

Spa Pool Plan Detail

Items to Include in the Plans

Spa Pool Dimensions and Surfacing Material

- Length.
- Width.
- Depth below water (not to exceed 4 feet).
- Square feet of surface area of pool.
- Total pool volume.
- Type of pool surfacing material.
- Pool color if spa has surface area of 100 square feet or more.

Note: This plan detail doesn't yet include additional requirements needed to comply with the new federal law, the *Virginia Graeme Baker Pool and Spa Safety Act*. For guidance, see www.doh.wa.gov/WaterRecRules.

Perimeter

- Width around 50 percent of spas less than 100 square feet.
- Width around entire perimeter of spas more than 100 square feet.
- If spa is raised above ground level more than 30 inches, guardrail required around walkway area.
- [It is recommended to provide a support protection to allow people to sit on top of spa].

Flow Design

- Spa turnover rate.
- Maximum and minimum pump flow with filters clean and dirty.
- Details of the operational design flow for maintaining water to go over surface skimmers or gutters (a minimum of 60 percent).

Jet or Hydrotherapy Flow Design

- Flow rate for the hydrotherapy pump.
- Include complete piping system on the plans.

Barrier Protection

- Type of barrier provided.
- Horizontal and vertical member construction of the barrier.
- Maximum openings at the base of the barrier.
- Barrier isn't compromised to reduce the minimum barrier height measured from the outside of the barrier (sloping hill, bench).
- At pools **without** lifeguards:
 - All gates or doors leading into the pool self-closing and self-latching.
 - Windows accessible to the public and opening to the pool, may not open more than 4 inches (bedroom windows that open need more barrier protection).
 - Separate locking method used to lock gates and doors when the pool is closed.
 - Latches installed on all gates and doors. Use one of the following latch types:
 - Continuously locked.
 - Coded.
 - Made with an 18 inch radius of protection to prevent a person from reaching through the outside of the gate to unlatch the door or gate.
 - Or raised 60 inches or more in height.
 - Check Americans with Disabilities Act for latch requirements (see WAC 51-1100) and Fire Code (see 51-54-1000) for additional guidance for emergency exits. For more information, see <https://fortress.wa.gov/ga/apps/sbcc/page.aspx?nid=4>.

Walking Surfaces

- All decks, locker rooms, and walkways to and from the pool sloped to drains.
- Surface is non-slip.
- Detail on type of surfacing material used.
- Note in drawing the amount and direction of slope of the surfaces.
- Materials easy to clean, fast drying and water-sealed.
- Width of the pool deck surfaces [50 percent or more of area around spa has a 4 foot wide deck].

Inlets and Outlets and Make-up Water

- Number of inlets.
- Location of inlets [when pool is more than 2500 square feet bottom inlets required].
- Designed flow per inlet.
- If outlet is an overflow channel:
 - Details on the overflow channel design.
 - General requirements require minimum slope of 0.1 foot/foot of run, if slope is less, hydraulic engineering justification is required.
 - Details of the accompanying balancing tank noting dimensions, valves, pipes, and freshwater makeup method with cross connection protection provided.
 - Design will be sufficient to handle peak design surges and turnover.
 - Design prevents flooding of the overflow system.
 - Design provides an equalizer line or similar protection for the recirculating pump.
 - Controls provided to ensure against flooding and preventing air lock on the pump.
- If outlet is a skimmer (pool less than 2500 square feet of surface area):
 - Total length of each weir.
 - Total height of each weir.
 - Design can handle from 3 to 5 feet per second across the weirs at normal operating flow.
 - Design of normal operating flow going across the weir (minimum of 60 percent).
 - Equalizer line users have opening to the pool protected with a grate rated through IAPMO or UL to protect against hair entrapment.
 - Dimensions of any balancing tank:
 - Flood prevention controls.
 - Pump air lock.

