

Pool $\Rightarrow 12' \times 24'$

Add 4' walk to all sides $\Rightarrow 20' \times 32'$

$$\text{Area} = 640 \text{ ft}^2$$

$$\text{Max. Monthly Rain} = 4.12'' = 0.3433'$$

$$\text{Monthly Volume of Rain} = (640 \text{ ft}^2)(0.3433') = 220 \text{ ft}^3$$

Assume @ 4' deep pit

Calculate Area Needed:

$$220 \text{ ft}^3 / 4' = 55 \text{ ft}^2 \approx 7.5' \times 7.5'$$

You will need a larger pit if fill will gravel

Assume 40% gravel porosity

$$220 \text{ ft}^3 / .40 = 550 \text{ ft}^3$$

Gravel Filled Pit Size:

$$550 \text{ ft}^3 / 4' \text{ depth} = 137.5 \text{ ft}^2 \approx 12' \times 12'$$

12' x 12' x 4' deep