CITY OF LINCOLN
CALIFORNIA

POLICY MEMORANDUM

DATE: November 13, 2018

TO: All Staff/Interested Parties

FROM: Fred Lustenberger, Chief Building Official

RE: Private Residential Swimming Pools and Spas

Effective July 1, 2017, building permit applications for permanently constructed private residential swimming pools and spas shall be processed as follows:

INTAKE:

Applicants shall submit the following documents to counter staff:

- Completed "Swimming Pool Packet," which includes the following forms: Swimming Pool Permit Checklist; Swimming Pool Requirements; Swimming Pool Plumbing, Mechanical & Energy Requirements; Swimming Pool Enclosure and Fencing Requirements; Swimming Pool Electrical Requirements; Electric Load Worksheet; Swimming Pool Alarm Requirements; Swimming Pool Acknowledgement Form; Swimming Pool Access Agreement; Notice to Pool Contractors- Inspection Requirements; Construction Site Stormwater Compliance Reminders; Pool Equipment Information; and Notice to Pool Contractors and Homeowners. Note: all forms must be signed or initialed (as indicated) by the appropriately authorized party.
- Three sets of Plans and two sets of engineering documents as stipulated on the Swimming Pool Requirements form (see above).
- Completed and signed City of Lincoln Application for Permit Form.
- Completed and signed Encroachment Permit Application Form from Engineering
- Copy of HOA approval letter
- Project Contact Information form

INSPECTIONS:

The applicant is responsible for scheduling all required inspections as listed on the Notice to Pool Contractors form. In addition to all items listed, the inspector will also verify all zoning and other City requirements related to the project. Work will not be allowed to proceed until all requirements for each inspection step are in compliance.

> *EXCEPTION: Certain non-life/safety, project engineer-specified structural only requirements, as determined by the Chief Building Official, will not preclude further work on the pool or issuance of a final sign-off. However, any such outstanding correction items will be permanently noted on the project files and retained by the City.*

SETBACK REQUIREMENTS:

3' = water line to property line (rear/side yard)
5' = water line to property line (Sun City area **ONLY**)
5' = pool equipment from property line (rear/side yard)

CORNER LOTS: 10' SIDE YARD SETBACK ON STREET SIDE OR OUT OF PUBLIC UTILITY EASEMENT (WATER LINE TO PROPERTY LINE).

SUNCITY SETBACK REQUIREMENTS:
15' SIDE YARD ABUTTING STREET (POOL & EQUIPMENT)

CITY OF LINCOLN BUILDING DIVISION
600 SIXTH STREET, 2ND FLOOR, LINCOLN, CA 95648
(916) 434.2470 cddpermitcenter@lincolnca.gov

SWIMMING POOL

&

SPA PACKET

City of Lincoln Building Division
600 Sixth Street, Lincoln, CA 95648 (916) 434-2470
cddpermitcenter@lincolnca.gov

Swimming Pool Permit Checklist

Applicant Name: _____

Job Address: _____

Date: _____

SUBMIT THREE COPIES OF THE FOLLOWING ITEMS FOR SWIMMING POOL/SPA PERMITS

Plot Plans shall indicate the following:

- O Drawn to an appropriate scale with pool depths shown and dimensions to other structures
- O Have an engineer address any surcharge loads on the pool or from the pool
- O Dimensions of all property lines with a north arrow
- O Location of all mechanical equipment, type and size of pool equipment and plumbing
- O BTU rating of gas appliances including diameter & length of each segment of gas run
- O Location of all easements (including Public Utility Easements) and required setbacks
- O Type of electric service currently on home (overhead / underground)
- O Location of electric panel and gas meter
- O Direction of surface water drainage and direction of flow of the deck drain (using arrows)
- O Pool fencing design and location to show enclosure around the pool area
- O All gates to indicate swing away from pool
- O Point of access across property line for pool construction equipment
- O Wall height and slope for any retaining walls that are part of the proposed construction
- O Oak trees and their dripline with a trunk diameter at breast height (TDBH) 4-1/2 feet above the root crown

