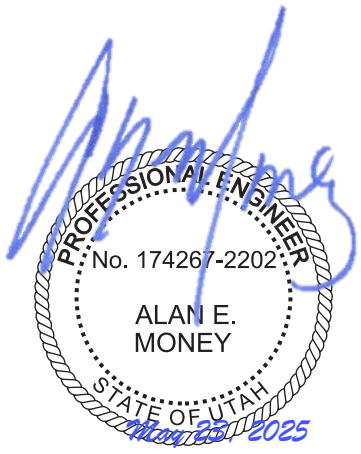
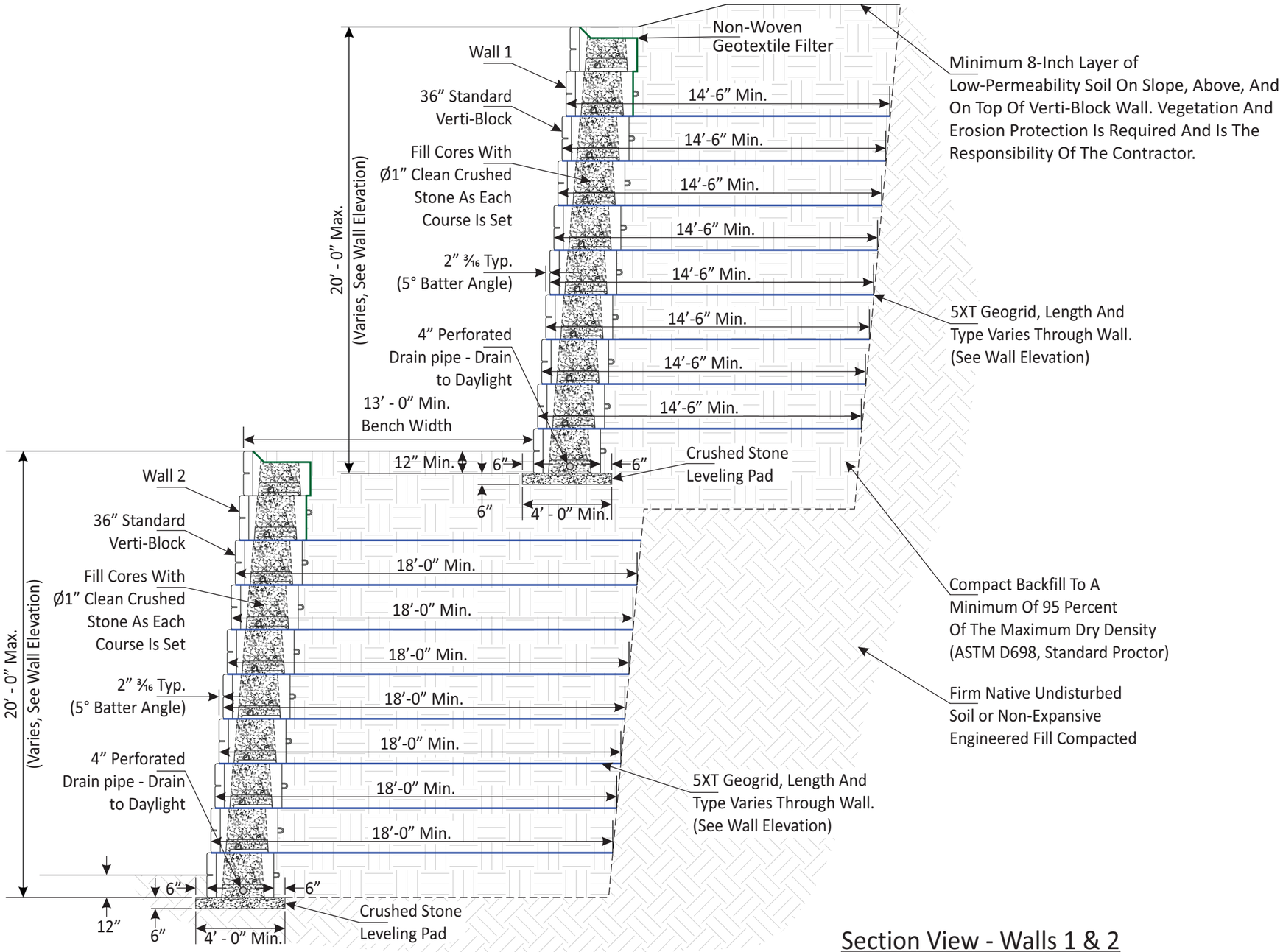
Appendix C

(Verti-Block Cross Sections)





Section View - Walls 1 & 2

Scale: 1”=5’-0”

SCALE 1” = 5’-0”

0 2.5 5 10

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

Safety Barrier Recommendation
It is the responsibility the property owner to install a safety fence/barriers above the retaining wall. During fence/barrier installation, for properties, reactions, and utilities, contractor to maintain the integrity of Verti-Block members and related Geogrid systems and connections. AMMTEC should be contacted for any potential construction impacts to wall including surcharge additions prior to construction.

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 23, 2025

Project Number: AZ 2025	DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALLS 1 & 2–	SHEET NUMBER: 33
Engineered By: Alan E. Money	PROJECT NAME: SUNDOWN CONDOS PHASE 3 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT	
Scale: 1”=5’-0”		

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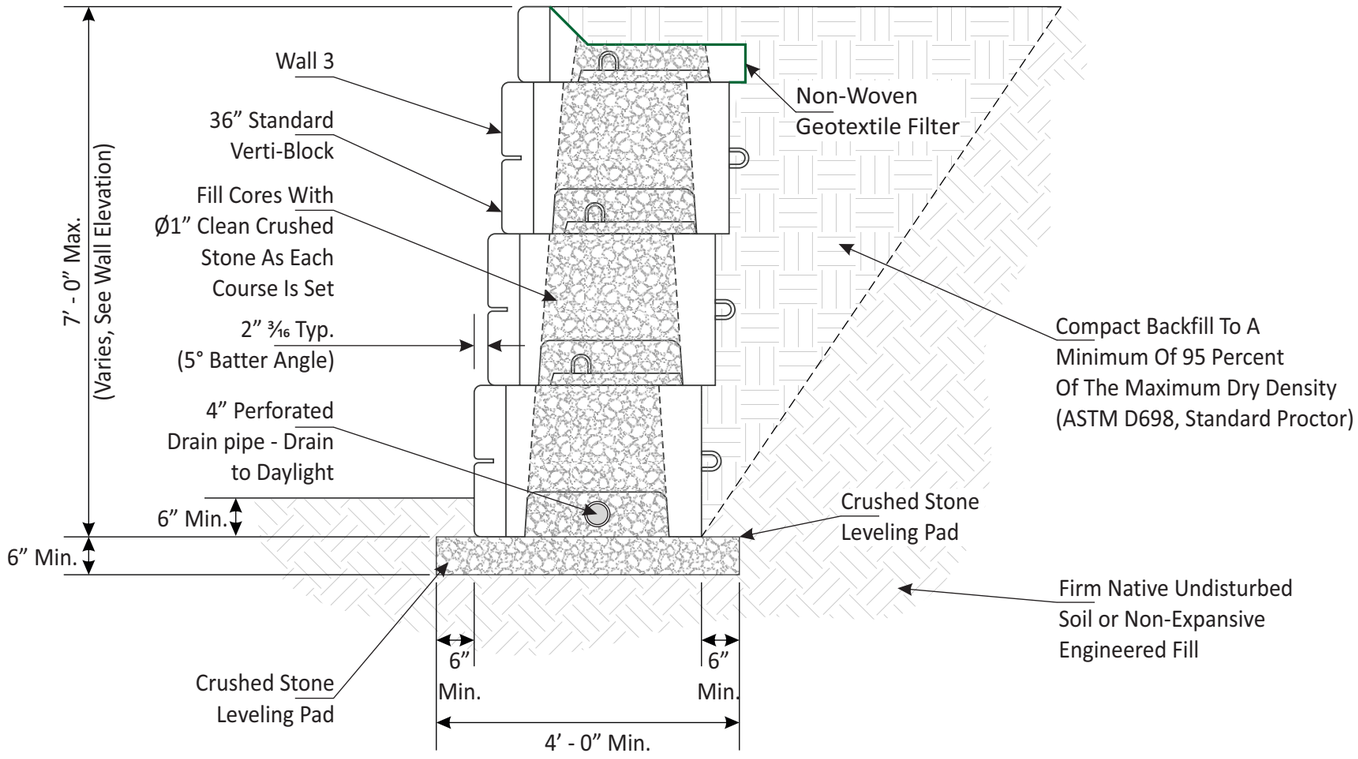
Prepared By:	JAM/BMH
Reviewed By:	AEM
Date:	05/14/25
Revision:	N/A



Notes:

Typical Section Displayed
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Excavation Safety
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Section View - Wall 3

Scale: 1”=2’-0”

SCALE 1” = 2’-0”

0 1 2 4

Project Number: AZ 2025
Engineered By: Alan E. Money
Scale: 1”=2’-0”

DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 3–

SHEET NUMBER: 34

PROJECT NAME: SUNDOWN CONDOS PHASE 3
6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT

