

DAYLIGHT BEAR END OF WALL IS CONNECTED TO DRAINAGE SYSTEM

MAGNUMSTONE® STANDARD BLOCK WITH EXTENDER UNIT, AND CRUSHED GRAVEL IN HOLLOW CORES AND BETWEEN EXTENDER UNITS

HIGH WATER MARK

PERFORATED DRAIN PIPE OUTLET EFER 03-103/1102 MS_GVT) DRAIN-PIPE LOCATION OPTIONS

LOW WATER MARK

MAGNUMSTONE® STANDARD BLOCK WITH EXTENDER UNIT

COMPACTED IMPERVIOUS MATERIAL-

(B.O.W.) BOTTOM OF WALL

COMPACTED GRAVEL LEVELING PAC

FOUNDATION SOIL

03

WATER APPLICATION OF GRAVITY WALL

SCALE 1:40

TECHNICAL REFERENCE MANUAL

STEEL GRID

EXCAVATION CUT LINE

PLAN PLAN

3D Drawings

Unit Specifications

Cross Sections

Design Charts

Dataila

Details

ABOUT MAGNUMSTONE



MagnumStone is an innovative, large precast modular retaining wall system (wet-cast concrete) that delivers exceptional strength and durability. With multiple design options, MagnumStone efficiently maximizes land use, minimizes excavation areas, and builds closer to property lines, structures and underground utilities.

These proven hollow core blocks enhance drainage efficiency and make installations quicker simpler, as each large MagnumStone block covers 8 sq. ft. (0.74 sq. m.). Expedite project timelines, save big on labor and build fortified wall solutions for critical slope stabilization, soil reinforcement and more.

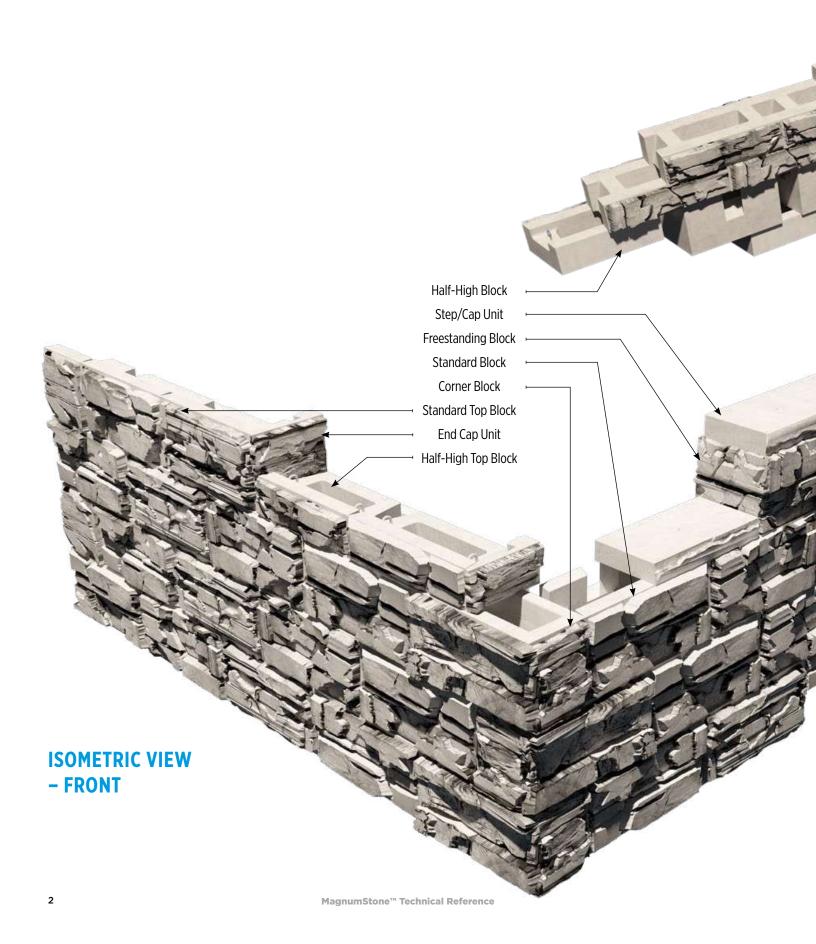
MagnumStone's everlasting solutions and supreme versatility fit any size retaining wall design for residential, commercial and coastal developments, and major infrastructure projects. The interlocking blocks' design flexibility excels in any application, simple or sophisticated. Achieve taller gravity walls, eco-friendly plantable wall designs, secure bridge wing walls, and protect communities with stormwater management protection; all with natural stone textured blocks.

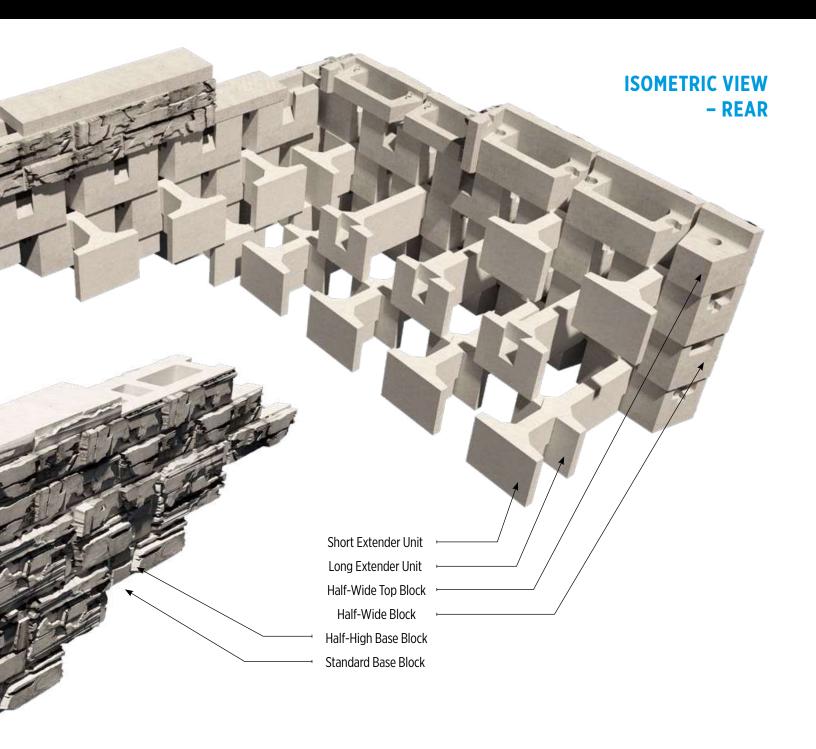
Learn more about MagnumStone's retaining wall solutions at magnumstone.com.

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THE MAGNUMSTONE SYSTEM





RETAINING WALL DESIGN AND ANALYSIS SOFTWARE



USER / REVDATE / NAME

START DESIGNING RETAINING WALLS IN MINUTES

The MagnumStone Retaining Wall Design & Analysis Software program is designed with the Engineer in mind. It includes multiple methodologies, MagnumStone retaining wall products and geogrid reinforcement options for the designer to choose from. This comprehensive software allows the user to select and edit soils information, input loads and slopes above and below the retaining wall.

Global stability is available within the program, allowing engineers the ability to perform deep dives into the analysis of the walls being designed. You can customize almost any component of your project, with the ability to export your design to AutoCAD. The program is powerful and easy to use, making it a time and money saver for engineers.

MAGNUMSTONE WALL DESIGNER IS FEATURE PACKED

Perform deep-dive analyses on your MagnumStone retaining wall designs to account for unique site details including soil compositions, active loads and global stability to ensure your cross sections are structurally sound.

MagnumStone Retaining Wall Design & Analysis Software users share a common goal of building secure, lasting retaining walls that keep homes, businesses and communities safe. Let's get started.



