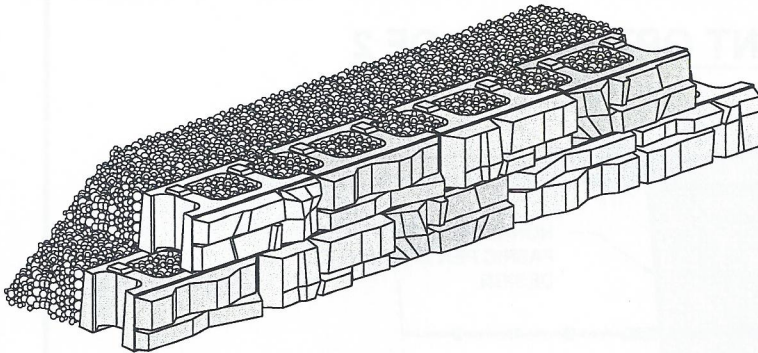


# TYPICAL CONSTRUCTION DETAILS

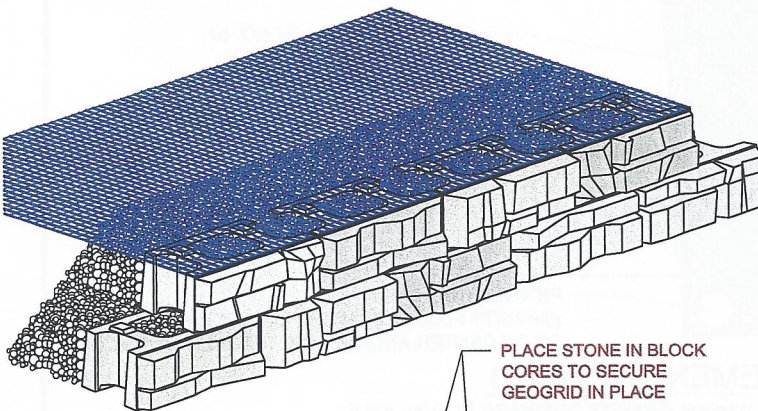
TYPICAL  
CONSTRUCTION  
DETAILS





**STEP 1**

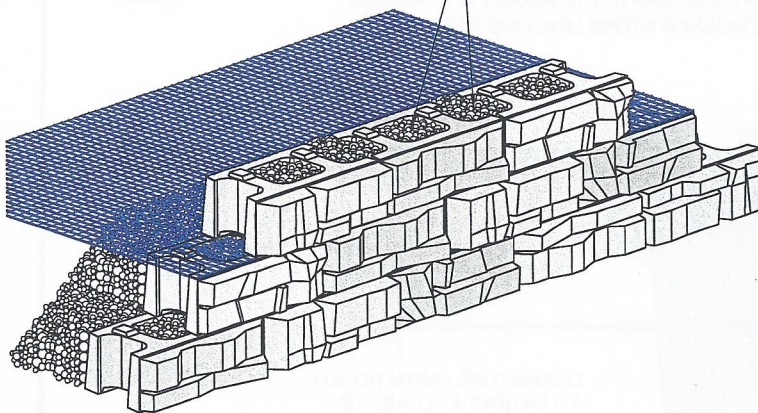
- PLACE BLOCKS.
- PLACE AND COMPACT STONE IN THE BLOCK CORES AND BEHIND THE WALL. PLACE AND COMPACT BACKFILL BEHIND THE STONE.
- STONE AND BACKFILL SHALL BE PLACED AND COMPACTED TO THE ELEVATIONS SHOWN IN THE DESIGN. DO NOT PLACE GEOGRID IF THERE ARE PARTIALLY FILLED BLOCK CORES OR DROPS IN THE GRADE IMMEDIATELY BEHIND THE RETAINING BLOCKS.



**STEP 2**

- PLACE GEOGRID OVER THE BLOCKS AND EXTEND TO THE FRONT PART OF THE BLOCK WHERE THE FACE TEXTURE BEGINS.
- THE GEOGRID SHALL LAY FLAT OR SLIGHTLY SLOPING DOWNWARD AWAY FROM THE WALL FACE AND PULLED TAUT TO REMOVE ANY SLACK.
- THE GEOGRID SHALL BE HELD IN PLACE WITH PINS OR OTHER METHODS RECOMMENDED BY THE GEOGRID MANUFACTURER.

PLACE STONE IN BLOCK CORES TO SECURE GEOGRID IN PLACE



**STEP 3**

- PLACE THE NEXT ROW OF BLOCKS.
- PLACE AND COMPACT STONE IN THE BLOCK CORES AND BEHIND THE WALL. PLACE AND COMPACT BACKFILL BEHIND THE STONE.
- BACKFILL AND STONE PLACEMENT AND COMPACTION SHALL BE PERPENDICULAR TO THE WALL AND PROCEED FROM THE REDI-SCAPE BLOCKS BACK INTO THE RETAINED SOIL TO MINIMIZE THE POTENTIAL TO "BUNCH" THE GEOGRID.

**NOTES**

- TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED FOR THE OPERATION OF TRACKED VEHICLES OVER THE GEOGRID REINFORCEMENT. TURNING OF TRACKED VEHICLES SHOULD BE KEPT TO A MINIMUM TO PREVENT DISPLACEMENT OF THE FILL AND THE GEOGRID REINFORCEMENT.
- RUBBER-TIRED VEHICLES MAY PASS OVER THE GEOGRID REINFORCEMENT AT A SLOW SPEED (LESS THAN 5 MPH). SUDDEN BREAKING AND SHARP TURNING SHOULD BE AVOIDED.
- GEOGRID REINFORCEMENT MUST BE ROLLED OUT WITH THE MACHINE DIRECTION PERPENDICULAR TO THE FACE OF THE WALL.
- GEOGRID REINFORCEMENT SHALL BE CONTINUOUS PERPENDICULAR TO THE WALL FACE. DO NOT USE SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID REINFORCEMENT.

DRAWN BY: J. Johnson	TITLE: <b>GEOGRID CONNECTION</b> <b>115 RETAINING</b>
APPROVED BY:	
DATE: 01-07-10	
SHEET NO. : 1 of 1	DRAWING FILE: RS 115 Geogrid Connection 010710.dwg

	
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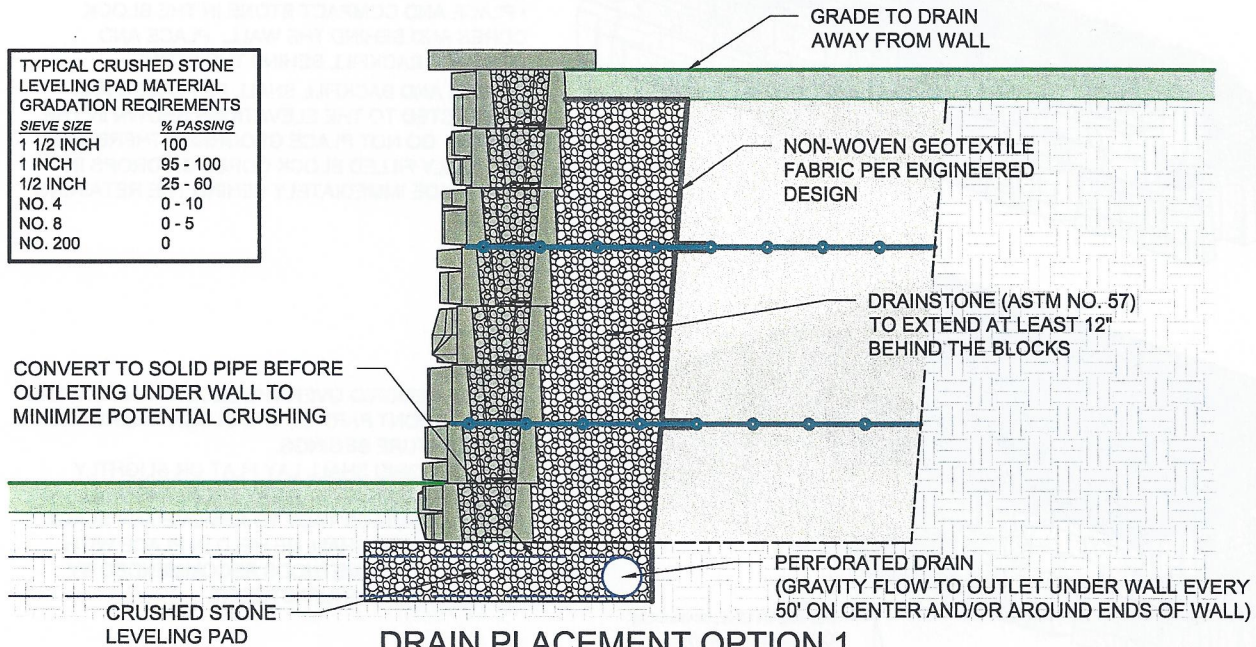


