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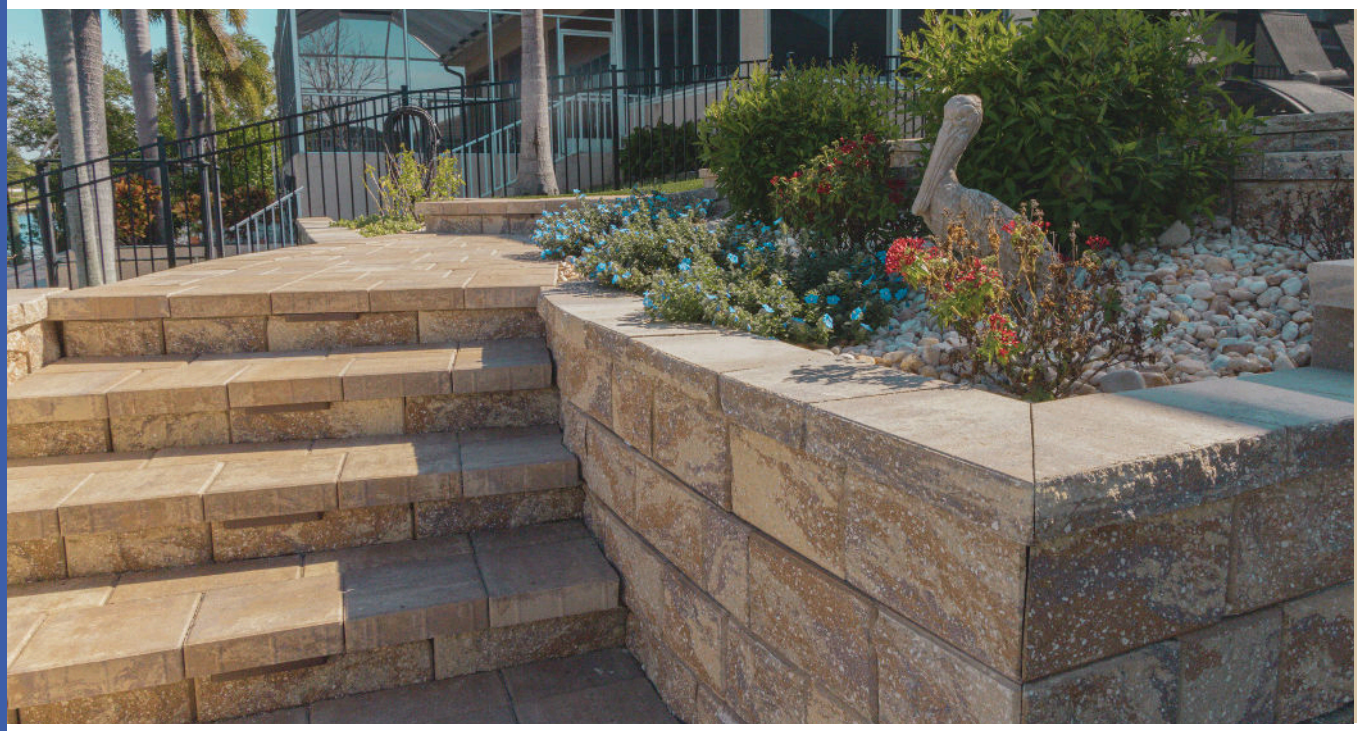
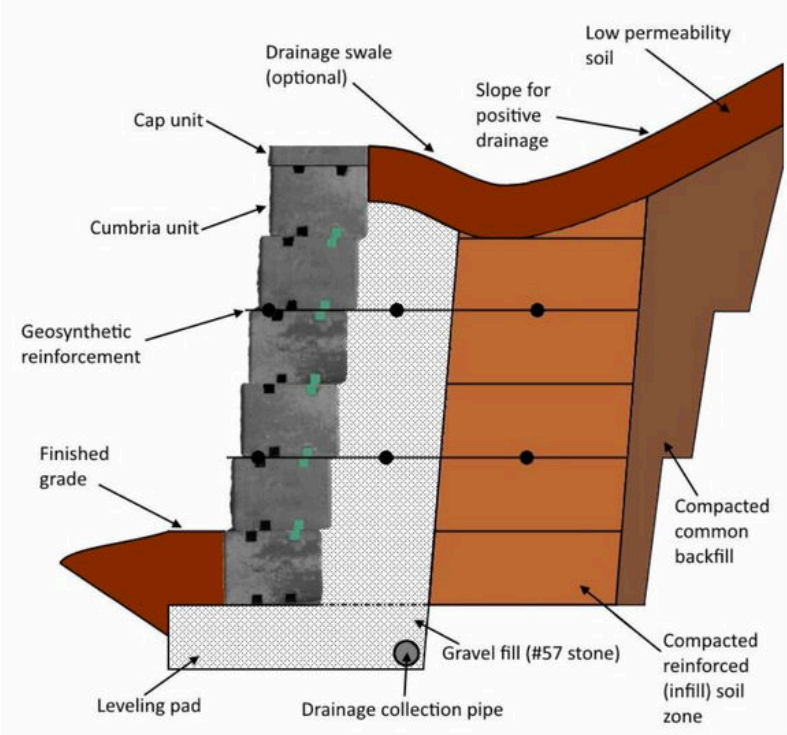
# Cumbria Wall Installation Guide



