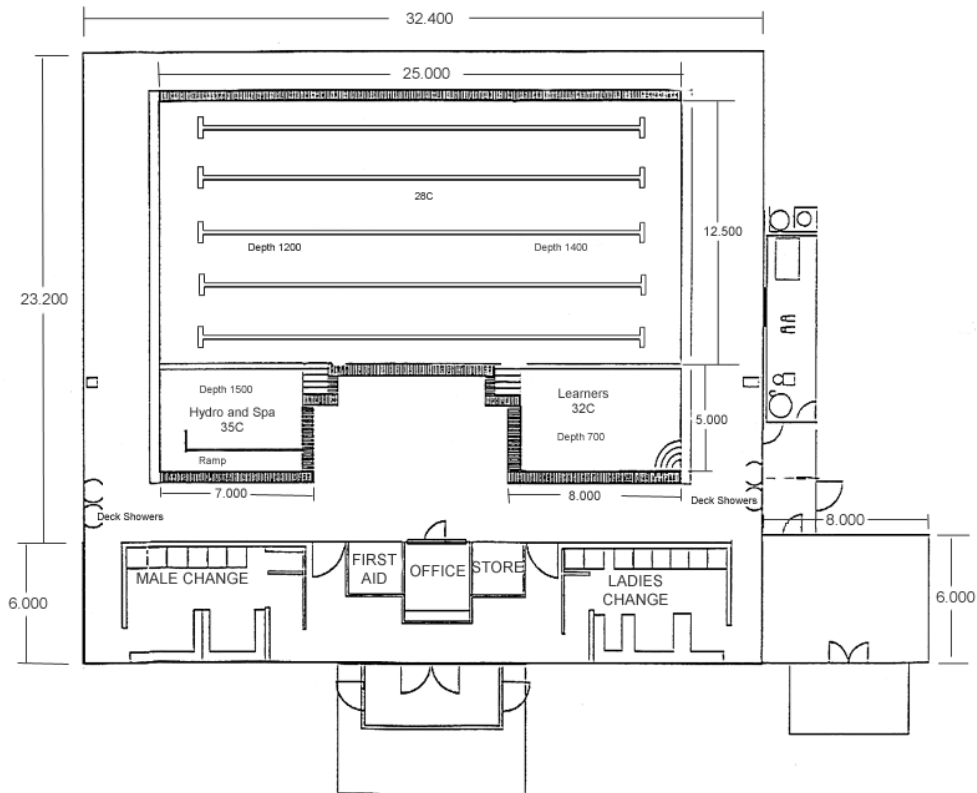


PUBLIC POOL OR SPA CONSTRUCTION GUIDE



GUIDELINES FOR CONSTRUCTING OR REMODELING
A PUBLIC POOL OR SPA

(800) 442-2283

ehs.sbcounty.gov

CONSTRUCTION GUIDE TO BUILD IT RIGHT

These guidelines are intended to assist the contractor, designer, or owner in the development of plans when constructing or remodeling a Public Pool or Spa in the County of San Bernardino. This guide has been developed from the California Health & Safety Code, Title 3 of San Bernardino County Code and guidelines established by the Southern California Pool Technical Advisory Committee and the California Conference of Directors of Environmental Health.

Division of Environmental Health Services



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PLAN SUBMISSION AND REVIEW PROCESS

Plan approval must be obtained from the County of San Bernardino, Department of Public Health, Division of Environmental Health Services (DEHS) before constructing, altering, converting or remodeling, of auxiliary structure or equipment at any public pool or spa pursuant to the California Code of Regulations, Section 3103B. ("Remodel" means construction, building, or repair to the pool or spa facility that requires a permit from the local building authority.) The following is required to process and obtain approval to build or remodel a public pool or spa facility.

PLAN SUBMISSION

1. Submit three (3) sets of detailed plans and specifications, complete an application for Food Service Plan Review and pay the required plan check fees. Proposed food facilities located in County (unincorporated) areas require five (5) sets of identical plans and specifications when submitted.

OR

An application and a set of digital plans in PDF format may be submitted via email to EHS.CustomerService@dph.sbcounty.gov. Plan check fee(s) must be paid online via the EHS Portal upon confirmation that DEHS has received the digital plans. Visit our website for improvement updates.

2. The plans must include sufficient information to demonstrate compliance with the California Health and Safety Code in order to be approved.
3. Plans may be prepared by an architect, draftsman, consultant, contractor or owner. All plans must be drawn to a minimum scale of 1/4" per foot for Public Pools and 1" per foot for Spa pools in a professional manner encompassing all applicable requirements of this construction guide.
4. Plans will be approved or rejected within twenty (20) working days after receipt and the applicant will be notified. Rejected plans (plans that are incomplete, or require significant change) will have two (2) sets returned for revision. Three (3) complete sets must again be submitted for review or one (1) electronic set before approval will be granted; no additional fee is required.
5. Upon approval, two (2) sets of plans will be returned to the applicant, and the third (3rd) set will be kept on file until construction has been completed. An approved set of plans must be maintained at the construction site until the final inspection has been made.
6. Any changes to DEHS approved plans require additional review and approval. Application and fee may apply.
7. Before beginning construction, a building permit must be obtained from the appropriate Department of Building and Safety. (By law, building permits for pool facilities are not to be issued until plan approval has been obtained from DEHS.)

NOTE: An approved plan is valid for two (2) years (five [5] years for schools and institutions). After such time, the plan is VOID.

INFORMATION REQUIRED FOR PLAN SUBMITTAL

The plans shall show and specify in detail the following on the plan and/or accompanying paperwork:

Provide the exact name and address of the proposed pool and/or spa, the name, contractor and contact person, telephone numbers and email addresses.

NOTE: Use of a commercial pool builder (with a valid California State Contractors License) and experienced in the construction of Public Pools, is highly recommended.

