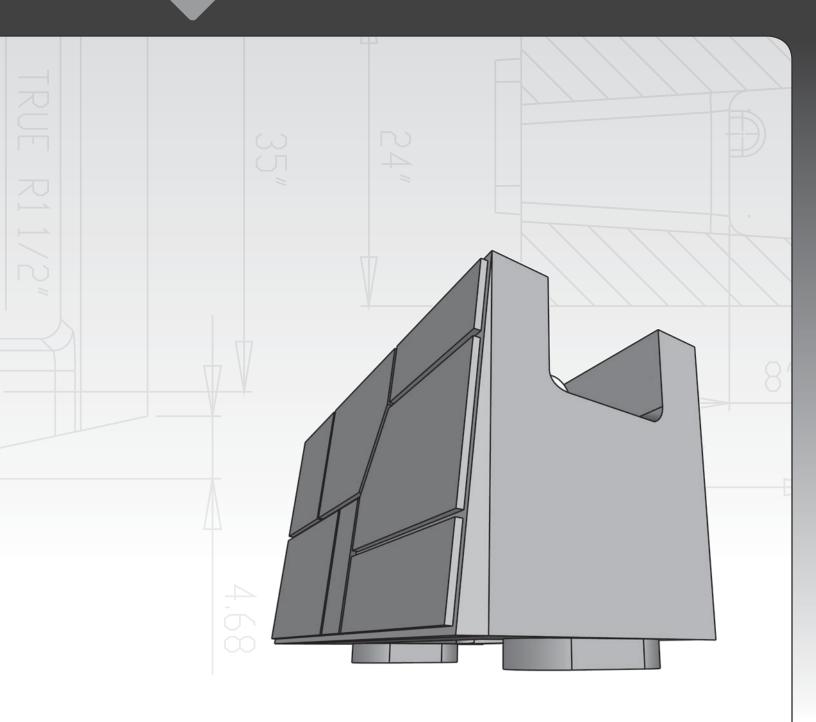
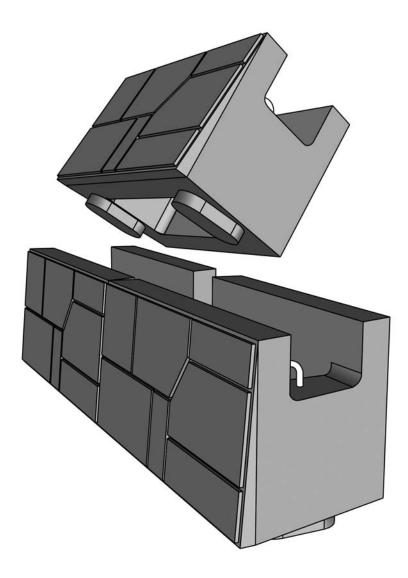


### TECHNICAL REFERENCE MANUAL



3D Drawings I Unit Specifications I Cross Sections I Design Charts I Details



Our MagnumStone<sup>™</sup> product is a large block, hollow core, wet-cast segmental retaining wall system that uses nearly half the amount of concrete per face foot when compared to traditional solid systems. The environmental and economical advantages of the pre-cast hollow block MagnumStone<sup>™</sup> product are unprecedented in the retaining wall industry. Because of its size and design flexibility, MagnumStone<sup>™</sup> is ideal for almost any retaining wall project from residential to large commercial installations.

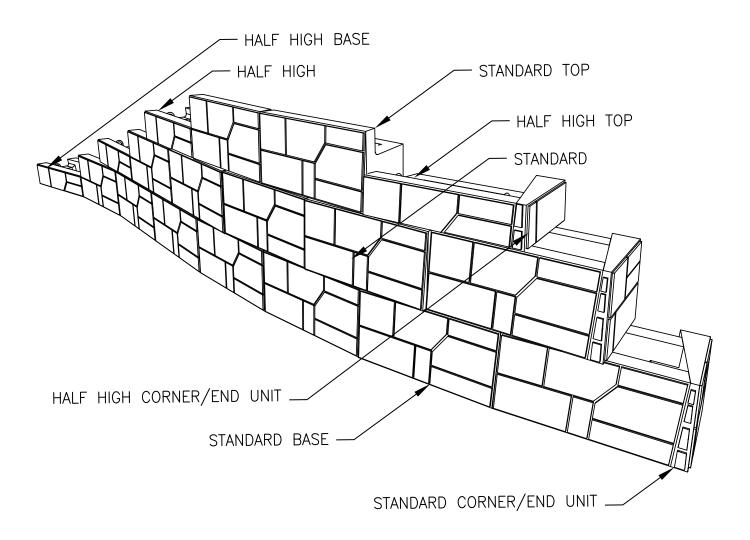
Unit to unit connection uses our patented, mortarless, SecureLug<sup>™</sup> interlock system (no expensive, time consuming pins or clips.) and are light enough that they can be moved two at a time with lighter machinery such as a standard Bobcat.

A wet cast segmental retaining wall product provides freeze/thaw durability advantages over competing products, a critical factor for the Departments Of Transport work that MagnumStone $^{\text{TM}}$  is very well suited for. The wet-cast process also allows for unique through-wall applications, face options and logo details for any type of project.

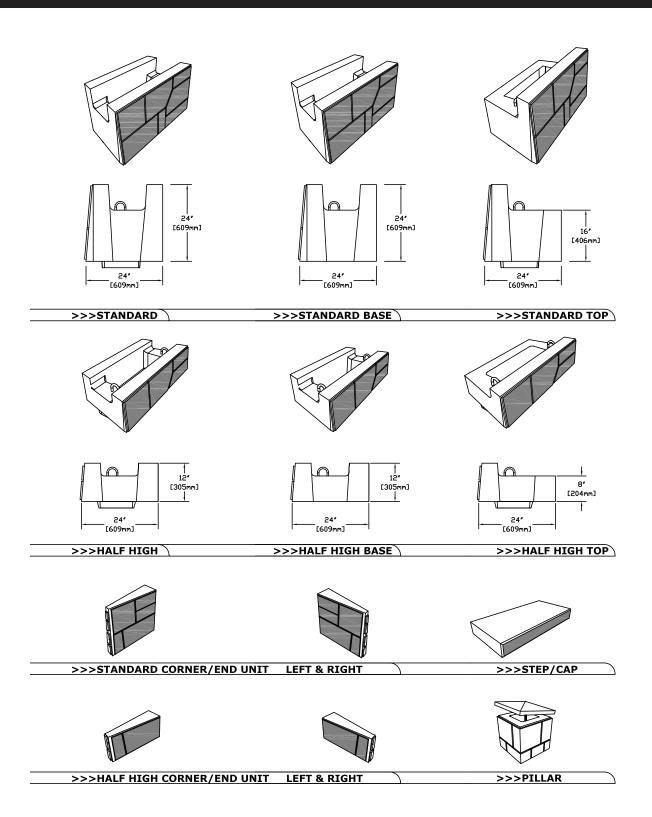
# > > MagnumStone<sup>™</sup> Technical Reference Index

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## > > MagnumStone<sup>™</sup> System

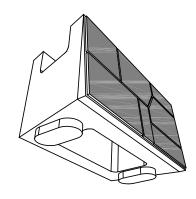


## > > MagnumStone<sup>™</sup> Units

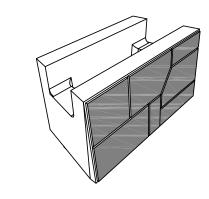


Weights and dimensions are nominal. Specifications may change. Verify exact information with your local producer.