# Cumbria Installation Guide

## (with geosynthetic reinforcement)

### Typical Wall Cross-section

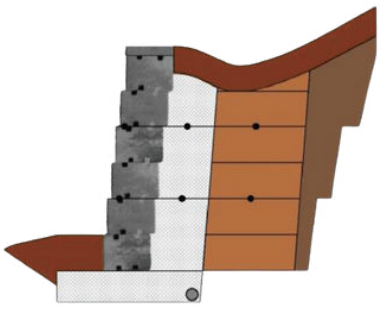



**Base Preparation:** To start, lay out and mark where you want the front of the retaining wall. Excavate the area by removing all surface vegetation and other organic materials. Dig a base trench the length of the wall and 20 inches wide; the depth of the trench should be 6 inches. Compact the subgrade soil thoroughly and line excavated area with landscape fabric.

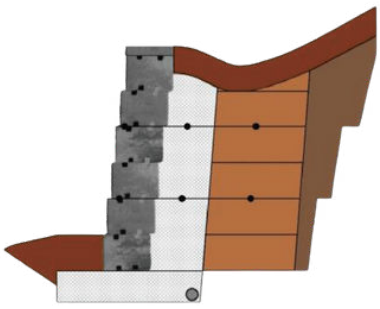
**Leveling Pad:** Fill the trench with #57 stone to create a leveling pad. Ensure that the gravel is densely compacted using a plate compactor.

**Drainage Pipe Installation:**
Place a proper drainage pipe to direct water away from the wall. There are different drain pipe installation options, depending on the site conditions. See Figure 1.

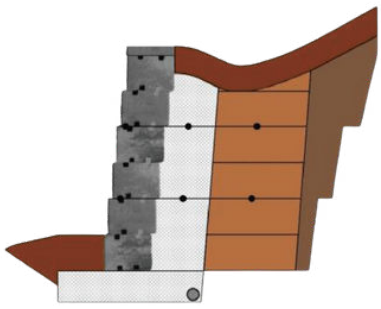
**Figure 1**



Drain pipe installed in compacted clean gravel.



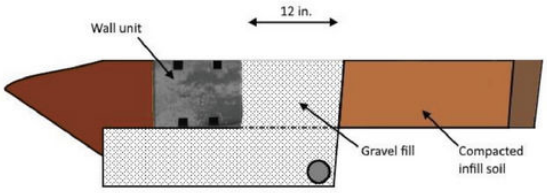
Drain pipe installed behind block.



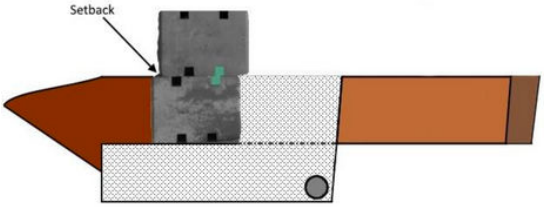
Drain pipe installed at a higher elevation through the wall face.

