



ENVIRONMENTAL HEALTH DIVISION

2120 DIAMOND BLVD, STE 200

CONCORD, CA 94520

(925) 692-2500 (925) 692-2502 FAX

WWW.CCHEALTH.ORG/EH/



**PLAN CHECK CONSTRUCTION GUIDELINES
FOR NEW AND REMODELED
SWIMMING POOLS AND SPAS**

Table of Contents

Pools

SECTION 1	The Plan Check Process
Introduction	1
Plans and Fees	1
General Requirements	1
Support Data.....	2
SECTION 2	Pools
Pool Profile View	3
Pool Top View.....	3
SECTION 3	
Equipment Specifications	6
Signs and Safety Equipment.....	7
SECTION 4	
Additional Requirements	7
Restrooms	12
Gas Chlorine Room (if applicable)	13
Figures	15

INTRODUCTION

The California Health and Safety Code and the California Code of Regulations, Title 22, requires any person proposing to construct, remodel or alter a public swimming pool or auxiliary structure or equipment to submit plans and specifications to the Environmental Health Division (EHD). Plans must be approved by EHD prior to commencing construction and in advance of the issuance of any permit from the local Building Inspection Department. Changes to plans and/or specifications after approval of plans must be submitted to EHD for review and approval.

These guidelines are based on requirements contained in the California Health and Safety Code (Sections 116025 through 116068) and the California Code of Regulations, Title 22 (Chapter 20) and Title 24 (Chapter 31B). Plans must show that all applicable requirements will be complied with. **These guidelines are not all inclusive and are subject to change without notice. Refer to the appropriate state laws and codes for additional requirements and details.** Pre-gunite (or equivalent), pre-plaster (or equivalent) and final inspections by EHD are required before a pool can be opened for use and before a permit to operate can be issued. Call for inspections at least four (4) working days in advance. Inspection date requests dependant on inspection availability.

PLANS AND FEES

Plans are required for the following:

- New construction for a pool
- Remodeling

Plans may be required for the following:

- Minor remodeling
- Equipment installation or replacement

Any required plan check fees are to be paid at the time of plan submittal. The current fee schedule is available from EHD and is also on the website.

http://www.cchealth.org/groups/eh/programs/consumer_plan.php

GENERAL REQUIREMENTS

The following information is required:

1. Plans must be drawn to scale (1/4-inch = 1 foot for pool plans) in a professional manner.
2. Provide a name, address, and telephone number of owner, pool contractor or pool company, general contractor, project coordinator, and architect that would be a contact person for the plan checker.
3. Address of pool to be constructed.

4. Plot plan drawn to scale showing the pool location in relation to all buildings on the property. Where applicable, indicate the travel distance in feet from the pool to the living quarters on the property that are farthest from the pool. Smaller scale is acceptable on the plot plan only.
5. Initially one (1) set of complete plans and specifications, four (4) are required for revised and final approval. Indicating code compliance by noting "By others" and/or "per code" is not acceptable. Indicate equipment make and model numbers on the plans.
6. All calculations must be shown on the plans or on a sheet attached to the plans.
7. A completed data sheet for each pool (data sheet is attached at the end of the guideline).
8. Detailed, acceptable pool decking, pool fencing or enclosure, and ancillary facility plans must be submitted before pool plans can be approved.
9. Scale floor plan of pool equipment room or area.
10. If restroom, dressing and shower facilities are required or proposed, acceptable plans for these facilities must be submitted before pool plans can be approved.

SUPPORT DATA

Provide the following information on the plans:

- Pool capacity in gallons
- Square footage of pool water surface area
- Finish color of pool (must be white)
- Finish material of pool (e.g., white plaster)
- Type of pool piping proposed (cooper, PVC schedule 40 or 80, etc.).
- Approved source of water for pool(s), restrooms, showers and hose bibs.
- Approved sanitary sewage disposal system for pool filter waste water disposal and for sewage from restrooms and showers.

POOL PROFILE VIEW

Longitudinal section plan through the center line of the pool must provide the following information (Figure 31B-1):

- Pool length and depth dimensions. Pool depth dimensions must be from the operating water level to the bottom of the pool.
- Distance from shallow end wall to point break in the bottom slope from shallow to deep water or to the main drain if there is no break in the bottom slope.
- Distance from break in bottom slope to main drain, if applicable.
- Distance from main drain to deep end well.
- Depth at shallow end wall and deep end wall.
- Depth at break in bottom slope, if applicable.
- Depth at main drain (maximum pool depth).
- Depth at entire base of any pool stairs (must be uniform in depth at entire base of any pool stairs).
- Location of any flush mounted rope anchors.
- Pool stairs profile view that includes height of step risers and width of step treads.
- Design and location of hand rail(s) at pool stairs. Include hand rail profile view. Indicate height of upper railing surface above deck, coping or other handhold and pool steps.

POOL TOP VIEW

Provide the following information on the plans (See Figures 31B-2 and 31B-3):

1. Width of pool
2. Diving board (if any) location(s) and distance from board center to side walls and any other diving board.
3. Submit a complete pool plumbing plan. Show location, pipe size of each section of pipe and length of all pool plumbing, including skimmer, main drain and other suction lines, fill lines, return lines and return inlets.
 - Design pool filtration return plumbing system to obtain uniform flow through each return inlet (a return loop system, for example).
 - Design pool skimmer plumbing system to obtain uniform flow through each skimmer (a "T" connection for the skimmer suction line between 2 skimmers that will result in uniform flow in a 2 skimmer system or a skimmer suction loop system, for example).

4. Return Inlets:

- Locations of inlet fittings
- Two return inlets for the first 10,000 gallons and one additional inlet for each additional 10,000 gallons or fractional part thereof.
- Inlet fittings shall be located greater than 18-inches below the water line, except for a wading pool.
- Inlet fittings shall be separated by at least 10 feet.
- Inlet fittings shall be located to ensure uniform circulation throughout the entire pool.
- Additional inlets may be required to ensure uniform circulation throughout the entire pool.
- Inlet fittings should be at least 5 feet from any skimmers or suction drains.
- Inlet fittings shall not protrude greater than 1¼-inches into the pool and shall be rounded and smooth.
- Volume of flow through inlet fittings must be adjustable.
- Wall inlet fittings direction of flow must be adjustable.

5. Floor Inlets:

- One floor inlet shall be provided for each 10,000 gallons for a pool that exceeds 40 feet in width.
- Additional floor inlets may be required to ensure uniform circulation throughout the entire pool.

6. Skimmers:

NOTE: Skimmers cannot be used on pools with a water surface area over 5,000 square feet. Approved perimeter overflow system required for pools over 5,000 square feet (refer to requirements in Title 24, Chapter 31B, Section 3134B.2 for details).

- Location of skimmer(s)
- Provide at least one skimmer for each 500 square feet of pool water surface area, or fractional part thereof.
- Each skimmer shall be located in relation to pool inlets to aid recirculation and skimming.
- Prevailing wind conditions will need to be considered when locating skimmers.

7. Location of main drains

8. Locations of ladders, grab rails, recessed steps, pool stairs and hand rails.

NOTE: Hand rails and grabrail anchors must be electronically bounded as per the requirements of the local building inspection department and the bonding must be approved by the local building inspection department.

