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Carson City · Douglas County

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Application To Construct A Public Bathing Place

DRAWINGS REQUIRED: The plans must be drawn to scale, include a north arrow, and be accompanied by proper specifications to permit a comprehensive engineering review. The plans must include:

(a) A plot plan and sectional views with all necessary dimensions of the spa and surrounding area.

(b) A piping diagram showing all plumbing, including treatment facilities with pertinent elevation data, in sufficient detail to permit a hydraulic analysis of the system.

(c) An electrical diagram showing the method of grounding and other pertinent details, which must show lighting and other electrical systems.

(d) Detailed plans of the bathhouse, equipment rooms, dressing rooms, toilet facilities, showers, and other spa structures and facilities.

(e) A hydraulic analysis completed by the applicant or his or her representative and submitted to the health authority on a form provided by the health authority.

Date: _____

Owner: _____ Pool Address: _____

Contractor: _____ Address: _____

This application is for: [ ] New Construction   [ ] Modification   [ ] Additions

Source of pool water supply: _____   Drinking water supply: _____

Pool will be: [ ] Re-circulating   [ ] Flow-through   [ ] Fill-draw

Size of Pool: Length: _____ feet.   Width: _____ feet.   Depth: Min. ___ feet   Max. ___ feet

Water surface area: _____ square feet   Capacity: _____ gallons

Pool to serve _____ people or _____ units.   Supervised by   [ ] Lifeguard   [ ] Owner

Safety equipment: # ___ of ___ inch ring buoys   # ___ body hooks ___ inch diameter lifeline (floats at 5' intervals)

CONSTRUCTION

[ ] Reinforced Concrete   [ ] Gunit   [ ] Steel   [ ] Other _____

Scum gutters on   [ ] 4 sides   [ ] 2 sides [ ] Surface skimmers [ ] Other _____

Number of recess steps _____   or stairway _____   fitted with handrails

Number of ladders at deep end _____   Number of ladders on sides of deep end _____

Walkways made of _____ material with width of _____ feet and a slope of ____ inch per foot

Walkways will drain to _____

Pool enclosed from it's surroundings: [ ] rope [ ] chain [ ] hedge [ ] low fence [ ] high fence [ ] wall.

If fence or wall, it will be made of what material? _____

What provisions have been made for spectators? _____

How will spectators be kept from bathing area? _____

Will there be a lounging or sunbathing area within the pool enclosure? [ ] Yes   [ ] No

In relation to the pool, where will the lounging area be? _____

Will dressing rooms and toilet facilities be provided? [ ] Yes [ ] No

Describe the method of venting and heating these rooms. _____

EQUIPMENT

Pool heater type: _____ rated BTU _____ Manufacturer _____

Underwater lamp type: _____ # of units _____ watts _____ Manufacturer_____

Spring board length: _____ feet   # of units _____ Manufacturer _____

# of units _____ Automatic Surface Skimmer   # of units ____ Leaf Skimmer and handle

# of units _____ Vacuum Cleaner and accessories   # of units ____ Wall Brush

# of filter units _____   Type: _____   Size: _____   Area: ____ sq. feet   Capacity: _____ gpm

Backwash rate: _____ gpm Manufacturer: _____

Chlorinator feed type: _____   Daily capacity: _____ lbs

Model #: _____ Manufacturer: _____

PIPING:	DIAMETER	LENGTH	MATERIAL
Fresh Water	_____	_____	_____
Main Suction	_____	_____	_____
Skimmer Suction	_____	_____	_____
Inlet Return # _____	_____	_____	_____
Vacuum Line	_____	_____	_____
Backwash Discharge	_____	_____	_____
Backwash Sump to Sewer	_____	_____	_____

Backwash Sight gauge # of units: _____   Loss of Head Gauge # of units: _____

POOL CONSTRUCTION

The following items (as required by NAC on Bathing Places/Spas) at the _____ pool, located

at_____ will be provided by the owner, contractors, sub-contractors, as signed below.

_____   Deck (min. 4' wide, slope ¼" per foot)

_____   Deck Drains

_____   Fence (min. 4' height)

_____   Hose Bibbs

_____   Test Kits (for pH, Chlorine residual, total alkalinity and cyanuric acid, if used)

_____   Sand Trap

_____   First Aid Kit

_____   Blankets (2 or more)

_____   Lifeguard (reference NAC 444.270, Public Bathing Places)

_____   Protective enclosure for equipment (which complies with all the requirements of ventilation,

                    drainage, access opening, equipment clearance storage space, etc. as listed in NAC 444.188 and NAC 444.190,

                    Public Bathing Places)

_____   Pool located where it can be seen by persons employed at the facility. (if not, attendant must be present at

                    pool side).