Place and level the first course of wall units on the base.
**It is very important to get the first row completely level before you continue building.**

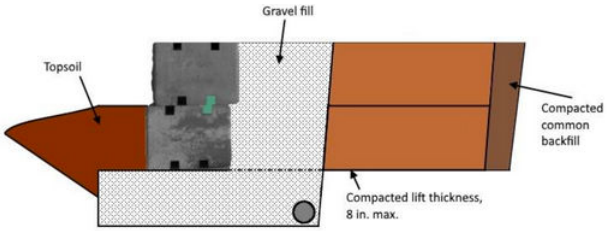
Carefully lay out clean gravel behind and up to the height of the wall unit to create a wall-face drain.
Place and compact infill soil behind wall-face drain. Next, add infill soil in front of the wall unit. Compact the gravel and infill soil.



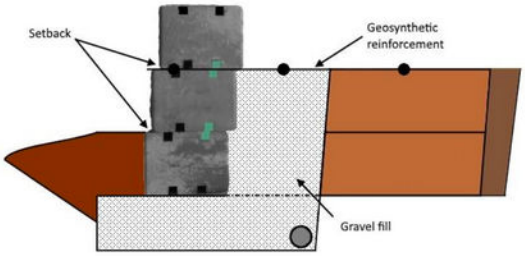

Ensure gravel fill is level with, or slightly below, the top of the wall unit. Clean off any debris from the top unit. Set connectors and move wall unit into place, no mortar needed. Ensure the wall has the proper setback.



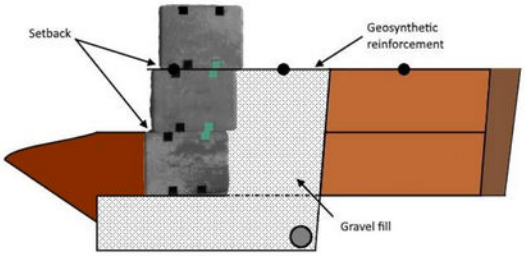

Use gravel to fill behind and up to the height of the wall unit to continue the wall-face drain. Place and compact infill soil behind the drain. Compact both the gravel and the soil.



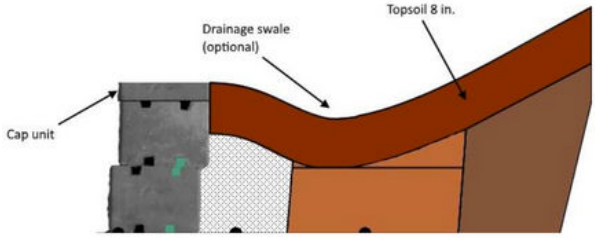

Ensure gravel fill is level with or slightly below the top of the wall unit. Clean off any debris from the top unit.
Cut **geosynthetic reinforcement** to design length and install. Place connectors and set next wall unit directly on top of **geosynthetic**. Make sure the wall unit is at its proper setback.




Pull **geosynthetic reinforcement** taut, removing all wrinkles and folds. Spread the gravel for wall-face drain behind and between the wall units as needed. Place infill soil and compact. Lay out the remainder of the gravel fill and compact.
Repeat for every foot of height.



