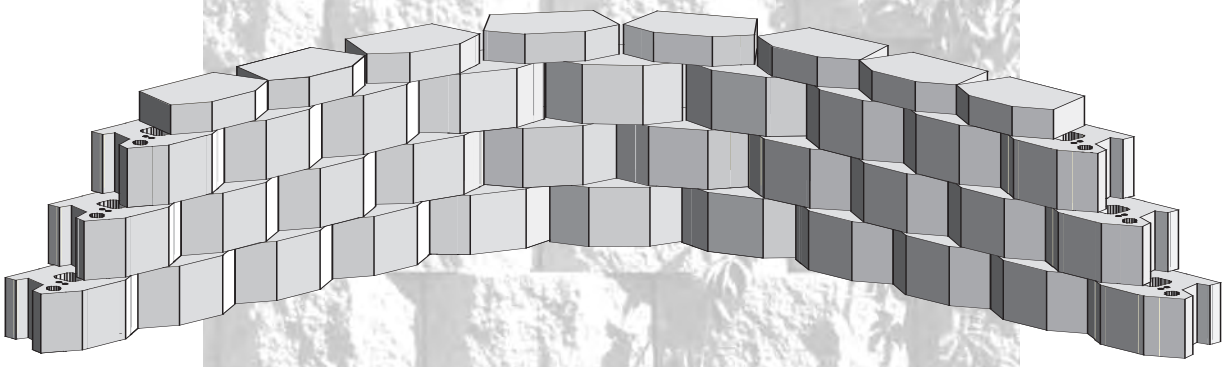
CORNERS AND CURVES



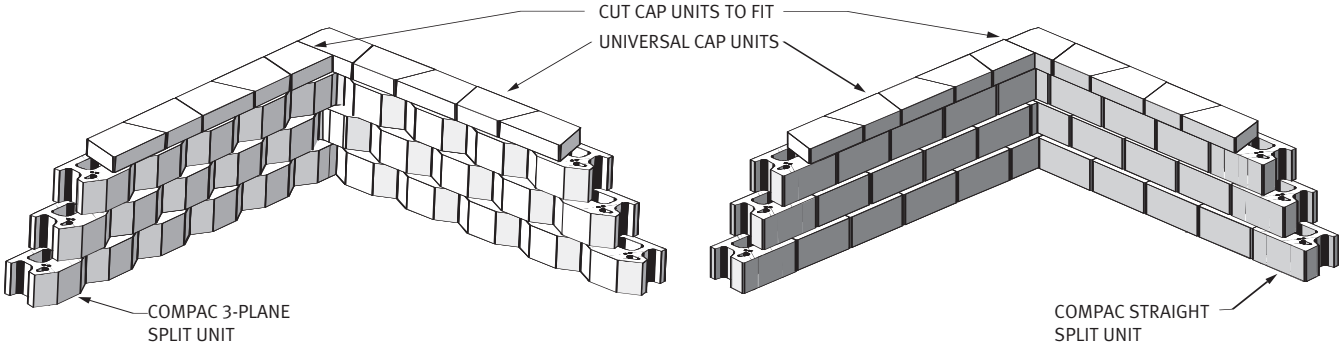
C O R N E R S A N D C U R V E S

90° INSIDE CORNER - USING 1" SETBACK

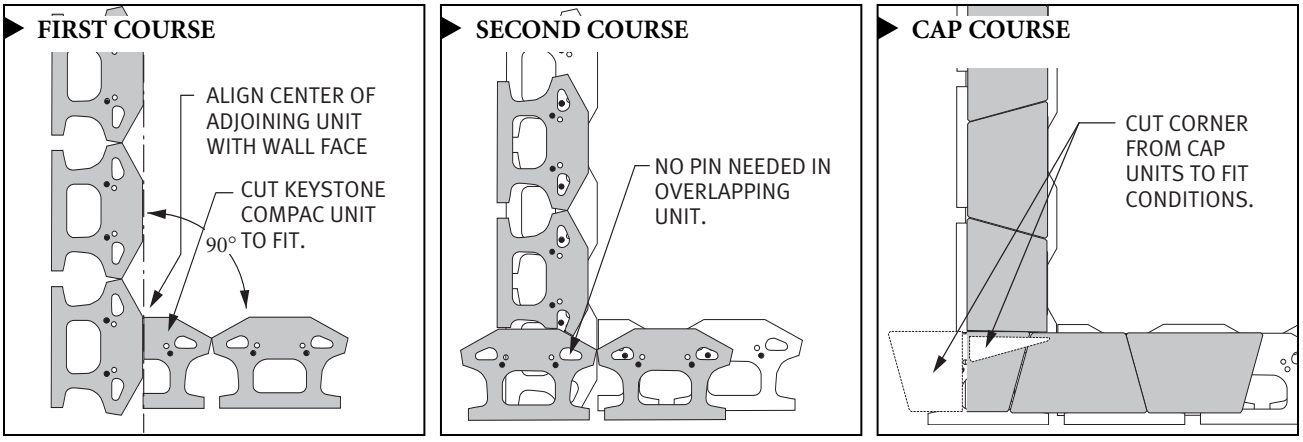
The following information will provide a general explanation of construction techniques for building retaining walls with these conditions.

