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Corners and Curves Guide



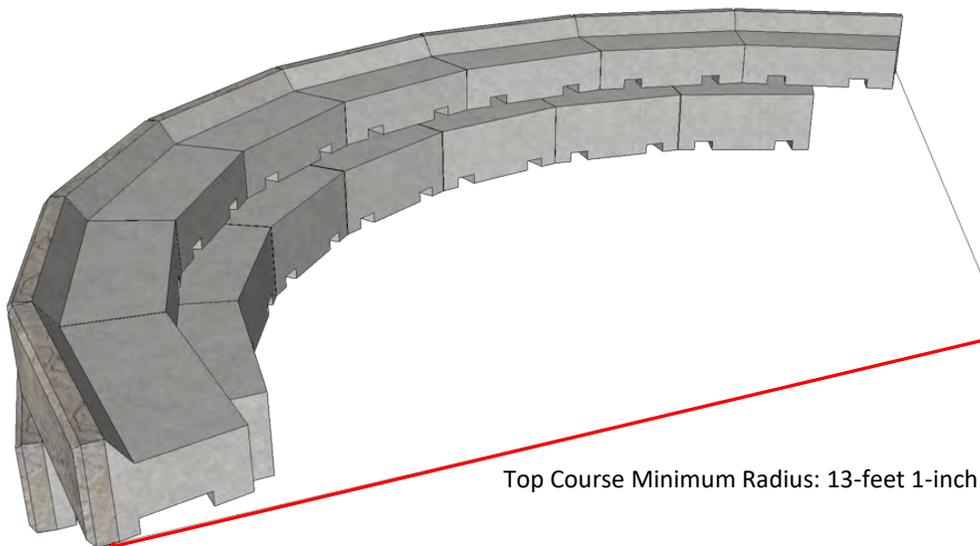
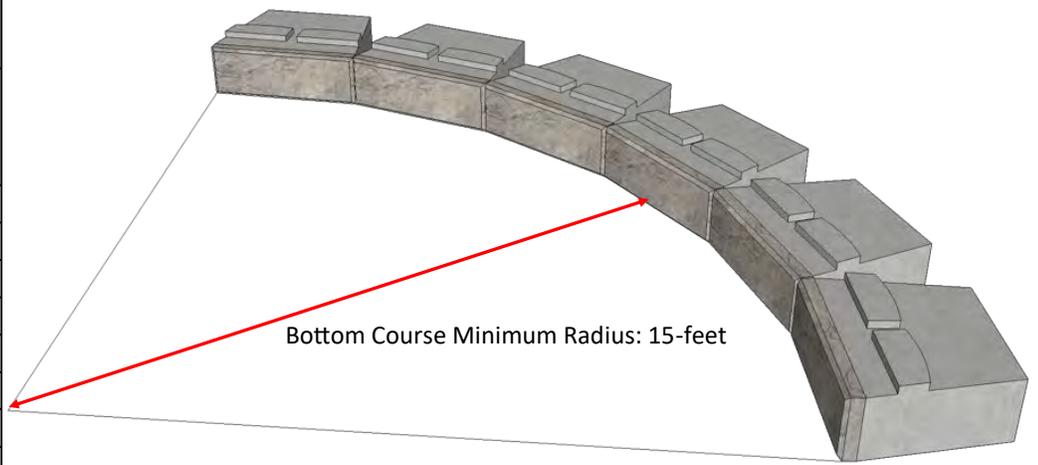
Recon Wall Systems — Corner and Curves Guide

Curved Walls

The absolute minimum turning radius for Recon blocks is a little over 13-feet. Due to the integral setback of the blocks, the actual minimum radius grows or shrinks by approximately 2-inches for each additional course depending on whether it is an inside or outside curve. For ease of installation, it is recommended that the radius, of a multiple course wall, be no less than about 15-feet at the bottom of an inside radius or top of an outside radius wall. From this starting point, you should add approximately 2-inches for each additional course on a curved wall.

Because Recon blocks have a fixed length and a built-in setback, walls constructed along radiuses will tend to run off-bond over long curves and as the height of the wall increases. For wall integrity, it is recommended that whenever a point is reached where there is less than 1/3 of an upper block bearing on the block below, a partial block (created by cutting a fitting block) should be inserted into the wall to return the bond to normal. For aesthetic purposes, it is recommended that you stagger any partial blocks placed so they don't all occur in the same section along the length of the wall face.

Inside Curve Minimum Radius		
Wall Height (ft)	Number of Courses	Top Row Min. Radius (ft)
2.67	2	15.17
4.00	3	15.33
5.33	4	15.50
6.67	5	15.67
8.00	6	15.83
9.33	7	16.00
10.67	8	16.17
12.00	9	16.33

