



Community Development
Department

SWIMMING POOLS

Definitions: (*NEC-680.2)

1. **Permanently installed Swimming, Wading, and Therapeutic Pools:** Those that are constructed in the ground, on the ground, or in a building in such a manner that the pool cannot be readily disassembled for storage, whether or not served by electrical circuits of any nature.
2. **Spa or Hot Tub:** A hydro massage pool designed for immersion of users and usually having a filter, heater, and motor-driven blower. It may be installed indoors or outdoors, on the ground or supporting structure, or in the ground or supporting structure.
3. **Storable Swimming or Wading Pool:** A pool with a maximum dimension of eighteen feet (18') (5.49 m) and a maximum wall height of forty-two inches (42") (107 cm) and so constructed that it may be readily disassembled for storage and reassembled to its original integrity. A pool with non-metallic, inflatable walls regardless of dimensions is considered to be a storable pool. ***No permit is required for a storable pool (*IRC-R105.2(7)); however, pools in excess of twenty-four inches (24") in height must be located in wholly enclosed, fenced yards in conformance with the Property Maintenance Code (*IPMC).***

General Requirements:

*Please note that these requirements are general and **not** comprehensive. Additional changes or suggestions may be made by the inspectors at the time of the site check to ensure construction is performed to code.*

1. No permanently installed pool, spa or hot tub shall be erected, installed or modified without a building permit (*IRC-R105.1).
2. To obtain a building permit, a manufacturer's brochure is required; along with a plat of survey showing pool location, location of any underground electric required, and how the fence requirements will be met.

Permitted Location and Fencing:

1. Private and commercial swimming pools shall be located in rear yards (*VC 11-4-4).
2. The pool must be ten feet (10') from the house, five feet (5') from any accessory structures, a minimum of five feet (5') from the lot lines and cannot be located on an easement (*VC 11-4-4(D)). The pool, along with all other detached accessory structures, shall not occupy

more than thirty percent (30%) of the required rear yard. All structures on the property may not occupy more than thirty-five percent (35%) of the total property area.

3. All yards containing swimming pools shall be completely enclosed by a chain-link or solid fence not less than five feet (5') in height. Four foot (4') high fencing may be allowed by the Code Official if existing. Fences attached to or made part of the deck of above-ground swimming pools shall be construed to have satisfied this requirement, so long as any gate, stairs or other means of entry are completely locked and sealed with a child-safe latch. The total height of such fence and pool shall not be less than six feet (6') above grade.

Access gates shall comply with the requirements of *IRC-AG105.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than fifty-four inches (54") (1,372 mm) from the bottom of the gate, the release mechanism and openings shall comply with the following:

- a. The release mechanism shall be located on the pool side of the gate at least three inches (3") (76 mm) below the top of the gate; and
- b. The gate and barrier shall have no opening larger than one half inch (1/2") (13 mm) within eighteen inches (18") (457 mm) of the release mechanism.

Where a wall of a dwelling serves as part of the barrier, one of the following conditions shall be met:

- a. The pool shall be equipped with a powered safety cover in compliance with ASTM F 1346; or
- b. Doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed in accordance with UL 2017. The audible alarm shall activate within seven (7) seconds and sound continuously for a minimum of thirty (30) seconds after the door and/or its screen, if present, are opened and be capable of being heard throughout the house during normal household activities. The alarm shall automatically reset under all conditions. The alarm system shall be equipped with a manual means, such as touch pad or switch, to temporarily deactivate the alarm for a single opening. Deactivation shall last for not more than fifteen (15) seconds. The deactivation switch(es) shall be located at least fifty-four inches (54") (1,372 mm) above the threshold of the door; or
- c. Other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body, shall be acceptable so long as the degree of protection afforded is not less than the protections afforded by items (a) or (b) above.