INSTALLATION PROCEDURES:

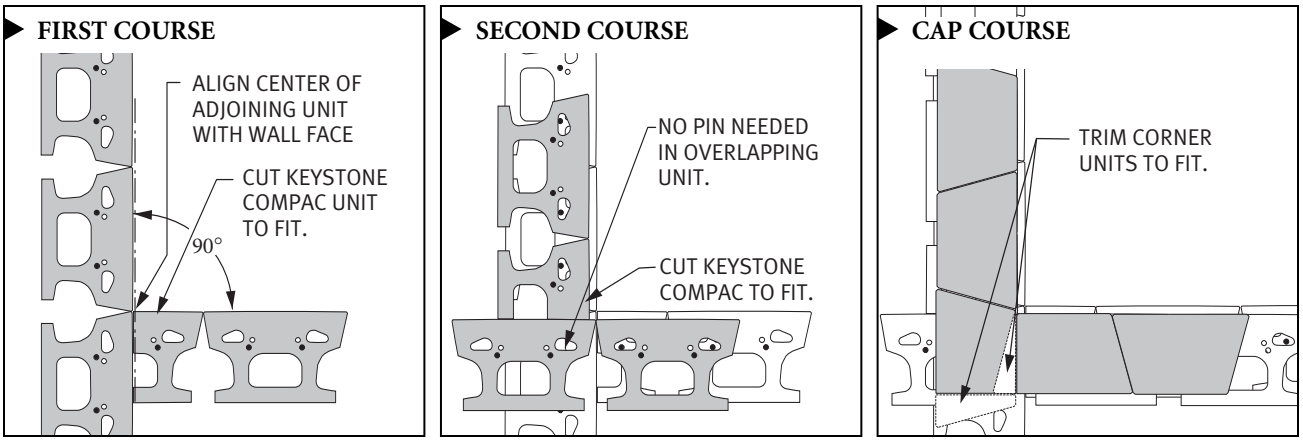
- Follow standard installation instructions for preparation of sub grade and leveling pad.
- Construction can start at the corner and work away from this point or with the method shown below, the wall can be started elsewhere and worked into the corner. This detail gives the builder flexibility.



3-PLANE SPLIT UNITS



STRAIGHT SPLIT UNITS



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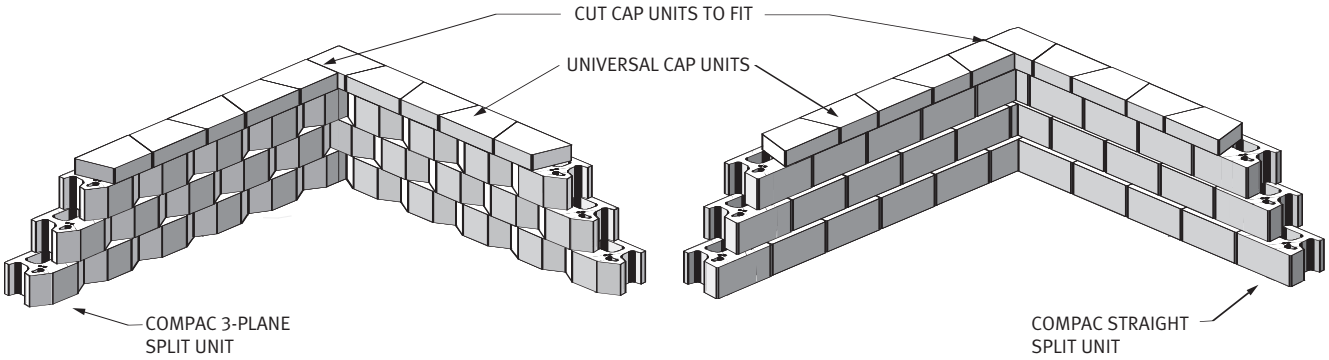
CORNERS AND CURVES

90° INSIDE CORNER - USING NEAR VERTICAL SETBACK

The following information will provide a general explanation of construction techniques for building retaining walls with these conditions.

