



CITY OF DERBY  
BUILDING DEPARTMENT  
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POOL INFORMATION

The following may not be all-inclusive of your project.  
Always reference the latest adopted State Building Code.

General:

- Obtain Zoning, Sewer, Tax Approvals (Etc.)
- Pool equipped with filtration system.

Barriers, Gates and Doors Enclosing Pool: (See Drawings and CSBC)

- Provide at least one means of egress from the pool enclosure. (ANSI/NSPI-4-1999)
- Gates shall open outward (away from pool), and be self-closing/self-latching.
- Gate Latches less than 54" above ground shall be inside gate and gate materials shall have openings 1/2" maximum within 18" of the latch. Latch shall not be less than 3" below the top of gate.
- Gates (Other than Pedestrian Access Gates) shall be self-latching.
- Doors with direct access to the pool shall be equipped with an alarm and be listed and approved in accordance with UL 2017. – Deactivating alarm switches shall be located at least 54" above the floor.
- Barrier (fence, pool wall, etc.) shall not be less than 48" in height. (IRC Section AG105)
- Openings shall not allow passage of a 4" sphere.
- Horizontal rails less than 45" apart on inside barrier. No greater than 1-3/4" vertical spacing.
- Horizontal rails spaced 45" or more vertical/pickets less than 4".
- Maximum 2-1/4" square chain link mesh openings.
- Maximum 1-3/4" diagonal openings. (ie. Lattice, Chain link with slats, etc.)

Electrical (See Drawings)

- Pump receptacle shall be GFCI, single, grounding and locking type. Shall be located within 6'-10' from inside wall of pool.
- Pump receptacle grounding conductor shall not less than #12AWG. All exterior wiring shall be rated for that use and the receptacle grounding conductor must be insulated. (Romex NOT Allowed outside of structure)
- At least one GFCI 125 volt receptacle shall be located between 6'- 20' from the inside pool walls. This receptacle shall be on a general-purpose branch circuit.
- All light fixtures located 5'- 10' from pool shall be GFCI protected.
- Switches shall not be located within 5' horizontally from pool (Unless located behind solid barrier.)
- Maximum pool equipment cord length is 3". (Except for underwater lighting fixtures.)
- Pool Motor Branch Circuit Burial Requirements for Conduit
  1. Rigid Metal Conduit – Not less than 6"
  2. Intermediate Metal Conduit – Not less than 6"
  3. Rigid Non-Metallic Conduit – Not less than 18"
- Bonding Required - #8 Solid Copper For the Following:
  1. Structural Reinforcing (rebar) of concrete pool.

