

POOLS

- ☐ Permanent (requires a zoning certificate) remains up year round.
 - ☐ Temporary(does not require a zoning certificate) is taken down and removed at the end of the season.
 - ☐ Above ground (construction fence required if pool does not provide its own barrier and must remain in place until a permanent barrier is installed)
 - ☐ height of pool frame
 - ☐ height is adjustable (requires a barrier)
 - ☐ removable ladder
 - ☐ lock up ladder
 - ☐ In ground (construction fence required must remain in place until a permanent barrier is installed)
 - ☐ Are there any overhead wires electrical or communication
(clearance in any direction to the water level, edge of water surface or base of diving board for overhead conductors is 22-1/2 feet)
All wiring above pools must be compliant with the 2005 NEC and the Utility Company.
 - ☐ height of wires
 - ☐ Are there any underground wires located within 5' of the edge of the pool
 - ☐ location of a GFCI receptacle for the pump motor
 - ☐ length of the factory installed cord for the pump motor
(an extension cord cannot be used)
 - ☐ any metal parts (requires bonding)
 - ☐ electrical permit application required pool with pool permit application
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SWIMMING POOLS

Property Owners and Contractors: It is important that you understand your responsibilities as defined in this attachment to your permit.

These items are your responsibility:

1. **Electrical Work:** Electrical permits are required for items such as power to pumps and filters, and pool lighting. An extension cord **cannot** be used. An electrical permit must be obtained by a licensed electrical contractor or the owner/occupant of the single family dwelling. Electrical permits for swimming pools must be obtained **before** or **concurrent** with the building permit.
2. **Fencing:** The pool area must be fenced in, or have a proper barrier before the pool has any water put into it.
 1. Every person owning land on which there is situated a swimming pool shall erect and maintain thereon an adequate enclosure surrounding either the property or pool area. Such enclosure, including the gates, must not be less than forty eight inches high and shall meet all the requirements of the 2006 IRC. The enclosure or fence shall be constructed of durable material, which may be of galvanized steel fabric, metal, wood, masonry or other material that will provide for permanent separation. All posts and fittings used shall be substantially sound. All gates must be self-closing and self-latching.
3. There are inspections that must be made during the construction and a final inspection that must be made before the pool can have water placed into it and used *
4. A Certificate of Use shall be issued upon completion of a final inspection. Failing to have proper inspection and a Certificate of Use prior to the use of the pool may result in daily tickets with a fine of \$100 to \$500.
5. All pools shall have a construction fence (48 inch minimum in height) in place during construction until the permanent barrier is installed.

THE POOL CANNOT BE USED SAFELY UNTIL ALL OF THIS IS DONE.

* A Minimum amount of water may be placed in the pool to hold the liner in place during construction.

SWIMMING POOLS – REQUIRED PERMITS

Definition:

Swimming Pool means and includes any private or public swimming pool, tank, hot tub, or other device that is artificially constructed, to provide recreational facilities for swimming, bathing, or wading, whether of permanent construction or portable in nature, upon any premises, which has a depth at any point in excess of 24 inches, and whether said pool is below ground level, above ground level, or partly above and partly below ground level.

Swimming Pools, Hot Tubs & Spas must conform to the 2006 International Residential Code. The purpose of these requirements is to provide an integrated level of protection against potential swimming pool drownings through the use of physical barriers and warning devices. It is not intended as a substitute for adult supervision of children.

A Swimming Pool permit is required to construct, replace, or install all in-ground and above ground swimming pools, spas or hot tubs. Wading pools less than 24 inches deep do not require a permit.

A site plan must be provided to the Planning and Growth Development department for the required zoning certificate. A zoning certificate is not required for temporary pools (ones that are taken down and stored at the end of the season). The site plan must indicate the following:

- Property lines, easements, right of ways and overhead utilities adjacent to the pool
- Existing structures, fences, retaining walls
- Proposed pool shape, dimension, relation to setbacks, side yards, clearance of existing structures, and proper barriers
- Proposed mechanical equipment
- Proposed deck

A building permit application must be submitted with a structural plan that indicates the pool dimensions, type of construction, details of any deck, and the exact type and dimensions of the barrier to be installed. Include specific details on the gates to be used or the door alarms to be installed.