## DRAIN PLACEMENT OPTIONS - 1 OF 2

TYPICAL CRUSHED STONE LEVELING PAD MATERIAL GRADATION REQUIREMENTS

SIEVE SIZE	% PASSING
1 1/2 INCH	100
1 INCH	95 - 100
1/2 INCH	25 - 60
NO. 4	0 - 10
NO. 8	0 - 5
NO. 200	0

CONVERT TO SOLID PIPE BEFORE OUTLETING UNDER WALL TO MINIMIZE POTENTIAL CRUSHING



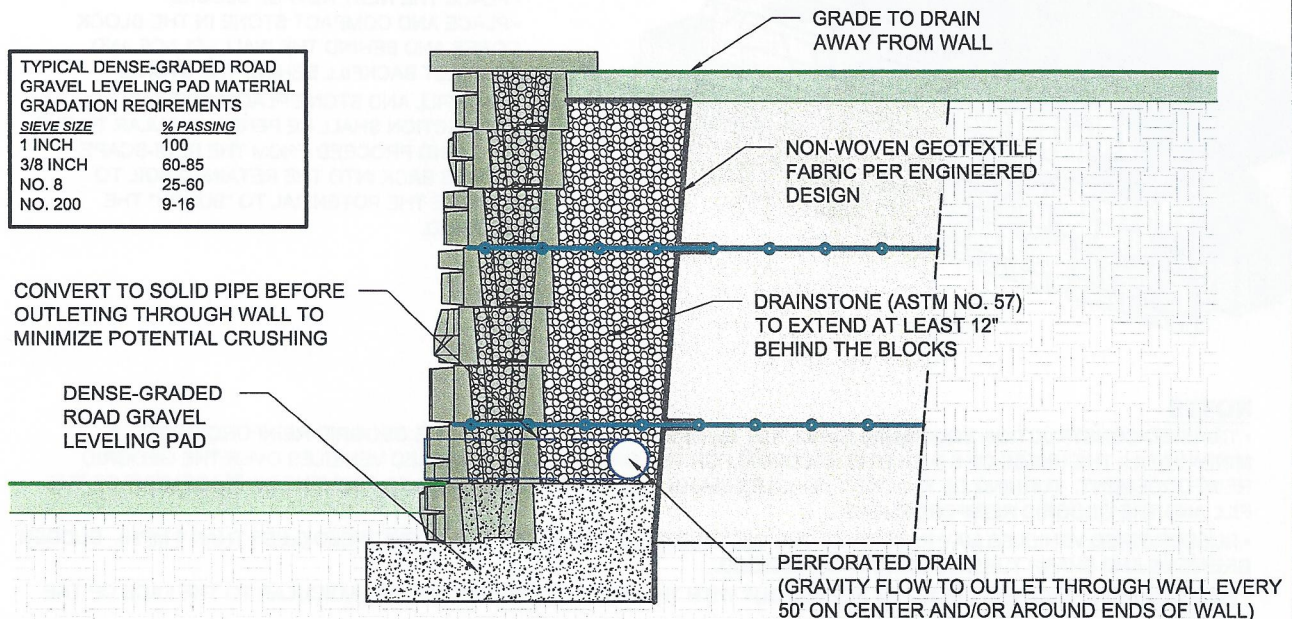
### DRAIN PLACEMENT OPTION 1

THIS DETAIL IS INTENDED FOR USE WHERE GRAVITY DRAINAGE IS AVAILABLE TO THE BOTTOM OF THE CRUSHED STONE LEVELING PAD

TYPICAL DENSE-GRADED ROAD GRAVEL LEVELING PAD MATERIAL GRADATION REQUIREMENTS

SIEVE SIZE	% PASSING
1 INCH	100
3/8 INCH	60-85
NO. 8	25-60
NO. 200	9-16

CONVERT TO SOLID PIPE BEFORE OUTLETING THROUGH WALL TO MINIMIZE POTENTIAL CRUSHING



### DRAIN PLACEMENT OPTION 2

THIS DETAIL IS INTENDED FOR USE WHERE GRAVITY DRAINAGE IS ONLY AVAILABLE TO THE BOTTOM OF THE EXPOSED WALL FACE

DRAWN BY:  
J. Johnson

APPROVED BY:

DATE:  
12-11-09

SHEET NO. :  
1 of 2

TITLE:

DRAIN PLACEMENT OPTIONS  
115 RETAINING

DRAWING FILE:  
RS 115 Drain Options 121109.dwg

**REDI-SCAPES**

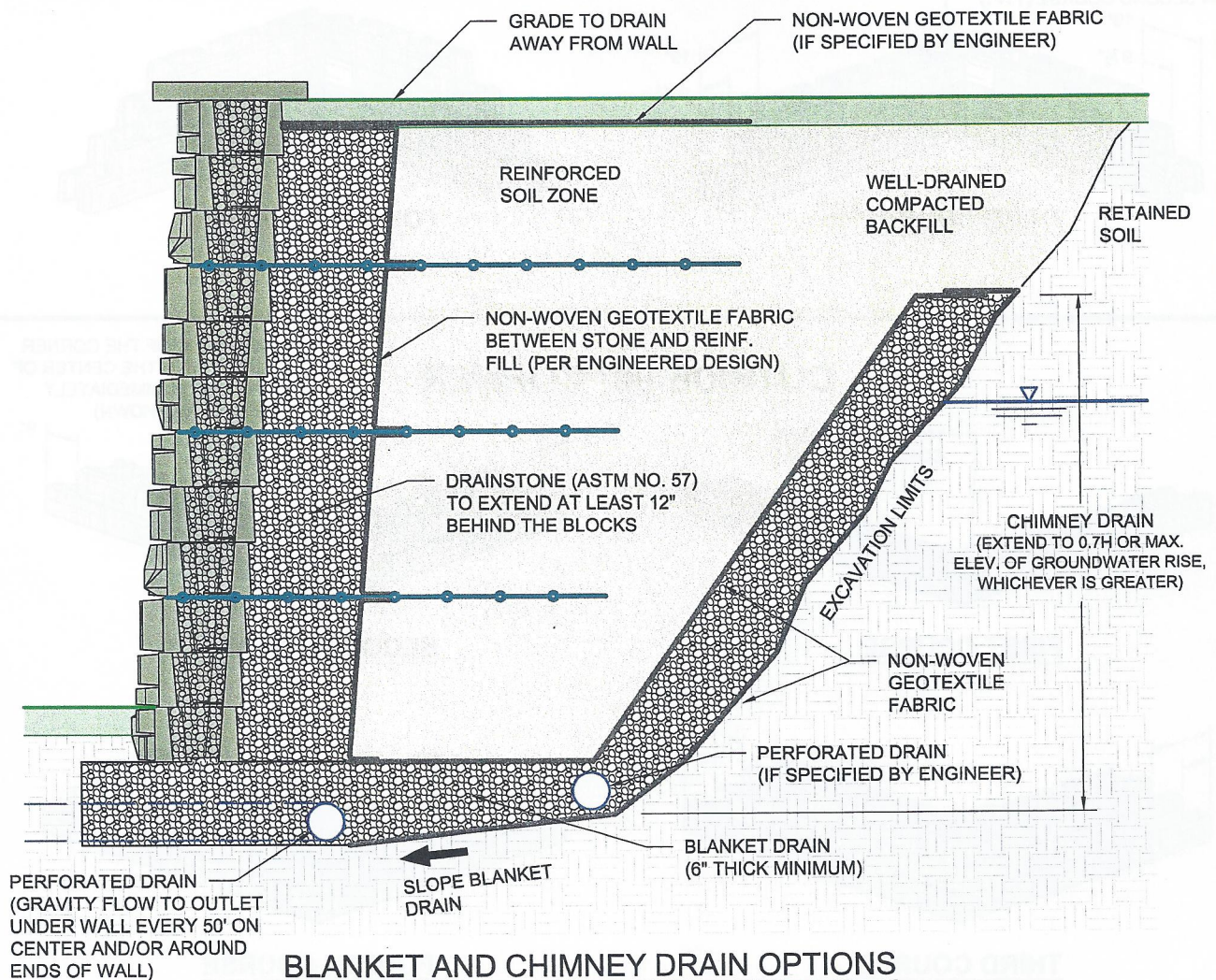
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## DRAIN PLACEMENT OPTIONS - 2 OF 2

