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Building Division

BUILDER'S BULLETIN BB 1-05

Construction Requirements for Swimming Pools, Spas and Hot Tubs

References: 2001 California Building Code
2001 California Plumbing Code
2004 California Electrical Code

Swimming Pool or Pool means any structure intended for swimming or recreational bathing that contains water over 18 inches deep. "Swimming Pool" includes in-ground and aboveground structures and includes, but is not limited to, hot tubs, spas, portable spas and non-portable wading pools.

NOTE: Although a permit may not be required, an approved barrier that complies with the Murrieta Municipal Code is required for any body of water greater than 18" which has a sloping grade below the surface originating at the shore line, that exceeds (is steeper than) a grade of one vertical to four horizontal.

A. **Permits Required** – A Swimming Pool, Spa, or Hot Tub construction/installation permit shall be obtained from the Building Division.

1. Submittal Documents

- a) **Site Plan** – Three copies shall be submitted, and shall include the following:
 - (1) Provide property identification information (Tract & lot number; address).
 - (2) Show ALL property lines and dimensions.
 - (3) Indicate the location of all streets and alleys.
 - (4) Show all existing and proposed buildings and structures.
 - (5) Location of any slopes on or adjacent to the subject property (include height and grade of the slope).
 - (6) Show proposed pool, spa or hot tub location.
 - (7) All setbacks from the inside edge of the pool (or spa) to the property lines and any existing or proposed structures.
 - (8) Detail fencing, showing that it will meet minimum pool barrier requirements.
 - (9) Show the proposed location of the pool equipment and the size and location of any sound walls, if required, and construction method.

- (10) Show the location, size and type of materials for any gas water and electric lines (include pipe sizes, conduit sizes, conductor types and sizes, and over-current device sizes and disconnect locations).
 - (11) Show the location of the gas meter.
 - (12) Show the location of the electric service.
 - (13) Show the location and BTU demand of any heating equipment.
 - (14) Show the location of the filter equipment.
 - (15) Show a profile of the pool or spa showing depths and section lines.
 - (16) Provide the property owners information (including name, address and phone number).
 - (17) All plans shall be drawn legibly.
- (b) Structural Plans** – Three copies shall be submitted, and shall include the following:
- (1) Diagrams of the pool, spa, hot tub or other structures requiring permits.
 - (2) Specifications and details.
 - (3) Engineering calculations.
 - (4) Soils investigation report, if required by the City Building Official.
 - (5) Special inspection and structural observation programs, if required.
 - (6) Plans shall be legible.
 - (7) A licensed architect or engineer shall prepare the plans.

B. Location Restriction

1. Pool, Spa or Hot Tub

- a) Maintain a minimum five (5') foot setback from all property lines for in-ground pools/spas, or per Planning Department requirements
- b) Shall not be located in a front yard setback
- c) Shall be no closer than seven (7') feet from the top of a slope, unless designed to support the water in the pool without soil support. {California Building Code (C.B.C.) 1806.5.4}
- d) Shall be no closer to the toe of a slope (that is steeper than 1 in 3 units) than the height of the slope divided by four (H/4), unless designed for the loads imposed. {C.B.C. 1806.5.4}

2. Mechanical Equipment

- a) Pumps and filters shall be located not less than four (4') feet from an adjoining property line. MMC 16.44.150 F Table 3-14
- b) Gas heating equipment shall be installed in accordance with the current adopted Mechanical and Plumbing Codes. Gas heating equipment without an integral venting system shall:
 - (1) Not have the vent termination closer than four (4') feet to any property line, except a public way. {California Plumbing Code (C.P.C.) 517.6} (Item 1 also applies to appliances with an integral vent.)

- (2) Terminate not less than four (4') feet below or four (4') feet horizontally from, and not less than one (1') foot above a door, an open able window or a gravity air inlet into a building. {C.P.C. 517.5}
- (3) Have the vent termination at least eight (8') feet from a vertical wall when a listed vent cap is used. All other vent terminations shall be at least two (2') feet higher than any portion of a building within ten (10') feet. {C.P.C. 517.3}

3. Electrical Equipment

- a) Electrical materials and equipment shall be installed in accordance with the current adopted edition of the National Electrical Code (N.E.C.)
- b) Electrical equipment shall be listed and labeled, and shall be installed and used in accordance with any instructions included in the listing or labeling. {N.E.C. article 110-3}
- c) Electrical sub-panels shall be provided with a minimum 30 inches by 36 inches unobstructed working area as required by the N.E.C. article 110-26(A).
- d) Rigid P.V.C. electrical conduit does not provide the support for electrical equipment, panel boards or junction boxes required by N.E.C. article 347-3(b).

4. Plumbing Installations

- a) All plumbing materials and installations shall conform to the current adopted edition of the Uniform Plumbing Code and I.A.P.M.O. Installation Standards.
- b) Gas Piping
- c) Plastic gas piping:
 - (1) Shall have at least eighteen (18") inches of earth cover or other equivalent protection. {C.P.C. 1211.6}
 - (2) Shall have an electrically continuous yellow insulated number 18 AWG copper tracer wire installed with and attached to the underground plastic gas piping and shall terminate above grade at each end. {C.P.C. 1211.19}
 - (3) Transitions to ferrous piping shall be by listed and approved transition fittings. {C.P.C. 1211.6}
- c) Metallic gas piping:
 - (1) Shall have at least twelve (12") inches of earth cover or other equivalent protection. {C.P.C. 1211.6}
 - (2) Shall be protectively coated by an approved type of machine applied protective coating. Fittings and damaged coating shall be field wrapped in accordance with I.A.P.M.O. Installation Standards.{C.P.C. 1211.10}
- d) All gas piping shall be tested with an air, CO² or nitrogen pressure test of at least ten (10 psi) pounds per square inch for fifteen (15 min.) minutes. {C.P.C. 1204.3.2}

- e) Reusable, cartridge or diatomite type filters with a separation tank is encouraged as a water conservation measure.