INPUT OPTIONS

- ➤ Wall Geometry
- > Soil Compositions
- Factor of Safety
- **▶** Block Specifications
- Geogrid Properties
- Global Stability
- Compound Stability
- Live & Dead Loads
- > Project Information
- > Imperial or Metric

FEATURES & BENEFITS

- Utilizes NCMA, AASHTO, and AASHTO LRFD method options
- > Great for designing solutions within the transportation industry
- **▶** Easy Export function to AutoCAD

WALL STRUCTURE OPTIONS

- Gravity Walls
- > Geogrid Friction Reinforced
- Geogrid Positive Reinforced



MAGNUMSTONE BLOCKS



STANDARD 1370 lbs (621 kgs)



STANDARD BASE 1345 lbs (610 kgs)



STANDARD TOP 1220 lbs (553 kgs)



HALF-HIGH 750 lbs (340 kgs)



HALF-HIGH BASE 725 lbs (328 kgs)



HALF-HIGH TOP 680 lbs (308 kgs)



HALF-WIDE 835 lbs (378 kgs)



HALF-WIDE BASE 823 lbs (373 kgs)



HALF-WIDE TOP 760 lbs (345 kgs)



*CORNER STANDARD
1700 lbs (771 kgs)
Available in left/right



*CORNER BASE 1675 lbs (760 kgs) Available in left/right



*CORNER TOP 1500 lbs (680 kgs) Available in left/right



2-SIDED FREESTANDING 900 lbs (408 kgs)



3-SIDED FREESTANDING 900 lbs (408 kgs)



2-SIDED QUARTER 300 lb (136 kgs)



3-SIDED QUARTER 300 lb (136 kgs)



SHORT EXTENDER 520 lbs (236 kgs)



LONG EXTENDER 820 lbs (372 kgs)



STANDARD END CAP 340 lbs (154 kgs)

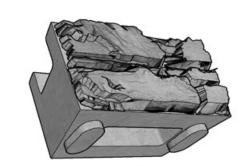


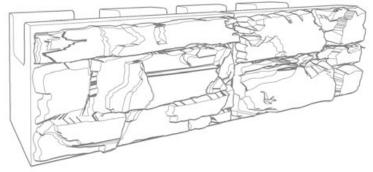
HALFHIGH END CAP 170 lbs (77 kgs)



CAP/STEP 580 lbs (263 kgs)

MAGNUMSTONE STANDARD BLOCK





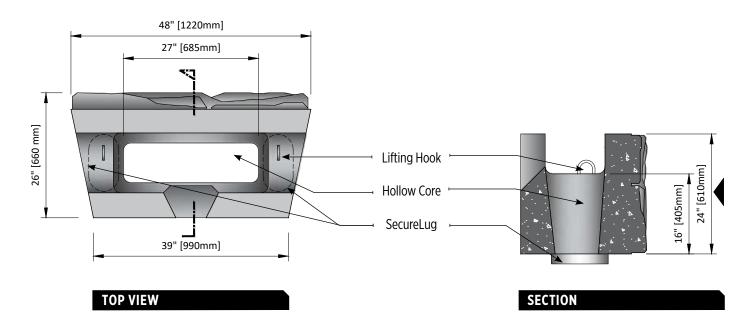
PERSPECTIVE



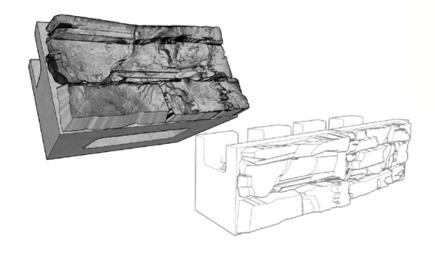
STANDARD

1370 lbs (621 kgs)

Height	24"	610mm
Depth	26"	660mm
Face Width	48"	1220mm
Back Width	39"	990mm
Face Area	8 sq ft	0.745 m2
Setback	2.4°	



MAGNUMSTONE STANDARD BASE BLOCK

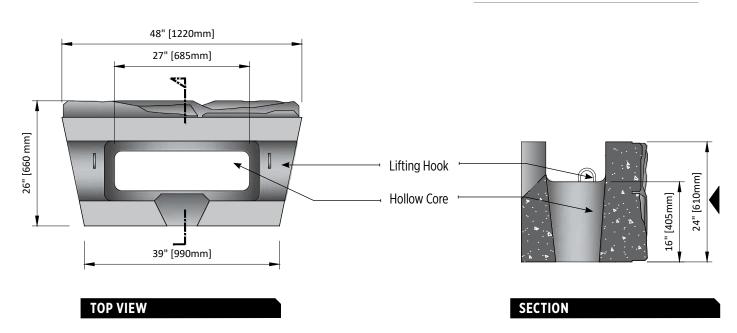


STANDARD BASE

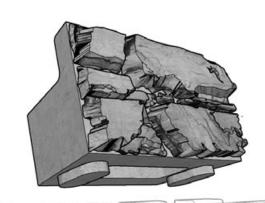
Height	24"	610mm
Depth	26"	660mm
Face Width	48"	1220mm
Back Width	39"	990mm
Face Area	8 sq ft	0.745 m2
Setback	2.4°	

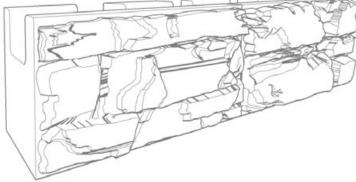
1345 lbs (610 kgs)

PERSPECTIVE



MAGNUMSTONE STANDARD TOP BLOCK





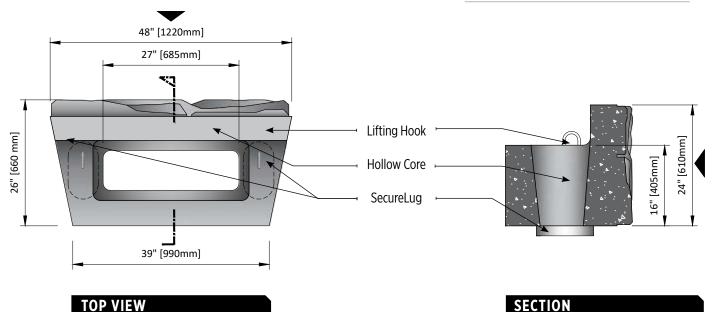
PERSPECTIVE



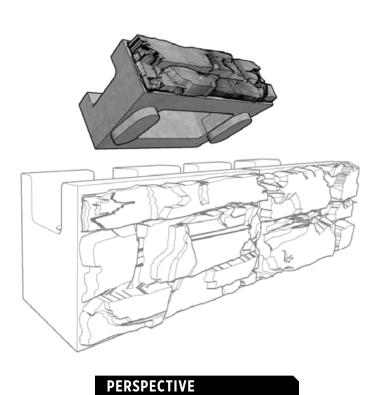
STANDARD TOP

1220 lbs (553 kgs)

Height	24"	610mm
Depth	26"	660mm
Face Width	48"	1220mm
Back Width	39"	990mm
Face Area	8 sq ft	0.745 m2
Setback	2.4°	



MAGNUMSTONE HALF-HIGH BLOCK

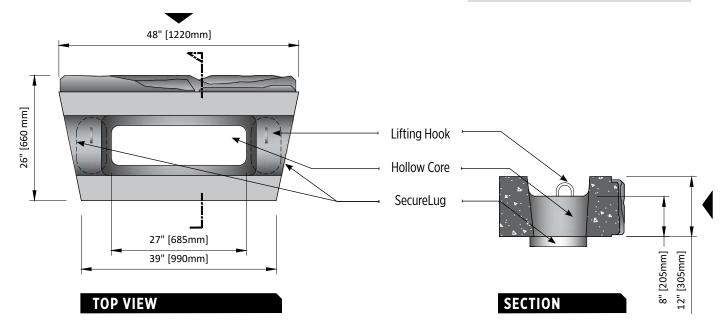




HALF-HIGH

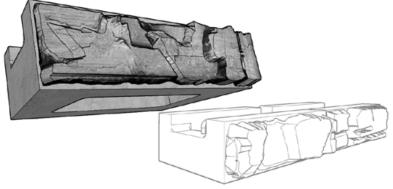
750 lbs (340 kgs)

Height	12"	305mm
Depth	26"	660mm
Face Width	48"	1220mm
Back Width	39"	990mm
Face Area	4 sq ft	0.37 m2
Setback	2.4°	



MAGNUMSTONE HALF-HIGH BASE BLOCK



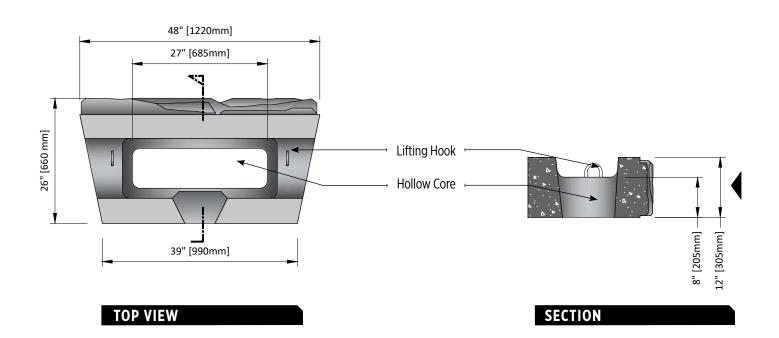


PERSPECTIVE

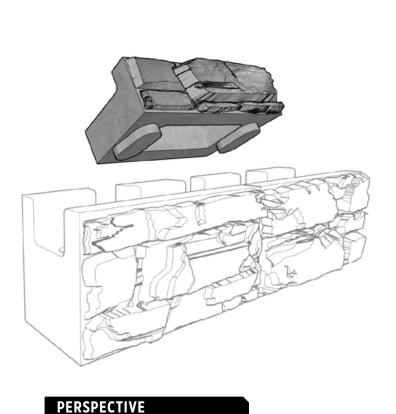
HALF-HIGH BASE

725 lbs (328 kgs)