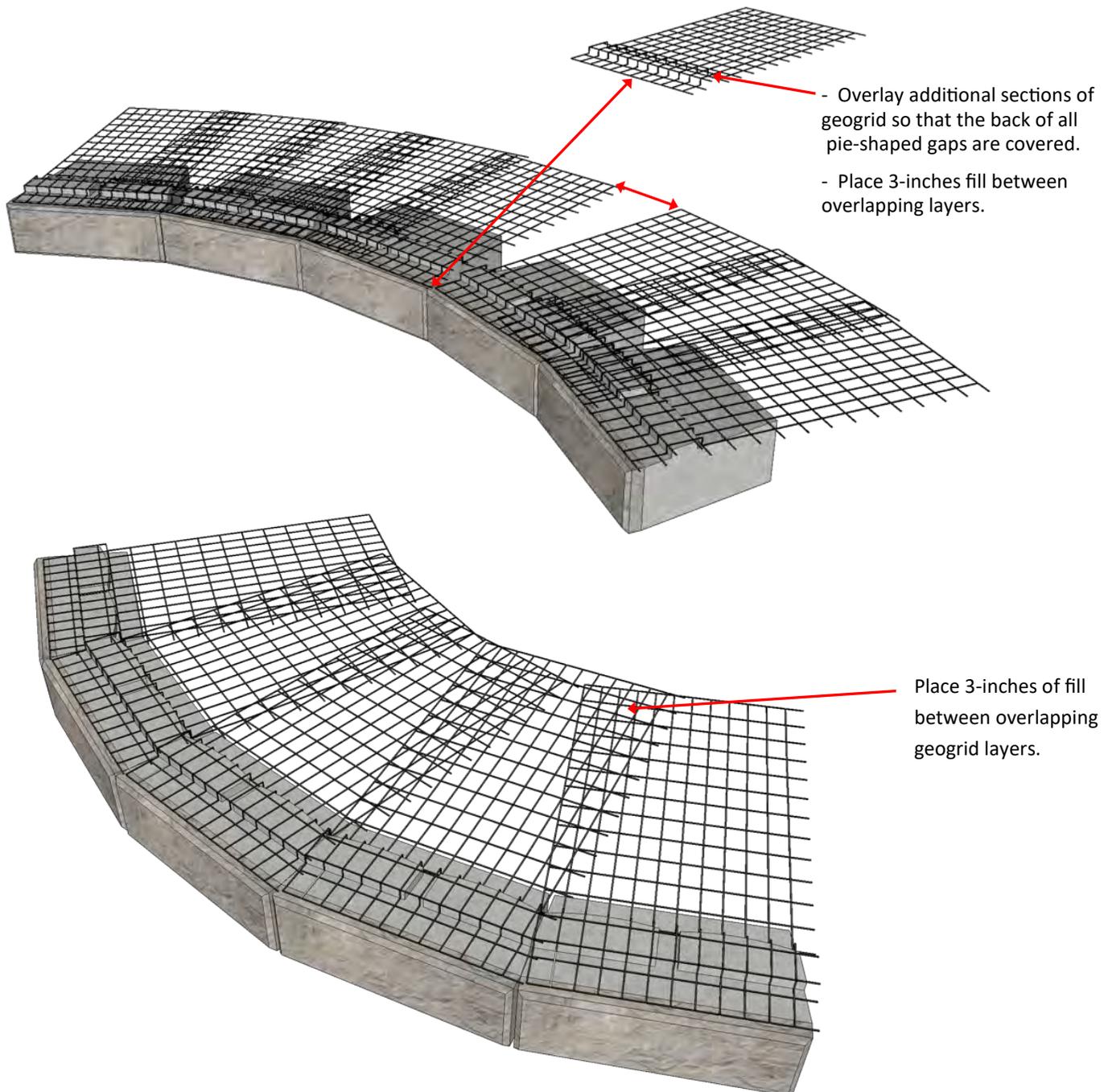


Outside Curve Minimum Radius		
Wall Height (ft)	Number of Courses	Base Row Min. Radius (ft)
2.67	2	14.0
4.00	3	14.5
5.33	4	15.0
6.67	5	15.5
8.00	6	16.0
9.33	7	16.5
10.67	8	17.0
12.00	9	17.5

Geogrid Placement on Curved Walls

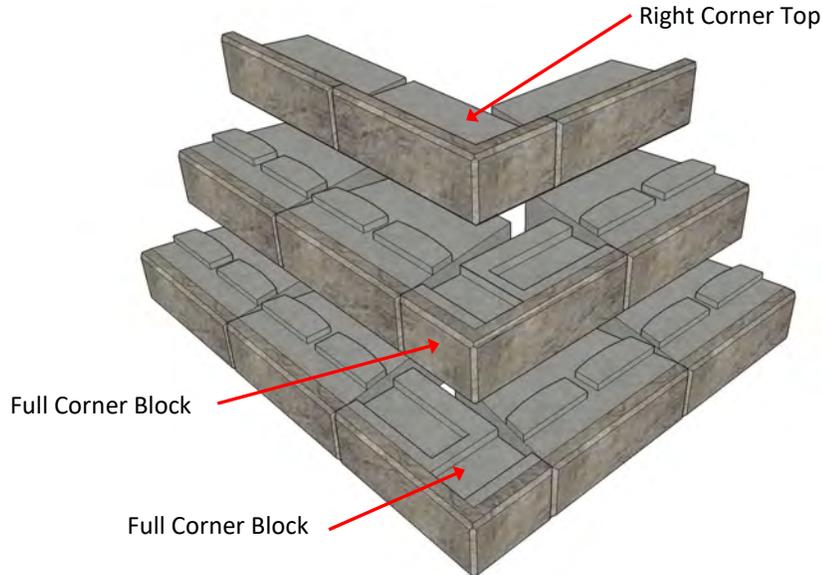
Most accepted design methodologies stipulate that the reinforcement shall be continuous along the length of the wall at both the front and rear of the reinforced soil zone. Geogrid layers should not overlap unless there is at least 3-inches of compacted soil separating the individual layers. In addition, the natural rectangular sections of geogrid should *never* be cut to form a wedge shape.