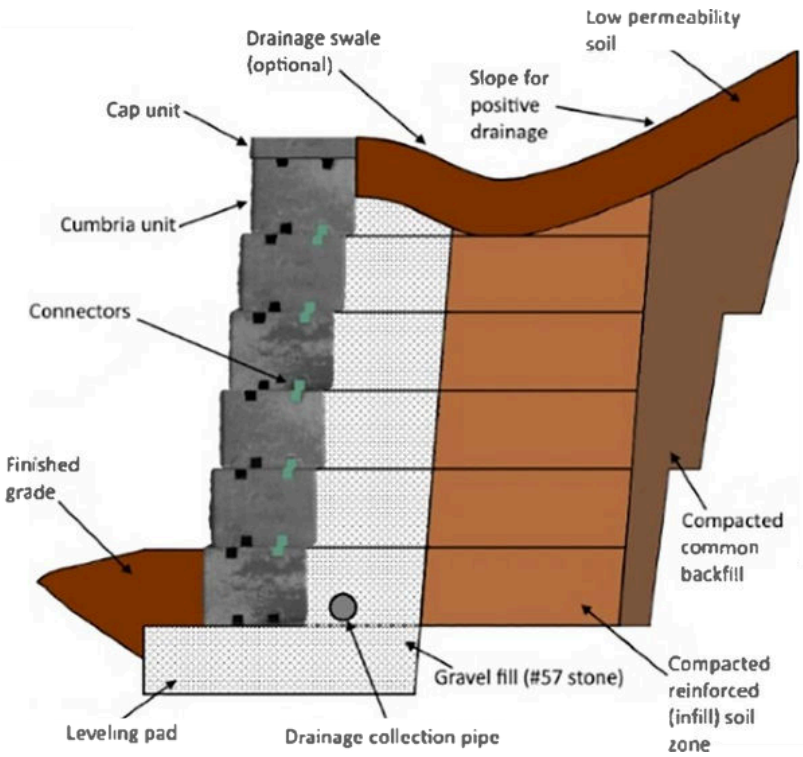

Once you are at your desired height, put down the cap unit and secure it with adhesive. Finish wall grading to direct water away from the wall. (Optional swale)



# Cumbria Installation Guide

## (without geosynthetic reinforcement)

### Typical Wall Cross-section




**Base Preparation:** To start, lay out and mark where you want the front of the retaining wall.
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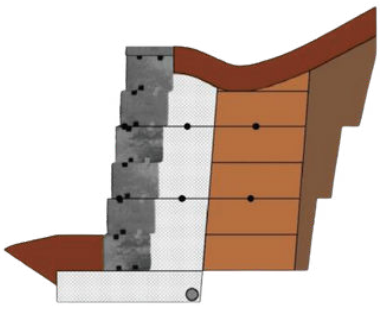
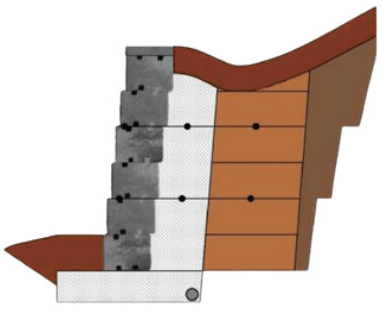
**Leveling Pad:** Fill the trench with #57 stone to create a leveling pad. Ensure that the gravel is densely compacted using a plate compactor.

**Drainage Pipe Installation:**
Place a proper drainage pipe to direct water away from the wall.
There are different drain pipe installation options, depending on the site conditions. See Figure 1.

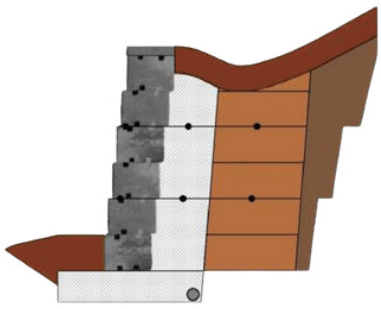
**Figure 1**



Drain pipe installed in compacted clean gravel.



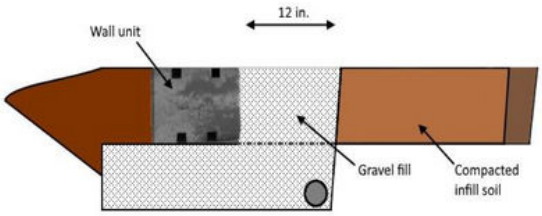
Drain pipe installed behind block.



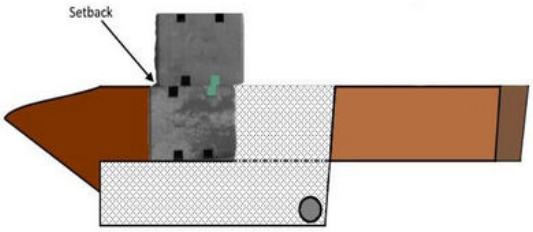
Drain pipe installed at a higher elevation through the wall face.