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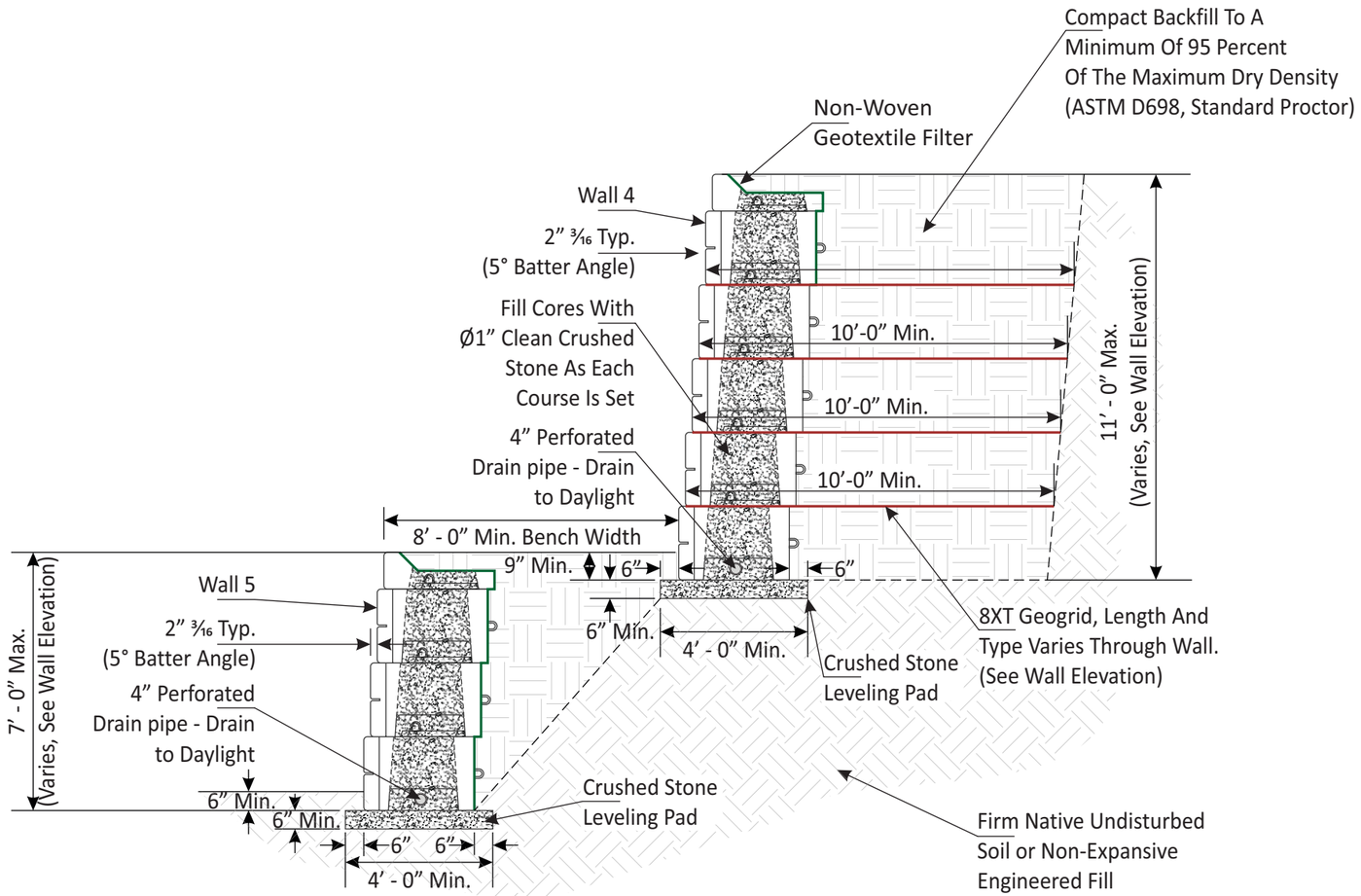
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 15, 2025



Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

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Section View - Walls 4 & 5

Scale: 1"=4'-0"

SCALE 1" = 4'-0"
0 2 4 8

Project Number: AZ 2025	DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALLS 4 & 5–	SHEET NUMBER: 35
Engineered By: Alan E. Money	PROJECT NAME: SUNDOWN CONDOS PHASE 3 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT	
Scale: 1"=4'-0"		

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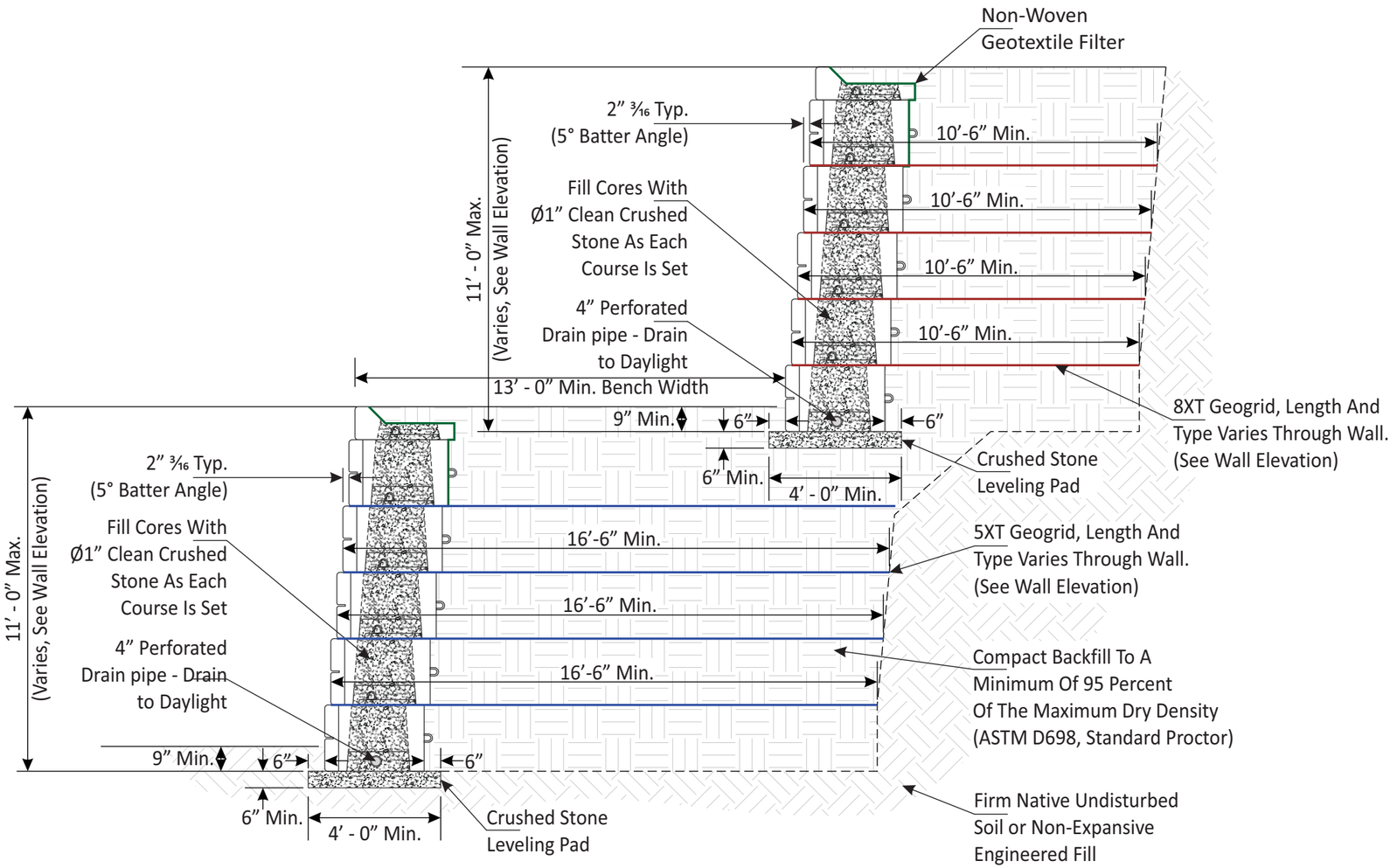
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025



Section View - Wall 6 Upper & Lower Wall

Scale: 1"=4'-0"

SCALE 1" = 4'-0"

0 2 4 8

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

Safety Barrier Recommendation
It is the responsibility the property owner to install a safety fence/barriers above the retaining wall. During fence/barrier installation, for properties, reactions, and utilities, contractor to maintain the integrity of Verti-Block members and related Geogrid systems and connections. AMMTEC should be contacted for any potential construction impacts to wall including surcharge additions prior to construction.

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
05/14/2025

Project Number: AZ 2025	DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 6–	SHEET NUMBER: 36
Engineered By: Alan E. Money	PROJECT NAME: SUNDOWN CONDOS PHASE 3 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT	
Scale: 1"=4'-0"		

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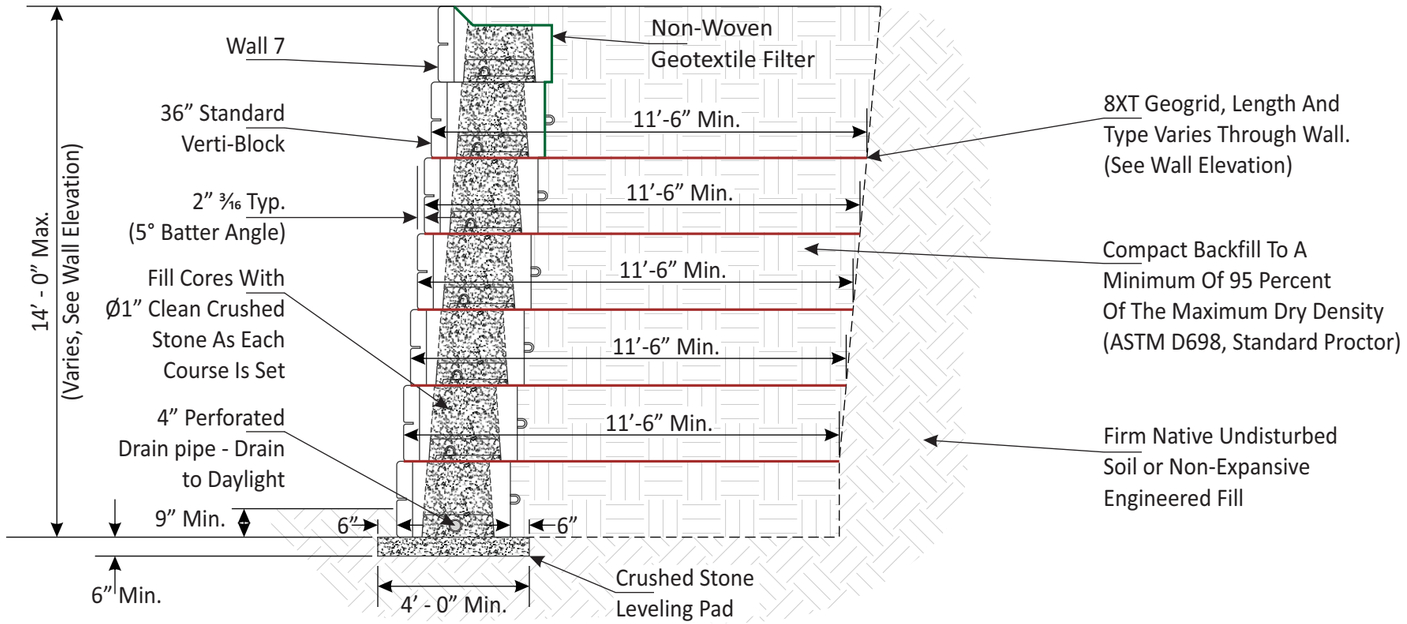
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A



Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

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Section View - Wall 7

Scale: 1”=4’-0”

SCALE 1” = 4’-0”

0 2 4 8

Project Number: AZ 2025	DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 7–	SHEET NUMBER: 37
Engineered By: Alan E. Money	PROJECT NAME: SUNDOWN CONDOS PHASE 3 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT	
Scale: 1”=4’-0”		

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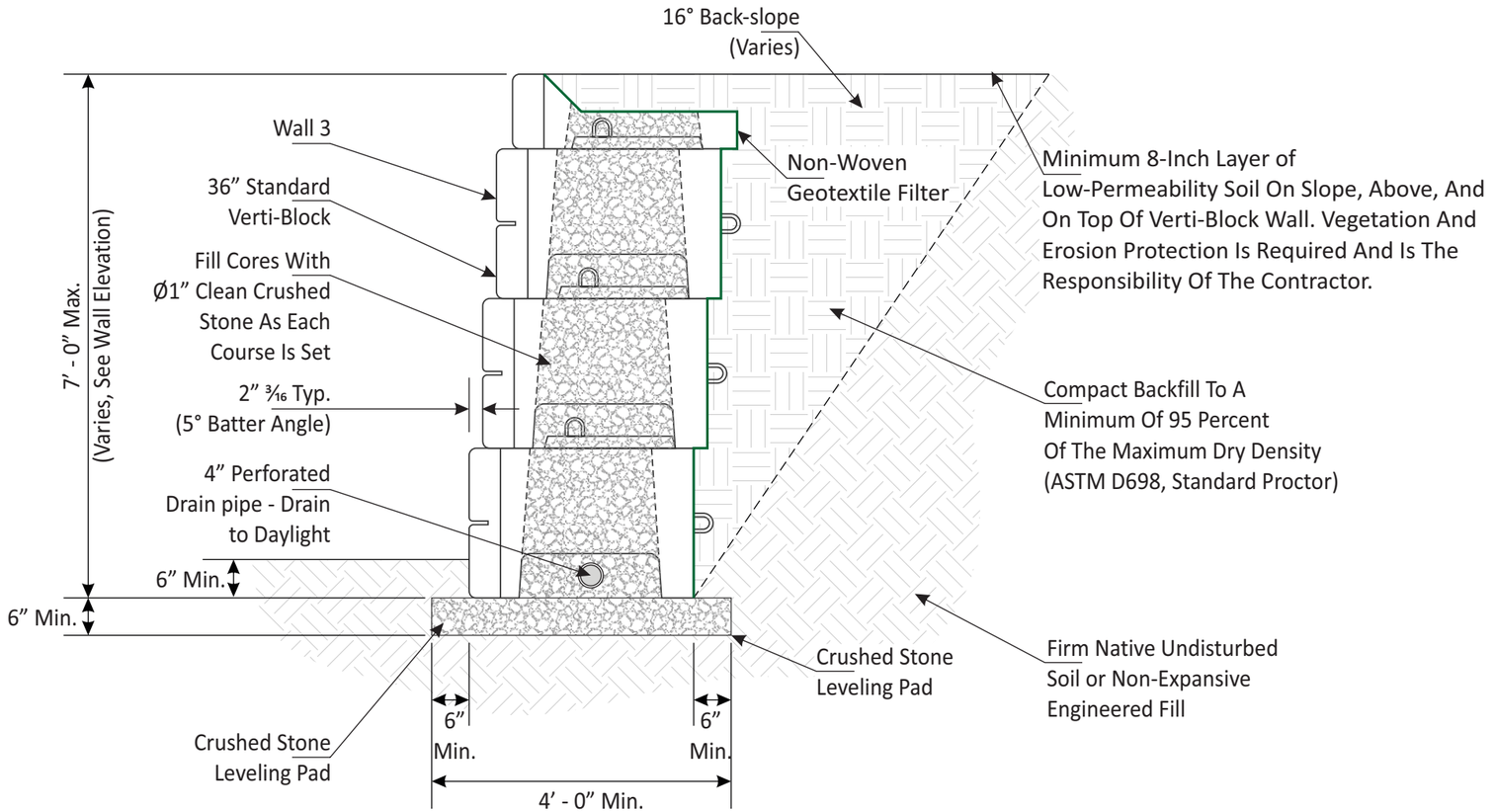
Prepared By: JAM/BMH
Reviewed By: AEM
Date: 05/14/25
Revision: N/A

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 28, 2025



Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

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Section View - Wall 8

Scale: 1"=2'-0"

SCALE 1" = 2'-0"

0 1 2 4

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
March 25, 2025

Project Number: AZ 2025	DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 8–	SHEET NUMBER: 38
Engineered By: Alan E. Money	PROJECT NAME: SUNDOWN CONDOS PHASE 3 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT	
Scale: 1"=2'-0"		

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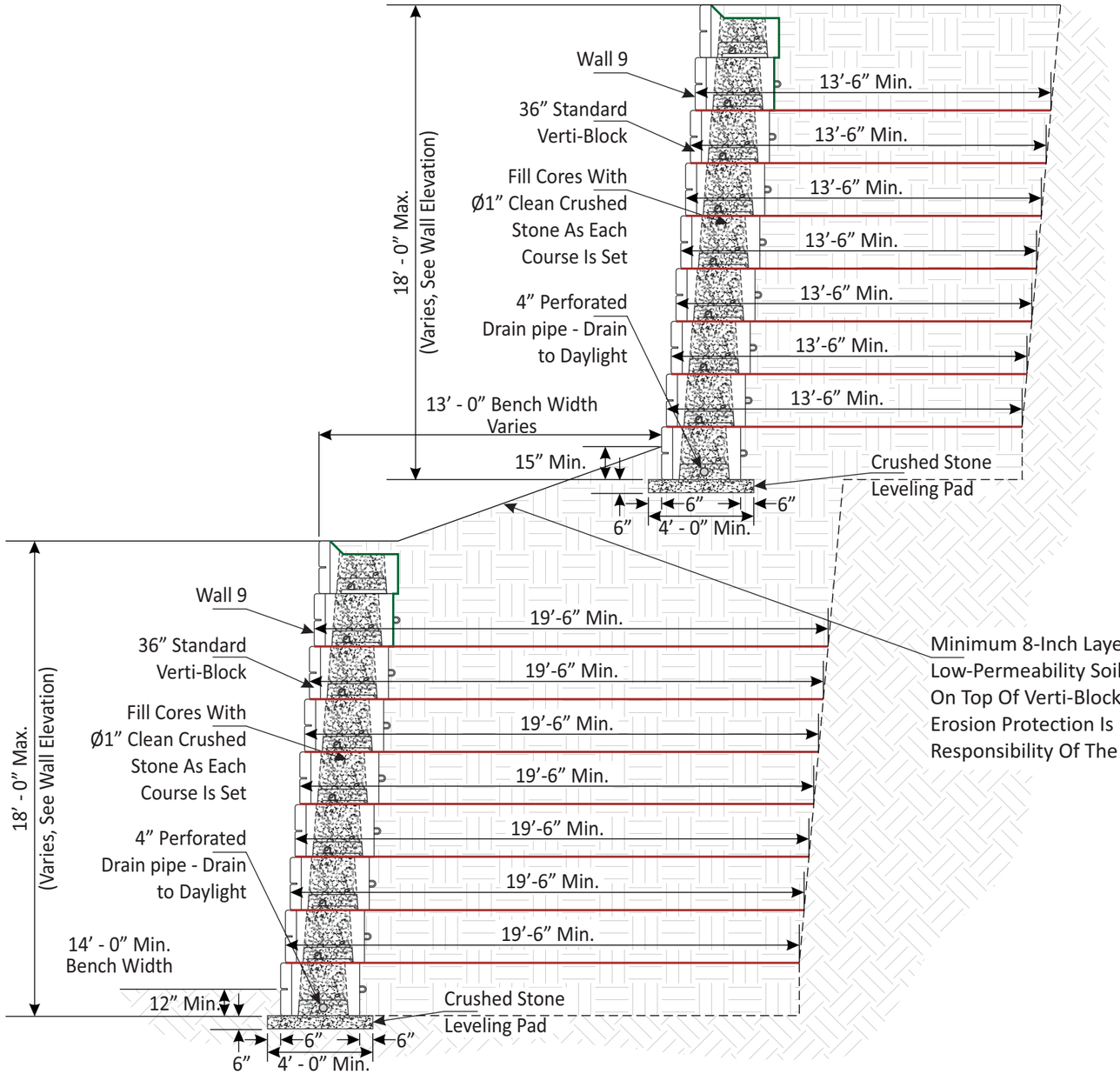
Prepared By:	JAM/BMH
Reviewed By:	AEM
Date:	05/14/25
Revision:	N/A



Section View - Wall 9 Upper & Lower

Scale: 1”=5’-0”

SCALE 1” = 5’-0”

0 2.5 5 10

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
Divert all surface water in a positive direction away from the wall. These protective measures should be implemented both during and after wall construction, and shall be maintained until all final drainage, landscaping, and paving work is finished.

