

**Installation
Specifications
and Guidelines for**

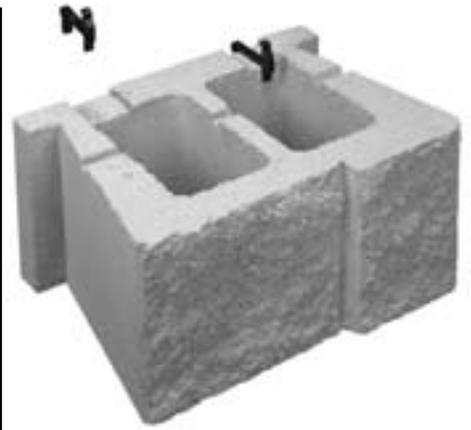
StoneWall[®] SELECT[®]

**Engineered for
superior strength,
the beauty of
natural stone, and
unrivaled versatility.**

ICD[®]
Corporation
Innovative Concrete Design

Different & Better

Perfectly proportioned, without the overpowering “stacked-tire” look – never appearing too large or too small. And pull-out and shear capacity tests prove that StoneWall SELECT’s hollow core system provides superior connection with geogrids. Nothing stacks up like StoneWall SELECT.



Introduction to the finest retaining wall system available

StoneWall SELECT combines the best of all retaining wall units, in a system that goes up faster and easier than any other product on the market today.

A natural fit in any landscape.

With a highly textured, split face that simulates the rugged, rough-hewn beauty of real rock, StoneWall SELECT is perfectly scaled to look naturally good in retaining walls of any size or height, in any commercial, residential, or governmental project.

More economical than poured concrete... superior to wood

StoneWall SELECT installations cost 25-40% less than poured concrete walls. Due to its multiple, mortarless joints, StoneWall SELECT provides flexibility not available in monolithic, poured walls and yet offers the same durability and zero-maintenance of concrete. When compared to treated timbers and railroad ties, StoneWall SELECT will never decay, splinter, or split. And StoneWall SELECT contains no environmentally harmful preservatives.

Simple, fast, mortarless installation.

StoneWall SELECT is engineered to be the easiest retaining wall system to install. No mortar is needed. The StoneWall SELECT System can be installed quickly and easily.

Two interlock clips fit into the pre-cut grooves on the top of each unit’s back. Units in the next course are stacked in half bond to overlap the units in the course below, then slid forward and “snugged” up against the interlock clips.

Lightweight and easy to handle.

Up to 43% lighter and much less cumbersome than other concrete retaining wall blocks, each StoneWall SELECT unit can be easily lifted, carried and set in place by just one laborer.

Corrosion-proof interlock clip.

The glass-filled polymer clips used to interlock the StoneWall SELECT units are a proven, durable connection system that resists decay, corrosion and deterioration and easily stands up to high subsurface stresses and forces.

Built-in 3/4” set-back.

The unique design of the interlock clips and the tapered cores of the StoneWall SELECT units provide an automatic set-

back of 3/4” per course.

Complete design flexibility.

StoneWall SELECT easily accommodates any design requirement, including steps and stairways, corners, inside or outside curves, serpentine walls and walls up to 40’ high with geogrid reinforcement.

Comprehensive technical support.

Design charts, section drawings, case studies and engineering data covering most retaining wall applications are available in this manual or upon request. For walls 3’ and above, see page 6 for constructing taller walls.

Extensive testing of the StoneWall SELECT system has been completed. Test reports on the Shear Connection between StoneWall SELECT units, Geogrid Reinforcement Connection with the StoneWall SELECT units, and a Field Test on a 20’ wall are available from our office upon request.

Table of Contents	Page
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Introduction	
Product Profile	2
StoneWall SELECT System	3
Specification Guidelines	4-5
Installation	
Basic Wall	3, 5
Walls above three feet	6
Terracing	6
Geogrid Placement	6, 7
90° Corners	7
Curved & Serpentine Wall	8
Knock-off Wings	8
Steps	8-9
Minimum Wall Embedment	10
Finishing	11
Lighting	12
Special Applications	
Submerged Walls	10
Surcharged Walls	10
Guide & Guard Rails, Fence Posts	11

Product Profile for 16” and 18”

General:

Material	Heavy weight concrete
	125 lbs / ft ³ (2002 kg / m ³)
Compressive strength	3,000 psi (20.7 MPa)
	(net area)
Absorption	5 - 9%

StoneWall SELECT Unit:

Dimensions:	
Depth	12” (305 mm)
Height	8” (203 mm)
Length	16” (406 mm)
	18” (457 mm)
Coverage:	for 16” - 1.13 units / sq.ft.
	(12 units / m ²)
	(Example: 113 units = 100 sq.ft.)
	for 18” - 1.00 units / sq.ft.
	(10.8 units / m ²)
	(Example: 100 units = 100 sq.ft.)
Unit weight	for 16” - 65 lbs. (29 kg)
	for 18” - 70 lbs. (31.75 kg)
	varies with location
Wall weight filled for 16”	- 106 lbs. (48 kg)
	for 18” - 120 lbs. (54 kg)
Set-back/course	3/4” (19 mm)
Wall batter	5°
Minimum radius	4’9” (1.45 m)

Cap Units:

(Confirm cap selection with local licensee.)

Dimensions:	
Depth	13” (330 mm)
Height	3 5/8” (92 mm)
Length	8”/6” (203 / 152 mm)
Coverage:	
8”/6”	1.71 units / lin.ft.
	(5.57 units / lin. m)
Unit weight	30 lbs. (14 kg)

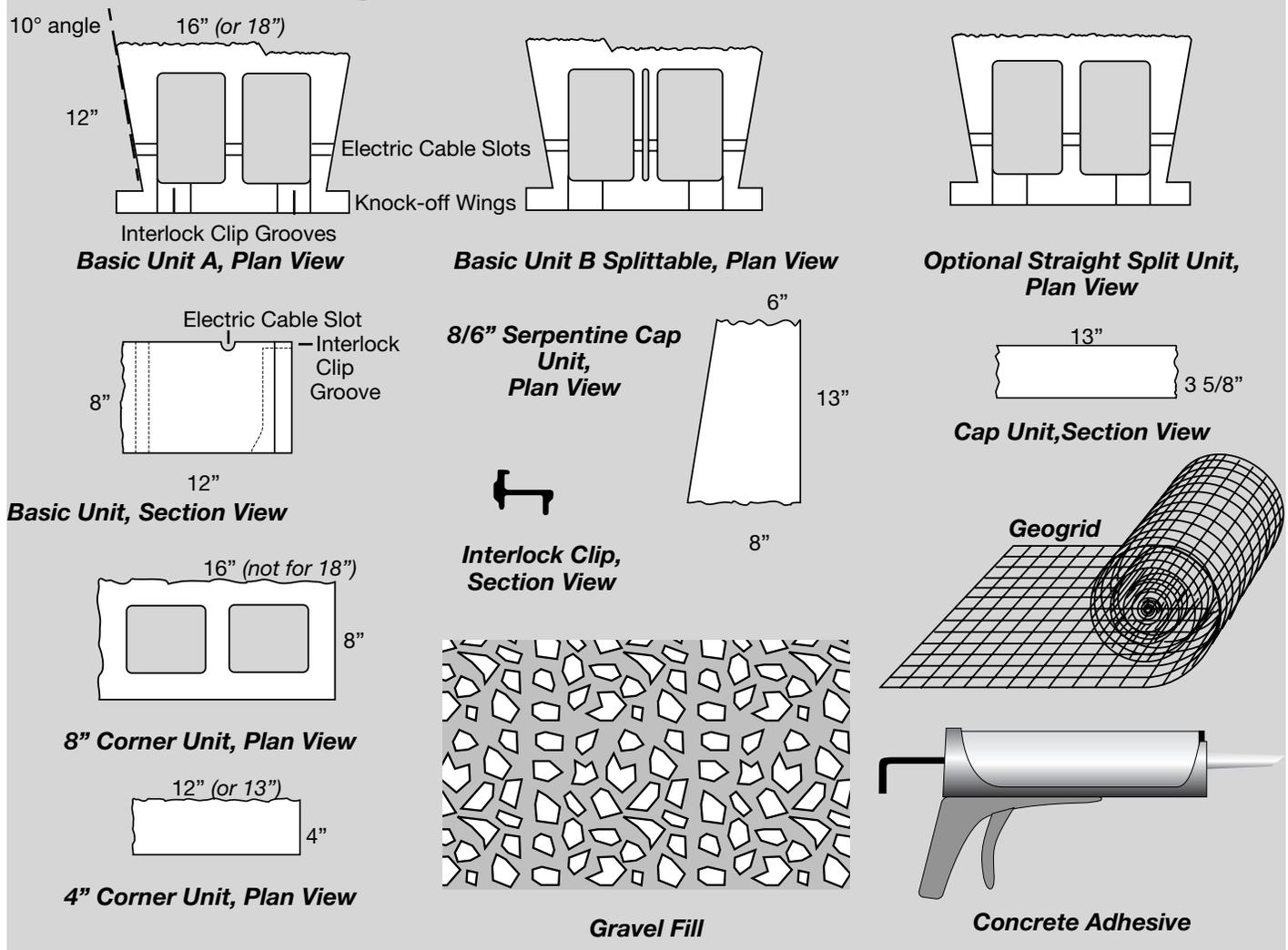
Interlock Clip:

Material	Glass filled polymer
Clip spacing	for 16” - 9” (229 mm)
	for 18” - 10” (254 mm)
Clips / Unit	2
Shear resistance at zero normal load	
	for 16” - 440 lbs. / ft. (655 kg / m)
	for 18” - 395 lbs / ft. (589 kg / m)

Colors: (Varies by region.)