Place and level the first course of wall units on the base.
**It is very important to get the first row completely level before you continue building.**

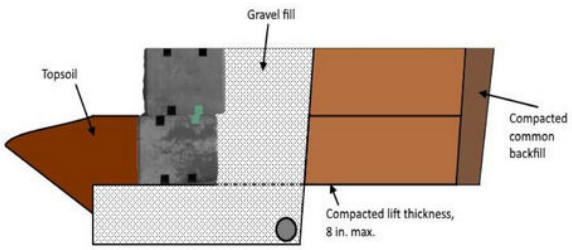
Carefully lay out clean gravel behind and up to the height of the wall unit to create a wall-face drain. Place and compact infill soil behind wall-face drain. Next, add infill soil in front of the wall unit. Compact the gravel and infill soil.



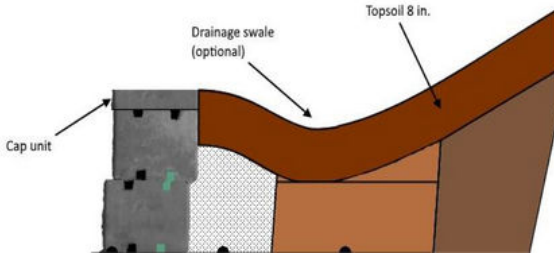

Ensure gravel fill is level with, or slightly below, the top of the wall unit. Clean off any debris from the top unit. Set connectors and move wall unit into place, no mortar needed. Ensure the wall has the proper setback.




Use gravel to fill behind and up to the height of the wall unit to continue the wall-face drain. Spread and compact infill soil behind the drain. Compact both the gravel and the soil.




Once you are at your desired height, put down the cap unit and secure it with adhesive. Finish wall grading to direct water away from the wall. (Optional swale)



# Benefits of Cumbria Wall Connectors

- **Easy Installation**
  Forget the mess of mortar; connectors make wall installation a breeze. Using connectors instead of mortar means your wall will be easy to modify and have a wide range of design capabilities.

- **Design Flexibility**
  The structural design of Cumbria walls paired with the connector system allows you to design and build practically any idea you can create, including curves and corners.

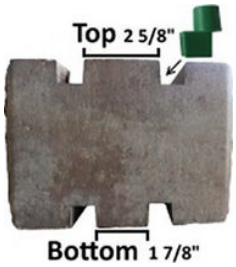
- **Simple Modification**
  Cumbria walls and corners can be easily modified to suit your design needs. These solid units can simply be split on-site, meaning no special blocks are needed.

- **Stability and Durability**
  Using connectors allows Cumbria walls to be stacked in three different ways: setback, stacked, and protruding; giving you the capability to create the most stable wall for your site. Cumbria walls are easily compatible with geosynthetic reinforcement and are solid units to keep your wall standing for a lifetime.

- **Free-draining Wall**
  While mortaring your wall blocks together inhibits natural drainage through the wall face, using connectors leaves small spaces for water to leave the soil behind your retaining wall. Water and improper drainage is often the cause for wall failure; getting maximum drainage is the goal.

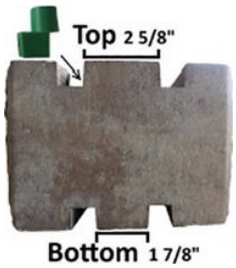
# Cumbria Wall Connector Placement

## Setback Wall




Place two connectors as shown above in the back slot facing towards the back of the block.

## Stacked Wall




Place two connectors as shown above in the front slot facing towards the back of the block.

## Protruding Unit


Place two connectors as shown above in the front slot facing towards the front of the block.

# Setback Retaining Wall Installation Quick Guide

Retaining walls under 4 feet high are commonly built as a gravity wall, where the weight and set-back of the units provide resistance (against the earth behind the wall).

1. For your leveling pad (base) dig a trench about 11" deep, 20" long, and 1' more than the length of your wall. Compact the subgrade soil thoroughly and line the excavated area with landscape fabric.