An Electrical permit is required for items such as power to pumps and filters, and pool lighting. An extension cord **cannot** be used. An electrical permit must be obtained either by a licensed electrical contractor or the owner/occupant of the single family dwelling. Electrical permits for swimming pools must be obtained **before** or **concurrent** with the building permit.

The electrical plan must indicate the following:

- Location of all outlets, conductors, and pool equipment
- Sizing of all conductors- Underground installation must be in galvanized rigid steel or non-metallic conduit with a minimum #12 THWN
- Grounding of all equipment and ground fault interrupters
- Bonding detail of all components including lighting (indicate type of lights)
- Details for the pool cover motor
- Show location of all overhead and underground wires.

A permit for HVAC work shall be required for heated pools.

SWIMMING POOL SAFETY ENCLOSURES

Swimming Pools, Hot Tubs & Spas must conform to the 2006 International Residential Code. The purpose of these requirements is to provide an integrated level of protection against potential swimming pool drowning through the use of physical barriers and warning devices. It is not intended as a substitute for adult supervision of children.

The top of the barrier shall be at least 48 inches above grade measured on the side of the barrier that faces away from the pool. The maximum distance between the bottom of the barrier and the grade is 2 inches.

All above ground pools with sidewalls that are at least four feet high (measured from the top of grade to the top of the pool wall) do not require enclosure by a separate fence as long as the pool has a removable or lock-up ladder except for pools that are adjustable in height. Ladder shall be removed or locked up when not in use.

A deck with stairs down to the ground (around or next to a pool) shall be built with a normal 36 inch high guardrail with pickets not more than 4 inches apart except at the end where the stairs will be located. The guardrail on this end is built 48 inches high. Latch hardware must be located on the pool side of the gate as specified in the 2006 IRC.

Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb the barriers. The purpose of a swimming pool barrier would be defeated if children could climb on benches, planters, pumps, and similar permanent features adjacent to the barrier and gain access to the pool area.

When the house is used as part of the barrier for a pool the protection of all door openings which give access to a swimming pool shall be as follows:

1. Use of an approved power safety cover. OR
2. Doors shall be equipped with an alarm.

Door alarms must produce an audible warning when the door and or its screen are opened.

The alarm shall be listed in accordance with UL 2017.

The audible alarm shall activate within 7 seconds and sound continuously for a minimum of 30 seconds after the door and/or its screen is opened.

The alarm must be capable of being heard throughout the house during normal household activities.

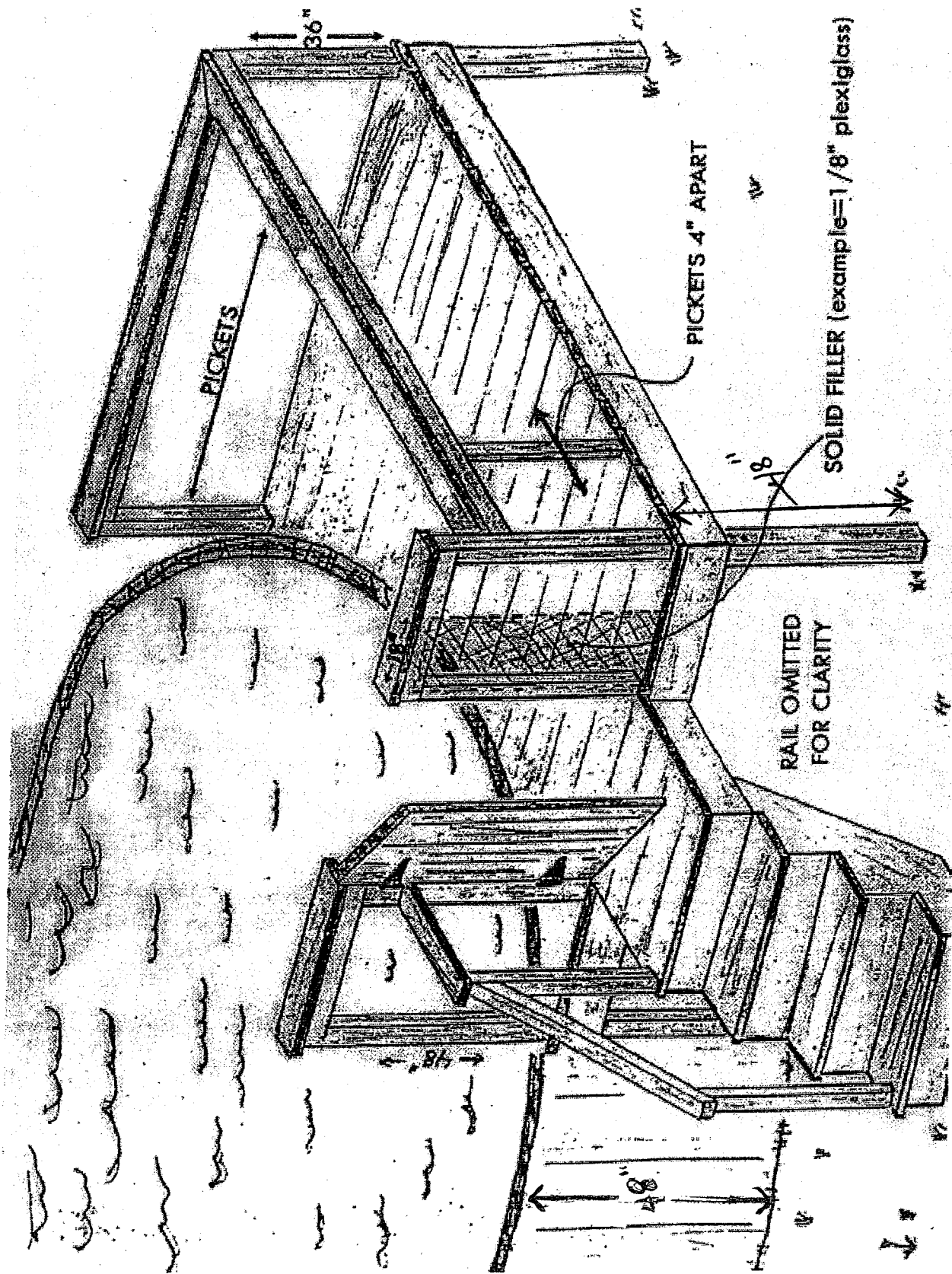
The alarm shall automatically reset under all conditions.

