



DEPARTMENT OF CODE ENFORCEMENT



# RETAINING WALLS

*Residential*



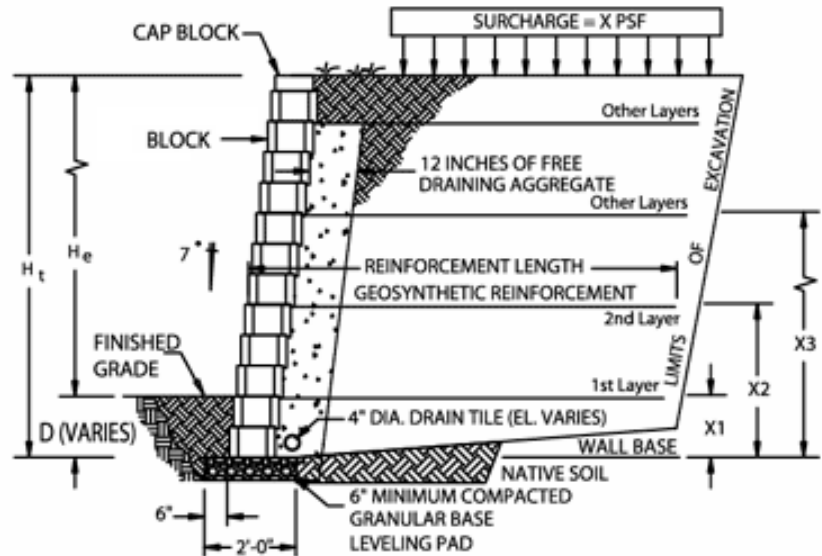
2000 INTERNATIONAL BUILDING CODE

# RETAINING WALLS

## INTERNATIONAL BUILDING CODE 1610.2 — RETAINING WALLS

Retaining walls 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.



## WHEN ARE PERMITS REQUIRED?

A permit is required for a retaining wall whenever the wall exceeds four (4') feet in height, measured from grade at the bottom of the wall to the top of the wall, but the City of Ballwin will review all plans for walls over 30" tall.

## WHAT INFORMATION IS NEEDED TO APPLY FOR A PERMIT?

- Two copies of a plot plan showing the location of the wall on the property. This plan should also show the location of driveways, sidewalks, patios, decks, pools and other structures or paving relative to the proposed wall. Guardrails may be required on walls near some of these structures.
- Two copies of engineered plans for the type of wall being installed. Sometimes these plans can be obtained from the material supplier.
- Plans may need to be sealed by a Missouri Licensed Professional Engineer or Architect, depending on the size and complexity of the proposed project or if the wall supports a surcharge such as a driveway.

## DOES IT MATTER WHAT KIND OF WALL I AM BUILDING?

No, all types of walls that exceed four (4') feet in height require a permit. These include, but are not limited to, rail-road tie retaining walls, landscape timber walls, stone or block walls and concrete walls.

## WHAT IS THE FEE FOR A RETAINING WALL PERMIT?

The permit fee is based on the estimated cost of construction (\$4.00/\$1000 of construction cost) with a minimum permit fee of \$50. An escrow deposit is also required based on the construction cost.

## DOES THE WALL HAVE TO BE INSPECTED?

Yes, inspections will be made at various stages of the walls construction and these inspections will be marked on a building permit card issued with the building permit. These inspections must be called in and work may not proceed to the next stage until the inspector has signed off on the permit card.

# RETAINING WALLS

## AT WHAT STAGES ARE INSPECTIONS MADE?

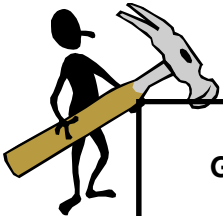
Obviously there are many types of walls (railroad tie, landscape timber, block, concrete), and all require multiple inspections during the progress of the work. For the most common type of wall construction (block retaining walls made by several different manufacturers), the following inspections will be made:

- 1. Footing:** After excavation and prior to setting any blocks.
- 2. Drainage:** After drainage rock has been installed and the drainpipe is installed but before the pipe is covered. The inspector will also want to see the filter fabric in place.
- 3. Reinforcing Grid:** An inspection is required before covering each layer of reinforcing grid. The number of these inspections depends on the design of the wall submitted with the permit application, but is usually every third tier of block. Be sure to use the proper fill material behind the wall (rock or soil) and compact it as specified by the design for the wall.
- 4. Final Inspection:** A final inspection must be made when the wall is complete and all disturbed areas are revegetated. This inspection must be completed before the permit expiration date, which is usually 6 months from the date the permit is issued. Failure to get this inspection before the permit expires will cause the escrow to be forfeited and a new permit will have to be obtained.

*If there is a walking surface within two (2') feet of the top of a retaining wall, a guardrail will be required.*

## ARE THERE ANY OTHER FACTORS THAT MAY AFFECT PERMIT ISSUANCE OR WALL CONSTRUCTION?

Yes, there can be many other factors, probably too numerous to cover fully, but one of the more important factors would be soil condition. The plan examiner may require a soils report at the time the application is reviewed or by the inspector on site based on observed soil conditions. Certain kinds of soil may require special considerations such as special drainage, backfill materials and compaction.