Rectangular reinforcement sections will naturally overlap in a pie-shaped fashion at either the front or the back of the reinforced zone depending on whether it is an inside or outside curve. The figures show how reinforcement is laid out in this situation. All the pie-shaped overlap areas should be separated by at least 3-inches of backfill.



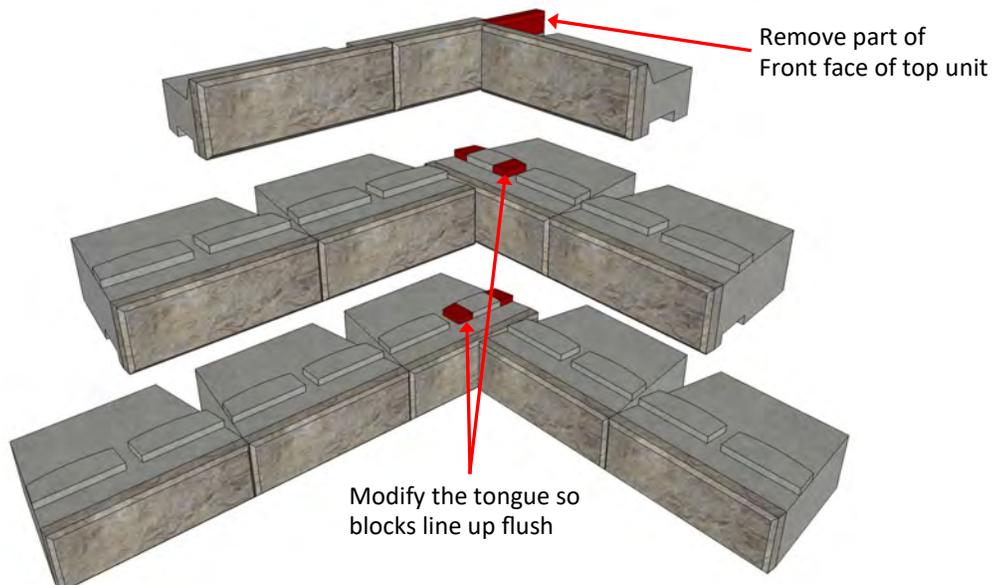
Outside 90-degree Corners

When building a wall with an outside 90-degree corner, it is recommended that construction start at the corner and work away from this point in both directions. Unless one of the walls going away from the 90-degree corner runs into another corner or abutment, no block should need to be cut. One standard corner block will be used at the corner on each course, alternating the long and short returns. The corner blocks should be glued at the corner where they overlap with a high-quality, exterior-grade concrete adhesive and extra drainage stone placed in the corner (Refer to Recon Typical Construction Drawings for additional information).