Height	12"	305mm
Depth	26"	660mm
Face Width	48"	1220mm
Back Width	39"	990mm
Face Area	4 sq ft	0.37 m2
Setback	2.4°	



MAGNUMSTONE HALF-HIGH TOP BLOCK

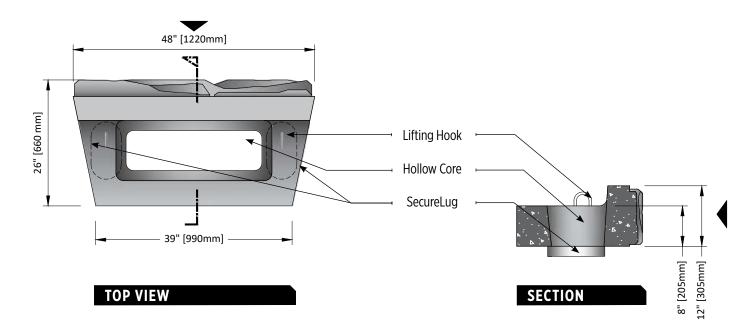




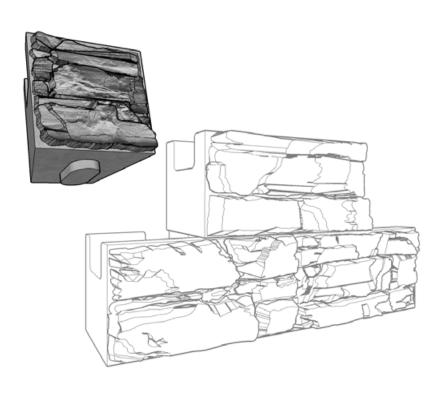
HALF-HIGH TOP

680 lbs (308 kgs)

Height	12"	305mm
Depth	26"	660mm
Face Width	48"	1220mm
Back Width	39"	990mm
Face Area	4 sq ft	0.37 m2
Setback	2.4°	



MAGNUMSTONE HALF-WIDE BLOCK



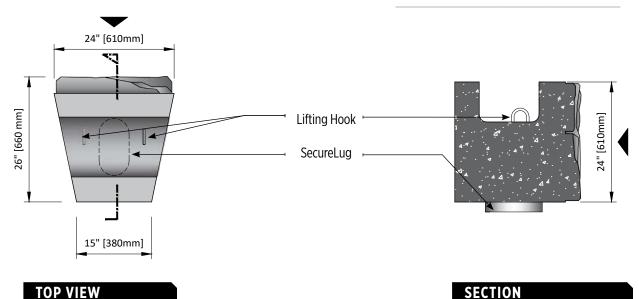




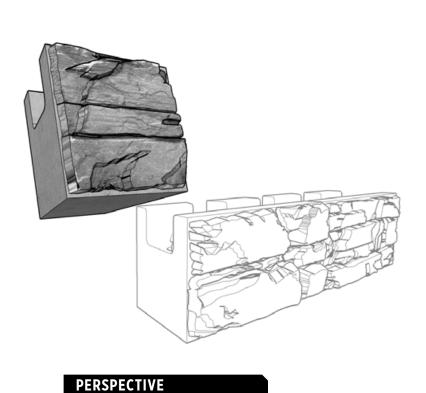
HALF-WIDE

835 lbs (378 kgs)

Height	24"	610mm
Depth	26"	660mm
Face Width	24"	610mm
Back Width	15"	380mm
Face Area	4 sq ft	0.37 m2
Setback	2.4°	



MAGNUMSTONE HALF-WIDE BASE BLOCK

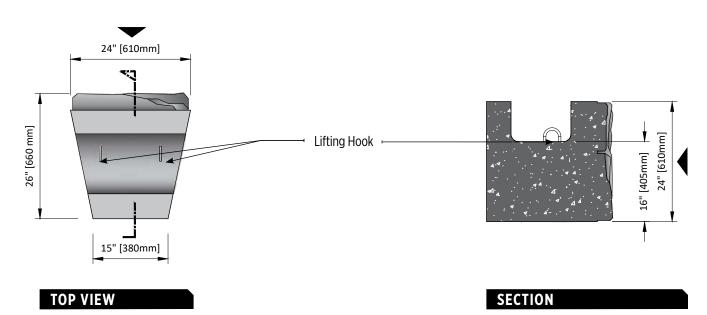




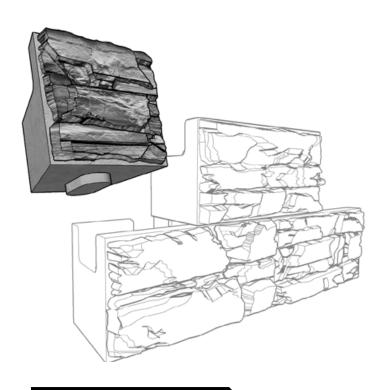
HALF-WIDE BASE

823 lbs (373 kgs)

Height	24"	610mm
Depth	26"	660mm
Face Width	24"	610mm
Back Width	15"	380mm
Face Area	4 sq ft	0.37 m2
Setback	2.4°	



MAGNUMSTONE HALF-WIDE TOP BLOCK



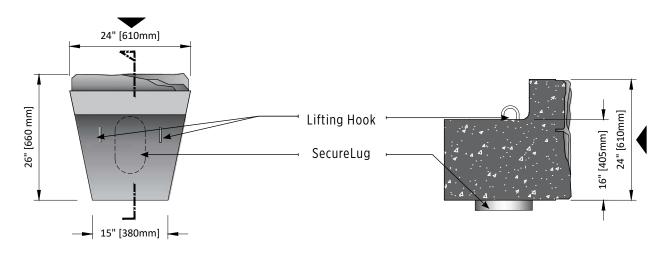
PERSPECTIVE



HALF-WIDE TOP

760 lbs (345 kgs)

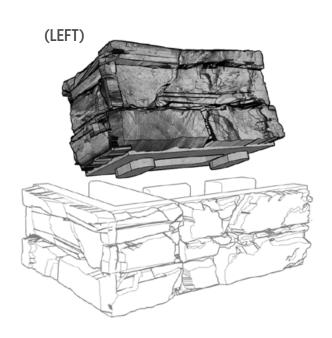
Height	24"	610mm
Depth	26"	660mm
Face Width	24"	610mm
Back Width	15"	380mm
Face Area	4 sq ft	0.37 m2
Setback	2.4°	



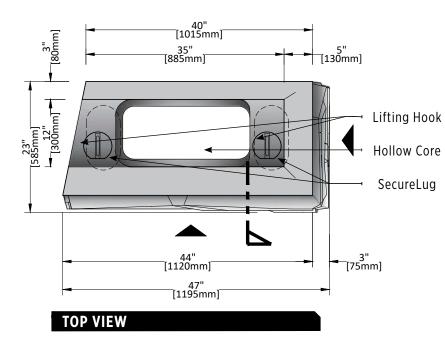
TOP VIEW

SECTION

MAGNUMSTONE CORNER BLOCK



PERSPECTIVE





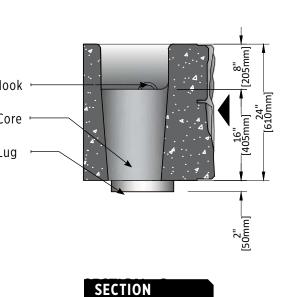
CORNER BLOCK

1700 lbs (771 kgs)

