SWIMMING POOLS B-21

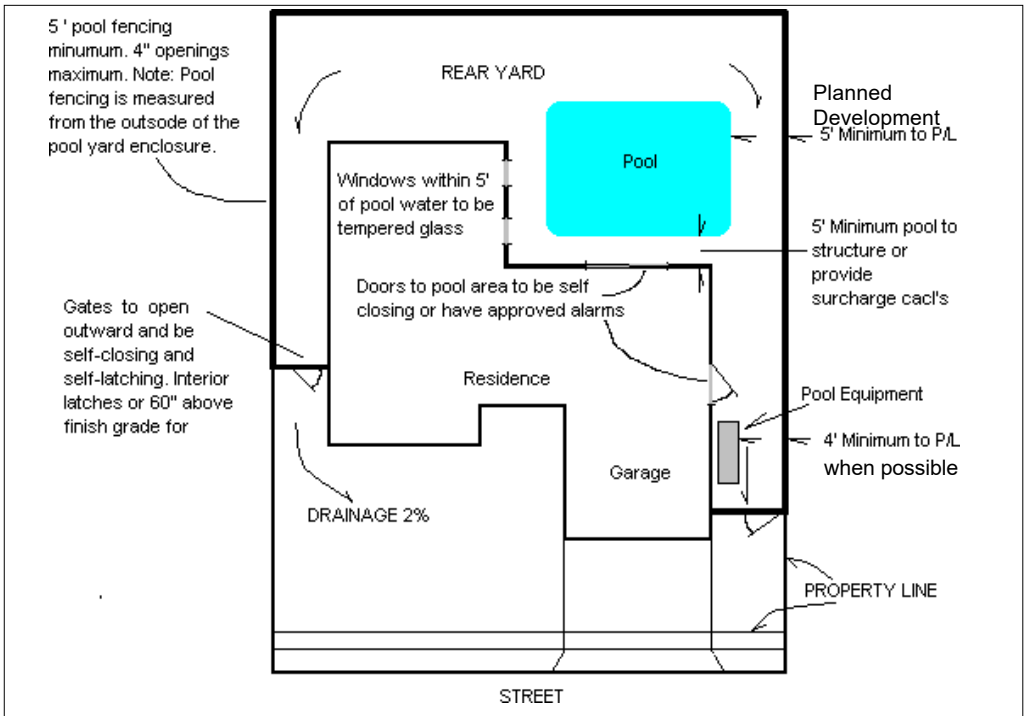
Development Services
Building Division
1635 Faraday Avenue
442-339-2719
www.carlsbadca.gov

Swimming Pools require permits in the City of Carlsbad. Many code requirements and City ordinances regulate the safe construction of pools, spa, and hot tubs. Electrical systems for pools are carefully reviewed, and pool yard fencing is of paramount importance in California. The fencing requirements must comply with the California Building Code (2019) edition.

Swimming Pool Plan Check

Two sets of plans are necessary for application for a pool permit. Plans for applying for a pool permit must contain the following information:

- A site plan drawn to scale and dimensioned showing all existing and proposed structures, slopes, property lines, and proposed pool fencing. The site plan should show proper drainage of surface water on the entire lot. The site plan should call out the location for the disposal of earth removed during pool excavation. The site plan should also show how the materials for pool construction will be staged.
- A section view showing pool location adjacent slopes. See page 7.
- Staging materials in the right of way requires Issuance of a Right Of Way permit with Land Development Engineering. This additional permit triggers additional insurance requirements and a traffic control plan.
- A typical site plan would be:



Please consult the Swimming Pool Safety Act for required safety features and the Carlsbad Planing Division for setback requirements specific to the property zone.

- All windows within 5 feet of the water's edge are required to be tempered glass if the bottom edge of the window is within 60 inches of the pool deck.

- Pool fencing should be detailed on the site plan along with a call out for the additional child safety protective feature into the pool yard enclosure.

- Structural details for the construction of any new pool are required to be stamped and wet signed by a licensed engineer. Photocopies of signed engineered plans are not acceptable. The plans should assume expansive soil conditions unless a current soils report is submitted with the application for a pool permit.

- Site plan to be reviewed/signed by the pool engineer.

Swimming Pool Inspections

There are a number of required inspections made by city inspectors during the course of construction for a swimming pool. Inspections should be requested the preceding day by 4 p.m. for an inspection the next working day. The required inspections are:

1. **Steel and Bonding -** Made when the pool is ready for gunite placement. All steel reinforcement and deck steel bonding is to be completed, including pool light shells, diving board or pool cover apparatus, metal window frames and patio cover hardware within 5 feet of the water's edge. Pool plumbing should be under a 35 pound pressure test.