INSTALLATION PROCEDURES:

- Follow standard installation instructions for preparation of sub grade and leveling pad.
- Construction can start at the corner and work away from this point or with the method shown below, the wall can be started elsewhere and worked into the corner. This detail gives the builder flexibility.



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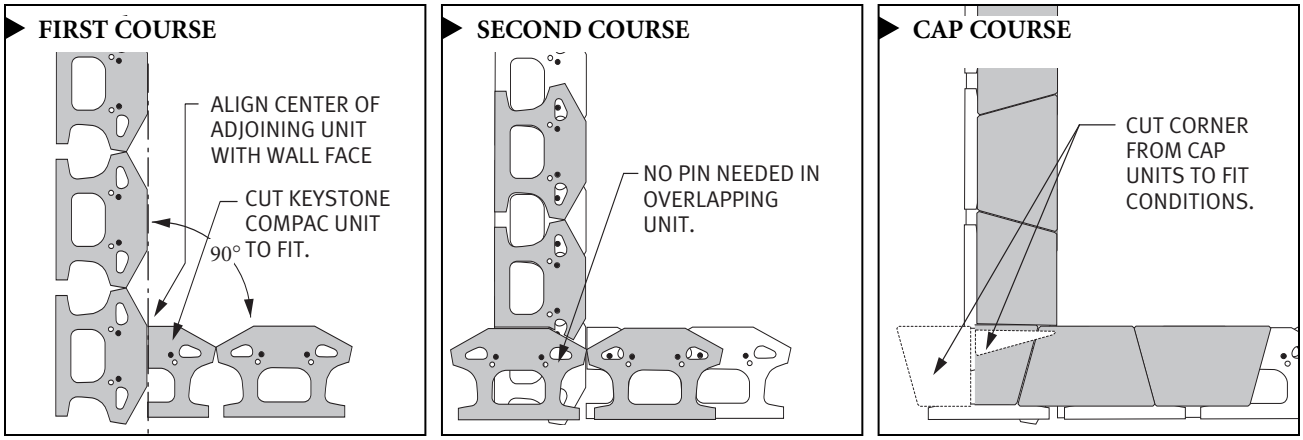

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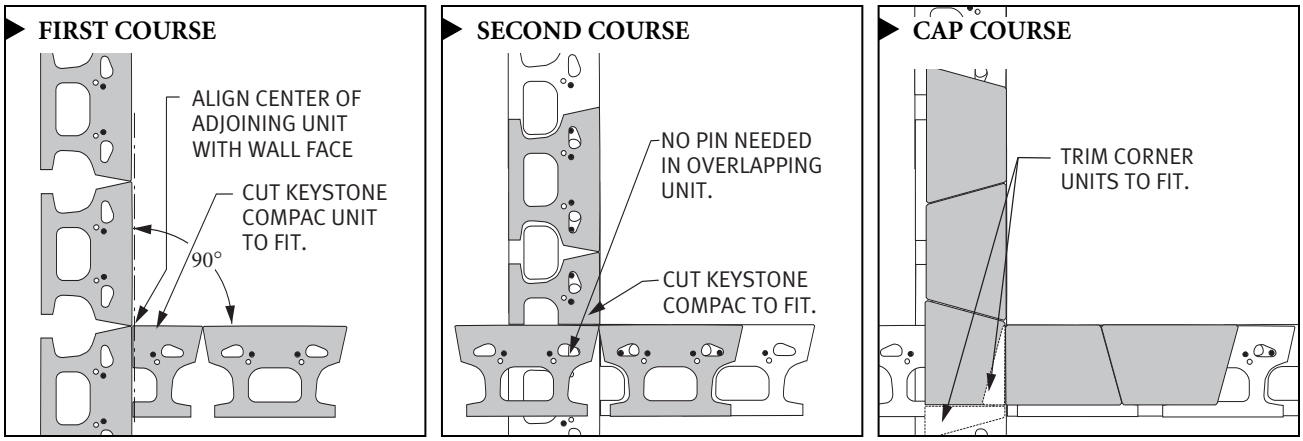