Main Drains

- Spacing between main drains and a minimum of two separate drains.
- There is more than one drain so no single drain becomes the sole source of suction.
- Maximum velocity through any one drain pipe shall not exceed 6 feet per second assuming 100 percent of the total recirculation flow at peak flow conditions.
- Main drain gratings:
 - Total open area of the grates.
 - Maximum flow potential across the drains does not exceed 1.5 feet per second.
 - Dimensions of the drain grates.
 - Means to secure and fasten the drain grates to the main drain sump.

Spa Capacity

- Provide information on the designed spa capacity (maximum number of people at one time).
- Consider parameters for square feet of surface area, vertical dimensions of skimmer and spa turnover rate and loading.

Fresh Water

- Note method for addition of fresh water.
- Protections to prevent back pressure or back siphonage.
- Size of the fresh water makeup in relation to anticipated daily needs.

Valves, Strainer Basket, and Pump

- Identify valve placement in the design.
- Flow control from the overflow and the main drain system assures at least 60 percent of the flow comes from the overflow system.
- Note design flow of the pump in relation to the overall range of flows with the filter clean and with the filter dirty.
- Provide estimated range of flows determined by the design (hydraulic calculations welcome).

Turnover Rate, Filter, Disinfection Equipment, and other Chemical Feeding Equipment

- Provide turnover rate.
- Turnover rate meets the minimum turnover requirement when filter is dirty.
- GPM/SF rate of flow with filter clean and dirty.
- Filter and disinfection equipment listed to NSF 50 or equal.
- Equipment sized to ensure it meets anticipated peak flows and demands, and average demands.
- If using cartridge filters, specify an extra set of cartridges.
- When recirculation pump is turned off, controls for feeding disinfectant and other chemical feeding equipment for controlling pH also turns off (describe how this is accomplished).
- If using supplemental disinfectants, such as ozone, copper/silver, or uV, contact the office to ensure that they are correctly used.

Mechanical Equipment and Chemical Storage

- Adequate space provided for access to equipment for routine maintenance and use.
- All gauges and flow meters placed where they can be easily read and provide accurate readings.
- Heater thermostat controls accessible.
- All chemicals stored in a separate room or according to the manufacturer's requirements.
- Mechanical room:
 - Enclosed.
 - Locked.
 - Well ventilated.
 - Sloped to drain.
 - Lighting sufficient for equipment maintenance and reading of meters and gauges.

Locker Rooms and Plumbing Fixtures

- Plumbing fixtures conform with applicable requirements – toilets, urinals, showers, sinks, hose bibs, diaper changing stations, drinking fountains, and janitor sinks.
- Locker rooms designed to minimize cross traffic between persons in street shoes and those in bare feet.
- [See fixture requirements for General use pools, WAC 246-031, Table 031.3, Limited use pools Table 031.4].

Stairs and Handrails

- Location, placement, and dimensions of steps.
- Location and placement of handrails.
- If pool deck is greater than 12 inches above pool water level, special consideration is required.

Mechanical Ventilation

- Conforms with ASHRAE standards for indoor pools.
- Provides good air patterns in the indoor pool area to eliminate short circuiting of fresh air to exhaust air.
- Provides protection against moisture buildup.
- Air pressure in the indoor pool area slightly lower than in air pressure in surrounding rooms or area.
- Total air flow and the minimum fresh air component detailed.

Lighting – Outdoor Pools

- Pools used after dusk meet minimum lighting conditions of 10 foot candles on the decks and pool surface.
- Pool closed before dusk.
 - Letter from the owner provided.

Lighting - Indoor Pools

- Meets minimum standards for indoor pools of 30 foot candles on pool surfaces, 10 foot candles on pool decks.
- Lights have protective covers.
- The direction of natural light from windows and potential for glare problems from sunlight considered.

Bather Load

- Bather load projections calculated in accordance with size of the pool, walking surfaces, plumbing fixtures, surge volume in overflow channel, and turnover rate.

Emergency Equipment

- Emergency shut-off and audible alarm switch located within 20 feet of the spa.
- Telephone.
- First aid kit and blanket.

For more information, contact the Washington State Department of Health's Water Recreation Program at www.doh.wa.gov/watersafetycontact.