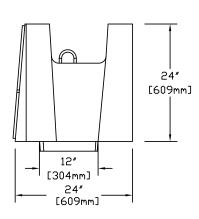
### > > MagnumStone™ Standard Unit

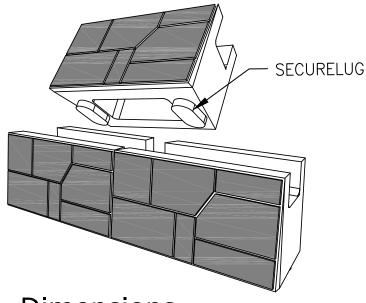


#### >>>ISOMETRIC BOTTOM VIEW



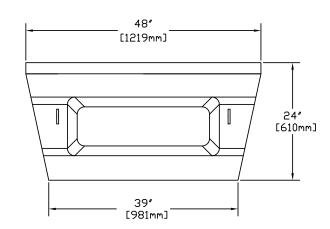
### >>>ISOMETRIC TOP VIEW





### **Dimensions**

48" Face Width 1219mm 39" Back Width 991mm Depth 24" 610mm Height 24" 610mm Face Area 8 sq ft 0.74 sq m 2.0"/Unit Batter 4.5° Vertical 0"/Unit Weight 1370lbs 621Kg SecureLug 6"x12"x2" 152x305x51mm

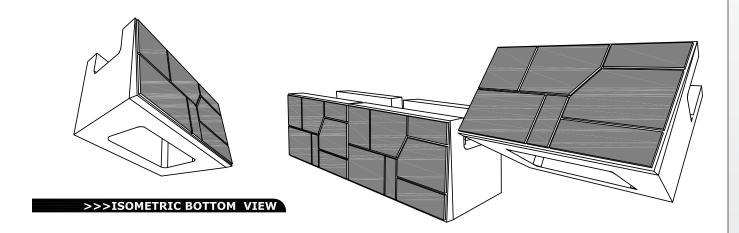


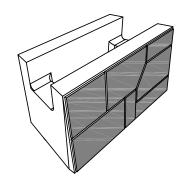
>>>SIDE VIEW

>>> TOP VIEW

Weights and dimensions are nominal. Specifications may change. Verify exact information with your local producer.

### > > MagnumStone™ Standard Base Unit

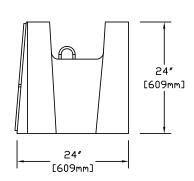


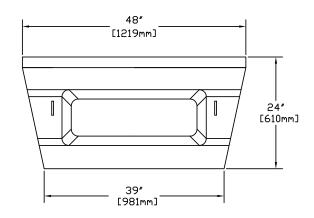


### **Dimensions**

48" Face Width 1219mm 39" Back Width 991mm Depth 24" 610mm Height 24" 610mm Face Area 8 sq ft 0.74 sq m 4.5° 2.0"/Unit Batter ٥٥ 0"/Únit Vertical Weight 1345lbs 621Kg

### >>>ISOMETRIC TOP VIEW

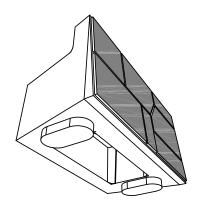




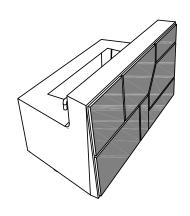
>>>SIDE VIEW

>>> TOP VIEW

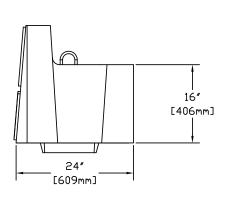
# > > MagnumStone™ Standard Top Unit

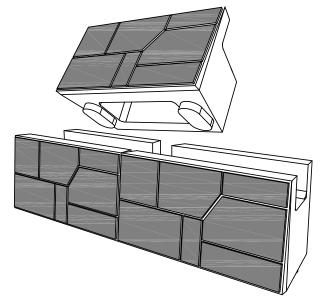


#### >>>ISOMETRIC BOTTOM VIEW



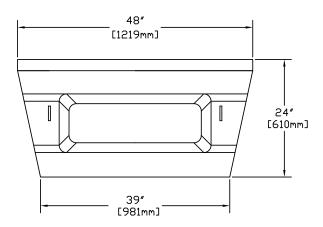
### >>>ISOMETRIC TOP VIEW





### **Dimensions**

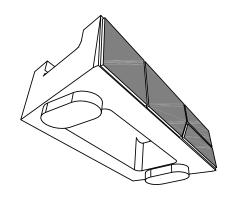
48" Face Width 1219mm Back Width 39" 991mm 24" Depth 610mm 24" Height 610mm 8 sq ft 0.74 sq m Face Area 4.5° 2.0"/Unit Batter 0° 0"/Unit Vertical Weight 1220lbs 553Kg



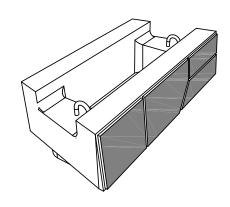
>>>SIDE VIEW >>> TOP VI

Weights and dimensions are nominal. Specifications may change. Verify exact information with your local producer.

