

**INSTALLATION INSTRUCTIONS**

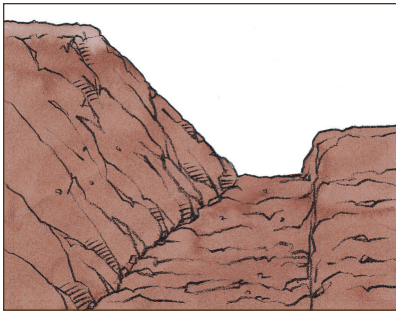


Diagram 1—Excavation

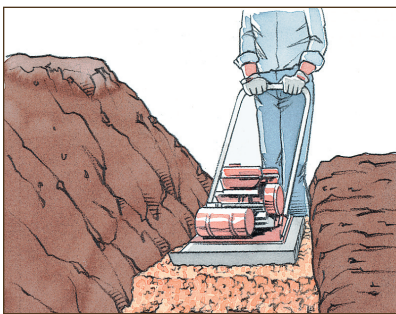


Diagram 2—Leveling Pad

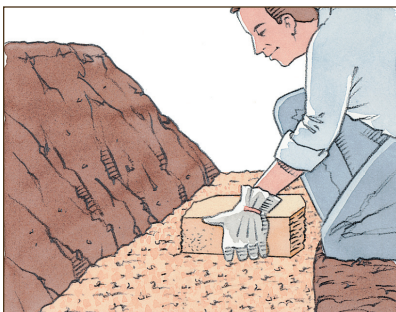


Diagram 3—Base Course

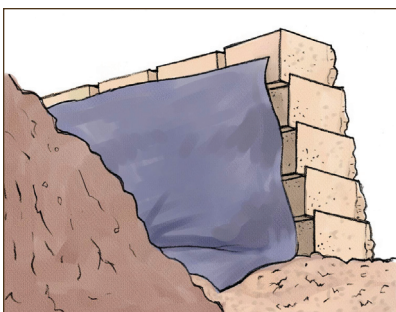


Diagram 4—Filter Fabric

**1 STAKE OUT THE WALL**

- Have a surveyor stake out the wall's placement. Verify the locations with the project supervisor.

**2 EXCAVATION**

- Excavate for the leveling pad to the lines and grades shown on the approved plans, and excavate enough soil from behind the wall for the geosynthetic reinforcement material.
- The trench for the leveling pad should be at least 1 foot wider than the depth (front to back) of the block and 6 inches deeper than the height of the block. *See Diagram 1.*

**3 LEVELING PAD**

- An aggregate leveling pad is made of compactible base material of  $\frac{3}{4}$ -inch minus with fines.
- If the planned grade along the wall front will change elevation, the leveling pad may be stepped up by the height of the block (typically 6-inch increments) to match the grade change. Always start at the lowest level and work upward.
- Compact the aggregate, making sure it's level front to back and side to side. Mist lightly with water before compaction, if needed. *See Diagram 2.*

**4 BASE COURSE**

- This is the most important step in the installation process.
- Begin laying block at the lowest elevation of the wall whenever possible. Remove the rear lip of the block by hitting with a hammer and chisel from the back so that the block will lie flat on the leveling pad.
- Place first block and level, front to back and side to side; lay subsequent blocks in same manner.
- Place the blocks side by side, flush against each other, and make sure the blocks are in full contact with the leveling pad. Level front to back and side to side.
- Place soil in front of the base course and compact. Base course should be buried. Continue to fill and compact after each course is laid.
- If the wall is on an incline, don't slope the blocks. Step them up so they remain consistently level.
- Use string along back edge of the block to check for proper alignment.

**5 CONSTRUCTION OF THE NEXT COURSE**

- Fill voids between blocks with  $\frac{3}{4}$ -inch clean drainage aggregate prior to laying the next course of block. Clean any debris off the top of the blocks.
- Place the second course of blocks on top of the base course. Maintain running bond. Pull each block forward as far as possible to ensure the correct setback. *See Diagram 5.*
- For best results, use a filter fabric, which should be placed directly behind the wall extending from the bottom of the base course to the middle of the top course. This will minimize material coming through the rough-hewn face texture of the wall. We recommend a non-woven, 4- to 6-ounce fabric. *See Diagram 4.*
- Backfill with drainage aggregate directly behind the block, adding 6 to 8 inches at a time. Add soil fill behind the aggregate.
- Compact before the next course is laid. Don't drive heavy equipment near the wall. Self-propelled compaction equipment should not be used within 3 feet of the back of the wall.
- You'll need partial units to stay on bond. A circular saw with a masonry blade is recommended for cutting partial units. Use safety glasses and other protective equipment when cutting.

