

County of Santa Cruz

HEALTH SERVICES AGENCY

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SPA POOL PLAN CHECK SHEET

Title 22 of the California Administrative Code requires that any person constructing, reconstructing, or altering a swimming pool, auxiliary structure or equipment submit legible plans and specifications to the enforcing agent, Santa Cruz County Environmental Health Service, for review and written approval prior to commencing work or issuance of necessary building permits [Section 65595] THIS CHECKLIST IS DESIGNED TO ASSIST THE APPLICANT IN THE PREPARATION OF SATISFACTORY PLANS.

Sec. 2-9003. Title 24, C.A.C.

(a) Spa Pool. A spa pool is a pool, not used under medical supervision, that incorporates a water jet system, an aeration system, or a combination of the two systems, and which may also utilize artificially heated water. The surface water area of a spa pool shall not exceed 250 square feet, and the water depth shall not exceed 4 feet.

The following must be submitted to the Environmental Health Service in triplicate. Two sets will be returned with a list of corrections or stamped as approved. Provide one set of forms for each spa plan submitted.

1. Drawings to scale (spa: 1" = 1 foot) of the spa in both plan view and longitudinal section.
2. Drawings to scale of the equipment room, equipment, plumbing and electrical with each item identified and piping sizes specified.
3. Drawings to scale of the deck area including drainage, fencing and gates, hose bib and drinking fountain locations.
4. Drawings to scale of restrooms, shower and locker areas when appropriate.

The following must also be submitted at the time of application for each spa:

1. Specification sheets for all spa equipment including pumps (with pump curves), filters, skimmers, chlorinators, heaters, flow meters, separation tanks, lights, and hand rails.
2. The following list of items [pages 2-12] must be completed, signed and dated by the pool contractor/designer. All spa and equipment data must be shown on plans submitted.

IDENTIFICATION:

Name of Facility Where Spa to be Constructed:	Location/Address	City
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Owner	Address	Phone
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Contractor/Designer	Address	Phone
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Person to Contact Regarding Plans	Phone
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ANSWER THE FOLLOWING QUESTIONS WHERE APPLICABLE AND CHECK THE APPROPRIATE BOX(s):

<p>1. SPA DIMENSIONS: A. Length _____ B. Width _____ C. Diameter _____ D. Surface Area _____ sq.ft. E. Maximum Depth _____ Minimum Depth _____ F. Average Depth _____</p> <p>2. SPA SHELL MATERIAL _____</p> <p>3. SPA CAPACITY: _____</p> <p>4. SPA COLOR: _____</p> <p>5. VOLUME(GALS.) _____</p> <p>6. RETURN INLETS: A. # of inlets _____ B. Size of inlets _____ C. Inlets adjustable _____ D. Show inlet balance plumbing design on plans ___ Yes ___ No</p> <p>7. RECIRCULATION BOTTOM DRAIN: A. Safety type dual main drains at least 3 feet apart (Equally T'd) ___ Yes ___ No B. Total open area of each drain cover _____ sq. in. C. GPM per grate (1/2 of GPM if 2 grates) ___ ÷ 7.48 gal./cu.ft. = _____ cfm ÷ 60 sec/min = _____ cfs ÷ grate opening in sq. ft. (sq. In. ÷ 144) = _____ fps. (Must be less than 2 ft./sec. for flat covers or less than 6 ft./sec. For antivortex covers)</p> <p>8. FLOW VELOCITIES A. Complete plumbing layout, INCLUDING PIPE SIZES, shall be shown in plans (Suction piping from main drains and balanced skimmers/equalizer lines to pump. Return piping from pump, through equipment to balanced inlets) ___ Yes ___ No B. The maximum velocity in any suction piping shall <u>not</u> exceed 6 ft./sec. ___ Yes ___ No C. The maximum velocity in any return piping shall not exceed 8 ft./sec. ___ Yes ___ No</p> <p>9. PUMP: A. _____ Make/Model _____ B. Horsepower _____ C. # of pumps _____ D. Ft. of head in system (if not calculated use 60 ft. of head) _____ E. GPM @ system head loss (pump curve) _____ F. Turnover rate _____ G. Hair & Lint catcher ___ Yes ___ No H. Jet Pump make/model _____ I. Jet Pump horsepower _____</p> <p>10. FILTER: A. Type _____ B. Make/Model _____ C. Area in sq. ft. _____ D. # of filters _____ E. Total Area _____ sq. ft.</p> <p>11. HYDROSTATIC RELIEF VALVE/ASSEMBLY: ___ Yes ___ No</p> <p>12. CHLORINATION OR DISINFECTION UNIT: A. Type of unit _____ B. Make/Model _____</p>	<p>13. SKIMMER/GUTTER SYSTEM: A. # of skimmers _____ B. Make/Model _____ C. Show skimmer balance plumbing design on plans. D. Make/Model of "Anti-Hair-Entrapment" Equalizer Line Covers _____ F. Gutter system with surge tank at _____ gallons</p> <p>14. FLOWMETER: A. # of flow meters _____ B. Make/Model _____</p> <p>15. PRESSURE GAUGES: Influent ___ Yes ___ No Effluent ___ Yes ___ No</p> <p>16. VACUUM GAUGE _____</p> <p>17. SPA STEPS/STAIRS/LADDERS/RAILS: A. Riser height of stair _____ (All stair risers must be uniform in height) B. Does each stair have uniform tread not less than 12" wide (except top step not less than 18" wide) ___ Yes ___ No C. # of safety rails _____ D. Height of rail above deck _____ inches E. Clearance between handrail and a stair riser _____ in. (3" - 5")</p> <p>18. DEPTH MARKERS: A. ___ maximum depth (minimum of 2) B. ___ verticle wall of spa C. ___ on deck surface D. ___ markers are ___ inches in height E. ___ "Ft." abbreviation after each depth marker</p> <p>19. DECK: A. Deck is made of _____ B. Deck is _____ ft. wide C. Deck is _____ ft. wide between pool & spa D. Deck is sloped 1/4"/ft. to deck drain _____ E. Deck drains to _____</p> <p>20. FENCING: A. Does fencing enclose spa? _____ B. What is its height? _____ C. Are any openings greater than 4 in. In any dimension? _____ D. Is the bottom of the fence within 2 inches of finished grade ___ Yes ___ No E. Does the gate have a self-closing self-latching lock? _____</p> <p>21. EQUIPMENT ROOM: A. The floor is made of _____ B. Is there easy access to all equipment and gauges? _____ C. Have provisions been made for a back wash sight glass? _____ D. Is floor sloped 1/4"/ft to a drain.</p> <p>22. DRESSING ROOM/TOILET/SHOWER: A. Straight line distance from above to farthest point of the farthest living unit _____ ft.</p>
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POOL DATA - PART I OF II (Continued)
ANSWER THE FOLLOWING QUESTIONS WHERE APPLICABLE
AND CHECK THE APPROPRIATE BOX(S):