Where an above-ground pool structure is used as a barrier, or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps:

- a. The ladder or steps shall be capable of being secured, locked or removed to prevent access; or

- b. The ladder or steps shall be surrounded by a barrier which meets the requirements of *IRC-AG105.2, Items 1 through 9. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch diameter (102mm) sphere.
- 4. Overhead conductors shall be ten feet (10') horizontally from the inside edge of the pool (*NEC-680.8).
- 5. Underground wiring shall not be permitted under the pool or under the area extending five feet (5') horizontally from the inside wall of pools (*NEC-680.10).
- 6. No more than one swimming pool, excluding hot tubs or spas, shall be permitted on one zoning lot.

Electrical Requirements - Permanently Installed Swimming Pools:

PLEASE NOTE: ALL ELECTRICAL WORK MUST BE COMPLETED PRIOR TO POOL USE

- 1. Receptacles on the property must be at least six feet (6') from the inside walls of the pool, except for the receptacle providing power for the pump (*NEC-680.22(A)(2)).
- 2. Receptacles that provide power for the water pump motor, on permanent pools, are permitted between six feet (6') and ten feet (10') from the inside pool walls. The receptacle shall be single and of the locking and grounding type, protected by a GFCI. The maximum cord length shall be three feet (3') with a locking plug (*NEC-680.22(A)(1)).
- 3. All 120 volt receptacles located within twenty feet (20') of the inside walls of the pool must be ground-fault circuit-interrupter protected. Receptacles must be installed in water proof enclosures. A convenience receptacle is required within six feet to twenty feet (6'-20') of the edge of the pool (*NEC-680.22(A)(4)).
- 4. Lighting fixtures shall not be installed over the swimming pool or over the area extending five feet (5') from the inside walls of the pool.
- 5. All wiring to required receptacles shall be underground and a minimum of twelve inches (12") below grade in rigid metal conduit or intermediate metal conduit. Rigid non-metallic conduit can be used if buried eighteen inches (18") deep and protected by rigid conduit until eighteen inches (18") below grade. Number 12, THHW wire shall be used in wet locations. A #12 ground wire shall be pulled and bonded to all metal boxes. UF Cable is not permitted.
- 6. **Receptacle Installation:** Receptacles should be at least eighteen inches (18") above the ground level and must be securely anchored underground. This can be done by laying the

conduit in a trench in which you place concrete to stabilize it as a unit or, by anchoring the box to a four-by-four (4"x4") post or by providing additional conduit for support of the box.

7. **Connection:** All splices must be made inside an outlet, junction, or switch box above grade. The splice must be made with wire nuts. It is also suggested that the wire nuts are wrapped tightly with electricians tape for added safety.
8. **Trench:** When laying out a path for the trench from the house, try to make the path straight. If you cannot make a path straight, make the bends gradual curves.
9. **Grounding:** All electrical equipment, including all electrical equipment located within five feet (5') of the inside wall of a spa or hot tub and associated with the circulation system of a spa or hot tub, must be grounded (*NEC-680.43(F);680.54).
10. **Pool Heaters:** All pool heaters shall be equipped with a readily accessible on-off switch to allow shutting off the heater without adjusting the thermostat setting. Pool heaters fired by natural gas or LPG shall not have continuously burning pilot lights (*IECC-R403.9.1).
11. **Time Switches:** Time switches that can automatically turn off and on heaters and pumps according to a preset schedule shall be installed on swimming pool heaters and pumps, except where public health standards require 24-hour pump operation, or where pumps are required to operate solar and waste-heat-recovery pool heating systems (*IECC-R403.9.2).
12. **Pool Covers:** Heated pools shall be equipped with a vapor retardant pool cover on or at the water surface. Pools heated to more than 90°F (32°C) shall have a pool cover with a minimum insulation value of R-12, except for pools deriving over 60% of the energy for heating from site-recovered energy or solar energy source (*IECC-R403.9.3).