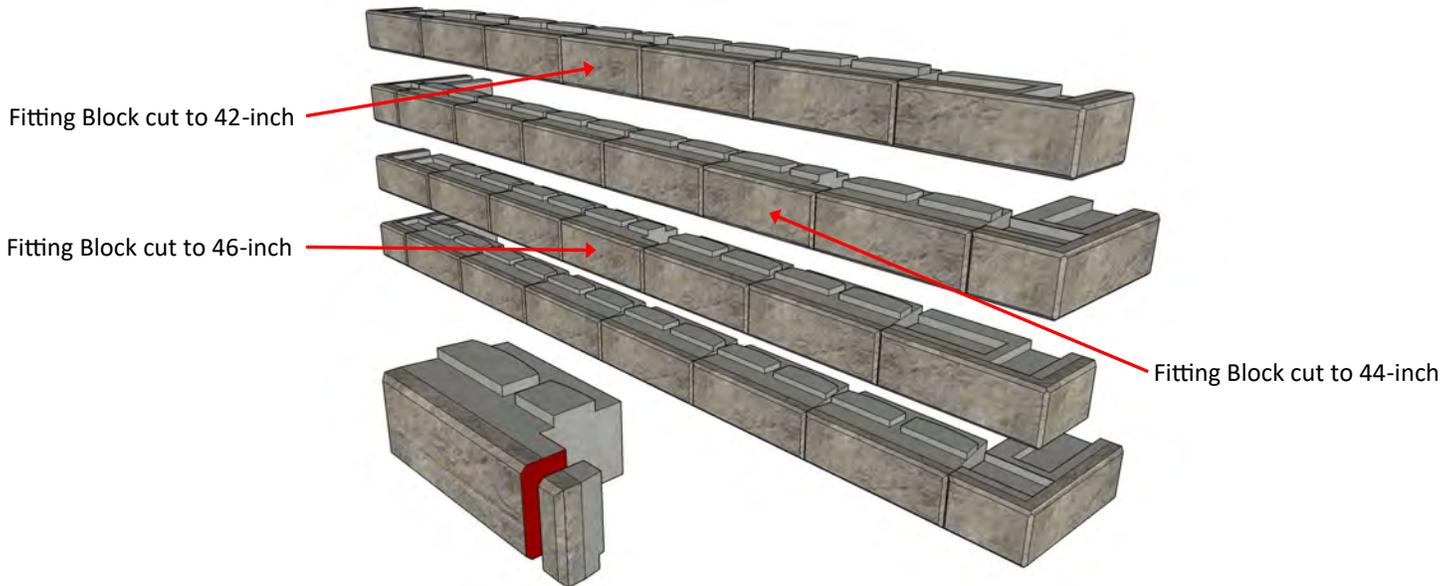
Inside 90-degree Corners

When building a wall with an inside 90-degree corner, it is recommended that once the base row is laid to the location of the inside corner, subsequent courses should begin at the corner and be laid outward from there. This aids with the alignment of blocks at the corner, given the 1-inch setback that will occur with each additional course of block. On taller walls, the running bond joint will tend to slide off center by 2-inches for every other course of block placed but this does not affect the integrity of the wall. In the corner, a portion of the tongue on one block will need to be removed as shown below. It is preferable to use a retaining wall block with a portion of the tongue removed in lieu of a corner block (especially for taller gravity walls). The use of the retaining wall block in the corner provides full engineered depth of the block at the corner. If a corner block is used, then the blocks must be glued where they overlap.



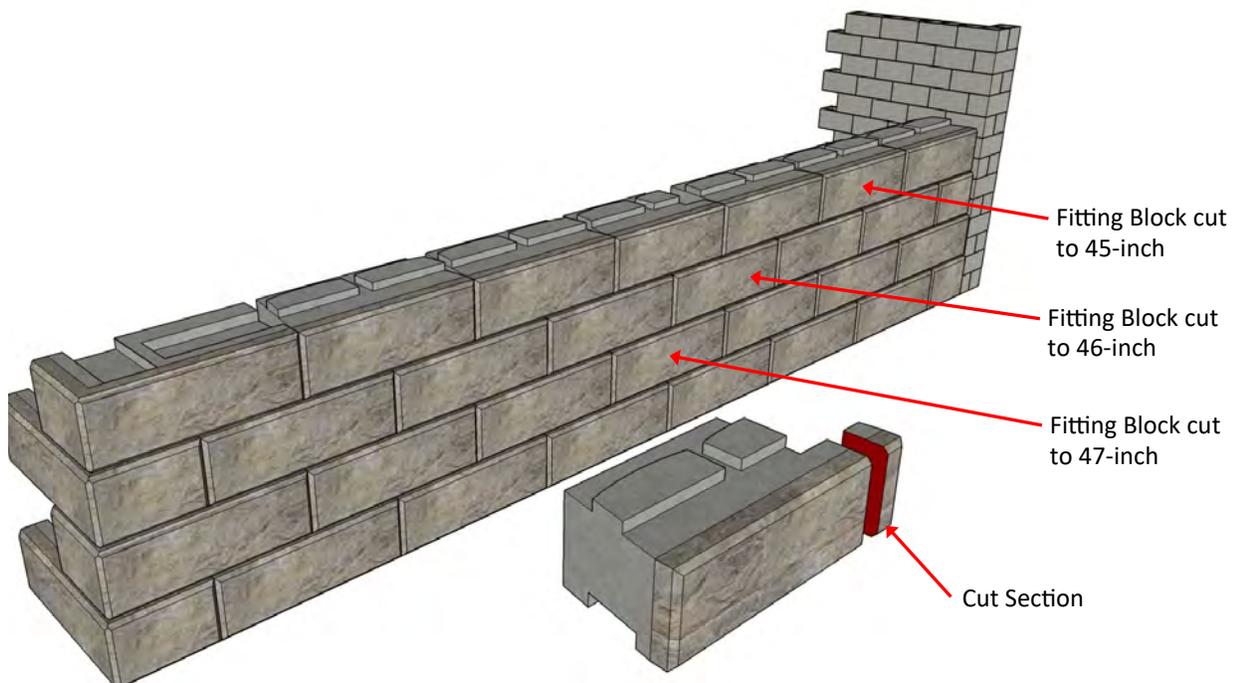
Double Outside 90-degree Corners

When building a wall with a section that is terminated on each end with an outside 90-degree corner, start by placing the corners in their proper location and elevation. Because the wall will narrow by 2-inches (on a 3.6-degree battered wall) for each successive course, a partial block must be cut to fit somewhere along the length of the wall. Use a Recon fitting block to create this partial block, thus making the cutting procedure easier. For aesthetic purposes, it is recommended that you locate these partial blocks at varying locations along the length of the wall.