Plans shall be drawn to scale using indelible ink or print and shall include:

- A site plan showing the proposed location of the pool and/or spa on the property. The site plan shall be drawn to scale, showing distance to all ancillary facilities (toilets, showers), fencing, property lines, and all adjacent structures.
- A plan (including top and side views) of the pool and spa pool drawn to scale (minimum 1/4" = 1 foot for pools and/or 1" = 1 foot for spas) including all plumbing, skimmers, returns, suction outlets, depth markers, stairs, ladders, fill line, and handrails. Show all measurements and dimensions.
 - Floor plan and finish schedules for ancillary structures (restrooms and showers).
 - Pool/spa stair and handrail profile diagram.
 - Equipment room diagram and related plumbing and valving details.
 - Deck details (including finishes); detail of deck drainage.
 - Enclosure details (i.e., fence, gates, building, walls or structures surrounding the pool area).
- Show a profile of the fence with measurements to scale.
- Show a profile view of each structure to scale.
 - A landscape plan showing all trees, walls, columns, rock formations, structures, and fence line.
- Specifications: Dimensions, surface area, volume (in gallons), occupancy, and flow rate in gallons per minute (gpm). Attach pool and spa specification sheets.
- Occupancy:
 - Swim pools: one bather per 20 square feet.
 - Spa pools: one bather per 10 square feet.

NOTES:

State on the plans whether the proposed pool is served by a Public Water System or individual water wells.

State on the plans the potable water supply source and type of sewage disposal system.

If an onsite water well is the potable water source or a sewage disposal system is to be installed, approval and permits must be obtained from Environmental Health Services, Water/Waste Water Program at (800) 442-2283.

FIELD CONSTRUCTION INSPECTIONS

Request for inspections should be made at least 5 business days in advance. Contact DEHS to schedule an inspection. The construction of the pool or spa pool must conform to the latest set of DEHS approved plans.

✓ **PRELIMINARY (PREGUNITE) INSPECTION**

After rebar has been installed; to verify dimensions, slope, radii, skimmers, plumbing, main drains (placement and split), pipe size, light, deck, structure clearance, water supply and waste water disposal.

✓ **CONSTRUCTION (PREPLASTER) INSPECTION**

Upon application of gunite; to verify dimensions, slope, radii, drain covers, coping, tile, depth markers, deck slope, fencing, gates, drains, steps, handrails, ladders, waste water disposal, skimmer openings, equipment, sight glass, ancillary facilities and hose bib.

✓ **FINAL INSPECTION**

Upon completion of all construction, including all previous corrections; permanent utilities (electric, gas, potable water, sewage disposal) must be provided. Pool chemistry shall be properly adjusted, all recirculation equipment operational, all safety equipment and signage in place.

When more than three (3) inspections are necessary to approve the facility to operate, additional fees may apply.

The owner/operator will receive an application for an annual Environmental Health Permit at the time of the construction inspection. This application along with applicable permit fees, are due at the time of final inspection.

Final construction must be approved by DEHS prior to the issuance of a health permit and the opening of a public pool facility or the use of remodeled areas.

GENERAL CONSTRUCTION AND EQUIPMENT REQUIREMENTS

POOL/SPA STRUCTURAL REQUIREMENTS

Pools shall conform to the requirements of Title 24 Building Standards, Title 22, California Administrative Code and any other applicable codes.

- a. **Structure:** All swimming pools shall be constructed of reinforced concrete or a material equivalent in strength and durability.
- b. **Slope:** The slope shall be no greater than 1 ft. vertically in 10 ft. horizontally. All slopes shall be continuous and uniform. Pools less than 6 ft. deep shall not be permitted to have a break in slope.
 - Pools with depths of 6 feet or greater shall have a deep end slope no greater than 1 ft. vertically in 3 ft. horizontally commencing from the break.

- c. **Dimensions:** All swimming pools shall have a minimum width of 15 ft. for pools with depths greater than 6 feet or 12 ft. for pools with depths less than or equal to 6 feet at the main drains, typically located at the bottom of the pool. At no point shall the body of the pool be less than 12 feet in width.
- Swimouts, islands, pool benches, recessed areas or projections are NOT permitted. Exception: Benches shall be permitted in a spa pool providing that the water depth over the bench does not exceed 24 inches.
 - Water depth at the shallow end of the pool shall not exceed 3 ½ feet.
- d. **Finish:** All swimming pools shall be finished with white plaster or other approved finish materials that can withstand repeated brushing, scrubbing, and cleaning procedures. If tile is used as a pool or spa finish, a sample of the tile must be submitted to this division for approval. Designs shall NOT be permitted on the pool shell.
- Non plaster pool finishes are generally not accepted; proposed samples submitted with plans will be evaluated on a case by case basis.
- e. **Handholds:** A handhold of bullnose coping or cantilevered decking is required around the entire perimeter not greater than 9 inches above the waterline. Provide a section view of cantilevered decking, drawn to scale. Handholds must overhang the tile at least one (1) inch, but not over two (2) inches and must not exceed two and one half (2 1/2) inches in thickness. Pool coping shall be slip-resistant. (See Appendix 1).
- f. **Tile Line:** Pools greater than five (5) feet in depth shall have a straight line of slip resistant tile, minimum of four (4) inches and not greater than six (6) inches wide and of contrasting color, installed where the water depth is four and one half (4 1/2) feet.
- Water lines must be tile; paint is not acceptable.
- g. **Depth Markers:** Install depth markers on both sides of the pool at the minimum and maximum depths and at the break in the bottom slope from the shallow to deep portions; also, on both ends of the pool (See Appendix 5).
- Depth markers shall be positioned to indicate the water depth accurate to the nearest 6 inches.
 - Depth markers shall be located on the coping or the deck as close as possible but no more than 3 feet from the pool water; and on vertical surface of pool (pools with skimmers- at waterline; pools with perimeter overflow- at face of cantilevered coping, at the back wall above the gutter, or immediately below the waterline; pools with rim flow gutters- immediately below the waterline.
 - Depth markers on coping or deck shall be slip resistant.
 - Depth markers shall be tile; paint is not acceptable.
 - The depth markers shall have numerals a minimum of 4 inches in height and be of a color contrasting with the background.
 - Depth markers shall be spaced not to exceed intervals of 25 feet.
 - Spa or wading pools shall have a minimum of two (2) depth markers.
- h. **No Diving Markers:** Pools 6 feet in depth or less shall install universal no diving markers on the deck directly adjacent to the depth markers.
- i. **Steps, Stairs, and Ladders:** A means of entry and exit to and from the pool shall consist of steps, recessed steps, ladders, or stairs, or a combination of them.
- Stairs: Stairs are required at the shallow end of all pools when the depth exceeds 1 ft. All pools with multiple shallow ends shall have stairs at each shallow end. A second means of entry and exit shall be provided in the deep portion of a pool having a depth greater than 4 ½ feet. When the

pool width exceeds 30 feet, such means of entry and exit shall be provided at each side, not more than 100 feet apart.

