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# RESIDENTIAL SWIMMING POOLS, SPAS and HOT TUBS PERMITTING and INSPECTIONS GUIDE

TOWN of CARY

This guide is designed to assist customers who wish to install swimming pools, spas, and hot tubs on residential sites. If you have any questions about what inspections your particular installation may require, please call Inspections & Permits at (919) 469-4046.

## FREQUENTLY ASKED QUESTIONS

### ***Why are permits required for pools, spas, and hot tubs?***

It is required by State law (G.S. 160A-417). Obtaining the proper permits and inspections helps ensure that the equipment is properly installed and has the appropriate safeguards in place that will help prevent injuries and deaths due to drowning, near-drowning, and electrocution. It helps the Town and the Department in our mission to provide for the health, safety, and welfare of Cary's citizens.

### ***Who makes the rules for pools, spas, and hot tubs?***

The State's design requirements are set forth in Appendix G of the North Carolina Residential Code. Town of Cary ordinances list additional requirements in LDO 5.3.4(I).

## HOW TO APPLY FOR A PERMIT

Please Submit:

- Completed Residential permit application**
- 2 copies of a plot plan showing the location of proposed pool**
- A sketch of the pool barrier fence (see last 2 pages for examples)**

1. For the **plot plan** it is best to use an existing survey that is to scale. If you do not have a survey for your lot, you may opt to draw a site plan to scale.
2. The plan needs to show all lot lines, existing structures, easements, buffers, etc.
3. Show the **location of the pool** and all pool decking or paving; dimensioned to the property lines.
  - a. All pool and decking needs to remain 5' from a side or rear property line.
  - b. For corner lots, no encroachment is allowed in a roadway side setback.
  - c. The pool and decking may not be located in a public easement. Gaining permission to encroach a private easement is the responsibility of the homeowner.
  - d. An as-built survey may be required if the pool decking is within 5' of a setback line or easement. Pool barriers within 5' of public easements will require an as-built survey. The need for an as-built survey will be determined at plan review.
4. Show the location of the **pool barrier** on the plan.
  - a. The pool barrier may go up to the property line.
  - b. The pool barrier may not be located in a public easement. Gaining permission to encroach a private easement is the responsibility of the homeowner.
5. **Buffers** on residential lots typically require a 5' set-back off the buffer for all pool and decking. In many cases, pool barriers can be located in buffers if no vegetation is disturbed. Check with the Town for specifics about your lot.
6. If your lot has an **impervious surface limit**, you will need to calculate the area of all new concrete decking and show the amount on the plan. Pool water and slated decking does not count toward the impervious surface amount. To determine if your lot has an impervious surface limit, check the recorded plat for your neighborhood, or call the Town at 919-469-4046.

7. If your lot has a **septic field**, your plan will need to be stamped "Approved" by Wake County to verify the pool location before the permit can be issued. Wake Gov Water Quality Division is located in Raleigh. Call 919-856-7400 for information.

## FEES

The minimum permit fee (\$66) is applied per trade.

The example below shows the permit fees for a typical residential in-ground pool:

**Building Permit (\$66) + Electrical Permit (\$66) = \$132 Total Permit Fees**

**Heated pools using gas require an additional Mechanical Permit (\$66) = \$198 Total Permit Fees**

Actual fees may vary, depending upon the specific installation. For a complete listing of current fees and rates as per the Town of Cary's approved budget, please visit the Inspections & Permits Web page at [www.townofcary.org](http://www.townofcary.org).

## GENERAL INFORMATION

Generally, inspections for pools, spas, and hot tubs will cover four areas:

- (1) Electrical work
- (2) Proper barrier protection
- (3) Entrapment protection
- (4) Pool heater = clearances/gas piping/venting

Required inspections may vary depending upon the specific equipment and installation, such as mechanical work for heated pools. It is the responsibility of both the owner and contractor to ensure that the installation is done in compliance with all applicable laws and regulations.

### IMPORTANT!

- Installers verification that entrapment protection was installed to meet code will need to be provide at final inspection. See page 4 for details.

## ELECTRICAL INSPECTIONS for POOLS

Electrical work must comply with Article 680 of the National Electrical Code. Typical inspections are listed below. Other inspections may be required depending upon the specific equipment and installation.