9. Pool light location(s) and wattage (when required).

10. Locations of depth markers.

11. Depth marking line. There shall be a straight line of 4-inch wide slip-resistant flush tile of contrasting color across the bottom of the pool where the water depth is 4½ feet. **EXCEPTION: Pools having a maximum depth of 5 feet or less shall not be required to have a depth marking line.**
12. Rope anchors. When a pool has a change in bottom slope from shallow to deep water, flush mounted rope anchors (for a safety rope and buoys) shall be installed where the water depth is 4½ feet.
13. Location of permanently installed fill line
14. If a pool overflow pipe is proposed, show it on the plans and where it will drain to. Indicate whether it will drain to the sanitary sewer or an approved onsite septic system. The overflow pipe will be permitted only if it is connected to the sewage indirectly through a 1-inch minimum air gap.
15. Pool shape may have additional requirements, for example, additional skimmers, inlets, and/or pool lights may be required.

EQUIPMENT SPECIFICATIONS

Provide the following information for each:

1. Provide manufacturer's specification sheets for all pool equipment, fittings, grates and backflow preventers. For specification sheets that include more than one item or model, clearly indicate on the sheets the selected item(s), and/or model(s).
2. Filters:
 - Filter type
 - Make and model number
 - Square footage of filter area
3. Pumps for each pump provided:
 - Make and model number
 - Horsepower
 - Pump performance curve
4. Skimmers:
 - Skimmer make and model number
 - Each skimmer shall have an equalizer line that will be split so as to have two (2) openings into the pool
 - Skimmer lines cannot be connected to a main drain
5. Disinfectant feeders or systems:
 - Make and model number
 - Disinfectant feed rate
 - Method to adjust feed rate (must be accurate within 10 percent of feed rate at any setting)
 - Disinfectant feeders that also feed cyanuric acid are not acceptable
6. Flow meters:
 - Make and model number
 - Location of piping
 - Flow meter pipe size rating
7. Pressure gauges:
 - Filter influent
 - Filter effluent
8. Approved backflow prevention device:
 - Properly installed on fresh water fill line at supply valve
 - If auto-fill device used; backflow preventer must be designed for use under pressure (e.g., pressure vacuum breaker)
9. Inlet fittings

10. Suction grates or covers (including skimmer equalizer line grates):
 - Suction grate make and model number(s)
 - Open area of each grate in square inches
 - Suction grates shall be removable only with tools.
 - Grate openings shall not exceed ½ inch in the smaller dimension.
 - Suction grates shall not create a suction hazard or a physical entrapment hazard.
 - Suction grate specification sheet(s) must show agency approval, such as UL or IAPMO, that certifies compliance with ASME/ANSI Standard A112.19.8-2007.

SIGNS AND SAFETY EQUIPMENT

1. Sign indicating **“WARNING-NO LIFEGUARD ON DUTY”** (minimum 4-inch letters). The sign shall also state **“Children Under the Age of 14 Should Not Use Pool Without an Adult in Attendance.”**
2. Approved artificial respiration demonstration sign
3. Emergency telephone number sign
4. At least two **“NO DIVING ALLOWED”** signs (minimum 4-inch letters) for pools with a maximum depth that is under 6 feet.
5. **“OCCUPANT LOAD”** sign (1 bather per 20 square feet of pool water surface area, minimum 4-inch letters).
6. **“NO USE OF POOL ALLOWED AFTER DARK”** sign (minimum 4-inch letters) if pool is not supplied with lighting.
7. Rescue pole (12 foot minimum, with body hook).
8. Life ring (minimum 17-inch exterior diameter) with a 3/16-inch attached line long enough to span maximum width of pool.
9. First Aid Kit (if required).

ADDITIONAL REQUIREMENTS

Provide plans and information for the following:

1. Pool decks:
 - Complete pool deck and deck drainage plans.
 - A minimum continuous and unobstructed 4 foot wide slip-resistant non-abrasive deck area of concrete or like material shall extend completely around all pools (including special use pools and wading pools) and the deck shall further extend at least 4 feet on

both sides and to the rear of any diving board. Deck width is measured from the poolside edge of the handhold.

- Pool deck surfaces shall be sloped away from the pool (minimum ¼-inch per foot) to deck drains or other approved surface water disposal areas.
- The distance between any pool and a spa shall be at least 6 feet.

2. Handholds (coping, cantilevered decking or perimeter overflow system):

- Submit a scale section view of the coping, cantilevered decking or perimeter overflow system
- Coping or cantilevered decking overhang shall not exceed 2-inches or be less and 1-inch and shall not exceed 2½-inches in thickness.
- Coping or cantilevered decking must be slip-resistant.

3. Pool enclosure:

- Clearly show and label the entire enclosure around the pool area on the plans.
- Submit scale elevation plans of the pool gates and any doors.
- The pool shall be enclosed by one or a combination of the following: a fence, portion of a building, wall or other approved durable enclosure. Doors, openable windows, or grates of living quarters or associated private premises shall not be permitted as part of the pool enclosure. The enclosure, doors and grates shall meet all of the following specifications:
 - The enclosure shall have a minimum effective perpendicular height of 5 feet as measured from the outside as depicted in Figures 31B-4 and 31B-5, California Code of Regulations, Title 24, Section 311-8B, **A pool enclosure higher than 5 feet is recommended**. Please be advised that some pool enclosures in the past that were proposed to be 5 feet high have been found to be slightly less than 5 feet high when inspected (e.g., 4 feet 11½-inches). Any pool enclosure found to be less than 5 feet high will not be accepted (see page 9).
 - Openings, holes or gaps in the enclosure, doors and/or gates shall not allow the passage of a 4 inch diameter sphere. The bottom of the enclosure shall be within 2-inches of the finished grade (no loose material such as bark). It is recommended that the entire pool enclosure be installed over concrete or a similar hard, durable material.
 - The enclosure shall be designed and constructed so that it cannot be readily climbed by small children. Horizontal and diagonal member designs, which might serve as a ladder for small children, are prohibited. Horizontal members shall be spaced at least 48-inches apart. Planters, trees, other structures, or any climbable objects shall not be permitted to encroach upon the clear span area as depicted in Figure 31B-5. Chain link may be used provided that the openings are not greater than 1¾-inches measured horizontally.
- Gates and doors opening into the pool enclosure shall also meet the following specifications:
 - Gates and doors (including building doors) shall be equipped with self-closing and self-latching devices. The self-latching device shall be designed to keep the gate or door securely closed. Gates and doors shall open outward away from the pool

except where otherwise prohibited by law. Hand activated door or gate opening hardware shall be located at least 3½ feet above the deck or walkway.