2. In the trench, place approximately 4" to 5" of ¾" crushed stone (#57 stone) and firmly compact in 2" lifts (stages).

3. On top of the ¾" stone, place DOT 89 stone or clean ¼" stone approximately ½" to 1" thick. Set and level the first course of wall units, which will be partially buried.

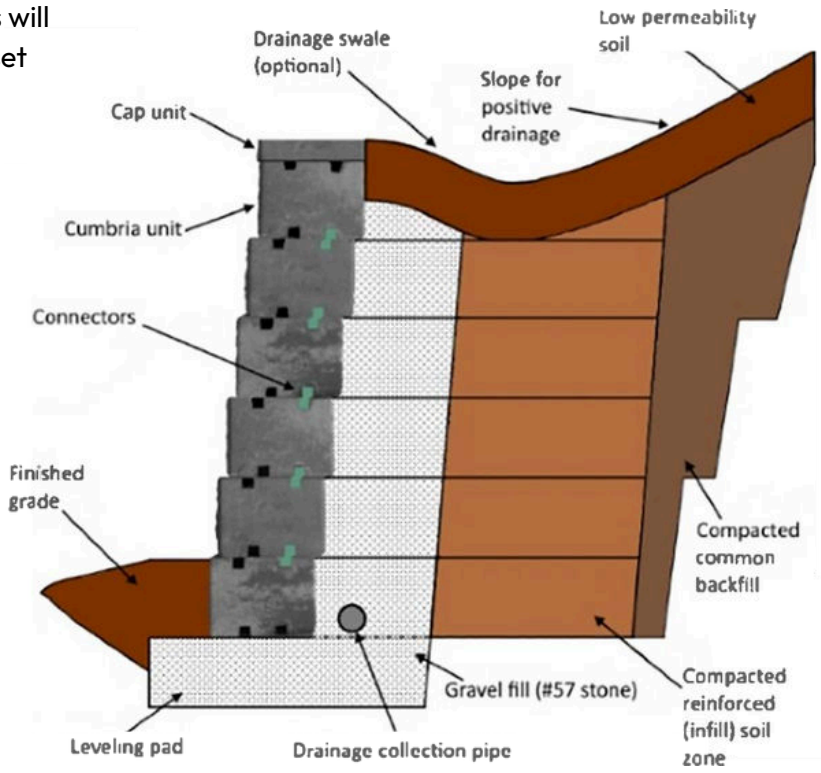
4. Place a perforated pipe behind the wall for drainage and backfill 10" to 12" behind the wall with ¾" crushed stone. Making sure that the perforated holes are pointed down.

5. Place successive courses by stacking wall units on top of the previous row using the connectors in the appropriate position. Ensure that the wall joints are staggered as you go.

6. Depending on the style of wall, units will interconnect and automatically be set back with the connectors or lip.

7. Backfill with ¾" crushed stone 12" behind each course and compact.

8. Finish the wall by attaching coping or cap units with quality adhesive.



# Straight Retaining Wall Installation Quick Guide

Retaining walls under 4 feet high are commonly built as a gravity wall, where the weight and set-back of the units provide resistance (against the earth behind the wall).

1. For your leveling pad (base) dig a trench about 11" deep, 20" long, and 1' more than the length of your wall. Compact the subgrade soil thoroughly and line the excavated area with landscape fabric.

2. In the trench, place approximately 4" to 5" of ¾" crushed stone (#57 stone) and firmly compact in 2" lifts (stages).

3. On top of the ¾" stone, place DOT 89 stone or clean ¼" stone approximately ½" to 1" thick. Set and level the first course of wall units, which will be partially buried.

4. Place a perforated pipe behind the wall for drainage and backfill 10" to 12" behind the wall with ¾" crushed stone. Making sure that the perforated holes are pointed down.

5. Place successive courses by stacking wall units on top of the previous row using the connectors in the appropriate position. Ensure that the wall joints are staggered as you go.

6. Depending on the style of wall, units will interconnect and automatically be set back with the connectors or lip.

7. Backfill with ¾" crushed stone 12" behind each course and compact.

8. Finish the wall by attaching coping or cap units with quality adhesive.