Plumbing Requirements:

1. **Water Supply:** All swimming pools shall be provided with a potable water supply, free of cross connections with the pool or its equipment. The source from which the pool is filled shall contain a vacuum breaker or approved back flow device.
2. **Drainage Systems:** The swimming pool and equipment shall be equipped to be completely emptied of water and the discharged water shall be disposed of in an approved manner that will not create a nuisance to adjoining property.

Inspection:

Call J.U.L.I.E., at 8-1-1, before digging. A site check and electrical inspection are required. All work must be inspected before it can be put into operation.

References (revised 01/2014):

*VC = Village Code

*NEC = National Electrical Code (2011)

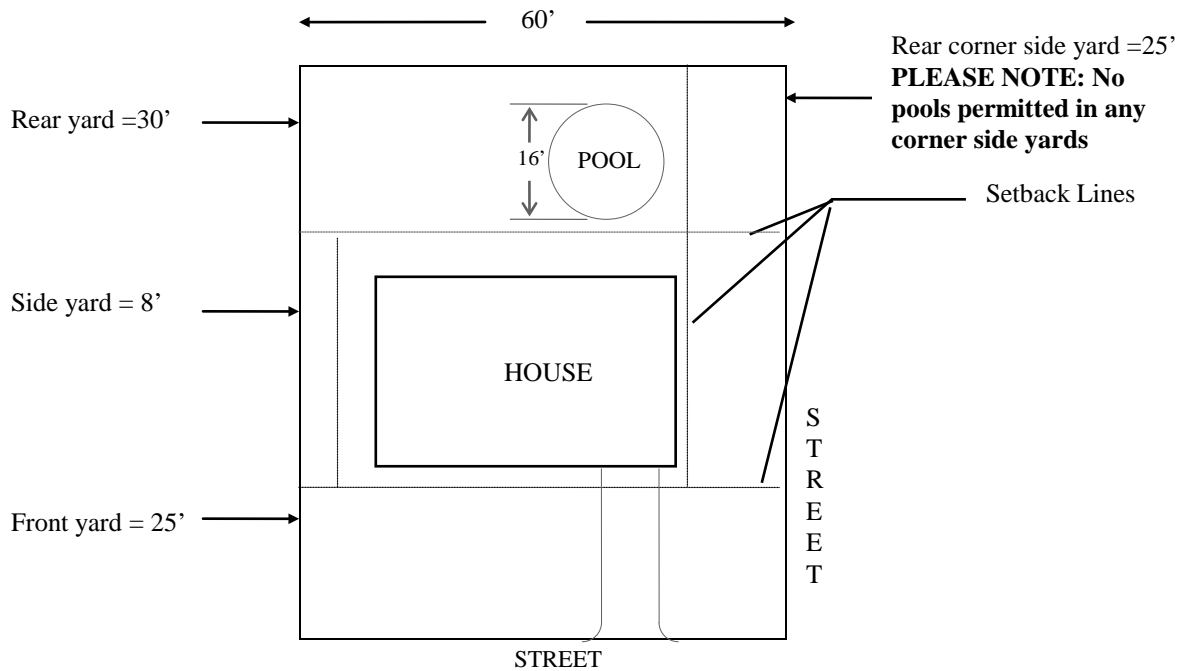
*IECC = International Energy Conservation Code (2012)

*IPMC = International Property Maintenance Code (2012)

*IRC = International Residential Code (2012)

Required Setbacks and Lot Coverage

Please note that all detached accessory structures must be located in the rear yard, at least ten feet (10') from the principal structure (house), five feet (5') from any lot line, must not be located on any easement and cannot occupy more than thirty percent (30%) of the required rear yard. All structures on the property cannot total more than thirty-five percent (35%) of the total lot area.



$$\frac{\text{Pool Coverage Area}^1}{\text{Rear Yard Area}} = \frac{3.14 \times 8^2}{60' \times 30'} = \frac{201 \text{ sf}}{1800 \text{ sf}} \times 100 = 11.2\%$$

¹ Pool area = πr^2

ELECTRICAL POOL INFORMATION FOR PERMANENTLY INSTALLED POOLS (NEC 2002)