- Gates and doors shall be capable of being locked during times when the pool is closed.
 - The pool enclosure shall have at least one means of egress without a key for emergency purposes. Unless all gates or doors are so equipped, those gates and/or doors which will allow egress without a key shall be clearly and conspicuously labeled in letters at least 4-inches high “**EMERGENCY EXIT**”.
 - The enclosure shall be designed and constructed so that all persons will be required to pass through common pool enclosure gates or doors in order to gain access to the pool area. All gates and doors exiting the pool area shall open into a public area or walkway accessible by all patrons of the pool.
- Pool enclosures must comply with the dimensions specified in figures 31B-4 and 31B-5 (see page 9).
 - Submit a landscape plan of the area within 5 feet of the exterior of pool enclosure. Planters or other structures, trees, climbable plants, pipes, hose bibs, conduits, utility meters, window ledges, ledges on buildings or other structures (such as columns or posts) or any other objects or structures that could be climbable or provide a surface that could be stood on shall not be permitted to encroach upon the 5 foot clear span area as depicted in Figure 31B-5, Section 3118B, Title 24, California Code of Regulations. Submit plans that will show the proposed locations of all climbable objects (such as trees, climbable plants, hose bibb(s) gas meters, electrical boxes and meters and water pipes, etc): all of these types of objects must not be within the 5 foot clear span area. Bushes, shrubs and other plants can be within the 5 foot clear span area only if they are not climbable when planted or at any time in the future.
 - More stringent pool enclosure requirements may be required by the local Building Inspection Departments.
4. Pool geometry. The dimensions and slopes of a pool shall conform to the appropriate Figure 31B-1, Figure 31B-2, or Figure 31B-3 (see pages 9 and 10). **EXCEPTION: A special purpose pool shall be permitted a depth greater than 3½ feet at the shallowest end.**
5. Pool stairs, hand rails, ladders, grab rails and recessed steps:
- Submit complete pool stair plans. Include scale cross-section and top view.
 - Pool stair step treads shall be a minimum of 12 inches in width and shall be uniform in size, except that if the top step is curved convexly, the top step tread shall be not less than 18-inches wide as measured at the point of maximum curvature.
 - Step risers shall not exceed 12-inches in height.
 - Step risers shall be uniform in size.
 - Hand rails shall extend from the deck to not less than a point above the top of the lowest pool step.
 - The upper surface of hand rails shall be not less than 28-inches above the deck and poolside edge of the handhold.

- Grab rails shall be provided above both sides of recessed steps and shall extend over the coping or edge of the deck. Recessed steps shall have a minimum tread of 5-inches, width of 14-inches, and shall be designed to be readily cleaned.
- Ladders shall be corrosion-resistant and shall be equipped with slip-resistant tread surfaces. Ladders shall be rigidly installed and shall provide a clearance of not less than 3-inches and no more than 5-inches between any part of the ladder and the pool wall.

6. Depth markers:

- 3-inch minimum height durable depth markers shall indicate pool water depth in feet (e.g., 3 FT).
- Depth markers must be accurate to the nearest ½ foot.
- Depth markers shall be a color contrasting with the background.
- Depth markers required at the following pool locations:
 - Maximum depth
 - Minimum depth
 - Each end
 - On both sides of pool at any break in bottom slope between shallow and deep areas of the pool
 - On perimeter of pool at distances not to exceed 25 feet.
- Depth markers shall be on vertical pool walls at or above water level.
- If pool is over 20 feet wide, pool must have corresponding slip-resistant, flush depth markers on edge of deck next to the pool.
 - Any deck depth markers must be arranged to be read from the deck.
 - Deck depth markers are recommended for pools that are 20 feet or less in width.

7. Main drains/suction drains:

- The clearance between the bottom of a main drain, suction drain grate or cover and the opening of the suction plumbing shall be equal to at least two (2) inches or the largest suction pipe diameter in the drain cavity, whichever is greater, unless otherwise specified by the grate or cover manufacturer. Submit scale cross section drawings of all pool drain sumps.
- In areas of anticipated high ground water table an approved hydrostatic relief device shall be installed.

8. Pool lighting:

- Submit pool and deck lighting plans.
- General: Where pool lighting is provided, it shall be such that lifeguards or other persons may observe, without interference from direct and reflected glare from the lighting sources, every part of the underwater area and swimming pool surface, all diving boards, or other pool appurtenances.
- Night time use: Pools used at night shall be equipped with underwater lighting (1/2 watt minimum per sq. ft.) fixtures that will provide complete illumination of all underwater areas of the pool with no blind spots. Illumination shall enable a lifeguard or other persons to determine whether (1) a bather is lying on the bottom of the pool, and (2) the pool water

conforms to the definition of “clear pool water”. Submit manufacturer specification sheets for proposed light fixtures. **EXCEPTION: Pools provided with a system of overhead lighting fixtures where it can be demonstrated to the enforcing agency that the system is equivalent to the underwater lighting fixture system.**

- Deck area lighting: Where the pool is to be used at night, pool deck areas shall be provided with lighting so that persons walking on the deck can identify hazards. Lighting fixtures shall be aimed towards the deck area and away from the pool surface insofar as practical
- Warning Sign for Pools without Pool Lighting: Where pool lighting fixture which comply with the above requirements are not provided, a sign with clearly legible letters not less than 4-inches high shall be posted in a prominent place near each entrance to the pool area. This sign shall state **“NO USE OF POOL ALLOWED AFTER DARK”**

9. Equipment room or area plan:

- Scale drawing of pool equipment room or area
- Equipment room or area plumbing and equipment plan
- Identify all equipment and show the location of equipment room or area in relation to the pool(s) on a scale plan
- Show all pipe sizes and direction of flow.
- Indicate any proposed 90 or 45 degree elbow piping, valves, gauges, flow meters, pumps, filters, heaters, chemical feeders, etc.
- Show the location of equipment room or area in relation to the pool(s) on a scale plan
- All equipment shall be readily accessible for service, repair, replacement and inspection
- Floor shall be concrete (or other approved material)
- Floor shall be sloped at a minimum of ¼-inch per foot to approved drainage
- Each pool’s filtration and treatment system shall be completely separate from the filtration *and treatment system of any other pool*

10. Waste water disposal:

- Filter waste water shall be disposed of to a sanitary sewer (or other approved waste water disposal system if a sanitary sewer is not available)
- 1-inch minimum air-gap separation required
- Plans must include size, location and slope of any sanitary sewer line that will receive filter waste water
- Submit the size and location of any proposed filter waste water sump
- Waste water disposal systems shall be designed so as to prevent backup and overflow of waste water while filters are being cleaned

11. Pool cleaning systems:

- A built-in or portable type vacuum cleaning system shall be provided

12. Potable water hose bibb(s):

- Indicate location of hose bibb(s)
- All areas of pool deck must be within 75 feet of a hose bibb

- Hose bibb(s) shall be located so as not to constitute a safety hazard
- Approved backflow prevention device required for each hose bibb(s).

13. Drinking fountains:

- One guarded jet drinking fountain shall be provided for the first 250 pool users and an additional fountain shall be provided for each additional 200 pool users or fraction thereof.
- The number of pool users shall be determined according to California Health and Safety Code Section 3115B 2.
- **EXCEPTION: Drinking fountains shall not be required when drinking water is available at adjacent living quarters, or in an adjacent building such as a bathhouse, cabana, clubhouse or recreational facility.**

14. Test Kit for free chlorine (DPD or other approved test kit), pH, and cyanuric acid (when used).

RESTROOM, DRESSING AND SHOWER FACILITY REQUIREMENTS (when necessary)

1. Public shower, toilet and dressing facilities are required unless all living quarters are located not more than 300 feet in travel distance from the pool.
2. Separate restroom and dressing facilities for each sex. Check with local Building Department regarding handicap requirements.
3. Number of restroom and shower fixtures:
 - For the purpose of determining the number of fixtures required, one pool user shall be considered for every 15 square feet of pool water surface area (total water surface area if there is more than 1 pool).
 - Showers: One shower per 50 pool users.
 - Lavatories: One lavatory per 80 pool users.
 - Toilets: (1) Female: one toilet per 60 females; (2) Male: one toilet plus one urinal per 75 males.
4. Provisions for privacy
5. Submit a complete schedule of proposed room finishes (including any showers).
6. Smooth, easily cleanable, durable and moisture resistant wall and ceiling finishes are required. Submit samples of proposed wall and ceiling materials (e.g., wall tile, FRP, ceiling tile).
7. Floors shall be slip-resistant and extend upward onto walls at least 5-inches with an integrally coved base. The floor also shall slope at least ¼ inch per foot to floor drains.
8. Submit scale cross-section drawings of required integral cove bases.