Natural gray, buff, brown
Custom colors by special order

The StoneWall SELECT System for 16" or (18")



Basic Installation

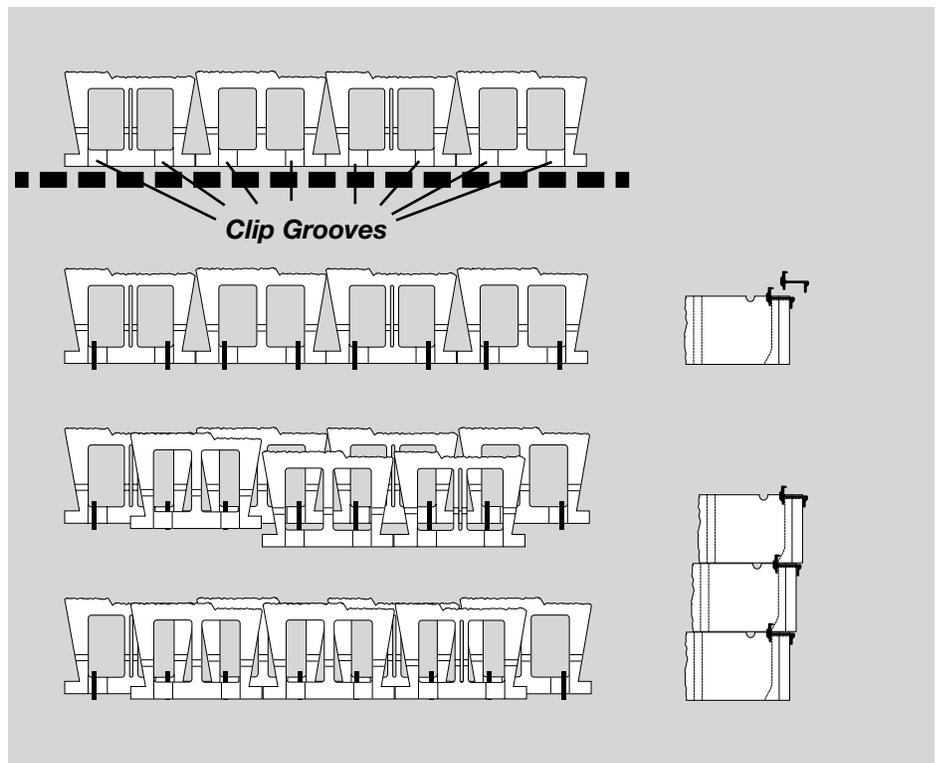
1. Lay the StoneWall SELECT unit so that the clip grooves face up. *Always align the wall from the back of the unit.* The face on the front will be off-set to provide the rugged texture. Use the wings as an alignment guide or lay the units to a string line.

2. Place two interlocking clips onto the back of each StoneWall SELECT unit. Look at the side of the clips for the up and front directions of the clip.

3. Stagger (half bond) the second course on top of the first course by positioning the sides of the upper unit over the center webs of the lower units. Lay the units so that the back of the core is well behind the clip.

4. Pull the unit forward until the back shell of the unit engages the upper leg of the clips.

5. StoneWall SELECT units are shipped in a cube in which 50% of the units will be unit A, and 50% unit B. However, the StoneWall SELECT system does not require that you choose the units in any predetermined order. The most desired pattern is a random pattern. Simply select any unit and install it.



SPECIFICATION GUIDELINES

GENERAL INFORMATION

1.1 SCOPE:

Work includes the manufacture, delivery and installation of concrete retaining wall units as required by the drawings and specifications.

1.2 RELATED SECTIONS:

A. Section 02265 pertaining to geogrid wall reinforcement.

B. Section 02223 pertaining to backfill requirements.

1.3 APPLICABLE DOCUMENTS:

ASTM STANDARDS:

C 1372 Specification for Segmental Retaining Wall Units.

C 1262 Standard test method for evaluating the freeze-thaw durability of manufactured concrete masonry units.

C 33 Specifications for concrete aggregates.

C 140 Methods for sampling and testing masonry units.

D 1557 Lab compaction characteristics of soil using modified effort.

OTHER STANDARDS:

NCMA Tek 2-4B, 15-5, 15-8

ASTM 6638-01 Determination of Connection Strength between Geosynthetics and Segmental Concrete Units.

NCMA SRWU-2 Determination of Shear Strength between Segmental Concrete Units

NCMA Design Manual for Segmental Concrete Units.

1.4 DELIVERY AND STORAGE:

A. The contractor shall check the material upon delivery to assure that the style, color etc. comply with the specification and that the materials are not damaged or defective. Materials that do not meet the specifications or are defective or damaged shall not be used for construction.

B. The contractor shall protect the material from ice, snow, excessive mud or any agent that will bond to the unit.

RETAINING WALL

2.1 MATERIALS:

A. Concrete Retaining Wall Units

1. Units shall be StoneWall SELECT Retaining Wall units manufactured in color selected by the architect.

2. Retaining wall units shall be manufactured in accordance with ASTM C 1372. Minimum compressive strength 3,000 psi. Maximum absorption 5-9% in lbs./cu. ft.

3. Exterior dimensions for StoneWall SELECT units shall be 12" x 8" x 16" to cover 1.13 units per square foot or 12" x 8" x 18" to cover 1.0 units per square foot.

4. Color used in units shall not exceed 10% of the weight of the Portland cement in the unit.

5. Units shall be capable of making inside and outside curves that meet a variety of radii, but not less than a 4'9" radius. Remove the knock-off wings for outside curves.

6. Units shall provide a weight of 120 psf when filled with aggregate. The unit fill shall be measured at an effective weight of 80%.

7. Units shall be interlocked with glass filled polymer clips, 2 per StoneWall SELECT unit. The clips will be installed at the job site in the indented slots in the rear face shell of the unit so that the long leg of the clip is adjacent to the back face of the unit and the short leg projects into the core of the unit.

8. The interlock system shall provide a setback of 3/4" per layer of StoneWall SELECT for a wall batter of 5°.

B. Interlocking Clips:

1. Clips shall be molded, glass filled polymer composite.

2. Clips shall have the following tested properties: Shear resistance - the clips provide 440 lbs/ft of shear resistance at zero normal load for 16", and 395 lbs/ft of shear resistance at zero normal load for 18".

C. Base Material:

1. Base material for the granular wall footing shall be well graded gravel with a Unified Soil Classification of GW. A minimum of 6" of compacted base is required.

2. A concrete footing may be substituted for the granular base.

D. Unit Fill:

1. Unit fill shall be clean, crushed stone, or well graded aggregate with a GW Unified Soil Classification. The fill shall have a maximum size of 3/4" and shall not have a fine content (passes #200 sieve) greater than 10% such as AASHTO No. 57 or 67.

2. Unit fill shall extend at least 6" behind the rear face shell of the concrete unit.

E. Wall Backfill and Compaction:

1. Existing soil on site may be used for backfill behind the unit fill unless deemed unsuitable by the engineer. When the backfill material contains excessive fines a protective fabric will be used to insure against contamination of the unit fill.

2. Always compact the backfill behind the wall, to 95% of maximum density, after each course is laid. A hand operated mechanical plate should be used within 3 ft. of the StoneWall SELECT units.

F. Drain Tile:

1. Drain tile shall be plastic, concrete or equal with a minimum diameter specified by the engineer or designer.

2.2 RETAINING WALL INSTALLATION:

A. Excavation:

1. Contractor shall excavate the site as required by the construction drawings.

B. Foundation Soil Preparation:

1. The foundation soil shall be excavated as required by the construction drawings.

2. The engineer shall examine the foundation soil for approval. Unsuitable soil will be removed and replaced with acceptable soil.