SUBMIT TWO COPIES OF THE FOLLOWING ITEMS FOR SWIMMING POOL PERMITS

Swimming Pool Forms/Letters to be included with submission:

- O Four 8 '/« x 11 photos from four different vantage points
- O Swimming Pool Requirements
- O Electrical Load Worksheet
- O Swimming Pool Acknowledgement Form
- O Engineering sheet wet stamped/signed by a licensed engineer to include highlighted details and must meet current building code.
- O Copy of signed contract (only one copy required)
- O Swimming Pool Access Agreement (if applicable)
- O Encroachment permit issued by the Engineering Department
- O Letter of Authorization on company letterhead signed by an officer of the company for contractor's representatives to sign on the company's behalf must be on file with the City
- O Pool Equipment Information
- O CF2R-PLB-03-E Energy Form
- O Pool Excavation, Grading, Erosion & Sedimentation Form

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600 Sixth Street, Lincoln, CA 95648 (916) 434-2470
cddpermitcenter@lincolnca.gov

Swimming Pool Requirements

PLAN AND CONSTRUCTION DETAILS:

- Construction details must be stamped and signed by a licensed engineer.
- Plot plan must show all easements, existing structures, retaining walls, electrical panel location(s) and all overhead & underground electrical lines
- Dimensions from the pool to all property lines must be indicated on plot plans.
- Pool equipment and other structures such as diving boards, ladders, diving rocks, slides and other devices must be shown on the plans.
- Indicate all drainage using arrows on the plot plans.
- Indicate fence location and design on pool plans.
- Provide a minimum of four full-page color photos from at least four vantage points (8-1/2" x 11".)

DESIGN REQUIREMENTS:

- Minimum setback for pool structures is 3 feet from side property line, 3 feet from opposite side property line and 3 feet to rear property line. Setbacks measured to the back of the bond beam and water source.
- Minimum setback for pool equipment is 5 feet to property line.
- Venting for gas pool heaters shall terminate not less than 4' from property line or any openable windows.
- Pools must meet the requirements of the Uniform Swimming Pool Code, the California Electric
- Code (CEC) and the California Building Code (CBC).
- Pool structure must not encroach into any easement(s).
- Clearance from combustibles to pool heaters shall be per manufacturer's specifications.

CONSTRUCTION REQUIREMENTS:

- Construction materials such as dirt, sand and cement shall not be washed into the gutter or storm drain.
- The City of Lincoln's Grading Ordinance and the California Penal Code Section 374.3(b) prohibit dumping of material on public or private property within the City limits and without the consent of the owner. Violators will be subject to fines.
- All fences and gates must be in place when work is completed daily so pool is not accessible by anyone other than property owners.
- All broken sidewalks as a result of pool construction must be fully repaired prior to the final inspection.
- No pool shall be filled with water before the pre-plaster inspection is approved.
- The grading must be complete prior to final inspection. This includes 2% drainage away from the house and all drainage sloping to the street. Note: It is the responsibility of the contractor to see that the grading is completed. All homeowners will be referred back to the contractor for clarification.
- It is the responsibility of the pool contractor to keep all streets, curbs, gutters and sidewalks clean and free of dirt, concrete, and other debris, used in the construction of swimming pools and spas.

Due to liability reasons, the City of Lincoln **will not** make any inspections unless there is an adult present or an authorizing note is left on the front door allowing the inspector to enter the rear yard. **All animals to be restrained!**

Date:_____

Pool Company:_____

Pool Company Representative (Print Name):_____

Signature of Pool Company Representative:_____

City of Lincoln Building Division
600 Sixth Street, Lincoln, CA 95648 (916) 434-2470
cddpermitcenter@lincolnca.gov

Swimming Pool Plumbing, Mechanical & Energy Requirements

Based on the California Mechanical Code (CMC), the California Plumbing Code (CPC), and the California Energy Code (CEC T-24)

1) Backflow prevention required at water supply per **CPC**

   a.) Manual fill: use AVB (Atmospheric Vacuum Breaker)
   b.) Auto fill / auto chlorinator: use PVB (Pressure Vacuum Breaker)

2) The swimming pool or spa shall have at least two circulation drains per pump that shall be hydraulically balanced and symmetrically plumbed through one or more T fittings, and that are separated by a distance of at least 3' in any dimension between the drains. Suction outlets that are less than 12" across shall be covered with anti-entrapment grates, as specified in the ASME/ANSI standard A 112.19.8, that cannot be removed except with the use of tools. Slots of openings in the grates or similar protective devices shall be of a shape, area and arrangement that would prevent physical entrapment and would pose any suction hazard to bathers.