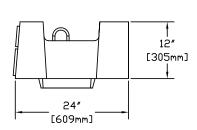
## > > MagnumStone™ Half High Unit

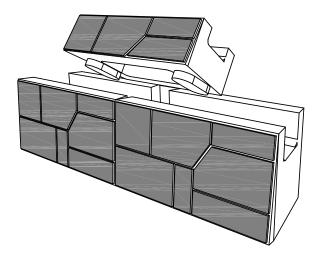


#### >>>ISOMETRIC BOTTOM VIEW



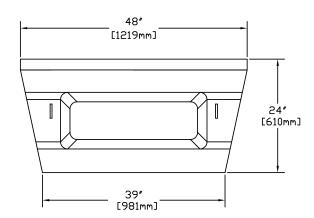
### >>>ISOMETRIC TOP VIEW





### **Dimensions**

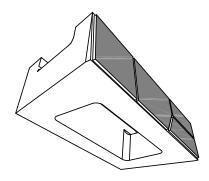
48" Face Width 1219mm 39" Back Width 991mm 24" Depth 610mm 12" Height 305mm 4 sq ft 4.5° 0.37sq m 1.0"/Unit Face Area Batter 0"/Unit Vertical ٥٥ Weight 750lbs 340Kg

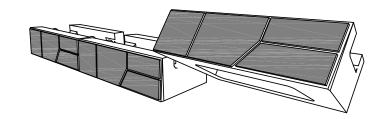


>>>SIDE VIEW

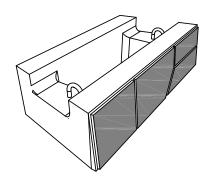
>>> TOP VIEW

# > > MagnumStone™ Half High Base Unit

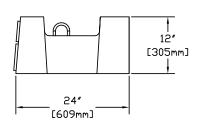




#### >>>ISOMETRIC BOTTOM VIEW

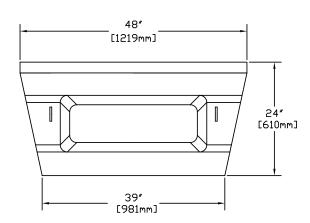


### >>>ISOMETRIC TOP VIEW



### **Dimensions**

Depth 24" Height 12" Face Area 4 sq ft Batter 4.5° Vertical 0° Weight 725lbs	610mm 305mm 0.37sq m 1.0"/Unit 0"/Unit 328Kg
weight /25lbs	328Kg

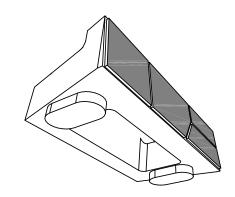


>>>SIDE VIEW

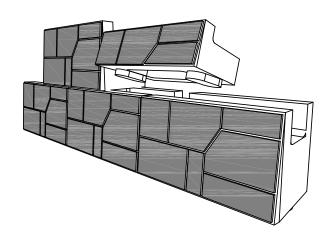
>>> TOP VIEW

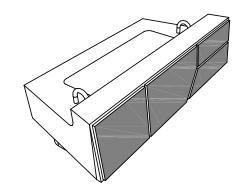
Weights and dimensions are nominal. Specifications may change. Verify exact information with your local producer.

# > > MagnumStone™ Half High Top Unit



#### >>>ISOMETRIC BOTTOM VIEW

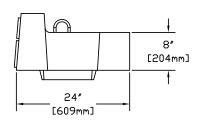


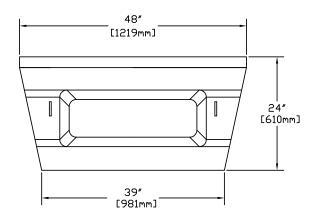


>>>ISOMETRIC TOP VIEW

### **Dimensions**

Face Width	48"	1219mm
Back Width	39"	991mm
Depth	24"	305mm
Height	12"	610mm
Face Area	4 sq ft	0.37sq m
Batter	4.5°	1.0"/Unit
Vertical	0°	0"/Unit
Weight	680lbs	308Kg

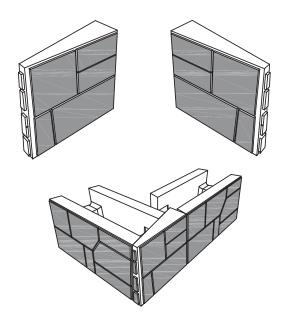




>>>SIDE VIEW

>>> TOP VIEW

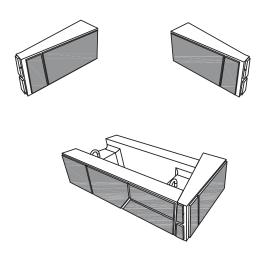
# > > MagnumStone<sup>™</sup> Corner/End Units



### **Dimensions**

Top Face Width 26" 660mm Bottom Face Width 28" 711mm Top Narrow Face 2" 51mm 4" Bottom Narrow Face 102mm 24" Height 610mm 4.66sq ft 0.434 sq m Face Area 2.0"/Unit 4.5° Batter 0"/Únit Vertical 0° 340lbs 154Kg Weight

#### >>>STANDARD CORNER/END UNIT



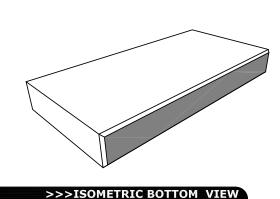
>>>HALF HIGH CORNER/END UNIT

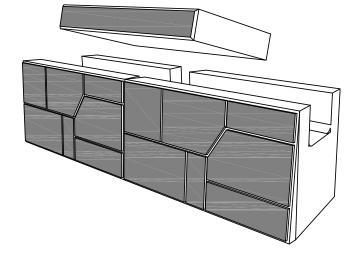
### **Dimensions**

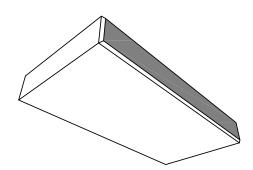
Top Face Width	27"	686mm
Bottom Face Width	28"	711mm
Top Narrow Face	3"	76mm
Bottom Narrow Face	4"	102mm
Height	24"	610mm
Face Area	2.33sq 1	ft 0.217 sq m
Batter	4.5°	1.0"/Unit
Vertical	0°	0"/Unit
Weight	170lbs	77Kg

Weights and dimensions are nominal. Specifications may change. Verify exact information with your local producer.

## > > MagnumStone<sup>™</sup> Step/Cap Unit



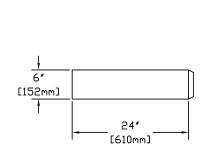


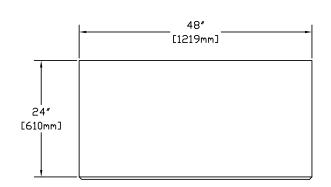


### **Dimensions**

48" Face Width 1219mm 48" Back Width 1219mm 24" Depth 610mm Height 6" 152mm Face Area 2 sq ft 0.186 sq m Weight 290lbs 131Kg

### >>>ISOMETRIC TOP VIEW



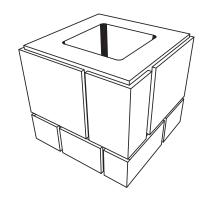


>>>SIDE VIEW

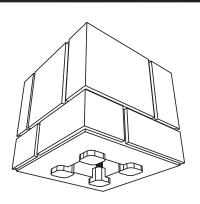
>>> TOP VIEW

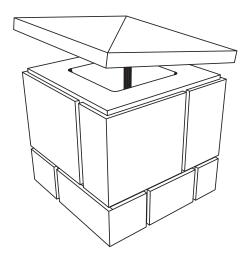
11

### > > MagnumStone™ Pillar & Pillar Cap Unit



#### >>>ISOMETRIC BOTTOM VIEW

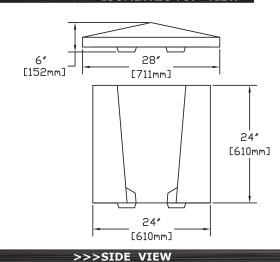


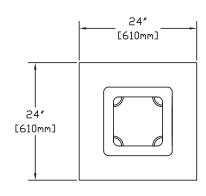


### **Dimensions**

Face Widths 24" 610mm
Height 24" 610mm
Face Area 4 sq ft 0.37 sq m
Batter 0° 0"/Unit
Weight 870lbs 394Kg