B. Are public showers, toilets and dressing rooms provided?

- C. Total # of bathers is _____
 D. Is one shower per 50 bathers provided? _____
 E. Is one lavatory per 80 bathers provided? _____
 F. Separate toilet facilities for men and women are provided as follows:
 # of women toilets _____
 # of men toilets _____
 # of men urinals _____
 # of women showers _____
 # of men showers _____
 # of women lavatories _____
 # of mens lavatories _____

G. Hot water max. temp. is _____ °F.

23. **HOSE BIBS/DRINKING FOUNTAIN:**

- A. Has a hose bib been provided that is located so that all portions of the deck can be reached with 75 ft. of hose _____.
 B. There is/are _____ drinking fountain(s).

24. **SIGNS:** The following signs will be posted at spa side:

- A. _____ Spa Caution Sign
 B. _____ Artificial Respiration
 C. _____ Emergency Phone Numbers
 D. _____ Spa Occupancy Capacity
 E. _____ No Lifeguard on Duty
 F. _____ Emergency Shut Off Switch

25. **SAFETY EQUIPMENT**

- A. _____ Emergency Shut off switch with alarm
 B. _____ First Aid Kit
 C. _____ Test kit (pH, free chlorine & cyanuric acid)

26. **BACKWASH**

- A. Separation tank ___ Yes ___ No
 Make/model _____
 maximum capacity _____ sq. ft.
 B. Air gap filter backwash to public sewer: ___ Yes ___ No
 C. Backwash receptacle size _____ p-trap
 size _____.
 D. Backwash valve ___ Yes ___ No
 _____ size Make/Model _____
 E. Backwash water goes to _____.
 F. Spa water, if emptied, goes to _____.

27. **HEATER**

- A. Mfg. _____ Model _____
 connection pipe size _____ in.
 B. Max. flow _____.
 External bypass valve ___ Yes ___ No,
 Size of bypass _____ in.