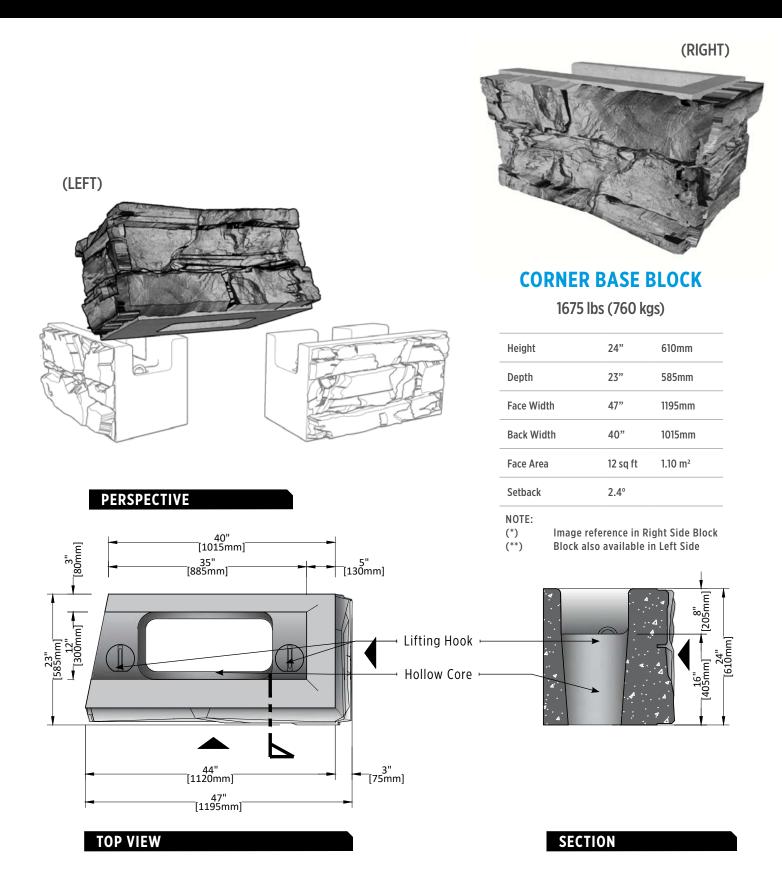
Height	24"	610mm
Depth	23"	585mm
Face Width	47"	1195mm
Back Width	40"	1015mm
Face Area	12 sq ft	1.10 m²
Setback	2.4°	

NOTE:

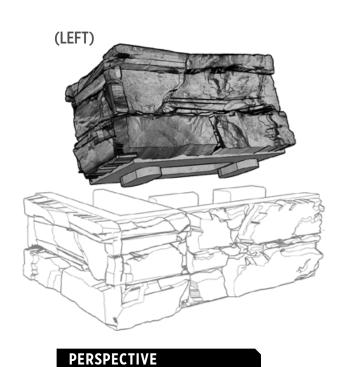
(*) Image reference in Right Side Block (**) Block also available in Left Side



MAGNUMSTONE CORNER BASE BLOCK



MAGNUMSTONE CORNER TOP BLOCK



CORNER TOP BLOCK

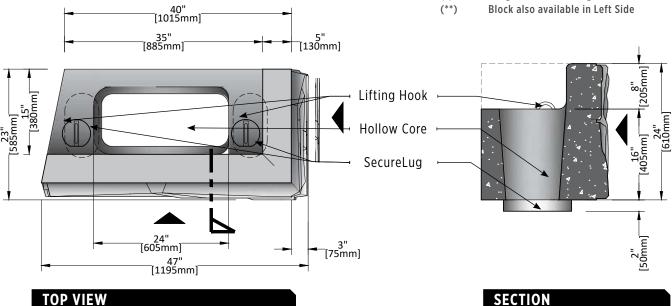
(RIGHT)

1500 lbs (680 kgs)

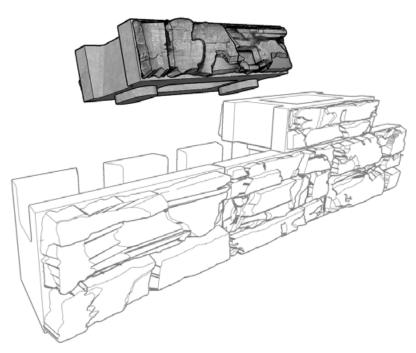
Height	24"	610mm
Depth	23"	585mm
Face Width	47"	1195mm
Back Width	40"	1015mm
Face Area	12 sq ft	1.10 m²
Setback	2.4°	

NOTE:

(*) (**) Image reference in Right Side Block Block also available in Left Side



MAGNUMSTONE FREESTANDING BLOCKS



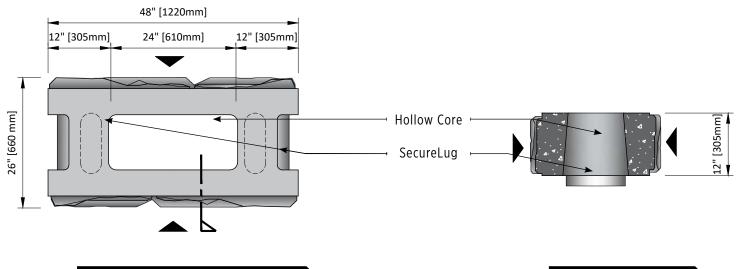


2-SIDED

900 lbs (408 kgs)

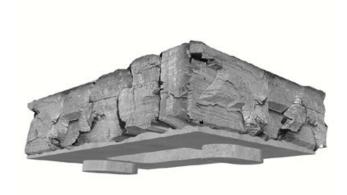
Height	12"	305mm
Depth	26"	660mm
Face Width	48"	1220mm
Back Width	48"	1220mm
Face Area	4 sq ft	0.37 m2
Setback	0°	

PERSPECTIVE



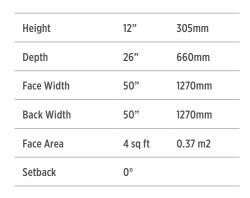
TOP VIEW

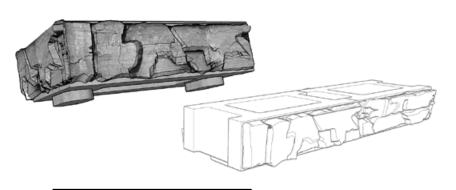
SECTION



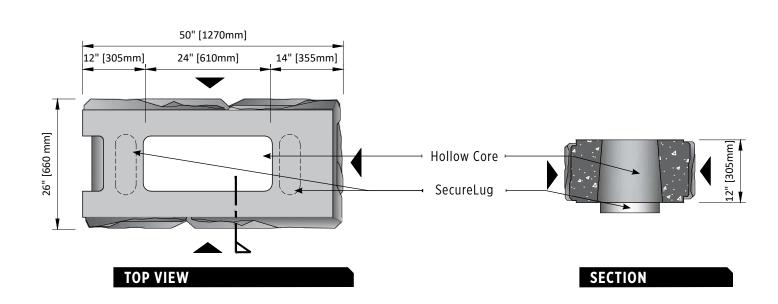
3-SIDED

900 lbs (408 kgs)

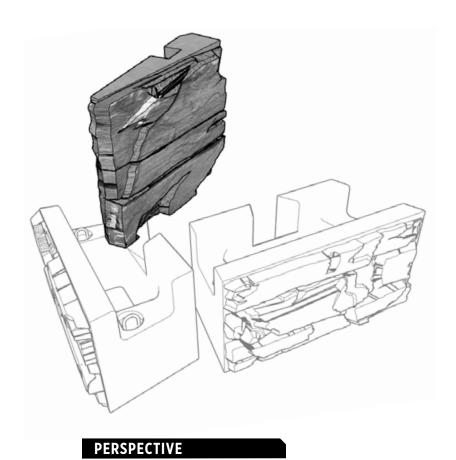




PERSPECTIVE



MAGNUMSTONE END CAP UNITS



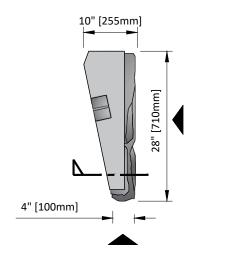
END CAP

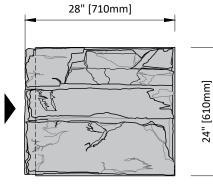
340 lbs (154 kgs)

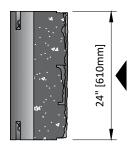
Height	24"	610mm
Depth	28"	710mm
Face Width	28"	710mm
Narrow Width	4"	100mm
Face Area	4.6 sq ft	0.44 m2
Setback	2.4°	

NOTE:

Corner End Units are Universal; Can be used on either Left or Right Side





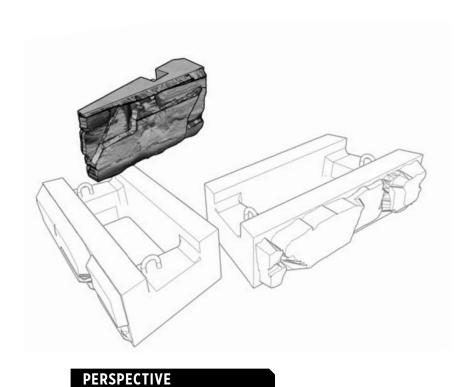


TOP VIEW

FRONT VIEW

SECTION

MAGNUMSTONE HALF-HIGH END CAP UNITS





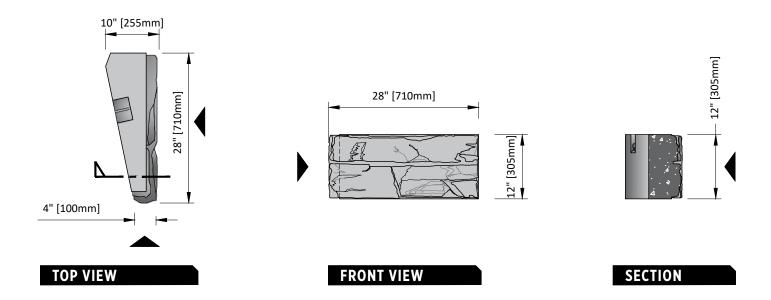
HALF-HIGH END CAP

170 lbs (77 kgs)