#### >>>ISOMETRIC TOP VIEW

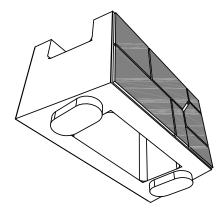




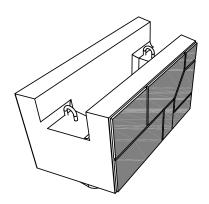
>>> TOP VIEW

Weights and dimensions are nominal. Specifications may change. Verify exact information with your local producer.

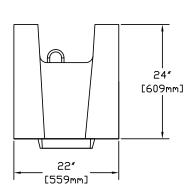
## > > MagnumStone<sup>™</sup> Double Sided Unit

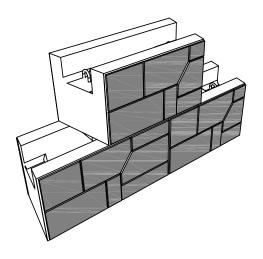


#### >>>ISOMETRIC BOTTOM VIEW



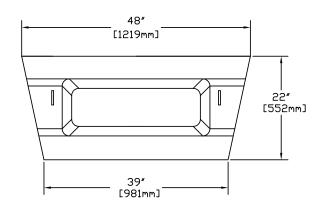
### >>>ISOMETRIC TOP VIEW





### **Dimensions**

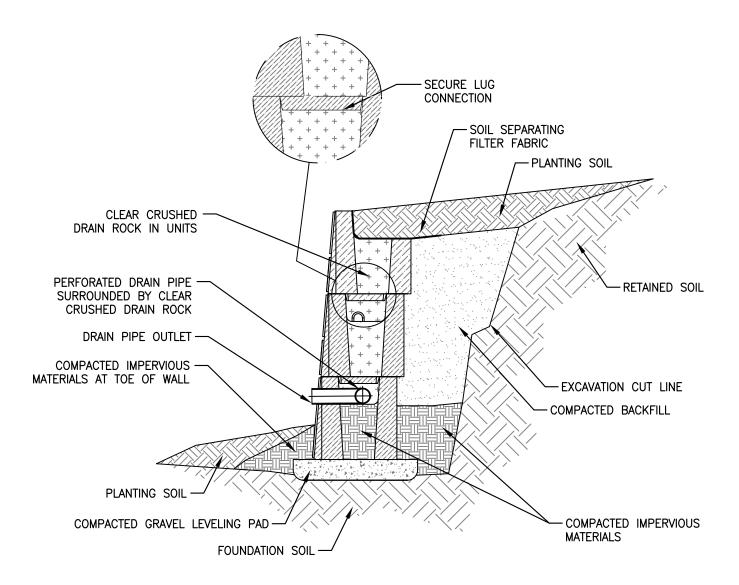
48" Face Width 1219mm 39" Back Width 991mm Depth 22" 559mm Height 24" 610mm Face Area 4 sq ft 0.37sq m ٥٥ 0"/Unit Vertical Weight 1345lbs 625Kg



>>>SIDE VIEW

>>> TOP VIEW

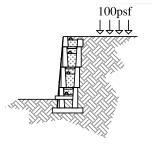
## > > MagnumStone™ Gravity Wall



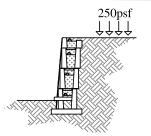
## > > MagnumStone™ Gravity Wall Charts



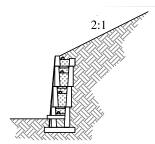
Soil Type	Height Exposed	Height Embedded	Total
AASHTO #57	8.1' (2469mm)	0.5' (152mm)	8.6' (2621mm)
34° Soil	6.6' (2012mm)	0.5' (152mm)	7.1' (2164mm)
30° Soil	5.9' (1798mm)	0.5' (152mm)	6.4' (1951mm)
26° Soil	4.9' (1494mm)	0.5' (152mm)	5.4' (1646mm)



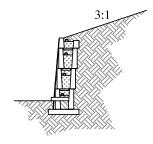
Soil Type	Height Exposed	Height Embedded	Total
AASHTO #57	6.6' (2012mm)	0.5' (152mm)	7.1' (2164mm)
34° Soil	5.4' (1646mm)	0.5' (152mm)	5.9' (1798mm)
30° Soil	4.4' (1341mm)	0.5' (152mm)	4.9' (1494mm)
26° Soil	3.3' (1006mm)	0.5' (152mm)	3.8' (1158mm)



Soil Type	Height Exposed	Height Embedded	Total
AASHTO #57	4.9' (1494mm)	0.5' (152mm)	5.4' (1646mm)
34° Soil	3.3' (1006mm)	0.5' (152mm)	3.8' (1158mm)
30° Soil	2.0' (610mm)	0.5' (152mm)	2.5' (762mm)
26° Soil	0.9' (274mm)	0.5' (152mm)	1.4' (427mm)



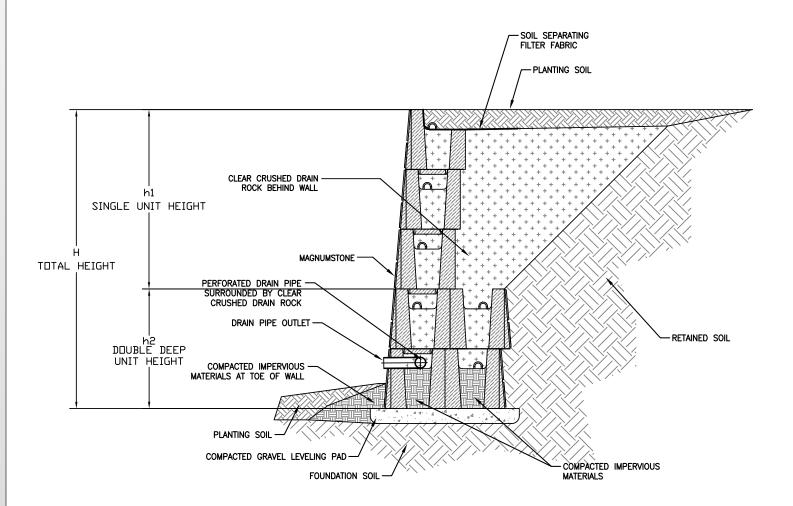
Soil Type	Height Exposed	Height Embedded	Total
AASHTO #57	6.5' (1981mm)	0.5' (152mm)	7.0' (2134mm)
34° Soil	4.5' (1372mm)	0.5' (152mm)	5.0' (1524mm)
30° Soil	3.2' (975mm)	0.5' (152mm)	3.7' (1128mm)
26° Soil			