- Each step of a stair shall have the same dimensions with a tread not less than 12 inches wide, except that if the top step is curved convexly, the top step tread shall not be less than 21 inches wide as measured at the point of maximum curvature. (See Appendix 4 for stair and handrail dimensions). Risers shall be uniform and shall not exceed 12 inches in height. At least one hand rail shall be provided, extending from the deck to not less than a point above the top of the lowest step and with the upper railing surface not less than 28 inches above the deck. Spas require 2 hand rails on stairs.
- Ladders and recessed steps shall have a minimum tread of 5 inches, width of 14 inches, and shall be designed to be readily cleaned. Risers shall be uniform and not exceed 12 inches in height. The first riser shall be measured from the deck.
- Ladders: 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 or more than 5 inches between any part of the ladder and the pool wall.
- Hand railings for ladders and recessed steps shall be provided at the top of both sides and shall extend over the coping or edge of the deck for each ladder and stephole.

RECIRCULATION EQUIPMENT & PLUMBING

All new and replacement pool-related equipment shall comply with the applicable requirements established by the NSF/ANSI 50-2012 performance standard. Accurate make and model numbers shall be submitted for all equipment for review. All equipment, including gauges and flow meter, shall be positioned so as to be readily accessible without requiring persons to climb over or remove obstacles to make repairs or inspections.

a. Pump

- A minimum turnover rate of six (6) hours is required for a pool.
- A minimum turnover rate of one half (1/2) hour is required for a spa pool.
- A minimum turnover rate of one (1) hour is required for a wading pool.
- A minimum turnover rate of one-half (1/2) hour is required for spray grounds.
- A minimum turnover rate of two (2) hours is required for a medical pool.

b. Filter

Filters must be sized according to the following filter media rates:

Diatomaceous earth	2 gpm/sq ft
Rapid sand	3 gpm/sq ft
High rate sand	5 gpm/sq ft
Cartridge	0.375 gpm/sq ft

Diatomaceous earth filters must backwash through a separation tank with a sight glass between filter and separation tank. All filters shall backwash to sanitary sewer through a permanently plumbed air-gap type separation. A sight glass is required on sand filters when the air gap is not visible from the filter location.

- If no sanitary sewer line is available, a disposal pit or drywell or alternate method of disposal may be approved by the local Building and Safety Department or Regional Water Quality Control Board.

- Backwash may not be returned into the pool or spa.
- c. **Chemical Feeders** (including disinfectant and pH adjustments) shall be adjusted by an approved chemical monitoring and control system.
- d. **Disinfectant Feeders:**
An approved automatic disinfectant feeder is required. The disinfectant feeder shall be capable of supplying not less than the equivalent of 3 pounds of 100 percent available chlorine per day per 10,000 gallons of pool water capacity. A visible means of determining the rate of flow through the device shall be provided for each disinfectant feeder.

The automatic disinfectant feeder shall maintain a minimum of 1.5 ppm of free chlorine when pool is open for use. (1.0 ppm without cyanuric acid); Free chlorine shall not exceed 10 ppm when pool is open for use.

- e. **Recirculation System** (pipes, drains, etc.).
All plumbing shall be sized so that flow velocity does not exceed:
- 6 feet per second in pump suction or copper piping
 - 8 feet per second in any portion of the return system

Each pool shall be provided with a main drain submerged suction outlet typically located at the bottom of a pool that conducts water to a recirculating pump.

Each pump on a pools system shall be connected to at least 2 suction outlets. The suction outlets shall be hydraulically balanced and symmetrically plumbed through one or more "T" fittings and shall be separated by a distance of at least 3 feet apart in any dimension between the suction outlets.

The main drains shall be on a separate, dedicated suction line and not interconnect with the skimmer suction lines until they converge in the equipment area (using an ASME/ANSI approved valve).

All drain and/or suction covers must be ANSI/APSP-16 (AB 1020) compliant, minimally rated for the designed flowrate of the pump, and removable only with tools. Expirations for suction covers must be adhered to.

The velocity of the suction piping installed between the suction outlets shall not exceed 3 feet per second.

Hydrostatic relief devices shall be installed in areas with a high groundwater table or as required by the local plumbing codes. When used in conjunction with a safety vacuum release system, the hydrostatic relief device must meet the manufacturer's installation requirements for the safety vacuum release system.

If the drain and/or suction covers require a sump, the depth of the sump shall be as specified by the cover manufacturer or 1.5 times the pipe diameter, whichever is greater.

If the drain and/or suction covers do not require a sump, documentation of such from the manufacturer must be provided with the plans.

Return lines and skimmers shall be located so as to provide uniform water circulation throughout the pool.

Pools greater than 40 ft in width or 3,000 sq ft in surface area shall have floor-mounted return inlets. All floor inlet fittings shall be located to provide uniform circulation and shall be installed so as to be flush with the surface of the pool bottom.

Two (2) return lines are required for the first 10,000 gallons and one (1) return line for each additional 10,000 gallons, or fractional part thereof. Return line piping shall be sized so as to provide an equal flow of water at each inlet.

Inlet fittings shall be located no less than 18 inches below the waterline, except for a spa pool or wading pool. Inlet fittings shall be separated by at least 10 feet and shall be located to ensure uniform circulation.

f. Skimmers

One (1) skimmer is required for each 500 square feet of pool surface area, or adequate number to meet 100% of pump flow at the manufacturer's maximum flow rating, whichever is greater.

Each skimmer shall be located in relation to pool inlets to aid recirculation and surface skimming.

Skimmers shall be individually adjustable for the rate of flow (trim plate or external valve).

If used, a skimmer equalizer suction outlet shall be connected to at least two suction grate assemblies that meet the ANSI/APSP-16 2011 performance standard and are located at least 3 feet apart in any dimension between the suction outlets. Skimmers shall have an equalizer line check valve to prevent suction through the equalizer line when water levels are normal.