9. Submit floor material manufacturer's specification sheets. Submit samples of proposed floor and base materials (e.g., floor tile, cove tile, poured epoxy). Floors shall have a hard non-absorbent surface, such as concrete or ceramic tile, with a slip resistant finish. Carpeting or other similar types of material shall not be permitted on shower or toilet room floors.
10. Lavatories shall be provided with permanent single-service towel dispensers or hot air blowers and permanent single service soap dispensers (not soap dishes).
11. Showers shall be provided with permanent single-service soap dispensers (not soap dishes).
12. Toilet tissue in permanent dispensers shall be provided.
13. Submit plumbing plans. Indicate hot (110°F maximum) and cold water to lavatories and showers.
14. Submit manufacturer specifications sheets for water heater and show location on plans.

GAS CHLORINE ROOM (if applicable)

1. Compressed chlorine gas storage containers and associated chlorinating equipment, when installed indoors, shall be in a separate room of not less than 1 hour fire-resistant construction.
2. The gas chlorine room shall not be located in a basement or below ground level.
3. The gas chlorine room entry door shall open to the exterior of the building and shall not open directly towards the pool or pool deck.
4. Provide mechanical exhaust (taken at a point at or near the floor level) which produces at least 60 air changes per hour and is vented to the outside air. The point of discharge for the mechanical exhaust system to the outside air shall be at least 10 feet from any openable window or adjacent building and at least 10 feet above the adjoining grade level.
5. Fresh air intakes shall be within 6-inches of the ceiling.
6. Submit the volume of the gas chlorine room in cubic feet and submit specifications for the exhaust fan or blower (including the cubic rate per minute ratings).
7. Provide a spray bottle of commercial strength ammonia.
8. Indicate location of light fixture and exhaust fan switches (switches must be adjacent to the entry door outside of the room). Each switch shall be clearly labeled "TURN ON BEFORE ENTERING".
9. A Gas Chlorine warning sign that reads "DANGER: GASEOUS OXIDIZER CHLORINE" (minimum 4-inch letters) and the appropriate hazard identification symbol for gas chlorine, on the exterior side of the entry door to the chlorine room, or on the adjacent wall area, is required.

10. Indicate location of gas mask or self-contained breathing apparatus.
11. Emergency evacuation procedures and map shall be in a conspicuous location near the entrance to the pool.
12. Fire Departments, Fire Districts and Hazardous Materials Division may have requirements relating to the use of chlorine gas.

Figure 31B-

Depths and Clearances for Pools with Diving Boards
30" (0.76 m) or less above water level.

Figure 31B-2

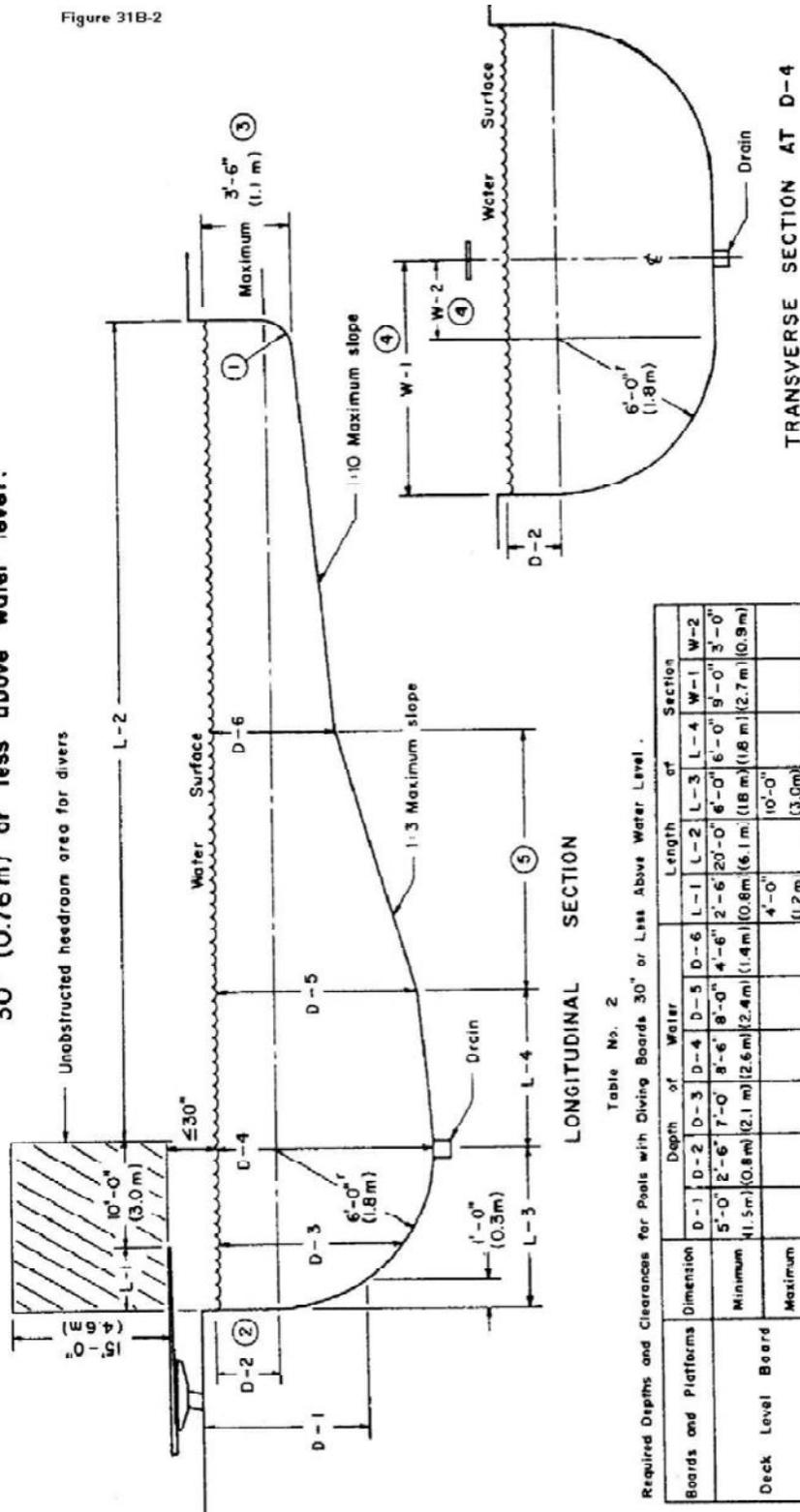


Table No. 2
Required Depths and Clearances for Pools with Diving Boards 30" or Less Above Water Level.

