

MagnumStone™

by CORNERSTONE®



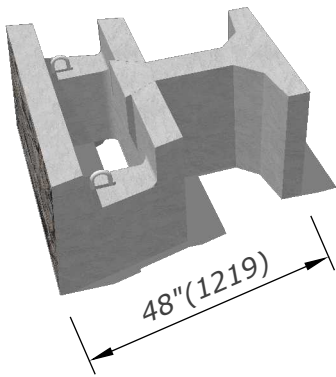
GRAVITY RETAINING WALL TECHNICAL MANUAL

MagnumStone™

by CORNERSTONE®

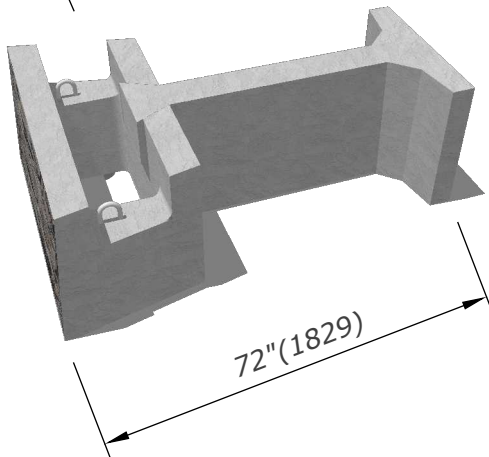
The user is responsible for the final design and use of the CornerStone® products. All drawings, illustrations, and text are accurate to the best of our knowledge but a qualified engineer shall do the analysis and structural design for all aspects of the segmental retaining wall project. The sole responsibility of the suitability of the products or information in this manual lies with the user.





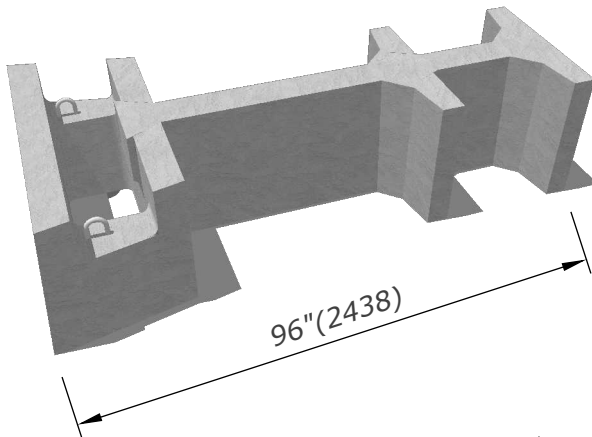
48"(1219)

Height	24"	610mm
Depth	48"	1219mm
Face Width	48"	1219mm
Back Width	39"	991mm
Weight	1920 lbs	870 Kgs
Volume Voids	18.2 ft3	0.511m3
Gravel Filled Weight	3925 lbs	1780kg



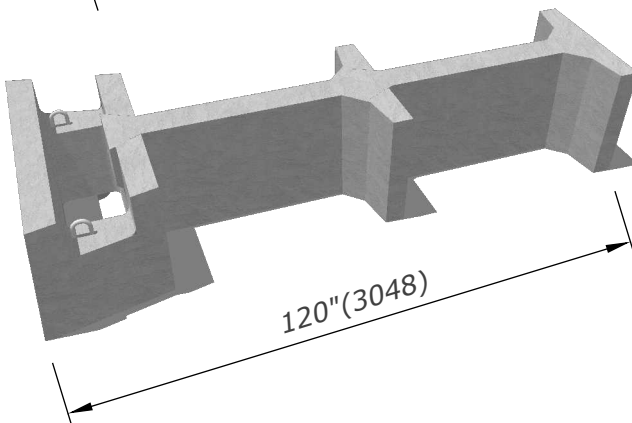
72"(1829)

Height	24"	610mm
Depth	72"	1829mm
Face Width	48"	1219mm
Back Width	39"	991mm
Weight	2220 lbs	1006 Kgs
Volume Voids	31.9 ft3	0.894m3
Gravel Filled Weight	5732 lbs	2600 Kg



96"(2438)

Height	24"	610mm
Depth	96"	2438mm
Face Width	48"	1219mm
Back Width	39"	991mm
Weight	2795 lbs	1267 Kgs
Volume Voids	45.4 ft3	1.271m
Gravel Filled Weight	7789 lbs	3353 K g

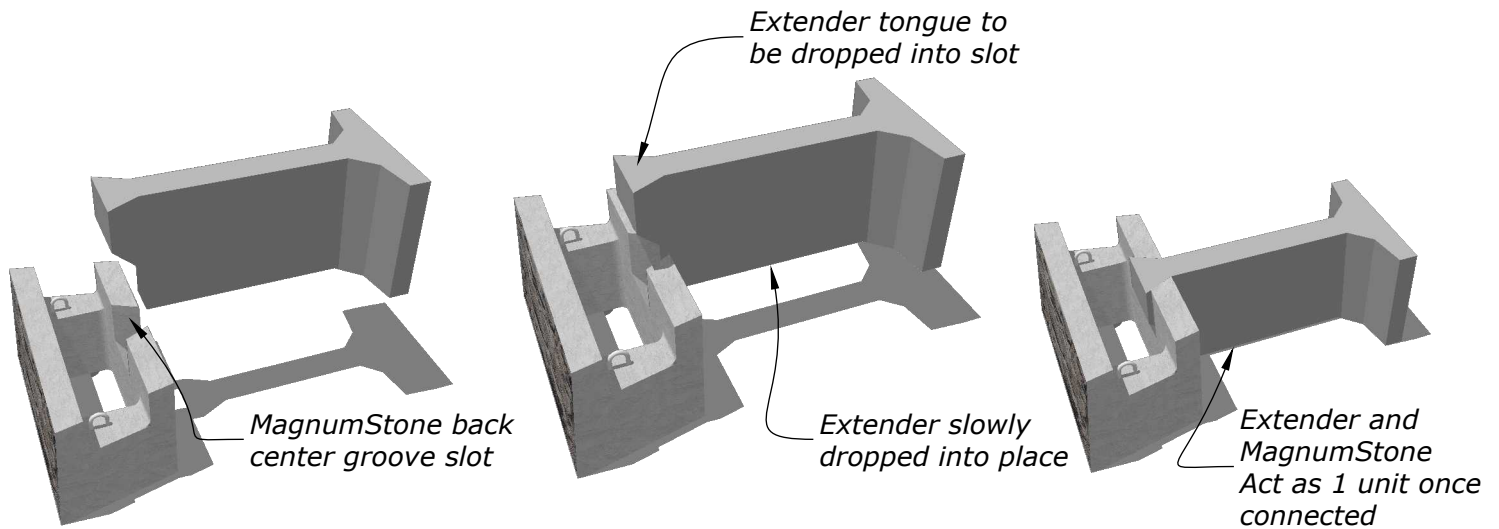


120"(3048)

Height	24"	610mm
Depth	120"	3048mm
Face Width	48"	1219mm
Back Width	39"	991mm
Weight	3098 lbs	1405 Kgs
Volume Voids	54.8 ft3	1.534m3
Gravel Filled Weight	9126 lbs	4139 Kg

Extender to MagnumStone block installation

After the MagnumStone block with the extender has been laid in it's appropriate place the extender unit is slowly dropped into the back center hollow portion. Once connected the MagnumStone and extender will act as 1 unit and be secured with back fill materials and compaction.

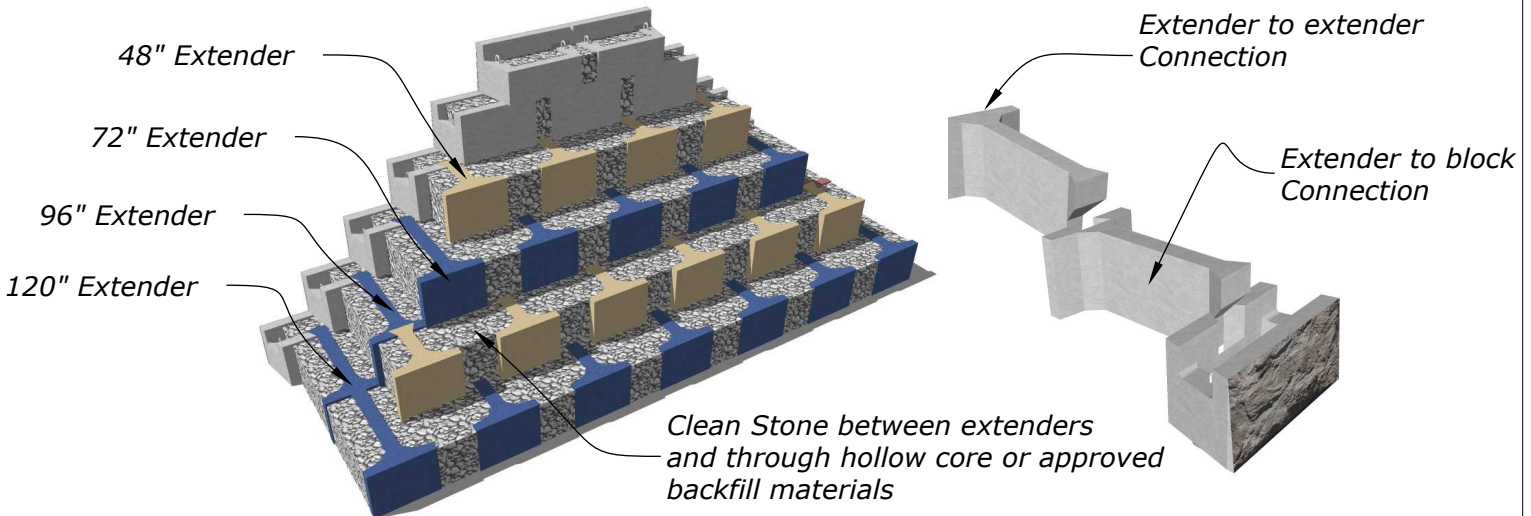


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Extender to Extender Installation