C. Base Footing:

1. Install footing as shown on the construction drawings. A 6" minimum thickness is required.

2. Granular footing material shall be compacted with a mechanical plate compactor to 95% of maximum modified proctor density (see ASTM D1557 for testing soil compaction characteristics).

3. Prepare the base footing so that the entire length and width of the StoneWall SELECT unit is in contact with the footing.

D. StoneWall SELECT Installation:

1. Lay a row of StoneWall SELECT units edge to edge on the prepared foundation following the lines shown on the construction drawing. Check for straightness. Level each unit from side to side. Do not pitch the unit towards the front.

2. Fill the units, and behind the units 6" to 12", with granular aggregate. Compact all unit fill and backfill. Do not use mechanical equipment on the units and do not operate heavy equipment within 3 feet of the wall. Clean the top of the units so they are free of aggregate before installing the next course.

3. Slide two interlocking clips onto the back of each block, in the clip grooves, one clip per groove, with the single leg of the clip extending up from the core of the unit.

Basic installation of the straight wall up to 3 feet

4. Stagger (half bond) the second course on top of the base course so that the clips extend into the cores of the unit being laid. Pull the unit to the front of the wall until the back face shell tightly engages the clips. Repeat steps 2 and 3 until the specified height is obtained.

5. At the end of each course turn the units at a radius into the bank or use the 90° corner unit.

E. Cap Unit Installation:

1. Cap units are installed as the last course on the wall. Use a high strength and flexible concrete adhesive compound to bond the cap to the wall. Apply the adhesive as recommended by the manufacturer on the front and back face shells of the StoneWall SELECT unit. Install the cap with or without an overhang as required by the architect.

F. Drain Tile Installation:

1. The installation of the drain tile shall be required directly behind the StoneWall SELECT unit at grade level. Cover the drain tile with the granular fill. Install drain tile bleeders wherever necessary or as required by the engineer.

G. Geogrid Installation:

1. Place and compact the granular unit fill within and behind the StoneWall SELECT unit.

2. Place and compact soil behind the granular fill in the reinforced zone.

3. Clean off the top of the StoneWall SELECT unit.

4. Cut the geogrid to the specified length.

5. Place the grid to the front of the StoneWall SELECT unit making sure that the strength direction of the grid is perpendicular to the wall.

6. Install the interlocking clips. Lay another course of StoneWall SELECT units. Repeat step 1.

7. Tension the grid before and during backfill placement. Repeat step 2.

8. Execute compaction to 95% of maximum density when 8" of backfill has been placed.

9. Place additional geogrid lengths at required vertical elevations by repeating steps 1-8.

10. Use only light weight, hand-operated compaction equipment within 3 feet of the wall units.

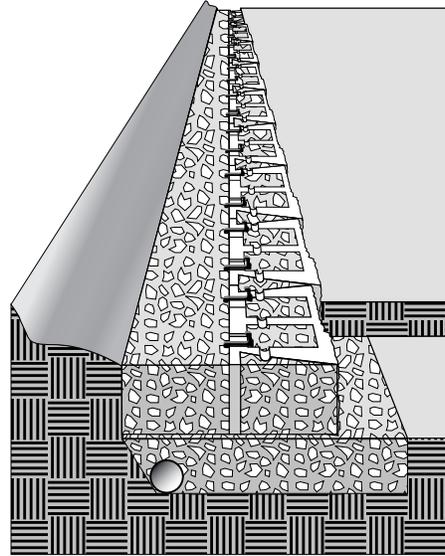
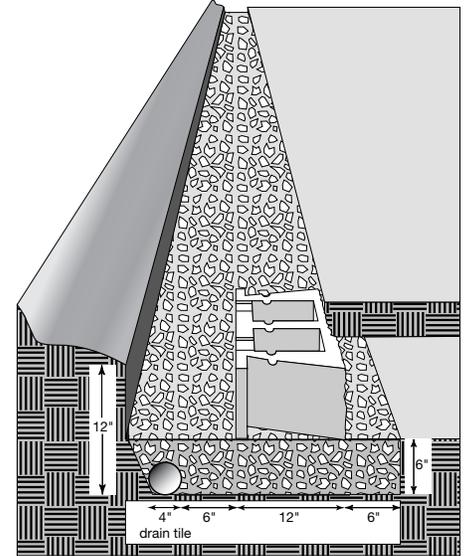
See Illustration on page 7

First, plan your layout

Develop a precise plan for your wall construction by first analyzing your site. Noting slope and drainage patterns, be sure to route rainwater around wall ends, not over the top. Contact your StoneWall SELECT Distributor with questions about special site considerations.

Second, prepare the foundation

Strip top soil and vegetation and dig a trench 28" wide along the planned path of the new wall. The depth of the trench will equal 12", 6" for base, 6" for unit embedment. The ground at the bottom of the trench should be stable and compacted with a vibrating, mechanical plate. Lay in a 6" base of compacted gravel for leveling the base course.

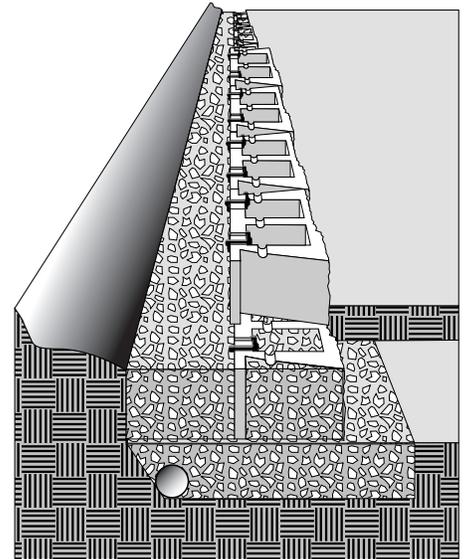


Third, lay the base course

Lay a row of StoneWall SELECT units edge to edge on the prepared foundation with the clip grooves up. Check for straightness with a string line. Level each unit. Do not pitch the unit forward. Install drain tile at grade to route water away from the wall. Use crushed stone to backfill 6" to 12" behind the base course and every successive course. The large cores in each unit must also be filled with the same material. Always compact the drainage stone and soil backfill, behind the stone, after installing each course. Slide two interlock clips onto the back of each unit in the clip grooves, with the single leg of each clip extending up and toward the front (see Basic Installation 1 & 2, pg 3).

Fourth, install additional courses

Stagger (half bond) the second course on top of the base course by positioning the sides of each upper unit over the center webs of two lower units, with the upright legs of two interlock clips extending into the cores of the upper unit. Then slide the unit forward until it rests tightly against the legs of the two clips (see Basic Installation 3 & 4, pg 3). The clips and the tapered core of the unit automatically establish a setback of 3/4". Backfill and slide two clips onto each unit of the second course, and repeat the process for successive courses (without drain tile). Finally, finish your wall with one of a variety of cap options. All caps are secured with a flexible, high-strength adhesive. Contact your StoneWall SELECT distributor for selection and details.



**Unit Fill including Min 6" Backfill
Base Material**

**= 0.04 yds³ per ft² of SWS Wall Area
= 0.14 yds³ per ft² of SWS Wall Length**

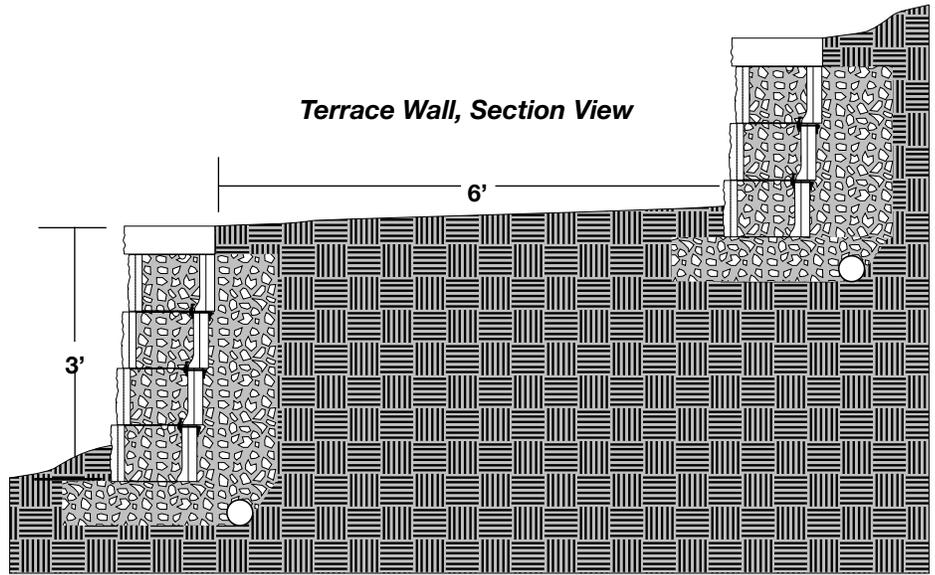
Constructing taller walls

Thanks to its installation flexibility and well-engineered design, StoneWall SELECT lends itself well to the construction of tall or terraced walls. In fact, with geogrid soil reinforcements properly installed, StoneWall SELECT heights can safely soar as high as 40 feet. However, it is very important to check the global stability of the site before constructing any retaining wall.