Each skimmer is required to have a removable and cleanable screen or basket to trap large solids. The screen or basket shall be accessible through an opening in the deck above the skimmer.

The skimmer shall be provided with an air-lock protective device that shall not permit leakage of air into the recirculation suction piping system. This device shall not leak more than 3 gpm of water during normal operation.

Skimmers shall be capable of continually withdrawing not less than 100% of the flow rate. Skimmers shall be operated to continuously remove floating debris.

Skimmer(s) shall have a weir which automatically adjusts to variations of the water level less than 4 inches.

Skimmers shall not be used on a pool with a water surface area 5,000 square feet or greater (perimeter overflow system must be used; see "PERIMETER OVERFLOW SYSTEMS" below).

g. **Gauges**

An approved pressure and vacuum gauge shall be provided for each pump system. The pressure gauge on the filter shall be marked with the clean start-up pressure reading.

An approved flowmeter shall be provided on each recirculation system and installed on the return line per the manufacturer's written instructions with increments in the range of normal flow.

h. **Water Supply**

Each pool shall be supplied with potable water by means of a permanently installed pipeline from a public supply system holding a permit from the California Department of Public Health or from a source approved by Environmental Health Services. There shall be no direct connection between any potable water supply system and the pool or its piping system unless protected by an approved backflow prevention device. Automatic makeup water flow controls with a manual override control shall be provided to maintain the proper pool water level.

SAFETY EQUIPMENT & SIGNS

a. **Approved Safety Equipment**

- A 12-foot minimum fixed length rescue pole with a permanently attached body hook.
- A 17-inch minimum exterior diameter life ring with attached rope of 3/8 inch diameter, long enough to span the maximum width of the pool.

b. **Lighting**

Underwater pool lighting is required (exception: wading pools). One (1) watt per square foot of pool water surface area is the minimum requirement.

- All underwater lighting systems operating at more than 15 volts shall be protected by a ground fault circuit interrupter.
- Only approved underwater lighting fixtures shall be used and no lighting fixtures shall be installed for operations at more than 150 volts between conductors.
- All electrical work required for compliance shall be performed by a contractor licensed to perform electrical work.
- 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.

c. **Signs**

All signs shall have clearly legible letters or numbers not less than 4 inches high, unless otherwise specified, affixed to a wall, pole, gate or similar permanent structure in a location visible to all pool users. Post the following safety signs:

- **No lifeguard.** Where no lifeguard service is provided a sign shall be posted "Warning: No lifeguard on duty." The sign shall also state in letters at least 1 inch high "Children under the age of 14 shall not use pool without a parent or adult guardian in attendance."
- **Pool user capacity.** A sign shall indicate the maximum number of pool users permitted for each pool.
 - **Spa pool.** The pool user capacity of a spa pool shall be based on one pool user for every 10 square feet of pool water surface area.
 - **Other pools.** The pool user capacity for all other pools shall be based on one pool user for every 20 square feet of pool water surface area.

- **Exception:** Pool user capacity requirements do not apply to wading pools or splash grounds.
- **Artificial Respiration and CPR sign.** Illustrated diagram with text at least ¼ inch high of artificial respiration and cardiopulmonary resuscitation (CPR) procedures.
- **Emergency sign.** Emergency telephone number 9-1-1. The number of the nearest emergency services and the name and address of the pool facility in lettering at least 1 inch high.
- **No diving sign.** “NO DIVING ALLOWED” sign in the pool area for pools less than 6 feet in depth.
- **No use after dark.** “NO USE OF POOL ALLOWED AFTER DARK” where pools were constructed for which lighting was not required, posted at each pool entrance on the outside of the gate(s).
- **Keep gate/door closed.** “KEEP GATE/DOOR CLOSED” sign on exterior side of gates/doors leading into pool areas.
- **Diarrhea.** A sign in letters at least 1 inch high and in a language or diagram that is clearly stated shall be posted to be visible from each entrance which states that persons having currently active diarrhea or who have had active diarrhea within the previous 14 days shall not be allowed to enter the pool water.
- **Warning sign for a spa.** Warning sign for spa use at least 1 inch high stating “Caution”:
 - 1) Elderly persons, pregnant women, infants and those with health conditions requiring medical care should consult with a physician before entering the spa.
 - 2) Unsupervised use by children under the age of 14 is prohibited.
 - 3) Hot water immersion while under the influence of alcohol, narcotics, drugs or medicines may lead to serious consequences and is not recommended.
 - 4) Do not use alone.
 - 5) Long exposure may result in hyperthermia, nausea, dizziness or fainting.
- **Emergency shut off.** “Emergency shut off switch” for spa in letters at least 1 inch high posted at the emergency shut off switch.
- **Spray grounds and splash pads.** A sign posted at each spray ground, visible from any part of the spray ground, stating “Caution: Water is recirculated. Do not drink.”

d. **Direction of flow**

- The direction of flow for the recirculation equipment shall be labeled clearly with directional symbols such as arrows on all piping in the equipment area.
- Where the recirculation equipment for more than one pool is located onsite, the equipment shall be marked as to which pool the system serves.

DECKING

A continuous and unobstructed four (4) foot minimum width deck that is made of slip resistant, cleanable, nonabrasive concrete or like material must be provided flush with the top of the pool and extend completely around the pool. Exception: a deck at least 4 feet in width shall extend around 50 percent or more of the perimeter of a spa pool.

- a. The deck must slope a minimum of one eighth (1/8) inch per foot but no more than one quarter (1/4) inch per foot away from the pool to a deck drainage system and shall be constructed and finished to prevent standing water.
- b. A distance of at least six (6) feet must separate any two (2) pools.

- c. All deck surfaces must have a coefficient of friction value of .60 or greater.
- d. Landscaping and planters are not to be located within four (4) feet of any pool. Avoid using plants or trees which shed in close proximity to the pool.
- e. A hose bib, with an approved backflow prevention device, is required in the pool area. The hose bib shall be located so that all portions of the pool deck may be reached with 75 foot length of hose attached to the hose bib.