3) At least 36" of pipe between the filter and the heater to allow for future addition of solar heating required. Per California Energy Code **(CEC T-24)**

4) All pools constructed with pool heaters require a pool cover. Per California Energy Code **(CEC T-24)**

5) A mechanical draft venting system of other than direct vent type shall terminate at least 4' below, 4' horizontally from or 1' above any door, operable window, or gravity air inlet into any building. The bottom of the vent terminal shall be located at least 12" above grade per CMC.

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Swimming Pool Enclosure and Fencing Requirements

Based on the California Building Code (CBC)

An enclosure shall have all of the following per the current CBC:

1) Any access gates through the enclosure open away from the swimming pool and are self-closing with a self-latching device placed no lower than 60" above the ground.
2) A minimum height of 60".
3) A maximum vertical clearance from the ground to the bottom of the enclosure of 2".
4) Gaps or voids, if any, do not allow passage of a sphere equal to or greater than 4" in diameter.
5) An outside surface free of protrusions, cavities or other physical characteristics that would serve as handholds or footholds that could enable a child below the age of 5 years to climb over.

Fencing Requirements:

1) Closely spaced horizontal members:

   a.) Where the barriers is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45", the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1.75" in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75" in width.

2) Widely space horizontal members:

   a.) Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45" or more, spacing between vertical members shall not exceed 4". Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75" in width.

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Swimming Pool Electrical Requirements

Based on the California Electrical Code (CEC)

1) All metals within 5' horizontally of the inside walls of the pool and 12' vertically of maximum water level of pool to be bonded per **CEC**.

2) Receptacles that provide power for water pump motors or for other loads directly related to the circulation and sanitations system that are 125v or 240v whether by receptacle or direct connection shall be provided with GFCI protection. They shall also be located at least 10' from the inside walls of the pool, or not less than 6' from the inside walls of the pool if they meet all of the requirements of the **CEC**.

3) Where a permanently installed pool is installed at a dwelling unit, no fewer than 1 — 125 volt, 15 or 20 amp receptacle on a general purpose branch circuit shall be located not less than 6' from and not more than 20' from the inside wall of the pool per **CEC**.

4) Equipotential Bonding Grid: The parts specified in 680.26(B) shall be connected to an equipotential bonding grid with a solid copper conductor, insulated, covered or bare, not smaller than 8AWG or rigid metal conduit of brass or other identified corrosion resistant metal conduit. Connection shall be made by exothermic welding or by listed pressure connectors or clamps that are labeled as being suitable for the purpose and are of stainless steel, brass, copper or copper alloy. The equipotential common bonding grid shall extend under paved and unpaved surfaces for 3' horizontally beyond the inside walls of the pool and shall be permitted to be any of the following:

   4.1) Structural reinforcing steel. The structural reinforcing steel of a concrete pool where the reinforcing rods are bonded together by the usual steel tie wires or the equivalent
   4.2) Bolted or welded metal pools. The wall *of* a bolted or welded metal pool
   4.3) Alternate means. This system shall be permitted to be constructed as specified (A)-(F)

      A.) Materials and connections. The grid shall be construction of minimum 8AWG bare solid copper conductors. Conductors shall be bonded to each other at all points of crossing. Connections shall be made per **CEC**.

      B.) Grid structure. The equipotential bonding grid shall cover the contour of the pool and the pool deck extending 3' horizontally from the inside walls of the pool. The equipotential bonding grid shall be arranged in a 12" x 12" network of conductors in a uniformly space perpendicular grid pattern with tolerance of 4".