Soil Type	Height Exposed	Height Embedded	Total
AASHTO #57	7.1' (2164mm)	0.5' (152mm)	7.6' (2316mm)
34° Soil	5.6' (1707mm)	0.5' (152mm)	6.1' (1859mm)
30° Soil	4.4' (1341mm)	0.5' (152mm)	4.9' (1494mm)
26° Soil	3.3' (1006mm)	0.5' (152mm)	3.8' (1158mm)

DISCLAIMER. This chart is for initial estimation purposes only. Do not use for final design or construction. Retain a licensed professional engineer to design every wall on a case-by-case basis using site specific criteria. The accuracy and use of this document are the sole responsibility of the user. All calculations were performed based on NCMA methodology using factors of safety of 1.5 for sliding and overturning. The bearing capacity of base soils will be no less than 3,000 pounds per square foot (psf). All soils have been assumed to be less than 125 pounds per cubic foot (pcf). Global Stability Analysis has not been performed.

### > > MagnumStone™ Double Deep Gravity Wall



DISCLAIMER. This chart is for initial estimation purposes only. Do not use for final design or construction. Retain a licensed professional engineer to design every wall on a case-by-case basis using site specific criteria. The accuracy and use of this document are the sole responsibility of the user. All calculations were performed based on NCMA methodology using factors of safety of 1.5 for sliding and overturning. The bearing capacity of base soils will be no less than 3,000 pounds per square foot (psf). All soils have been assumed to be less than 125 pounds per cubic foot (pcf). Global Stability Analysis has not been performed.

# > > MagnumStone™ Double Deep Gravity Wall Charts

Lower Tier (AASHTO #57) Upper Tier (AASHTO #57)

 $\varphi_{\text{soil}}$  = 38° (min.)  $\varphi_{\text{soil}}$  = 38° (min.)  $\gamma_{\text{soil}}$  = 110pcf (max.)  $\gamma_{\text{soil}}$  = 110pcf (max.)

#### No Slope, No Load

Н	h1	h2
16' (4877mm)	0' (0mm)	16' (4877mm)
14' (4267mm)	2' (610mm)	12' (3658mm)
12' (3658mm)	5' (1524mm)	7' (2134mm)
10' (3048mm)	8' (2438mm)	3' (914mm)
9' (2134mm)	9' (2134mm)	0' (0mm)

#### 2:1 Slope, No Load

Н	h1	h2
14' (4267mm)	0' (0mm)	14' (4267mm)
12' (3658mm)	1' (305mm)	11' (3353mm)
10' (3048mm)	4' (1219mm)	6' (1829mm)
8' (2438mm)	6' (1829mm)	2' (610mm)
7' (2134mm)	7' (2134mm)	0' (0mm)

#### 3:1 Slope, No Load

Н	h1	h2
15' (4572mm)	0' (0mm)	15' (4572mm)
14' (4267mm)	0' (0mm)	14' (4267mm)
12' (3658mm)	3' (914mm)	9' (2743mm)
10' (3048mm)	5' (1524mm)	5' (1524mm)
8' (2438mm)	7' (2134mm)	1' (305mm)
8' (2438mm)	8' (2438mm)	0' (0mm)

#### No Slope, 100psf Load

Н	h1	h2
16' (4877mm)	0' (0mm)	16' (4877mm)
14' (4267mm)	1' (305mm)	13' (3962mm)
12' (3658mm)	3' (914mm)	9' (2743mm)
10' (3048mm)	6' (1829mm)	5' (1524mm)
8' (2438mm)	7' (2134mm)	1' (305mm)
7' (2134mm)	7' (2134mm)	0' (0mm)

#### No Slope, 250psf Load

н	h1	h2
14' (4267mm)	0' (0mm)	14' (4267mm)
12' (3658mm)	1' (305mm)	11' (3353mm)
10' (3048mm)	3' (914mm)	7' (2134mm)
8' (2438mm)	5' (1524mm)	3' (914mm)
6' (1829mm)	6' (1829mm)	0' (0mm)
5' (1524mm)	5' (1524mm)	0' (0mm)

Lower Tier Upper Tier (AASHTO #57)

 $\varphi_{\text{soil}}$  = 30° (min.)  $\varphi_{\text{soil}}$  = 38° (min.)  $\gamma_{\text{soil}}$  = 125pcf (max.)  $\gamma_{\text{soil}}$  = 110pcf (max.)

#### No Slope, No Load

Н	h1	h2
13' (3962mm)	0' (0mm)	13' (3962mm)
12' (3658mm)	2' (610mm)	10' (3048mm)
10' (3048mm)	4' (1219mm)	6' (1829mm)
8' (2438mm)	6' (1829mm)	3' (914mm)
6' (1829mm)	6' (1829mm)	0' (0mm)

#### 2:1 Slope, No Load

Н	h1	h2
7' (2134mm)	0' (0mm)	7' (2134mm)
7' (2134mm)	3' (914mm)	4' (1219mm)
6' (1829mm)	4' (1219mm)	2' (610mm)
4' (1219mm)	4' (1219mm)	1' (305mm)
4' (1219mm)	4' (1219mm)	0' (mm)

#### 3:1 Slope, No Load

Н	h1	h2
10' (3048mm)	0' (0mm)	10' (3048mm)
8' (2438mm)	4' (1219mm)	4' (1219mm)
6' (1829mm)	5' (1524mm)	1' (305mm)
5' (1524mm)	5' (1524mm)	0' (0mm)

#### No Slope, 100psf Load

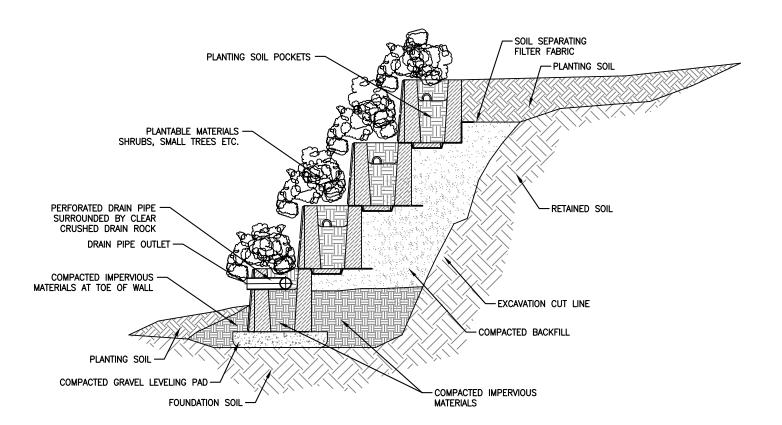
Н	h1	h2
11' (3353mm)	0' (0mm)	11' (3353mm)
10' (3048mm)	1' (305mm)	9' (2743mm)
8' (2438mm)	4' (1219mm)	4' (1219mm)
6' (1829mm)	5' (1524mm)	1' (305mm)
5' (1524mm)	5' (1524mm)	0 (0mm)