For walls exposed 3 feet or more you must terrace the wall or use geogrid soil reinforcing.

A. Terracing Walls

Terracing walls provides an attractive appearance. However there are some limitations. Terraced walls significantly increase the time spent on base preparation. Terraced walls also require substantial space. If a tiered retaining wall is placed within a horizontal distance less than twice the height of the bottom wall, a surcharge will be applied to the bottom



wall. If a surcharge is applied, additional soil stabilization and reinforcement with geogrids will be required. However if

there is plenty of space to allow for terracing, it will create a beautiful result (see illustration).

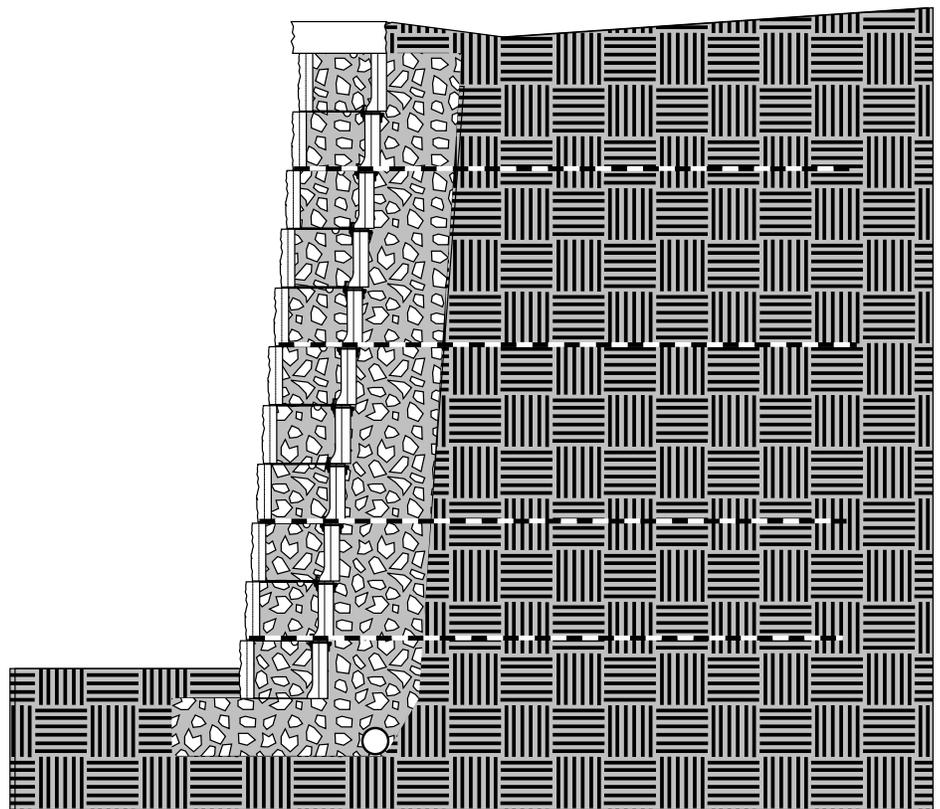
B. Geogrid Soil Reinforcing

Geogrid provides strength to the soil in the same way that reinforcing steel strengthens concrete. When properly engineered and installed, the reinforced soil section, which is the combination of the StoneWall SELECT facia and the reinforced soil, will resist forces applied by the retained soil and surcharges on that soil. The geogrid layers fit between courses of StoneWall SELECT units and are secured to the wall by the friction between the units, the interlocking clips and the granular fill placed from core to core in the StoneWall SELECT units. Always refer to geogrid manufacturers' information for proper use of their respective products.

Procedure

The following procedure should be followed when installing geogrid in a StoneWall SELECT wall.

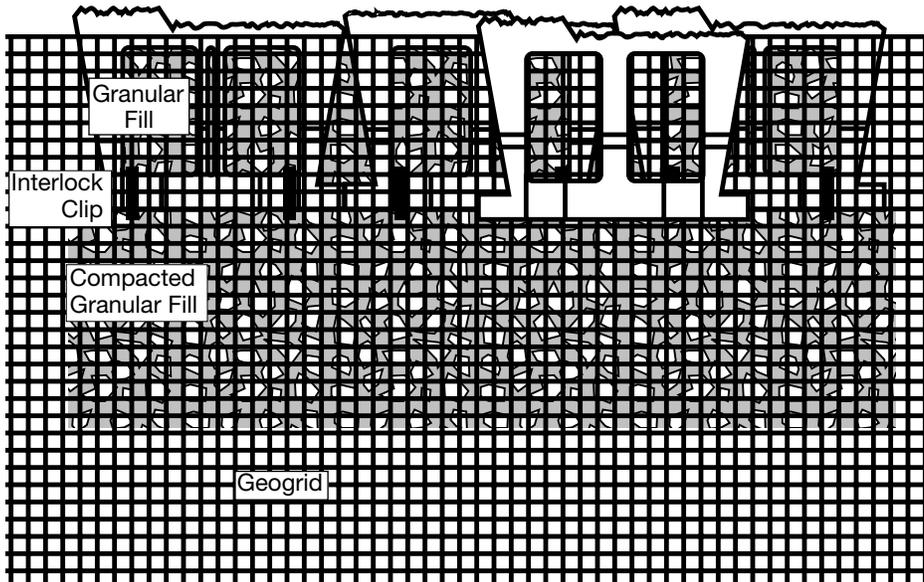
1. Place and compact granular fill within and behind the StoneWall SELECT units.
2. Place and compact soil behind the granular fill in the reinforced zone.
3. Clean off any loose material from the top of the StoneWall SELECT units.
4. Cut the geogrid to the proper length as specified in the drawings and/or geogrid tables.
5. Place the grid to the front of the StoneWall SELECT units making sure that the strength direction of the grid is perpendicular to the wall.
6. Install the interlocking clips. Lay another course of StoneWall SELECT units. Repeat step 1.
7. Tension the grid before and during backfill placement. Repeat step 2.
8. Execute compaction to 95% of maximum density after 8" of backfill has been placed.



Geogrid Placement for walls above 3 feet, Section View

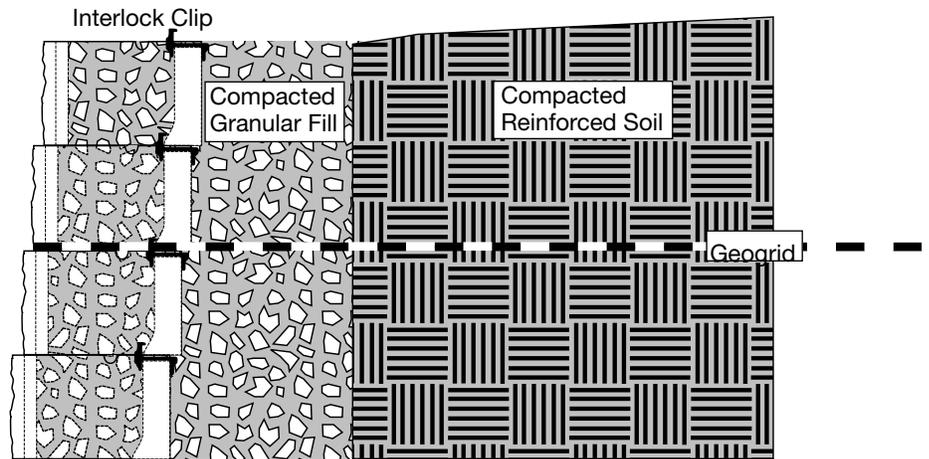
9. Place additional geogrid lengths at required vertical elevations by repeating steps 1-8.
10. Use only light weight, hand operated compaction equipment within 3 feet of the StoneWall SELECT units.

Geogrid Tables for use with StoneWall SELECT units are provided separately and not included in this manual. Please contact your local StoneWall SELECT representative for this information.