2. **Underground electric and gas pressure test** - Made when all electrical conduit and gas piping has been installed and is prepared for cover. Gas piping must be observed under test prior to covering with soil at any point.

3. **Pre-plaster/Final inspection** – A preplaster inspection is a final inspection and it occurs when the pool is ready to be plastered. All electrical work must be finished. The fencing, gates and latches must be complete. The additional pool safety device must be installed. If that device is an exit alarm or self-closing and latching hardware on exterior doors(s), the contractor or homeowner must demonstrate those systems to the inspector at this time.

Pool Yard Fencing

All pools, spas, and hot tubs constructed or installed as package units are subject to and regulated by the California Building Code. The general requirements are as follows:

- Fencing must be a minimum of 60” high as measured from outside the pool yard.
- Openings shall not allow the passage of a 4” sphere.
- The outside surface of the fence shall not have handholds that would enable climbing.
- When the house forms part of the pool enclosure and there are doors leading from the house to the pool yard, an additional child safety protective device is mandatory. Those may be one of the following:
    - Isolate the pool from the house with additional fencing.
    - Provide exit alarms on the exterior doors
    - Equip the pool with an approved safety cover
    - Provide all doors with self-closing and latching hardware
- Yard gates must be self-closing and latching.
- Gates must open away from the pool.
- Gate latches must be inside the enclosure or 60” above grade.
- Inspectors will not final the pool until the fencing, gates, and latches are installed.

***3109.4 Residential swimming pools**. Residential swimming pools shall comply with CBC Sections 3109.4.1 through 3109.4.3.*
Exception: A swimming pool with a power safety cover or a spa with a safety cover complying with ASTM F1346 need not comply with Section 3109.4.

Electrical Requirements

Swimming pools, spas, and hot tubs that have electrical equipment are carefully inspected. The National Electric Code regulations are very explicit since having electrical devices in and near pools can lead to fatalities. That document should be consulted for specific, detailed requirements. The following general rules are extracted and paraphrased from NEC Article 680:

- Receptacles :
    - Must be installed at least 10’ away from the water.
    - At least one receptacle must be installed at grade between 10 and 20 feet from the water.
    - All receptacles within 20 feet of the pool must be GFCI protected.
- Light Fixtures
    - Lights may not be installed over or within 5 feet of the inside walls of the pool. (Existing light fixtures must be at least 5 feet above the pool and GFCI protected.)
    - Light fixtures between 10 and 20 feet must be GFCI protected.
    - Lighting systems operating at 30 volts or less shall be a minimum of 10 ft from pools and spas.
    - Cord connected light fixtures (including all low voltage landscape lighting) are subject to the above noted limitations.
- Switching devices
    - All switching devices must be located 5 feet from the water’s edge unless separated by a solid wall or barrier.

The electrical installation shall comply with Article 680 of the 2019 California Electric Code.

- Underwater Lighting Fixtures

The lighting fixtures are to be installed specifically per the manufacturer's installation instructions and in accordance to Article 680. The NEC should be consulted for detailed requirements. Pool lights require both grounding and bonding in addition to GFCI protection.

- Bonding

These requirements are often confused with grounding requirements. Bonding is the principal of positively connecting all electrical and metallic systems together to eliminate potential between those systems. When these systems are at the same electrical potential, the possibility of transmitting voltage across these systems is greatly reduced.

- Grounding

Pool circuit grounding is also very important. The use of chlorine and other pool chemicals has shown to deteriorate some wiring types, so pool wiring methods are very specific. Generally, all pool wiring, including grounding, must be insulated copper wiring. There are some exceptions to this general rule for pool feeders remote from the pool equipment.

Definitions

As used in this chapter:

A. "Swimming pool or pool" means any structure intended for recreational swimming or bathing that contains water over eighteen inches deep. "Swimming pool" includes in-ground and above-ground structures and includes, but is not limited to, hot tubs, spas, portable spas, and nonportable wading pools.

B. "Public swimming pool" means a swimming pool operated for the use of the general public with or without charge, or for the use of the members and guests of a private club. Public swimming pool does not include a swimming pool located on the grounds of a private single family home.

C. "Enclosure" means a fence, wall, or other barrier that isolates a swimming pool from access to the home.

D. "Approved safety pool cover" means a manually or power-operated safety pool cover that meets all of the performance standards of the American Society for Testing and Materials (ASTM), in compliance with standard F1346-91 or in the case of a hot tub or spa, a safety cover that complies with ASTM- Emergency Performance Specification ASTM-ES 13-89.

E. "Exit alarms" means devices that make audible, continuous alarm sounds when any door or window, that permits access from a residence to the pool area, that is without any intervening enclosure, is left open or is left ajar. Exit alarms may be battery operated or may be connected to the electrical wiring of the building.