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Project Number: AZ 2025	DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 9 UPPER & LOWER–	SHEET NUMBER: 39
Engineered By: Alan E. Money	PROJECT NAME: SUNDOWN CONDOS PHASE 3 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT	
Scale: 1”=5’-0”		

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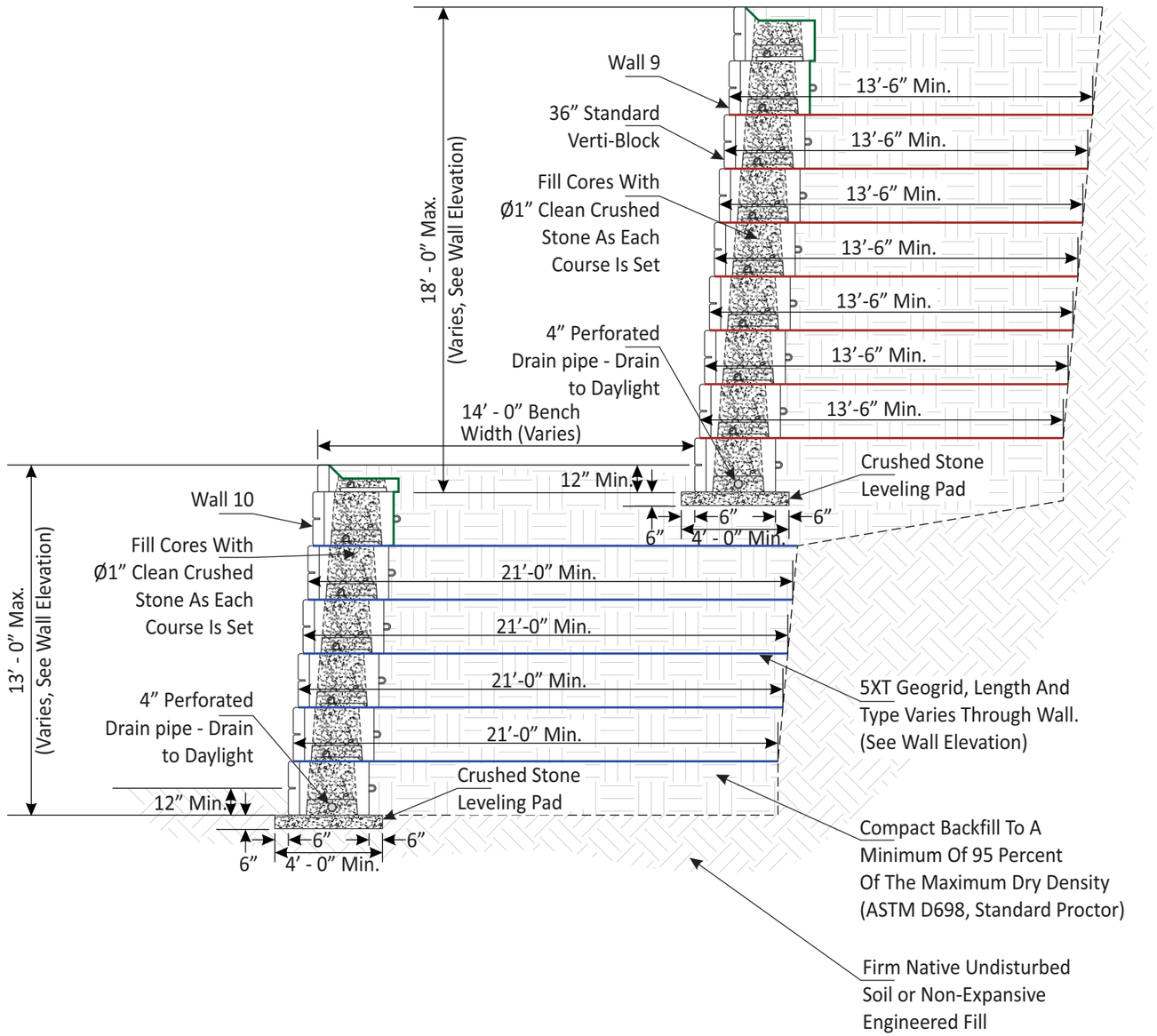
Prepared By:	JAM/BMH
Reviewed By:	AEM
Date:	05/14/25
Revision:	N/A

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 14, 2025



Notes:

Typical Section Displayed
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Excavation Safety
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Section View - Wall 10

Scale: 1”=5’-0”

SCALE 1” = 5’-0”

0 2.5 5 10

PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 23, 2025

Project Number: AZ 2025	DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 10–	SHEET NUMBER: 40
Engineered By: Alan E. Money	PROJECT NAME: SUNDOWN CONDOS PHASE 3 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT	
Scale: 1”=5’-0”		

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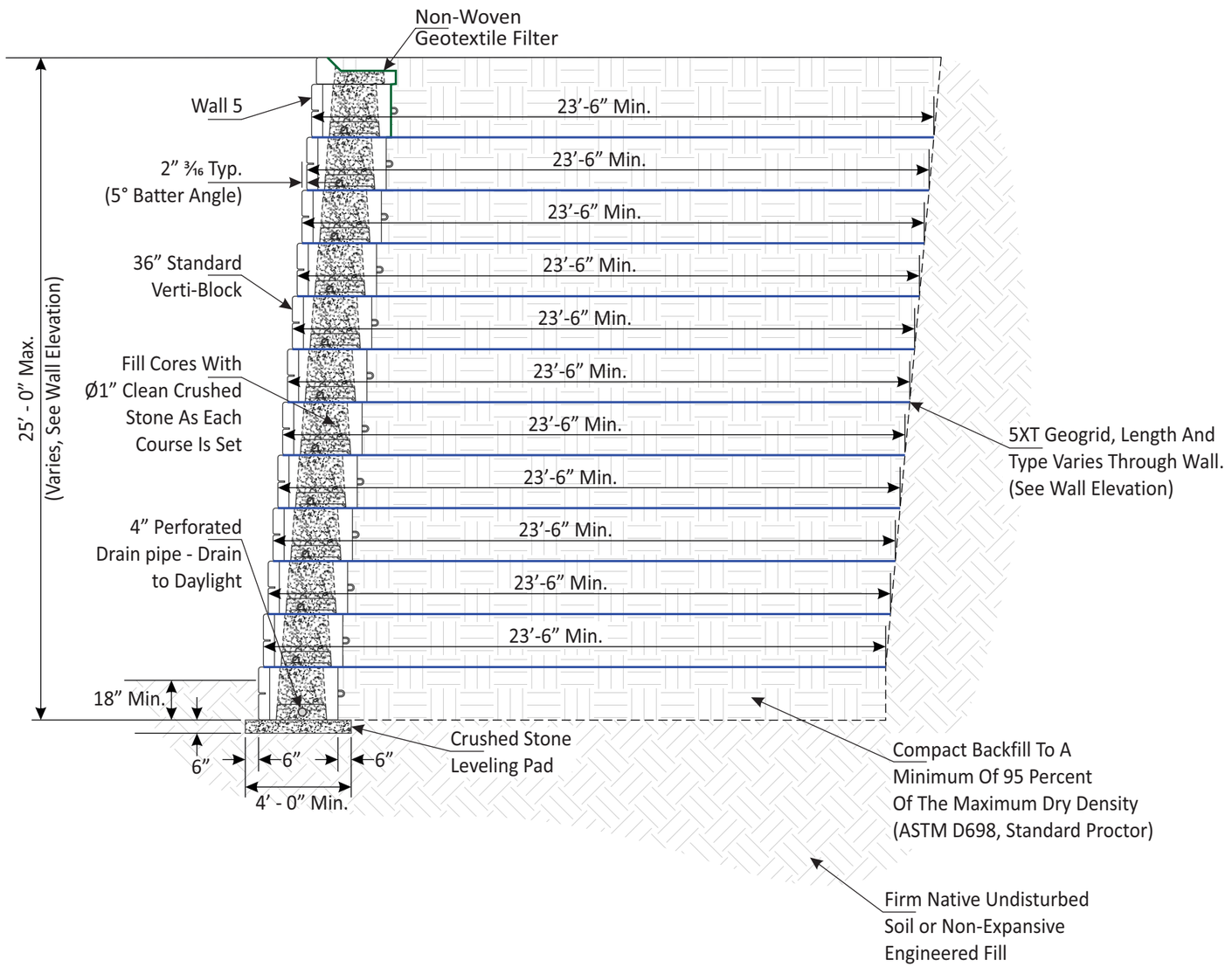
www.ammtec.com

Prepared By:	JAM/BMH
Reviewed By:	AEM
Date:	05/14/25
Revision:	N/A



Section View - Wall 11

Scale: 1"=5'-0"

SCALE 1" = 5'-0"

0 2.5 5 10

Notes:

Typical Section Displayed
All other sections should adhere to these same specifications unless specifically indicated otherwise.

Excavation Safety
Soil excavation must be benched to meet OSHA compliance standards.

Retaining Wall Protection
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PROFESSIONAL ENGINEER
No. 174267-2202
ALAN E. MONEY
STATE OF UTAH
May 23, 2025

Project Number: AZ 2025	DRAWING TITLE: VERTI-BLOCK RETAINING WALLS –WALL 11–	SHEET NUMBER: 41
Engineered By: Alan E. Money	PROJECT NAME: SUNDOWN CONDOS PHASE 3 6550 NORTH POWDER MOUNTAIN ROAD, EDEN, UT	
Scale: 1"=5'-0"		

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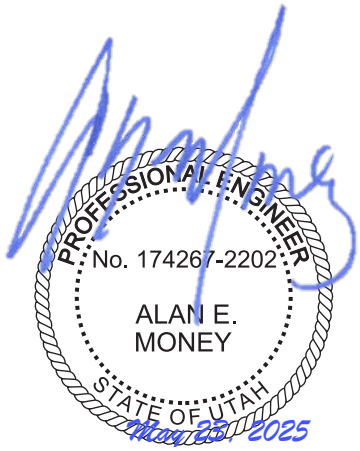
Prepared By:	JAM/BMH
Reviewed By:	AEM
Date:	05/14/25
Revision:	N/A

Appendix D

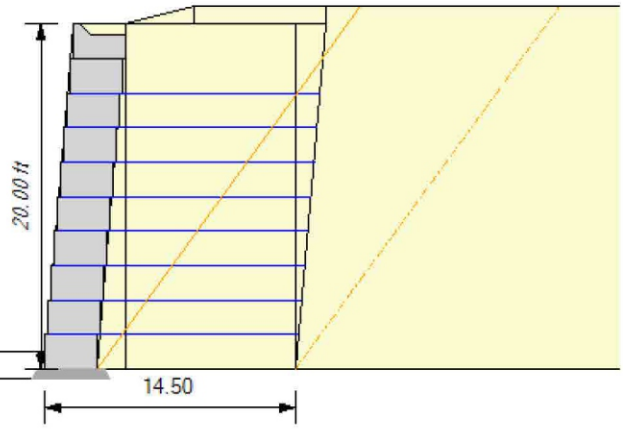
(Calculations - Static & Seismic)



Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 1 - 20 ft
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	20.00 ft (19.00 ft Exp.)			Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft		
Embedment:	1.00 ft	LL2 Width:	0 ft		
Leveling Pad Depth:	0.50 ft	Dead Load:	0 lbf/ft2		
Back Slope Angle:	14.0 deg	Dead Load Offset:	0.0 ft		
Back Slope Length:	4.0 ft	Dead Load Width:	0.00 ft		
Back Slope Toe Offset:	0.0 ft				

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

RESULTS

FoS Sliding:	3.39	FoS Overturning:	6.46
Bearing	2,641	FoS Bearing:	12.56
FoS Pullout	2.08		
Total Pullout	73,056	FoS Total Pullout	10.69
Top FoSot:	5.10	FoS Connection:	2.16

ID	Height	Length	Name	Ta	Pa	TMax	FSStr	FSPo	FSSldg	GridEmbedment
8	16	14.5	5XT	1786	413	413	6.49	2.08/[413]	13.98	1.33
7	14	14.5	5XT	1786	396	396	6.76	5.55/[396]	10.63	2.60
6	12	14.5	5XT	1786	528	528	5.07	7.67/[528]	8.58	3.87
5	10	14.5	5XT	1786	660	660	4.06	9.71/[660]	7.21	5.14
4	8	14.5	5XT	1786	793	793	3.38	11.72/[793]	6.22	6.42
3	6	14.5	5XT	1786	925	925	2.90	13.71/[925]	5.48	7.69
2	4	14.5	5XT	1786	1057	1057	2.54	15.68/[1057]	4.90	8.96
1	2	14.5	5XT	1786	1189	1189	2.25	17.66/[1189]	4.44 [3.39]	10.23

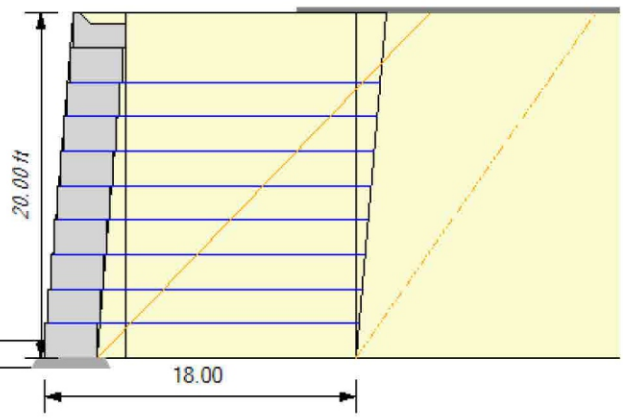
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 2 - 20 ft with Wall 1 SC
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	20.00 ft (19.00 ft Exp.)			Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:		0.00 ft	
Embedment:	1.00 ft	LL2 Width:		0 ft	
Leveling Pad Depth:	0.50 ft	Dead Load:		2,700 lbf/ft2	
Back Slope Angle:	0.0 deg	Dead Load Offset:		10.0 ft	
Back Slope Length:	10.0 ft	Dead Load Width:		40.00 ft	
Back Slope Toe Offset:	0.0 ft				

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	2.21	FoS Overturning:	4.83
Bearing	3,874	FoS Bearing:	9.19
FoS Pullout	2.82		
Total Pullout	155,041	FoS Total Pullout	26.79
Top FoSot:	6.18	FoS Connection:	1.98

ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
8	16	18	5XT	1786	350	696	1046	2.56	2.82/[1046]	5.14	1.01
7	14	18	5XT	1786	336	275	610	4.39	14.26/[610]	4.03	2.75
6	12	18	5XT	1786	448	271	719	3.73	21.02/[719]	3.44	4.50
5	10	18	5XT	1786	560	712	1271	2.11	13.83/[1271]	3.06	6.25
4	8	18	5XT	1786	671	665	1336	2.01	15.60/[1336]	2.79	8.00
3	6	18	5XT	1786	783	614	1398	1.92	17.80/[1398]	2.59	9.75
2	4	18	5XT	1786	895	561	1457	1.84	20.38/[1457]	2.43	11.50
1	2	18	5XT	1786	1007	531	1538	1.74	22.93/[1538]	2.29 [2.21]	13.25

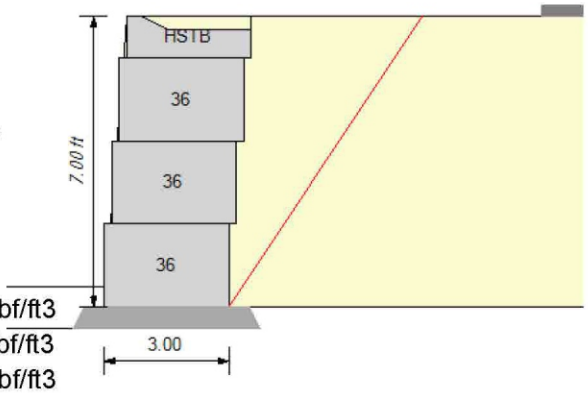
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 3 - 7 ft with Condo SC
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Infill Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
LvlPad / Drain Mat:	40 deg	0 lbf/ft2	135 lbf/ft3
Crushed Stone Lvlng Pad			

GEOMETRY

Design Height:	7.00 ft	Live Load:	0.00 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft
Embedment:	0.50 ft*	Live Load Width:	0.00 ft
Leveling Pad Depth:	0.50 ft		
Slope Angle:	0.0 deg	Dead Load:	1,890.0 lbf/ft2
Slope Length:	7.0 ft	Dead Load Offset:	7.0 ft
Slope Toe Offset:	0.0 ft	Dead Load Width:	21.00 ft
Leveling Pad Width:	4.00 ft	D.L. Embedment:	0.00 ft

Vert δ on Single Dpth

* Note: For all designs the passive resistance in front of the wall units is ignored for sliding calculations.

FACTORS OF SAFETY

Sliding:	1.50	Overturning:	1.50
Bearing:	2.00		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	2.59 (lvlpd)	FoS Overturning:	3.06
Bearing:	1020.05	FoS Bearing:	9.66

Name	Elev.[dpth]	ka	Pa	Paqd	PaT	FSsl	FoS OT	%D/H
HSTB	6.00[1.00]	0.254	16	0	16	73.63	>100	300%
36	4.00[3.00]	0.219	123	0	123	13.81	14.84	100%
36	2.00[5.00]	0.219	343	0	343	6.64	5.67	60%
36	0.00[7.00]	0.219	672	0	672	2.59	3.06	43%

Design Approach:

The design is a 'top down' approach. The values shown in the table[ka, kae, Pa, etc.] are the values from the top of wall to the base of that row. For trial wedge analysis, the ka and kae are back-calculated from the Pa, Pae values.

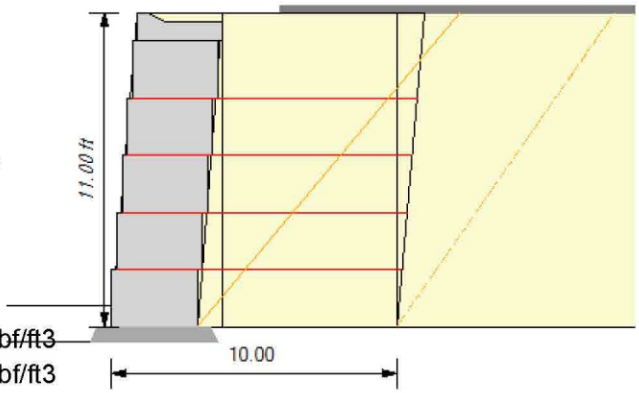
Column Descriptions:

ka: active earth pressure coefficient
Pa: active earth pressure
Paq: live surcharge earth pressure
Paq2: live load 2 surcharge earth pressure
Paqd: dead surcharge earth pressure
(PaC): reduction in load due to cohesion
PaT: sum of all earth pressures
FSsl(lvl Pad): factor of safety for sliding at each layer. (FS sliding below the leveling pad)
FSot: factor of safety of overturning about the toe.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 4 - 11 ft with Condo SC
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	11.00 ft (10.25 ft Exp.)			Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft		
Embedment:	0.75 ft	LL2 Width:	0 ft		
Leveling Pad Depth:	0.50 ft	Dead Load:	1,890 lbf/ft2		
Back Slope Angle:	0.0 deg	Dead Load Offset:	2.0 ft		
Back Slope Length:	2.0 ft	Dead Load Width:	25.00 ft		
Back Slope Toe Offset:	0.0 ft				

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	2.50	FoS Overturning:	5.52
Bearing	2,750	FoS Bearing:	7.56
FoS Pullout	1.15 NG		
Total Pullout	30,943	FoS Total Pullout	16.59
Top FoSot:	12.77	FoS Connection:	2.86

ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
4	8	10	8XT	2812	238	1594	1832	2.30	1.15/[1832]	7.33	1.02
3	6	10	8XT	2812	298	719	1017	4.15	5.68/[1017]	4.98	2.51
2	4	10	8XT	2812	417	688	1106	3.81	9.14/[1106]	3.94	4.01
1	2	10	8XT	2812	537	666	1202	3.51	10.77/[1202]	3.33 [2.50]	5.50

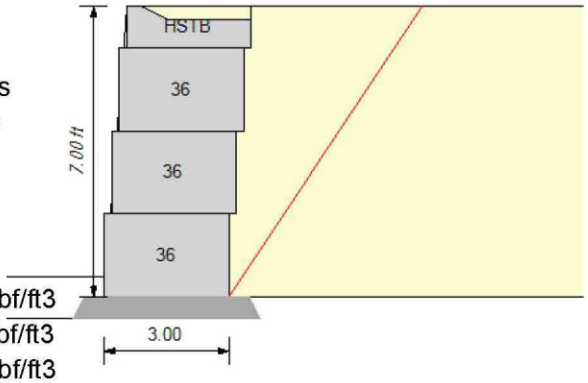
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 5 - 7 ft with Wall 4 and Condo SCs
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Infill Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
LvlPad / Drain Mat:	40 deg	0 lbf/ft2	135 lbf/ft3

Crushed Stone Lvlng Pad

GEOMETRY

Design Height:	7.00 ft	Live Load:	0.00 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft
Embedment:	0.50 ft*	Live Load Width:	0.00 ft
Leveling Pad Depth:	0.50 ft		
Slope Angle:	0.0 deg	Dead Load:	3,375.0 lbf/ft2
Slope Length:	6.0 ft	Dead Load Offset:	8.0 ft
Slope Toe Offset:	0.0 ft	Dead Load Width:	32.00 ft
Leveling Pad Width:	4.00 ft	D.L. Embedment:	0.00 ft

Vert δ on Single Dpth

* Note: For all designs the passive resistance in front of the wall units is ignored for sliding calculations.