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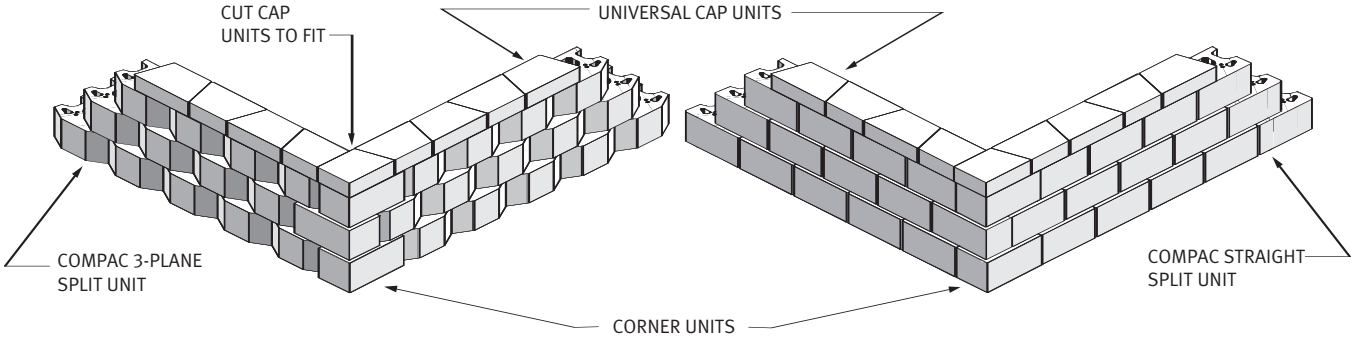
I N S T A L L A T I O N

90° OUTSIDE CORNER - USING 1" SETBACK

The following information will provide a general explanation of construction techniques for building retaining walls with these conditions.

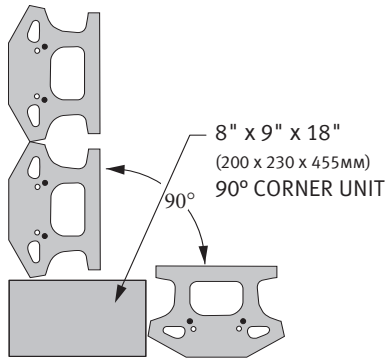
INSTALLATION PROCEDURES:

- Follow standard installation instructions for preparation of sub grade and leveling pad.
- Construction can start at the corner and work away from this point or with the method shown below, the wall can be started elsewhere and worked into the corner. This detail gives the builder flexibility.