### DRAIN PLACEMENT NOTES:

1. CLEARLY UNDERSTAND THE DRAINAGE CHARACTERISTICS OF THE SITE, INCLUDING BOTH SURFACE AND SUBSURFACE WATER FLOW. HAVE A DETAILED PLAN TO PROPERLY DEAL WITH ANY WATER BEFORE STARTING CONSTRUCTION.
2. INSTALL THE DRAIN IN THE LOWEST POSSIBLE POINT BEHIND THE WALL TO ALLOW THE OUTLET PIPE TO DRAIN BY GRAVITY TO DAYLIGHT.
3. OUTLET TO A STORM DRAIN SYSTEM SHOULD ONLY BE MADE UNDER SPECIFIC DESIGN, OVERSIGHT, AND DIRECTION BY A PROFESSIONAL ENGINEER.
4. GRADE AREAS BOTH ON TOP AND BOTTOM OF THE WALL TO DIRECT SURFACE WATER RUNOFF AWAY FROM THE RETAINING WALL. DRAINAGE SWALES MAY BE REQUIRED.
5. USE OF A BLANKET AND/OR CHIMNEY DRAIN IS RECOMMENDED IN AREAS WHERE GROUNDWATER CAN BE EXPECTED NEAR THE BOTTOM OF THE WALL OR FLOWING THROUGH THE RETAINED SOIL ZONE.



THIS DETAIL IS RECOMMENDED IN AREAS WHERE GROUNDWATER CAN BE EXPECTED NEAR THE BOTTOM OF THE WALL OR FLOWING THROUGH THE RETAINED SOIL ZONE

DRAWN BY: J. Johnson	TITLE: <b>DRAIN PLACEMENT OPTIONS</b> <i>115 RETAINING</i>
APPROVED BY:	
DATE: 12-11-09	
SHEET NO. : 2 of 2	DRAWING FILE: RS 115 Drain Options 121109.dwg

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**NOTE:**  
FOR AN INSIDE 90° CORNER,  
THE RUNNING BOND WILL BE  
SHIFTED BY 1/2" ON EACH ROW  
DUE TO BATTER ON WALLS.

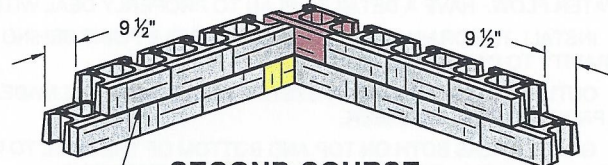
### INSIDE 90° CORNER

ALIGN FACE OF ROW  
IN CENTER OF LAST  
(YELLOW) BLOCK

OVERLAP RED BLOCK IN  
SECOND COURSE OVER  
BOTH YELLOW AND GRAY  
END BLOCKS ON FIRST  
COURSE (TYPICAL)



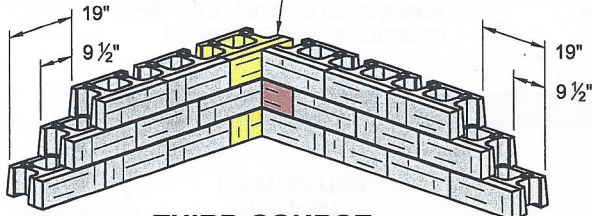
**FIRST COURSE**



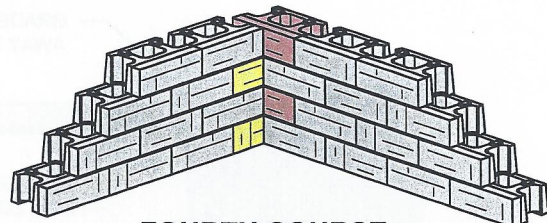
**SECOND COURSE**

OVERLAP YELLOW BLOCK IN  
THIRD COURSE OVER BOTH  
RED AND GRAY END BLOCKS  
ON SECOND COURSE (TYP.)

SHIFT BLOCKS IN EACH ROW  
AN EXTRA 1/2" CLOSER TO  
THE CORNER TO ACCOUNT  
FOR BATTER IN WALLS



**THIRD COURSE**

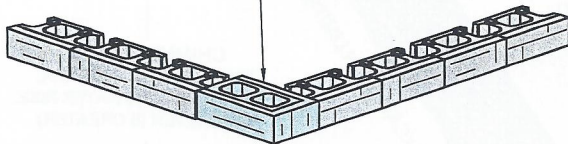


**FOURTH COURSE**

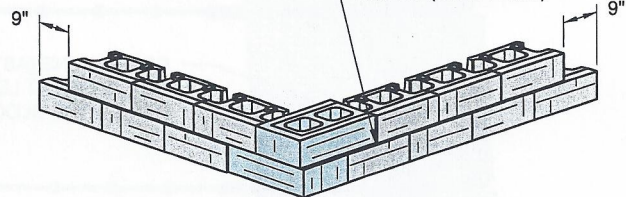
### OUTSIDE 90° CORNER

140 FREESTANDING  
CORNER (TYPICAL)

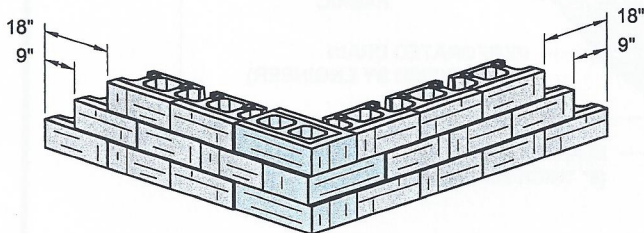
ALIGN END OF THE CORNER  
BLOCK WITH THE CENTER OF  
THE BLOCK IMMEDIATELY  
BELOW (AS SHOWN)



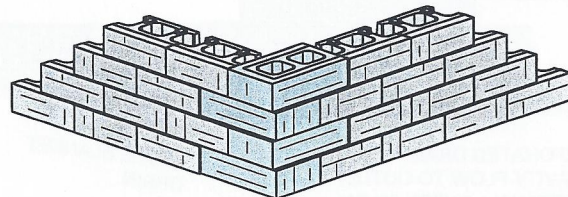
**FIRST COURSE**



**SECOND COURSE**



**THIRD COURSE**



**FOURTH COURSE**

DRAWN BY:  
J. Johnson

APPROVED BY:

DATE:  
01-05-10

SHEET NO. :  
1 of 1

TITLE:

**CORNER OPTIONS**  
**115 RETAINING**

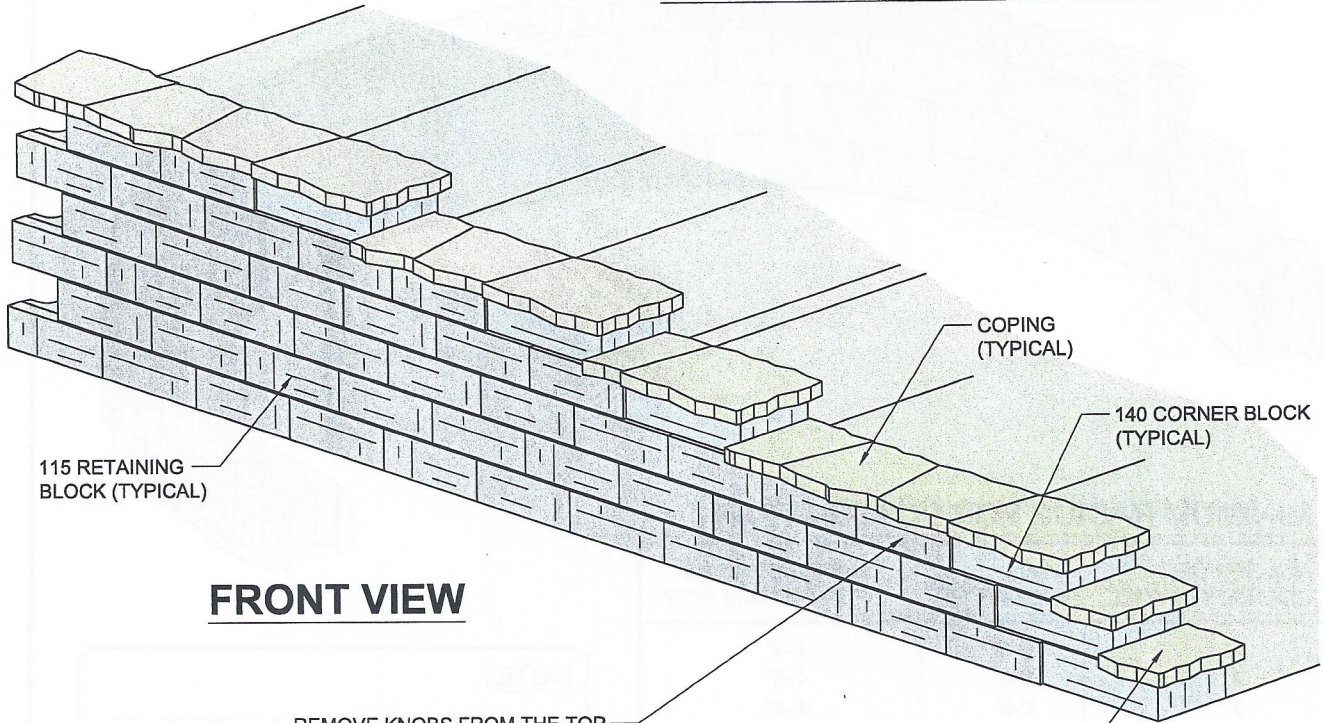
DRAWING FILE:  
RS 115 Corner Options 010510.dwg

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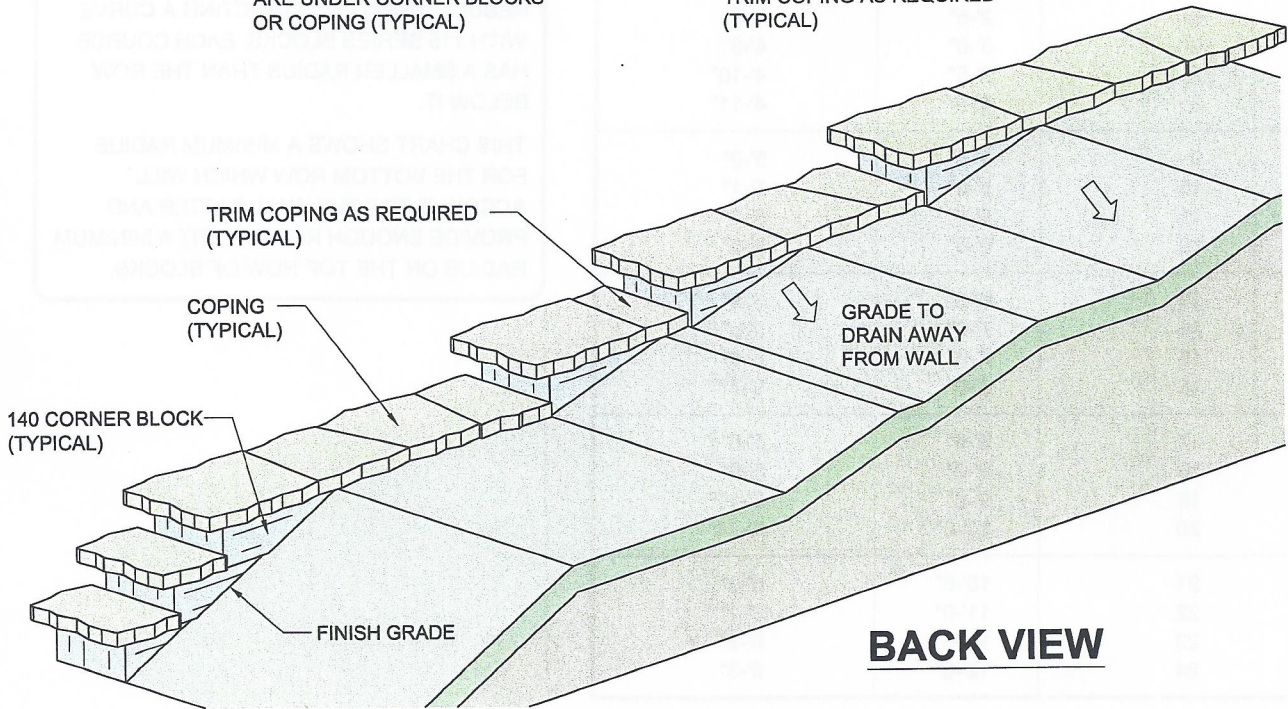
# WALL STEP-DOWN OPTIONS



## FRONT VIEW

REMOVE KNOBS FROM THE TOP OF RETAINING BLOCKS WHICH ARE UNDER CORNER BLOCKS OR COPING (TYPICAL)

TRIM COPING AS REQUIRED (TYPICAL)

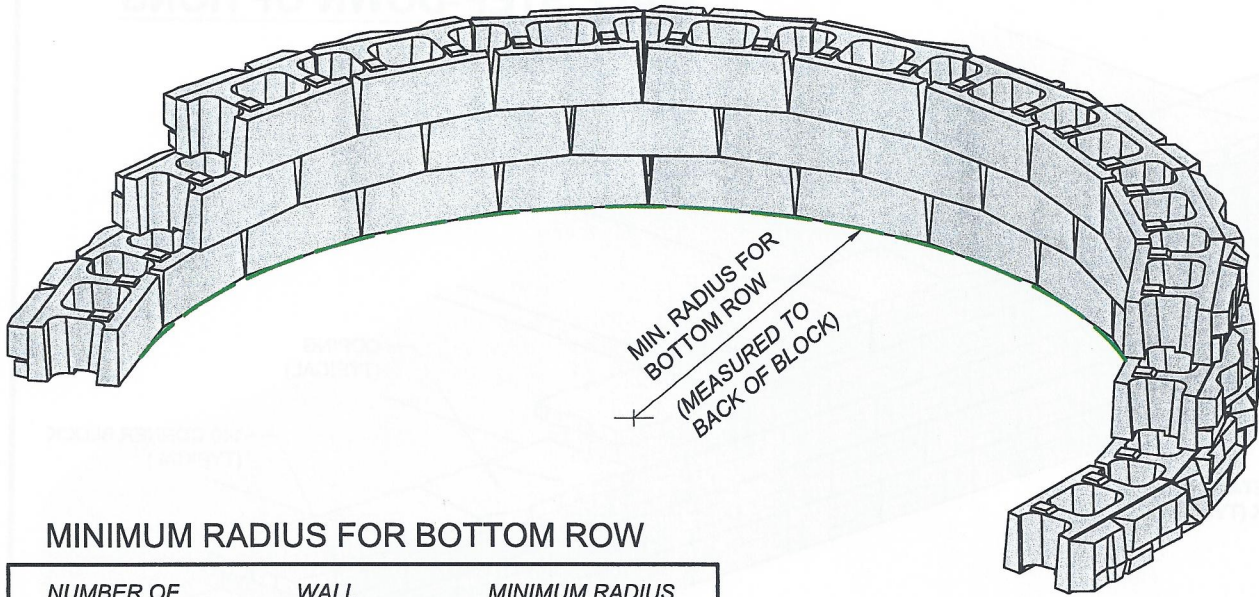


## BACK VIEW

DRAWN BY: J. Johnson	TITLE:
APPROVED BY:	WALL STEP-DOWN OPTIONS
DATE: 01-05-10	115 RETAINING
SHEET NO. : 1 of 1	DRAWING FILE: RS 115 Step Down Options 010510.dwg