The alarm system shall be equipped with a manual means (touch pad or switch) to temporarily deactivate the alarm for a single opening. Deactivation shall last not more than 15 seconds. Deactivation switches shall be located at least 54 inches above the threshold of the door.

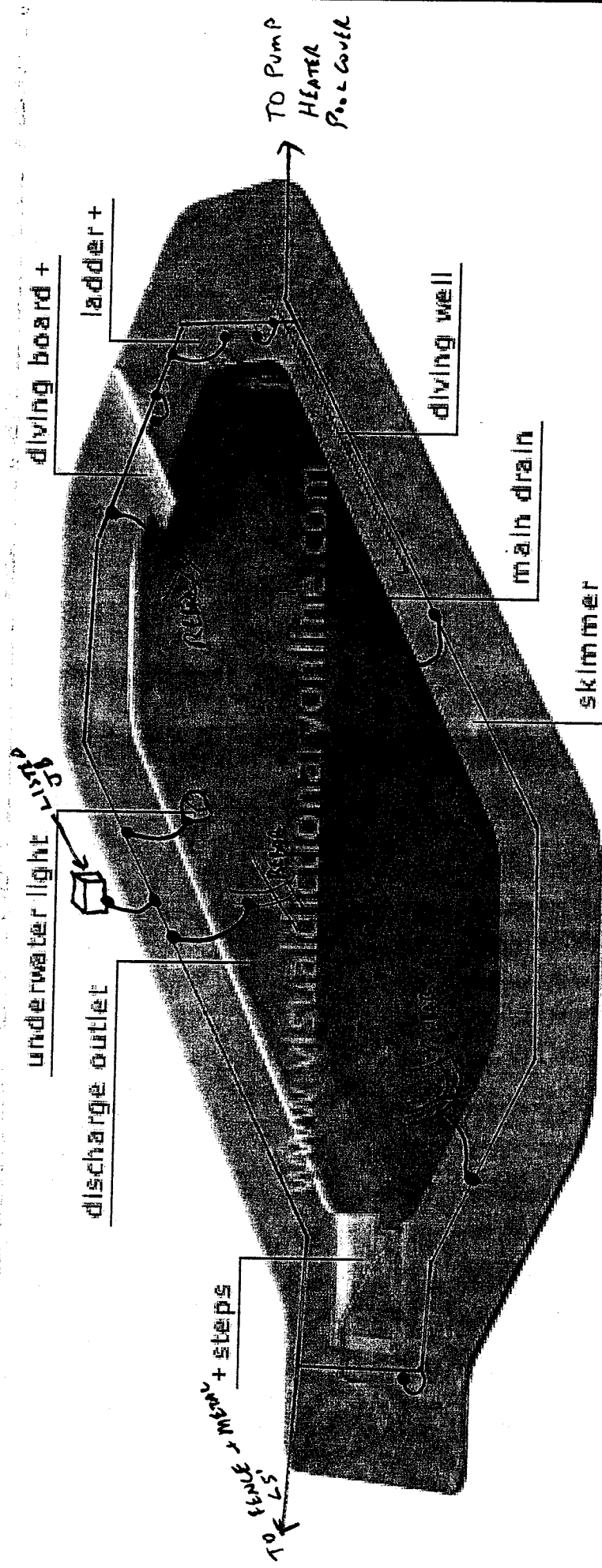
Indoor pools: When a pool is located completely within a house, the walls that surround the pool should be equipped to serve as pool safety barriers.