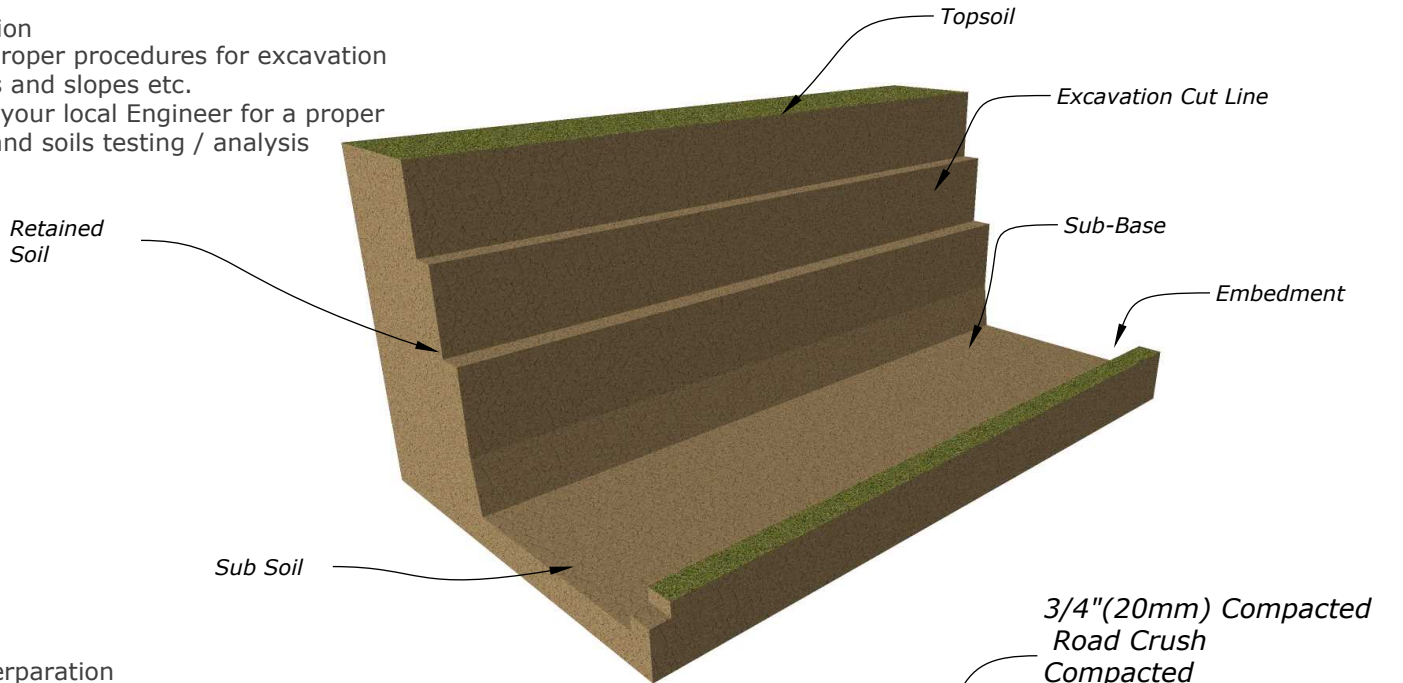
MagnumStone extenders can be used in any combination of standard lengths. The design will be based on what is best suited for the soils and loads. MagnumStone engineering design software will allow the user to choose what is best suited for the project.

Once a back fill is chosen the contractor can backfill and compact around the extender units. Typically a free draining material clean stone or approved material will be used.



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Excavation
Follow proper procedures for excavation cut lines and slopes etc.
Consult your local Engineer for a proper design and soils testing / analysis



Base Preparation
Follow proper procedures for excavation cut lines and slopes etc.

The width of the base leveling pad should be the depth of the block and or extender(s) on the first course plus 6" (152mm) front and back.

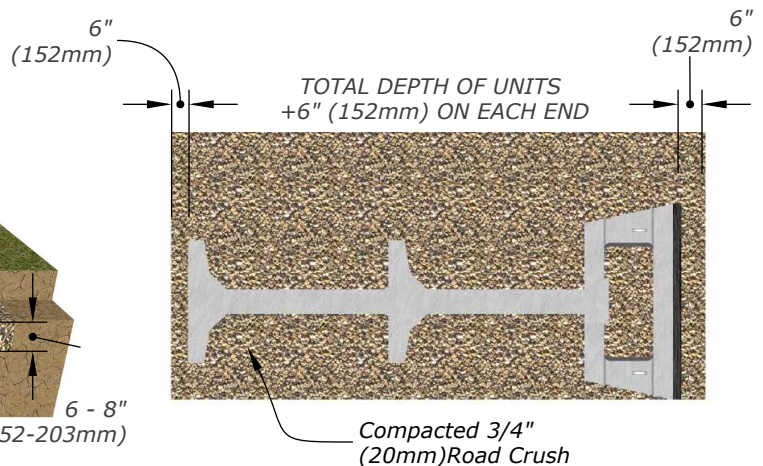
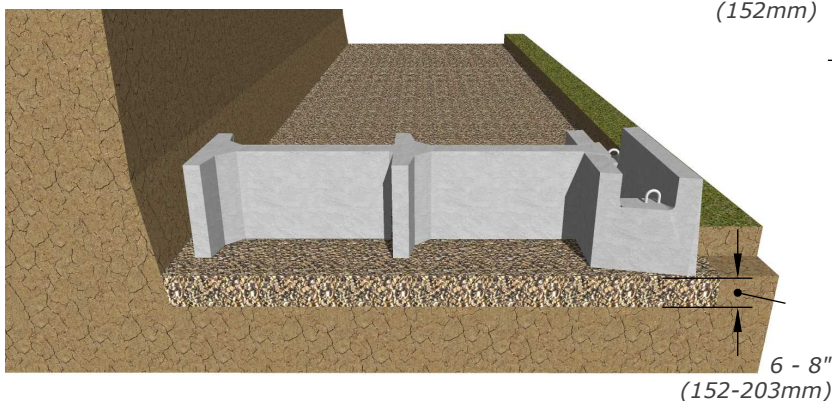
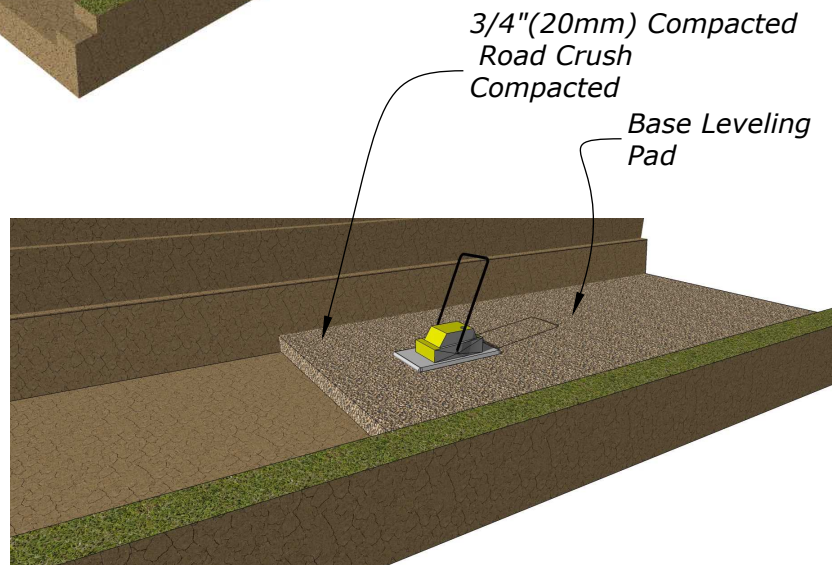
example for a standard unit
24" + 6"(front) + 6" (back)
= 48" total

Material should be a 3/4" (20mm) road crush or equivalent

The depth of the leveling pad should be minimum of 6" thick compacted to 95% standard proctor density.

Soil separating fabrics may be used between the sub-base and leveling pad.

MagnumStone Block Installation
All MagnumStone Units shall be installed and leveled front to back and side to side

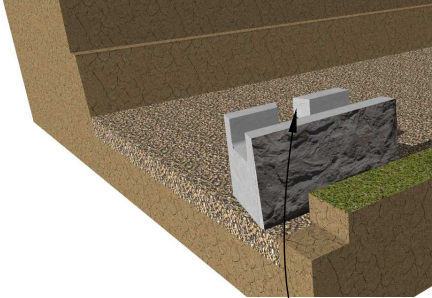


MagnumStone block and extender installation

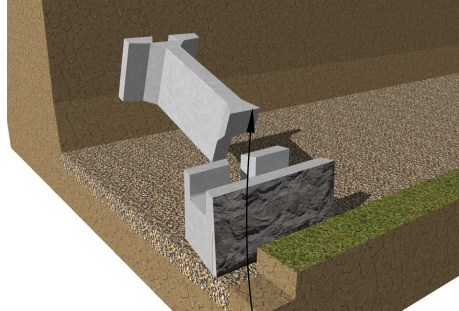
Install the MagnumStone base block on the leveling pad. The base block should not have the lugs on the bottom. Ensure that the blocks are level front to back and side to side.

Place the tongue of the extender block inside the groove of the MagnumStone block

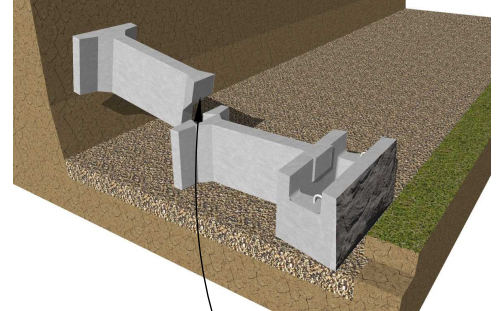
If extender to extender blocks are required place them in the same manner as the previous ensuring that the blocks stay level and true.



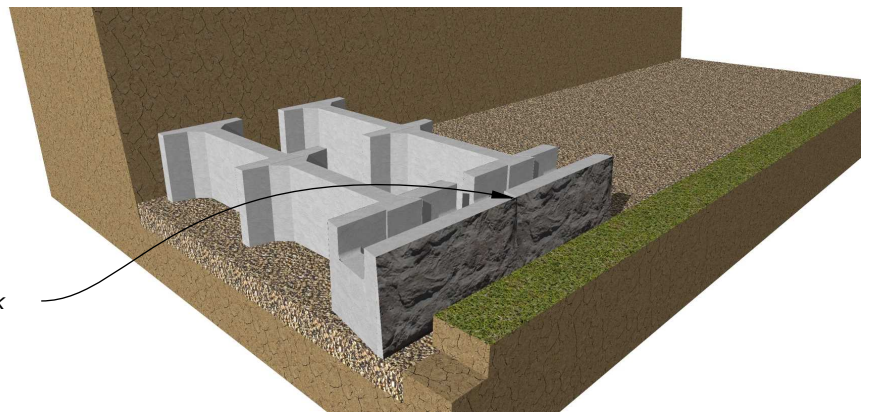
MagnumStone Groove Slot



Extender tongue inserted into groove slot



Extender to Extender groove and tongue connection



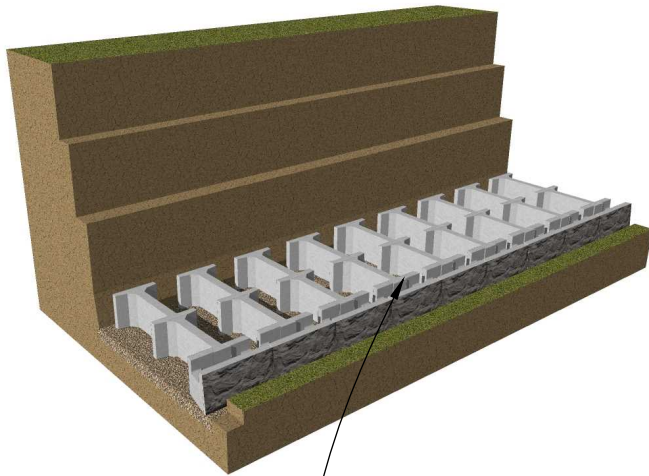
Place the next row of blocks level and aligned front to back and side to side

Backfill MagnumStone blocks and extender units

Backfilling the MagnumStone blocks and extender units with a clear crush gravel (#57 Stone) slightly above the units. Run a plate vibratory compactor over the stones and units allowing them to settle in the hollow cores. Sweep any excess stones off the top of the units and blocks.