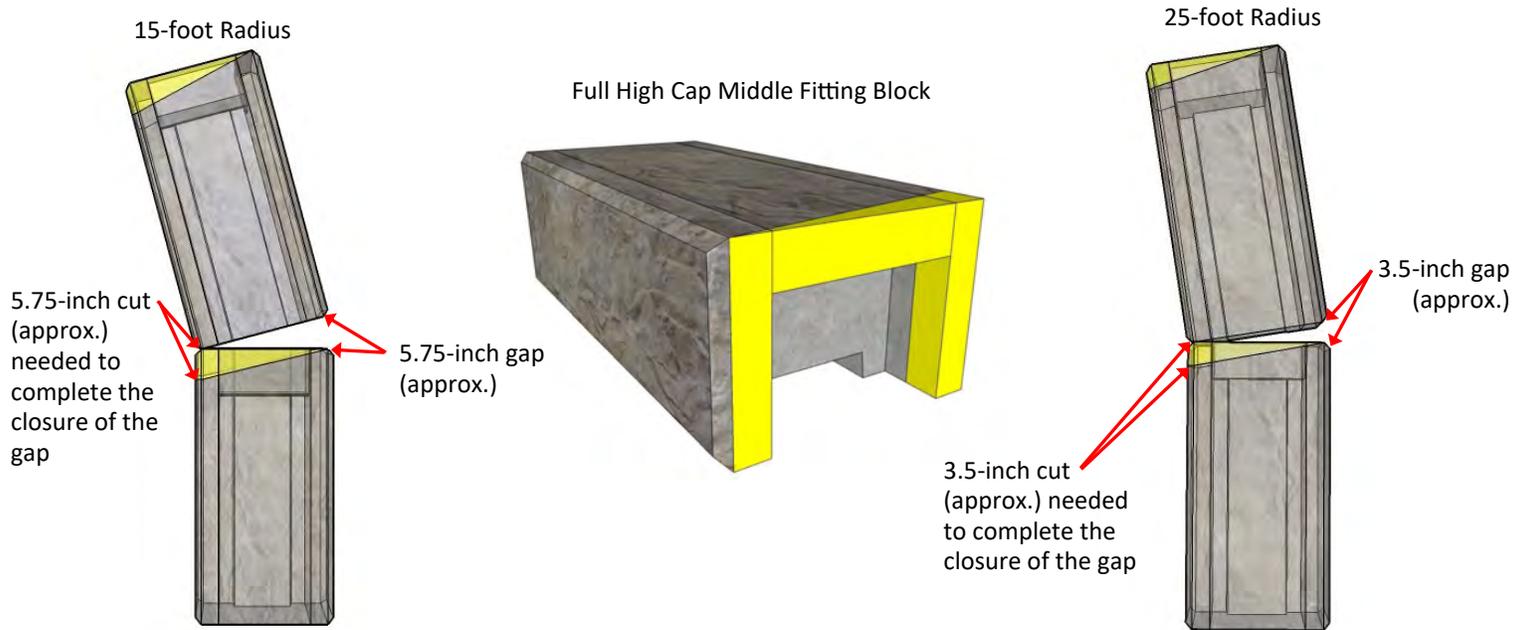
Outside 90-degree Corner to Abutment

At times, a Recon wall may start against an abutment, such as a garage or walk-out basement. Often the other end of the wall will turn with a 90-degree corner. When such a wall is built with the normal setback, each successive course will be 1-inch shorter in length than the course below. The simplest way to build this wall is to use the Recon fitting block and cut the fitting end so that the block will fit into the space left after the rest of the blocks on that course have been laid.



Full-High Cap Blocks

Recon Full-High Cap Blocks can be used when freeboard, above the top of wall finished grade, is required. This solution can be useful when the wall involves numerous step-ups at the top of the finished wall and a finished appearance is desired for all exposed block above grade.



The top of a Recon retaining wall or free-standing wall can be finished using the Recon Full High Cap (16-inches high). When the wall is curved, miter cutting will be required to eliminate the opening that will form between the blocks. Cutting the Recon Full High Cap can require substantial effort since it is a solid piece of concrete, 24-inches thick and 16-inches in height. To reduce the time and energy required to complete this cut, Recon offers a Full High Cap Middle FITTING Block. This block is precast with a recess on one end of the block that is 6-inches deep and leaves about 4-inches of concrete along the top and sides of the block. Thus, the time required to cut this thinner section is significantly reduced when using a standard 14-inch concrete chop saw.

Curved Walls – Freestanding Block

Introducing a curve into a freestanding block wall, especially when the wall product is 24-inches thick, can create some challenges. The design and configuration of the Recon Freestanding System was intended to balance versatility with ease of construction and great aesthetics. The end-to-end tongue and groove design of the system allows the contractor to construct curved walls without needing to cut each block along the curve.

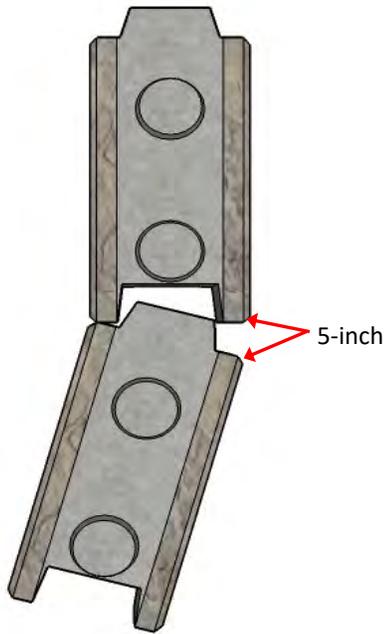
Along the outside curve side of the wall, there will be a small opening between adjacent block face textures. The tighter the radius, the greater this opening will become. However, because of the tongue and groove design, the opening will not appear as a visible crack or gap from either side of the wall.