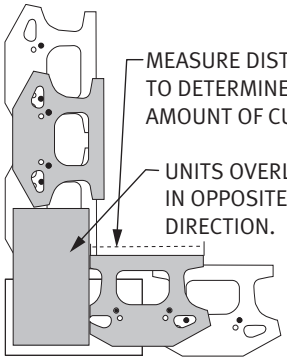


3-PLANE SPLIT UNITS

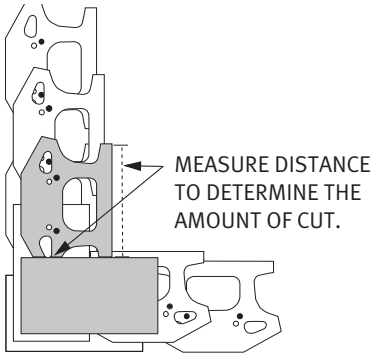
FIRST COURSE



SECOND COURSE

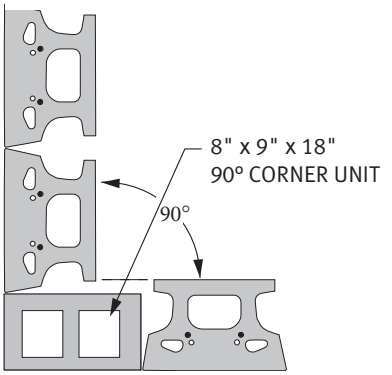


CAP COURSE

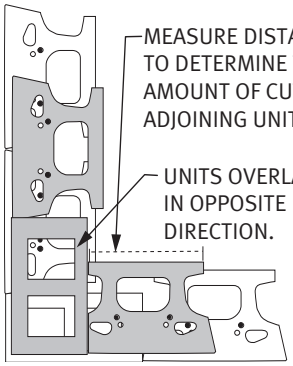


STRAIGHT SPLIT UNITS

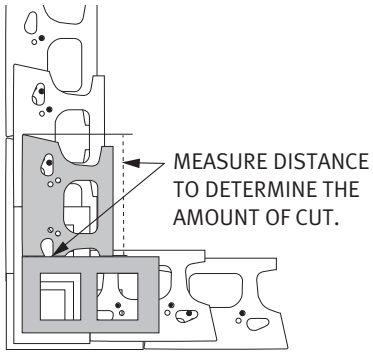
FIRST COURSE



SECOND COURSE



CAP COURSE



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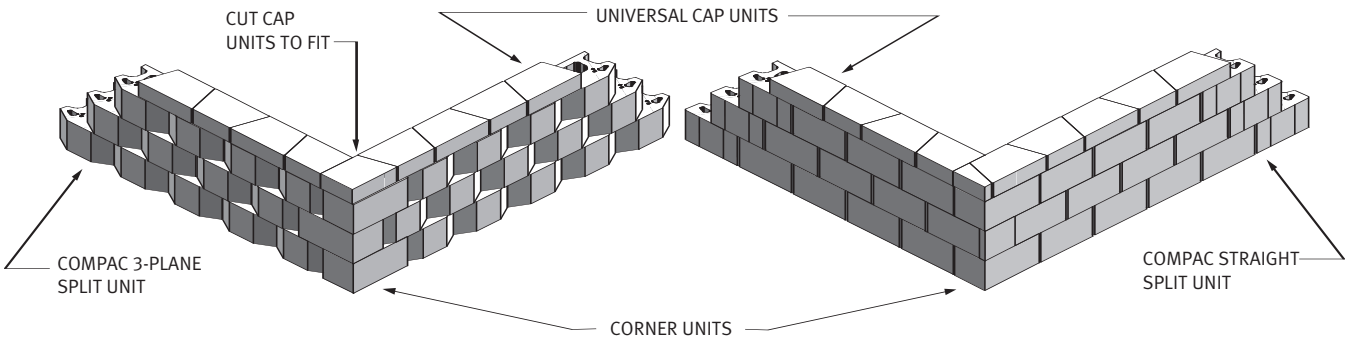
CORNERS AND CURVES

90° OUTSIDE CORNER - USING NEAR VERTICAL SETBACK

The following information will provide a general explanation of construction techniques for building retaining walls with these conditions.

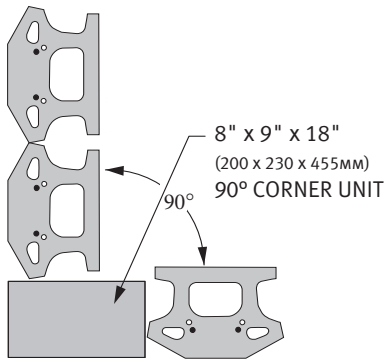
INSTALLATION PROCEDURES:

- Follow standard installation instructions for preparation of sub grade and leveling pad.
- Construction can start at the corner and work away from this point or with the method shown below, the wall can be started elsewhere and worked into the corner. This detail gives the builder flexibility.