F. "Grade" means the underlying surface, such as earth or a walking surface.

Drowning prevention safety features

When a building permit is issued for the construction of a new swimming pool or spa or the remodeling of an existing swimming pool or spa at a private single-family home, the respective swimming pool or spa shall be equipped with at least two of the following seven drowning prevention safety features:

1. An enclosure that meets the requirements of Section AV100.3 and isolates the swimming pool or spa from the private single-family home.
2. Removable mesh fencing that meets American Society for Testing and Materials (ASTM) Specifications F2286 standards in conjunction with a gate that is self-closing and self-latching and can

accommodate a key lockable device.
3. An approved safety pool cover, as defined in Section AV100.1
4. Exit alarms on the private single-family home's doors that provide direct access to the swimming pool or spa. The exit alarm may cause either an alarm noise or a verbal warning, such as a repeating notification that "the door to the pool is open."
5. A self-closing, self-latching device with a release mechanism placed no lower than 54 inches (1372 mm) above the floor on the private single-family home's doors providing direct access to the swimming pool or spa.
6. An alarm that, when placed in a swimming pool or spa will sound upon detection of accidental or unauthorized entrance into the water. The alarm shall meet and be independently certified to the ASTM Standard F2208 "Standard Safety Specification for Residential Pool Alarms," which includes surface motion, pressure, sonar, laser and infrared type alarms. A swimming protection alarm feature designed for individual use, including an alarm attached to a child that sounds when the child exceeds a certain distance or becomes submerged in water, is not a qualifying drowning prevention safety feature.
7. Other means of protection, if the degree of protection afforded is equal to or greater than that afforded by any of the features set forth above and has been independently verified by an approved testing laboratory as meeting standards for those features established by the ASTM or the American Society of Mechanical Engineers (ASME).

Gates and latches

A. Any access gates through the enclosure shall comply with the requirements of Section 18.28.020.

B. Any pedestrian access gate(s) through the enclosure shall open away from the swimming pool.

C. Every pedestrian access gate shall be equipped and maintained with self-closing and self-latching devices. Such devices shall be placed no lower than sixty inches above grade. Latching hardware may be placed at a lower height if it is operable only from the inside of the enclosure.

D. Gates other than pedestrian access gates shall be equipped with lockable hardware and shall remain locked at all times when not in use.

Ingress and egress requirements

Such fence, gate or other protective device as required by these sections shall be installed in such manner as to comply with the fire exit requirements as contained in this code and the state law. No swimming pool shall be installed in any court or yard area which is required for ingress or egress to any building or occupancy.

SWIMMING POOL AND SPA PLAN CHECK

1. Two site plans to scale showing:

    A. Legal description, address and location.

    B. A fence that is 60" minimum height with self-closing, self-latching gates, latches to be at least five (5) feet above grade, bottom of gate shall be no more than four (4) inches above grade, and no openings in the fence shall be larger than four (4) inches. Any fence, which exceeds six (6) feet in height, requires a building permit. Pool fences are measured from the side of the fence opposite the yard where the pool is located.

SPAS
Two-foot clearance from buildings, property lines and slopes within certain zones. Consult the city's Planning Division if property is in a planned development.

POOLS
See the next page of this handout. Consult the city's Planning Division if property is in a planned development.

C. Location of heater.

1. Heaters shall comply with all governing codes and manufacturer's recommendations. (Stackless models may not terminate closer than four (4) feet horizontally to any operable window).

2. May not be under roof overhangs.

3. Must be four (4) feet clear of property lines.

2. Identify manufacturer of equipment and spas for approval.

3. Show proper drainage of surface water.

4. Show method of disposal of pool flushing water.

5. Call out the location for disposal of earth removed.

6. Expansive soil details are to be used unless a soils report for pool site is submitted.

Swimming Pool Setback to slopes

Figures 9, 10, 11, and 12 show how the standard setback can be provided for pools adjacent to a slope steeper than 3 horizontal to 1 vertical but less than 1 horizontal to 1 vertical. Where the slope is steeper than 1:1, the setback shall be measured from an imaginary plane projected at an angle of 45 degrees and tangent to the slope. **In addition to the footing setback, any portion of the pool wall within 7 feet of the top of the slope shall be designed for a freestanding condition, without soil support (see Figure 10).**

The Carlsbad Planning Division should be consulted for pool and spa setback requirements within a planned development.