FACTORS OF SAFETY

Sliding:	1.50	Overturning:	1.50
Bearing:	2.00		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	2.59 (lvlpd)	FoS Overturning:	3.06
Bearing:	1020.05	FoS Bearing:	9.66

Name	Elev.[dpth]	ka	Pa	Paqd	PaT	FSsl	FoS OT	%D/H
HSTB	6.00[1.00]	0.254	16	0	16	73.63	>100	300%
36	4.00[3.00]	0.219	123	0	123	13.81	14.84	100%
36	2.00[5.00]	0.219	343	0	343	6.64	5.67	60%
36	0.00[7.00]	0.219	672	0	672	2.59	3.06	43%

Design Approach:

The design is a 'top down' approach. The values shown in the table[ka, kae, Pa, etc.] are the values from the top of wall to the base of that row. For trial wedge analysis, the ka and kae are back-calculated from the Pa, Pae values.

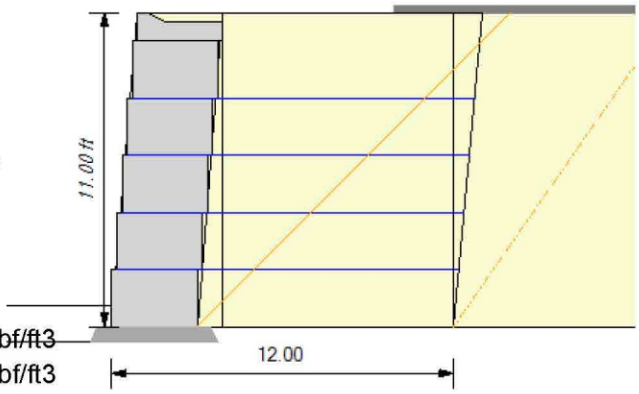
Column Descriptions:

ka: active earth pressure coefficient
Pa: active earth pressure
Paq: live surcharge earth pressure
Paq2: live load 2 surcharge earth pressure
Paqd: dead surcharge earth pressure
(PaC): reduction in load due to cohesion
PaT: sum of all earth pressures
FSsl(lvl Pad): factor of safety for sliding at each layer. (FS sliding below the leveling pad)
FSot: factor of safety of overturning about the toe.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 6a - 11 ft with Condo SC
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	11.00 ft (10.25 ft Exp.)	Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft
Embedment:	0.75 ft	LL2 Width:	0 ft
Leveling Pad Depth:	0.50 ft	Dead Load:	1,890 lbf/ft2
Back Slope Angle:	0.0 deg	Dead Load Offset:	6.0 ft
Back Slope Length:	6.0 ft	Dead Load Width:	32.00 ft
Back Slope Toe Offset:	0.0 ft		

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	1.76	FoS Overturning:	3.66
Bearing	1,743	FoS Bearing:	12.96
FoS Pullout	7.57		
Total Pullout	29,738	FoS Total Pullout	17.41
Top FoSot:	12.77	FoS Connection:	4.53

ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
4	8	12	5XT	1786	218	256	474	5.65	7.57/[474]	6.16	1.73
3	6	12	5XT	1786	273	125	398	6.73	16.51/[398]	4.42	3.55
2	4	12	5XT	1786	382	418	800	3.35	10.55/[800]	3.63	5.36
1	2	12	5XT	1786	491	379	870	3.08	12.79/[870]	3.16 [1.76]	7.18

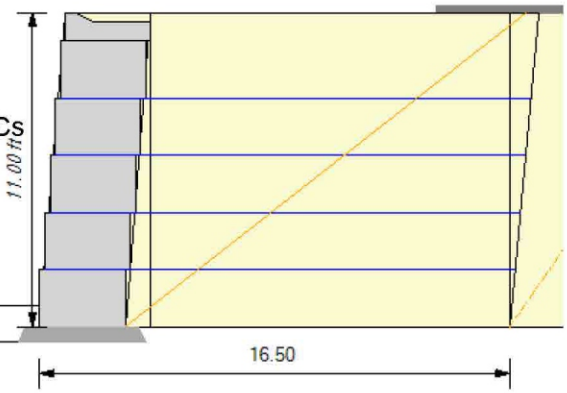
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 6b - 11 ft with Upper Wall and Condo SCs
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	11.00 ft (10.25 ft Exp.)			Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft		
Embedment:	0.75 ft	LL2 Width:	0 ft		
Leveling Pad Depth:	0.50 ft	Dead Load:	4,320 lbf/ft2		
Back Slope Angle:	0.0 deg	Dead Load Offset:	10.0 ft		
Back Slope Length:	6.0 ft	Dead Load Width:	46.00 ft		
Back Slope Toe Offset:	0.0 ft				

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	2.07	FoS Overturning:	7.73
Bearing	2,615	FoS Bearing:	12.89
FoS Pullout	29.88		
Total Pullout	71,342	FoS Total Pullout	58.97
Top FoSot:	12.77	FoS Connection:	6.79

ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
4	8	16.5	5XT	1786	155	0	155	17.32	94.18/[155]	4.40	3.99
3	6	16.5	5XT	1786	193	0	193	13.86	82.98/[193]	3.13	6.37
2	4	16.5	5XT	1786	271	0	271	9.90	68.62/[271]	2.57	8.74
1	2	16.5	5XT	1786	348	394	742	3.61	29.88/[742]	2.24 [2.07]	11.12

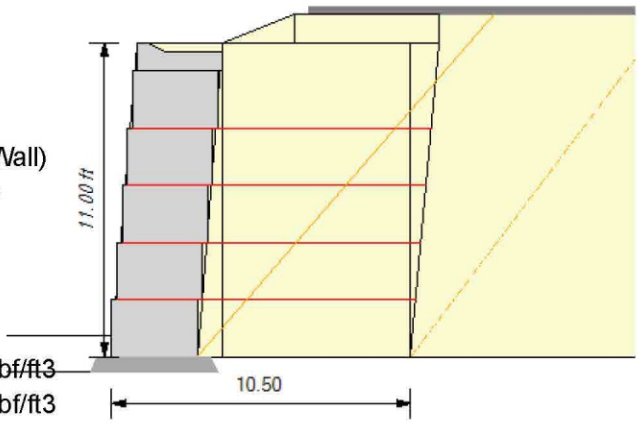
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 6c - 11 ft with Condo SC (Upper Wall)
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	11.00 ft (10.25 ft Exp.)			Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:		0.00 ft	
Embedment:	0.75 ft	LL2 Width:		0 ft	
Leveling Pad Depth:	0.50 ft	Dead Load:		1,890 lbf/ft2	
Back Slope Angle:	22.0 deg	Dead Load Offset:		3.0 ft	
Back Slope Length:	2.5 ft	Dead Load Width:		32.00 ft	
Back Slope Toe Offset:	0.0 ft				

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	1.85	FoS Overturning:	4.03
Bearing	2,948	FoS Bearing:	6.77
FoS Pullout	1.46 NG		
Total Pullout	33,663	FoS Total Pullout	15.65
Top FoSot:	8.78	FoS Connection:	2.60

ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
4	8	10.5	8XT	2812	275	1713	1988	2.12	1.46/[1988]	3.49	1.27
3	6	10.5	8XT	2812	344	777	1120	3.76	6.21/[1120]	2.94	2.83
2	4	10.5	8XT	2812	481	741	1222	3.45	8.86/[1222]	2.59	4.39
1	2	10.5	8XT	2812	619	703	1322	3.19	9.82/[1322]	2.34 [1.85]	5.94

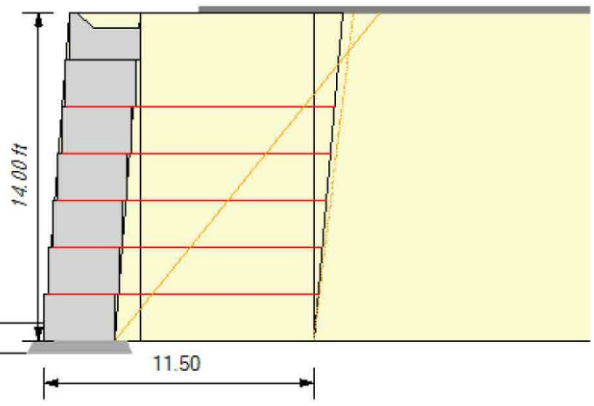
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 7 - 14 ft with Condo SC
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	14.00 ft (13.25 ft Exp.)			Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:		0.00 ft	
Embedment:	0.75 ft	LL2 Width:		0 ft	
Leveling Pad Depth:	0.50 ft	Dead Load:		1,890 lbf/ft2	
Back Slope Angle:	0.0 deg	Dead Load Offset:		2.5 ft	
Back Slope Length:	2.5 ft	Dead Load Width:		28.00 ft	
Back Slope Toe Offset:	0.0 ft				

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	1.87	FoS Overturning:	3.50
Bearing	3,745	FoS Bearing:	5.51
FoS Pullout	1.21 NG		
Total Pullout	54,247	FoS Total Pullout	17.80
Top FoSot:	6.18	FoS Connection:	2.34

ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
5	10	11.5	8XT	2812	376	2008	2384	1.77	1.21/[2384]	6.31	1.31
4	8	11.5	8XT	2812	361	735	1096	3.85	6.05/[1096]	4.71	2.75
3	6	11.5	8XT	2812	481	708	1189	3.55	9.27/[1189]	3.88	4.19
2	4	11.5	8XT	2812	601	688	1289	3.27	11.98/[1289]	3.35	5.62
1	2	11.5	8XT	2812	721	668	1389	3.04	13.16/[1389]	2.99 [1.87]	7.06