If, however, the customer does not want this small opening, then the installer can simply cut the block “wings” along the inside curve side of the wall to eliminate or reduce the opening on the outside curve of the wall. Cutting the block wings, which is a 4-inch thick section, to close this opening is much easier and quicker than miter cutting through an entire Fence block that is 24-inches thick. In some cases, a small portion of the adjacent block’s tongue will need to be removed as well.

The drawings below show the size of the opening that results when a wall has a 15-foot and a 25-foot radius. These drawings also show the approximate amount of trimming that would be required if it is desired to close the opening.

15-foot Radius

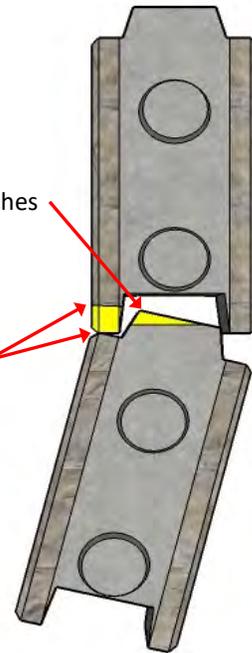
Option 1



*Option 2
Trim Wing &*

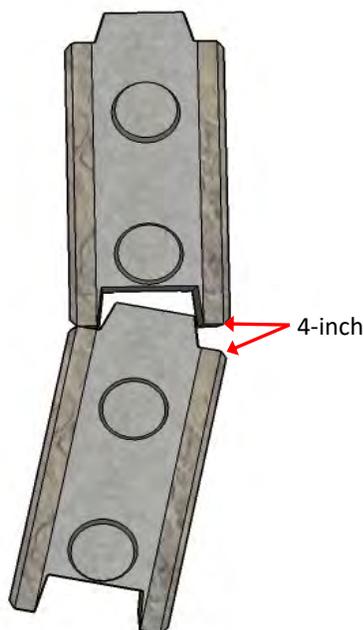
Cut approximately 3-inches off tongue to complete

Cut approximately 5-inches off wing to close gap on



25-foot Radius

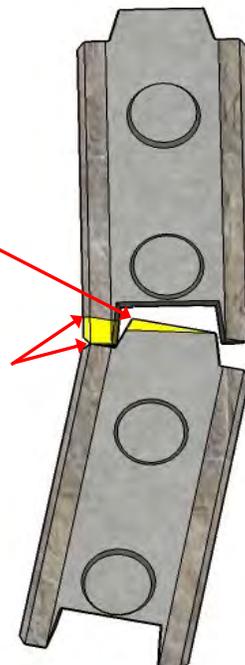
Option 1



*Option 2
Trim Wing &*

Cut approximately 2-inches

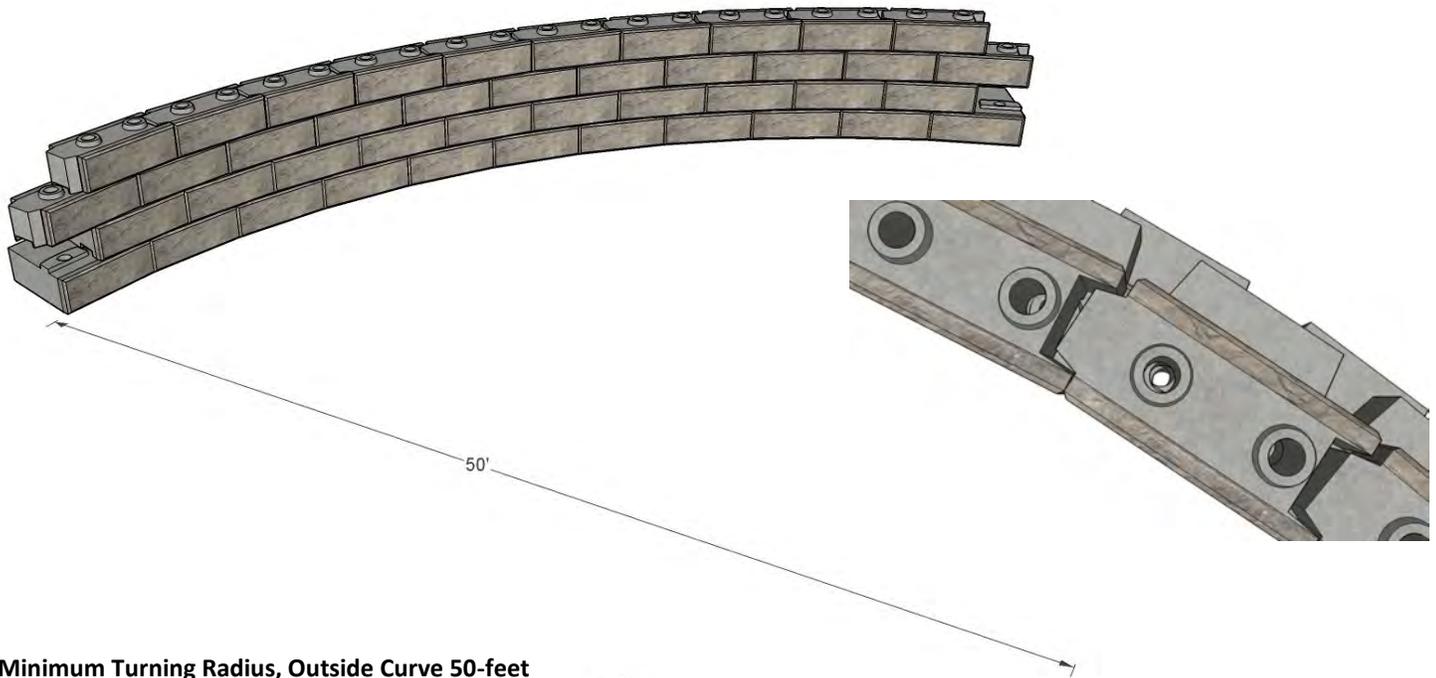
Cut approximately 4-inches off wing to close gap on



