



MANORSTONE® ELITE



Smooth Face in Charcoal with Onyx Caps

ManorStone® Elite retaining wall blocks feature a hollow middle, reducing the weight per block by 30% compared to traditional non-hollow retaining wall blocks. Our lighter-weight blocks require less energy to lift which can help you save on labor costs and project build time.

Fill the hollow cores of the ManorStone Elite blocks with crushed rock to achieve the same gravity function of non-hollow blocks for walls up to 3' 6" high. Add a cap or coping unit to beautifully finish your retaining wall; bringing style and elegance to your outdoor living areas you'll enjoy for years' to come.

PRODUCT DATA

	Coverage	Units / Pallet	Coverage / Pallet	Weight / Piece	Weight / Pallet
Smooth Face Tapered Sides	1.5 pcs / ft ² (16.2 pcs / m ²)	54	36 ft ² (3.34 m ²)	46 lb (21 kg)	2,484 lb (1,126.7 kg)
Split Face Tapered Sides	1.5 pcs / ft ² (16.2 pcs / m ²)	54	36 ft ² (3.34 m ²)	46 lb (21 kg)	2,484 lb (1,126.7 kg)
Split Face Tapered Cap Unit	0.8 pcs/Ln ft	72	90 Ln ft	45 lb (20.4 kg)	3,290 lb (1,493 kg)
Smooth Face Cap Unit	.75 pcs/Ln ft	72	96 Ln ft	43 lb (19.5 kg)	3,146 lb (1,427 kg)
Coping Unit	0.5 pcs / Ln ft	36	72 Ln ft (19.5 Ln m)	62 lb (30.8 kg)	2,262 lb (1,010 kg)

All Weight per Pallet noted above include a 50 lb pallet weight. Maximum wall height: 3' 6". Minimum radius: 2' 8".

AVAILABLE TEXTURES & COLORS



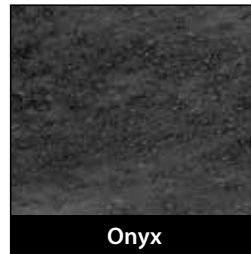
Smooth Texture

Shown in Charcoal.



Split Face Texture

Shown in Gray.



Onyx

Smooth Face Tapered Sides
16" x 6" x 12" (15.2 cm x 40.6 cm x 30.5 cm)



Available in Charcoal and Gray.

Split Face Tapered Sides
16" x 6" x 12" (15.2 cm x 40.6 cm x 30.5 cm)



Available in Gray.

Split Face Tapered Cap Unit
18" (front face) 12" (back face) x 3" x 13"
(45.7 cm x 7.6 cm x 33 cm)



Available in Charcoal and Gray.

Smooth Face Cap Unit
16" x 3 x 12 3/8" (40.6 cm x 7.6 cm x 31.4 cm)



Available in Gray and Onyx.

Coping Unit
23 5/8" x 3" x 12" (60.34 cm x 7.6 cm x 30.5 cm)



Available in Gray and Onyx.