Geogrid Placement, for walls above 3 feet, Detail Plan View

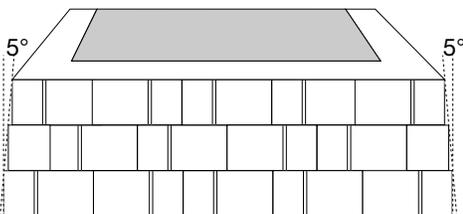
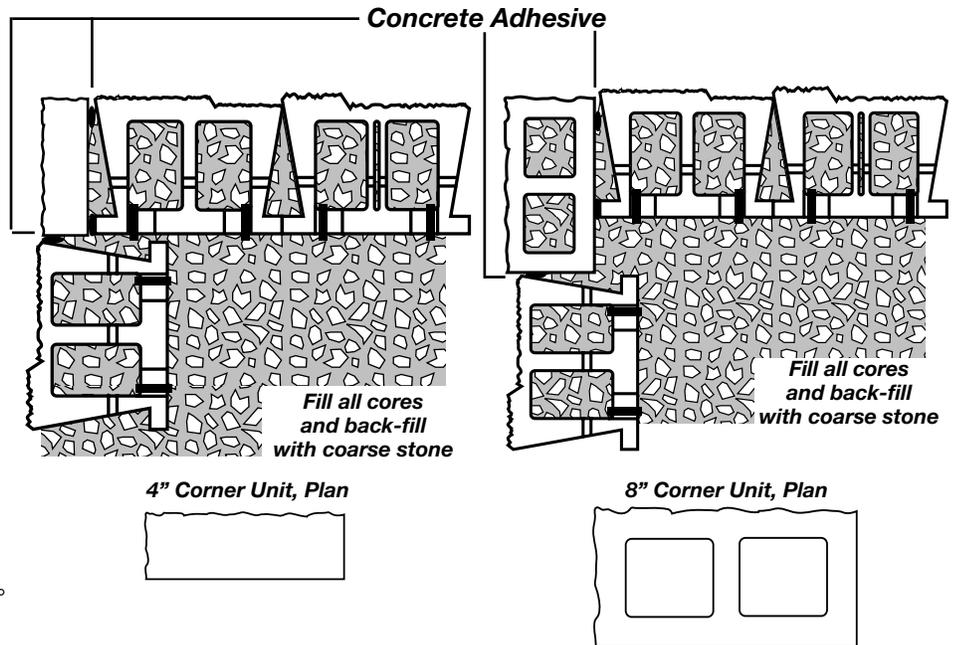
Geogrid Placement for walls above 3 feet, Detail Section View



Constructing 90° Corners

StoneWall SELECT corner units are specifically designed to allow construction of a true 90° corner, while retaining the randomly textured look of rough-hewn stone on the exposed corner faces. To build a 90° corner, begin construction at the corner and work out. To tie the corner to the wall use a concrete adhesive to bond the unit to adjacent StoneWall SELECT units. The concrete adhesive should be applied so that it is not exposed. See illustration at right.

Remember to alternate corner units 90° for each course to maintain running bond pattern. Also, any single wall, with a 90° corner on each end, requires cutting units to accommodate the wall batter as the wall rises, and to maintain the running bond pattern.



Wall batter shortens wall length

**Next course corner unit will lay perpendicular to previous course corner unit.
Use concrete adhesive to connect corner units on each course.**

Constructing curved or serpentine walls

The unique design of the StoneWall SELECT system gives it a built-in advantage when constructing simple or elaborate curving retaining walls around embankments or planting beds. The flexible placement of the interlock clips on StoneWall SELECT unit and the double wings, which are easily knocked off at the site, allow for the construction of outside curves with a radius as tight as 4' 9". The serpentine cap will follow this same radius without saw-cutting any units.

Inside curves can also be easily achieved by placing the unit faces edge to edge at the desired angles.

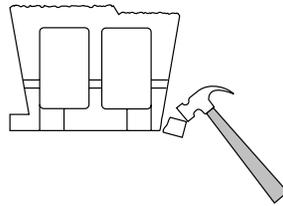
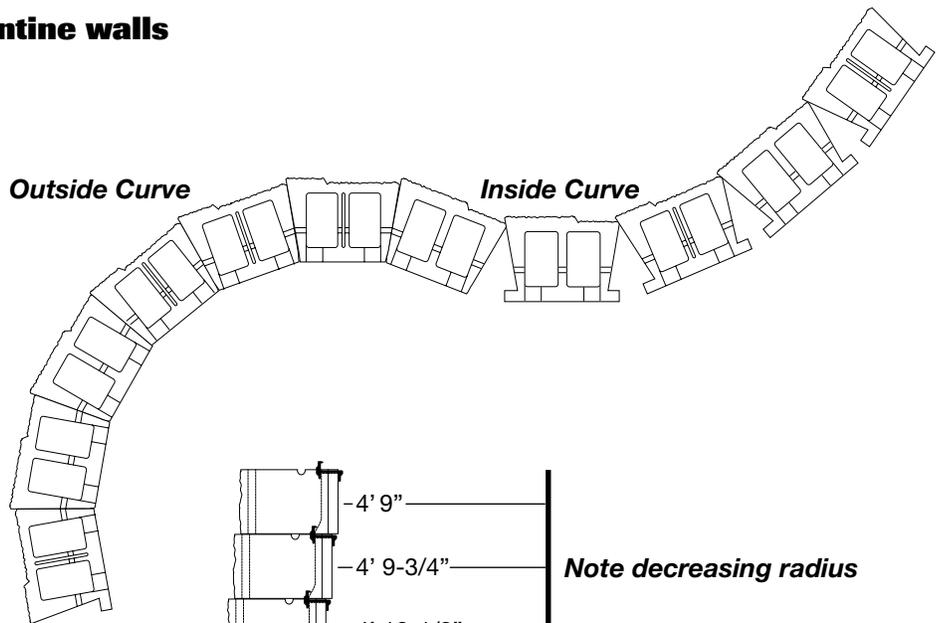
Notes

1. To build outside curves, remove the knock-off wings as shown by striking them with a hammer. (Using a masonry chisel will create a very clean cut.)

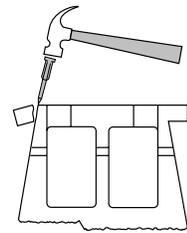
2. Always align the units from the back.

3. Radii for *outside curves* decrease by 3/4" per course of StoneWall SELECT. *Note: Never lay a base course to the tightest radius for outside curves.* Therefore determine the desired radius at the top of the wall. Multiply the number of courses X 3/4". Add this amount to the top radius to determine the base course radius.

4. Conversely, radii for *inside curves* increase by 3/4" (the set-back) per course of StoneWall SELECT. After determining the desired radius at the top of the wall, multiply the number of courses X 3/4" and subtract this amount from the top radius to determine the starting radius for the base course.



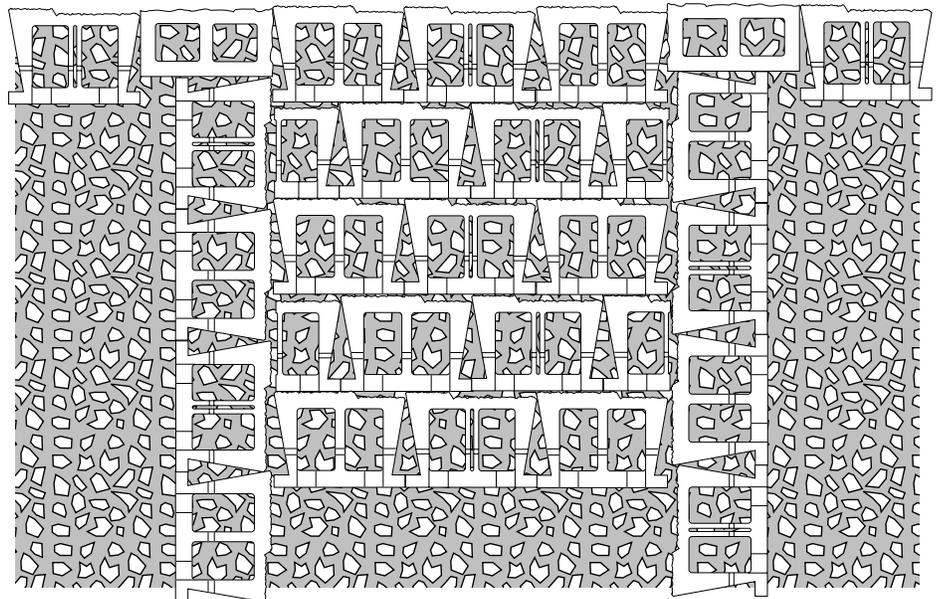
Knock-off Wings can be removed simply with a hammer blow



or with the use of a Masonry Chisel

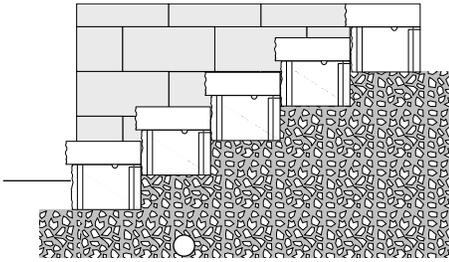
Constructing steps

Attractive, durable, highly functional steps – in either straight or scalloped designs, with 6" to 8" risers – are easy to build using StoneWall SELECT units. Base preparation and compaction are absolutely essential to achieve proper results. A minimum of 6" of granular base is required under all risers. If the base soil is unacceptable, remove and replace with granular drainage fill. The height of the riser may be determined by the position of the unit adjacent to the step below it. If the top of the base is flush with the top of the StoneWall SELECT unit in the step below there will be an 8" rise. Reduce the base elevation by 2" and a 6" rise will be achieved. Fill all units with granular drainage material. Adhere the cap stones to the StoneWall SELECT units with a concrete adhesive. *Note: When the retaining wall turns 90° to face the steps, do not install the clips in the StoneWall SELECT units, and lay the units so the back of the wall is flush, without a batter or set-back in the wall. The steps between the facing walls will provide adequate stabilization. See illustration at right.*