      C.) Securing. The below grade grid shall be secured within or under the pool and deck media per **CEC**.

      D.) Swimming pools made of fiberglass and vinyl shall be considered nonconductive.

      E.) All metal parts used to secure vinyl pool liners shall be bonded to the equipotential bonding grid.

      F.) An intentional bond of 9" sq shall be installed in contact with the pool water of nonconductive swimming pools per **CEC**.

Initials:_____

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Electric Load Worksheet

Address:_____ Date:_____

Phone:_____ **Gas Furnace (Y/N)** _____ **Existing Sq. Ft:**_____ **New Sq. Ft:**_____

Rating of:		Watts* x % = Total(a)
Electric Furnace	NPR (Name Plate Rating)	_____ x .65 = _____
Air Conditioning	NPR_____ x 1.00 =	_____ x 1.00 = _____
Heat Pump	NPR	_____ x 1.00 = _____
Heater Rating (Less than 4 rooms)		_____ x .65 = _____
Heater Rating (More than 4 rooms)		_____ x 1.00 = _____

Enter the largest value (watts) from Total (a) ⇩

_____

Quantity	Item	Watts*
_____	Sq. Ft. x 3 watts per sq. ft.	_____
_____	20 Amp appliance circuits @ 1500 watts ea.	_____
_____	Ranges NPR	_____
_____	Ovens NPR	_____
_____	Water Heater NPR	_____
_____	Dishwasher NPR	_____
_____	Garbage Disposal NPR	_____
_____	Washer NPR	_____
_____	Dryer NPR	_____
_____	Motor loads NPR	_____
_____	Other loads	_____
	Sub Panel Total (from below)	_____
	Subtotal =	_____
	Less -	10,000
	Total =	_____ x.40 = + _____

Add this value to calculations below ⇩

⇩

⇩

10,000

***Watts - Volts x Amps**

Grand Total (Watts) = _____

Grand Total (watts)_____ — 240 Volts = _____ Service Load (Amps)

Service size:_____ Amps

Are sub-panels to be installed ?_____ How many? _____

Amp Rating?_____ Wire Size? _____

_____	Motor loads NPR	_____
_____	Other loads	_____
_____	Other loads	_____
	Sub Panel Total	_____

_____ _____

(Print name)-Electrical Contractor / Owner - Builder State License number

_____

(Signature) - Electrical Contractor / Owner - Builder

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Swimming Pool Alarm Requirements

Based on the California Building Code (CBC)

Where a wall of a dwelling serves as part of a barrier, one of the following shall apply:

1). Doors with direct access to the pool through that wall shall be equipped with an alarm that produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed in accordance with UL 2017 and shall meet the requirements of the California Building Code.

2.) The pool shall be equipped with a power safety cover that complies with ASTM F1346.

3.) Other means of protection, such as self-closing doors with self-latching devices, which are approved, shall be accepted so long as the degree of protection afforded is not less than protection afforded by the **CBC**.

Initials:_____

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Swimming Pool Acknowledgement Form

HOMEOWNER MUST READ AND SIGN. THIS FORM MUST BE SUBMITTED UPON REQUEST FOR PLAN CHECK

Address (please print): _____

Owners Name: _____

Name of Pool Contractor: _____

As the owner of record for the above referenced address, the City of Lincoln Building Division wants you to be aware that by state law we enforce the California Building Code, California Electric Code, Uniform Swimming Pool, Spa & Hot Tub Code and California Energy Requirements.

Because of the increased electrical load that is caused by pool equipment, the pool contractor is required to calculate the total electrical load that will apply once the pool/spa is installed. It is required that your pool contractor complete the City of Lincoln's Electrical Load Calculation Sheet and submit it along with your pool plans for plan check.

Plan check may take up to 3 weeks and we suggest that excavation does not start until plans are approved and your permit is issued. Should excavation start prior to issuance of permit, it is at the risk of the pool company.

Your pool contractor shall request the following inspections when ready: **Pre-gunite, Pre-deck, Pre-plaster and Final**.

