



# Spa Pool Plan Detail

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## 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/ehp/wr/rules.htm](http://www.doh.wa.gov/ehp/wr/rules.htm).

### 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 on-line information go to: [www.sbccc.wa.gov/pages/code.html#viewing\\_online](http://www.sbccc.wa.gov/pages/code.html#viewing_online)

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### 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 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
- 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 e.g. 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; toilets, urinals, showers, sinks, hose bibs, diaper changing stations, drinking fountains, and janitor sinks; conform with applicable requirements
- 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

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### **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 Water Recreation Program at [www.doh.wa.gov/ehp/wr/contact.htm](http://www.doh.wa.gov/ehp/wr/contact.htm).