_____   Other items _____

Signed _____   Date_____

Title   _____

INFORMATION REQUIRED FOR SWIMMING POOL/SPA PLAN REVIEW

___   1. Pool surface area _____ sq ft

___   2. Pool volume _____ gallons   Pool perimeter _____ feet

___   3. Pump performance curve

___   4. Pump capacity: Filtration cycle _____ gpm   _____ tdh

                                                    Backwash cycle _____gpm   _____ tdh

___   5. Manufacturer's rated filter losses during: Filtration cycle _____ psi or   _____ feet

                                                                                    Backwash cycle _____psi or   _____ feet

___   6. Vertical distance from center line of pump to water level in pool _____ feet.

___   7. Vertical distance from center line of pump to level of backwash discharge piping _____ feet.

___   8. Plot plan layout of pool enclosure, equipment room, piping, fresh water line, waste water line, street and structures

         on adjoining property.

___   9. Elevations showing section through pool (longitudinal and at D-5), equipment room and pool

            enclosure. (diving boards, ladder, and related appurtenances)

___   10. Plans shall contain a north arrow, be to scale and be signed.

___   11. Steel schedule.

___   12. Four copies each of: plans, pool construction application, and pool construction supplement.

___   13. One copy of pool hydraulic calculations and detailed piping diagram showing all fittings, valves,

            equipment, and elevations.

___   14. Type of pipe to be used in plumbing and pipe rating. (only National Sanitation Foundation

            coded pipe approved)

CALCULATION OF TOTAL DYNAMIC HEAD IN POOL FILTER INSTALLATIONS

Facility: _____

Person preparing this form: _____

NOTE:

- ❖ Nevada Administrative Code, Chapter 444, Public Bathing Places, requires a turnover rate of six (6) hours
  immediately prior to backwashing the filters (NAC 444.152 and NAC 444.162).
- ❖ To comply, the recirculation system must be designed for less than six (6) hour turnover.
- ❖ Turnover rate for therapy pools – one (1) hour or less.
- ❖ Turnover rate for wading pools – three (3) hours maximum.
- ❖ Nevada Administrative Code, Chapter 444, Public Spas, requires a turnover rate of 30 minutes
  immediately prior to backwashing the filters (NAC 444.496).
- ❖ To comply, the recirculation system must be designed for less than a 30 minute turnover.

1. Head loss data for all system components are required. Use head loss listed herein or submit manufacturer's engineering specifications.

2. Pump performance curve required (Public Bathing, NAC 444.162).

3. Piping (Public Bathing, NAC 444.160: Spas, NAC 444.482) – Non-toxic corrosion resistant, able to withstand operating procedures. NSF approved piping acceptable. Submit specifications for piping.

4. If multiple pumps and filters are to be used, additional calculations will be required, showing workability of the system.

HYDRAULIC CALCULATIONS – Typical Pool Plan – for completing hydraulic calculations:

S= Strainer Basket

P= Pump

F= Filter

V= Multi-port valves

H= Heater

I.   Return Piping – Circuit 1 to 6 (or 1 to 6'):

(Schema: Determine the pressure drops in each section of piping in the parallel circuit. Then add up all pressure drops in the circuit with the greater pressure drop. Label all circuit and points on piping diagram.)

		Linear Feet	**Feet of Head Loss**
A. From point 1 to 2:			
1. Flow rate = _____ gpm			
2. Piping length _____" D		_____	
3. Fittings:			
_____ Reducer (s) ____ " D. to ____ " D.		_____	
_____ Ell (s)		_____	
_____ Tee		_____	
4. Total equivalent length	=	_____	
5. Total pressure drop 1 to 2	=	_____	
B. From point 2 to 3 (or 2 to 3'):			
1. Flow rate = _____ gpm			
2. Piping length _____" D		_____	
3. Fittings:			
_____ Reducer (s) ____ " D. to ____ " D.		_____	
_____ Ell (s)		_____	
_____ Tee		_____	
4. Total equivalent length	=	_____	
5. Total pressure drop 2 to 3	=	_____	
C. From point 3 to 4 (or 3' to 4'):			
1. Flow rate = _____ gpm			
2. Piping length _____" D		_____	
3. Fittings:			
_____ Reducer (s) ____ " D. to ____ " D.		_____	
_____ Ell (s)		_____	
_____ Tee		_____	
4. Total equivalent length	=	_____	
5. Total pressure drop 3 to 4	=	_____	
D. From point 4 to 5 (or 4' to 5'):			
1. Flow rate = _____ gpm			
2. Piping length _____" D		_____	
3. Fittings:			