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**MINIMUM RADIUS FOR BOTTOM ROW**

NUMBER OF COURSES IN WALL	WALL HEIGHT	MINIMUM RADIUS FOR BOTTOM ROW
1	0'-6"	4'-4"
2	1'-0"	4'-5"
3	1'-6"	4'-6"
4	2'-0"	4'-7"
5	2'-6"	4'-8"
6	3'-0"	4'-9"
7	3'-6"	4'-10"
8	4'-0"	4'-11"
9	4'-6"	5'-0"
10	5'-0"	5'-1"
11	5'-6"	5'-2"
12	6'-0"	5'-3"
13	6'-6"	5'-4"
14	7'-0"	5'-5"
15	7'-6"	5'-6"
16	8'-0"	5'-7"
17	8'-6"	5'-8"
18	9'-0"	5'-9"
19	9'-6"	5'-10"
20	10'-0"	5'-11"
21	10'-6"	6'-0"
22	11'-0"	6'-1"
23	11'-6"	6'-2"
24	12'-0"	6'-3"

**NOTE:**

115 SERIES BLOCKS HAVE A SETBACK, OR BATTER, BETWEEN COURSES. AS A RESULT, WHEN CONSTRUCTING A CURVE WITH 115 SERIES BLOCKS, EACH COURSE HAS A SMALLER RADIUS THAN THE ROW BELOW IT.

THIS CHART SHOWS A MINIMUM RADIUS FOR THE BOTTOM ROW WHICH WILL ACCOUNT FOR THE WALL BATTER AND PROVIDE ENOUGH ROOM TO FIT A MINIMUM RADIUS ON THE TOP ROW OF BLOCKS.

DRAWN BY:  
J. Johnson

APPROVED BY:

DATE:  
01-06-10

SHEET NO.:  
1 of 1

TITLE:

**MINIMUM RADIUS DETAILS  
115 RETAINING**

DRAWING FILE:  
RS 115 Minimum Radius Details 010610.dwg



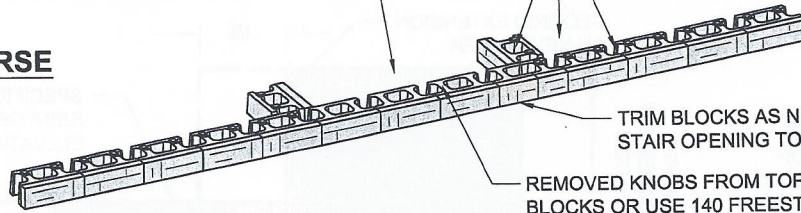
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**FIRST COURSE**

INCLUDE EXTRA STONE AS NEEDED TO PROVIDE LEVELING PAD FOR NEXT STAIR RISER

PLACE AND COMPACT DRAINSTONE IN BLOCK CORES AND BEHIND WALL. PLACE AND COMPACT BACKFILL BEHIND DRAINSTONE.

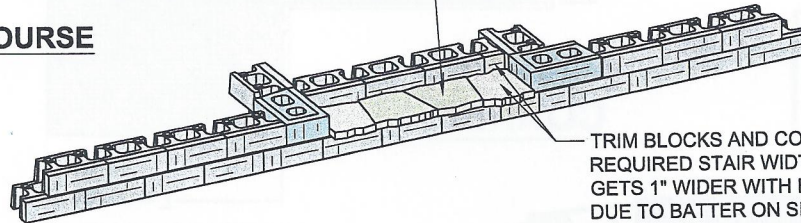


TRIM BLOCKS AS NEEDED TO SET STAIR OPENING TO DESIRED WIDTH

REMOVED KNOBS FROM TOP OF 115 RETAINING BLOCKS OR USE 140 FREESTANDING BLOCKS FOR STAIR RISERS

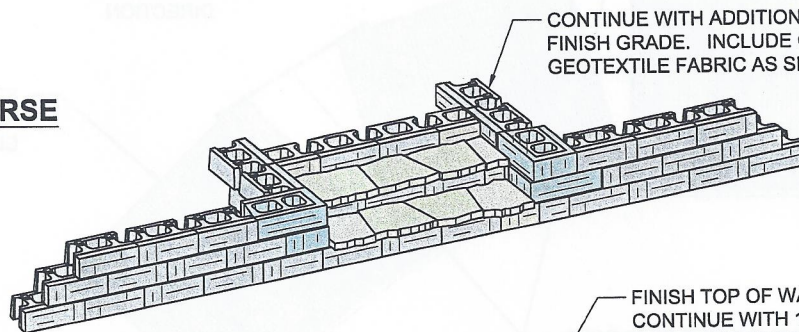
PLACE COPING ON STONE LEVELING PAD FOR STAIR TREADS

**SECOND COURSE**



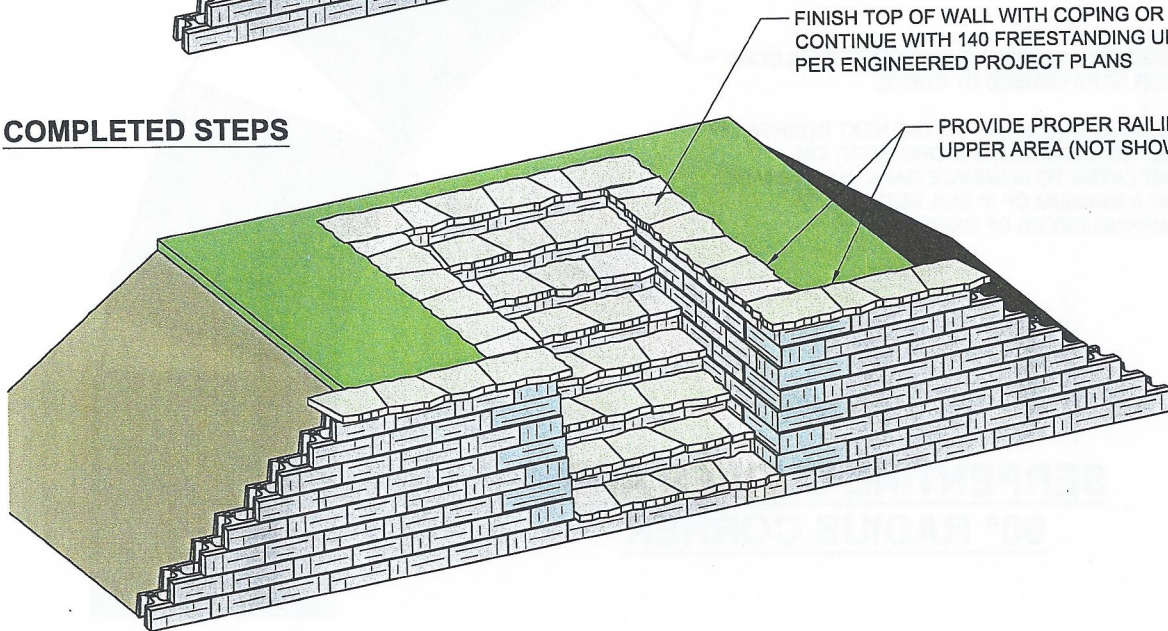
TRIM BLOCKS AND COPING AS NEEDED TO MATCH REQUIRED STAIR WIDTH. (NOTE THAT OPENING GETS 1" WIDER WITH EACH SUCCESSIVE COURSE DUE TO BATTER ON SIDE WALLS.)