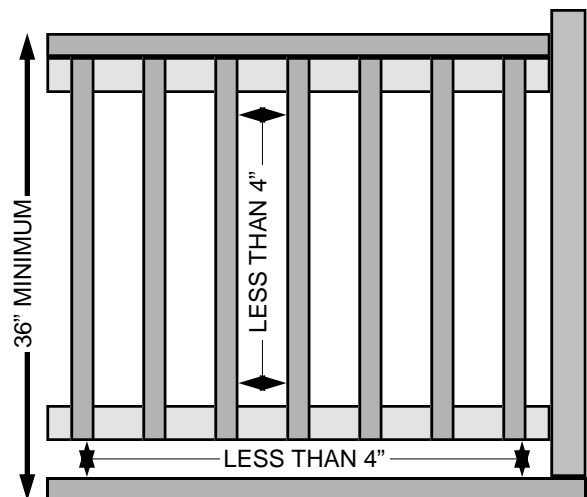


### GUARDS REQUIRED (R316.1)

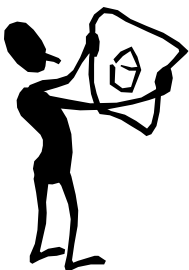
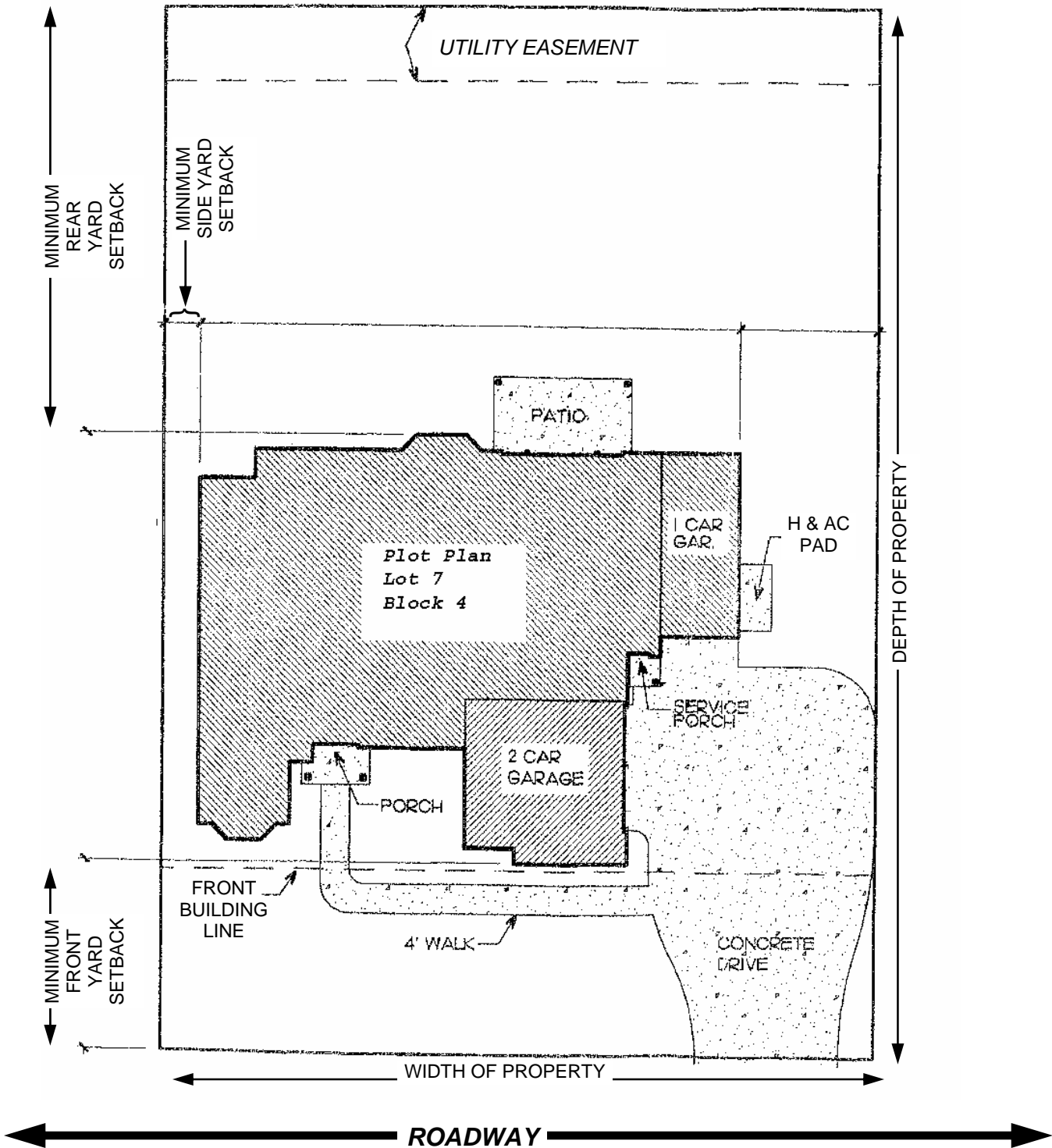
Decks, porches, balconies or raised floor surfaces located more than 30 inches (762 mm) above the floor or grade below shall have guards not less than 36 inches (914 mm) in height.

### GUARD OPENING LIMITATIONS (R316.2)

Required guards on open sides of stairways, raised floor areas, balconies, porches and decks shall have intermediate rails or ornamental closures that do not allow passage of a sphere 4 inches (102 mm) in diameter. Required guards shall not be constructed with horizontal rails or other ornamental pattern that results in a ladder effect.



# TYPICAL PLOT PLAN



<b>CITY OF BALLWIN</b>
▶ REVIEWED ◀
_____ BUILDING INSPECTOR
_____ DATE