It is the responsibility of the permit holder of the swimming pool to install all permanent barriers.

It is the responsibility of the pool contractor to inform the new pool owner that the barrier requirements must be maintained.



#8 Solid Bare Copper wire bonds perimeter to pool wall steel at 4 equal distant points. This wire is embedded in pavement or is unpaved-buried 4" to 6" deep. It is run following the perimeter of the pool 18" to 24" from pool wall. May bond other items to it.



Bond: Equipment (pump and heater), metal items within 5' of water, underwater luminaire shell, listed JB connected to shell, ladder, ladder, water (9 sq in), handrails, pool cover motor and frame, all structural steel (if no structural steel, make them install some).

Equipotential Bonding Grid to reduce voltage gradients in area. (lower chance of shock)

_____ Conductive pool shells (concrete, metal) require connection to the grounding/bonding grid. The choices are to connect to the non-encapsulated structural steel of the pool (rebar or mesh) or install a very expensive copper mesh 12" on center with connectors at every cross point. If encapsulated rebar is used, may permit mesh to be overlaid on insulated mesh instead of requiring the copper grid.

_____ The perimeter surfaces of all permanent pools is required to be bonded from the sidewall out 3 feet. If the surface is paved, connect mesh to grid via #8 solid cu wire installed in pour. If not paved or no structural steel then a #8 wire is required to be installed 18" to 24" from pool wall. This wire is embedded in any pavement or buried 4" to 6" deep below grade if not paved. The wire shall follow the perimeter all the way around the pool.

_____ All metallic components of pool structure, including reinforcing metal (unless encapsulated).

_____ All metal shells of underwater lighting, including brackets of no-niche luminaires.

_____ All metal fittings with or attached to pool structure. Isolated parts not over 4" in any dimension and do not penetrate into the pool structure more than 1" shall not require bonding.

_____ Electrical equipment, including circulating pumps, covers, heaters, etc. If double insulated pump, then leave a #8 (solid, CU and connected to the grid) coiled at the pump location for future pump change out.

_____ Pool water—An intentional bond with a conductive surface area of 9 square inches or more in contact with the pool water shall be bonded to the grid. A brass or stainless nipple with a water pipe ground clamp is sufficient provided the nipple is $\geq \frac{3}{4}" \times 4"$ or $\geq \frac{1}{2}" \times 6"$. Handrails and other items in contact with water that are bonded count as this bond.

Storable Pool

_____ Power to pump listed for storable pool (cord may be 25' long, no grounding terminal wanted as pump should be double insulated) is supplied from a GFCI protected outlet that is $\geq 6'$ from water.

_____ Luminaires in storable pools must be listed for the purpose. Some requirements are no exposed metal parts, polymeric lens and body, an integral GFCI that opens the neutral as well built into the assembly. They may be 15 volts or less or between 15 and 150 volts to ground. Follow manufacturer's installation instructions.

Definitions from Article 680 National Electrical Code

Permanently Installed Swimming, Wading, Immersion, and Therapeutic Pools. Those that are constructed in the ground or partially in the ground, and all others capable of holding water in a depth greater than 1.0 m (42 in.), and all pools installed inside of a building, regardless of water depth, whether or not served by electrical circuits of any nature.