Height	12"	305mm
Depth	28"	710mm
Face Width	28"	710mm
Narrow Width	4"	100mm
Face Area	2.3 sq ft	0.44 m2
Setback	2.4°	

NOTE:

Refer Lifting Hook position for orientation; Lifting Hook should face upwards



MAGNUMSTONE STEP/CAP UNITS





STEP/CAP

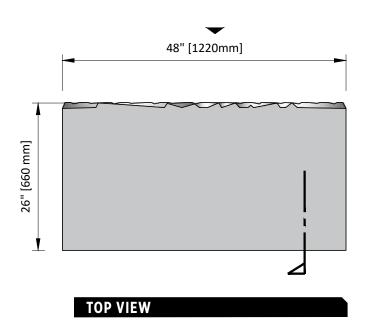
580 lbs / 263 kgs

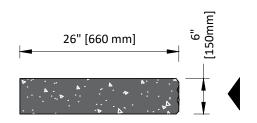
Height	6"	150mm
Depth	26"	660mm
Width	48"	1220mm

NOTF:

Cap Style may vary by Manufacturer

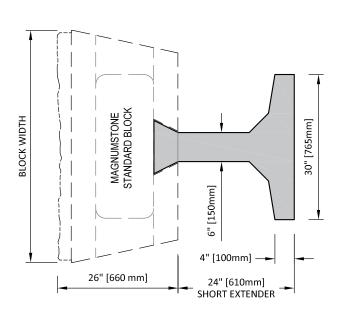
PERSPECTIVE





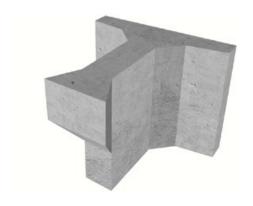
SECTION

MAGNUMSTONE EXTENDER UNITS



TOP VIEW

TOP VIEW



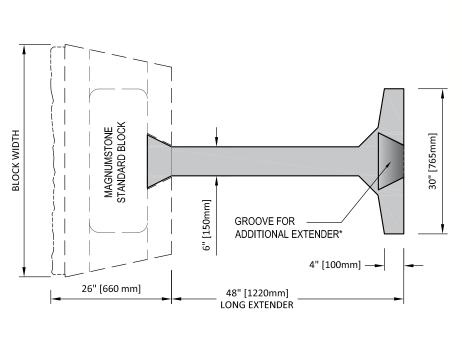
SHORT EXTENDER UNIT

520 lbs (236 kgs)

Height	24"	610mm
Depth	24"	610mm
Width	30"	765mm

NOTE:

For Gravity and Hybrid Retaining walls



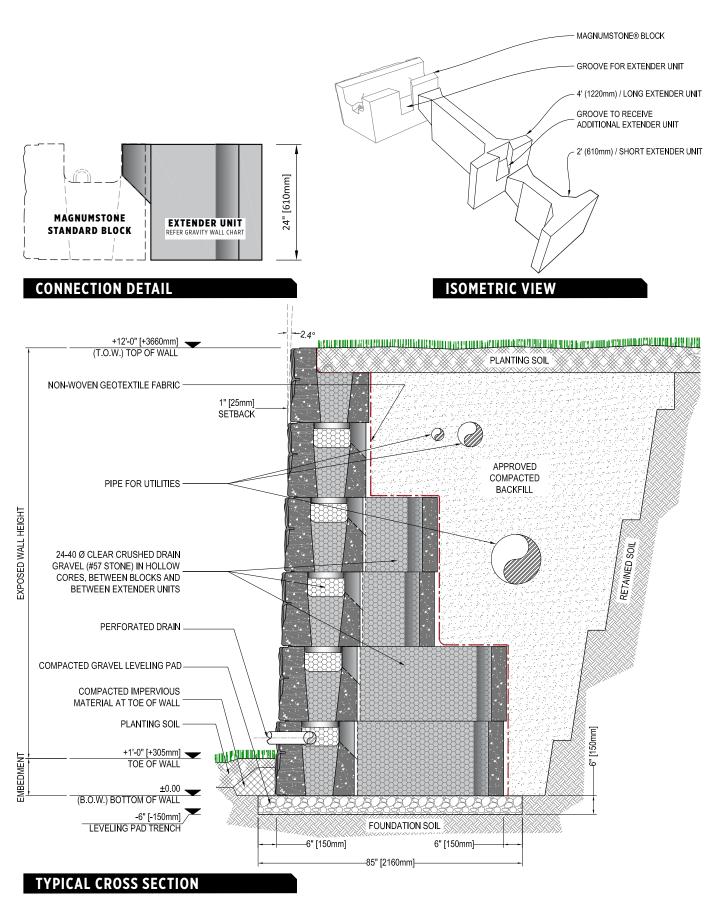


LONG EXTENDER UNIT

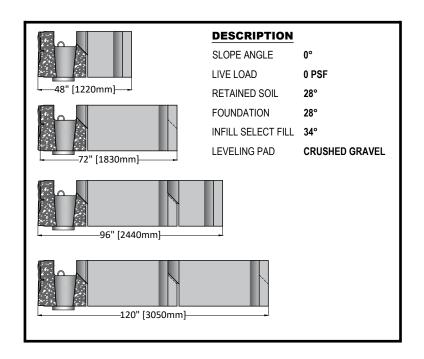
820 lbs (372 kgs)

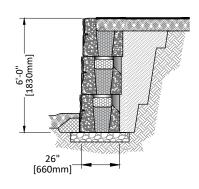
Height	24"	610mm
Depth	48"	1220mm
Width	30"	765mm