28. **JET SYSTEM BOTTOM DRAIN**

- A. Safety type dual main drains at least 3 feet apart (Equally T'd) _____ Yes _____ No
 B. Total open area of each drain cover _____ sq. in.
 C. GPM per grate (½ of GPM if 2 grates) _____ ÷ 7.48
 gal./cu.ft. = _____ cfm ÷ 60 sec/min = _____ cfs ÷ grate
 opening in sq. ft. (sq. In. ÷ 144) = _____ fps. (Must
 be less than 2 ft./sec. for flat covers or less than 6 ft./sec.
 For antivortex covers)

DO THE FOLLOWING CALCULATIONS:

I. **Gallonge Calculation:**

- A. length x width x average depth x 7.5 gal./ft³ = # of gallons
 Answer: _____ gal.
 B. For Round Spas:
 3.14 x R² x average depth x 7.5 gal/ft³ = # of gallons
 Answer: _____ gal.

II. **Pump Curve Calculations:**

- _____ gpm from pump curve at _____ ft. of head
 A. 60 ft. of head for pressure D.E., high rate sand & cartridges
 B. 45 ft of head for rapid sand
 C. 40 ft of head for vacuum D.E.

III. **Turnover Calculations:**

- Pump must provide a complete turnover of spa water in 30 minute period.
 A. $\frac{\text{gallons in spa}}{30 \text{ min.}} = \text{minimum gpm of pump}$
 B. _____ = _____ (answer)
 30 min.
 C. Gallons in spa X 30 min. ÷ pump curve gpm
 X 30 min. = _____ turnover rate in minutes

IV. **Max. Filtration Flow Rate Calculations:**

- (Complete for your filter type)
 A. Rapid sand: 3 gpm/ft² maximum
 _____ gpm (pump curve)
 sq. ft. of filter
 = _____ gpm/sq. ft. of filter area
 (answer)
 B. D.E.: 2 gpm/ft² maximum
 _____ gpm (pump curve)
 sq. ft. of filter
 = _____ gpm/sq. ft. of filter area
 (answer)
 C. High Rate Sand: Recommend 12-14 gpm/sq. ft. of filter area. Backwash rate shall not be less than 15 gpm/sq. ft. of filter area
 _____ gpm (pump curve)
 sq.ft. of filter (filter area)= _____ gpm/sq. ft of filter area
 D. Cartridge: 0.375 gpm/ft² maximum
 _____ gpm (pump curve)
 sq. ft. of filter = _____ gpm/sq. ft. of filter area

V. **Skimmer Calculations:**

- A. 1 Skimmer/500 ft² surface area
 _____ ft² (spa surface)
 500 ft²/skimmer = _____
 (# of skimmers)
 B. _____ pump curve gpm
 (# of skimmers)
 = _____ gpm/skimmer (35 gpm optimum)

PART II OF II

ANSWER THE FOLLOWING QUESTIONS:

- 2-9003 #1 Spa is not over 4 feet in depth.
 Yes No Not Applicable Shown on plans
- 2-9011 #2 Spa to be finished in white or in a light pastel color approved by the Environmental Health Service.
 Yes No Not Applicable Shown on plans
- 2-9011 #3 Spa pool bench and step edges have contrasting colors.
 Yes No Not Applicable Shown on plans
- 2-9011 #4 Spa has benches, depth of water over bench not exceeding 24 inches.
 Yes No Not Applicable Shown on plans
- 2-9011 #5 Spa is free from projections and recessed areas. All radiuses/Pinch Points must be at least 6".
 Yes No Not Applicable Shown on plans
- 2-9014 #6 There are no designs resembling a human form on the walls or bottom of the spa.
 Yes No Not Applicable Shown on plans
- 2-9014 #7 The water depth is clearly marked at each end.
 Yes No Not Applicable Shown on plans
- 2-9014 #8 Minimum of two depth markers at least 3 in. in height, of contrasting color, made of durable material that resists weathering (slip resistant if located on the deck.) Also, the abbreviation "Ft" (3 inches in height) must appear after each depth marker.
 Yes No Not Applicable Shown on plans
- 2-9015 #9 Spa: (circle any letter which applies)
 a. Has 12 inch riser and requires 2 handrails
 b. Has 9 inch riser and requires 1 handrail
 c. All risers shall be uniform in height
 d. Leading railing edge extends to a point not less than 12 inches from plane of bottom riser.
 e. The top step is curved convexly and top step tread is 18 inches or greater.
 f. Minimum stair tread is 12 inches or greater. Each stair shall have uniform treads.
- 2-9016 #10 Handholds will be installed. They will be located not more than 9 inches above water level.
 Yes No Not Applicable Shown or noted on plans
- 2-9016 #11 Handholds are bullnosed coping or cantilevered decking that is not over 2 ½ inches thick (overhang shall not exceed 2 inches nor be less than 1 inch)
 Yes No Not Applicable Shown or noted on plans
- 2-9016 #12 Handholds other than the above are to be installed.
 Yes No Not Applicable Shown or noted on plans
- 2-9016 #13 The deck is made of concrete or similar material and is slip-resistant and non-abrasive.
 Yes No Not Applicable Shown or noted on plans
- 2-9018 #14 Spa: The deck is 4 feet wide and extends at least 50% or more around the spa. It is made of _____.
 Yes No Not Applicable Shown or noted on plans
- 2-9018 #15 Spa: The deck width separating the spa from adjacent pool is 6 feet or greater.
 Yes No Not Applicable Shown or noted on plans
- 2-9018 #16 The deck has a minimum slope of 1/4 inch per foot to deck drains and doesn't drain into spa.
 Yes No Not Applicable Shown or noted on plans