The pool contractor needs to inform you prior to the inspection date. In the event you cannot be home the day of the inspection, an authorization note must be left on the front door giving the inspector permission to enter the rear yard. Note: **All animals shall be restrained!**

All fencing must be replaced when the pool contractor is not working on site. If fencing is left down, an inspection will not be given. Also, please refer to your pool contractor should you have any questions on your lot grading.

I HAVE READ THE ABOVE AND UNDERSTAND MY RESPONSIBILITY AS THE HOMEOWNER.

Owners Name: _____
(Please print)

Owners Signature: _____

Date: _____

City of Lincoln Building Division
600 Sixth Street, Lincoln, CA 95648 (916) 434-2470
cddpermitcenter@lincolnca.gov

Swimming Pool Access Agreement

Please Print Clearly

Date _____
(full date)

To Whom It May Concern:

I, _____ am the property owner of
(full name)

_____, Lincoln, CA
(address)

and have applied for a building permit to construct a swimming pool at this location. The plans for this pool show access to the work site through my neighbor's property. I understand that City approval of my plans does not constitute authority to access their property, and *that* this *approval* is solely up to my neighbor.

Sincerely,

_____
(Homeowner Signature)

_____, Lincoln, CA
(address)

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Notice to Pool Contractors

The City of Lincoln is enforcing the following field inspections on all swimming pools and spas. Following are some basic guidelines.

1. **Pre-gunite:**
   - All reinforcement is in place.
   - Underground electrical conduit is in trench.
   - Bonding to pool, equipment pad, light niche, all metal objects within 5' of pool
   - Gas piping in trench and on test.
   - Water lines on test at 35 psi.

2. **Pre-deck:**
   - All forms in place with drains installed.
   - Bonding of all metal objects within 5' of water's edge (handrails, ladders, umbrella pockets.)
   - Min. slab thickness with no exposed pipes or conduit (wrap if necessary.)
   - Protect PVC at equipment slab.

3. **Pre-plaster - <u>Prior to filling with water</u> :**
   - All Safety devices **<u>must be installed</u>** and operating properly.
     - Pool barrier / alarms / self-closing doors.
     - Self-closing, self-latching gate(s) must swing away from pool.
   - "Listed" potting compound in all light niche fixtures.
   - Equipment installed and ready for operation.
     - Bonding in place.
     - Pool sub panel completed.
     - Correct breaker size at main panel for equipment installed.
   - All back-flow devices installed.
     - AVB on supply line.
     - Back-flow preventers on hose bibs.
   - Bonding of **all** metal objects within 5' of pool.

4. **Pool Final:**
   - Final electrical
     - Pool lighting.
     - GFI's.
     - Bonding of **all** metal objects within 5' of pool.
   - Safety glazing where required.
   - Check sidewalks for damage from equipment access.
   - Lot drainage to fall towards street or other approved location.

Please be ready for the inspection desired before scheduling an inspection request.

Initials:_____

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Construction Site Stormwater Compliance Reminders

To comply with the requirements of your Construction General Permit, or City Stormwater Ordinance, you must:

1) Implement effective best management practices (BMPs) for all pollutants at your site including - sediment, concrete waste, stucco waste, paint, fertilizers & fuels.
2) Implement effective combination of erosion and sediment control. Prevent erosion by stabilizing all disturbed soil, paying particular attention to exposed slopes.
3) Conduct site inspections before, during extended storm events, and after each storm event. Make sure all BMPs are installed properly and are working effectively. If State permitted, note any problems and corrective actions taken in your on-site SWPPP.
4) Keep replacement supplies on hand and/or on site.
5) Cover all dumpsters - especially important during the wet season.
6) If you are dewatering ground water from your construction site, you must demonstrate the ground water quality meets all water quality standards prior to discharge.
7) If you are using soil amendments (such as lime, fly ash etc.) and they will be exposed to stormwater, you must implement a Sampling Analysis Program.
8) Ensure all site personnel are trained in erosion prevention/sediment control techniques, and know their responsibilities under the Construction General Permit and the City's Stormwater Ordinance.
9) Immediately report to the Public Services Department any instances of sediment or other pollutant discharges from your construction site.
10) Maintain your construction access to minimize tracking.
11) Contain wash water from power washing operations and discharge it to porous areas.
12) Maintain drain inlet and perimeter protection year round.