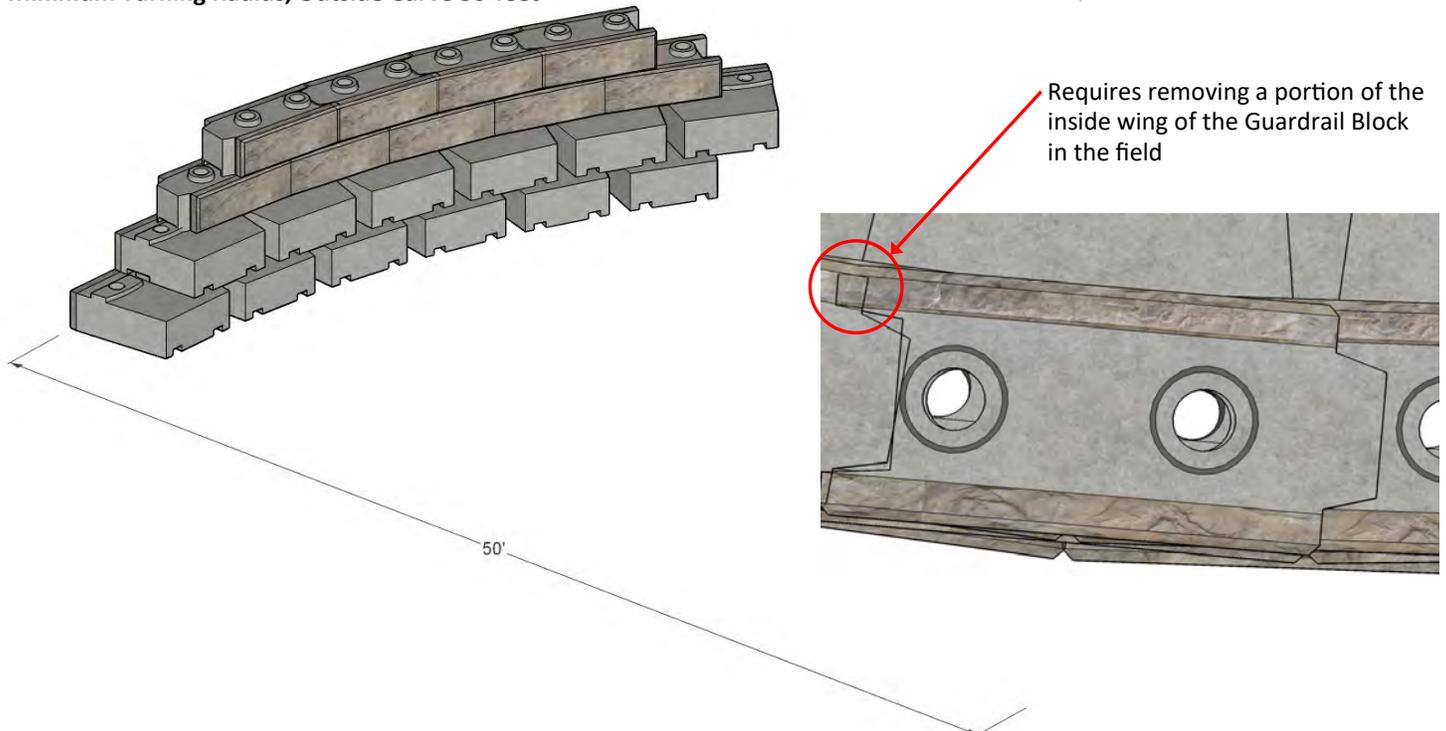
Curved Walls – Freestanding Block with Holes

When constructing a traffic barrier along a curved wall, using Recon's freestanding block with holes, block alignment is critical. Each of the blocks is precast with two 6-inch diameter holes through the block that are spaced 24-inches apart. These holes must align vertically to allow for proper installation of rebar and grout. As the radius of the curve becomes tighter, alignment of these holes becomes more of a challenge. For this reason, the minimum radius for both inside and outside curves should be limited to 50-feet. If your project requires a traffic barrier along a wall curve, please contact Recon for additional guidance as some block cutting and/or core drilling may be required.