PART II OF II (continued)

- 2-9018 #17 Spa: Landscape planters, flowerbed or similar unpaved areas are located 4 feet or more away from spa.
 Yes No Not Applicable Shown or noted on plans
- 2-9021 #18 Public showers, toilets and dressing rooms will be provided.
 Yes No Not Applicable Shown or noted on plans
- 2-9021 #19 Adjacent living facilities or accommodations are to be used (300 ft or less).
 Yes No Not Applicable Shown or noted on plans
- 2-9022 #20 There is 1 drinking fountain for first 250 bathers and 1 for each 200 thereafter (exception: when drinking water is available in living quarters or clubhouse)
 Yes No Not Applicable Shown or noted on plans
- 2-9023 #21 Hose bib available so that all portions of deck can be reached with 75 ft. of hose.
 Yes No Not Applicable Shown or noted on plans
- 2-9024 #22 Fencing and gates at least 5 ft. in height enclose spa. No opening greater than 4 inches in any dimension exists. The bottom of the fence is within 2 inches of finish grade.
 Yes No Not Applicable Shown or noted on plans
- 2-9024 #23 Gate is equipped with self closing and self latching device located 3 ½ ft. or higher above deck.
 Yes No Not Applicable Shown or noted on plans
- #24 The following signs will be posted in a conspicuous place at the spa and required information added (circle letter[s] which applies):
- 2-9025 a. Occupant load sign (4 inch letters)
" b. Spa Caution Sign. (The word caution shall be in 4 inch letters)
65539 c. Emergency Phone Number sign.
" d. Artificial Respiration Procedures sign.
e. Warning - No Lifeguard on Duty sign (4 inch letters)
f. Emergency Shut off Switch Sign (1 inch letters)
 Yes No Not Applicable Shown or noted on plans
- 2-9026 #25 Spa is located indoors and is ventilated according to Section 605 of the Uniform Building Code.
 Yes No Not Applicable Shown or noted on plans
- 2-9027 #26 Spa equipment room is mounted on a Portland cement concrete or similar floor material and slopes 1/4 inch/ft. to floor drain.
 Yes No Not Applicable Shown or noted on plans
- 2-9031 #27 Recirculation system: (Answer a-h)
- a. Discharge flow velocity does not exceed 8 ft./second on inlet piping and 6 ft./second on suction piping.
 Yes No Not Applicable Shown or noted on plans
- b. All filters, valves, pumps, strainers and equipment requiring adjustment are readily accessible for repair and replacement.
 Yes No Not Applicable Shown or noted on plans

PART II OF II (continued)

- c. Pressure gauge on influent and effluent lines
 Yes No Not Applicable Shown or noted on plans
- d. Flowmeter.
 Yes No Not Applicable Shown or noted on plans
- e. Vacuum gauge on suction type filters.
 Yes No Not Applicable Shown or noted on plans
- f. Spa: Two spas are on one recirculation system with individually metered and adjustable flow and chlorination.
 Yes No Not Applicable Shown or noted on plans
- g. Hair and lint strainer is provided on the suction side of the recirculation pump
 Yes No Not Applicable Shown or noted on plans
- h. Backwash piping and valves to be installed. The backwash will go to _____ . Septic disposal not allowed.
 Yes No Not Applicable Shown or noted on plans
- i. Valves area easily accessible and not located under decking. They are marked for identification.
 Yes No Not Applicable Shown or noted on plans

2-9034 #28 The pump capacity is designed at which of the following heads?
(please circle the letter preceding your answer)

- a. Pressure D.E. - 60 ft. head
- b. Vacuum D.F. - 40 ft. head
- c. Rapid Sand - 45 ft. head
- d. Hi rate sand - 60 ft. head
- e. Cartridge filter - min 60 ft. head