#### No Slope, 250psf Load

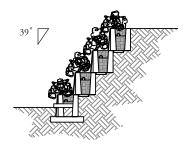
Н	h1	h2
9' (2743mm)	0' (0mm)	9' (2743mm)
8' (2438mm)	3' (914mm)	5' (1524mm)
6' (1829mm)	4' (1219mm)	2' (610mm)
4' (1219mm)	3' (914mm)	1' (305mm)
3' (914mm)	3' (914mm)	0' (0mm)

## > > MagnumStone<sup>™</sup> 2.0 Ft Plantable Wall

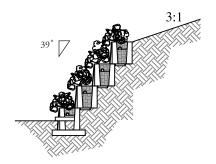




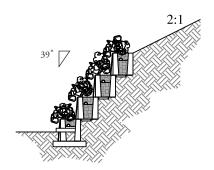
## > > MagnumStone™ 2.0 Ft Plantable Wall Charts



Soil Type	Height Exposed	Height Embedded	Total
34° Soil	20.9' (6370mm)	1.1' (335mm)	22.0' (6706mm)
30° Soil	20.9' (6370mm)	1.1' (335mm)	22.2' (6767mm)
26° Soil	14.5' (4420mm)	0.8' (244mm)	15.3' (4663mm)



Soil Type	Height Exposed	Height Embedded	Total
34° Soil	20.9' (6370mm)	1.1' (335mm)	22.0' (6706mm)
30° Soil	17.8' (5425mm)	1.0' (305mm)	18.8' (5730mm)
26° Soil	10.8' (3292mm)	0.6' (183mm)	11.4' (3475mm)

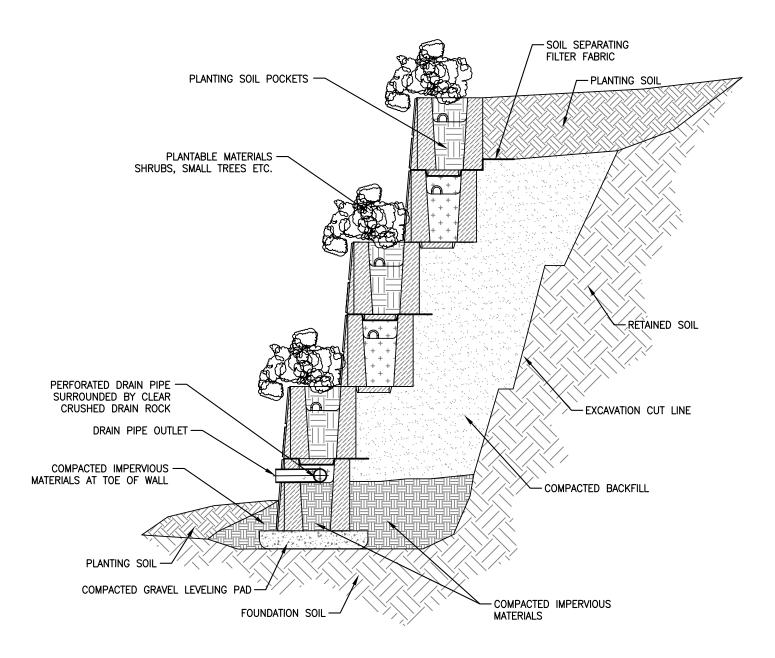


Soil Type	Height Exposed	Height Embedded	Total
34° Soil	20.9' (6370mm)	1.1' (335mm)	22.0' (6706mm)
30° Soil	13.4' (4084mm)	0.8' (244mm)	14.2' (4328mm)
26° Soil	N/A	N/A	N/A

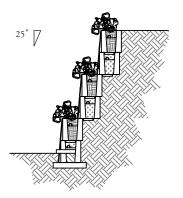
DISCLAIMER. This chart is for initial estimation purposes only. Do not use for final design or construction. Retain a licensed professional engineer to design every wall on a case-by-case basis using site specific criteria. The accuracy and use of this document are the sole responsibility of the user. All calculations were performed based on NCMA methodology using factors of safety of 1.5 for sliding and overturning. The bearing capacity of base soils will be no less than 3,000 pounds per square foot (psf). All soils have been assumed to be less than 125 pounds per cubic foot (pcf). Global Stability Analysis has not been performed.

## > > MagnumStone™ 4.0 Ft Plantable Wall

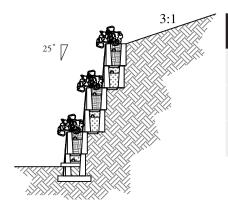
25°



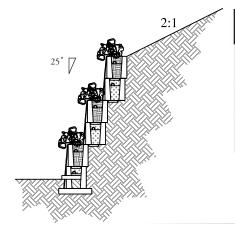
## > > MagnumStone™ 4.0 Ft Plantable Wall Charts



Soil Type	Height Exposed	Height Embedded	Total
34° Soil	14.5' (4420mm)	0.8' (244mm)	15.3' (4663mm)
30° Soil	10.8' (3292mm)	0.6' (183mm)	11.4' (3475mm)
26° Soil	8.1' (2469mm)	0.5' (152mm)	8.6' (2621mm)



Soil Type	Height Exposed	Height Embedded	Total
34° Soil	11.8' (3597mm)	0.7' (213mm)	12.5' (3810mm)
30° Soil	8.4' (2560mm)	0.5' (152mm)	8.9' (2713mm)
26° Soil	5.8' (1768mm)	0.5' (152mm)	6.3' (1920mm)