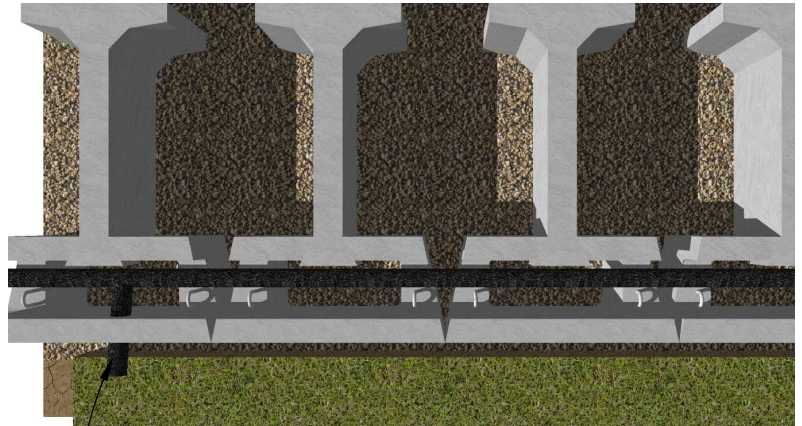


Drainage



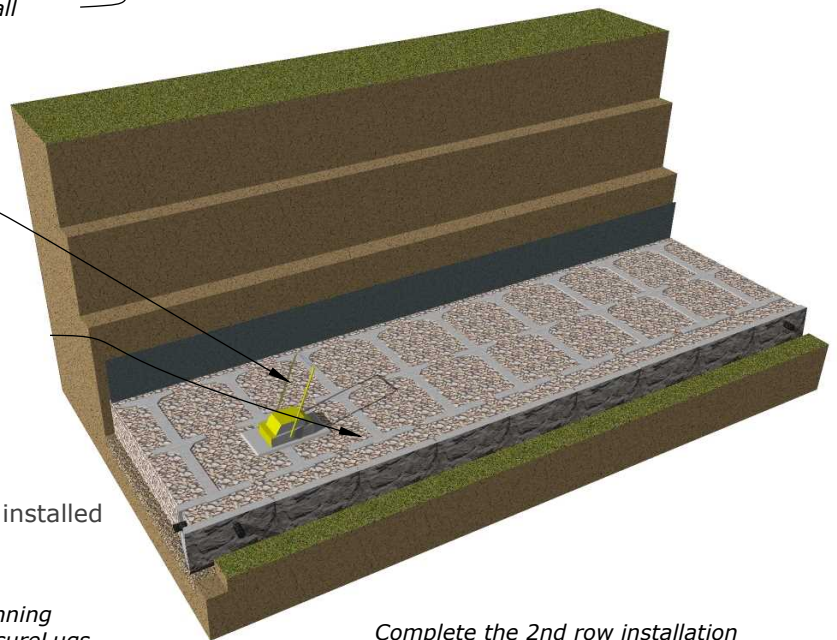
*Finish laying the
MagnumStone Units
and Extenders*

*4" Perforated Drain Pipe
Daylight front of wall
min 35ft (11m)*



*Back Fill the Hollow cores and
between extender units with clean
stone or approved Backfill*

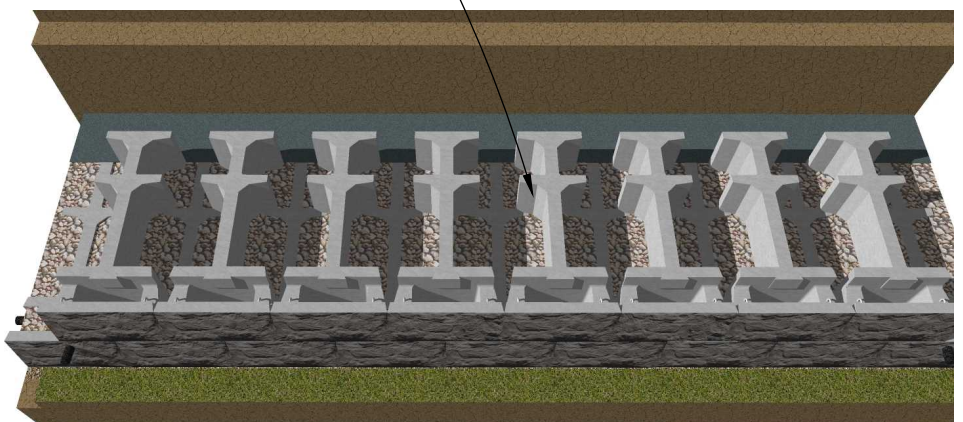
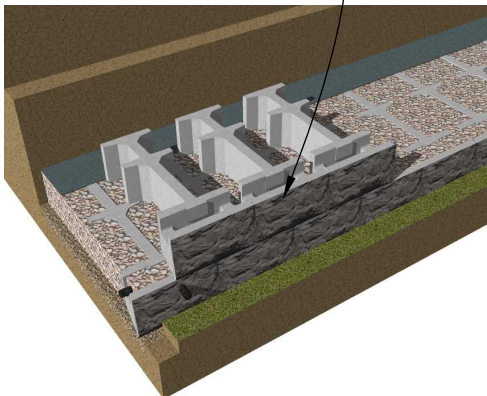
*Install the drain gravel slightly above the
the units and compact with a plate vibratory
compactor. Sweep access rock and debris
off the blocks before installing the next course*



MagnumStone Block and Extender Installation
Every MagnumStone block and extender unit should be installed
with proper care ensuring they are level and aligned

*Lay the Next row on a running
Bond pattern with the SecureLugs
Connected in the hollow core below*

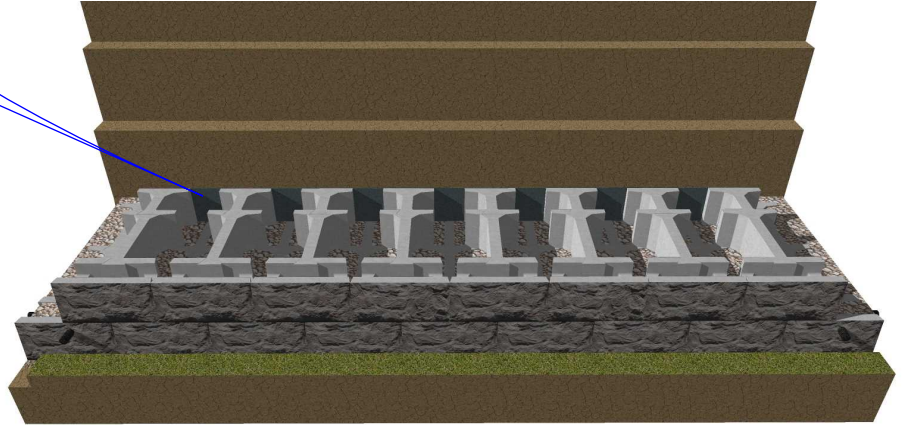
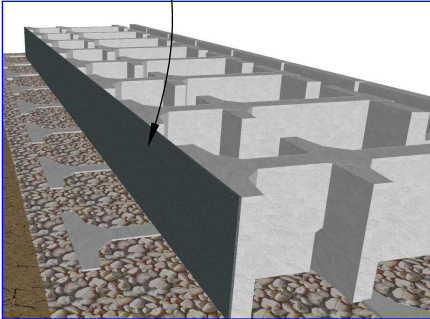
*Complete the 2nd row installation
ensuring everything is level*



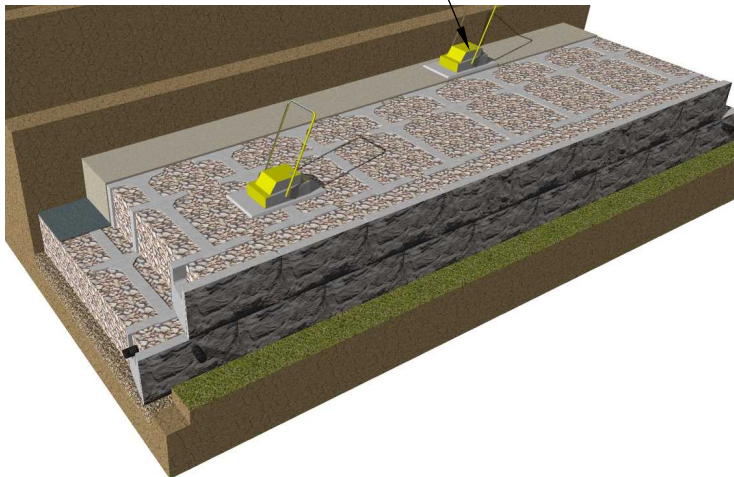
Soil Separation Fabric

Install a soil separating fabric to separate the fines and compacted backfill material from the drainage aggregate. The filter fabric can be installed directly behind the MagnumStone extender units.

