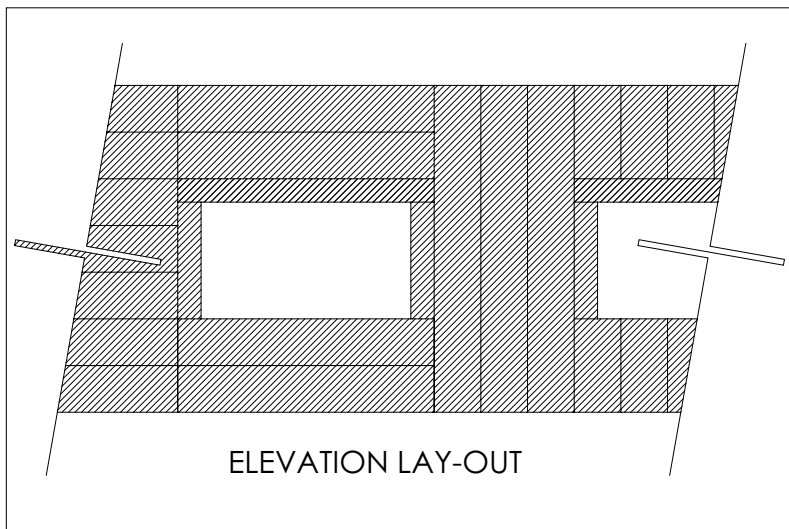


## Basement and Retaining Walls



Basement and retaining walls can be built from PERFORM WALL™ panels. The design of the wall is to conform to building code requirements and with the engineer's specifications for size, strength and location of reinforcement, as well as slump, aggregate size, type and strength of concrete grout.

The panels may be installed, either horizontally, vertically or in combination. The panels are normally bonded together by applying polyurethane foam. They may also be stapled or connected in any other manner, which keeps them together.



**IMPORTANT:** Walls must be plumb and level prior to grouting and any excess debris from cutting or rasping must be removed from the cavities, which may block the grout fill.

### Rebar Placement

Rebar in footings is placed prior to pouring or immediately following the pour. The rebar must be long enough for correct embedment in the footings and provide the correct length above the footings for overlapping with the next level, normally 5 x the diameter of the rebar as mandated by code.



### Electrical & Plumbing Considerations

Electrical conduit and water/waste piping can be run through the footer or slab per customary usage and then fed up into the cavities within the PERFORM WALL™

panels. Placement of the electrical conduit and plumbing piping within the PERFORM WALL™ panels must be done before the walls are grouted.

Alternatively, they can be brought through the stem wall or slab into the interior of the structure and run up partition walls as necessary. Installation of electrical conduit may also be placed in routed grooves made in the interior surface of the walls.



## Basement and Retaining Walls

### Footings – Marking Corners

Start at a corner, set the corner bars at 5" for mitered corner or 7.5" for end panel corner and then space the bars at the proper spacing as called for by the structural engineer. This spacing is usually either 15" or 30" on center. If the layout doesn't come out even, the difference can be compensated for near the next corner.

### Placement of Reinforcement

Once panels are installed and prior to grouting, horizontal reinforcement can be placed directly on the bottom of the horizontal grout cells and vertical reinforcement can be hand centered unless otherwise directed by the engineer's specifications. Should the engineer specify, chairs or other devices may be used to position horizontal or vertical reinforcement in the required locations within the cells.

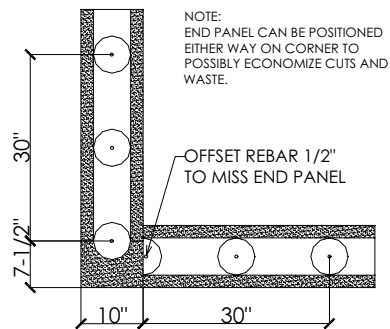
### Footing and Length of Starter Bars or Dowels

Starter bars or dowels should be placed into the footing and extend up into the wall a distance of at least 24" or the length required by code.

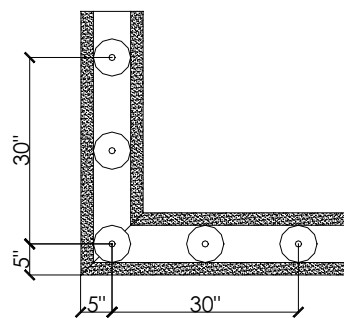
### Length of Vertical Reinforcement and Depth of Grout

In a multi-story structure, it is important to provide for vertical overlap of reinforcement. For example, if a 10 ft. high basement wall is being constructed, the wall may be grouted to the 10 ft. level with the required length of rebar extending above the wall, thus creating the overlap in the upper story OR the wall may be grouted to less than 10 ft. with the overlap occurring in the lower story. In either case, the required length of rebar would be available to provide the necessary overlap for the next story.

REBAR LAYOUT FOR 10" PERFORM WALL END PANEL CORNERS



REBAR LAYOUT FOR 10" PERFORM WALL MITERED CORNERS



Perform Wall™ panels are actually a form-work for the interior reinforced concrete and thus they do not need to be staggered the way brick or concrete masonry block is. The strength of the walls comes from the reinforced concrete contained within the interior cavities. However, some builders of PERFORM WALL™ prefer to stagger the panels purely as a matter of preference, because doing so breaks up the join lines. The choice is yours.



## Basement and Retaining Walls

### Waterproofing

PERFORM WALL™ panels should be waterproofed according to code, the same as for masonry or concrete. To protect the waterproofing from damage during backfilling, a layer of “protection” should be placed between the waterproofed wall and the backfill. A layer of polystyrene sheet or thick cardboard is normally used.