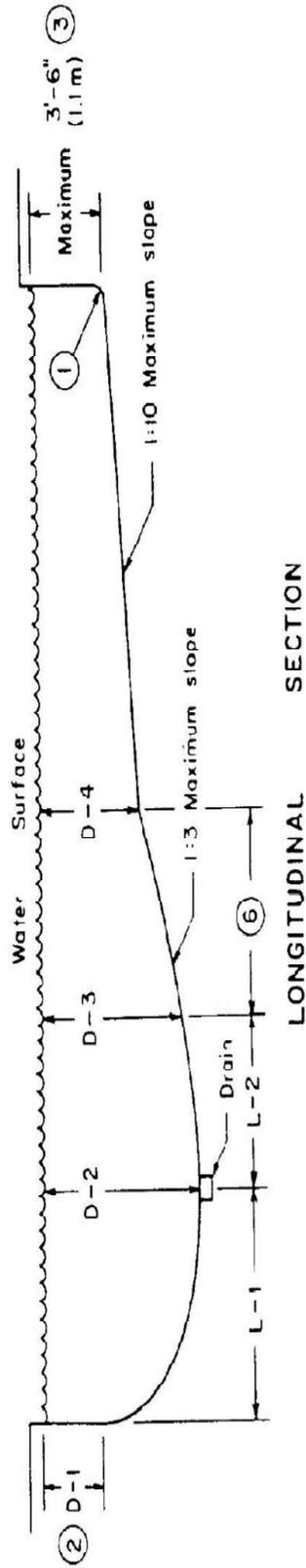
Boards and Platforms Dimension	Depth of Water												Length of Section		
	D-1	D-2	D-3	D-4	D-5	D-6	L-1	L-2	L-3	L-4	W-1	W-2			
Deck Level Board	Minimum	5'-0" (1.5m)	2'-6" (0.8m)	7'-0" (2.1m)	8'-6" (2.6m)	4'-6" (1.4m)	2'-6" (0.8m)	20'-0" (6.1m)	6'-0" (1.8m)	6'-0" (1.8m)	9'-0" (2.7m)	3'-0" (0.9m)			
	Maximum						4'-0" (1.2m)		10'-0" (3.0m)						

Notes for Figure 2 and Table No. 2

- ① Maximum radius at shallow end shall be 1'-0" (0.3 m).
- ② Springline D-2 shall extend to the break in slope between the shallow area and the diving bowl.
- ③ See exception to Section 2-9013(a).
- ④ Dimensions W-1 and W-2 shall apply from wall at deep end to D-6.
- ⑤ Dimension based on maximum slope and other minimum or maximum dimensions.

Figure 31B-

Depths and Clearances for Pools without Diving Boards



LONGITUDINAL SECTION

Table No. 3
Required Depths and Clearances for Pools without Diving Boards

Boards and Platforms	Dimension	Depth of Water		Length of Section			
		D-1	D-2	D-3	D-4	L-1	L-2
None	Minimum	2'-6" (0.8 m)	6'-0" (1.8 m)	5'-6" (1.7 m)	4'-6" (1.4 m)	3'-6" (1.1 m)	3'-0" (0.9 m)

Notes for Figure 3 and Table No. 3

- ① Maximum radius at shallow end shall be 1'-0" (0.3 m).
- ② Springline (D-1) shall extend to the break in slope between the shallow area and the diving bowl.
- ③ See exception to Section 2-9013(a).
- ④ Width of pool at Section D-2 shall be at least 15'-0" (4.6 m).
- ⑤ Pools with maximum depths less than that specified shall have a minimum length of 15'-0" (4.6 m).
- ⑥ Dimension based on maximum slope and other minimum or maximum dimensions.

Figure 31B-4

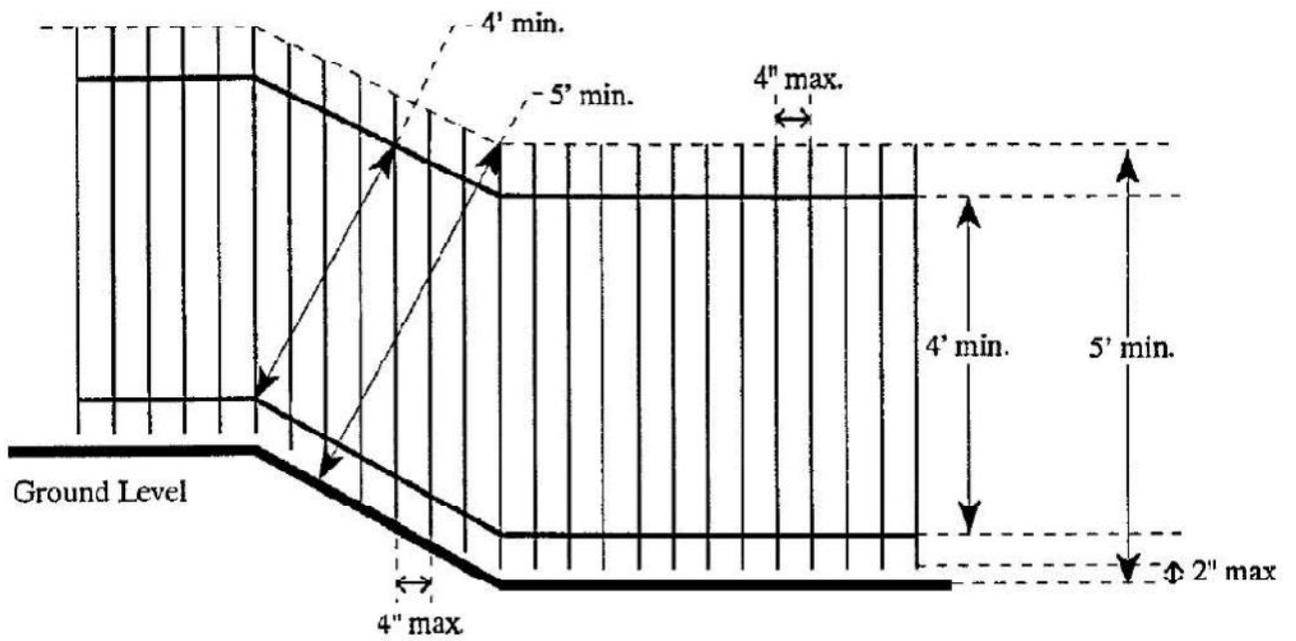


Figure 31B-4 Perpendicular fencing dimensions on sloping ground.

Figure 31B-5

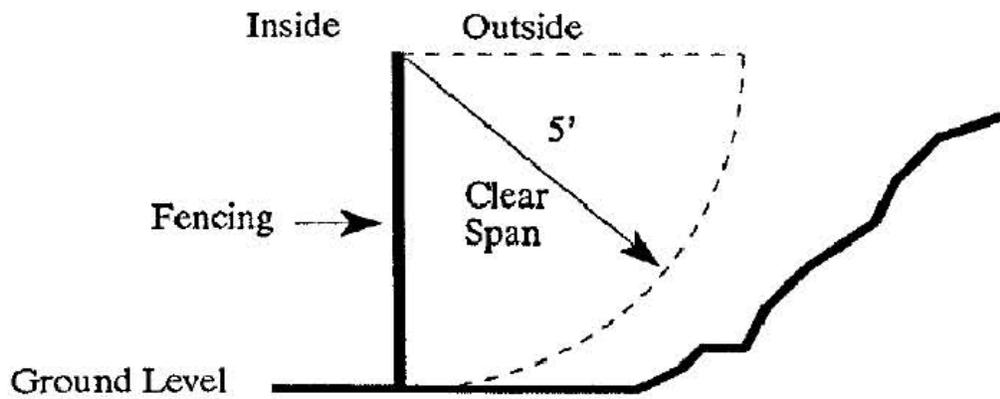


Figure 31B-5 Effective fencing height.