Storable Swimming, Wading, or Immersion Pool. Those that are constructed on or above the ground and are capable of holding water to a maximum depth of 1.0 m (42 in.), or a pool with nonmetallic, molded polymeric walls or inflatable fabric walls regardless of dimension.

Checklist:

_____ Permanently Installed Pool or _____ Storable pool (see reverse for definitions)

_____ Pool Placement on lot. Has location been JULIED?

Minimum of 5 foot clearance from underground wires to pool sidewalls.

Clearance to overhead wires? (22.5' min to wire from water, 14.5' from dive tower)

Zoning placement – proximity to lot line, front yard, back yard, etc.

Permanently Installed Pool (All Indoor pools and Outdoor over 42" not vinyl or nonconductive)

_____ Wiring method OK? Rigid metal conduit, IMC, PVC, or (MC approved for location). EMT OK on or within buildings. Sealtight OK for flexible connections only. Must have #12 or larger equipment grounding conductor (cannot rely on raceway as a ground). For single family, any permitted wiring inside is OK (romex up to point exits bldg is ok). Feeders are required to be in a conduit system (see the code if have subpanel for list)

Cord and plug connections OK (cord length 3') on utilization equipment other than lights (hardwired).

_____ No GFCI protected wiring or wiring under 15 volts shall occupy same raceway as non-GFCI protected wiring. Do not want to intermingle

_____ Equipment receptacles should be 10' from water. They may be 6' from water if (1) a single receptacle. (2) A locking configuration (3) Grounding type (4) Have GFCI protection

Other receptacles must be 6' from inside walls. Dwelling unit pools require a receptacle within 20' of the water and not more than 6'6" above grade. All receptacles within 20' shall be GFCI protected (indoor and outdoor pools).

_____ 120 and 240 volt pump motors supplied by 15 and 20 amp breakers require GFCI protection.

_____ Luminaires. Outdoor Lights above pool or within 5' of sidewall shall be $\geq 12'$ above water. Indoor-Totally enclosed luminaires permitted $\geq 7' 6''$ above water. Fans permitted if listed for porch or patio. Light outlets between 5' and 10' of sidewalls must be GFCI protected. Existing lights permitted if GFCI and $\geq 5'$ above water. No switches permitted closer than 5' to water. Permanent barrier ok to separate (wall or door).

_____ Underwater Luminaires. If over 15 volts, require GFCI protection. Cannot be over 150 volts. Top of wall luminaire must be 18" below water. Bottom facing up must be listed and guarded. Check manufacturers installation instructions for specific requirements.

Wet Niche Fixture: The forming shell must have terminals inside and out for #8 copper. Conduit between the shell and listed junction box shall be approved non-corrosive (brass or PVC or other approved). If PVC, then a #8 **insulated** solid or stranded conductor required to be run inside the conduit between listed box and shell. The termination inside the shell must be potted with listed potting compound. Listed junction box and exterior of shell should be connected to the #8 solid copper bonding grid wire (see below for Grid).

Bottom of listed Junction Box shall be greater of 8" above water or 4" above pool deck/grade. Box shall be located at least 4' from pool wall. If low voltage (< 15 volts) the box may be flush with deck if filled with potting compound. The wet niche fixture must be removable for inspection/relamping with sufficient cord to place on deck out of water.

Dry Niche Fixture: not common, see NEC for specifics.

Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device.

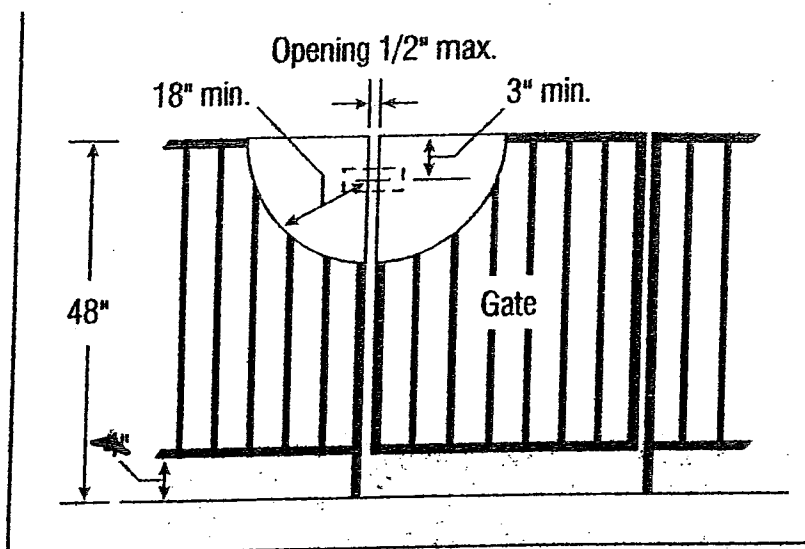
A self-closing pedestrian gate must open away from the pool because if the latch fails to operate, a child pushing on the gate will not gain immediate access to the pool.

