

TO: Michael Rotolo

RE: Southern Yacht Club Pool

Dear Mike,

You recently asked that we calculate the size & location of the re-bar in the pool at the Southern Yacht Club in New Orleans,

The side walls were calculated at one foot in thickness, although I think you shot against the dirt wall which turned out to make the walls of the pool thicker. We calculated that when using the #4 bar, the horizontal bars should be 6" O.C. both ways, but that these should be two rows – on each side of the wall 1 ½" from the exterior edge of the wall. I suppose that the bars were only in the middle of the wall (1 layer both ways). You could have spaced #6 bars at 12" O.C. both ways, but still need the two layers to counter act the pressure on the wall both when filled with water, and when the pool is dry.

The pool floor was calculated at 8" thickness. If using #4 bars, they would need to be at 8" O.C. both ways; if using #5 bars they would need to be 12" O.C. both ways. Again, 1 layer of steel at 1 ½" from top & 1 layer at 1 ½" from bottom.

All of these calculations are based on worst case scenario. The outside layer of steel supports the concrete assuming the pool is full and there is no support from the soil. The layer of steel on the inside supports the pool when it is empty and the soil exerts pressure on the concrete.