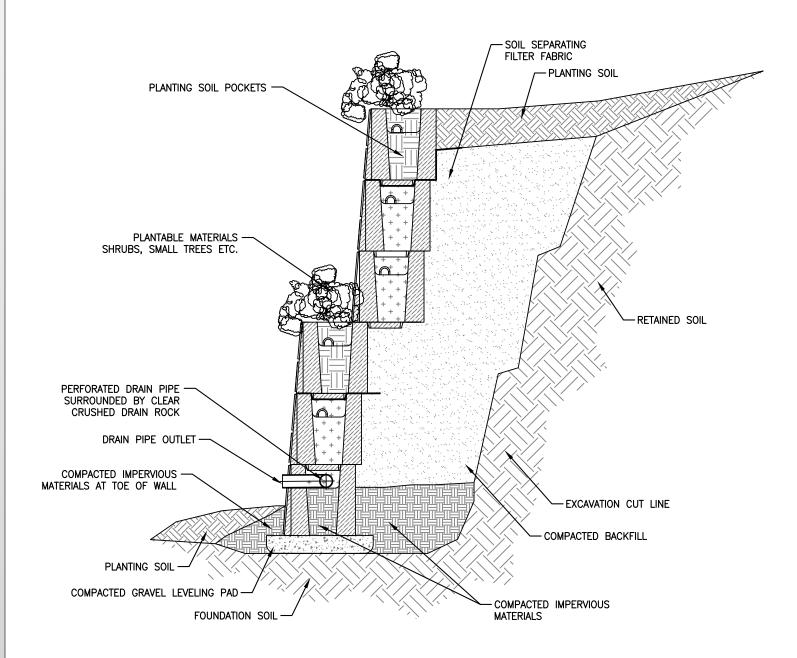


Soil Type	Height Exposed	Height Embedded	Total
34° Soil	9.8' (2987mm)	0.6' (183mm)	10.4' (3170mm)
30° Soil	6.2' (1890mm)	0.5' (152mm)	6.7' (2042mm)
26° Soil	N/A	N/A	N/A

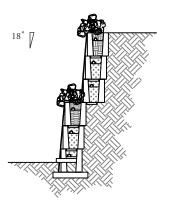
DISCLAIMER. This chart is for initial estimation purposes only. Do not use for final design or construction. Retain a licensed professional engineer to design every wall on a case-by-case basis using site specific criteria. The accuracy and use of this document are the sole responsibility of the user. All calculations were performed based on NCMA methodology using factors of safety of 1.5 for sliding and overturning. The bearing capacity of base soils will be no less than 3,000 pounds per square foot (psf). All soils have been assumed to be less than 125 pounds per cubic foot (pcf). Global Stability Analysis has not been performed.

# > > MagnumStone™ 6.0 Ft Plantable Wall

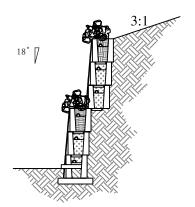
18° /



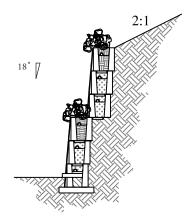
## > > MagnumStone™ 6.0 Ft Plantable Wall Charts



Soil Type	Height Exposed	Height Embedded	Total
34° Soil	10.9' (3322mm)	0.6' (183mm)	11.5' (3505mm)
30° Soil	8.5' (2591mm)	0.5' (152mm)	9.0' (2743mm)
26° Soil	6.6' (2012mm)	0.5' (152mm)	7.1' (2164mm)



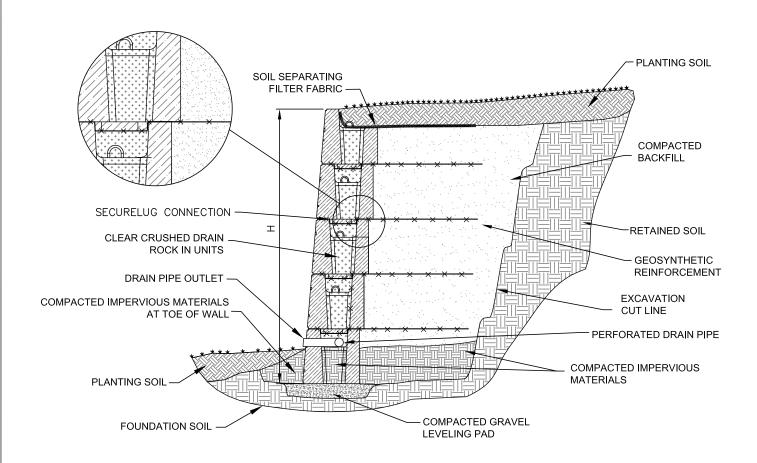
Soil Type	Height Exposed	Height Embedded	Total
34° Soil	8.8' (2682mm)	0.5' (152mm)	9.3' (2835mm)
30° Soil	6.4' (1951mm)	0.5' (152mm)	6.9' (2103mm)
26° Soil	4.7' (1433mm)	0.5' (152mm)	5.2 (1586mm)

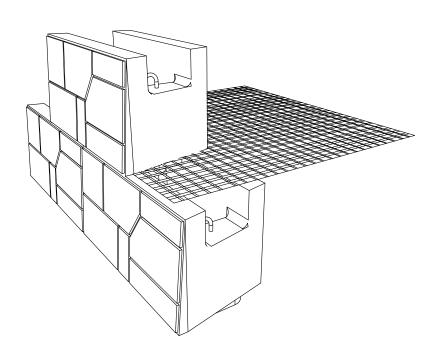


Soil Type	Height Exposed	Height Embedded	Total
34° Soil	7.2' (2195mm)	0.5' (152mm)	7.7' (2347mm)
30° Soil	4.8' (1463mm)	0.5' (152mm)	5.3' (1615mm)
26° Soil	N/A	N/A	N/A

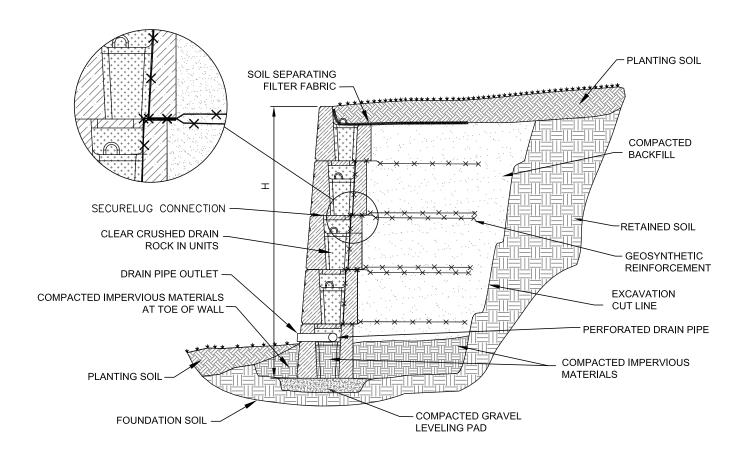
DISCLAIMER. This chart is for initial estimation purposes only. Do not use for final design or construction. Retain a licensed professional engineer to design every wall on a case-by-case basis using site specific criteria. The accuracy and use of this document are the sole responsibility of the user. All calculations were performed based on NCMA methodology using factors of safety of 1.5 for sliding and overturning. The bearing capacity of base soils will be no less than 3,000 pounds per square foot (psf). All soils have been assumed to be less than 125 pounds per cubic foot (pcf). Global Stability Analysis has not been performed.