Large non-pedestrian gates are not required to be self-closing (these gates are typically operated by persons other than small children).

When the release mechanism of the self-latching device is located less than 54 inches from the bottom of the gate, the release mechanism and openings shall comply with the following:

The release mechanism shall be located on the pool side of the gate at least 3 inches below the top of the gate AND

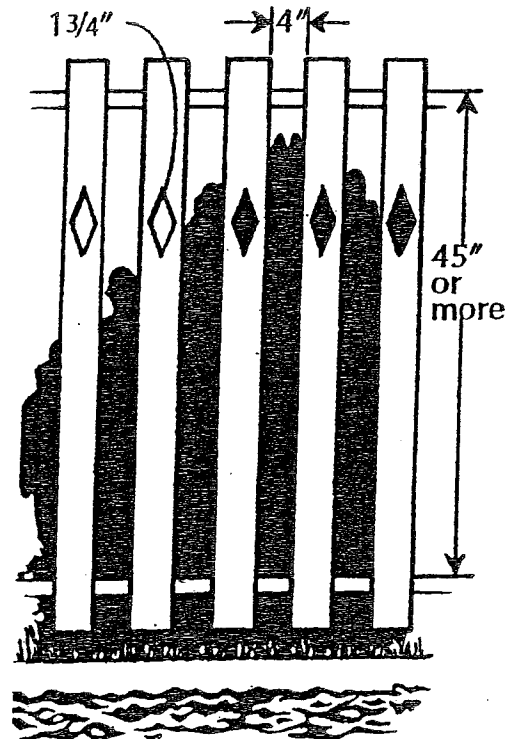
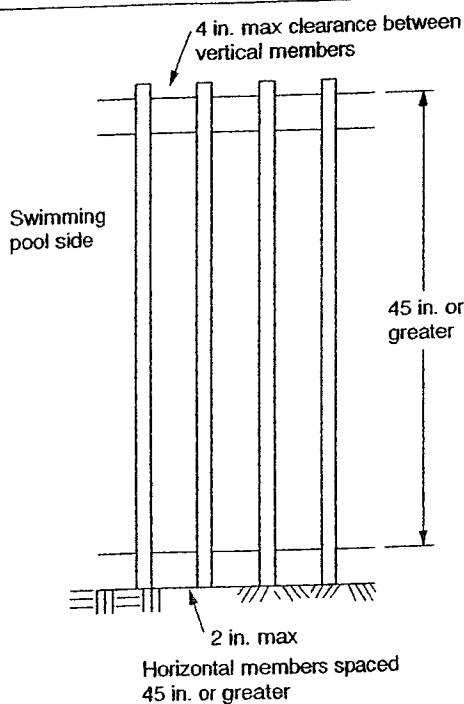
The gate and barrier shall have no openings greater than $\frac{1}{2}$ inch within 18 inches of the release mechanism.



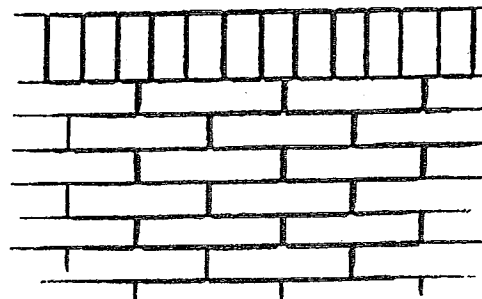
Use this as a guide when the release mechanism is located less than 54 inches from the bottom of the gate.

Where the barrier has horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches, the horizontal members shall be located on the swimming pool side and the spacing between the vertical members shall not exceed 1-3/4 inches. When the distance between the tops of the horizontal members is more than 45 inches spacing between vertical members shall not exceed 4 inches.

Openings in the barrier shall be less than 4 inches.