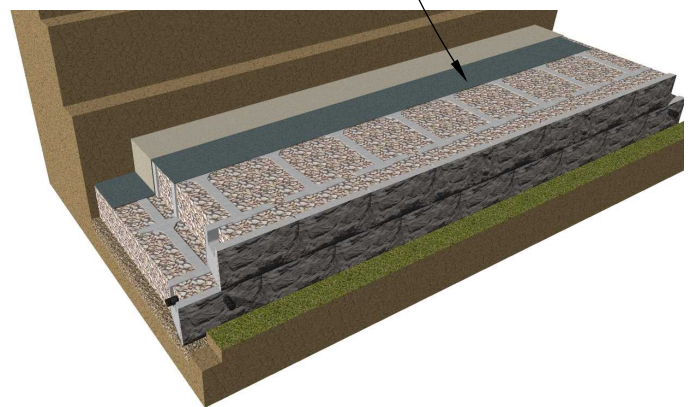
Filter fabric installed at the back of the extender units



Compact the approved backfill material behind the filter fabric



Filter fabric wrapped around clean gravel to stop fines from migrating



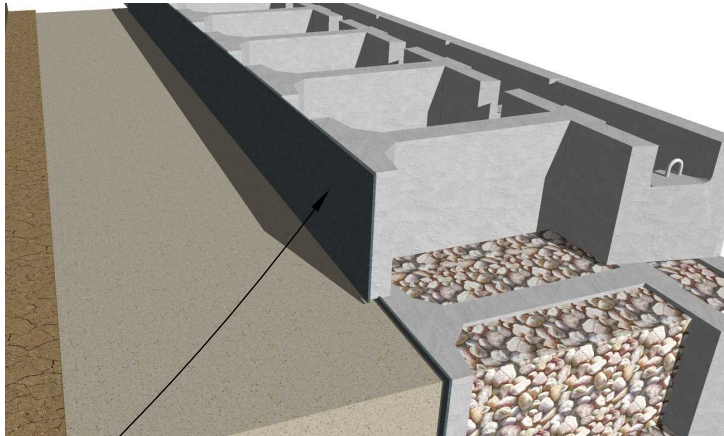
Compaction

Once the blocks have been placed and leveled compact the approved backfill materials.



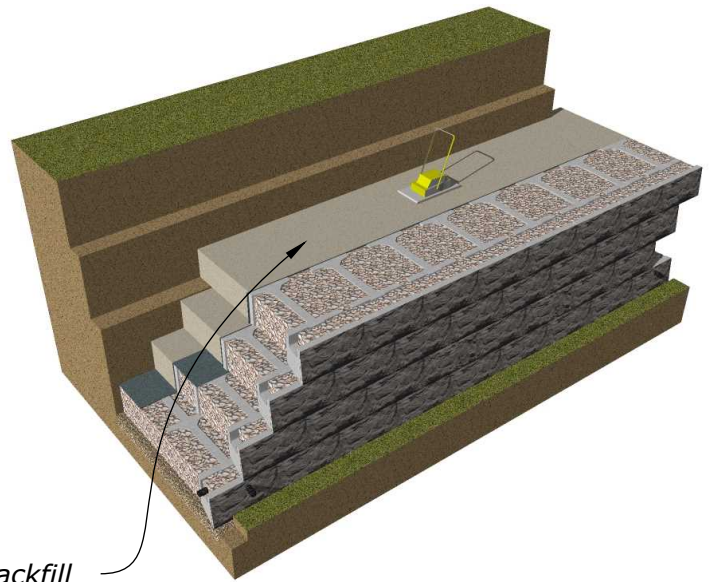
installation

Ensure that proper installation procedures and techniques are being used while installing each course. The blocks should be installed and levelled front to back and side to side.

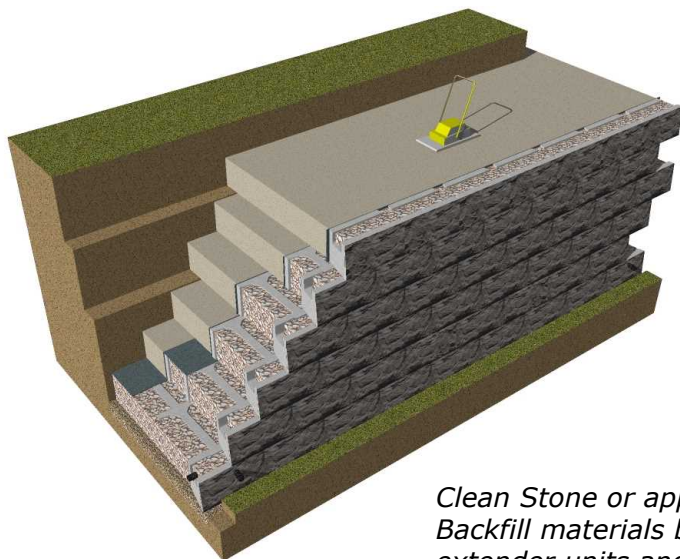


Filter fabric placed behind extender units

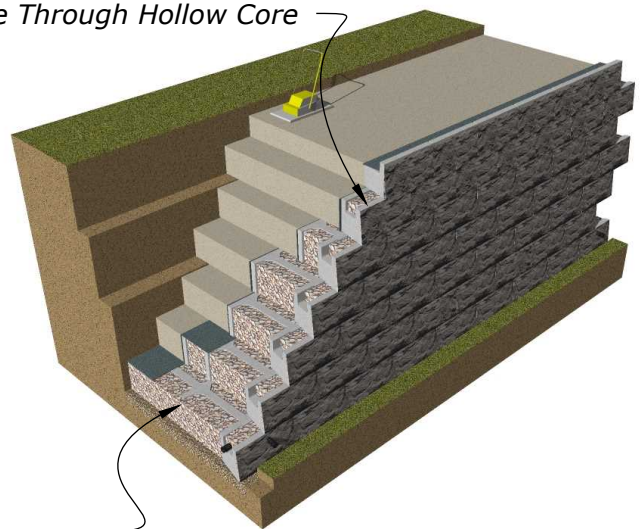
Approved compacted backfill



Drainage Through Hollow Core

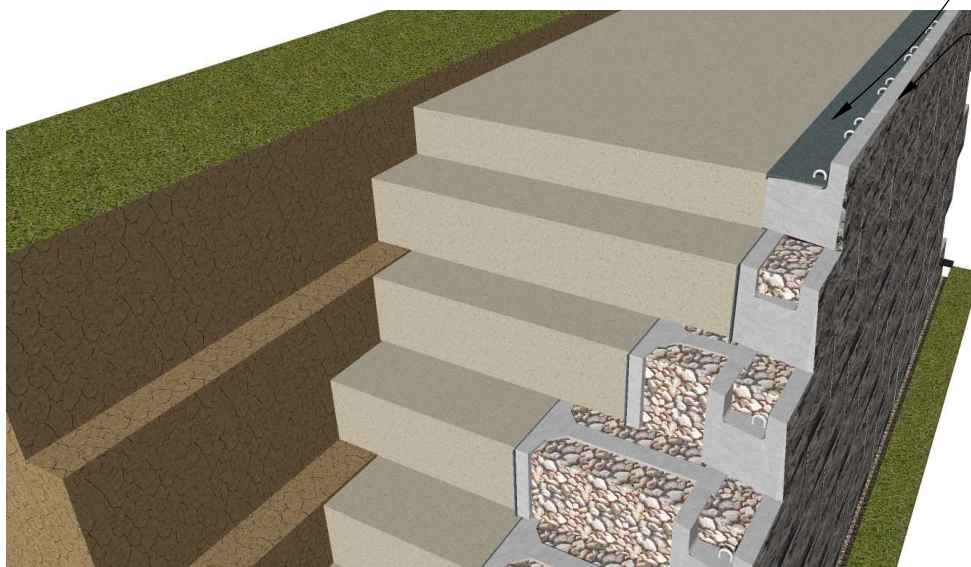


Clean Stone or approved Backfill materials between extender units and inside hollow cores