Table of Contents

Spas

SECTION 1	The Plan Check Process
Introduction	1
Plans and Fees	1
General Requirements	1
Support Data	2
SECTION 2	Spas
Spa Pool Profile View	3
Spa Pool Top View	3
SECTION 3	
Equipment Specifications	5
Signs and Safety Equipment	6
SECTION 4	
Additional Requirements	8
Restrooms	13
Figures	15

INTRODUCTION

The California Health and Safety Code and the California Code of Regulations, Title 22, requires any person proposing to construct, remodel or alter a public swimming pool or auxiliary structure or equipment to submit plans and specifications to the Environmental Health Division (EHD). Plans must be approved by EHD prior to commencing construction and in advance of the issuance of any permit from the local Building Inspection Department. Changes to plans and/or specifications after approval of plans must be submitted to EHD for review and approval.

These guidelines are based on requirements contained in the California Health and Safety Code (Sections 116025 through 116068) and the California Code of Regulations, Title 22 (Chapter 20) and Title 24 (Chapter 31B). Plans must show that all applicable requirements will be complied with. **These guidelines are not all inclusive and are subject to change without notice. Refer to the appropriate state laws and codes for additional requirements and details.** Pre-gunite (or equivalent), pre-plaster (or equivalent) and final inspections by EHD are required before a pool can be opened for use and before a permit to operate can be issued. Call for inspections at least four (4) working days in advance. Inspection date requests are dependent on inspection availability.

PLANS AND FEES

Plans are required for the following:

- New construction for a spa
- Remodeling

Plans may be required for the following:

- Minor remodeling
- Equipment installation or replacement

Any required plan check fees are to be paid at the time of plan submittal. The current fee schedule is available from EHD and is also on the website.

http://www.cchealth.org/groups/eh/programs/consumer_plan.php

GENERAL REQUIREMENTS

1. Plans must be drawn to scale (1-inch=1 foot for spa plans) in a professional manner.
2. Provide a name, address, telephone number of owner, spa pool contractor or spa pool company, general contractor, project coordinator, and architect that would be a contact person for the plan checker.
3. Address of spa pool to be constructed.

4. Plot plan drawn to scale showing the spa pool location in relation to all buildings on the property. Where applicable, indicate the travel distance in feet from the spa pool to the living quarters on the property that are farthest from the spa pool. Smaller scale is acceptable on the plot plan only.
5. Initially one (1) set of complete plans and specifications, four (4) are required for revised and final approval. Indicating code compliance by noting **“by others” and/or “per code” is not acceptable**. Indicate equipment make and model numbers on the plans.
6. Spa pool plans must be drawn to scale.
7. All calculations must be shown on the plans or on a sheet attached to the plans.
8. A completed data sheet for each spa pool (data sheet is attached at the end of the guideline).
9. Detailed, acceptable spa pool decking, pool fencing or enclosure, and ancillary facility plans must be submitted before spa pool plans can be approved.
10. Scale floor plan of spa pool equipment room or area.
11. If restroom, dressing and shower facilities are required or proposed, acceptable plans for these facilities must be submitted before spa pool plans can be approved.

SUPPORT DATA

Provide the following information on the plans:

- Spa pool capacity in gallons
- Square footage of spa pool water surface area (shall not exceed 250 square feet).
- Finish color of spa pool must be white or a light pastel color. Colors other than white must be approved by this Division. If not white, submit color sample(s).
- Finish material of spa pool (e.g., white plaster)
- Type of spa pool piping proposed (copper, PVC schedule 40 or 80, etc.).
- Approved source of water for spa pool(s), restrooms, showers, and hose bibs.
- Approved sanitary sewage disposal system for spa pool filter waste water disposal and for sewage from restrooms and showers.

SPA POOL PROFILE VIEW

Longitudinal section plan through the center line of spa pool must provide the following information:

- Spa pool length and depth dimensions. Spa pool depth dimensions must be from the operating water level to the bottom of the spa pool. Water depth shall not exceed 4 feet.
- Depth at underwater spa pool bench (shall not exceed 24 inches in depth).
- Depth at main drain (maximum spa pool depth).
- Depth at entire base of spa pool stairs (must be uniform in depth at entire base of spa pool stairs).
- Spa pool stairs profile view that includes height of step risers and width of step treads.
- Design and location of hand rail(s) at spa pool stairs. Include hand rail profile view. Indicate height of upper railing surface above deck, coping or other handhold and spa pool steps.

SPA POOL TOP VIEW

1. Width of spa pool
2. Submit a complete spa pool plumbing plan. Show location, pipe size of each section of pipe and length of all spa pool plumbing, including skimmer, main drain and other suction lines, fill lines, return lines and return inlets.
 - Design spa pool filtration return plumbing system to obtain uniform flow through each return inlet (a return loop system, for example).
 - Design spa pool skimmer plumbing system to obtain uniform flow through each skimmer (e.g., a "T" connection for the skimmer suction line between 2 skimmers that will result in uniform flow in a 2 skimmer system or a skimmer suction loop system).
3. Return Inlets:
 - Locations of inlet fittings
 - Sufficient, properly located return inlets to ensure uniform circulation throughout the spa pool
 - Inlet fitting shall not protrude greater than 1¼ inches into the spa pool and shall be rounded and smooth
 - Volume of flow through inlet fittings must be adjustable
 - Wall inlet fittings direction of flow must be adjustable
4. Skimmers:
 - Location of skimmer(s). Depending on rate of flow, more than 1 skimmer may be required
 - Each skimmer shall be located in relation to pool inlets to aid recirculation and skimming
 - Prevailing wind conditions will need to be considered when locating skimmers

5. Location of main drains and jet system drains
6. Locations of spa pool stairs and hand rails
NOTE: Handrail anchors must be electronically bonded and approved by the local building inspection department.
7. Spa pool light location(s) and wattage (when required)
8. Locations of depth markers
9. Location of fill line
10. If a spa pool overflow pipe is proposed, show on the plans where it will drain to. Indicate whether it will drain to the sanitary sewer or an approved onsite septic system. The overflow pipe will be permitted only if it is connected to the sewage indirectly through a 1-inch minimum air gap.