Public Services Department:

For more information, contact the Public Services Department at 1-916-434.2450.

Information on the Construction General Permit can be found at the State Water Resources Control Board's website at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.shtml

Initials:_____

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Pool Equipment Information

Job Address:_____ BLD #:_____

TYPE OF SPECIFICATION	POOL	SPA
Depths		
Surface Area		
Capacity in Gallons		
Turnover time in Hours (must be minimum of 6 hours)		
Returns Number		
Pipe Diameter (in inches)		
Main Drains Number		
Size		
Distance Between Drains		
Suction Pipe Diameter (in inches)		
Skimmers Number		
Size		
Gas Line Pipe Diameter/Material		
Length (in linear feet)		
Number of Jets		
Filter Make		
Model		
Type		
Size		
Pump Make		
Model Number		
Horsepower or RPM		
Type		
Min/Max Flow (in gallons per minute)		
Performance Curve With Head Pressure		
Heater Make		
BTUs		
Underwater Lights Number		
Type		

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POOL EXCAVATION, GRADING, EROSION, & SEDIMENTATION FORM

DIRECTIONS. Please complete the job address then read and initial each statement below.

Job Address. _____

Pool Excavation Disposal

_____ The excavated material from the pool construction project at the address referenced above shall be disposed of in compliance with all local, state, and federal laws and regulations.

_____ I have contacted the owner of the property on which I intend to dispose of the excavation material and have received valid authorization and permission from the property owner or his or her agent to place the excavation material on that property.

_____ I shall place the excavation material on the property in accordance with all applicable requirements, regulations, and standard industry practices governing the placement of fill materials and the instructions of the property owner.

I understand that unauthorized dumping of excavation material is a violation of California Penal Code Section 602 and is punishable by a fine or imprisonment or both.

Grading and Erosion and Sedimentation Control

_____ I will comply with all the City of Lincoln Grading, Erosion, and Sedimentation Control requirements as outlined in the Lincoln Municipal Code.

_____ The pool construction shall use sediment and erosion control best management practices to prevent contaminants from entering the storms drains and/or creeks.

_____ Two sets of Grading, Erosion, and Sedimentation Control plans are incorporated into the construction drawings or attached as a separate document.

By my signature below, I certify that I am the property owner or authorized to act on the property owner's behalf. I have read this document and the information I have provided is correct.

_____	_____	_____
Print Name	Signature	Date

_____	_____
Pool Company Name *(if applicable)*	Contractor's State License #

CERTIFICATE OF INSTALLATION		CF2R-PLB-03-E
Pool And Spa Heating Systems		(Page 1 of 3)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City:	Zip Code:

A. Pool and Spa System Type	
01	Pool and Spa System Type

B. Pool and Spa Systems and Equipment Requirements (Section 110.4(a) and 110.5)	
01	Heater has a thermal efficiency that complies with the Appliance Efficiency Regulations.
02	A readily accessible on-off switch is mounted on the outside of the heater, which allows the heater to be shut off without the user adjusting the thermostat setting.
03	A weatherproof plate or card containing instructions for the energy-efficient operation of the pool or spa heater is permanently mounted.
04	No electric resistance heating except for listed package units that have fully insulated enclosures and tight fitting covers that are insulated to at least R-6. Or if documentation is provided that at least 60% of the annual heating energy is from site solar energy or recovered energy.
05	Heating system has no pilot light.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

C. Pool and Spa System Installation Requirements (Section 110.4(b))	
01	To allow for the future addition of solar heating equipment, at least 36" of pipe is installed between the filter and heater, or dedicated suction and return lines are installed, or built-in, or built-up, connections for future solar heating are provided.
02	A cover is provided for outdoor pools or spas that have a heat pump or gas heater.
03	Pool system has directional inlets to adequately mix the pool water.
04	Pool system has a time switch that allows the pump to be set or programmed to run during off-peak periods only.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	