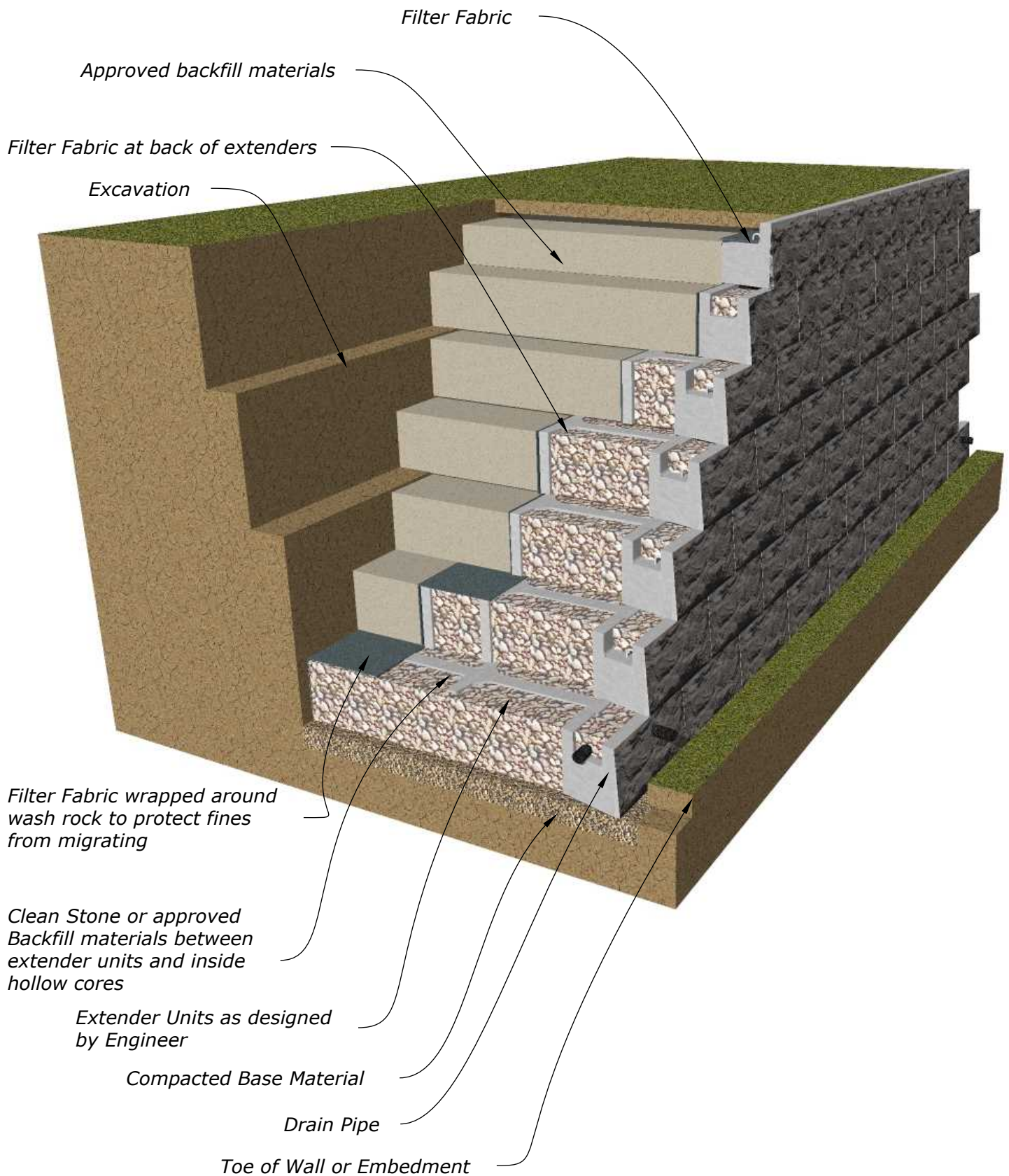


Filter Fabric

MagnumStone Top Unit



Typical Completed Cross Section

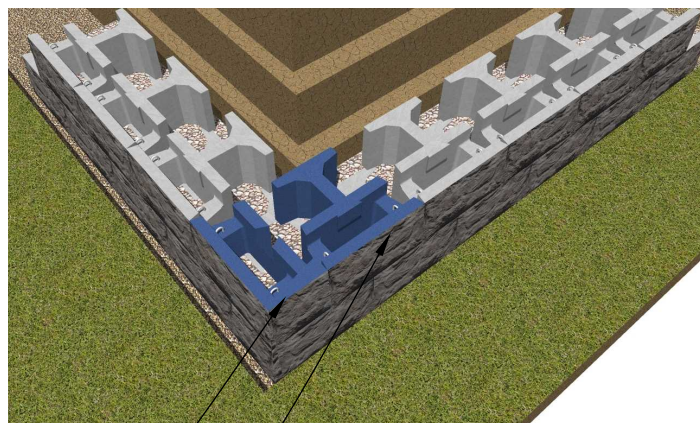
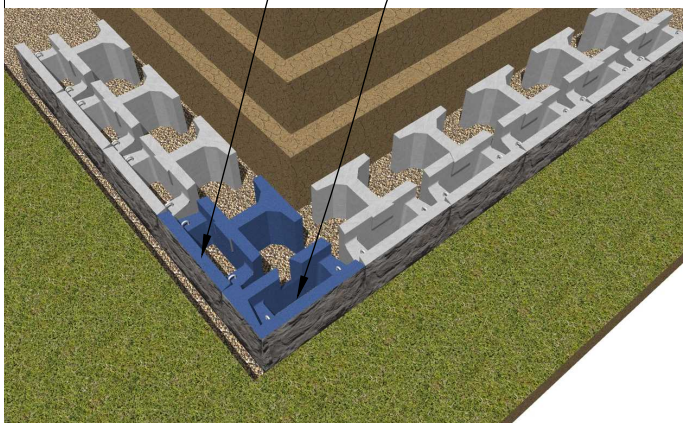


48" (1219) Extender Outside Corner

Corners in retaining walls are unavoidable. With the MagnumStone gravity system we have developed a solution that fits any situation.

48" (1219) Extender & Base Block

Corner / End Cap Base Block



Standard Corner / End Cap

48" (1219) Extender & Standard Block

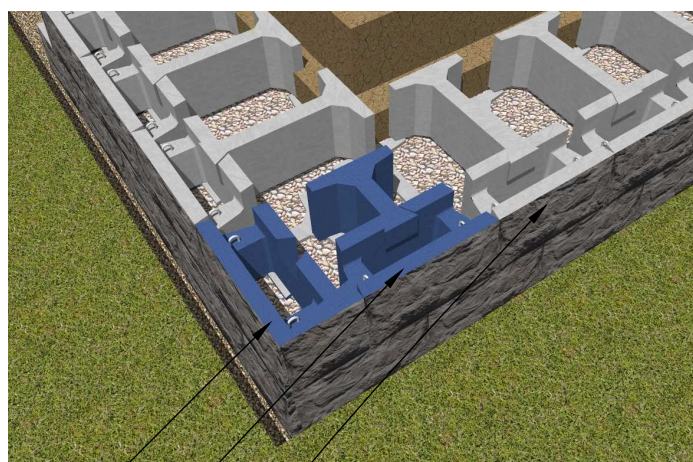
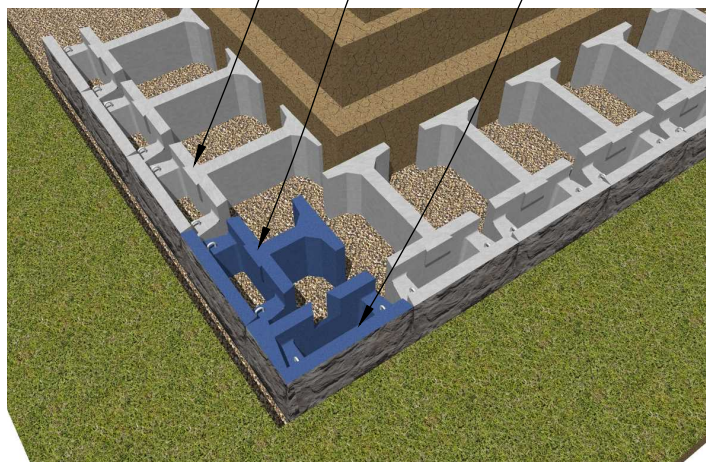
72" (1829) Extender Outside Corner

- Follow proper procedures for excavation cut lines and slopes etc.

72" (1829) Extender & Base Block

48"(1219) Extender & Base Block

Corner / End Cap Base Block



Standard Corner / End Cap

48"(1219) Extender & Standard Block

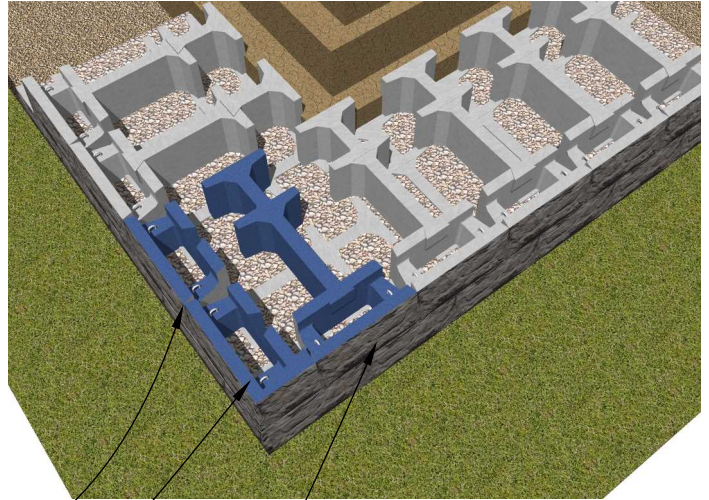
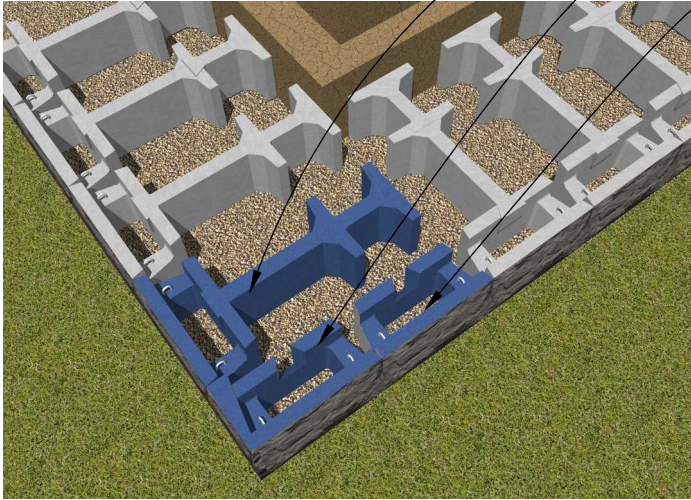
72"(1829) Extender & Standard Block

96" (2438) Extender Outside Corner

96" (2438)

Corner End Cap Base Block

Standard Base Block



Standard Block

Standard Corner End Cap

96" (2438) extender

120" (3048mm) Extender Outside Corner

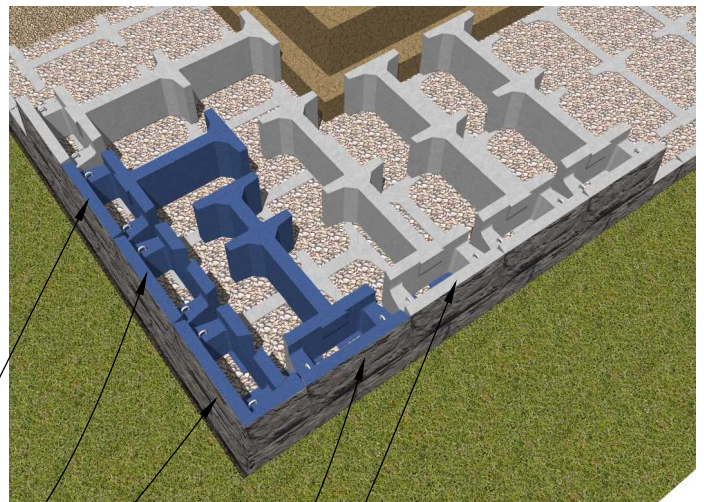
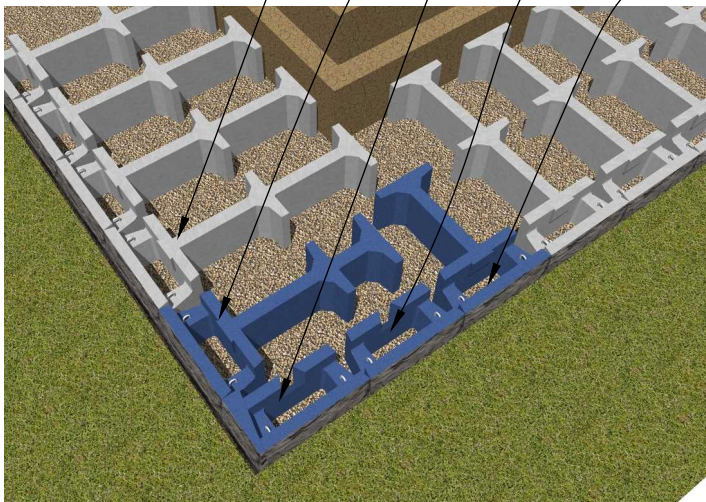
120" (3048) Extender Base Block