EQUIPMENT SPECIFICATIONS

Provide the following information:

1. Provide manufacturer's specification sheets for all spa pool equipment, fittings, grates, and back flow preventers.
2. For specifications sheets that include more than one item or model, clearly indicate on the sheets the selected item(s) and/or model(s).
3. Filters:
 - Filter type
 - Make and model number
 - Square footage of filter area
4. Pumps, for each pump (including booster or jet pumps) provide:
 - Make and model number
 - Horsepower
 - Pump performance curve
5. Skimmers:
 - Skimmer make and model number.
 - Each skimmer shall have an equalizer line that will be split so as to have two (2) opening into the spa pool.
 - Skimmer lines cannot be connected to a main drain or a jet pump drain.
6. Disinfectant feeders or systems:
 - Make and model number
 - Disinfectant feed rate
 - Method to adjust feed rate. Must be accurate within 10 percent of feed rate at any setting.
 - Disinfectant feeders that also feed cyanuric acid are not acceptable.
7. Flow Meters:
 - Make and model number
 - Location on piping
 - Flow meter pipe size rating (must be accurate within 10 percent of feed rate at any setting).
8. Pressure gauges:
 - Filter influent
 - Filter effluent

9. Approved backflow prevention device:
 - Properly installed on fresh water fill line at supply valve
 - If autofill device is used, a backflow preventer must be designed for use under pressure (e.g., pressure vacuum breaker).
 - Inlet fittings

10. Suction grates or cover (including skimmer equalizer line grates):
 - Suction grate make and model number(s)
 - Open area of each grate in square inches
 - Suction grates shall be removable only with tools
 - Grate openings shall not exceed ½ inch in the smaller dimension
 - Suction grates shall not create a suction hazard or a physical entrapment hazard.
 - Suction grate specification sheet(s) must show agency approval, such as UL or IAPMO, that certifies compliance with ASME/ANSI standard A112.19.8-2007.

SIGNS AND SAFETY EQUIPEMENT

Provide the following information on the plans:

1. Sign indicating **“WARNING-NO LIFEGUARD ON DUTY”** (minimum 4 inch letters). The sign shall also state **“Children Under the Age of 14 Should Not Use Pool Without An Adult In Attendance.”**
2. Approved artificial respiration demonstration sign.
3. Emergency telephone number sign.
4. **“NO DIVING ALLOWED”** signs (minimum 4 inch letters).
5. **OCCUPANT LOAD** sign (1 bather per 10 square feet of spa pool water surface area, (minimum 4 inch letters).
6. A precaution sign with clearly legible letters shall be posted in a prominent place near the entrance to a spa pool which shall contain the following language: **“CAUTION”**
 - Elderly persons, pregnant women, infants and those with health conditions requiring medical care should consult with a physician before entering a spa.
 - Unsupervised use by children under the age of 14 is prohibited.
 - Hot water immersions may lead to serious consequences and is not recommended.
 - Do not use alone.
 - Long exposure may result in nausea, dizziness or fainting.

7. **“NO USE OF POOL ALLOWED AFTER DARK”** sign (minimum 4 inch letters) if spa pool is not supplied with lighting.
8. **“EMERGENCY EXIT”** sign (maximum 4 inch letters, not required if gates/doors to spa pool area allow egress without a key).
9. Rescue pole must be long enough to span the maximum width of spa pool, and have an attached body hook.
10. First-aid kit (if required).

ADDITIONAL REQUIREMENTS

1. Spa Pool Decks:

- Complete spa pool deck and deck drainage plans.
- A minimum continuous and unobstructed 4 foot wide slip-resistant nonabrasive deck area of concrete or like material shall extend around 50 percent or more of the perimeter of a spa pool. Deck width is measured from the poolside edge of the handhold.
- Landscape planters, flower beds, or similar unpaved areas shall not be located within 4 feet of a spa pool.
- Spa pool deck surfaces shall be sloped away from the spa pool (minimum ¼ inch per foot) to deck drains or other approved surface water disposal areas.
- The distance between any pool and a spa pool shall be at least 6 feet.

2. Handholds (coping or cantilevered decking):

- Submit a scale section view of the coping, cantilevered decking.
- Coping or cantilevered decking overhang shall not exceed 2 inches or be less than 1 inch and shall not exceed 2 ½ inches in thickness. **EXCEPTION: Environmental Health Division may accept spa pool handholds other than those specified.**
- Coping or cantilevered decking shall be slip-resistant.

3. Spa Pool Enclosure:

- Submit complete spa pool enclosure plans. Clearly show and label the entire enclosure around the spa pool area on the plans. Submit scale elevation plans of the pool enclosure and gate(s) and door(s).
- The spa pool shall be enclosed by one or a combination of the following: a fence, portion of a building, wall or other approved durable enclosure. Doors, openable windows, or grates of living quarters or associated private premises shall not be permitted as part of the spa pool enclosure. The enclosure, doors and gates shall meet all of the following specifications:
 - The enclosure shall have a minimum effective perpendicular height of 5 feet as measured from the outside as depicted in Figures 31B-4 and 31B-5, California of Regulations, Title 24, Section 3118B (see page 8). A spa pool enclosure higher than 5 feet is recommended. Please be advised that some pool enclosures in the past that were proposed to be 5 feet high have been found to be slightly less than 5 feet high when inspected (e.g., 4 feet 11 ½ inches). Any spa pool enclosure found to be less than 5 feet high will not be accepted.
 - Openings, holes or gaps in the enclosure, doors and/or gates shall not allow the passage of a 4-inch diameter sphere. The bottom of the enclosure shall be within 2-inches of the finished grade (no loose material such as bark). It is recommended that the entire spa pool enclosure be installed over concrete or a similar hard, durable material.

- **More stringent spa pool enclosure requirements may be required by local the Building Inspection Departments.**

4. Spa Pool Stairs and Hand Rails:

- Submit complete spa pool stair plans. Include scale cross-section and top view.
- Spa pool stair step treads shall be a minimum of 12-inches in width and shall be uniform in size, except that if the top step is curved convexly, the top step tread shall be not less than 18-inches wide as measured at the point of maximum curvature.
- Step risers shall not exceed 12 inch in height.
- Step risers shall be uniform in size.
- Hand rails shall extend from the deck to not less than a point above the top of the lowest spa pool step.
- The upper surface of hand rails shall be not less than 28 inches above the deck and poolside edge of the handhold.
- Two approved, properly installed hand rails shall be provided if the spa pool stairs step risers exceeds 9-inches in height.

5. Spa Pool Step and Bench Markings:

- The outer top surface edges of spa pool steps and benches shall have a 1-inch to 2-inch wide line of tile or other acceptable permanent marking.
- The markings shall be slip-resistant.
- The markings shall be a dark, contrasting color.
- The markings shall be flush with the surrounding surface.

6. Depth Markers:

- 3-inch minimum height durable depth markers shall indicate maximum spa pool water depth in feet (e.g., 3 FT.).
- Depth markers must be accurate to the nearest ½ foot.
- Depth markers shall be a color contrasting with the background.
- At least two properly located depth markers are required.
- Depth markers shall be on the vertical spa pool walls at or above water level.
- Deck depth markers are recommended (must be slip-resistant and flush with deck).
- Any depth markers must be arranged to be read from the deck.

7. Main Drains and Jet Pump Drains:

- The clearance between the bottom of a main drain, jet pump drain suction grate,(or cover) and the opening of the suction plumbing shall be equal to at least 2-inches or the largest suction pipe diameter in the drain cavity, whichever is greater, unless otherwise specified by the grate or cover manufacturer. Submit scale cross section drawings of all spa pool drain sumps.
- In areas of anticipated high ground water table an approved hydrostatic relief device shall be installed.