**THIRD COURSE**



CONTINUE WITH ADDITIONAL COURSES TO DESIRED FINISH GRADE. INCLUDE GEOGRID LAYERS AND GEOTEXTILE FABRIC AS SHOWN ON DESIGN DRAWINGS.


**COMPLETED STEPS**



FINISH TOP OF WALL WITH COPING OR CONTINUE WITH 140 FREESTANDING UNITS PER ENGINEERED PROJECT PLANS

PROVIDE PROPER RAILINGS ON UPPER AREA (NOT SHOWN)

DRAWN BY: J. Johnson	TITLE:
APPROVED BY:	STEPS THROUGH WALL
DATE: 01-07-10	115 RETAINING
SHEET NO. : 1 of 1	DRAWING FILE: RS 115 Step Through Wall 010710.dwg

	
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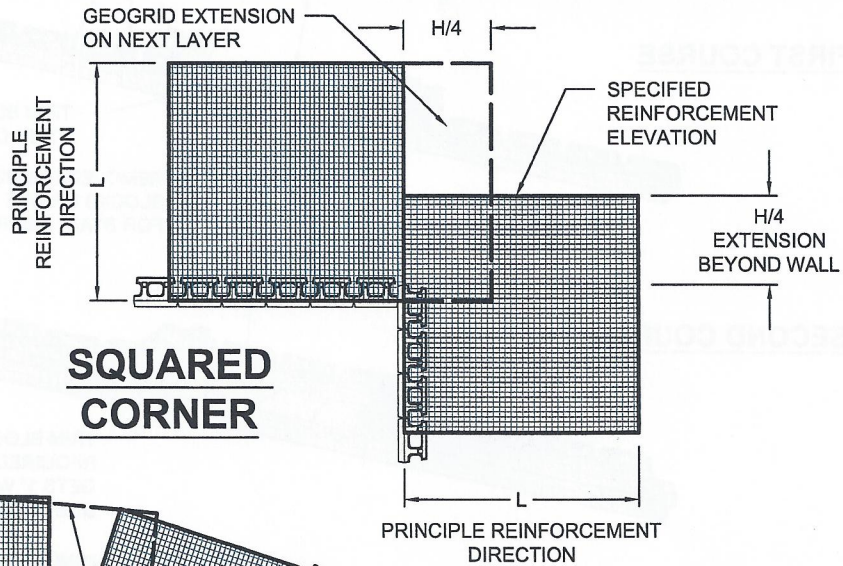


# GEOGRID PLACEMENT FOR CONCAVE CURVES AND CORNERS

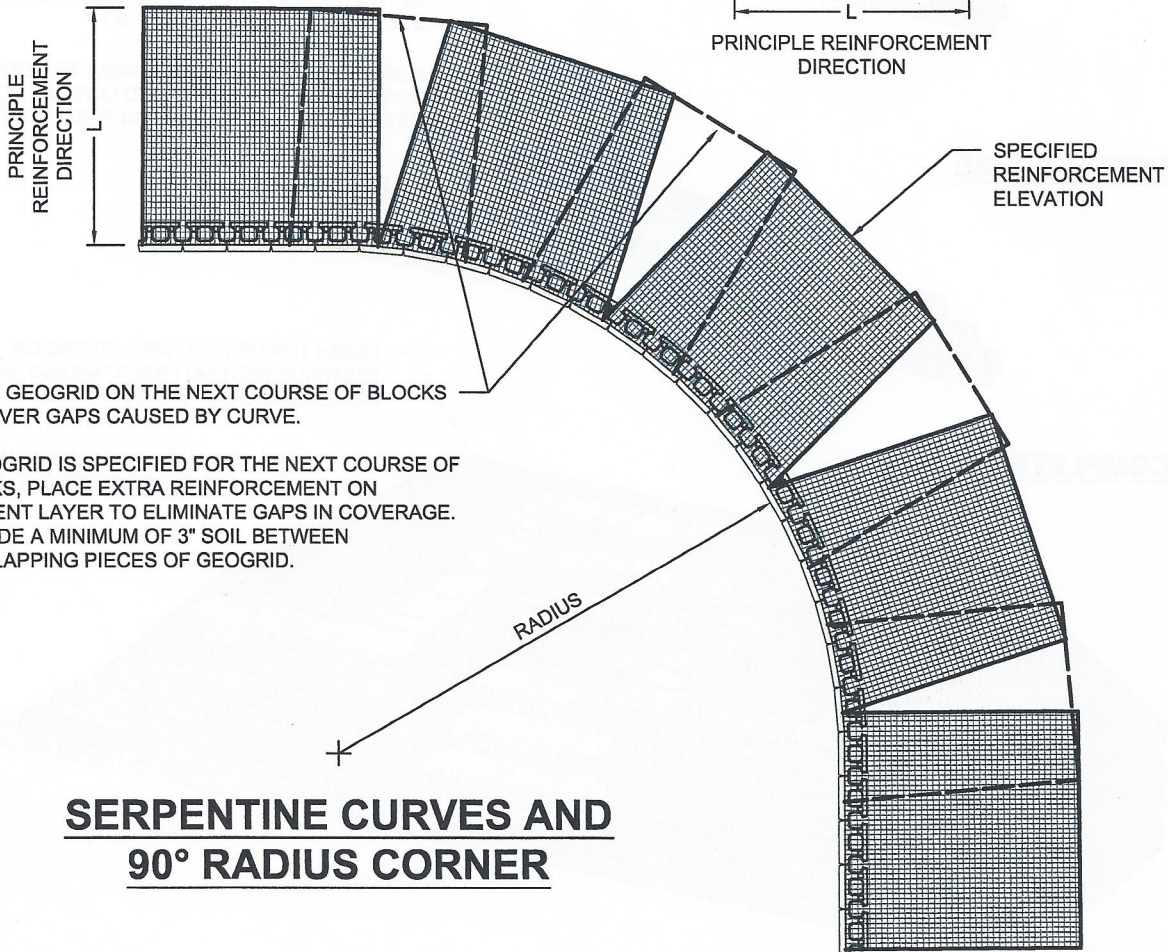
**NOTE:**

EXTEND REINFORCEMENT BEYOND END OF WALL BY AT LEAST H/4 (ONE QUARTER OF THE WALL HEIGHT). ALTERNATE WHICH SIDE IS EXTENDED EVERY OTHER COURSE OF GEOGRID AS SHOWN.

DETAILS SHOWN BASED ON FIGURE 13-1 FROM DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS, THIRD EDITION, COPYRIGHT 2009, NATIONAL CONCRETE MASONRY ASSOCIATION, HERNDON, VA



## SQUARED CORNER



PLACE GEOGRID ON THE NEXT COURSE OF BLOCKS TO COVER GAPS CAUSED BY CURVE.

IF GEOGRID IS SPECIFIED FOR THE NEXT COURSE OF BLOCKS, PLACE EXTRA REINFORCEMENT ON CURRENT LAYER TO ELIMINATE GAPS IN COVERAGE. PROVIDE A MINIMUM OF 3" SOIL BETWEEN OVERLAPPING PIECES OF GEOGRID.