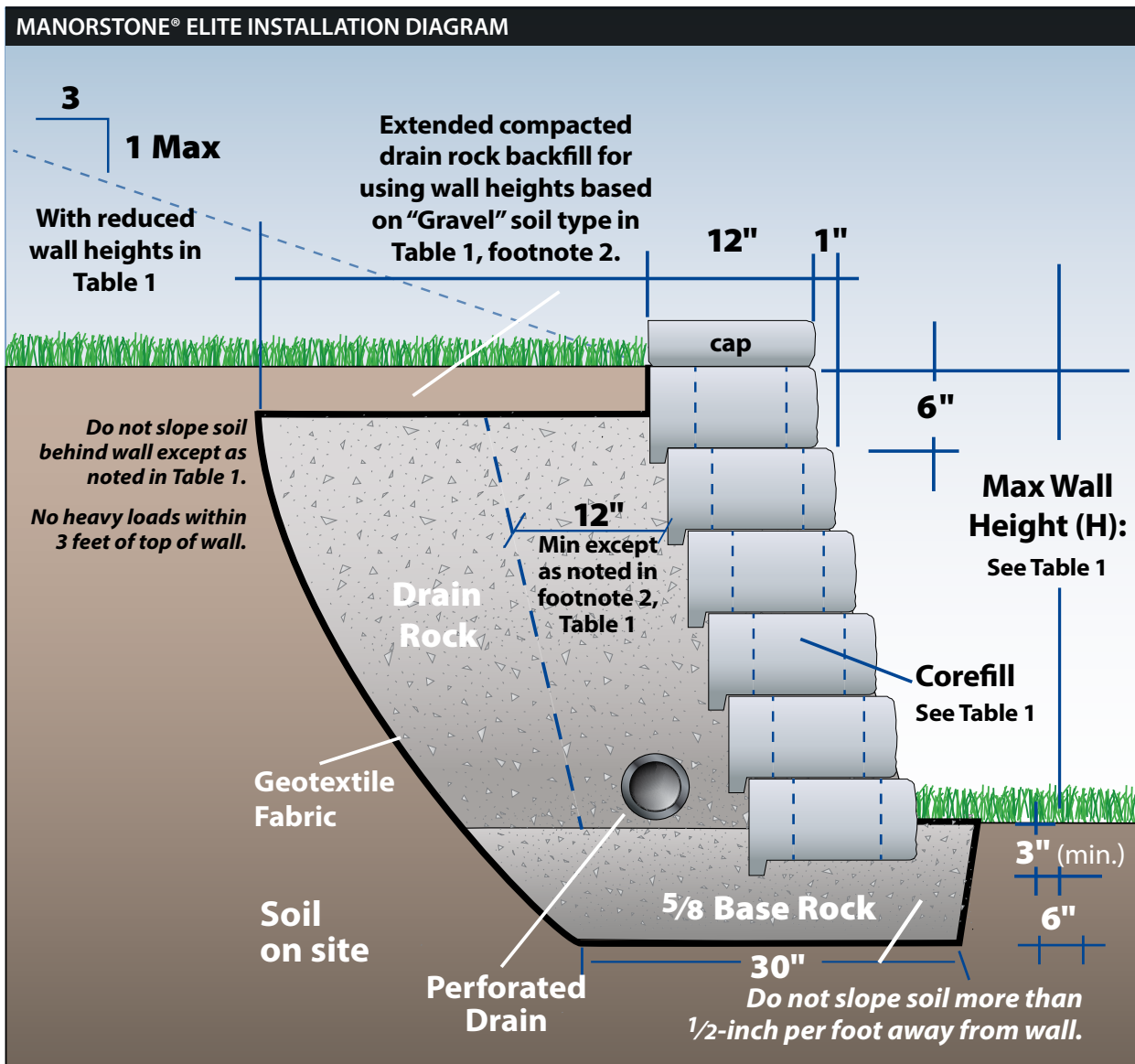
PROJECT ESTIMATION

NOT TO EXCEED 3' 6"		WALL LENGTH (0.75 units per lineal foot)					
WALL HEIGHT	COURSES	10 ft	15 ft	20 ft	25 ft	30 ft	35 ft
1'	2	15	23	30	38	45	53
1' 6"	3	23	34	45	57	68	79
2'	4	30	45	60*	75	90	105
2' 6"	5	38	57	75	92	113	132
3'	6	45	68	90	113	135	158

TABLE 1

LOAD CASE ³	MAX. WALL HEIGHT (H) ¹ (SEE CROSS SECTION)		
	SOIL TYPE		
	CLAY ² Φ=28°	SILTY SAND ² Φ=32°	GRAVEL Φ=36°
LEVEL BACKFILL WITH CRUSHED ROCK CORE-FILL	2' 6"	2' 6"	3' 6"
LEVEL BACKFILL WITH <u>NO COREFILL</u>	1' 6"	2'	2'
<u>3H:1V MAX SLOPED</u> BACKFILL WITH CRUSHED ROCK COREFILL	1' 6"	2'	2' 6"