8. Spa Pool Lighting:

- Submit spa pool and deck lighting plan.
- Where spa pool lighting is provided, it shall be such that lifeguards or other persons may observe, without interference from direct and reflected glare from the lighting sources, every part of the underwater area and swimming pool surface, all diving boards or other pool appurtenances.
- Night time use: Spa pools used at night shall be equipped with underwater lighting (1/2 watt minimum per sq. ft.) fixtures that will provide complete illumination of all underwater areas of the spa pool with no blind spots. Illumination shall enable a lifeguard or other persons to determine whether: (1) a bather is lying on the bottom of the spa pool, and (2) the spa pool water conforms to the definition of "clear pool water". Submit manufacturer specification sheets for proposed light fixtures.
EXCEPTION: Spa pools provided with a system of overhead lighting fixtures, where it can be demonstrated to the enforcing agency that the system is equivalent to the underwater lighting fixture system.
- Deck area lighting: Where the spa pool is to be used at night, spa pool deck areas shall be provided with lighting so that persons walking on the deck can identify hazards. Lighting fixtures shall be aimed towards the deck area and away from the spa pool surface insofar as practical.
- Warning sign for spa pools without spa pool lighting: Where spa pool lighting fixture which comply with the above requirements are not provided, a sign with clearly legible letters not less than 4-inches high shall be posted in a prominent place near each entrance to the spa pool area. This sign shall state "**NO USE OF POOL ALLOWED AFTER DARK**".

9. Equipment Room or Area Plan:

- Scale drawing of spa pool equipment room or area.
- Equipment room or area plumbing and equipment plan.
- Identify all equipment and show the location of equipment room or area in relation to the pool(s) on a scale plan.
- Show all piping, pipe sizes and direction of flow.
- Indicate any proposed 90 or 45 degree elbow pool piping, valves, gauges, flow meters, pumps, filters, heaters, chemical feeders, etc.
- Show the location of equipment room or area in relation to the spa pool(s) on a scale plan.
- All equipment shall be readily accessible for service, repair, replacement and inspection.
- Floor shall be concrete (or other approved material).
- Floor shall be sloped at a minimum of ¼-inch per foot to approved drainage.
- Spa pool filtration and treatment systems shall be completely separate from the filtration and treatment systems of a swimming pool.

10. Waste Water Disposal:

- Filter waste water shall be disposed of to a sanitary sewer (or other approved waste water disposal system if a sanitary sewer is not available).
- 1-inch minimum air-gap separation required
- Plans must include size, location and slope of any sanitary sewer line that will receive filter waste water.
- Submit the size and location of any proposed filter waste water sump.
- Waste water disposal systems shall be designed so as to prevent back-up and overflow of waste water while filters are being cleaned.

11. Spa Pool Cleaning Systems:

- A built-in or portable type vacuum cleaning system shall be provided.

12. Potable Water Hose Bibb(s):

- Indicate location of hose bibb(s).
- All areas of pool deck must be within 75 feet of a hose bibb.
- Hose bibb(s) shall be located so as not to constitute a safety hazard.
- Approved backflow prevention device required for each hose bibb(s).

13. Drinking Fountains:

- One guarded jet drinking fountain shall be provided for the first 250 spa pool users and an additional fountain shall be provided for each additional 200 spa pool users or fraction thereof.
- The number of spa pool users shall be determined according to California Health and Safety Code Section 3115B 2. **EXCEPTION: Drinking fountains shall not be required when drinking water is available at adjacent living quarters, or in an adjacent building such as a bathhouse, cabana, clubhouse or recreational facility.**

14. Test kit for free chlorine (DPD or other approved test kit), pH and cyanuric acid (when used).

15. Water Temperature:

- The maximum allowable spa pool water temperature is 104°F.

16. Emergency Shut-Off Switch

- A clearly labeled emergency shut-off switch for the control of the recirculation system and the aeration and/or jet system shall be installed adjacent to the spa pool.
- Indicate on plans drawn to scale the proposed location of the emergency switch in relation to the spa pool.
- The location of the emergency switch must be acceptable to both Environmental Health Division and the local Building Inspection Department.

- The emergency switch must be close enough to be easily seen and quickly reached from the spa pool without going through a gate, door or similar opening and far enough away to comply with the requirements of the local Building Inspection Department.
- The emergency switch should be located at least 10 feet from the jet/booster pump timer or switch so that it is not used as an “off” switch, which would shut off the filter pump also.
- The emergency switch is to be red in color.
- The emergency switch must be clearly labeled with a permanent sign that is legible, large enough to be easily read from the spa pool, clearly visible from the spa pool and durable. The sign shall read as follows: **SPA POOL EMERGENCY SHUT-OFF SWITCH.**
- The emergency switch must be a single on/off switch that will turn off all spa pool pumps (filter pump(s), jet/booster pump(s) and any air blower(s).
- The emergency switch must be easily activated (key activation is prohibited) and readily accessible (direct access without the necessity of opening or removing any panel, door or similar obstruction).
- **WIRING MUST BE SUCH THAT THE JET/BOOSTER PUMP(S) AND AIR BLOWER(S), IF PROVIDED, CAN OPERATE ONLY WHEN THE FILTER PUMP IS ON.**
- All wiring must meet the requirements of the local Building Inspection Department.

RESTROOM, DRESSING, AND SHOWER FACILITIES REQUIREMENTS (when necessary)

1. Public shower, toilet and dressing facilities are required unless all living quarters are located not more than 300 feet in travel distance from the spa pool.
2. Separate restroom and dressing facilities for each sex. Check with local Building Department regarding handicap requirements.
3. Number of restroom and shower fixtures:
 - For the purpose of determining the number of fixtures required, one pool user shall be considered for every 15 square feet of pool water surface area (total water surface area if there is more than 1 pool).
 - Showers: 1 shower per 50 pool users.
 - Lavatories: 1 lavatory per 80 pool users.
 - Toilets: (1) Female: 1 toilet per 60 females; (2) Male: 1 toilet plus 1 urinal per 75 males.
4. Provisions for privacy.

5. Submit a complete schedule of proposed room finishes (including any showers).
6. Smooth, easily cleanable, durable and moisture resistant wall and ceiling finishes, are required. Submit samples of proposed wall and ceiling materials (e.g., wall tile, FRP, ceiling tile).
7. Floors shall be slip-resistant and extend upward onto walls at least 5-inches with an integrally coved base. The floor shall also slope at least ¼-inch per foot to floor drains.
8. Submit scale cross-section drawings of required integral cove bases.
9. Submit floor material manufacturer specifications sheets. Submit labeled sample of proposed floor and base materials (e.g., floor tile, cove tile, poured epoxy). Floors shall have a hard nonabsorbent surface, such as concrete with a slip-resistant finish or slip-resistant ceramic tile. **Carpeting or other similar types of material shall not be permitted on shower or toilet room floors.**
10. Lavatories shall be provided with permanent single-service towel dispensers or hot air blowers and permanent single service soap dispensers (not soap dishes).
11. Showers shall be provided with permanent soap in dispensers (not soap dishes).
12. Toilet tissue in permanent dispensers shall be provided.
13. Submit plumbing plans. Indicate hot (110°F maximum) and cold water will be supplied to the lavatories and showers.
14. Submit manufacturer specifications sheets for the water heater and show the location on plans.

***ALL PUBLIC POOLS AND SPAS MUST COMPLY WITH THE VIRGINIA GRAEME BAKER POOL AND SPA SAFETY ACT. www.cpsc.gov/whatsnew.html#pool or Email: info@cpsc.gov**