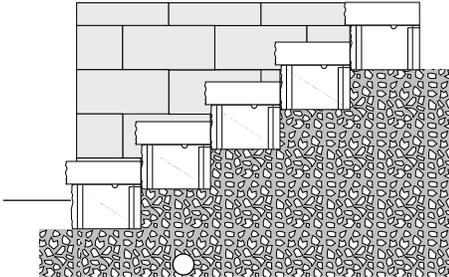


**Do not batter side walls
Do not use interlock clips in side walls**

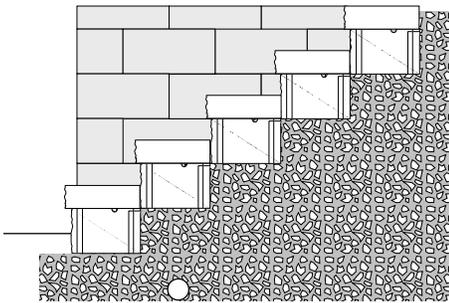
Steps without Caps, Plan View



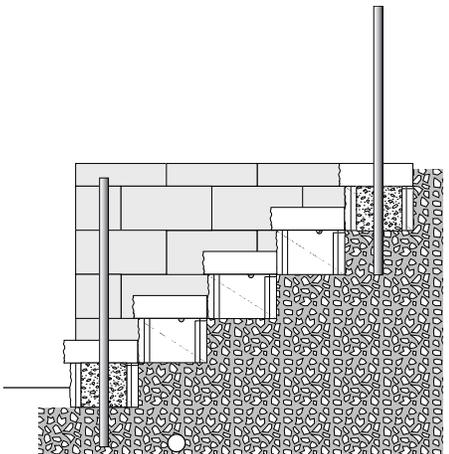
**Steps with Caps (6" rise),
Section View**



**Steps with Caps (7" rise),
Section View**

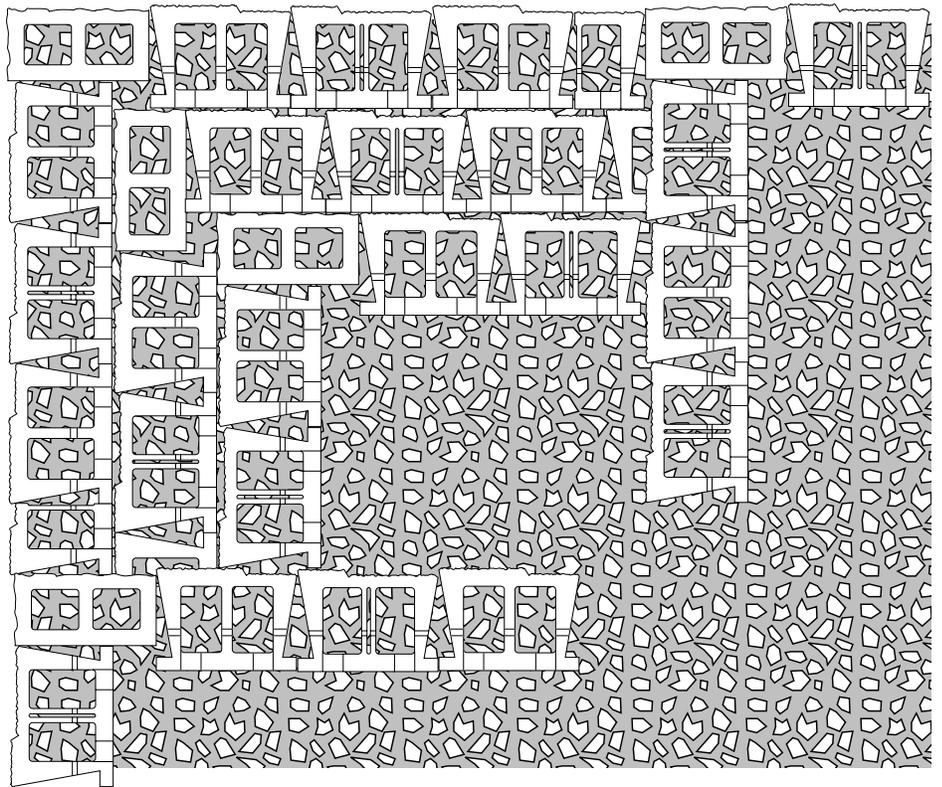


**Steps with Caps (8" rise),
Section View**

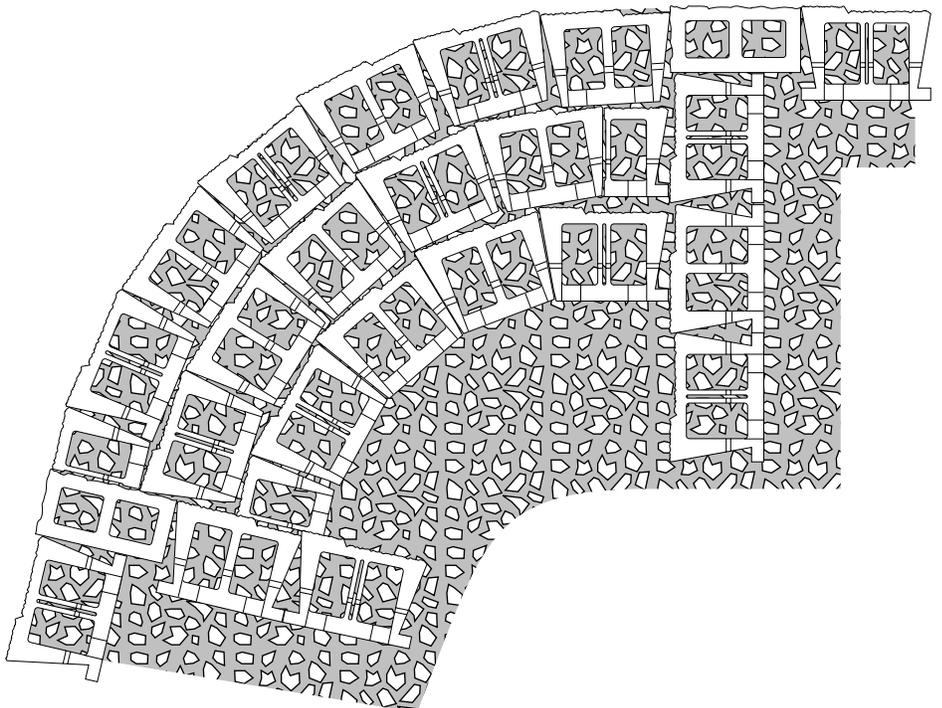


**Steps with Hand Rails,
Section View**

When placing posts in the step, fill cores at post locations with grout and cap the step. Use coring machine to core the caps and filled units. Install posts and fill gaps with epoxy cement.



