

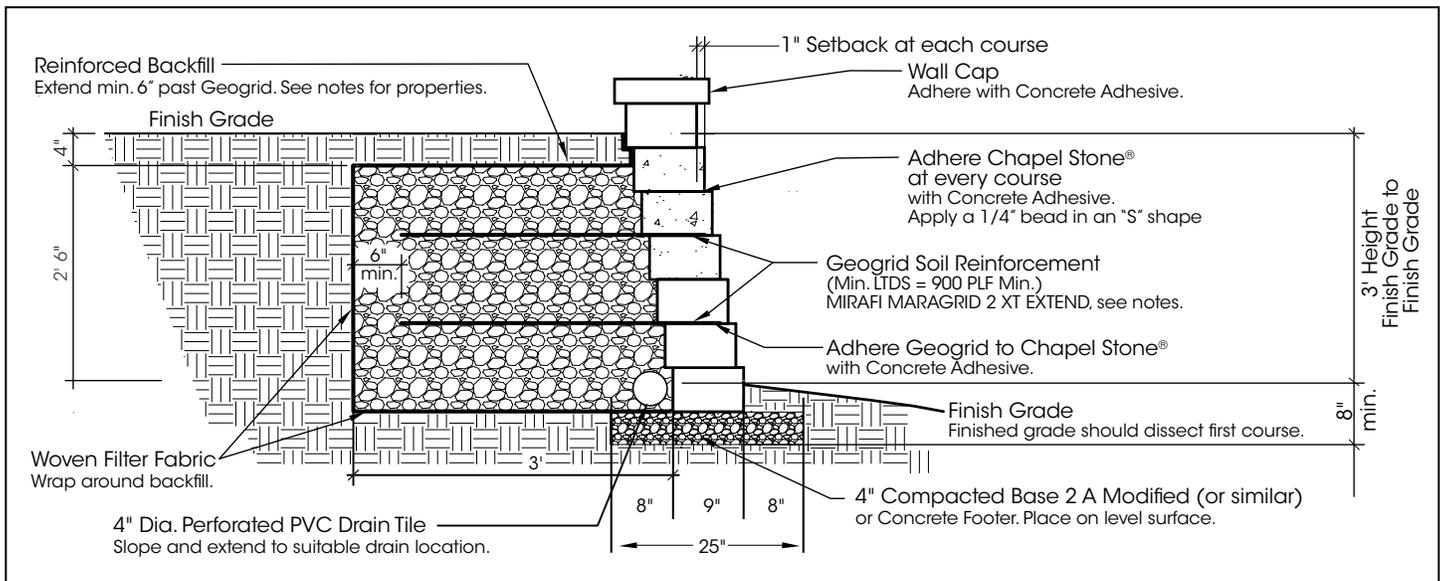
Installation Guidelines for Residential Applications Chapel Stone® Garden Walling

1. Calculate wall materials needed. Determine the square footage of the wall by multiplying length by the height.
2. Prepare the footing. Dig a trench 25" wide and 3 - 6" below grade. The height of the wall will determine the number of units to bury. As a rule of thumb, you will bury 1" of block for every 8" of exposed wall height. Add 4" for the depth of the base material. Be sure the soil is well compacted to prevent settling. Be sure disturbed soils are stabilized.
3. Construct the base. A level compacted base is crucial for wall stability. Consisting of 2 A modified stone or concrete footer, the base should be 4" deep with 8" behind and 8" in front of the wall. Total base width would be 16" plus the 9" depth of the wall unit for a total of 25".
4. Install the base course. Position the units side by side on the prepared compacted base. Along the back of the block, level the units with a carpenter's level from front to back and side to side. Use a string line to verify straightness.

Each course should be set back 1" from the front of the previous course and adhered with manufacturer recommended concrete adhesive. If using a concrete footer as the base, adhere the first course to the footer. Apply 1/4" bead of adhesive in an "S" shape for maximum strength. Care should be taken to insure that the adhesive is not exposed at the joints.

As the next course and all additional courses are placed, be sure to stagger the joints. Joints between wall units on adjacent courses should not align. Each unit should span two below.

5. Backfill the wall as you go. The wall should be backfilled using clean washed ballast stone (minimum 1 1/2" in diameter). The depth of the backfill should be equal to the height of the wall and wrapped on the top, back and bottom with woven filter fabric.
6. Stabilize wall sections as you go. The use of GeoGrid reinforcement to stabilize wall sections is recommended. GeoGrid should be adhered to the wall units between courses starting 12" from the base/foundation and continuing every 12". Be sure top layer of GeoGrid is covered by a minimum of 12" of backfill stone.



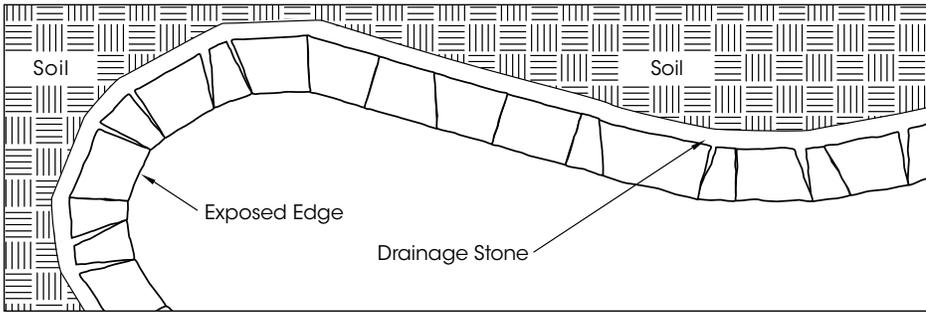
Please Note : Proper installation methods must be followed to ensure wall strength and stability. Freestanding walls should not exceed 3 feet in height. Retaining walls and walls with elevations beyond 3 feet must also employ proper installation methods and may require engineering design. Chapel Stone® Garden Walls can be laid as dry walls or as mortared walls. Chapel Stone® is not meant as a highway retaining wall.