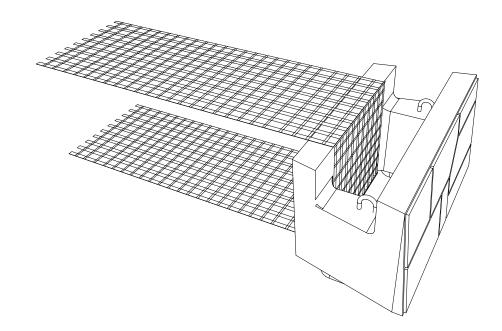
## > > MagnumStone™ Geogrid Friction Wall



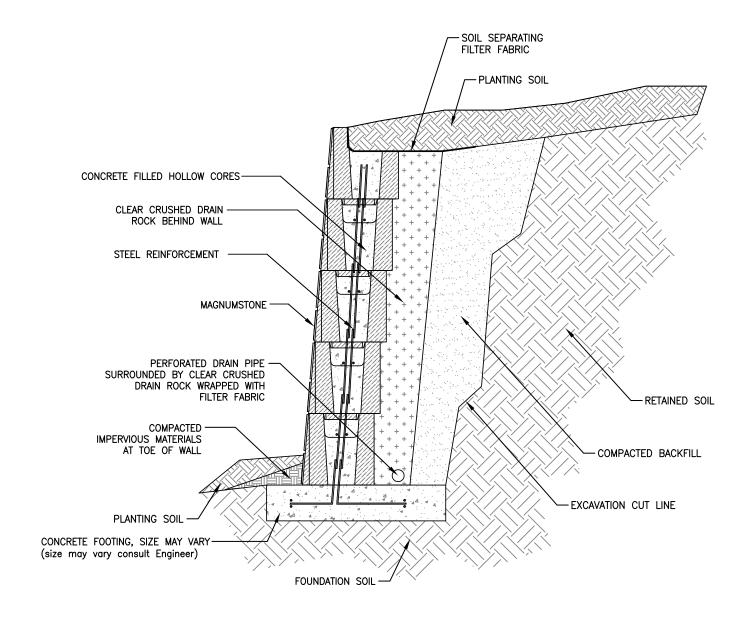


## > > MagnumStone<sup>™</sup> Positive Connection Wall

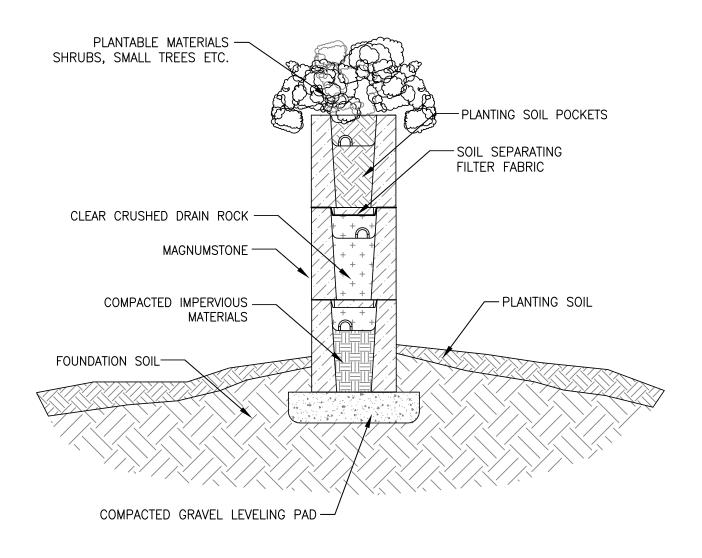


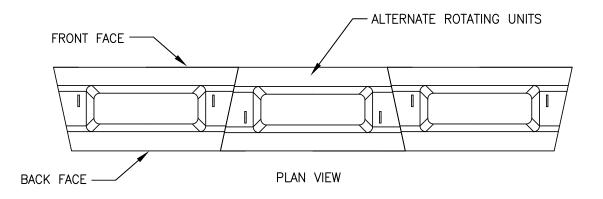


### > > MagnumStone<sup>™</sup> Steel/Concrete Wall



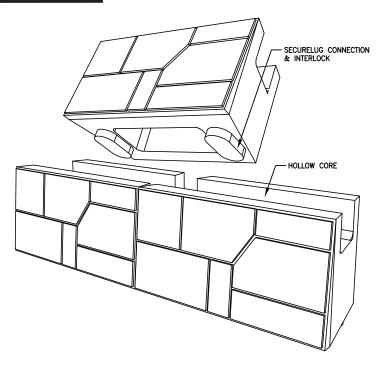
### > > MagnumStone™ Free Standing Double Sided Wall



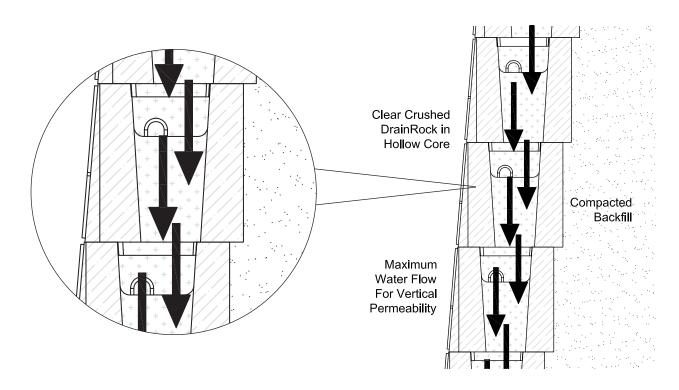


# > > MagnumStone™ Interlock/Drainage

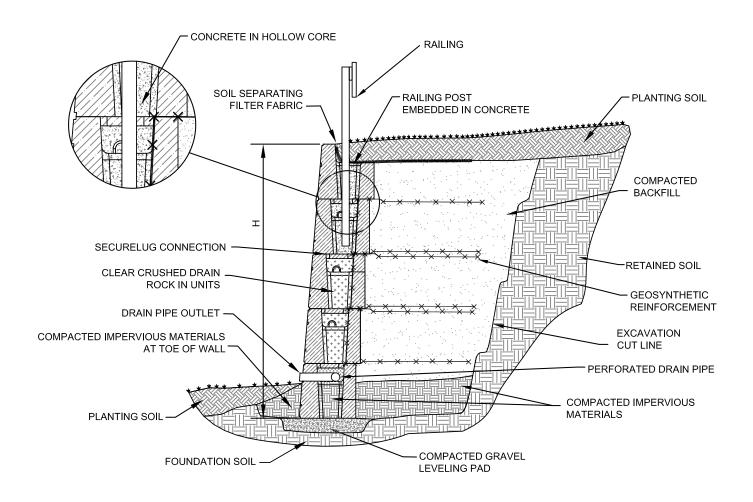
#### >>>INTERLOCK



### >>>VERTICAL PERMEABILITY



## > > MagnumStone<sup>™</sup> Top of Wall Detail





If you require more information on MagnumStone™ please visit our website at cornerstonewallsolutions.com.



CornerStone® Website



Installation Guide



Sustainability Brochure



General Brochure



Technical Reference



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