2-9035 #29 Spa refill inlets not less than 1 inch nor less than 2 pipe diameters above overflow rim.
 Yes No Not Applicable Shown or noted on plans

2-9037 #30 A rapid sand filter is being installed. The filtration rate does not exceed 3 gpm/sq. ft.
Backwash is not less than 12 gpm/sq. ft. of filter area.
 Yes No Not Applicable Shown or noted on plans

2-9038 #31 A diatomaceous earth filter is being installed. The filtration rate does not exceed 2 gpm/sq. ft.
 Yes No Not Applicable Shown or noted on plans

2-9039 #32 A high rate sand filter is being installed. Recommend 12-14 gpm/sq. ft. of filter area;
backwash minimum is 15 gpm/sq. ft.
 Yes No Not Applicable Shown or noted on plans

2-9039 #33 A cartridge filter is being installed. The filtration rate does not exceed _____ 0.375
gpm/sq. ft.
 Yes No Not Applicable Shown or noted on plans

2-9040 #34 The chemical feeders comply with Section 2-9040.
 Yes No Not Applicable Shown or noted on plans

2-9041 #35 The disinfectant feeders comply with Section 2-9041.
 Yes No Not Applicable Shown or noted on plans

PART II OF II (continued)

- 2-9042 #36 Skimmers:
- a. Minimum one skimmer is provided for each 500 sq. ft. of spa surface area and capable of withdrawing 75% of required recirculation capacity.
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - b. Skimmer is built-in type, recessed into spa wall, individually adjustable for rate of flow, automatically adjusts to variations in spa level within 4 inches, has a removable and cleanable screen or basket, and is provided with an air lock protective device to prevent air leakage into recirculation system.
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - c. Skimmer located in relation to spa inlets so as to aid recirculation and skimming.
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - d. Skimmer flow rate does not exceed 40 gpm (if exceeds 40 gpm, then need 2 skimmers).
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - e. Anti-hair entrapment equalizer line covers provided. (Removable only with tools)
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - f. If only one skimmer is provided, then 2 split equalizer lines must be provided. (Equally T'd"
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans

2-9042 &
2-9013

- #37 Bottom Drains
- a. Spa can be drained through bottom drains. It goes to _____.
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - b. They are covered by a protective cover whose opening does not exceed 1/2 inch in its smaller dimension
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - c. Grates removable only with tools
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - d. Must have 2 main drains with at least 3 feet of separation to prevent a suction hazard. (Equally "T'd"). The jet system must have separate duplicate bottom drains.
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans

- 2-9042 #38 Inlets:
- a. Minimum of one provided.
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - b. Inlets do not protrude greater than 1 1/4 inch into spa and are rounded or smooth.
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - c. Inlets are separated by at least 10 feet and are located so as to ensure uniform circulation.
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans
 - d. Provisions have been made for adjusting the volume and direction of flow from the wall inlets.
____ Yes ____ No ____ Not Applicable ____ Shown or noted on plans

PART II OF II (continued)

2-9043 #39 The aeration and/or jet system is completely separate from its filtration system and not interconnected with any non-spa pool.

___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

2-9045 #40 Waste Disposal:

a. The backwash goes to _____ (septic systems not allowed)

b. If D.E. filter, there is a receiving chamber which catches waste D.E.
___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

c. Sumps and drain piping have sufficient capacity to receive spa system backwash without overflowing the sump receiver.
___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

d. A sight glass on waste discharge line from filter provided.
Exception: air gap visible to operator during backwash operation.
___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

e. There is no direct connection of the spa or its recirculation system with the sanitary sewer or drainage system.
___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

3-680-6 #41. Electrical Requirements:

a. Electrical receptacles are located at least 10 ft. from the inside walls of the spa.
___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

b. Electrical receptacles located within 15 ft. of the inside walls are protected by ground-fault circuit interrupter.
___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

c. A receptacle that provides power to a permanently installed spa recirculating pump motor is located between 5 and 10 ft. from the inside wall of a pool or spa but is a single, locking, grounding type.
___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

d. A clearly labeled emergency shut off switch for control of both the recirculating system and the aeration and/or jet system is located within 5 feet of the spa.
___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

e. Underwater lighting and area lighting is provided. It meets all electrical provisions of Article #680 of the National Electrical Code.
___ Yes ___ No ___ Not Applicable ___ Shown or noted on plans

#42. Have provisions for accessibility to the physically handicapped been made.
___ Yes ___ No ___ Not Applicable ___ Shown

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Contractor/Designer Signature

License Number

Date

Plans checked by

Approved ___ Yes ___ No

Date

=====