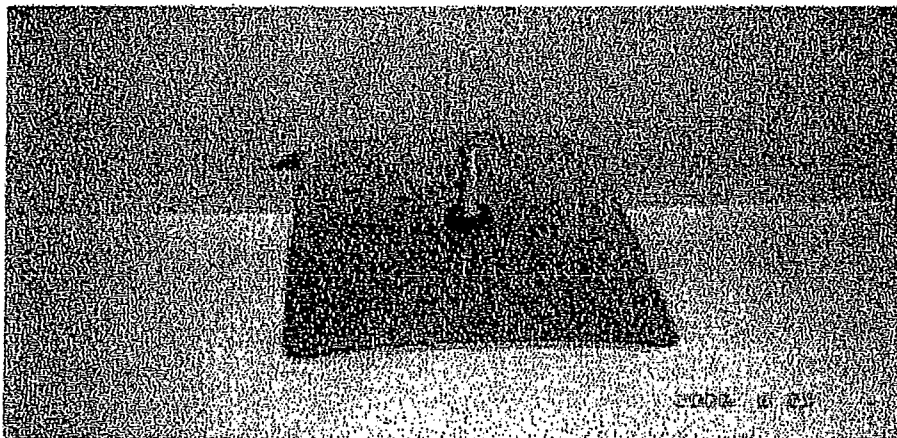
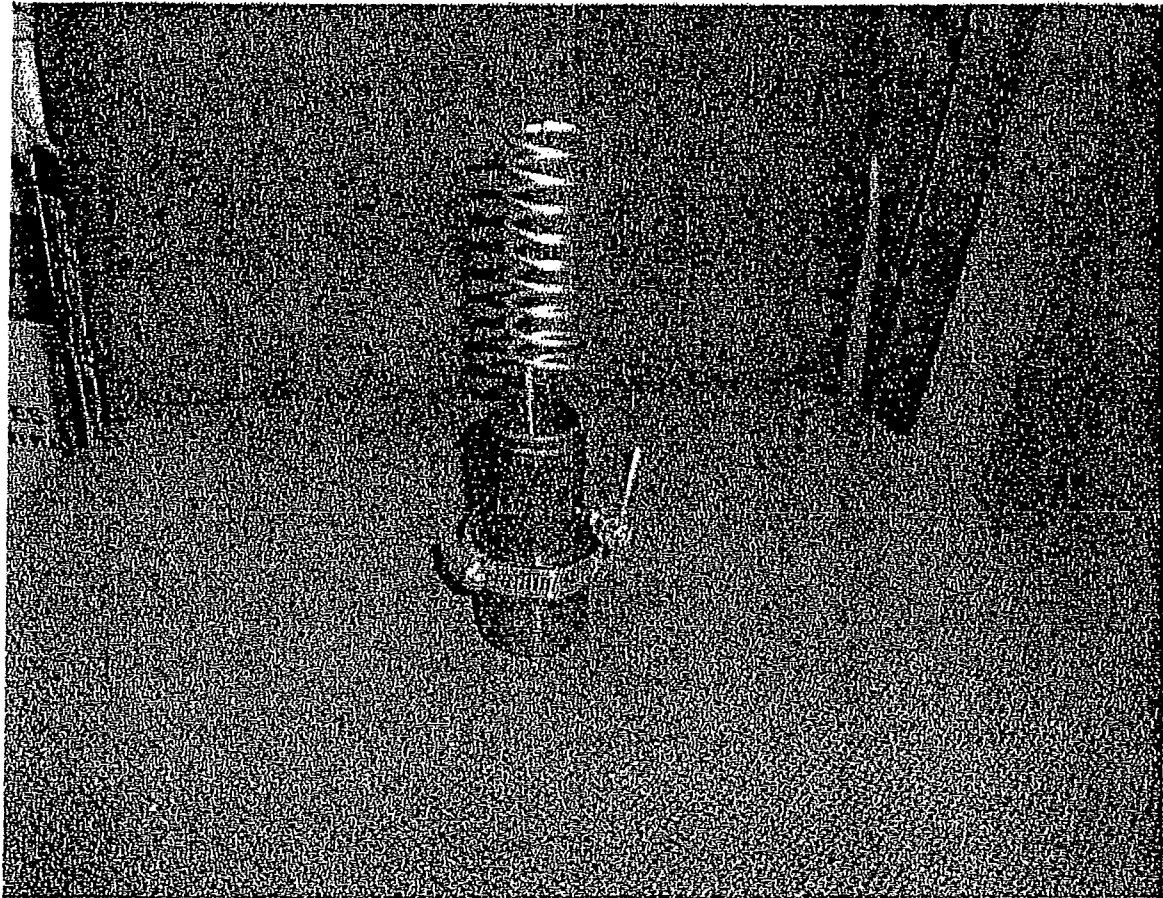
2. Walls of bolted or welded metal pools.
  3. All metallic parts of pool structure.
  4. All fixed metal parts within 5' horizontally from the pool edge.
  5. All pump motors, filter casings and other metallic electrical equipment associated with the pool.
  6. Provide bonding grid with four uniformly spaced points of attachment. # 8 Solid copper conductor 18" to 24" from the pool wall, 4" to 6" below grade.
  7. Pool water heaters bonded and installed per manufacturer.
  8. Pool water bond with conductive area of 9 square inches in contact with pool water.
- Time Clock for pool filter motor. - CSBC N1103.83
  - Pool Alarm Required – CSBC AG105.7 CT CGS 29-265a
  - Pool Heater – Provide On/Off Switch. If gas, no continuously burning pilot (N1103.8.1)