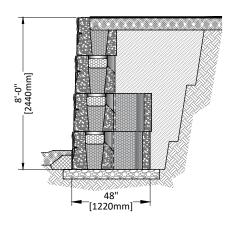
MAGNUMSTONE GRAVITY WALL CROSS SECTION & DETAILS

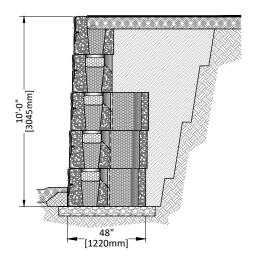


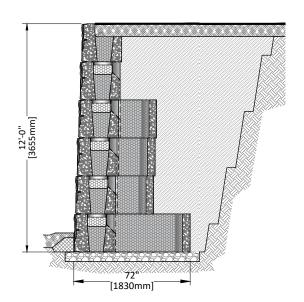
MAGNUMSTONE GRAVITY WALL CHARTS

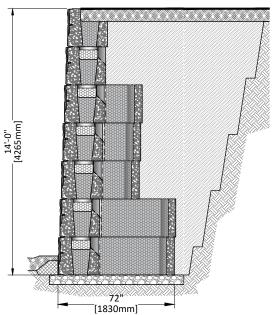




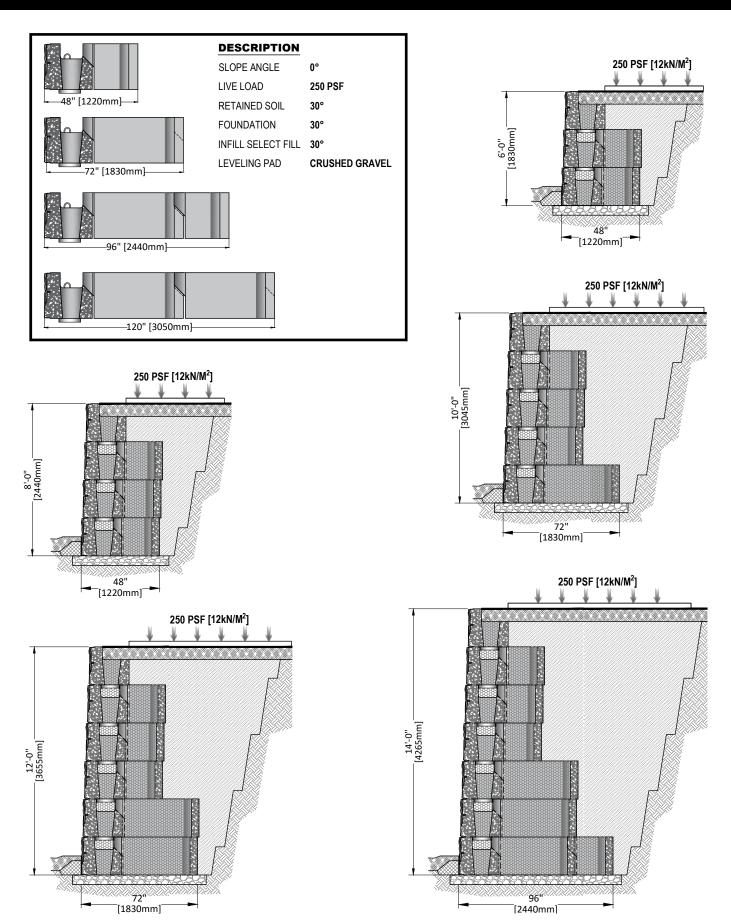






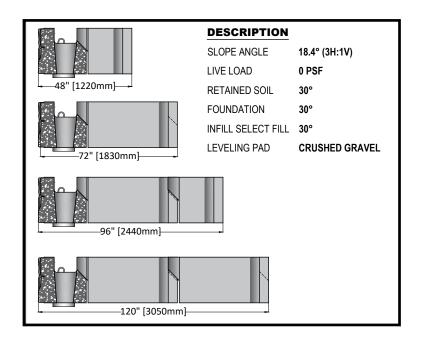


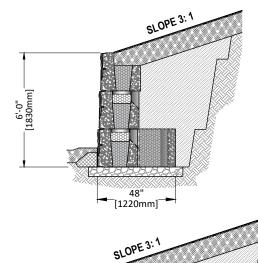
MAGNUMSTONE GRAVITY WALL CHARTS

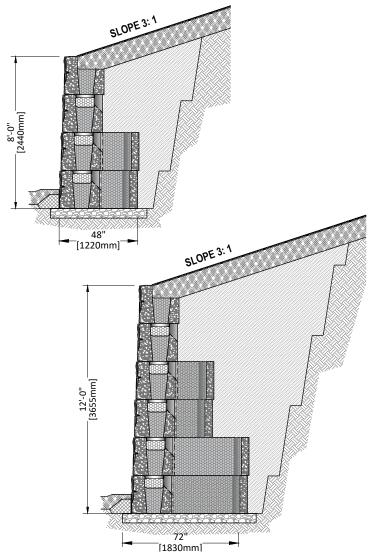


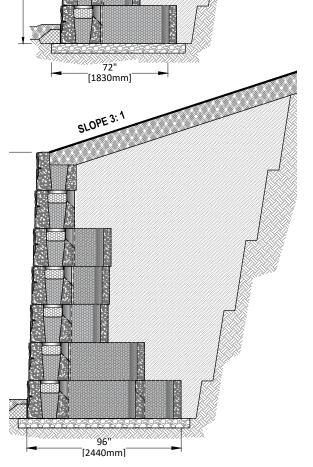
MAGNUMSTONE GRAVITY WALL CHARTS

10'-0" [3045mm]

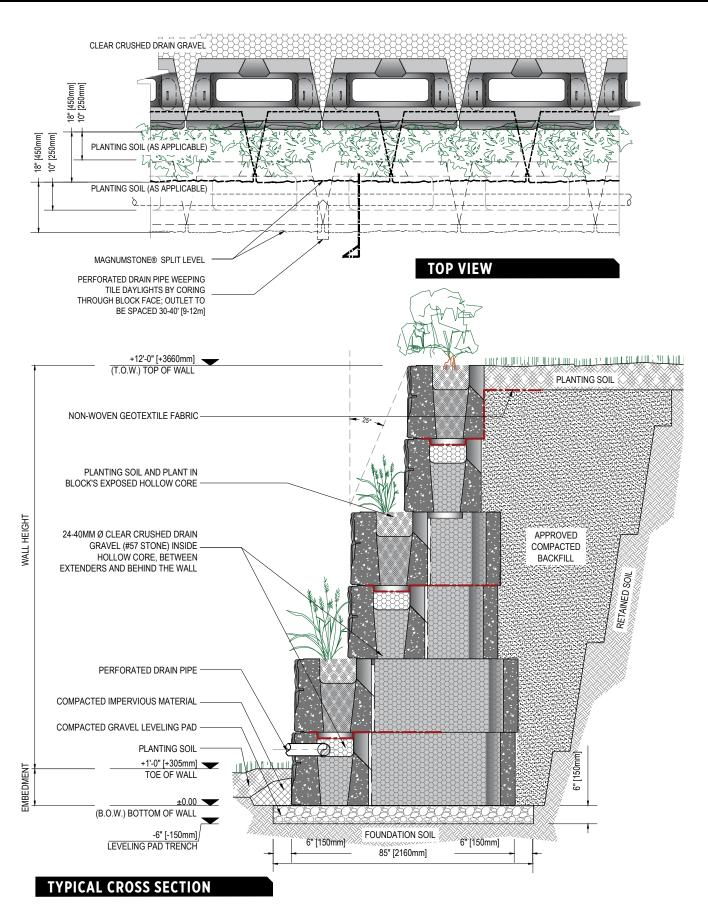




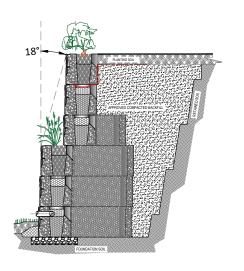




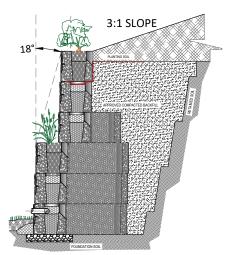
MAGNUMSTONE PLANTABLE WALL



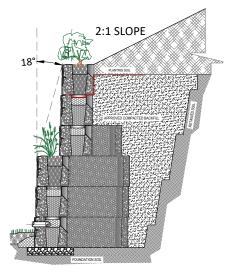
MAGNUMSTONE 18° SETBACK PLANTABLE WALL



SOIL TYPE	HEIGHT EXPOSED	HEIGHT EMBEDDED	TOTAL
34° SOIL	10.4' [3170 mm]	0.6' [183 mm]	11' [3353 mm]
30° SOIL	8.5' [2591 mm]	0.5' [152 mm]	9' [2743 mm]
26° SOIL	6.5' [1981 mm]	0.5' [152 mm]	7' [2134 mm]



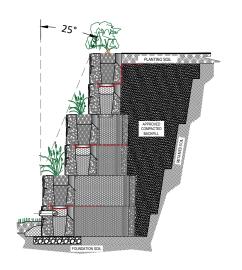
SOIL TYPE	HEIGHT EXPOSED	HEIGHT EMBEDDED	TOTAL
34° SOIL	8.5' [2591 mm]	0.5' [152 mm]	9' [2743 mm]
30° SOIL	N/A	N/A	N/A
26° SOIL	N/A	N/A	N/A



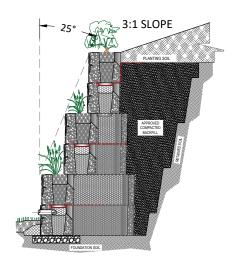
SOIL TYPE	HEIGHT EXPOSED	HEIGHT EMBEDDED	TOTAL
34° SOIL	6.5' [1981 mm]	0.5' [152 mm]	7' [2134 mm]
30° SOIL	N/A	N/A	N/A
26° SOIL	N/A	N/A	N/A

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.

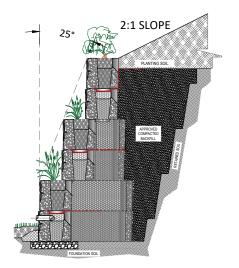
MAGNUMSTONE 25° SETBACK PLANTABLE WALL



SOIL TYPE	HEIGHT EXPOSED	HEIGHT EMBEDDED	TOTAL
34° SOIL	14.2' [4329 mm]	0.8' [244 mm]	15' [4572 mm]
30° SOIL	10.4' [3170 mm]	0.6' [183 mm]	11' [3353 mm]
26° SOIL	7.5' [2286 mm]	0.5' [152 mm]	8' [2438 mm]



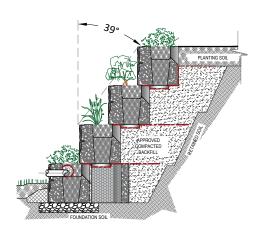
SOIL TYPE	HEIGHT EXPOSED	HEIGHT EMBEDDED	TOTAL
34° SOIL	11.3' [3444 mm]	0.7' [213 mm]	12' [3658 mm]
30° SOIL	7.5' [2286 mm]	0.5' [152 mm]	8' [2438 mm]
26° SOIL	5.5' [1676mm]	0.5' [152 mm]	6' [1829 mm]



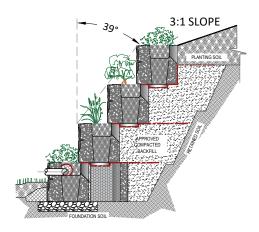
SOIL TYPE	HEIGHT EXPOSED	HEIGHT EMBEDDED	TOTAL
34° SOIL	9.4' [2865 mm]	0.6' [183 mm]	10' [3048 mm]
30° SOIL	5.5' [1676 mm]	0.5' [152 mm]	6' [1829 mm]
26° SOIL	N/A	N/A	N/A