Minimum Turning Radius, Inside Curve 50-feet

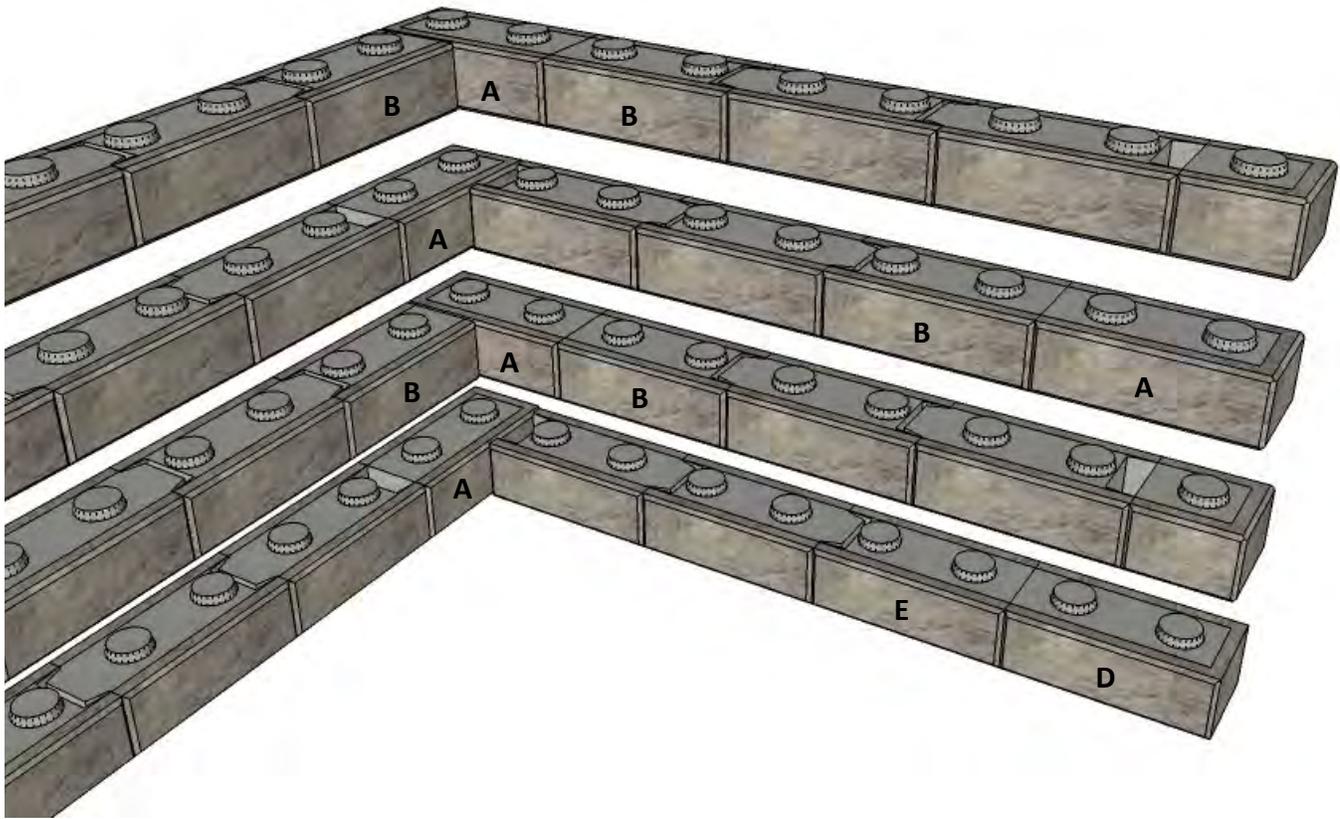


Minimum Turning Radius, Outside Curve 50-feet

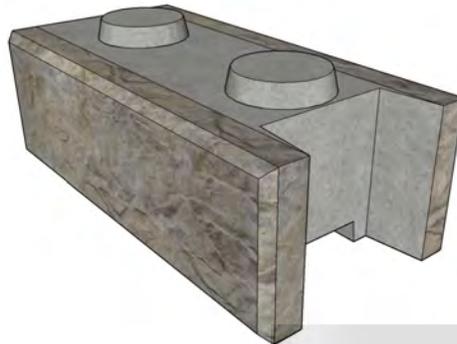


Freestanding Block 90-degree Corners

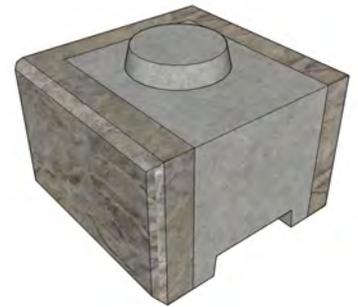
The figure below shows the typical construction of a 90-degree corner using the Recon Freestanding System.



A—Fence Middle End



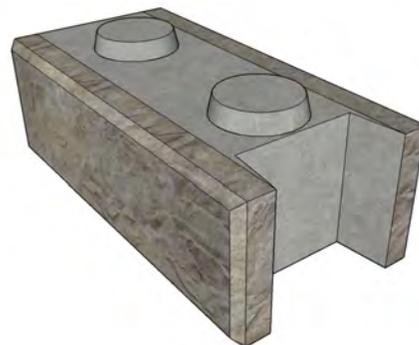
B—Fence Middle Flat End



C—Half Fence Middle End



D—Fence Base End



E—Fence Base Flat End