ENCLOSURE (See Appendix 2)

The pool shall be enclosed by one (1) of the following: a fence, portion of a building, wall or other approved durable enclosure. Doors, openable windows, or gates of living quarters or associated private premises shall not be permitted as part of the pool enclosure. The enclosure shall have a minimum effective perpendicular height of five (5) feet as measured from the outside of the enclosure from finish grade to the top of the enclosure.

a. **Fencing:**

- Pool enclosures shall be constructed over hard or permanent material equivalent to concrete.
- 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.
- Openings, holes or gaps in the enclosure, doors and/or gates shall not allow the passage of a four (4) inch diameter sphere.
- Planters or other structures shall not be permitted to encroach upon the clear span area as depicted in Figure 31B-5.
- Masonry or Stone columns must be a minimum 5 feet tall, smooth and non-climbable.
- Chain link may be used provided that the openings are not greater than one and three quarter (1 3/4) inches measured horizontally.

b. **Gates:**

- 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.
- Gates and doors shall open outward away from the pool except where otherwise prohibited by law.
- Gates and doors shall be equipped with self-closing and self-latching devices. The self-latching device shall be designated to keep the gate or door securely closed.
- Hand activated door or gate opening hardware shall be located at least forty-two (42) inches above the deck or walkway.
- The pool enclosure shall have at least one (1) means of egress without a key for emergency purposes. Unless all gates or doors are so equipped, those gates and /or doors which allow egress without a key shall be clearly and conspicuously labeled in letters at least 4 inches high "EMERGENCY EXIT."
- Gates and doors shall be capable of being locked during times when the pool is closed.

ANCILLARY FACILITIES

Public toilet facilities, showers, and drink fountain(s) shall be provided at the pool/spa site. (Exception: They may be omitted when bathers have access to such facilities either in living quarters located within 300 feet walking distance from the pool or in an adjacent building such as a recreational facility, clubhouse, or cabana).

- a. Separate toilet facilities shall be provided for each sex.
- b. Using a factor of one bather per 15 square feet of pool water surface area, the following shall be provided:
 - One (1) toilet for each 60 women or less
 - One (1) toilet and one urinal for each 75 men or less
 - One (1) shower for each 50 bathers
 - One (1) lavatory for each 80 bathers.
- c. When required, one guarded jet drinking fountain shall be provided for the first 250 bathers and an additional fountain shall be provided for each additional 200 bathers or fraction thereof.
- d. Floors shall have a hard nonabsorbent surface, such as concrete, ceramic tile or other approved material which extends upwards onto the wall at least 5 inches with an integral covered base. Concrete floors shall be sealed with an approved sealer; paints are unacceptable. Floors shall be slip resistant and shall be sloped not less than one quarter (1/4) inch per foot to floor drains. Carpeting is not permitted on toilet or shower room floors.
- e. Restroom walls and ceilings shall be smooth and easily cleanable.
- f. Four (4) feet of approved wainscot (fiberglass reinforced polyester [FRP], ceramic tile, cement plaster or the equivalent) is required on walls in the restrooms; Full height on shower walls shall be so covered.
- g. Hot and cold water shall be provided to lavatories and showers. Hot water shall not exceed 110°F to prevent scalding.
- h. Lavatories shall be provided with soap from permanently installed soap dispensers.
- i. Single use towels or hot air blowers and toilet tissue shall be provided in permanently installed dispensing devices in toilet facilities.
- j. All restroom doors and windows shall be arranged to prevent viewing of the interior from any portion of the building used by the opposite sex and from view from the outdoors. View screens are permitted for this purpose.
- k. Indoor pools, dressing rooms and toilet rooms shall be ventilated to the requirements in Chapter 4 of the California Mechanical Code.

SPA POOL SPECIAL REQUIREMENTS

A 'Spa Pool' means a pool that incorporates a water jet system, an aeration system, or a combination of the two systems used in conjunction with heated water.

Spa pools shall meet all the requirements of a swim pool, except as follows:

- a. The water surface area of a spa shall not exceed 250 sq. ft. and the water depth shall not exceed 4 ft.
- b. The water depth over the benches shall be uniform and shall not exceed 24 inches. The bench shall be level with a step tread (See Appendix 3).
- c. Two (2) hand rails shall be provided extending from the deck to not less than a point above the top of the lowest step. Step risers shall not exceed 12 inches in height. The steps shall be located where the deck is at least four (4) feet wide (See Appendix 4).
- d. A spa pool shall have a minimum of two depth markers.
- e. The spa pool aeration and /or jet system shall be completely separate from the recirculation system and shall not be interconnected with any other pool.
- f. Aeration and/or jet system shall be patron controlled by means of a timer.
- g. A single clearly labeled emergency shut off switch which controls both the recirculation system and the aeration and/or jet system shall be installed adjacent to the spa pool. It shall be located at least five (5) feet but not more than twenty (20) feet away from the spa, and within the enclosure.
- h. The maximum allowable water temperature in a spa pool shall be 104 degrees Fahrenheit.

WADING POOL REQUIREMENTS

A wading pool is a pool intended to be used for wading by small children and has a maximum depth of 18 inches at the deepest point.

PERIMETER OVERFLOW SYSTEMS

Perimeter overflow systems are required on pools with a surface area of 5,000 square feet or more, and shall comply with all of the following provisions:

- a. **Location:** The overflow system shall be integrated with the pool structure and extend completely around the pool parallel to the pool deck except where an entry or exit may require interruption.
- b. **Channel Detail:** The overflow channel shall be not less than 3 inches deep, the section shall not diverge with depth, and the width of the bottom shall be not less than 3 inches. The opening beneath the coping into the overflow system shall be a minimum of 4 inches beneath the coping in any direction measured radially from the inner edge of the overflow channel lip.
- c. **Channel Lip:** The overflow channel lip shall not be more than 12 inches below the level of the deck. The lip edge shall be rounded and shall not be thicker than 2 1/2 inches nor thinner than 1 inch from the top 2 inches.

- d. **Channel Covering:** Covered overflow channels shall be permitted provided the openings do not exceed ½ inch in the smaller dimension.
- e. **Channel Outlets:** Outlet spacing and channel bottom slope shall be hydraulically designed by an engineer or architect who has experience working on public pools.
- f. **Channel Outlet Covers:** Overflow channel outlets covers shall be accessible for cleaning and maintenance. Openings of the channel outlet covers shall not pass a ½ inch sphere in the smaller dimension.
- g. **Channel Drain Piping:** Channel drain piping shall provide drainage of the overflow system, carry overflow water to a surge basin and return to skimming within 10 minutes after being flooded by a sudden displacement of the pool water by pool users.
- h. **Surge Storage Capacity:** A perimeter overflow system shall be provided with a minimum surge storage of not less than 1 gallon per square foot of pool water surface area. Surge storage shall be permitted in the surge basin, perimeter overflow channel and in the channel drain piping returning to the surge basin.