90° Steps without Caps, Plan View



Radial Steps without Caps, Plan View

**NOTE: 4" Corner Units may be substituted
where 8" Corner Units are Shown**

Special Applications

Submerged Walls

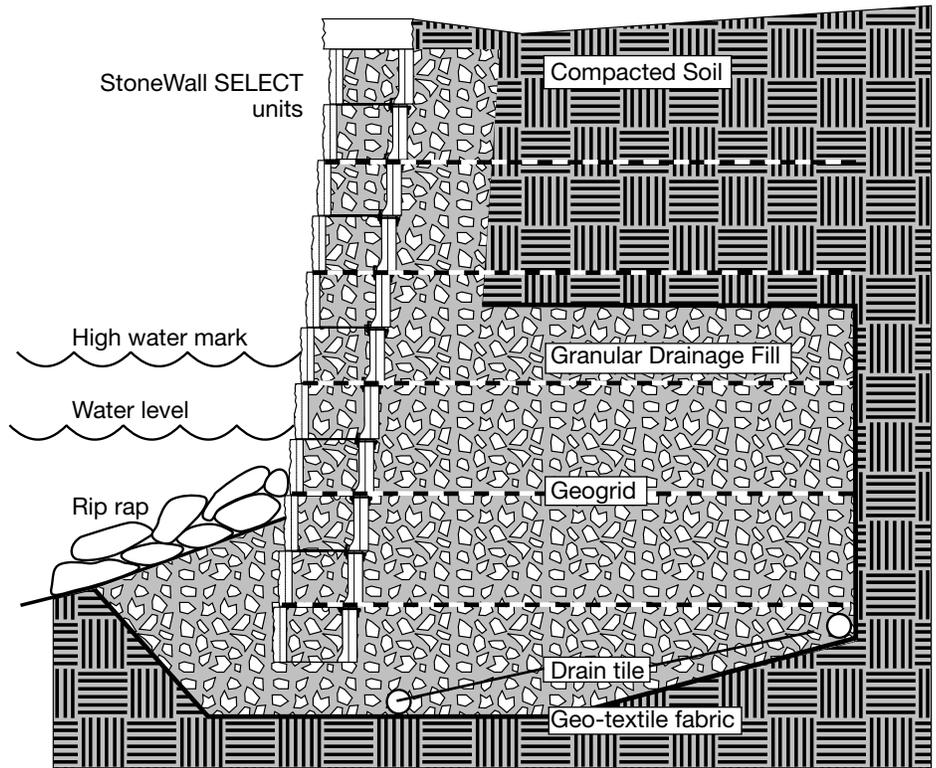
StoneWall SELECT may be used in water applications such as ponds, creeks and small lakes. However, the stability of the foundation soil, protection of the wall base from ice action, wave action, scour etc., and design of the drainage system require professional analysis and engineering of submerged walls. In addition the following recommendations should be followed:

1. A free draining granular aggregate should be placed behind the StoneWall SELECT units in a 1:1 ratio of wall height to depth of the granular fill. All geogrid soil reinforcement will be placed in granular drainage fill.

2. The entire wall system including the wall base and geogrid reinforced zone shall be protected with a geo-textile fabric. See illustration.

3. A drainage system must be designed to relieve hydrostatic pressure from behind the retaining wall and provide for adequate flow of water as the water table changes.

4. Rip rap protection should be provided in front of the wall to protect the wall from scour, wave action, ice action etc. as required.

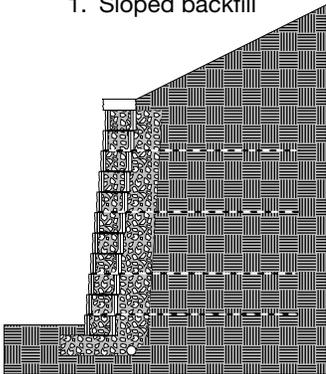


Submerged Wall, Section View

Surcharges

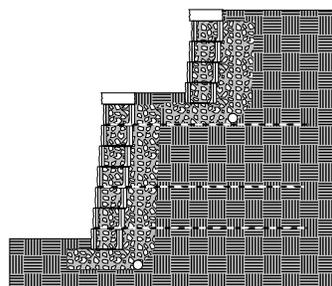
In many cases a retaining wall must carry additional loads or surcharges in addition to the earth behind the wall. These surcharges exert additional pressure on the wall. Common surcharge loads are:

1. Sloped backfill

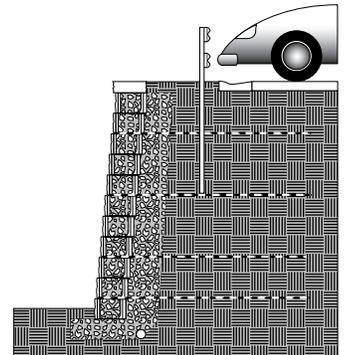


2. Terraced retaining walls when the spacing between tiers is less than two times the lower wall height.

3. Buildings, outdoor storage



4. Parking lots, streets and highways which are loaded by vehicular traffic.



If there is a surcharge placed on a wall, the maximum unreinforced wall height will decrease. This added pressure may also require additional geogrid

layers and/or deeper embedment of the geogrid.

Whenever a **surcharge** exists, the wall must be engineered to carry the addi-

tional load. These unique conditions and requirements fall outside the scope of this manual.

Minimum Wall Embedment for Slopes in Front of Wall Bases

The following formulas apply to the wall embedment depth when a slope occurs in front of the wall base.

$H' \div 20 =$ Embedment for a level slope (A)
(minimum 6" or 0.50' [0.15m])

$H' \div 10 =$ Embedment for a 3h:1v slope (B)

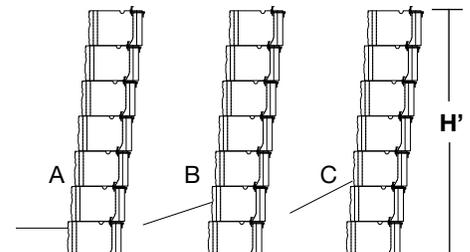
$H' \div 7 =$ Embedment for a 2h:1v slope (C)

Examples:

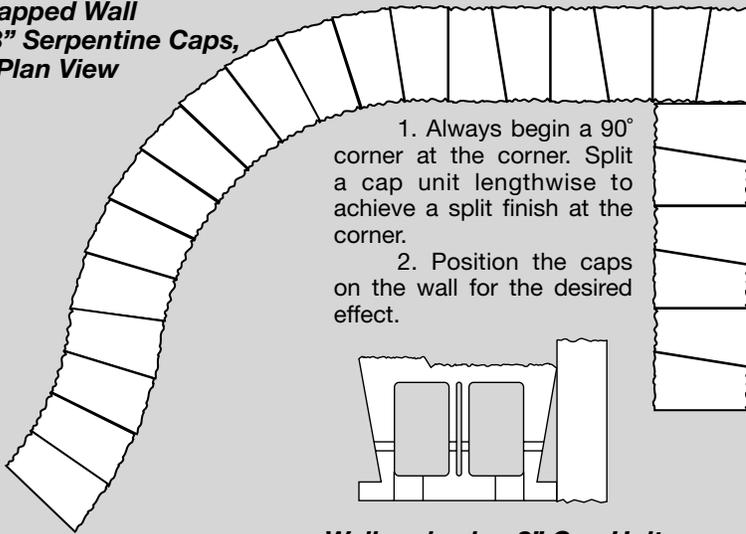
Wall Height of $10' \div 20 = 0.5'$ Embedment

Wall Height of $10' \div 10 = 1.0'$ Embedment

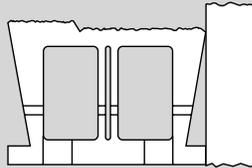
Wall Height of $10' \div 7 = 1.42'$ Embedment



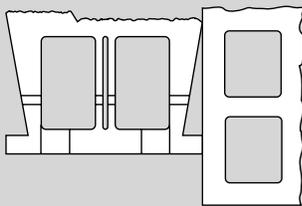
**Capped Wall
using 6 7/8" Serpentine Caps,
Plan View**



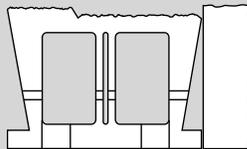
1. Always begin a 90° corner at the corner. Split a cap unit lengthwise to achieve a split finish at the corner.
2. Position the caps on the wall for the desired effect.



**Wall end using 8" Cap Unit,
Plan View**



**Wall end using 8" Corner Unit,
Plan View**



**Wall end using 4" Corner Unit,
Plan View**

Finishing the wall

A. Top of the wall

Finish the top of the wall with one of the StoneWall SELECT cap options. Straight caps in 8", 12", or 16" lengths may be available from your supplier or use the versatile serpentine cap unit which will cap straight and curved walls to a radius of 4' 9" without having to make any cuts.

When making a 90° corner one serpentine cap must be cut in half. Both sides of the serpentine cap are finished with a split face.

Adhere the caps to the wall with a concrete adhesive.