96"(2438) Extender

Corner End Cap Base Block

Standard Base Blocks

72"(1829) Extender



72"(1829) Extender

Standard Block

Standard Corner End Cap

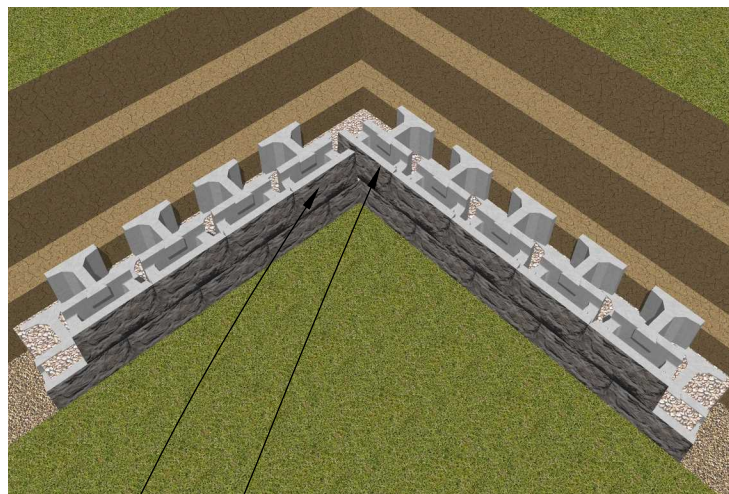
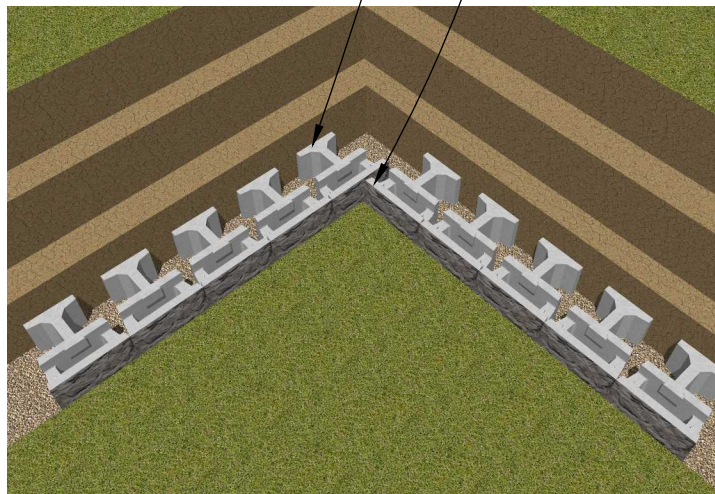
96"(2438) Extender

120"(3048) Extender

48" (1219) Extender Inside Corner

48"(1219) Extender & Base Block

48"(1219) Extender & Base Block in Middle of adjacent block



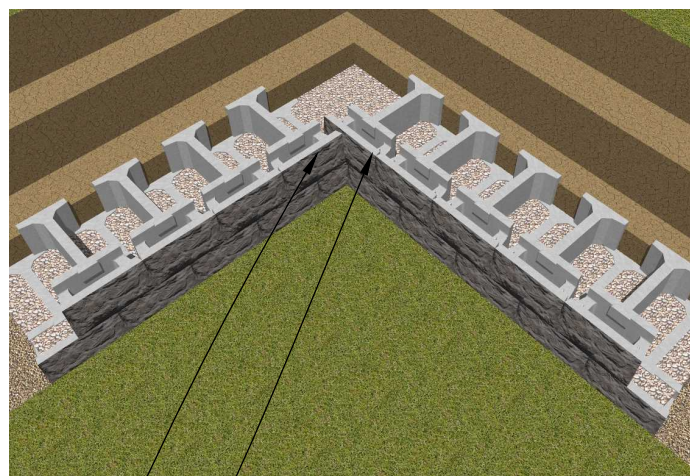
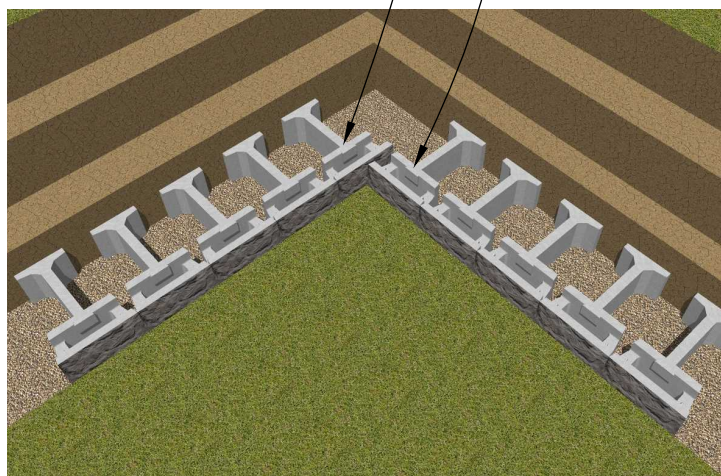
48"(1219) Extender & Standard Block
in Middle of Adjacent Block

48"(1219) Extender & Standard Block

72" (1829) Extender Inside Corner

72"(1829) Extender & Base Block

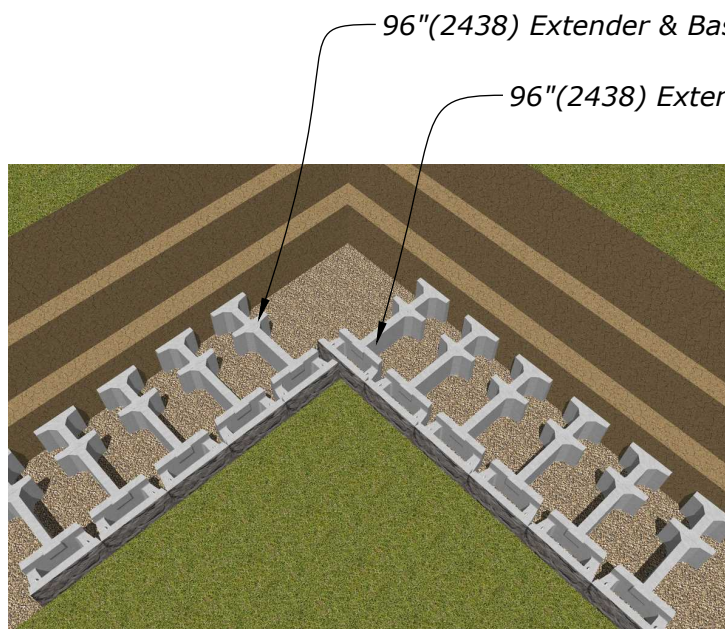
72"(1829) Extender & Base Block
in Middle of Adjacent Block



72"(1829) Extender & Standard Block
in Middle of Adjacent Block

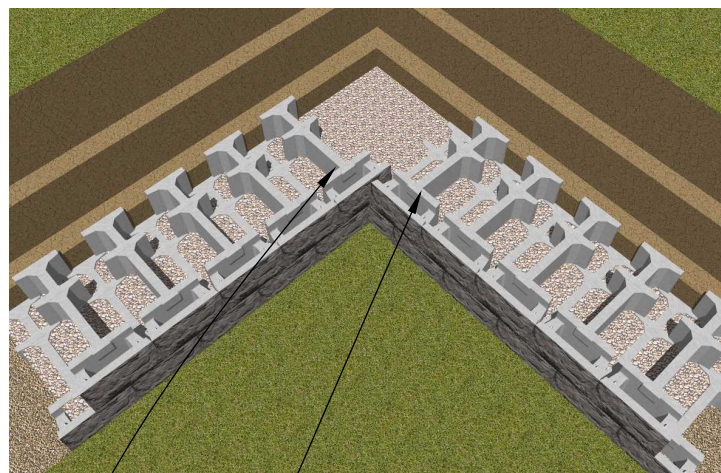
72"(1829) Extender & Standard Block

96" (2438) Extender Inside Corner



96" (2438) Extender & Base Block Placed in Middle of Adjacent Block

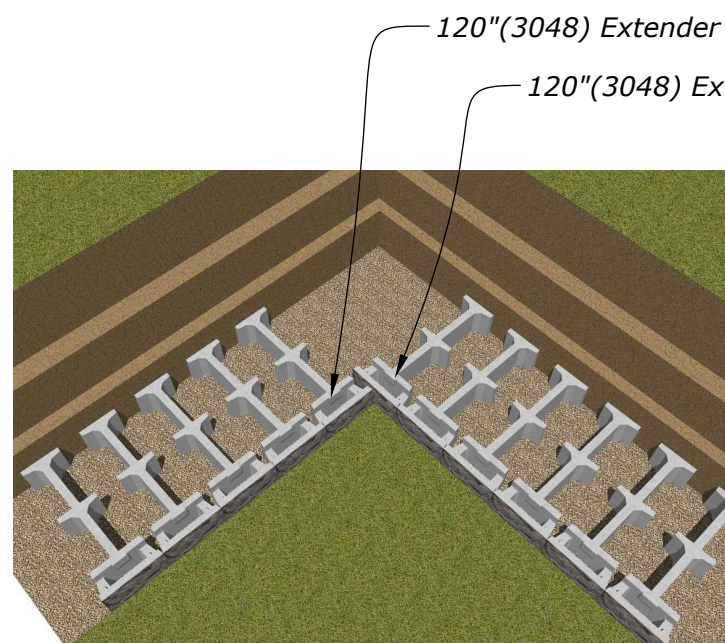
96" (2438) Extender & Base Block



96" (2438) Extender & Standard Block

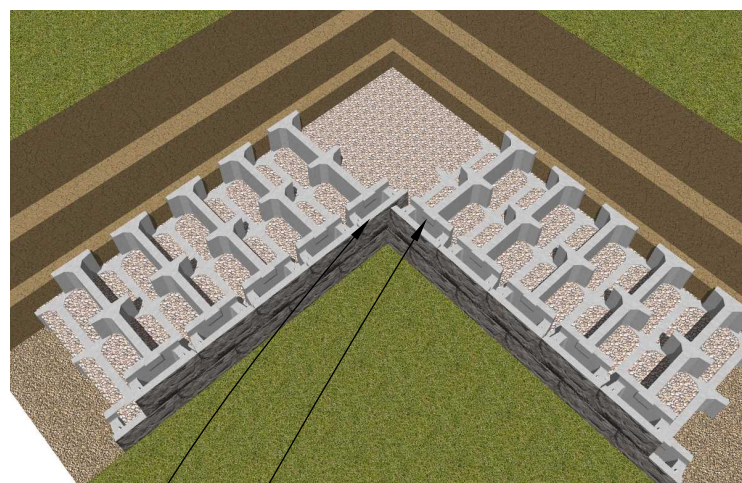
*96" (2438) Extender & Standard Block
Placed in Middle of Adjacent Block*