GAS CHLORINE SPECIAL REQUIREMENTS

If considering use of Gas chlorine, contact EHS for specific requirements.

SOLAR HEATING REQUIREMENTS

Solar heating systems shall comply with the following requirements:

- a. Solar heating system suction outlets shall comply with recirculation requirements.
- b. Suction outlets shall be located no closer than 5 feet to any pool inlet fitting.
- c. The installation of a solar heating system on a new or existing pool shall not interfere with the required turnover rate nor exceed the maximum pipe flow velocities.
- d. Solar heating equipment shall comply with applicable requirements established by the NSF/ANSI 50-2012 performance standard.

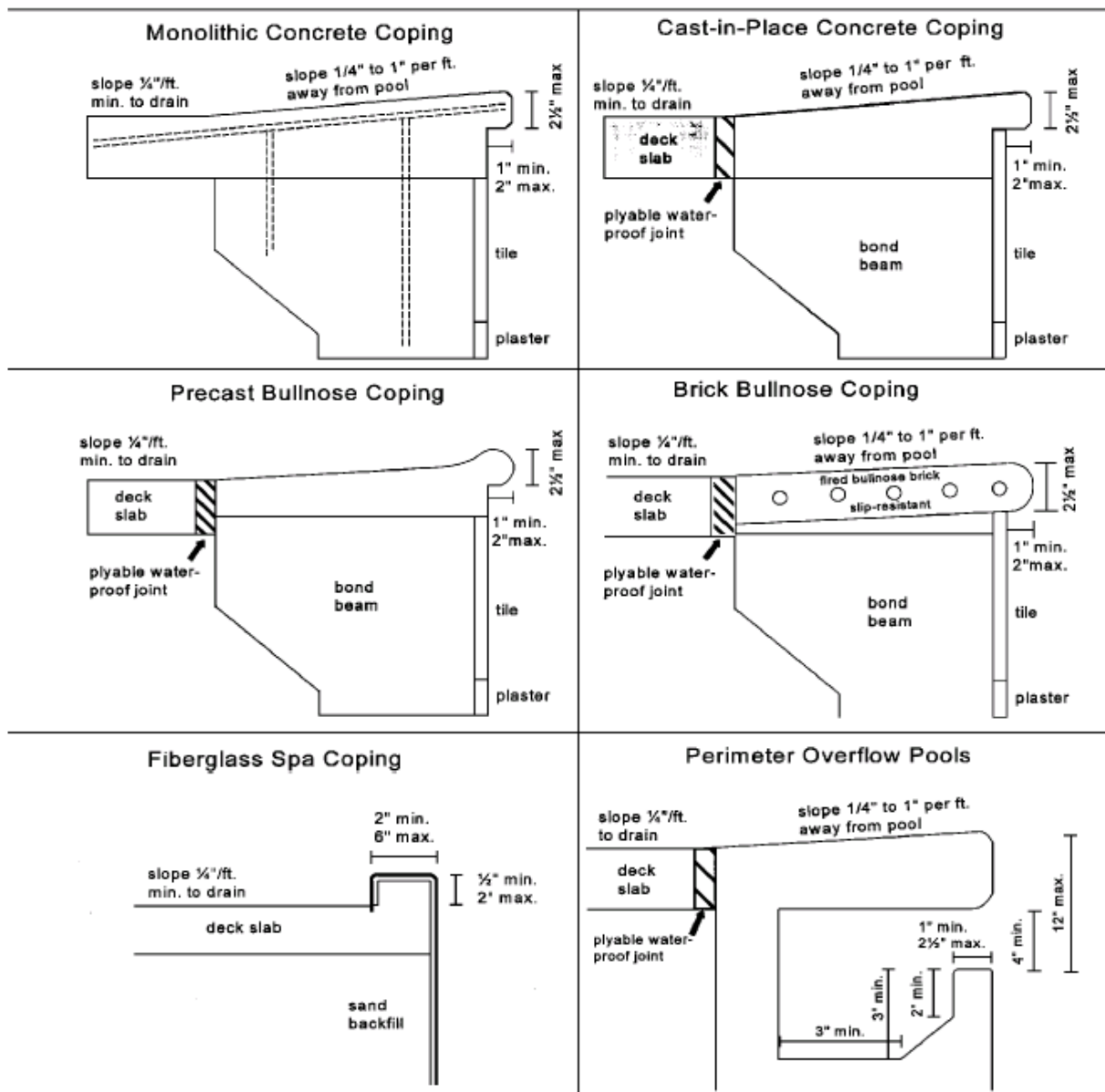
RENOVATION OF AN EXISTING POOL

If a commercial pool or spa pool is being re-plastered and NOTHING else is being done except the replacement of the perimeter tiles/break line tiles/depth markers, then plan submittal is not required. EHS must still be notified of the work, and will provide consultation as needed. Plans shall be required for all of the following:

- Replacement or remodeling of plumbing
- Replacement of equipment
- Replacement of fencing/gates
- Replacement/ Installation of new hand rails
- Replacement/alteration of decking
- Remodeling of toilet or shower facilities