**6 DRAINAGE DESIGN**

- Each project is unique. The grades on your site will determine at what level to install the drainpipe.
- Place the drainpipe (4-inch perforated piping) so water drains down and away from the wall into a storm drain, or daylight just above grade.
- Fill in the area behind the blocks with clean drainage aggregate, at least 1 foot from the wall.
- You may need to place and backfill several courses to achieve the proper drainage level.
- The outlet pipes should be spaced not more than every 50 feet and at low points of the wall. In order for the drainage aggregate to function properly, it must keep clear of regular soil fill. *See Diagram 6 and 7.*

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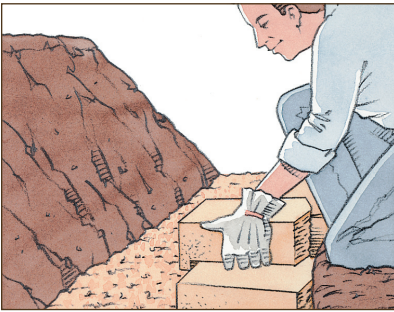


Diagram 5—Next-Course Construction

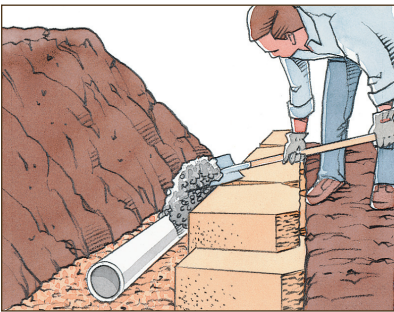


Diagram 6—Drainage

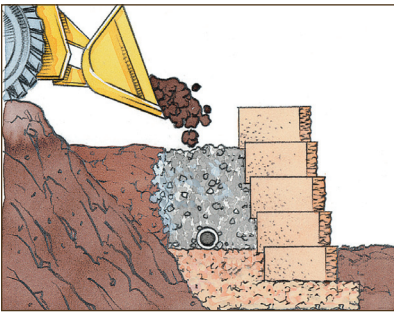


Diagram 7—Backfill

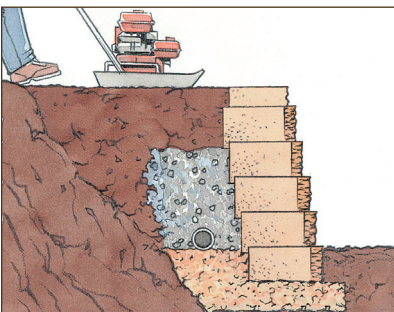


Diagram 8—Compaction

### 7 REINFORCEMENT (IF REQUIRED)

- Geosynthetic reinforcement is recommended for walls taller than 4 feet 6 inches, or walls situated in poor soils, supporting a driveway, etc. Consult an engineer for design assistance.
- Check the wall construction plan to determine which courses will need reinforcement.
- Clean any debris off the top layer of blocks.
- Measure and cut the reinforcement to the design length in the plans.
- The reinforcement has a design strength direction, which must be laid perpendicular to the wall.
- Place the front edge of the material on the top course, 1 inch from the face of the block.
- Apply the next course of blocks to secure reinforcement material in place.
- To keep it from wrinkling, pull the reinforcement taut and pin the back edge in place with stakes or staples.
- Add drainage aggregate behind the blocks; then add the soil and compact it. It is ideal to fill from the wall toward the cut.
- A minimum of 6 inches of backfill is required to provide cushioning prior to operating vehicles on the reinforcement. Avoid sudden turning or braking when operating vehicles on the reinforcement area.  
*See Diagrams 6 and 7.*

### 8 COMPACTION

- Shovel the backfill soil behind the drainage aggregate and compact the backfill with a hand-operated compactor.
- Make sure the aggregate is level with or slightly below the top of the course.
- Base course should be buried. Continue to fill and compact after each course is laid.  
*See Diagram 8.*

### 9 CAPPING A WALL

- **Straight wall**
  - Caps are trapezoidal and must be laid alternating short and long cap faces for a straight line. Always start capping from the lowest elevation.

### Outside curves

- Lay cap units side by side and cut at least every other cap to produce a uniform look. Start with the long side of the cap facing out and adjust to the radius.

### Inside curves

- Lay cap units side by side with the short side facing out. In most circumstances, making two cuts on one cap and then not cutting the adjacent caps produces the most pleasing look.

### Corners

- On a 90-degree corner wall, the corner caps need to be saw-cut to achieve a 45-degree mitered corner.

### Stepping up caps

- If a wall elevation changes, caps can be stacked where the wall steps up. Begin laying caps at the lowest elevation change and work your way toward the previous step up. Split a cap unit to create a rough face on the exposed side. Place the partial cap unit directly on top of the capped portion of the wall with all three split faces exposed.

### Finishing

- After layout is complete and caps are saw-cut or split to size, carefully glue in place with a concrete adhesive.

### 10 FINISH GRADE AND SURFACE DRAINAGE

- Protect the wall with a finished grade at the top and bottom.
- To ensure proper water drainage away from the wall, use 6 inches of soil with low permeability. This will minimize water seeping into the soil and drainage aggregate behind the wall.

### 11 SITE CLEANING AND RESTORATION

- Brush off the wall and pick up any debris left from the construction process.
- Notify the job superintendent in writing of the completion and that it is ready for final inspection and acceptance.
- Planting vegetation in front and on top of the wall will help reduce the chance of erosion.

**SAFETY NOTE:** Always use appropriate equipment, including safety glasses or goggles and respirators, when splitting, cutting or hammering units.