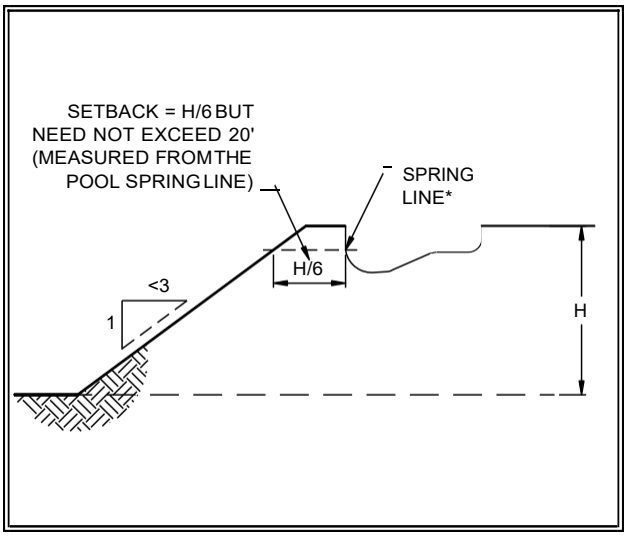


Figure 9 (Section 1808.7.3)

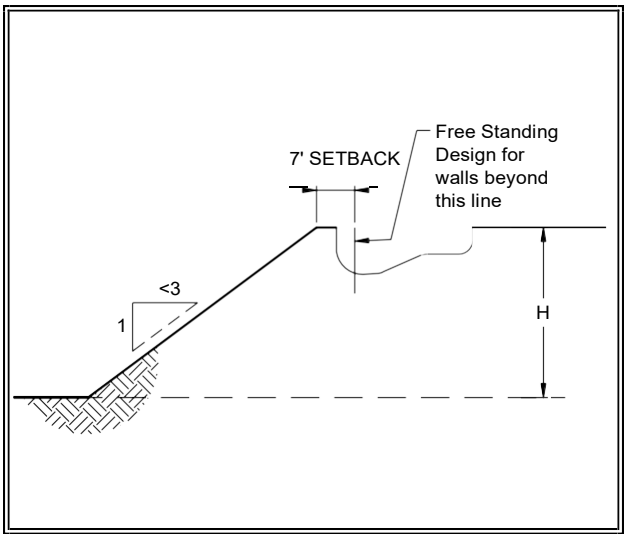


Figure 10 (Section 1808.7.3)

* The spring line is defined as the location on the pool shell where it changes curvature away from the adjacent slope. In addition, the pool clearance dimension is measured to the outside of the pool shell not the inside finished surface.

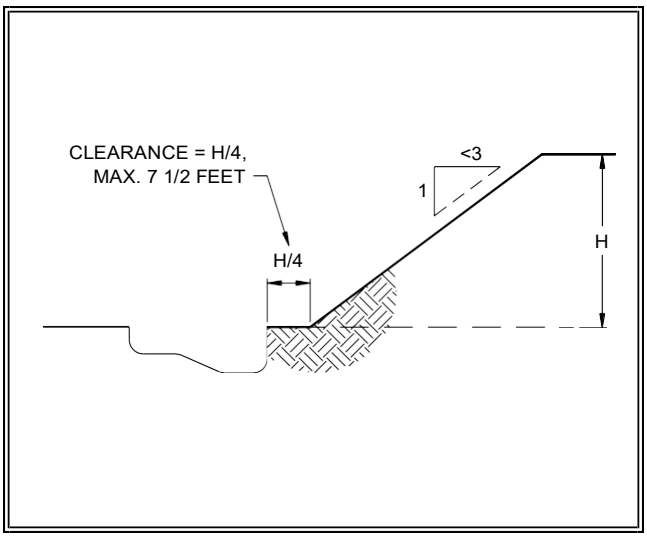


Figure 11 (Section 1808.7.3)

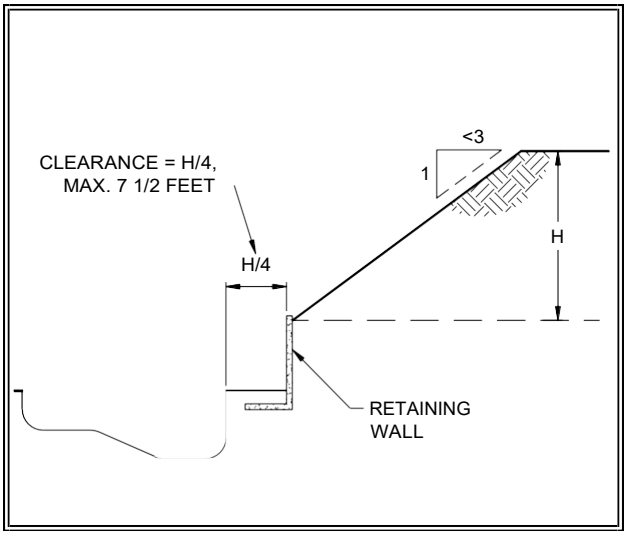


Figure 12 (Section 1808.7.3)