Appendix 1

APPROVED COPING



Appendix 2

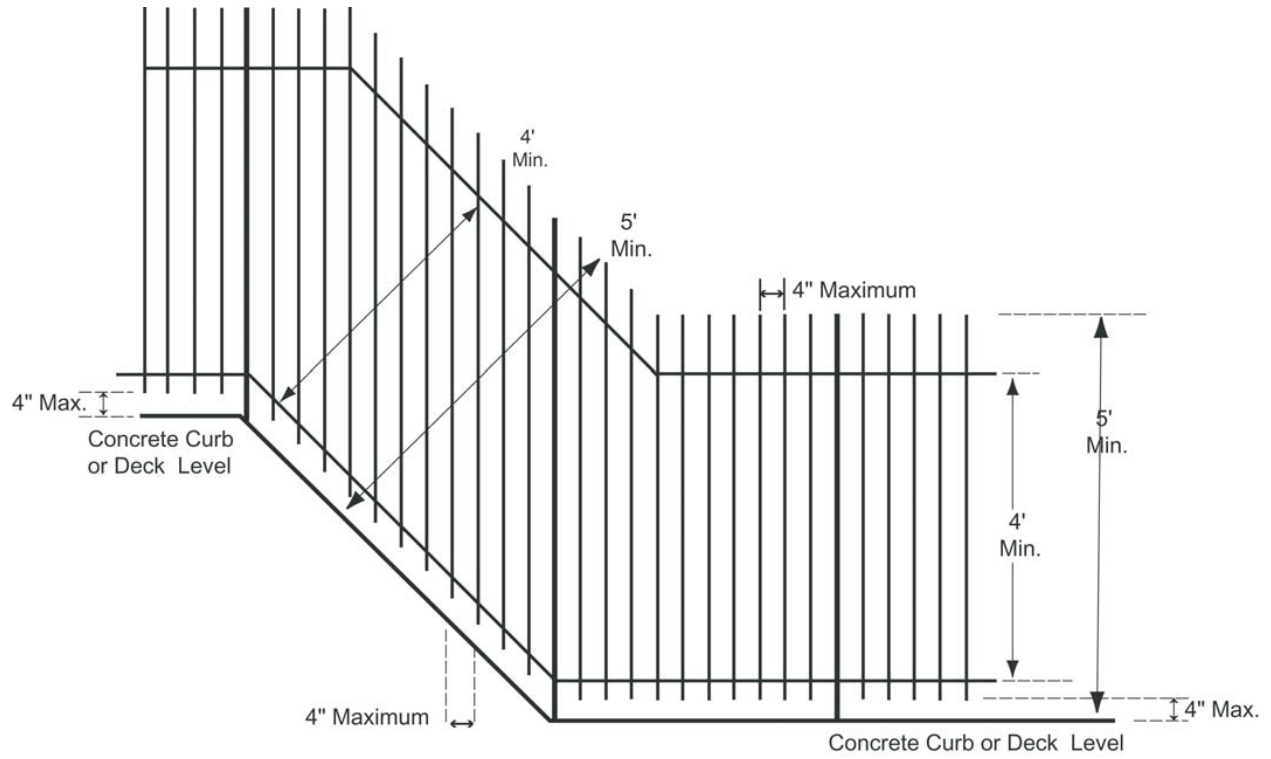


Figure 31B-4
Perpendicular Fencing Dimension of Sloping Ground

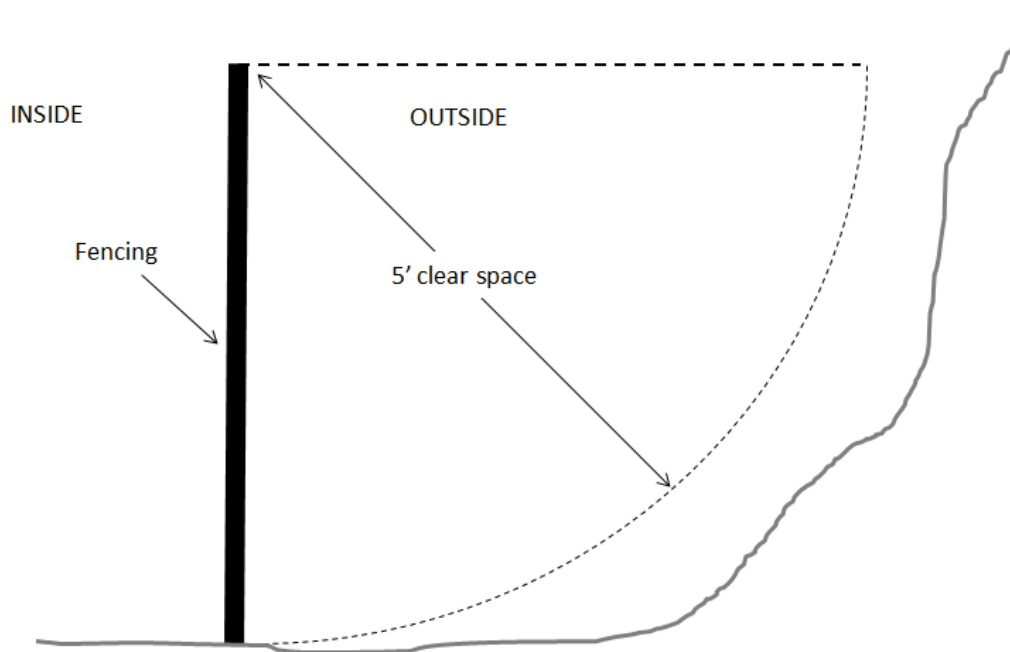
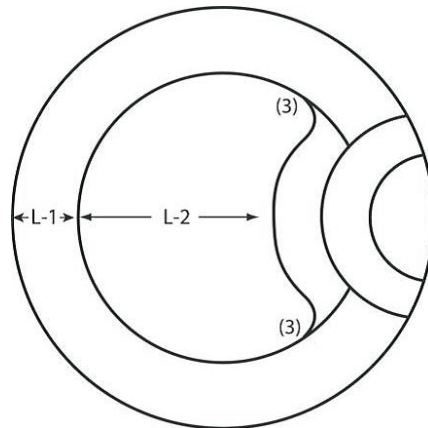


Figure 31B-5
Effective Fencing Height

Appendix 3

Top View



Dimension	Depth of Water		Length of Sections	
	D1	D2	L1	L2
Minimum	-	24"	12"	24"
Maximum	24"	42"	24"	-

Notes for Appendix 3:

1. Bottom slope shall not exceed 1:10 and must be uniform.
2. Bench ramping shall not exceed 1:10 uniform slope, measured at the inner circumference of the bench.
3. Six inch minimum radius at "pinch points."
4. See Figure 6.1 for step and handrail dimensions.