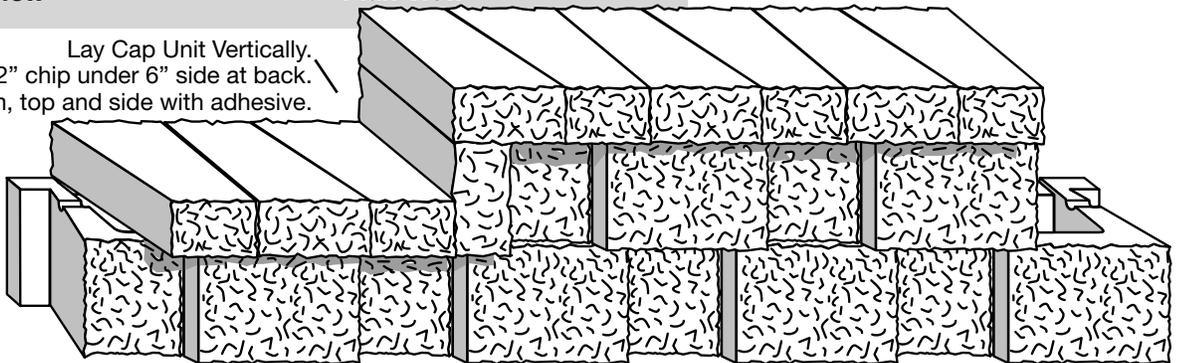
The top of the wall is completely covered. There are no gaps or unfinished edges. (see illustration).

B. End of the wall

StoneWall SELECT offers attractive options for finishing the end of the wall.

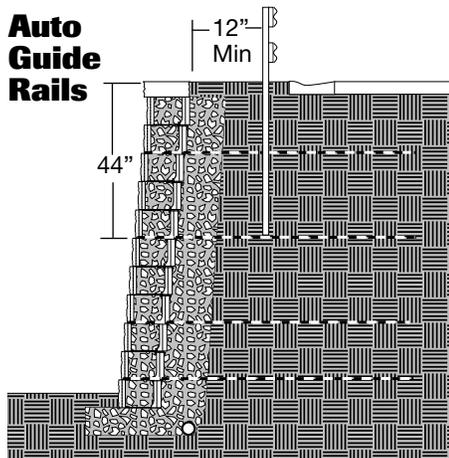
As the wall changes height, use either the 90° corner unit to provide a split finish (see illustration), or use an 8" long cap unit laid vertically to finish the end (see illustration), or turn a tight radius into the embankment.

Lay Cap Unit Vertically.
Tuck 2" chip under 6" side at back.
Attach bottom, top and side with adhesive.



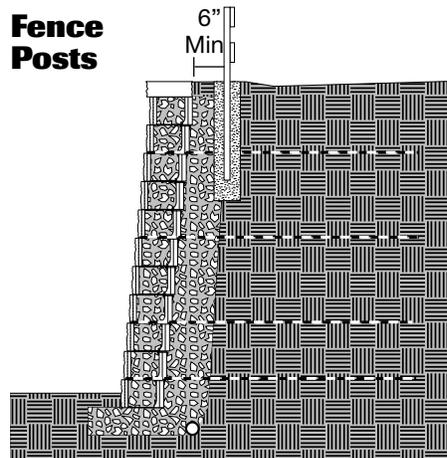
Wall End, using 6 7/8" Cap Unit, Elevation View

**Auto
Guide
Rails**



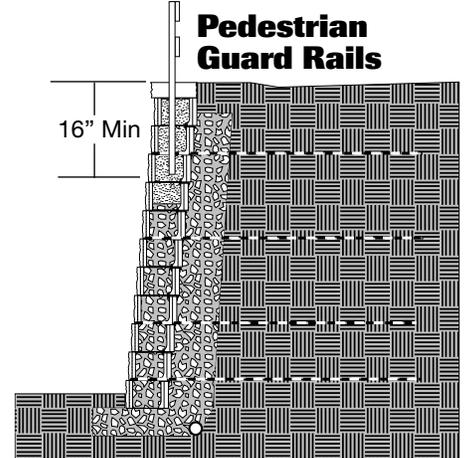
After the wall is completed, the metal posts (Guide Rail designed by others) are driven 44" deep, placed a minimum of 12" from the the wall. The posts may be driven through geogrid.

**Fence
Posts**



Posts are placed in grouted, pre-augured 8" holes; or grouted into HDPE or PVC pipe placed during wall construction. The *wind load effect* on the fencing material and concurrent effect on the wall *must be considered* when engineering the project.

**Pedestrian
Guard Rails**



When placing posts in the wall, fill the cores at post locations with grout and cap the wall. Use coring machine to core the filled units. Install posts and fill gaps with epoxy cement. *This installation detail assumes minimal wind load.*

Add the finishing touch to your StoneWall SELECT project with Landscape Lighting

Your StoneWall SELECT retaining wall looks beautiful during the day. Now you can "show it off" at night with landscape lighting. This will add safety and security too!

StoneWall SELECT units are designed with built-in cable slots for low voltage electrical cables.

Easy installation.

1. Lay the low voltage electrical supply cable in the cable slots cast in the top of each block. **DO NOT PLUG IN ELECTRICAL SUPPLY CABLE TO POWER SOURCE.**
2. Hold the lighting fixture backplate in position against the block and mark the hole locations.
3. Using a 1/4" masonry bit, drill three holes through the front of the block. Insert two masonry screw anchors in the two mounting holes. Thread the light fixture cable through the center hole. Secure the backplate to the face of the block with two screws.
4. Connect the fixture cable to the electrical supply cable. Install StoneWall SELECT caps to finish your project.

Notice:

This brochure is intended to describe the general procedure for installing landscape lighting on a StoneWall SELECT wall. Before installing any landscape lighting system on a StoneWall SELECT wall, you must refer to the instructions accompanying the lighting system you've selected for specific installation guidelines to ensure proper safety.

Additional Information on StoneWall SELECT Includes:

- *The Complete Resource CD Rom which includes:*
 - Complete CAD Details.
 - Design Charts for installation of geogrid with StoneWall SELECT units.
 - Material Estimating Spreadsheet Software.
 - Design data for use with the NCMA SRW Design Software.
 - The Block Pallet 3D Rendering Files.
- *The StoneWall SELECT Residential brochure, 4 colored pages.*
- *The StoneWall SELECT Commercial/ Governmental brochure, 4 colored pages.*
- *The ICD StoneWall SELECT video, 5 minutes (available through licensees).*

Limits of Liability

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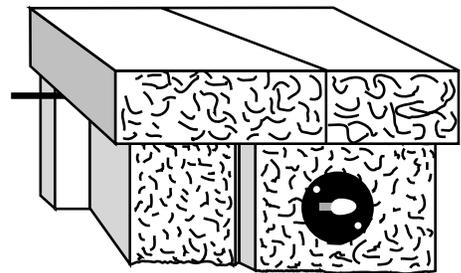
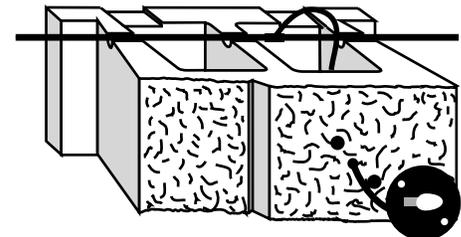
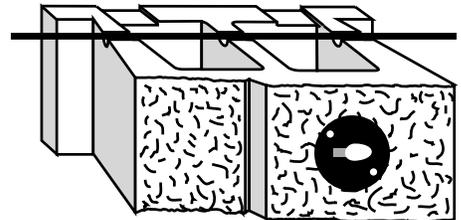
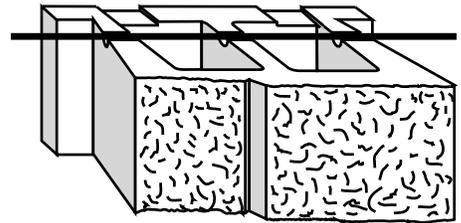
U. S. Patent # 4,920,712; 4,335,549
Canadian Patent #1,169,265; 2,007,668
The "Look" of StoneWall® SELECT® is a trademark of Innovative Concrete Design Corporation
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Additional Products Available from ICD:

- *SELECTedge®* provides the ultimate in maintenance-free landscape borders—perfect for tree rings, garden edging, pavement borders, and planting beds. Full color letterfold brochure available.
- *StoneRidge®* provides the same appearance as StoneWall SELECT, but in a smaller scale (8"D x 6" H x 12" L). The perfect choice for small landscape walls 2 feet and below. Full color letterfold brochure available.

The ICD Network

Innovative Concrete Design Corporation owns the patent rights to the StoneWall SELECT retaining wall system. StoneWall SELECT is manufactured and sold throughout North America by an extensive network of licensed companies. Contact the nearest licensee for prices, color selection and availability. Please note that color will vary slightly from region to region due to variation in local aggregates.



**StoneWall SELECT...
another perfectly proportioned product from:**



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