120" (3048mm) Extender Inside Corner



120" (3048) Extender & Base Block Placed in Middle of Adjacent Block

120" (3048) Extender & Base Block

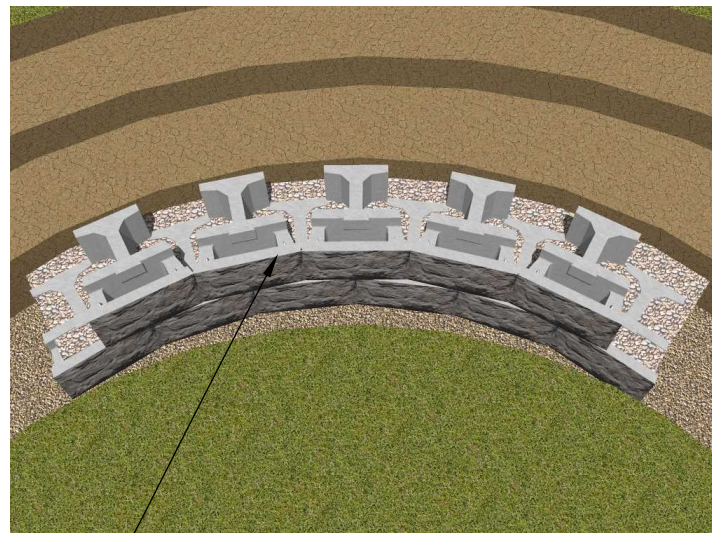
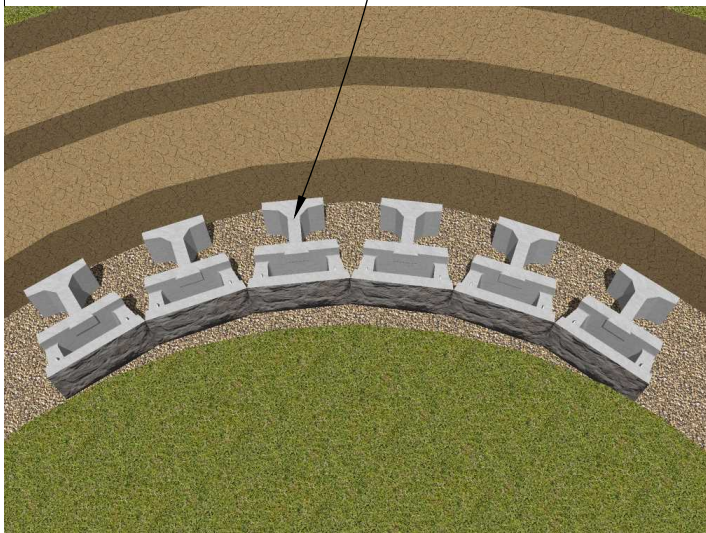


120" (3048) Extender & Standard Block

*120" (3048) Extender & Standard Block
Placed in Middle of Adjacent Block*

48" (1219) Inside Curve

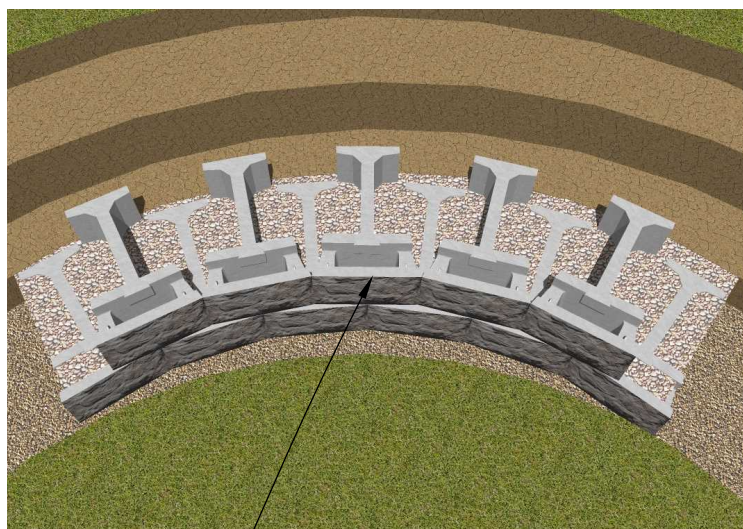
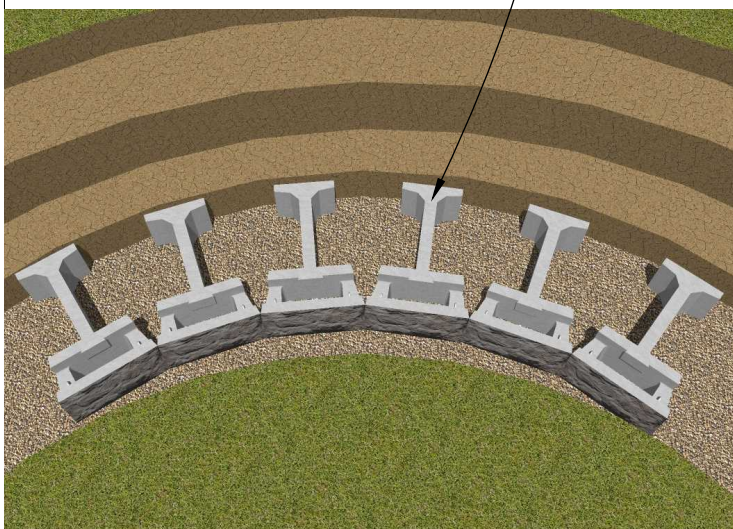
48"(1219) Extender & Base Block



48"(1219) Extender & Standard Block

72" (1829mm) Inside Curve

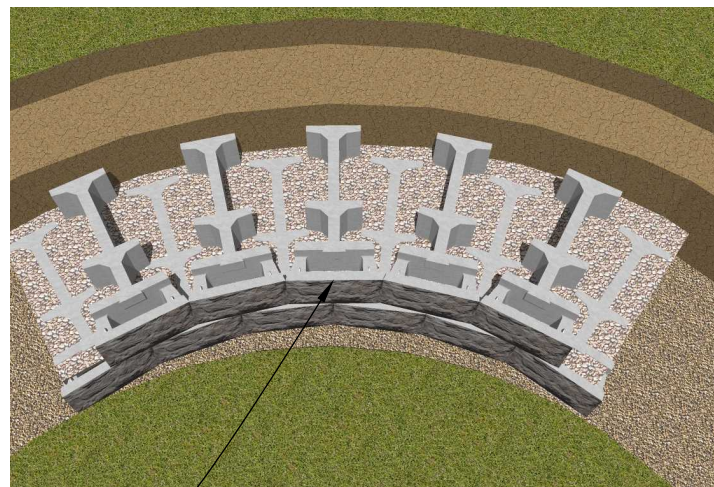
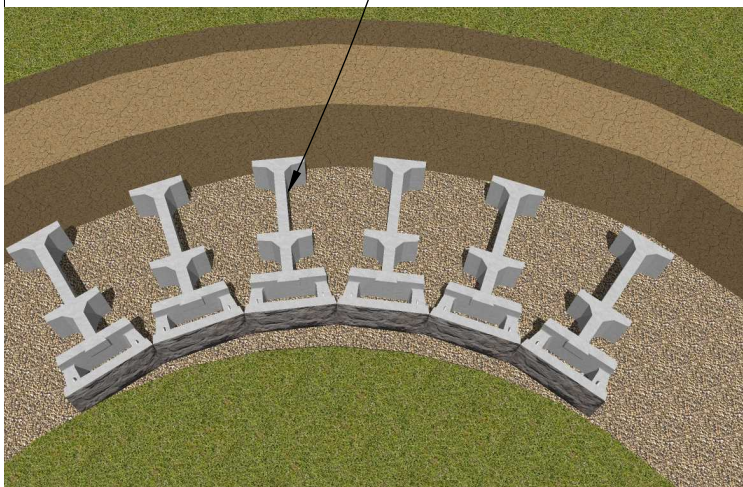
72"(1829) Extender & Base Block



72"(1829) Extender & Standard Block

96" (2438) Inside Curve

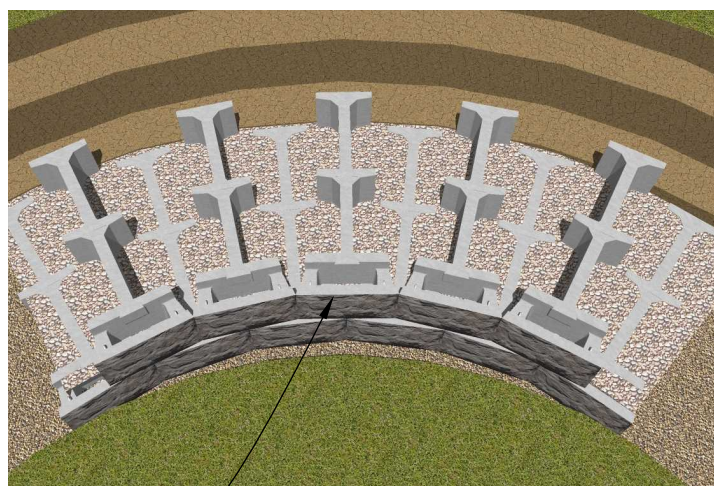
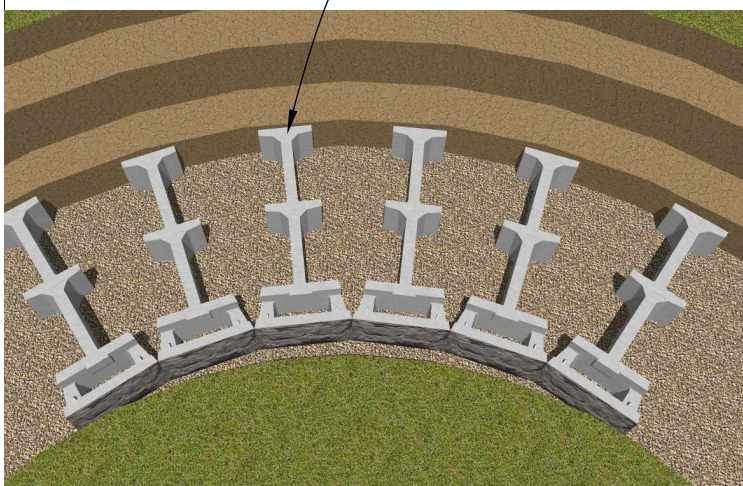
96"(2438) Extender & Base Block