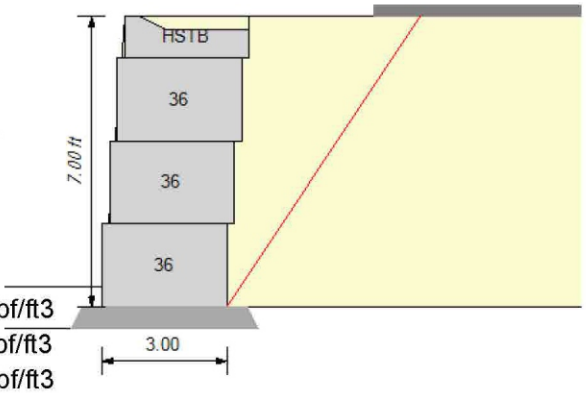
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 8 - 7 ft with Condo SC
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Infill Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
LvlPad / Drain Mat:	40 deg	0 lbf/ft2	135 lbf/ft3
Crushed Stone Lvlng Pad			

GEOMETRY

Design Height:	7.00 ft	Live Load:	0.00 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft
Embedment:	0.50 ft*	Live Load Width:	0.00 ft
Leveling Pad Depth:	0.50 ft		
Slope Angle:	0.0 deg	Dead Load:	1,890.0 lbf/ft2
Slope Length:	3.0 ft	Dead Load Offset:	3.0 ft
Slope Toe Offset:	0.0 ft	Dead Load Width:	21.00 ft
Leveling Pad Width:	4.00 ft	D.L. Embedment:	0.00 ft

Vert δ on Single Dpth

* Note: For all designs the passive resistance in front of the wall units is ignored for sliding calculations.

FACTORS OF SAFETY

Sliding:	1.50	Overturning:	1.50
Bearing:	2.00		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	1.59 (lvlpd)	FoS Overturning:	1.58
Bearing:	1630.24	FoS Bearing:	4.64

Name	Elev.[dpth]	ka	Pa	Paqd	PaT	FSsl	FoS OT	%D/H
HSTB	6.00[1.00]	0.254	16	0	16	73.63	>100	300%
36	4.00[3.00]	0.219	123	0	123	13.81	14.84	100%
36	2.00[5.00]	0.219	343	0	343	6.64	5.67	60%
36	0.00[7.00]	0.219	672	419	1091	1.59	1.58	43%

Design Approach:

The design is a 'top down' approach. The values shown in the table[ka, kae, Pa, etc.] are the values from the top of wall to the base of that row. For trial wedge analysis, the ka and kae are back-calculated from the Pa, Pae values.

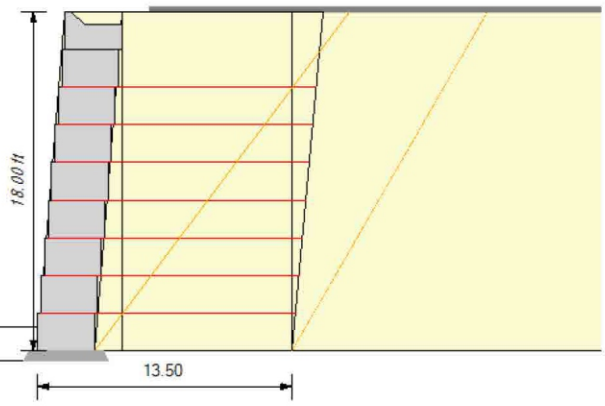
Column Descriptions:

ka: active earth pressure coefficient
Pa: active earth pressure
Paq: live surcharge earth pressure
Paq2: live load 2 surcharge earth pressure
Paqd: dead surcharge earth pressure
(PaC): reduction in load due to cohesion
PaT: sum of all earth pressures
FSsl(lvl Pad): factor of safety for sliding at each layer. (FS sliding below the leveling pad)
FSot: factor of safety of overturning about the toe.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 9a - 18ft with Condo SC (Upper Wall)
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	18.00 ft (16.75 ft Exp.)			Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:		0.00 ft	
Embedment:	1.25 ft	LL2 Width:		0 ft	
Leveling Pad Depth:	0.50 ft	Dead Load:		1,890 lbf/ft2	
Back Slope Angle:	0.0 deg	Dead Load Offset:		1.5 ft	
Back Slope Length:	1.5 ft	Dead Load Width:		32.00 ft	
Back Slope Toe Offset:	0.0 ft				

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	2.05	FoS Overturning:	3.68
Bearing	4,537	FoS Bearing:	5.89
FoS Pullout	1.05 NG		
Total Pullout	109,589	FoS Total Pullout	21.55
Top FoSot:	6.18	FoS Connection:	1.85

ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
7	14	13.5	8XT	2812	379	2175	2554	1.65	1.05/[2554]	7.95	1.22
6	12	13.5	8XT	2812	364	833	1198	3.52	5.13/[1198]	5.82	2.55
5	10	13.5	8XT	2812	486	818	1304	3.24	7.82/[1304]	4.72	3.87
4	8	13.5	8XT	2812	607	802	1409	2.99	10.53/[1409]	4.04	5.20
3	6	13.5	8XT	2812	728	785	1514	2.79	13.26/[1514]	3.56	6.52
2	4	13.5	8XT	2812	850	775	1625	2.60	15.93/[1625]	3.21	7.85
1	2	13.5	8XT	2812	971	765	1736	2.43	17.14/[1736]	2.28 [2.05]	9.17

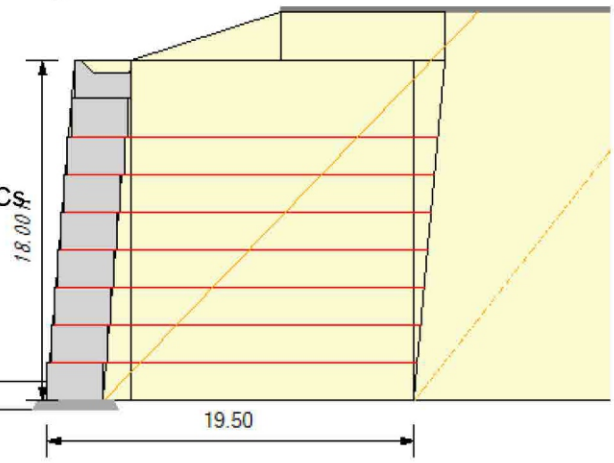
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 9b - 18 ft with Upper Wall and Condo SCs
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	18.00 ft (17.00 ft Exp.)			Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:		0.00 ft	
Embedment:	1.00 ft	LL2 Width:		0 ft	
Leveling Pad Depth:	0.50 ft	Dead Load:		4,320 lbf/ft2	
Back Slope Angle:	18.0 deg	Dead Load Offset:		8.0 ft	
Back Slope Length:	8.0 ft	Dead Load Width:		46.00 ft	
Back Slope Toe Offset:	0.0 ft				

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	1.74	FoS Overturning:	4.54
Bearing	5,413	FoS Bearing:	6.84
FoS Pullout	9.87		
Total Pullout	292,206	FoS Total Pullout	50.33
Top FoSot:	4.71	FoS Connection:	1.44... NG

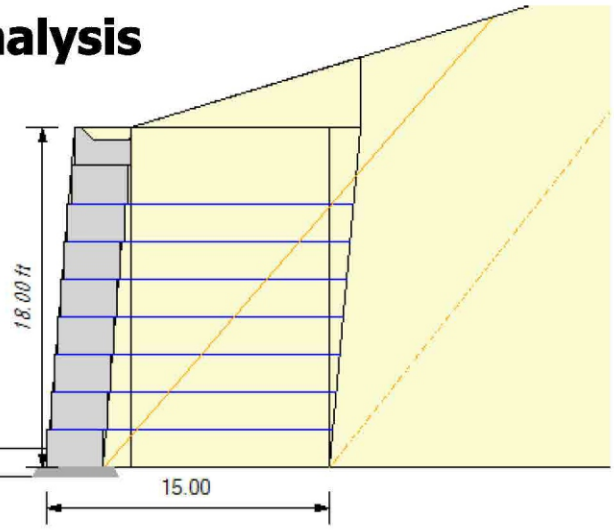
ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
7	14	19.5	8XT	2812	433	1641	2074	2.03	9.87/[2074]	2.77	4.25
6	12	19.5	8XT	2812	416	1669	2085	2.02	14.39/[2085]	2.46	6.00
5	10	19.5	8XT	2812	554	1593	2147	1.96	18.71/[2147]	2.24	7.75
4	8	19.5	8XT	2812	693	1512	2205	1.91	20.00/[2205]	2.07	9.50
3	6	19.5	8XT	2812	832	1463	2295	1.84	20.86/[2295]	1.94	11.25
2	4	19.5	8XT	2812	970	1413	2383	1.77	21.94/[2383]	1.83	13.00
1	2	19.5	8XT	2812	1109	1362	2470	1.71	23.21/[2470]	1.74 [1.86]	14.75

Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis



Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 9c - 18 ft no SC (East Section)
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36

SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	18.00 ft (17.00 ft Exp.)			Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:		0.00 ft	
Embedment:	1.00 ft	LL2 Width:		0 ft	
Leveling Pad Depth:	0.50 ft	Dead Load:		0 lbf/ft2	
Back Slope Angle:	17.0 deg	Dead Load Offset:		0.0 ft	
Back Slope Length:	24.0 ft	Dead Load Width:		0.00 ft	
Back Slope Toe Offset:	0.0 ft				

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	2.54	FoS Overturning:	4.87
Bearing	2,628	FoS Bearing:	12.40
FoS Pullout	1.90		
Total Pullout	64,951	FoS Total Pullout	9.93
Top FoSot:	4.81	FoS Connection:	2.02