Transverse Section

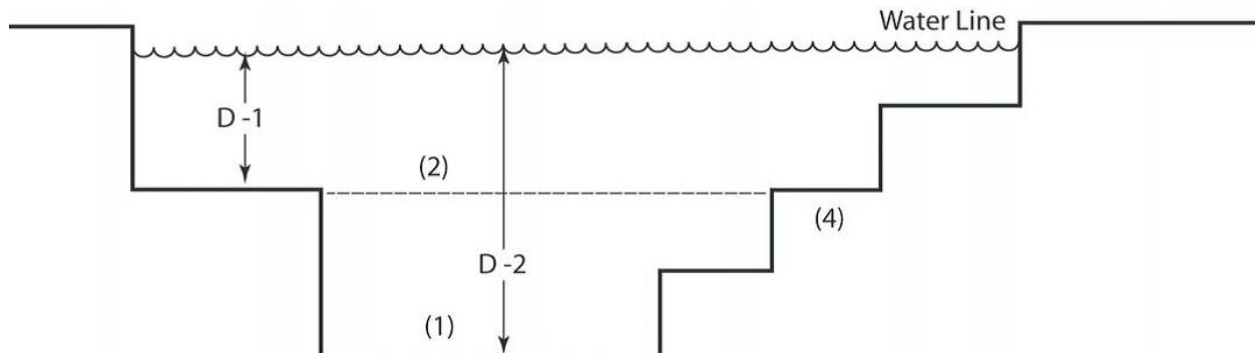
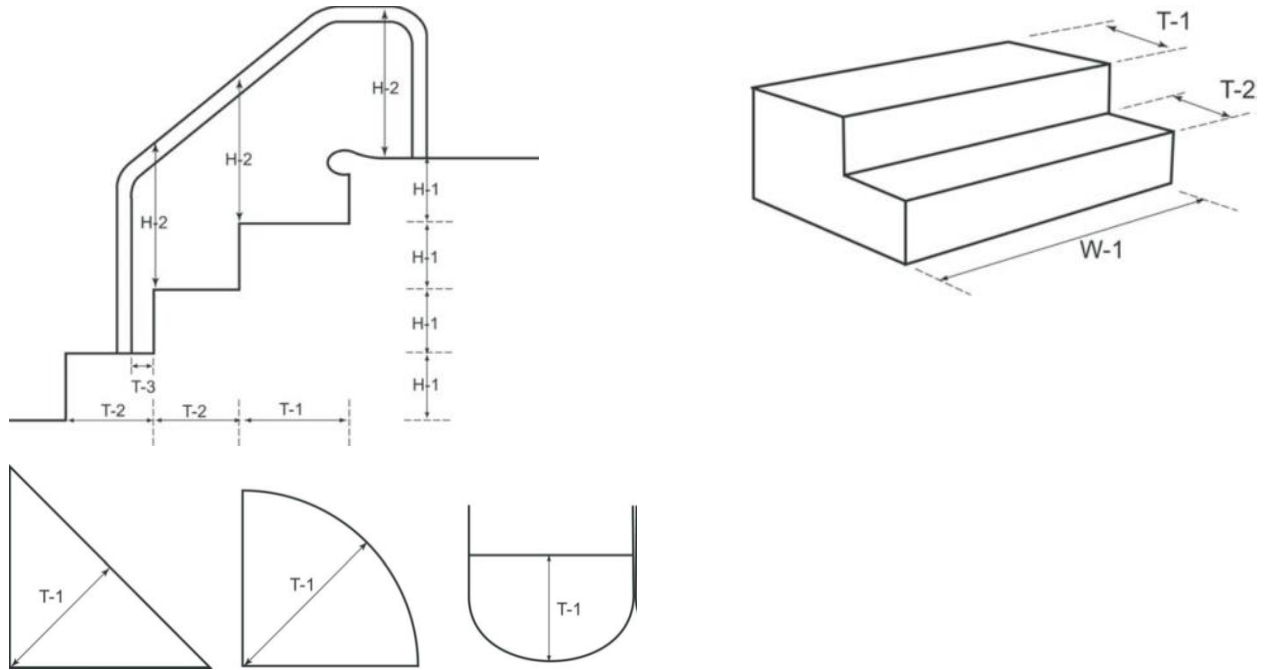


Figure 31B-6
Depths and Dimensions for Spa Pools

Appendix 4



Dimensions	T-1 Standard	T-1 Triangular Concave, Convex	T-2	T-3	W-1	H-1	H-2
Minimum	14"	21"	12"	3"	24"	6"	28"
Maximum	18"	24"	16"	-	-	12:	36"

Figure 31B-7

Appendix 5

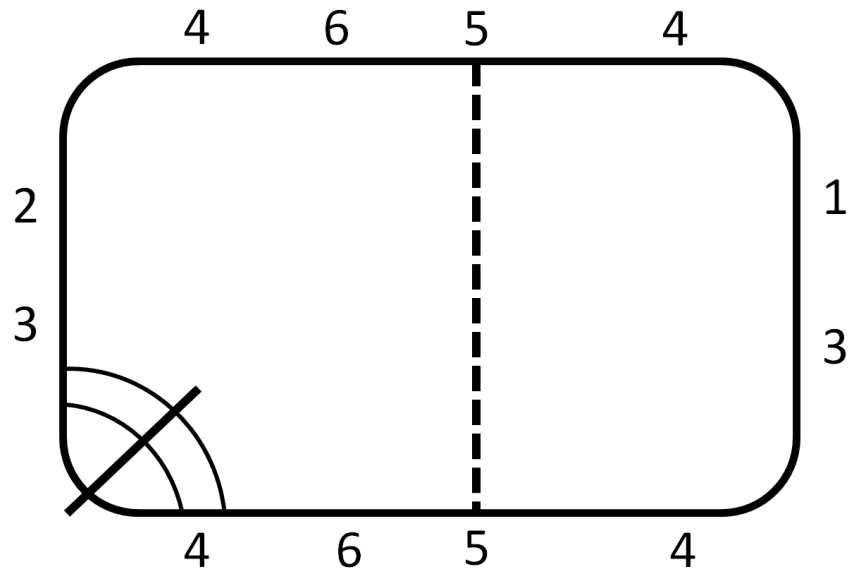


FIGURE 31B-8
DEPTH MARKER LOCATIONS

1. Maximum depth.
2. Minimum depth.
3. Each end of pool.
4. Both sides at the shallowest and deepest part of pool.
5. At the break in the bottom slope between the shallow and deep end.
6. Along the perimeter of the pool at distances not to exceed 25 feet.