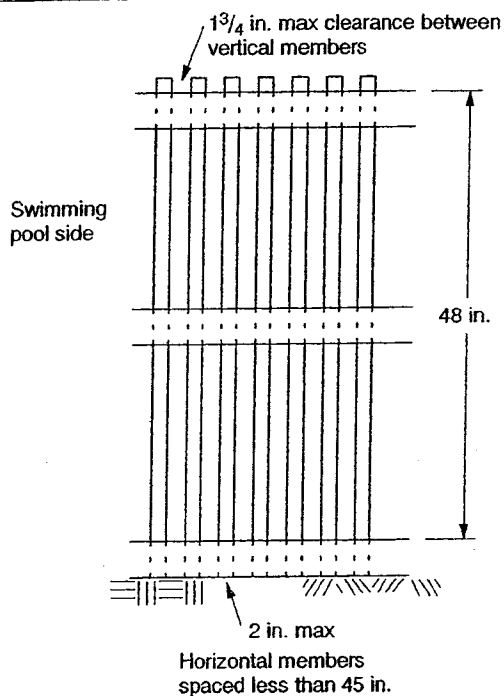


Solid barriers with out openings (masonry or stone) shall not contain indentions or protrusions except for normal construction tolerances and tooled joints. This provision reduces the potential for gaining a foothold and climbing the barrier.

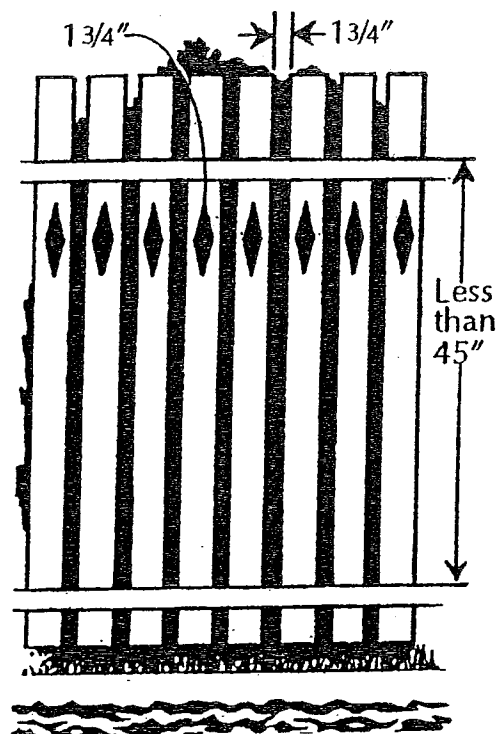


Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to climb the barriers. The purpose of a swimming pool barrier would be defeated if children could climb on benches, planters, pumps, and similar permanent features adjacent to the barrier and gain access to the pool area.

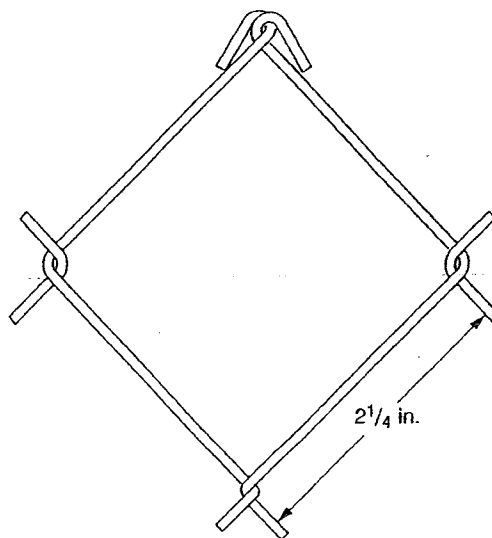
The more stringent 1-3/4 inch provision for spacing between vertical members applies when the spacing between horizontal members is less than 45 inches. It acknowledges the potential for a child to gain both a handhold and a foothold by limiting the space between the vertical members on the same barrier.



Lattice fences, the maximum opening formed by the diagonal members shall not be more than 1-3/4 inches.



Maximum mesh size for chain link fences shall be 2-1/4 inches. The mesh size is permitted to be larger if slats are used to reduce the mesh openings to 1-3/4 inches in order to reduce the potential for a child to obtain a foothold or handhold.



For SI: 1 inch = 25.4 mm.

Figure AG105.2(3)
CHAIN-LINK FENCE MESH FOR PRIVATE SWIMMING POOLS