# Blount County Dept. of Building Safety
# 2006 ICC RETAINING WALL INFORMATION

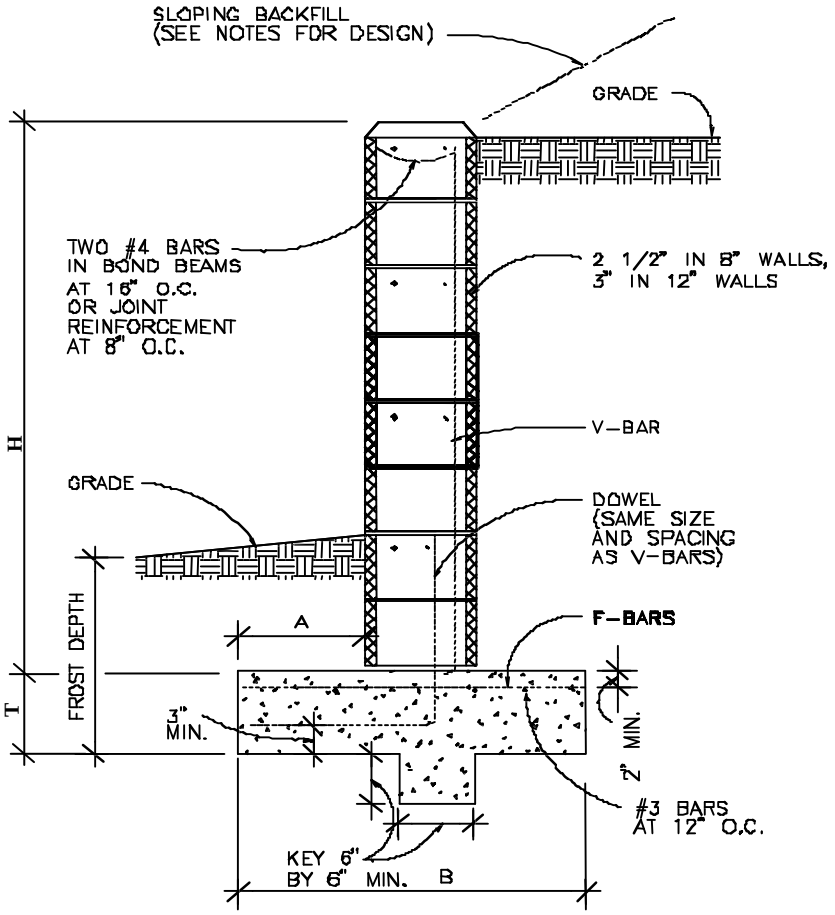
**The 2006 IRC states in section 105.2**; Retaining walls that are not over 4 feet (1219 mm) in height measured from the bottom of the footing to the top of the wall, unless supporting a surcharge. This means all retaining walls over 4 feet in height and all retaining walls that support a surcharge (sloped backfill) require a permit.

**Retaining wall is defined** in the code as: A wall not laterally supported at the top, that resists lateral soil load and other imposed loads.

**R404.5 Retaining walls.** Retaining walls that are not laterally supported at the top and that retain in excess of 24 inches (610 mm) of unbalanced fill shall be designed to ensure stability against overturning, sliding, excessive foundation pressure and water uplift. Retaining walls shall be designed for a safety factor of 1.5 against lateral sliding and overturning.

**AE503.2 Retaining walls.** Where retaining walls are used as a permanent perimeter enclosure, they shall resist the lateral displacements of soil or other materials and shall conform to this code as specified for foundation walls. Retaining walls and foundation walls shall be constructed of approved treated wood, concrete, masonry or other approved materials or combination of materials as for foundations as specified in this code. Siding materials shall extend below the top of the exterior of the retaining or foundation wall or the joint between siding and enclosure wall shall be flashed in accordance with this code.

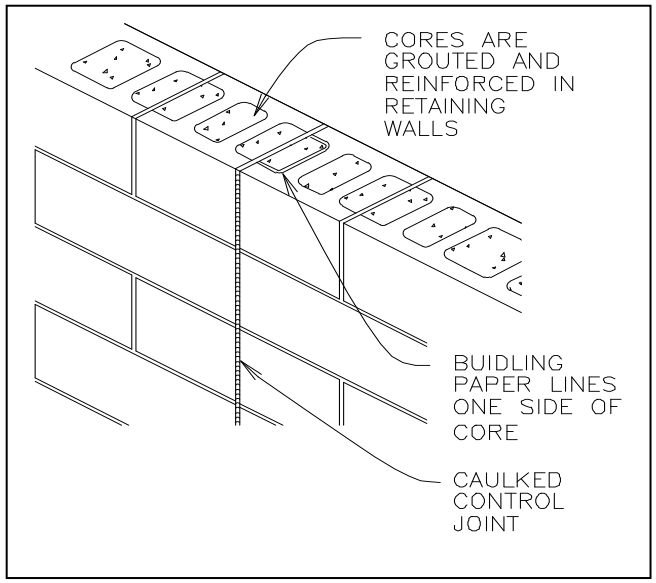
**Wall at toe of Slope:** Where a retaining wall is constructed at the toe of the slope, the height of the slope shall be measured from the top of the wall to the top of the slope.




## DIMENSIONS AND REINFORCEMENT FOR CMU RETAINING WALLS

| WALL | H | B | T | A | V-BARS | F-BARS |
|---|---|---|---|---|---|---|
| 8" | 3'-4" | 2'-4" | 9" | 8" | #3 @ 32" | #3 @ 27" |
| | 4'-0" | 2'-9" | 9" | 10" | #4 @ 32" | #3 @ 27" |
| | 4'-8" | 3'-4" | 10" | 12" | #5 @ 32" | #3 @ 27" |
| | 5'-4" | 3'-8" | 10" | 14" | #4 @ 16" | #4 @ 30" |
| | 6'-0" | 4'-2" | 12" | 16" | #6 @ 24" | #4 @ 25" |
| 12" | 5'-4" | 3'-8" | 10" | 14" | #4 @ 24" | #3 @ 25" |
| | 6'-0" | 4'-2" | 12" | 15" | #4 @ 16" | #4 @ 30" |
| | 6'-8" | 4'-6" | 12" | 16" | #6 @ 24" | #4 @ 22" |
| | 7'-4" | 4'-10" | 12" | 18" | #5 @ 16" | #5 @ 26" |
| | 8'-0" | 5'-4" | 12" | 20" | #7 @ 24" | #5 @ 21" |
| | 8'-8" | 5'-10" | 14" | 22" | #6 @ 8" | #6 @ 26" |
| | 9'-4" | 6'-2" | 14" | 24" | #8 @ 8" | #6 @ 21" |

## TYPICAL CANTILEVER RETAINING WALL




Notes

1. Long retaining walls should be broken with vertical control joints into panels 20 to 30 feet long. These panels must be designed to resist shear and other lateral forces while permitting longitudinal movement.
2. Materials and construction practices for concrete masonry retaining walls should comply with “Building Code Requirements for Concrete Masonry Structures (ACI 531).”
3. Use fine grout when grout space is less than 3 in. in the least dimension. Use coarse grout when the least dimension of the grout space is 3 in. or more.
4. Steel reinforcement bars should be clean, free from harmful rust, and in compliance with applicable ASTM standards for deformed bars and steel wire.