GeoGrid Soil Reinforcement Notes:

1. Pull GeoGrid taut and anchor prior to backfill placement over GeoGrid.
2. GeoGrid reinforcement shall be continuous throughout the embedment length. 100% coverage shall be provided at each level.
3. GeoGrid extends min. 8" over the Chapel Stone® and shall be bonded to the stone.
4. Apply adhesive to both sides of GeoGrid to insure proper bond to both courses.

Reinforced Backfill Notes:

1. Use ballast stone (min. 1 1/2" diameter) for backfill, or larger as per the geotechnical report prepared by specialized engineering, file no. 063503, dated Oct. 18, 2006.
2. Place reinforced backfill in 12" lifts.
3. Compact reinforced backfill to 95% of maximum dry density as determined by modified proctor tests, ASTM D-1557.
4. Tracked compaction equipment shall not be used directly on GeoGrid reinforcement. A min. thickness of 12" of reinforced backfill is required above GeoGrid to utilize tracked compaction equipment.
5. Only small vibratory hand operated rollers or walk behind rollers or equipment shall be allowed within 5' of the wall.



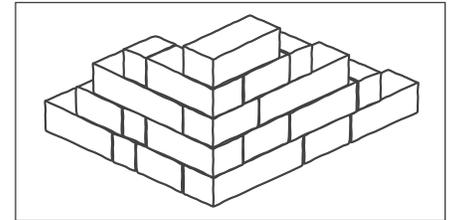
Chapel Stone® Radius Installation

Chapel Stone® Radius pieces are used to create arcs and curves within a wall design. Radius pieces can be used in several ways by turning them over. Follow the installation guidelines shown on page 1 for Chapel Stone® Garden Walling.

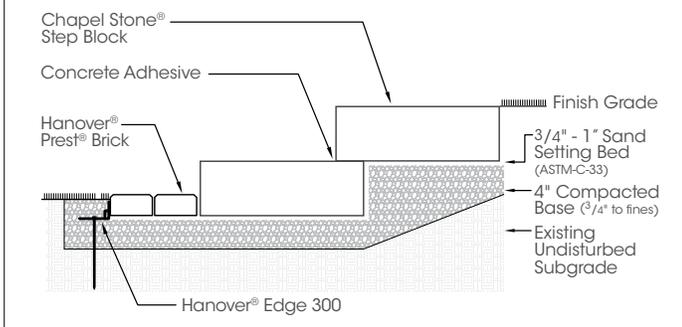
Building 90° Corners

Overlap the corners to create a bond. Using the corner pieces provided, overlap the units to build your corner. Be sure to stagger the joints; Joints between blocks on adjacent courses should not align. Each block should span two blocks below.

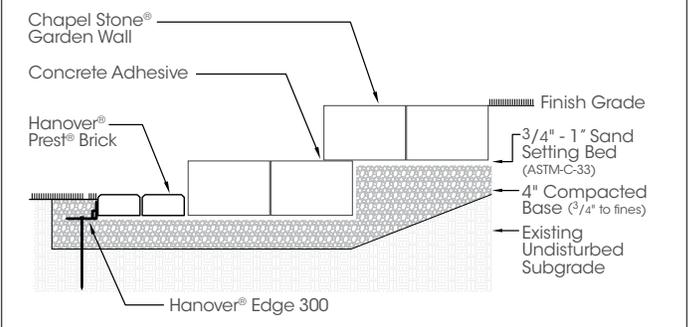
Please Note: Chapel Stone® Garden Walling requires a stable footing, compacted base and proper drainage with filter fabric. Please see Page 1 Installation Guidelines or contact a Hanover® representative for more information.



Step Block Step Construction



Garden Walling Step Construction*



1. Stair width, length and rise should be determined prior to beginning.
1. Compact existing subgrade if area has been excavated. Be sure disturbed soils are stabilized. Place compacted gravel over compacted subgrade. Screed setting bedding sand.
2. Begin installation at bottom by installing the first step or course. Install the next layer of compacted gravel base behind the first step. Install the second step. Use a Concrete Adhesive to adhere the second step to the first. Keep proper tread depth in mind when setting this course. Continue this procedure for the desired number of steps or courses.
3. Adhere Step Blocks at each course or step. Concrete Adhesive should be applied in a 1/4" bead to the full length of the block in an "S" shape. Care should be taken to insure that the adhesive is not exposed at the joint.

*A variety of Hanover® products such as Chapel Stone® Wall Caps or Appian® 6" x 9" brick can be incorporated into the step construction. They should be bonded to the Garden Walling units which are beneath them using a concrete adhesive. Be sure to allow cure time for the units to stabilize.

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