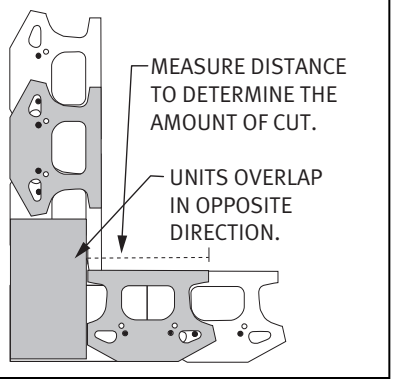


3-PLANE SPLIT UNITS

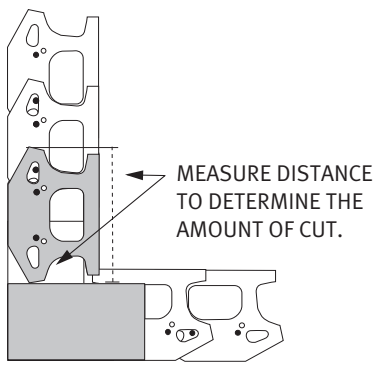
FIRST COURSE



SECOND COURSE

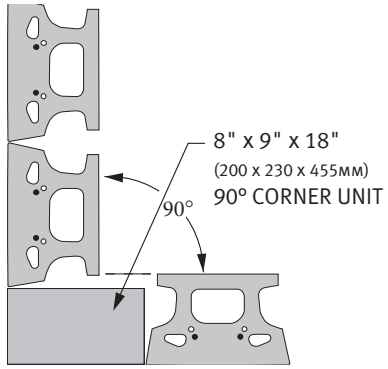


CAP COURSE

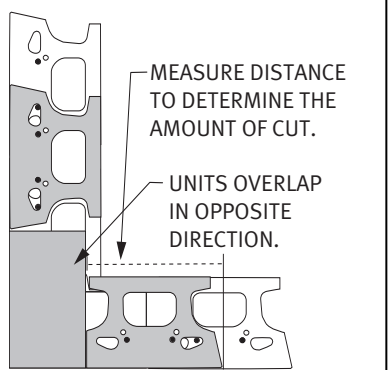


STRAIGHT SPLIT UNITS

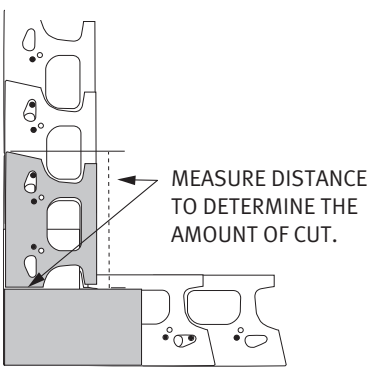
FIRST COURSE



SECOND COURSE



CAP COURSE



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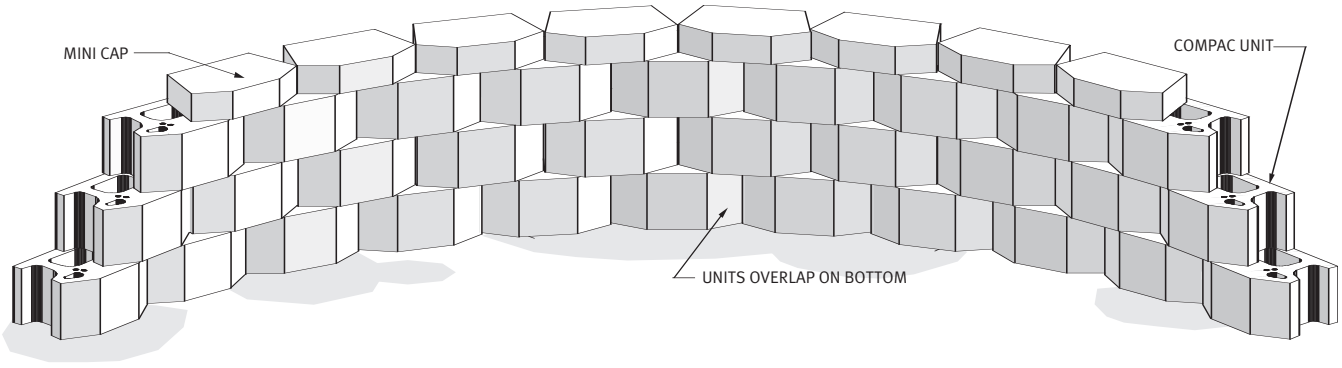
CORNERS AND CURVES

CONCAVE CURVES

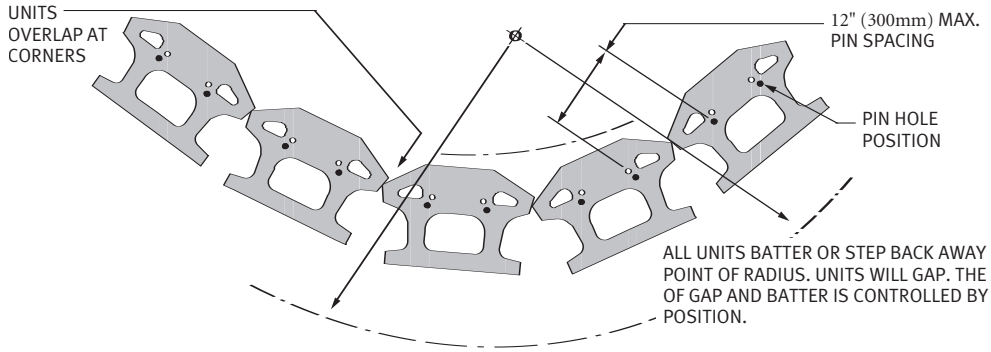
Concave curves are constructed using typical wall units. The following information will provide a complete explanation of construction techniques for building retaining walls with these conditions.