**Electrical Groundwork Inspection (EX10 & EX22)** includes, but is not limited to:

- Bare copper ties to wall rebar
- Potting compound at underwater lights
- Bare copper ties to metal light fixture shells, cups for ladders, handrails, etc.
- Other bonding & grounding depending on type of pool
- Junction boxes
- Underground conduits
- Underground copper ties from house/electrical panel to pool equipment
- Equipotential bonding of perimeter surfaces

**Electrical Final Inspection (EX30)** includes, but is not limited to:

- Pool equipment grounding
- Junction boxes
- Completion of electrical work
- Ground fault protection
- Required receptacles, required distances

## **ELECTRICAL INSPECTIONS for SPAS and HOT TUBS**

Electrical work must comply with Part IV of Article 680 of the North Carolina Electrical Code, which includes all pertinent sections of Parts I and II. Typical inspections are listed below. Other inspections may be required depending upon the specific equipment and installation.

**Electrical Groundwork (EX10 & EX22)** includes, but is not limited to:

- Required on spas and hot tubs installed outside (equipotential bond and power to tubs or spas)

**Electrical Final Inspection (EX30)** includes, but is not limited to:

- Pool equipment grounding
- Junction boxes
- Completion of electrical work
- Ground fault protection
- Required receptacles, required distances

## **MECHANICAL INSPECTIONS FOR POOLS, SPAS, and HOT TUBS (if applicable)**

If the pool, spa, or hot tub is fueled by natural or propane gas, then the mechanical gas piping work must comply with the North Carolina Mechanical and Fuel Gas Codes

**Mechanical and Gas Piping Rough-In Inspections (MX20)** includes but is not limited to:

- Inspection of heating equipment components (verify clearances, etc.)
- Inspection of gas piping that will be concealed (ex. underground / under slab / under patio)
- Gas piping pressure test of any gas piping that will be concealed (visual inspection / pressure gauge)

**Mechanical and Gas Piping Final Inspections (MX30)** includes but is not limited to:

- Inspection of fuel fired equipment and components (verify clearances, combustion air etc.)
- Inspection of complete gas piping system
- Gas piping pressure test of total complete system (visual inspection / pressure gauge)

## **BUILDING INSPECTIONS FOR POOLS, SPAS, and HOT TUBS**

Building inspections for residential pools, spas, and hot tubs are performed to verify compliance with the barrier and entrapment protection requirements set forth in Appendix G of the North Carolina Residential Code (NCRC).

Some of the requirements are listed below. Always consult the Town's ordinances and NCRC Appendix G for specific details and alternate methods.

**Building Final Inspection (BX30)** includes, but is not limited to:

**BARRIERS** (provide a sketch of the existing or proposed fence for this property)

- Top of fences or solid barriers shall be 48 inches
- Maximum clearance under the barrier is 2 inches
- Openings must not allow passage of a 4-inch diameter sphere
- Horizontal members of fences must be at least 45 inches apart with 4-inch space between vertical members
- Horizontal members of fences less than 45 inches apart require 1¾ inches or less between vertical members
- Decorative cutouts in barrier must not exceed 1¾ inches
- Solid barriers shall not have protrusions or indentations that can be used for climbing
- Gates shall be self-closing, self-latching device, and open away from pool
- Release mechanism height is required to be at least 54 inches
- Release mechanism heights less than 54 inches require gate and barrier to have openings no greater than 0.5 inches for 18 inches on each side of the mechanism and 3 inches below the top of gate on the pool side
- Doors with pool access require an alarm that activates within 7 seconds, is audible for 30 seconds, and can be heard throughout house
- The alarm shall be listed in accordance with UL 2017
- A deactivation switch is allowed that at 54 inches above the door threshold and lasts for not more than 15 seconds
- Self-closing, self-latching doors may be used instead of an alarm if the opening mechanism is at least 54 inches above the door threshold
- Ladders or steps to an above-ground pool must be capable of being secured, locked, or removed, or have a barrier surrounding the pool access point
- Barriers must be kept 36" away from permanent structures to prevent climbing

