# RETAINING WALL STANDARDS

It is the policy of the Department of Buildings and Inspections that permits shall not be required for the erection of retaining walls or garden walls in residential districts when the difference in grade is not over 48" from the bottom of footing to top of wall and the walls are at least 5' from any adjoining building or lot line and the difference in grade is not over 30" (RCO 105.2(1). Retaining Walls within Hillside Districts are subject to standards found in Chapter 1433 of the Zoning Code.

All other retaining walls shall be designed and constructed in accordance with the applicable provisions of the CBC and OBBC and as follows:

1. Retaining walls shall be built with footings the bottom of which shall be at least 2'-6" below the finish grade at the face of the wall. The bottom of the footings and the vertical face of the footings at the face of the wall (the low or exposed side) shall be placed against undisturbed or well-compacted earth.

   **Exceptions:**

   A. Curb walls up to 1'-6" high (above lower grade level) adjacent to and retained by hard surfaced paving at the face of the wall may be built without footings and with the bottom of the wall level with the bottom of the slab.

   B. Retaining walls up to 3'-0" high (above lower grade level) adjacent to and restrained by hard surface paving at the face of the wall may be built without footings and with the bottom of the wall 1'-6" below the finished grade at the face of the wall.

   C. Modular concrete facing units must have footings as required by the manufacturer, but not less than a base of compacted crushed 57 limestone aggregate with one course below grade.

2. Hollow concrete block units shall not be used for the construction of curbs, walls or retaining walls.

3. A granular backfill shall be placed behind all walls and shall extend from an elevation coinciding with the finished grade at the face of the wall to within 8" of the top of the wall. This backfill shall be at least 12" thick against the back of the retaining wall. Earth backfill shall be carefully placed behind this granular backfill or the granular backfill shall be made sufficiently wide to assure a full 12" drainage strata. The backfill may be of any relatively free draining granular material. Nonporous (clay) backfill may be used if the wall thickness is doubled over that otherwise required.

4. Drainage of the backfill behind the wall shall be provided either by means of weep holes of 4" minimum diameter spaced at 10' o.c. maximum in the walls or with perforated pipe of 4" minimum diameter laid at the base of the backfill and having a proper gradient to an outlet.

5. Unless engineering design is provided, gravity retaining walls constructed of masonry shall be solid units, shall rest on a concrete footing not less than 12" in

thickness, and be designed in accordance with the table below. The design shown in the table can only be used for gravity walls with horizontal backfill and without surcharge (such as rising grade, right-of-way, buildings, etc. within the zone of influence of wall footing).

6. Approved engineered modular facing units can be constructed up to 4'-0" high without additional reinforcing. Engineering information must be submitted for taller walls of modular concrete facing units.

7. Retaining walls must be approved by the Department of Transportation and Engineering if the paved roadway falls within the zone of influence for the retaining wall. (The zone of influence is defined as the area behind the retaining wall to a line rising 45 degrees from the top edge of the footing see drawing below).

8. Retaining walls over 30" in height must have guardrails where required by 1012 OBC including when within 2 feet of a right-of-way or there is a walking surface on the high side within 2 feet of the drop–off.

DIVISIONS OF GRAVITY RETAINING WALLS

| HEIGHT OF WALL "H" (Feet) | WIDTH OF FOOTING "B" | |
|---|---|---|
| | Walls of Poured Concrete | Walls of Brick, Stone, or Solid Concrete Block |
| 4 | 2' - 0" | 2' - 0" |
| 5 | 2' - 6" | 2' - 6" |
| 6 | 3' - 0" | 3' - 0" |
| 7 | 3' - 6" | 3' - 6" |
| 8 | 4' - 0" | 4' - 0" |
| 9 | 4' - 6" | 4' - 6" |
| 10 | 5' - 0" | 5' - 0" |
| 11 | 5' - 7" | 5' - 8" |
| 12 | 6' - 2" | 6' - 4" |
| 13 | 6' - 9" | 7' - 0" |
| 14 | 7' - 4" | 7' - 8" |
| 15 | 8' - 0" | 8' - 4" |
| 16 | 8' - 7" | 9' - 0" |
| 17 | 9' - 3" | 9' - 8" |
| 18 | 9' - 10" | 10' - 3" |
| 19 | 10' - 3" | 10' - 11" |
| 20 | 11' - 0" | 11' - 6" |