INSTALLATION PROCEDURES:

- Follow standard installation instructions for preparation of subgrade and leveling pad.
- Overlap corners of base course if building with the 8.8° or 4.4° batter options. The amount of overlap will vary based on size of curve. Gapping will occur as the units batter or move away from the point of radius. The rate of gapping is controlled by the severity of the batter (i.e. a 8.8° batter will gap more quickly than a near vertical batter). The distance between the pin holes on adjacent first course units should not exceed 12" (30cm) on center. For best visual appearance, a maximum 1/2" to 3/4" (15 -20mm) gap is recommended.
- Follow standard installation instructions for back filling and placement of additional courses.
- If geogrid reinforcement is used, refer to manufacturer's recommendations for proper placement of this material along concave curves and corners.
- Depending on wall height, radius and batter selection some gapping between units may occur. If gaps exceed acceptable limits, re-drill new pin holes as needed using a 5/8" (15mm) masonry bit and realign units to close gaps.



NOTE: All units shown with Sculptured Rock Face finish



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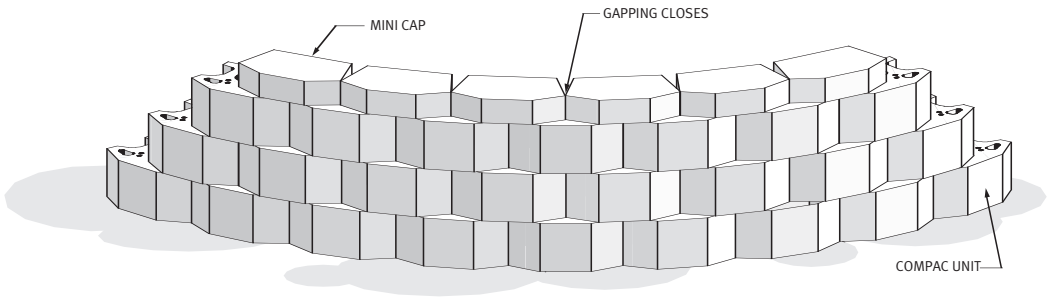
CORNERS AND CURVES