## SERPENTINE CURVES AND 90° RADIUS CORNER

DRAWN BY:  
J. Johnson

APPROVED BY:

DATE:  
01-07-10

SHEET NO.:  
1 of 2

TITLE:

GEOGRID PLACEMENT  
115 RETAINING

DRAWING FILE:  
RS 115 Geogrid Placement on Curves 010710.dwg

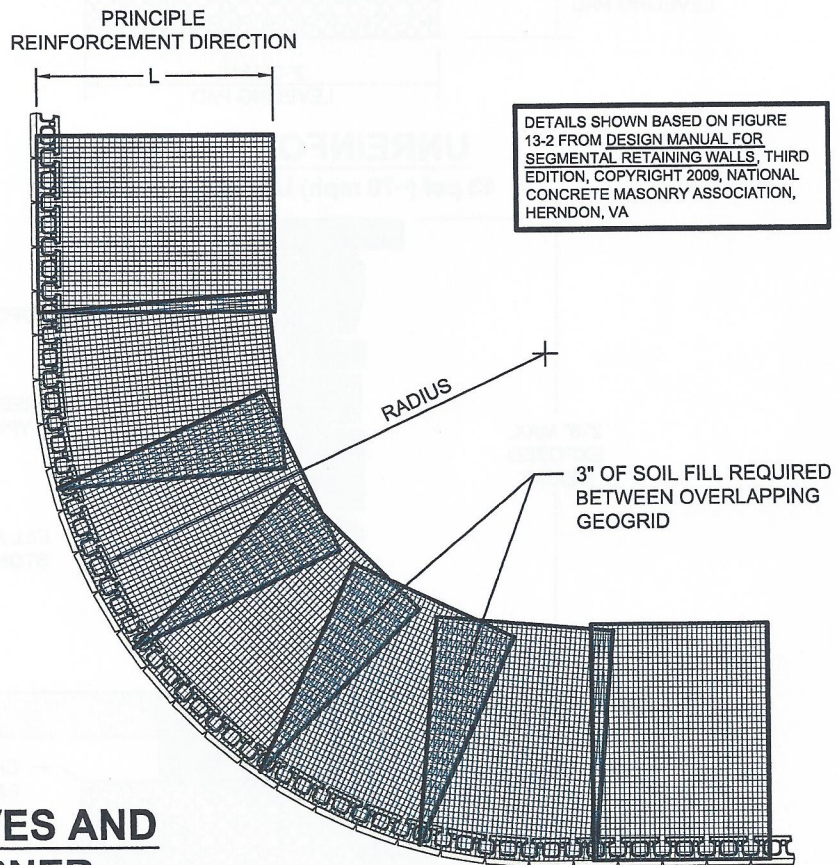
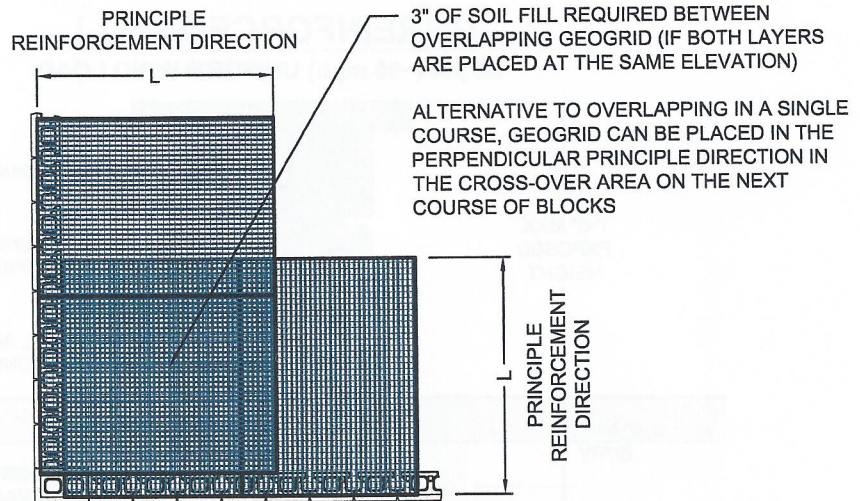
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# GEOGRID PLACEMENT FOR CONVEX CURVES AND CORNERS

## SQUARED CORNER



DETAILS SHOWN BASED ON FIGURE 13-2 FROM DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS, THIRD EDITION, COPYRIGHT 2009, NATIONAL CONCRETE MASONRY ASSOCIATION, HERNDON, VA

## SERPENTINE CURVES AND 90° RADIUS CORNER

DRAWN BY: J. Johnson
APPROVED BY:
DATE: 01-07-10
SHEET NO.: 2 of 2

TITLE: <b>GEOGRID PLACEMENT 115 RETAINING</b>
DRAWING FILE: RS 115 Geogrid Placement on Curves 010710.dwg

**REDI-SCAPES**

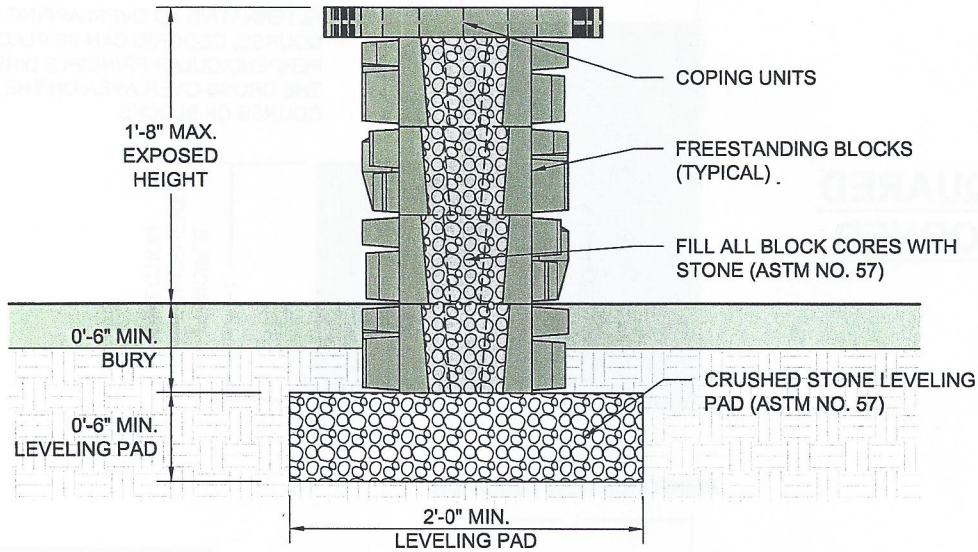
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## FREESTANDING WALL SECTIONS - 1 OF 2

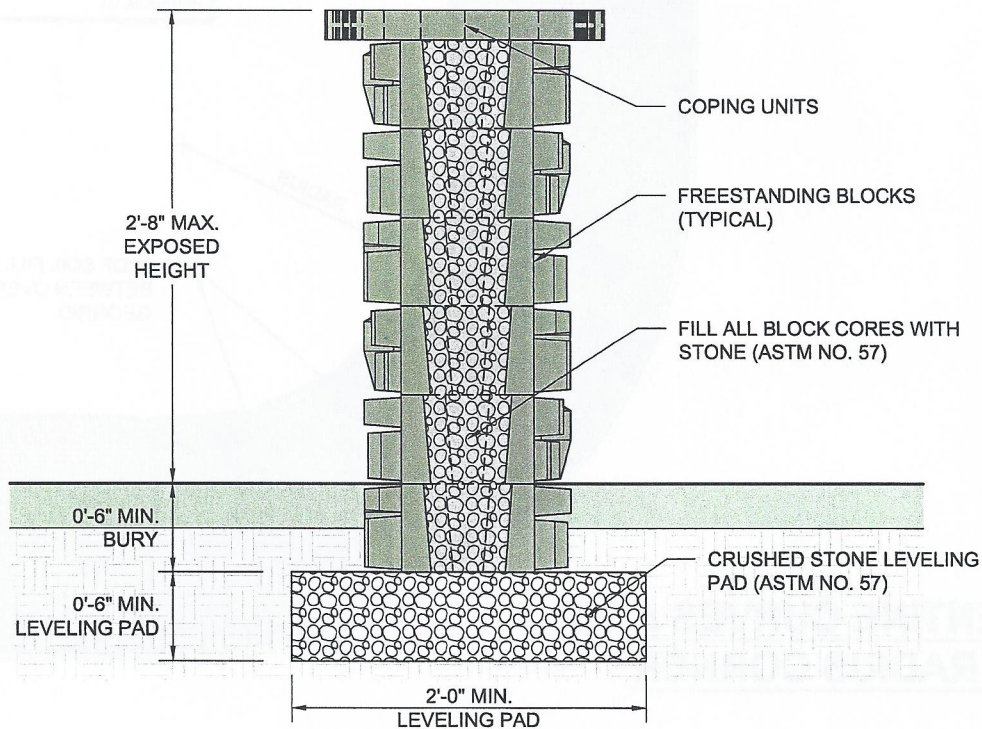
### UNREINFORCED WALL

20 psf (~90 mph) UNIFORM WIND LOAD



### UNREINFORCED WALL

13 psf (~70 mph) UNIFORM WIND LOAD



DRAWN BY:  
J. Johnson

APPROVED BY:

DATE:  
01-08-10

SHEET NO.:  
1 of 2

TITLE:

FREESTANDING WALL OPTIONS  
140 FREESTANDING

DRAWING FILE:  
RS 140 Freestanding Section 010810.dwg

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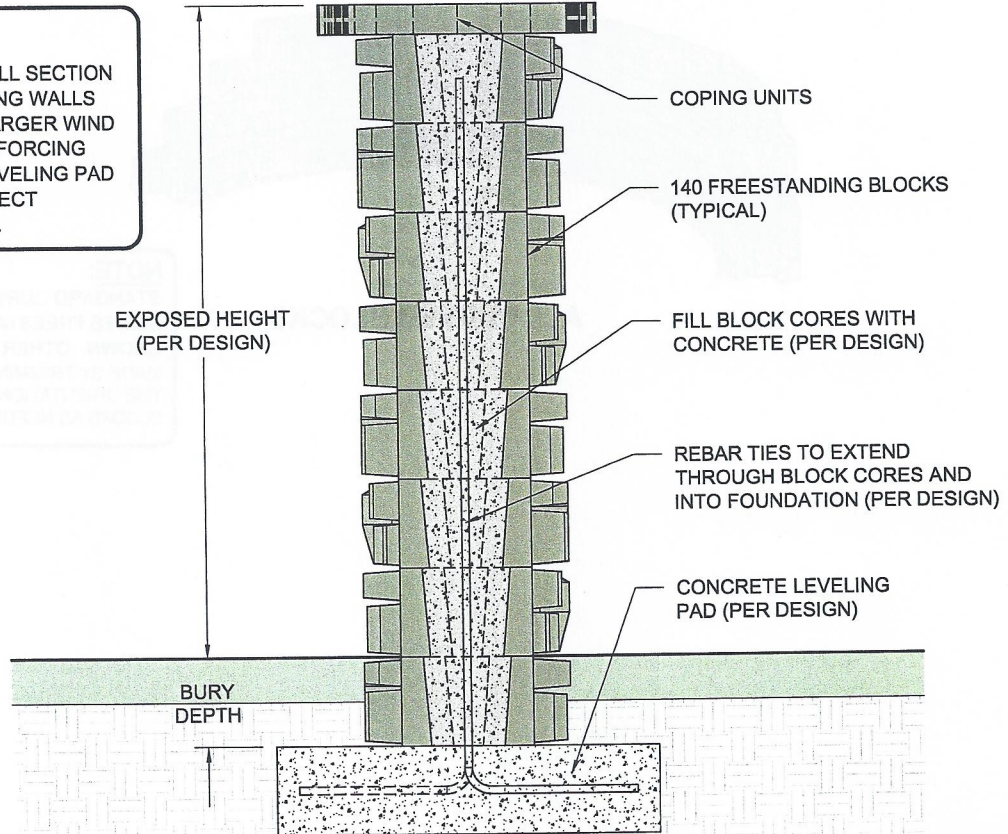


## FREESTANDING WALL SECTIONS - 2 OF 2

### REINFORCED WALL

**NOTE:**

USE THE REINFORCED WALL SECTION FOR HIGHER FREESTANDING WALLS OR WALLS SUBJECT TO LARGER WIND OR APPLIED LOADS. REINFORCING STEEL AND CONCRETE LEVELING PAD ARE SIZED TO MEET PROJECT SPECIFIC REQUIREMENTS.



#### FREESTANDING WALL INSTALLATION NOTES

- FOOTING EXCAVATION SHOULD BE TO THE DEPTH SHOWN IN THE ENGINEERED PLANS FOR THE WALL, BUT AT LEAST 6" BELOW THE ELEVATION OF THE BOTTOM BLOCK IN THE WALL.
- FOOTING EXCAVATION WIDTH SHOULD BE A MINIMUM OF 24", WHICH WILL PROVIDE 6" ON EITHER SIDE OF THE BOTTOM BLOCK.
- EXISTING SOIL SUB-GRADE SHOULD BE COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY BEFORE FOUNDATION MATERIAL IS INTRODUCED. SUB-GRADE SOIL SHOULD BE FIRM NATIVE SOIL, DRY AND STABLE. CONSULT A SOILS ENGINEER IF IN DOUBT.
- PLACE LEVELING PAD MATERIAL AS SPECIFIED IN THE WALL DESIGN.
- WALLS SHALL HAVE THE BOTTOM COURSE BURIED TO THE DEPTH SHOWN ON THE ENGINEERED DESIGN. A MINIMUM BURY OF 6" IS RECOMMENDED.
- PLACE THE BOTTOM COURSE OF WALL BLOCKS. TAKE CARE TO LEVEL THE BLOCKS BOTH PARALLEL AND PERPENDICULAR TO THE WALL.
- PLACE SUCCESSIVE UNITS TO THE DESIRED WALL HEIGHT.
- FILL BLOCK CORES WITH STONE OR CONCRETE AS SPECIFIED IN THE DETAILED ENGINEERING PLANS. STEEL REINFORCEMENT, IF REQUIRED, MUST BE PLACED AS DETAILED IN THE WALL PLANS.
- PLACE COPING UNITS TO FINISH THE WALL. COPING SHOULD ADHERE TO THE FREESTANDING BLOCKS WITH CONCRETE ADHESIVE OR OTHER MEANS AS SPECIFIED IN THE ENGINEERED WALL PLANS.

DRAWN BY:  
J. Johnson

APPROVED BY:

DATE:  
01-08-10

SHEET NO.:  
2 of 2

TITLE:

FREESTANDING WALL OPTIONS  
140 FREESTANDING

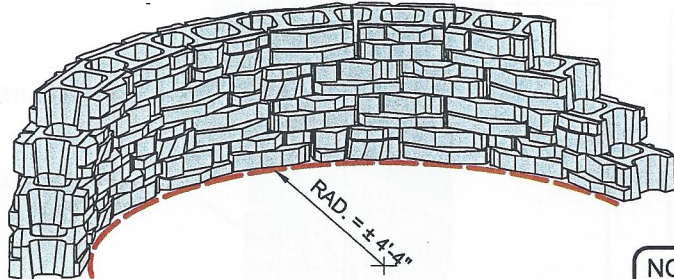
DRAWING FILE:  
RS 140 Freestanding Section 010810.dwg

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## CURVES MADE WITH 140 FREESTANDING BLOCKS



**ALL CURVED BLOCKS**

**NOTE:**  
STANDARD CURVES MADE WITH 140 SERIES FREESTANDING BLOCKS ARE SHOWN. OTHER CURVES CAN BE MADE BY TRIMMING OR ALTERNATING THE ORIENTATION OF THE CURVED BLOCKS AS NEEDED.

<b>DRAWN BY:</b> J. Johnson	<b>TITLE:</b> <b>CURVE OPTIONS</b> <b>140 FREESTANDING</b>
<b>APPROVED BY:</b>	
<b>DATE:</b> 01-19-10	
<b>SHEET NO.:</b> 1 of 1	<b>DRAWING FILE:</b> RS 140 Curve Options 011910.dwg



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