96"(2438) Extender & Standard Block

120" (3048mm) Inside Curve

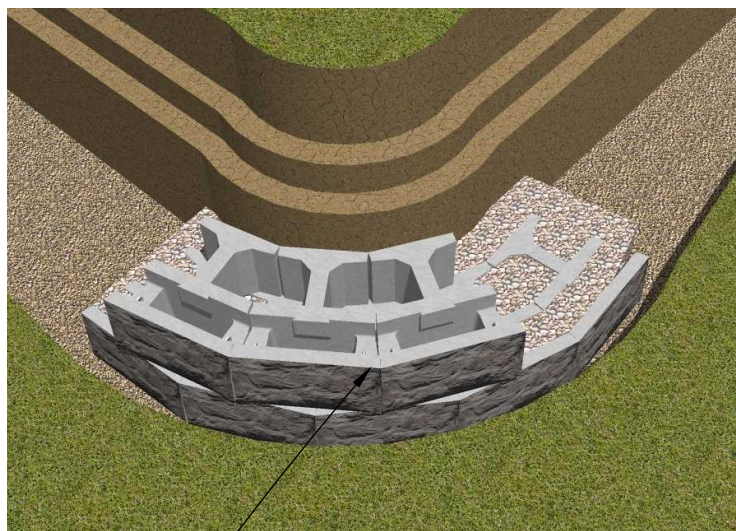
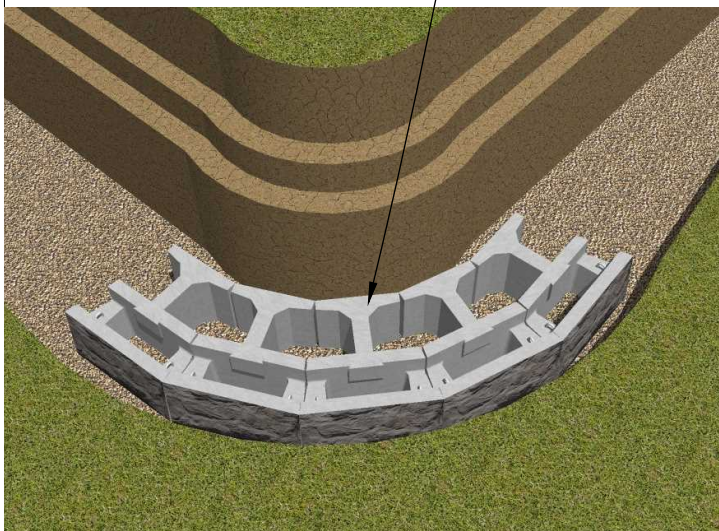
120"(3048) Extender & Base Block



120"(3048) Extender & Standard Block

48" (1219) Outside Curve

48"(1219) Extender & Base Block

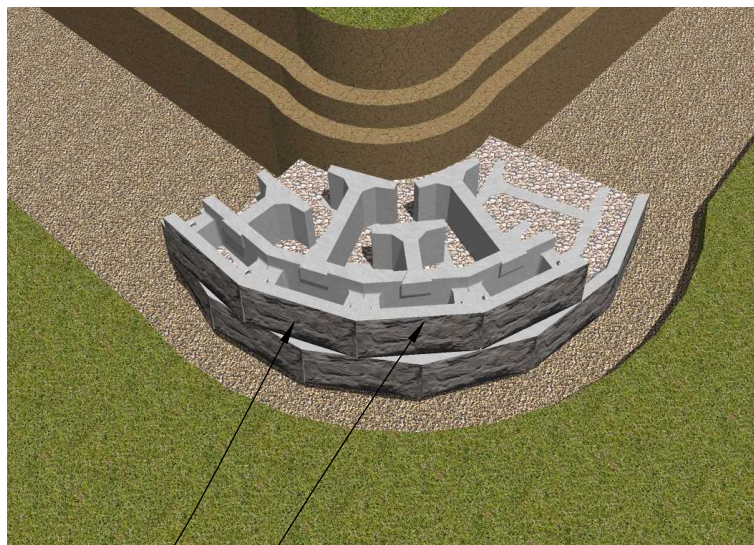
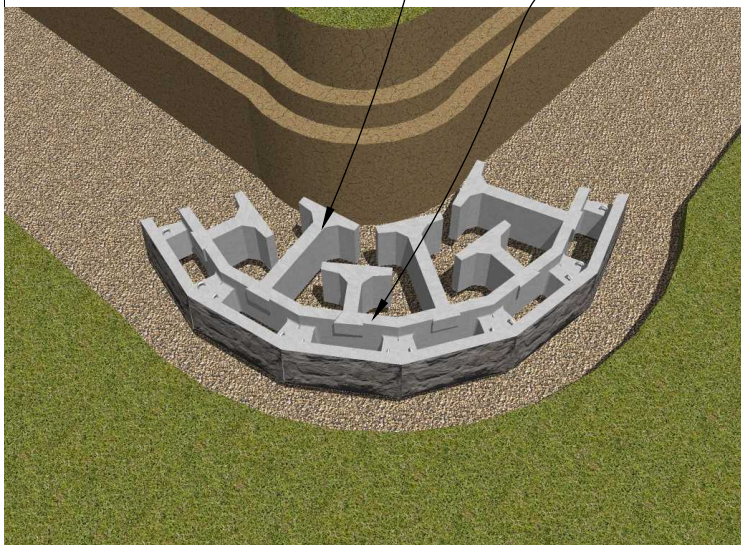


48"(1219) Extender & Standard Block

72" (1829mm) Outside Curve

72"(1829) Extender & Base Block

48"(1219) Extender & Base Block



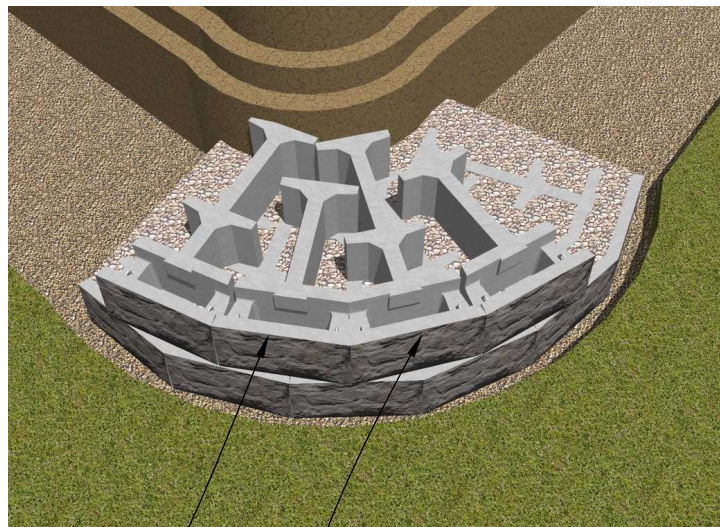
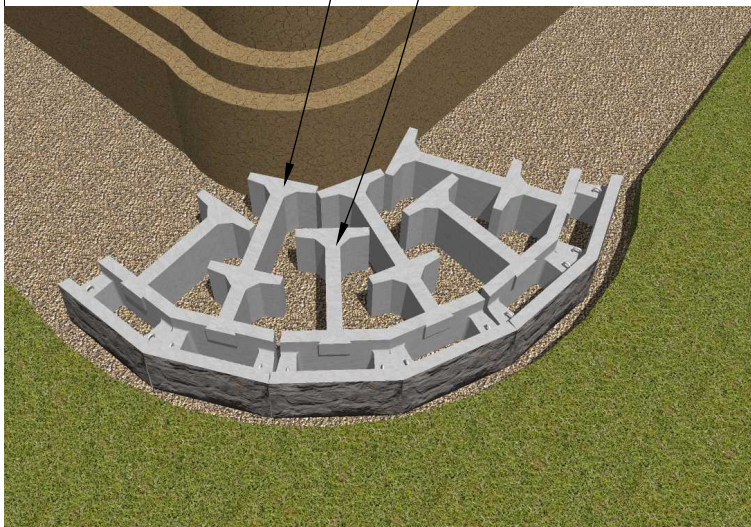
72"(1829) Extender & Standard Block

48"(1219) Extender & Standard Block

96" (2438) Outside Curve

96"(2438) Extender & Base Block

72"(1829) Extender & Base Block



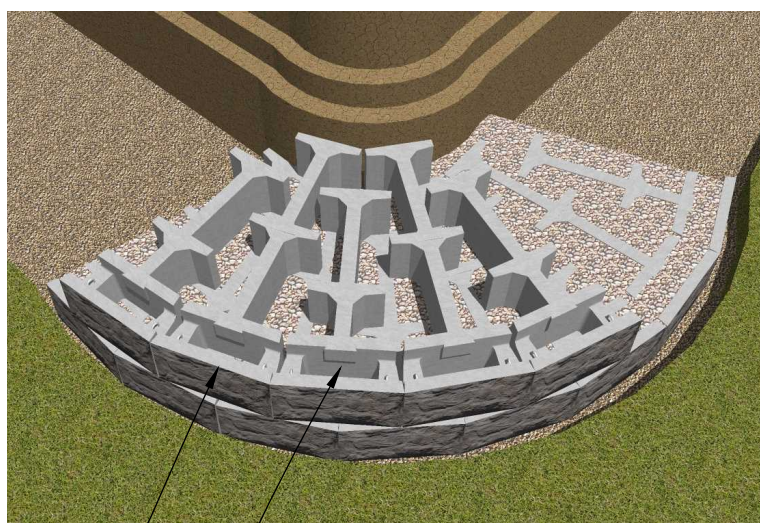
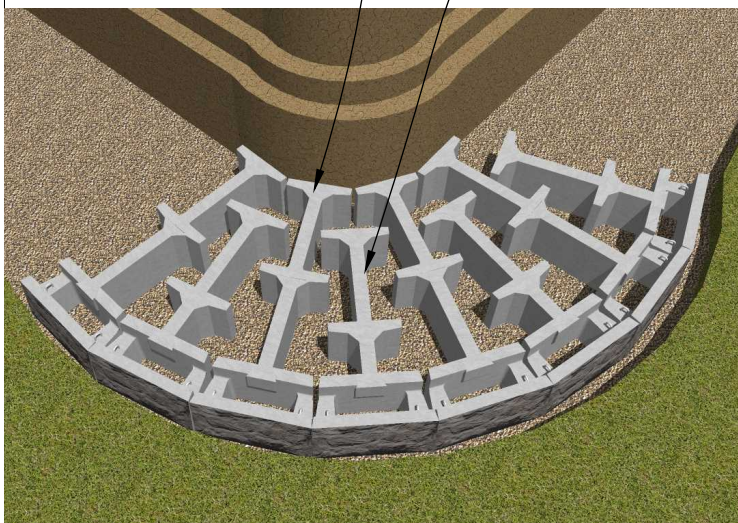
72"(1829) Extender & Standard Block

96"(2438) Extender & Standard Block

120" (3048mm) Outside Curve

120"(3048) Extender & Base Block

96"(2438) Extender & Base Block



120"(3048) Extender & Standard Block

96"(2438) Extender & Standard Block