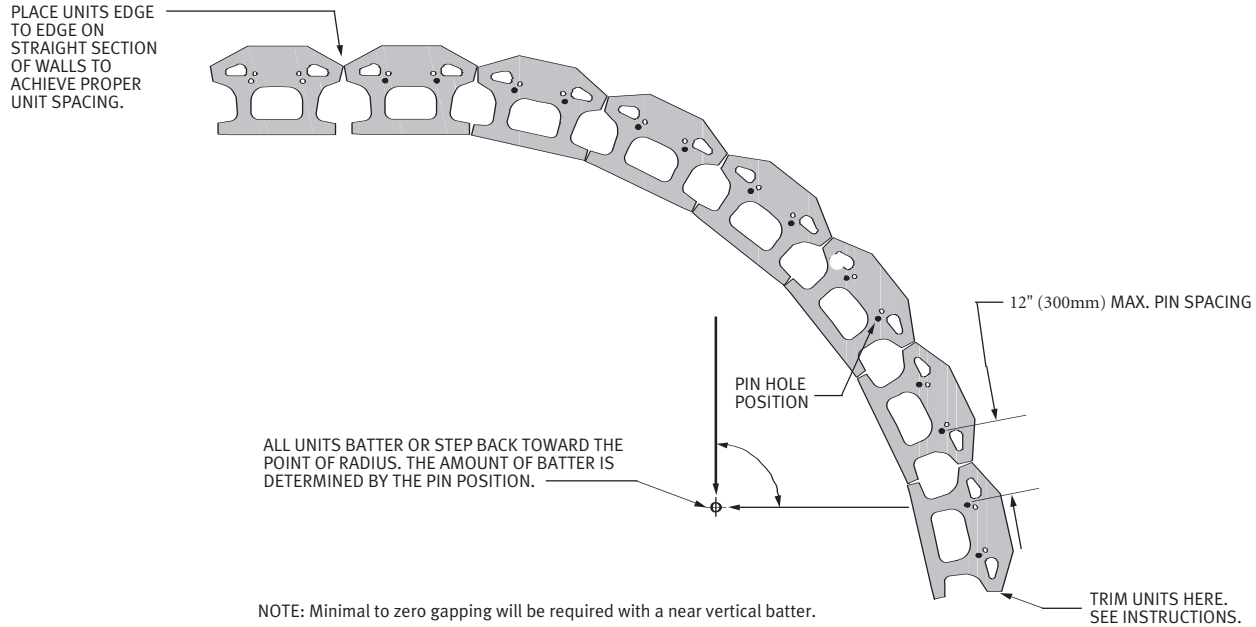
CONVEX CURVES

INSTALLATION PROCEDURES:

- Follow standard installation instructions for preparation of sub grade and leveling pad.
- Place base course units with a small gap between adjacent units. This gap will close with the placement of each additional course of Keystone® units as the units batter and converge toward the point of radius. The rate of closure is controlled by the severity of the batter (i.e. a 8.8° batter will close more quickly than a near vertical batter). A maximum of 1/2" to 3/4" (15-20mm) gap is recommended for best visual appearance. To achieve this, the distance between the pin holes on adjacent first course units should not exceed 12" (30cm) on center.
- Follow standard installation instructions for back filling and placement of additional courses.
- If geogrid reinforcement is used, refer to manufacturers recommendations for proper placement of this material along convex curves.
- Depending on wall height, radius and batter selection some binding between units may occur. If this prohibits proper placement of additional units, try one of the following suggestions.
  - Trim unit corners using either a masonry cold chisel or concrete saw.
  - Push units back and realign. Re-drill new pin holes as needed using a 5/8" (15mm) masonry bit.



NOTE: All units shown with Sculptured Rock Face finish



NOTE: Minimal to zero gapping will be required with a near vertical batter.

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C O R N E R S A N D C U R V E S

QUESTIONS AND ANSWERS

CORNERS & CURVES

QUESTION:	*When building an inside 90° corner, how much should be cut off the first course?*
ANSWER:	A good place to start is approximately at the half unit range. This will result in field cutting the caps to finish the top of wall in the corner. If it is important to finish the wall with full cap units versus a cut unit as shown below, you will need to know how much setback occurs in your wall from base course to cap course to determine the starting location of the last full unit (uncut) at the base. To determine setback, follow this simple method: Place 3 units on a smooth level surface. Place fiberglass pins in desired setback option. Place next course of units in running bond pattern over base units. Pull upper unit forward towards face of wall. Now measure distance from tail surface of lower and upper courses. This is your setback dimension! Multiply this measurement times the total number of vertical courses. This will then give you the projected horizontal shift required to handle the setback of the two 90° walls away from the starting point.
QUESTION:	*How do I determine the smallest **concave** radius I can construct before unacceptable gapping between units may occur?*
ANSWER:	Multiply the height of wall by two. The result is the smallest radius dimension.
EXAMPLE:	Wall Height (4') (1.2m) x 2 = Smallest Radius (8') (2.4m) NOTE: This formula applies to installations using the 8.8° batter. For the 4.4° batter use a multiple of 1.5. For the near vertical batter, no radius limitations are expected. No minimum radius applies. The near vertical batter is recommended for walls with multiple curves.
QUESTION:	*How do I determine the smallest **convex** radius I can construct before binding between units may occur?*
ANSWER:	Multiply the height of wall by two. The result is the smallest radius dimension.
EXAMPLE:	Wall Height (4') (1.2m) x 2 = Smallest Radius (8') (2.4m) NOTE: This formula applies to installations using the 8.8° batter. For the 4.4° batter use a multiple of 1.5. For the near vertical batter, no radius limitations are expected. Minimum overall radius is 3.5' (1m).
QUESTION:	*How do I determine how many Keystone® units will be required for a given radius or for a complete circle?*
ANSWER:	Multiply the diameter of the circle (the measurement of a line passing through the center from one side of the circle to the other or 2 x the radius) by 3.146. Divide the result by 1.5. The result is the number of units for a complete circle.
EXAMPLE:	Diameter (10') x 3.146 = 31.46 ÷ 1.5 = 21 units for a 10' circle or 5 units for a 90°-5' radius arc within a wall (3.05m x 3.146 = 9.6m x 2.19 units/m = 21 units)

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