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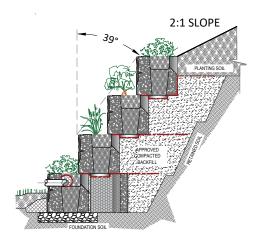
MAGNUMSTONE 39° SETBACK PLANTABLE WALL



SOIL TYPE	HEIGHT EXPOSED	HEIGHT EMBEDDED	TOTAL
34° SOIL	20.9' [6367 mm]	1.1' [335 mm]	22.0' [6706 mm]
30° SOIL	20.9' [6367 mm]	1.1' [335 mm]	22.0' [6706 mm]
26° SOIL	14.2' [4330 mm]	0.8' [244 mm]	15.0' [4572 mm]



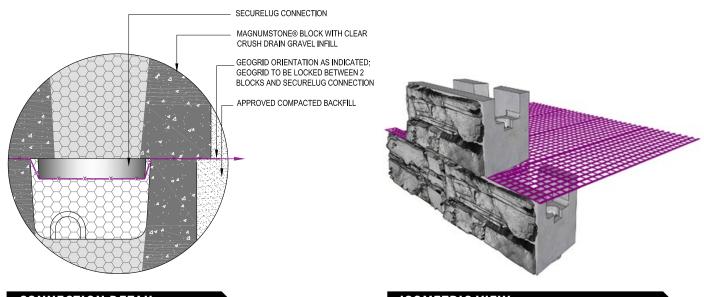
SOIL TYPE	HEIGHT EXPOSED	HEIGHT EMBEDDED	TOTAL
34° SOIL	20.9' [6367 mm]	1.1' [335 mm]	22.0' [6706 mm]
30° SOIL	17.0' [5182 mm]	1.0' [305 mm]	18.0' [5486 mm]
26° SOIL	10.4' [3170 mm]	0.6' [183mm]	11.0' [3353 mm]



SOIL TYPE	HEIGHT EXPOSED	HEIGHT EMBEDDED	TOTAL
34° SOIL	20.9' [6367 mm]	1.1' [335 mm]	22.0' [6706 mm]
30° SOIL	13.2' [4026 mm]	0.8' [244 mm]	14.0' [4267 mm]
26° SOIL	N/A	N/A	N/A

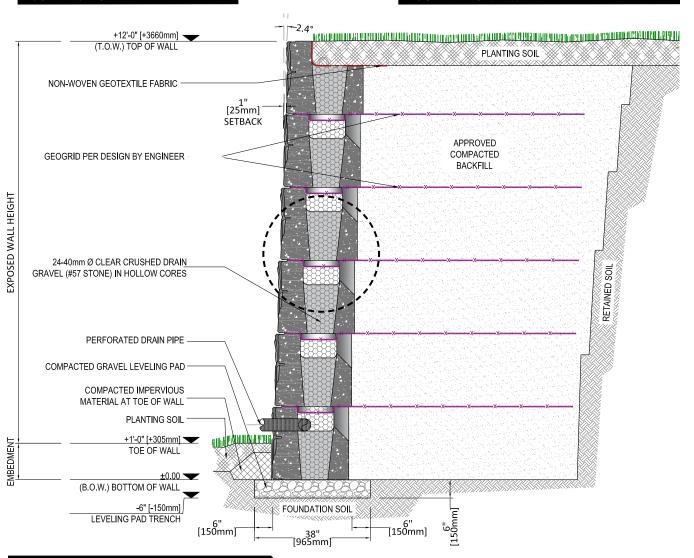
DISCLAIMER: This chart is for initial estimation purposes only. Do not use for final design or construction. Retain a licensed professional engineer to design every wall on a case-by-case basis using site specific criteria. The accuracy and use of this document are the sole responsibility of the user. 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 WALL