CERTIFICATE OF INSTALLATION		CF2R-PLB-03-E
Pool And Spa Heating Systems		(Page 2 of 3)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City:	Zip Code:

D. Pool Pump Sizing and Flow Rate Specification (Section 150.0(p))		
01	The pool pump specified is listed in the CEC database of certified pool pumps.	
02	The pool pump flow rate shall not exceed the maximum pump flow rate calculated based on pool sizing in the table below. The return pipe diameter, suction pipe diameter, and filter area shall be at least as large as the required minimums shown in the table. Alternatively, a flow calculation or flow test result shall be provided to demonstrate that the pump flow rate is less than 6 hour filtration turnover, and the return pipe flow rate does not exceed 8 fps and that the suction pipe flow rate does not exceed 6 fps.	
03	An alternative compliance calculation or a flow test result is provided for this pool or spa use (must attach flow calculation or flow test result to this form)	Yes ○ No ○
04	The pump is capable of operating at 2 or more speeds (not applicable if pump is less than 1 horsepower).	
05	Each auxiliary pool load is served by either a separate pump, or the system is served by a multi-speed pump.	
06	Volume of Pool (gallons)	
07	Filter Type (Cartridge, Sand, DE)	

08a Required Min Return Pipe Diameter (inches)	08b Required Min Suction Pipe Diameter (inches)	08c Required Min Filter Area (ft^2)	08d Required Max Pump Flow (gpm)

09	Return Pipe Diameter (inches)	
10	Suction Pipe Diameter (inches)	
11	Filter Surface Area (ft^2)	
12	Max Pump Flow Rate (gpm)	
13	Measured Flow Rate Return Line (fps)	
14	Measured Flow Rate Suction Line (fps)	
15	Compliance Statement:	

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

E. Pool System Piping (Section 150.0(p)2)	
01	The suction side pipe is straight for at least 4 pipe diameters before entering the pump (See table below for the required straight run lengths for various pipe sizes).
02	All elbows are sweep elbows, or an elbow type that has a pressure drop that is less than the pressure drop of a straight pipe with a length of 30 pipe diameters.

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

F. Pool Filters and Valves (Section 150.0(p)3 and 4)	
01	If a filter is used in a pool intended for public use: The size of the filter is at least the size specified in NSF/ANSI 50.
02	If a backwash valve is used: The diameter of the backwash valve is at least 2 inches, or the diameter of the return pipe, whichever is greater.

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

CERTIFICATE OF INSTALLATION		CF2R-PLB-03-E
Pool And Spa Heating Systems		(Page 3 of 3)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City:	Zip Code:

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
1. I certify that this Certificate of Installation documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
Documentation Author Company Name:	Date Signed:
Address:	CEA/HERS Certification Identification (If applicable):
City/State/Zip:	Phone:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Installation is true and correct.
2. I am either: a) a responsible person eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation, and attest to the declarations in this statement, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I will ensure that a registered copy of this Certificate of Installation shall be posted or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Builder/Installer Name:	Responsible Builder/Installer Signature:	
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)	Position With Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed:

Table C
Pool sizing (Values are based on a maximum allowable turnover rate of 6- hours)
Note: *For pumps greater than 1 hp. The maximum Pump Flow is the lowest speed default filtration*

Max Pool Volume (gallons)	Min Pipe D or Greater (inches)		Min Filter Area or more (square feet)			Max Pump Flow (gpm)
	Return	Suction	Cartridge	Sand	DE	
13,000	1.5	1.5	100	2.4	20	36
17,000	1.5	2	130	3.1	25	47
21,000	2	2	160	3.9	30	58
28,000	2	2.5	210	5.2	40	78
42,000	2.5	3	320	7.8	60	117
48,000	3	3	360	8.9	70	133

Table D
Pipe Diameter/Pipe Length

Pipe Diameter (inch)	Required Pipe Length leading into pump (inch)
1.5	6
2	8
2.5	10
3	12