1. Wall construction shall be performed per design provided by a local registered Professional Engineer, based on actual site conditions.
2. Wall heights may be increased to that shown for the GRAVEL soil type, by extending the drainage layer horizontally, to match the total height of blocks, subject to review and approval by a local registered Professional Engineer. Compact the crushed rock drainage layer, to 6" max loose lifts.
3. No surcharge loads, or seismic loads, are included in the load cases shown.



INSTALLATION INSTRUCTIONS

For more specific and detailed instructions, please contact your Mutual Materials sales representative.)

Maximum gravity wall height: See Table 1

Minimum radius circle: 2' 8"

- 1. Excavation:** First mark the area of the wall with chalk or spray paint and then string a line. Dig out a trench that is a minimum of 9" (230 mm) deep plus one inch for every foot of wall height. Allow 12" (305 mm) of space behind the wall for $\frac{5}{8}$ " minus angular washed drain rock (this means your trench should be 30" wide). Roots and large rocks must be removed from the trench.
- 2. Base Preparation:** The project requires a perforated drain, cover the back and the bottom of the trench with a geotextile to prevent soil from blocking the drainage system. Measure geotextile fabric with excess length of about 12" (305 mm) at the top of the bank, which will be folded over the completed drainage fill.
- 3. Foundation:** Install a 4" (102 mm) diameter perforated drain in this foundation and connect it to the existing drainage system. Next, prepare a 6" (152 mm) deep foundation with $\frac{5}{8}$ " minus or $\frac{3}{4}$ " minus crushed rock. Add 1"-2" of $\frac{5}{8}$ " minus or $\frac{3}{4}$ " minus crushed rock, rake smooth and compact with plate compactor. Base rock should have a certain amount of moisture content. Repeat steps until final 6" base elevation is achieved.
- 4. First Course:** Lay the base course of retaining wall blocks. Using a string line at the back of the units for alignment, place units side by side on the gravel checking for level in both directions. Begin laying block at the lowest point of the wall and/or 90° corner. It is easier to start at a straight section of the wall. Complete the base course before proceeding to the second course. Be aware that the blocks have a 1" set back. When curves are laid out, space the base course block slightly apart to allow for their set back.

NOTE: Before installing additional courses, it is recommended that the installer front fills and backfills the first course with base rock and compacts to ensure stability of the wall. Use $\frac{5}{8}$ " minus clean/washed crushed rock to fill cores in blocks, except as noted in Table 1.

- 5. Second & Additional Courses:** Sweep top of underlying course and stack next course in running bond pattern so the middle of the unit is above the joint between adjacent blocks below. To cut blocks for the ends of the wall or in tight curved sections, use a hammer and chisel to score the unit on all sides. Always wear eye protection when splitting stones. If many cuts are needed, a masonry saw may be the better option.
- 6. Backfilling:** After each course is laid, backfill behind the wall with $\frac{3}{4}$ " washed drain rock. This improves drainage and prevents soil from leaching through the wall face.
- 7. Top Course:** Use concrete adhesive to secure the cap course. Apply the adhesive with a caulking gun. Lay the cap down and press firmly. Finish backfilling behind the wall.

MUTUAL MATERIALS LOCATIONS

For more product information or to reach customer service, please call: **1-888-688-8250.**

WASHINGTON		OREGON	IDAHO	MONTANA
Auburn	Port Orchard	Bend	Boise	Missoula
Bellevue	South Seattle	Clackamas	Hayden	
Bellingham	Spokane	Durham		
Marysville	Tacoma (Parkland)	Portland		
Olympia (Tumwater)	Vancouver, WA	Salem		



MUTUALMATERIALS®