C. Barriers for Swimming Pools, Spas and Hot Tubs – The pool barrier shall comply with the following:

1. The top of the barrier shall be at least 5 feet (60”) above grade measured on the side of the barrier that faces away from the pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches. The maximum vertical clearance may be increased to 4 inches when grade is a solid surface such as a concrete deck, or when the barrier is mounted on the top of an aboveground pool structure. When the barrier has horizontal members spaced less than 45 inches apart, the horizontal members shall be placed on the pool side of the barrier. Any decorative design work on the side away from the pool, such as protrusions, indentation or cutouts, which render the barrier easily climbable, is prohibited.
2. Openings in the barrier shall not allow passage of a 1¾ inch diameter sphere. Exception: The opening size may be increased such that the passage of a 4 inch diameter sphere is not allowed if: a.) The vertical spacing between such openings is 45 inches or more, or b.) The fencing is composed of vertical and horizontal members and the distance between the horizontal members is 45 inches or more.
3. Chain link fences used as barriers shall not be less than 11 gauge.
4. Access gates shall comply with items 1 through 3 above. Pedestrian gates shall be self-closing and have a self-latching device. Where the release mechanism of the latching device is located less than 54 inches from the bottom of the gate, then:
 - a) the release mechanism shall be located on the pool side of the barrier at least 3 inches below the top of the gate, **and**
 - b) The gate and barrier shall have no opening greater than ½ inch within 18 inches of the release mechanism.
5. Pedestrian gates shall swing away from the pool. Any other gates, such as vehicle access gates, shall be equipped with lockable hardware or padlocks and shall remain locked at all times when not in use.
6. Where the wall of a Group U, Division 1 Occupancy, attached or detached garage, serves as part of the barrier and contains door openings between the garage unit and the pool, the door shall be self-closing and self-latching or a separation fence meeting the above shall be provided.

NOTE: Where the wall of any other non-residential occupancy group serves as part of the barrier and contains door openings between the building and the pool, a separation fence meeting the requirements of items 1 through 4 shall be provided. When approved by the Building Official, the exception allowed in number 5 above may be used.
7. Where an aboveground 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, then: 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 that meets the requirements of items 1 through 5 above. When the ladder or steps are secured, locked or removed, any opening created shall be protected by a barrier complying with items 1 through 5 above.

8. Indoor swimming pools shall comply with item 5 above.

9. *Self-contained* spas or hot tubs equipped with a listed safety cover, complying with ASTM F-1346-91, shall be exempt from the above listed barrier requirements.

D. Placement of Sand and Building Materials in the Public Street

When constructing swimming pools and large spas, it is a common practice to place sand or other building materials in the public street, temporarily. On occasion, pool contractors inadvertently deposit a portion of the sand pile in such a way that a lane is partially blocked. This creates an unacceptable traffic hazard which endangers not only the motorist but the pool company's staff who may be operating equipment next to the sand pile

In order to eliminate these hazardous occurrences, all Contractors shall adhere to the following requirements:

1. If the stockpile encroaches into the street 5 feet or less from the curb use "Post Tube" delineators around the portion of the materials in the street.
2. If the stockpile encroaches into the street more than 5 feet from the curb use "Post Tube" delineators to route traffic in the manner shown on page 37 of the Watch Book and/or provide Type II Lighted Barricades around the stockpile.
3. If a clear space in driving lanes is less than 22 feet wide?
 - a) Cones and a flagman are required.
 - b) Notify Public Works Department, Inspection section at 461-6028.
 - c) Advise adjacent home owners of the material delivery and pre-gunite several days before the actual day of delivery.
 - d) Comply with all the traffic control measures as depicted in the current edition of the "Watch Book" available from the Public Works Department.

E. Glass Adjacent to Swimming Pools

Regarding hazardous locations requiring special glazing considerations, section 2406.4, Item 9, of the California Building Code states:

The following shall be considered specific hazardous locations. Glazing in walls and fences used as the barrier for indoor and outdoor swimming pools and spas when all of the following conditions are present:

1. ***The bottom edge of the glazing is less than 60 inches above the pool side of the glazing.***

2. ***The glazing is within 5 feet of the swimming pool or spa “water’s edge”.***

In light of the above, the Murrieta Building Department has determined that any glass that is less than 60 inches from grade or finished surfaces and within **5 feet** of the pool wall (water) needs appropriate protection. The question that most pool contractors ask is “What is considered appropriate protection for glass that is installed in areas subject to this new code requirement?”

The answer to this question is that the Murrieta Building Department has approved numerous methods which will meet the intent of the Building Code. These are as follows:

1. Install tempered glass.
2. Install a minimum 1/8 inch thick plexi-glass over the entire window or over each pane.
3. Install expanded metal lath or ornamental wrought iron over the window.
4. Install window film which meets ANSI Z97.1 and is **APPROVED** by the Murrieta Building Official. These films are similar to the “Scotchshield, Safety & Security” by 3M. Proof of material type, after installation shall be provided to the Building Inspector at the time of inspection.
5. Install a 5 foot high fence (not wrought iron) between the pool and the window.
6. Other methods approved the City of Murrieta Building Official.

Any questions concerning these requirements may be referred to the City of Murrieta Building & Safety (951) 461-6050, Monday through Friday, 7:30 a.m. to 5:00 p.m.