____ Reducer (s) ____ " D. to ____ " D. 　　　　　　_____

　　　　　　____ Ell (s) 　　　　　　_____

　　　　　　____ Tee 　　　　　　_____

　　　4. Total equivalent length 　　　　　　=　　_____

　　　5. Total pressure drop 4 to 5 　　　　　　=　　_____

E. From point 5 to 6 (or 5' to 6'):

　　　1. Flow rate = _____ gpm

　　　2. Piping length ____" D 　　　　　　_____

　　　3. Fittings:

　　　　　　____ Reducer (s) ____ " D. to ____ " D. 　　　　　　_____

　　　　　　____ Ell (s) 　　　　　　_____

　　　　　　____ Tee 　　　　　　_____

　　　　　　____ Crifice, pressure drop across 　　　　　　　　　　_____

　　　4. Total equivalent length 　　　　　　=　　_____

　　　5. Total pressure drop 5 to 6 　　　　　　=　　_____

F. Return piping pressure drop:

　　　(A5+B5+C5+D5+E5=) 　　　　　　　　　　=　　_____

II.　　Suction Piping – Circuit (s) a to e (or a to e, or b to e):

(Schema: Determine the pressure drops in each section of piping in the parallel circuit(s).   Then add up all pressure drops in the circuit(s) with the greater pressure drop. Label all circuit and points on piping diagram.)

　　　　　　　　　　　　　　　　Linear Feet　　**Feet of Head Loss**

A. From point a to c: (Skimmer #1)

　　　1. Flow rate = _____ gpm

　　　2. Piping length ____" D 　　　　　　_____

　　　3. Fittings:

　　　　　　____ Skimmer, pressure drop in 　　　　　　　　　　_____

　　　　　　____ Reducer (s) ____ " D. to ____ " D. 　　　　　　_____

　　　　　　____ Ell (s) 　　　　　　_____

　　　　　　____ Tee 　　　　　　_____

　　　4. Total equivalent length 　　　　　　=　　_____

　　　5. Total pressure drop a to c 　　　　　　=　　_____

B. From point b to c: (Main Drain)

　　　1. Flow rate = _____ gpm

　　　2. Piping length ____" D 　　　　　　_____

　　　3. Fittings:

　　　　　　____ Main drain grate, pressure drop in 　　　　　　　　　　_____

　　　　　　____ Reducer (s) ____ " D. to ____ " D. 　　　　　　_____

　　　　　　____ Ell (s) 　　　　　　_____

　　　　　　____ Tee 　　　　　　_____

　　　4. Total equivalent length 　　　　　　=　　_____

　　　5. Total pressure drop b to c 　　　　　　=　　_____

C. From point c to d: (Piping)

    1. Flow rate = _____ gpm

    2. Piping length _____" D   _____

    3. Fittings:

        _____ Reducer (s) _____ " D. to _____ " D.   _____

        _____ Ell (s)   _____

        _____ Tee   _____

    4. Total equivalent length   =   _____

    5. Total pressure drop c to d   =   _____

D. From point a' to d: (Skimmer #2)

    1. Flow rate = _____ gpm

    2. Piping length _____" D   _____

    3. Fittings:

        _____ Skimmer, pressure drop in   _____

        _____ Reducer (s) _____ " D. to _____ " D.   _____

        _____ Ell (s)   _____

        _____ Tee   _____

    4. Total equivalent length   =   _____

    5. Total pressure drop a' to d   =   _____

	Linear Feet	Feet of Head Loss

E. From point d to e: (Piping)

    1. Flow rate = _____ gpm

    2. Piping length _____" D   _____

    3. Fittings:

        _____ Reducer (s) _____ " D. to _____ " D.   _____

        _____ Ell (s)   _____

        _____ Tee   _____

    4. Total equivalent length   =   _____

    5. Total pressure drop d to e   =   _____

F. Suction piping pressure drop:

[(A5+C5+E5) or (B5+C5+E5) or (D5+E5)=]   = _____

III. Pump Room Piping – Circuit e to i:

    1. Flow rate = _____ gpm

    2. Piping length _____" D   _____

    3. Fittings:

        _____ Reducer (s)   (at suction side of pump)   _____

    s _____ Strainer   _____

    p _____ Enlarger (s)   (at discharge side of pump)   _____

    v_____ Multi-port valve (s)   _____

        _____ Gate valve (s)   _____

_____ Reducer (s)   (at multi-port or filter)   _____

f&h_____ Filter (s) & heater   _____

_____ Enlarger (s)   (at multi-port or filter)   _____

_____ Ell (s)   _____

_____ Tee   _____

4. Total equivalent length   =   _____

5. Total pressure drop e to i   = _____

6. Suction lift (vertical distance from C/L of pump to

water level. Use minus if pump is below water level)   = _____

IV.   Total Dead Load:

(If+ IIf +III5+III6 =)   = _____

V .   Flow rate at above TDH (from pump curve) = _____ gpm.

I, _____ , certify that the above measurements have been performed and recorded accurately.

_____   _____   _____

(PRINTED NAME)   (SIGNATURE)   (DATE)