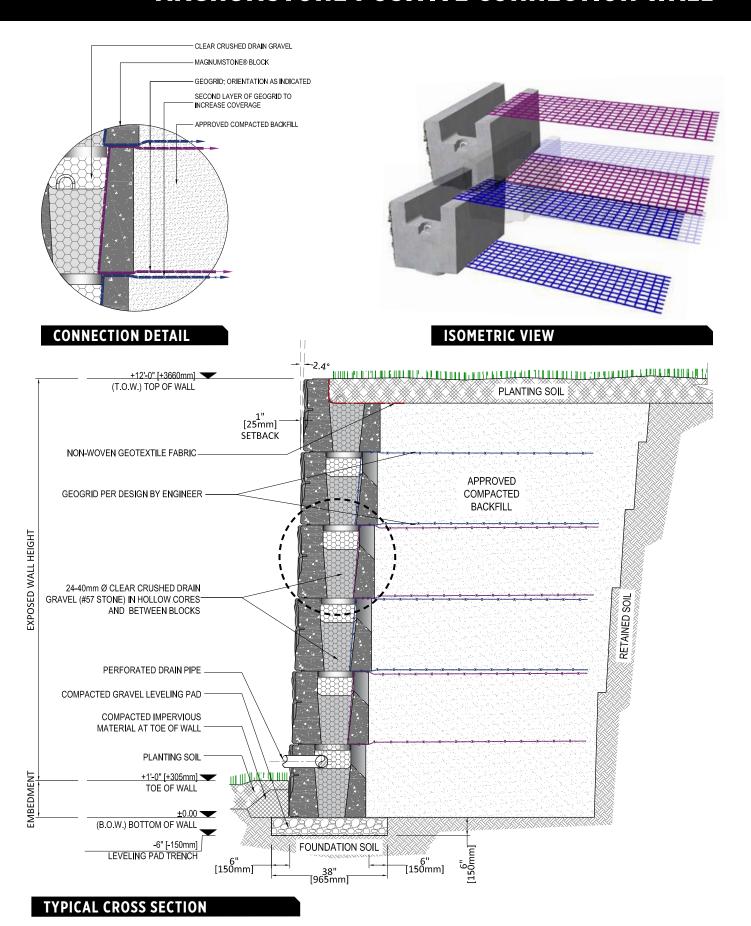
CONNECTION DETAIL

ISOMETRIC VIEW

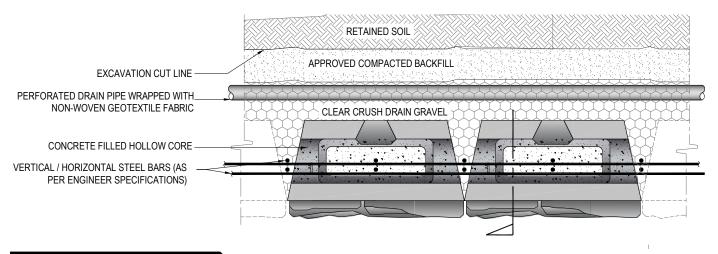


TYPICAL CROSS SECTION

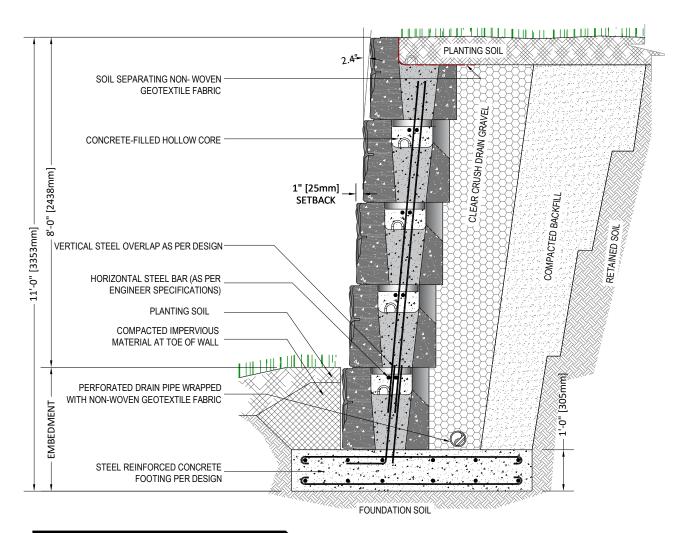
MAGNUMSTONE POSITIVE CONNECTION WALL



MAGNUMSTONE CANTILEVER WALL

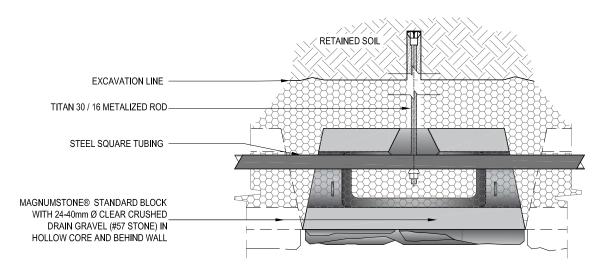


TOP VIEW

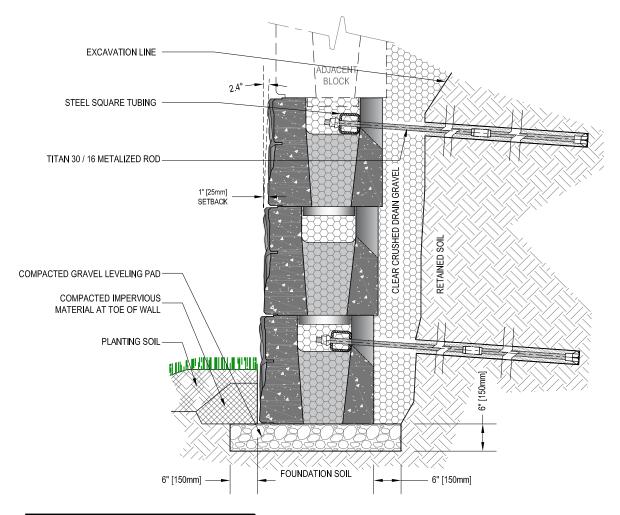


TYPICAL CROSS SECTION

MAGNUMSTONE SOIL NAILING

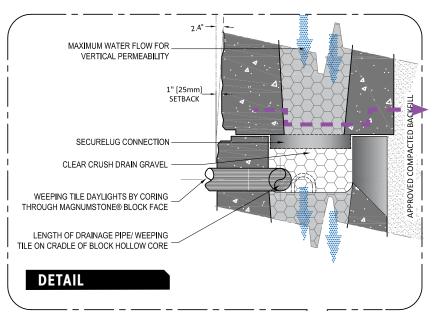


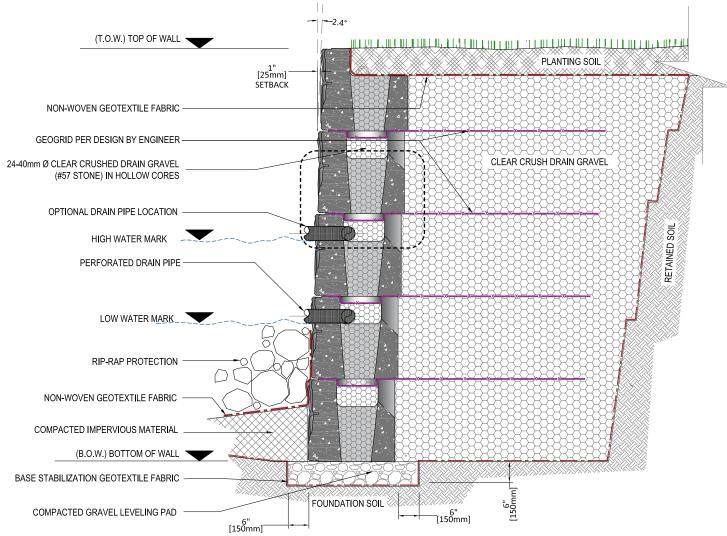
TOP VIEW



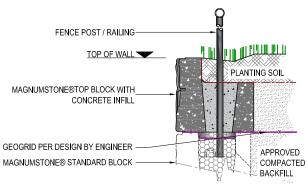
TYPICAL CROSS SECTION

MAGNUMSTONE WATER APPLICATION/DRAINAGE





MAGNUMSTONE FENCE/POST OPTIONS



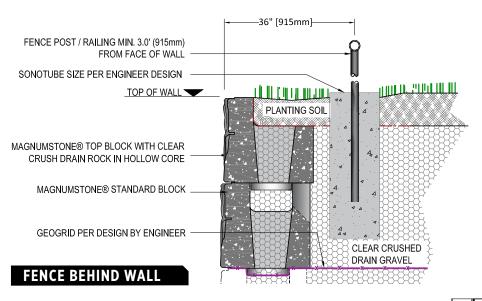
GENERAL NOTE:

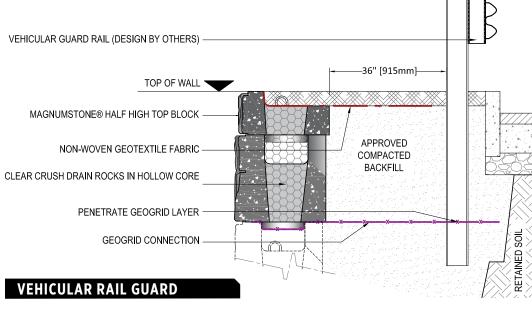
- 1. Fence post / railing design by others
- 2. Design to be performed by engineer

FENCE POST / RAILING TOP OF WALL CAP UNIT - POST CORED THROUGH CAP MAGNUMSTONE® STANDARD BLOCK WITH CONCRETE INFILL GEOGRID PER DESIGN BY ENGINEER MAGNUMSTONE® STANDARD BLOCK MAGNUMSTONE® STANDARD BLOCK BACKFILL

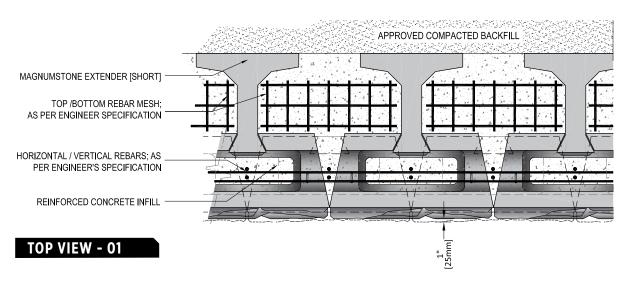
THROUGH HOLLOW CORE

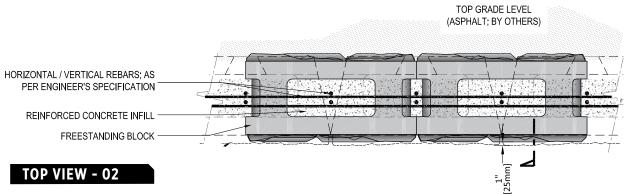
THROUGH HOLLOW CORE WITH CAPPING

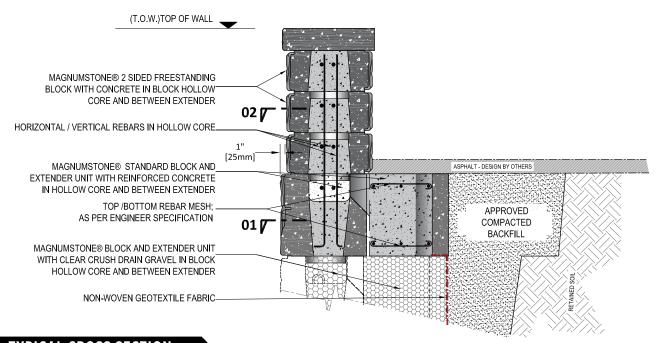




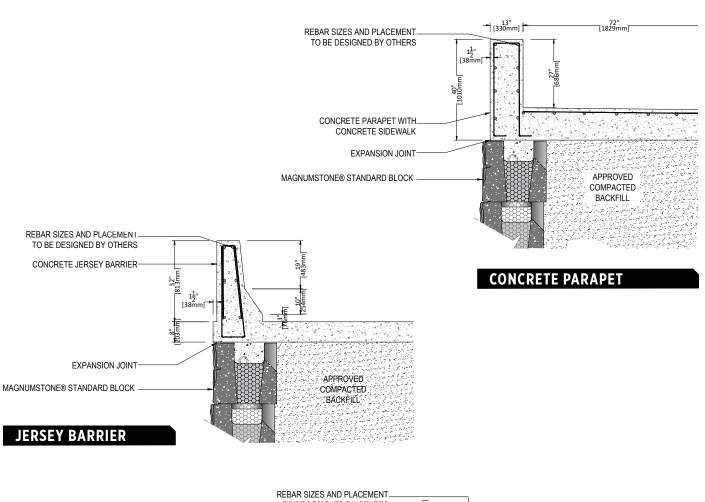
MAGNUMSTONE FREESTANDING PARAPET WALL

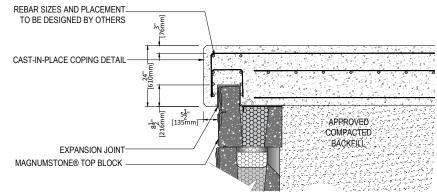


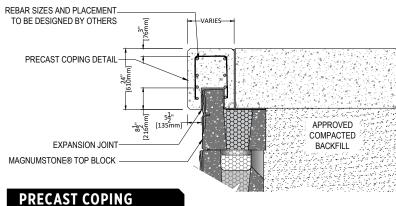




MAGNUMSTONE TOP OF WALL BARRIER OPTIONS







CAST-IN-PLACE COPING