ID	Height	Length	Name	Ta	Pa	TMax	FSStr	FSPo	FSSldg	GridEmbedment
7	14	15	5XT	1786	488	488	5.49	1.90/[488]	8.00	1.10
6	12	15	5XT	1786	468	468	5.72	5.85/[468]	6.35	2.66
5	10	15	5XT	1786	624	624	4.29	8.22/[624]	5.27	4.22
4	8	15	5XT	1786	781	781	3.43	10.39/[781]	4.51	5.77
3	6	15	5XT	1786	937	937	2.86	12.46/[937]	3.95	7.33
2	4	15	5XT	1786	1093	1093	2.45	14.48/[1093]	3.54	8.89
1	2	15	5XT	1786	1249	1249	2.15	16.46/[1249]	3.22 [2.54]	10.44

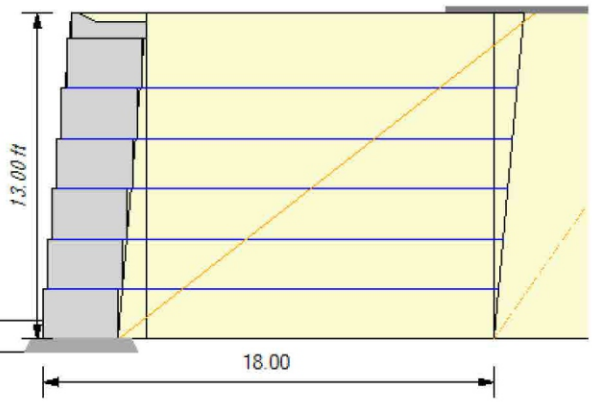
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 10 - 13 ft with Wall 9 and Condo SCs
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	13.00 ft (12.25 ft Exp.)	Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft
Embedment:	0.75 ft	LL2 Width:	0 ft
Leveling Pad Depth:	0.50 ft	Dead Load:	3,645 lbf/ft2
Back Slope Angle:	0.0 deg	Dead Load Offset:	12.0 ft
Back Slope Length:	12.0 ft	Dead Load Width:	40.00 ft
Back Slope Toe Offset:	0.0 ft		

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	1.50	FoS Overturning:	3.89
Bearing	2,019	FoS Bearing:	16.36
FoS Pullout	51.35		
Total Pullout	77,105	FoS Total Pullout	45.63
Top FoSot:	12.77	FoS Connection:	5.67

ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
5	10	18	5XT	1786	155	0	155	17.32	68.04/[155]	4.40	3.11
4	8	18	5XT	1786	193	0	193	13.86	61.64/[193]	3.25	5.49
3	6	18	5XT	1786	271	0	271	9.90	53.08/[271]	2.74	7.87
2	4	18	5XT	1786	348	0	348	7.70	51.35/[348]	2.43	10.24
1	2	18	5XT	1786	425	0	425	6.30	52.73/[425]	2.23 [1.50]	12.62

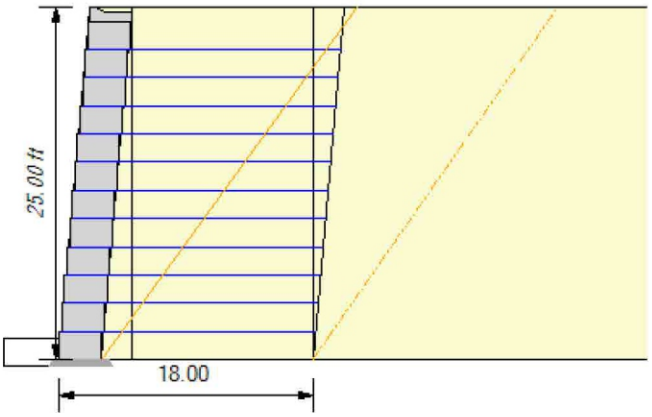
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 11a - 25 ft no SC
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	25.00 ft (23.50 ft Exp.)	Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft
Embedment:	1.50 ft	LL2 Width:	0 ft
Leveling Pad Depth:	0.50 ft	Dead Load:	0 lbf/ft2
Back Slope Angle:	0.0 deg	Dead Load Offset:	0.0 ft
Back Slope Length:	30.0 ft	Dead Load Width:	0.00 ft
Back Slope Toe Offset:	0.0 ft		

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	4.28	FoS Overturning:	8.43
Bearing	3,119	FoS Bearing:	13.83
FoS Pullout	1.42 NG		
Total Pullout	147,999	FoS Total Pullout	15.07
Top FoSot:	12.77	FoS Connection:	1.93

ID	Height	Length	Name	Ta	Pa	TMax	FSStr	FSPo	FSSldg	GridEmbedment
11	22	18	5XT	1786	243	243	11.02	1.42/[243]	59.63	1.04
10	20	18	5XT	1786	304	304	8.82	4.21/[304]	30.04	2.31
9	18	18	5XT	1786	425	425	6.30	6.52/[425]	19.74	3.58
8	16	18	5XT	1786	547	547	4.90	8.84/[547]	14.63	4.84
7	14	18	5XT	1786	668	668	4.01	11.15/[668]	11.61	6.11
6	12	18	5XT	1786	790	790	3.39	13.47/[790]	9.62	7.38
5	10	18	5XT	1786	911	911	2.94	15.79/[911]	8.21	8.65
4	8	18	5XT	1786	1033	1033	2.59	18.10/[1033]	7.17	9.92
3	6	18	5XT	1786	1154	1154	2.32	20.42/[1154]	6.37	11.19
2	4	18	5XT	1786	1276	1276	2.10	22.73/[1276]	5.73	12.46
1	2	18	5XT	1786	1398	1398	1.92	25.05/[1398]	5.21 [4.28]	13.73

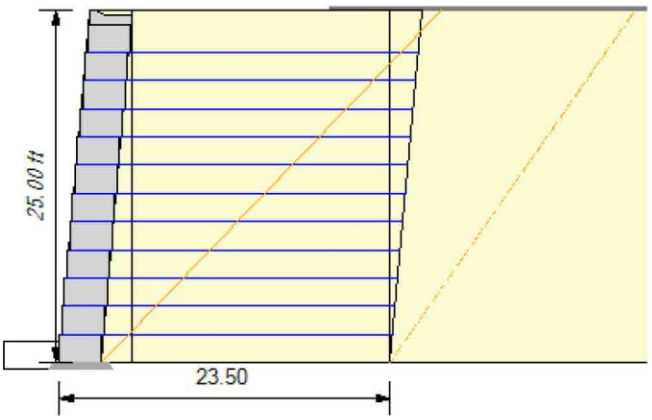
Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.

Verti-Block® Retaining Walls

REA Analysis

Project:	Sundown Condos Phase 3
Location:	6550 North Powder Mountain Road
Designer:	JAM
Date:	5/20/2025
Section:	Wall 11b - 25 ft with Condo SC
Design Method:	NCMA_09_3rd_Ed, Ignore Vert. Force
Design Unit:	VertiBlock 4.0: 36



SOIL PARAMETERS	Φ	coh	γ
Reinforced Soil:	30 deg	0 lbf/ft2	120 lbf/ft3
Retained Soil:	34 deg	0 lbf/ft2	125 lbf/ft3
Foundation Soil:	34 deg	0 lbf/ft2	110 lbf/ft3
Leveling Pad:	40 deg	0 lbf/ft2	135 lbf/ft3
Leveling Pad:	Crushed Stone		

GEOMETRY

Design Height:	25.00 ft (23.50 ft Exp.)	Live Load:	0 lbf/ft2
Wall Batter/Tilt:	5.20/ 0.00 deg	Live Load Offset:	0.00 ft
Embedment:	1.50 ft	LL2 Width:	0 ft
Leveling Pad Depth:	0.50 ft	Dead Load:	1,890 lbf/ft2
Back Slope Angle:	0.0 deg	Dead Load Offset:	14.0 ft
Back Slope Length:	14.0 ft	Dead Load Width:	39.00 ft
Back Slope Toe Offset:	0.0 ft		

Vertical δ on Single Depth

FACTORS OF SAFETY

Sliding:	1.50	Pullout:	1.50
Overturning:	2.00	Tension/Uncertainties:	1.50
Bearing:	2.00	Connection:	1.50
Unit/Unit Shear:	1.50		

Verti-Block® Retaining Walls

RESULTS

FoS Sliding:	2.94	FoS Overturning:	6.62
Bearing	3,939	FoS Bearing:	12.99
FoS Pullout	5.94		
Total Pullout	288,707	FoS Total Pullout	31.93
Top FoSot:	12.77	FoS Connection:	1.85

ID	Height	Length	Name	Ta	Pa	DL	TMax	FSStr	FSPo	FSSldg	GridEmbedment
11	22	23.5	5XT	1786	224	216	440	6.09	5.94/[440]	9.27	1.26
10	20	23.5	5XT	1786	280	107	387	6.93	17.89/[387]	6.75	3.01
9	18	23.5	5XT	1786	392	106	497	5.39	24.12/[497]	5.59	4.76
8	16	23.5	5XT	1786	504	104	608	4.41	27.25/[608]	4.88	6.51
7	14	23.5	5XT	1786	616	103	719	3.73	27.58/[719]	4.40	8.25
6	12	23.5	5XT	1786	727	102	830	3.23	28.76/[830]	4.03	10.00
5	10	23.5	5XT	1786	839	101	940	2.85	30.48/[940]	3.74	11.75
4	8	23.5	5XT	1786	951	377	1329	2.02	25.78/[1329]	3.50	13.50
3	6	23.5	5XT	1786	1063	357	1420	1.89	28.61/[1420]	3.30	15.25
2	4	23.5	5XT	1786	1175	315	1490	1.80	32.04/[1490]	3.13	17.00
1	2	23.5	5XT	1786	1287	313	1600	1.67	34.79/[1600]	2.98 [2.94]	18.75

Column Descriptions:

Ta: allowable geogrid strength
Rc %: percent coverage for geosynthetics
EP (Pa) internal active earth pressure
LL (Pql) earth pressure due to live load surcharge
DL (Pqd) earth pressure due to dead load surcharge
Tmax maximum earth pressure on geosynthetic layer
FSstr factor of safety on geogrid strength (LTDS/Tmax)
Ta cn allowable tension on the connection
FS Pkcn, factor of safety on the connection (PkCn/Tmax)
FS PO, factor of safety on pullout (Pullout/(Tmax - LL)
Grid Embedment, depth of embedment beyond the theoretical failure plane.