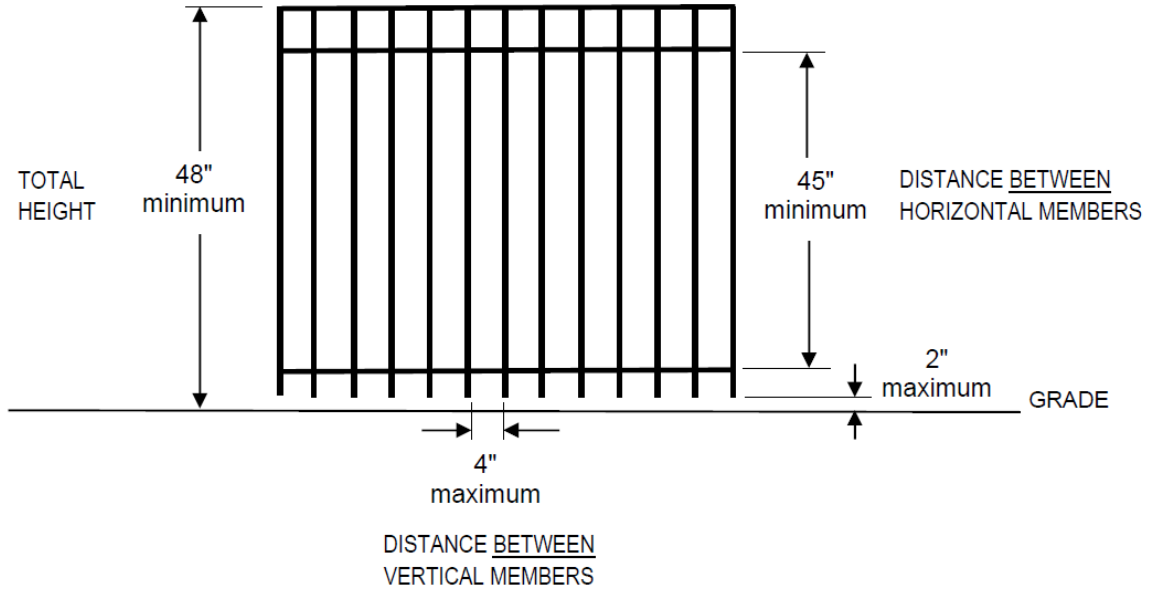
***EXCEPTION: Spas or hot tubs may have a safety cover complying with ASTM F 1346***

**ENTRAPMENT PROTECTION**

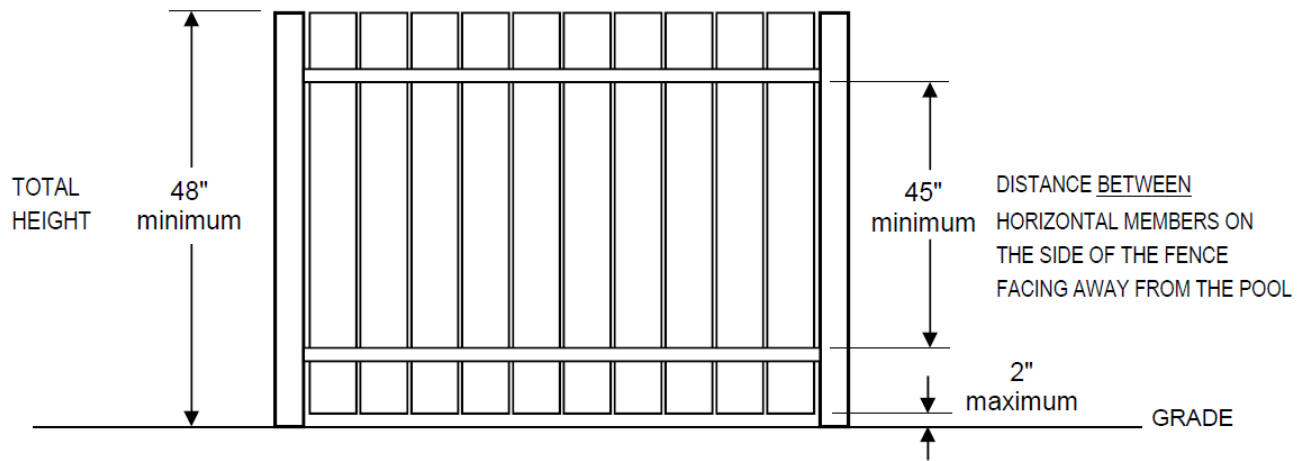
- Suction fittings must comply with ANSI /ASME A112.19.8M or must have covers at least 18 inches x 23 inches
- Safety vacuum release systems must conform to ASME A112.19.17
- Two required suction outlets shall be at least 36 inches apart
- Suction outlets shall be piped so that water is drawn through them simultaneously through a vacuum-relief-protected line to the pump or pumps
- Pool cleaner fittings shall be in an accessible location between 6 inches and 12 inches below the minimum operable water level

# SAMPLE FENCE SKETCH

(see NC State Residential Code Appendix G for a complete list of requirements)



## METAL FENCE (aluminum or wrought iron)



**WOOD FENCE**