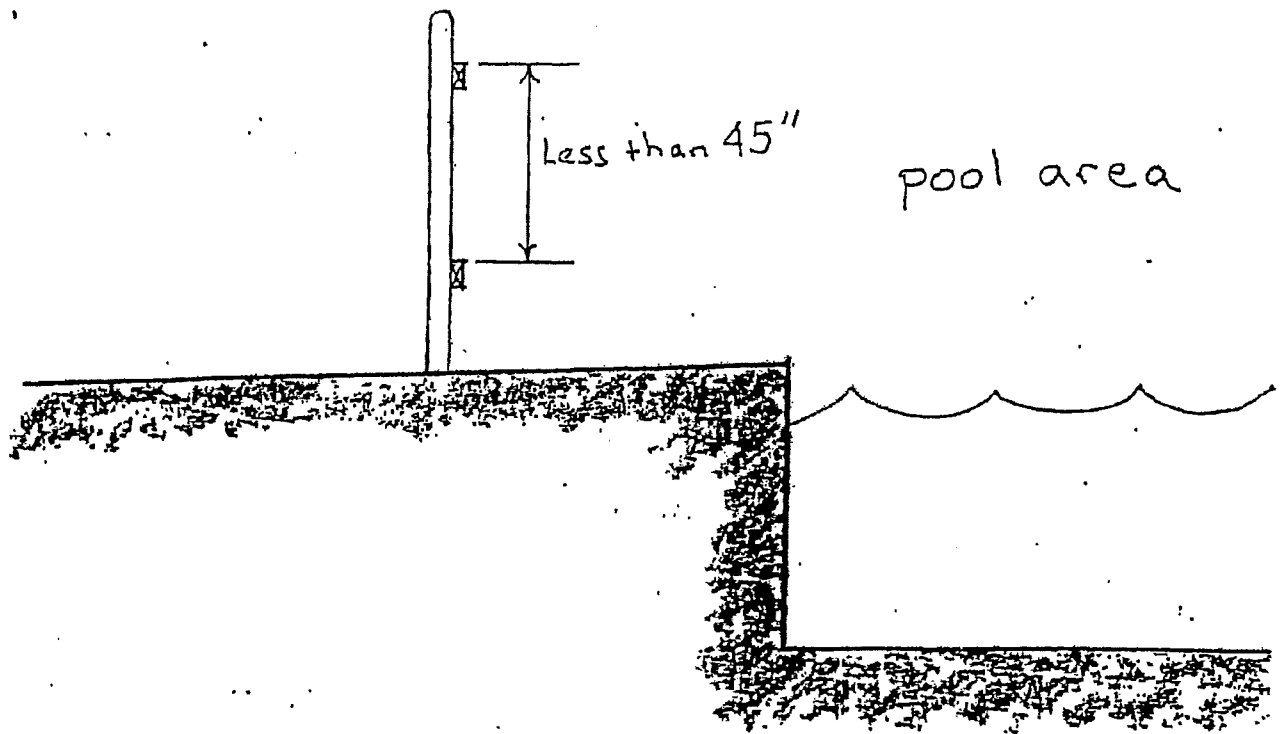
## Equipotential Bonding

You'll bury a continuous loop of 8 AWG solid copper conductor around the pool <sup>680.26(B)(2)(b)(1 & 2)</sup>. The loop should be 4-6" deep <sup>680.26(B)(2)(b)(5)</sup>, and between 18-24" from the pool <sup>680.26(B)(2)(b)(4)</sup>. You'll then bond the frame of the pool to this loop, at 4 uniformly spaced points <sup>680.26(B)(2)</sup>. Next you'll bond the pool water to the loop, using a special bracket on the filter basket <sup>680.26(C)</sup>. Finally, the loop is bonded to the filter motor <sup>680.26(B)(6)</sup>.

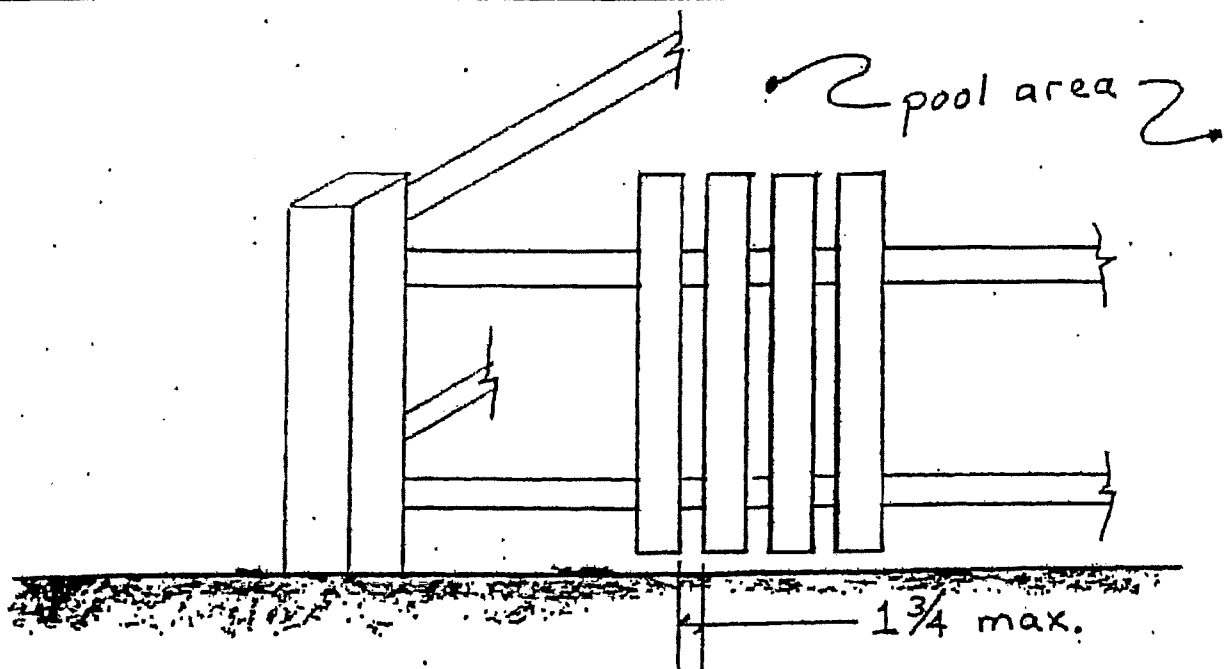
### Additional items to be bonded

- Metal ladder <sup>680.26(B)(5)</sup>
- Concrete pads within 3' of the pool <sup>680.26(B)(2)</sup>
  - Underwater Lighting <sup>680.26(B)(4)</sup>
  - Underwater Audio Equipment <sup>680.27(A)</sup>
- Electrically Operated Pool Covers <sup>680.27(B)</sup>
  - Deck Area Heating <sup>680.27(C)</sup>

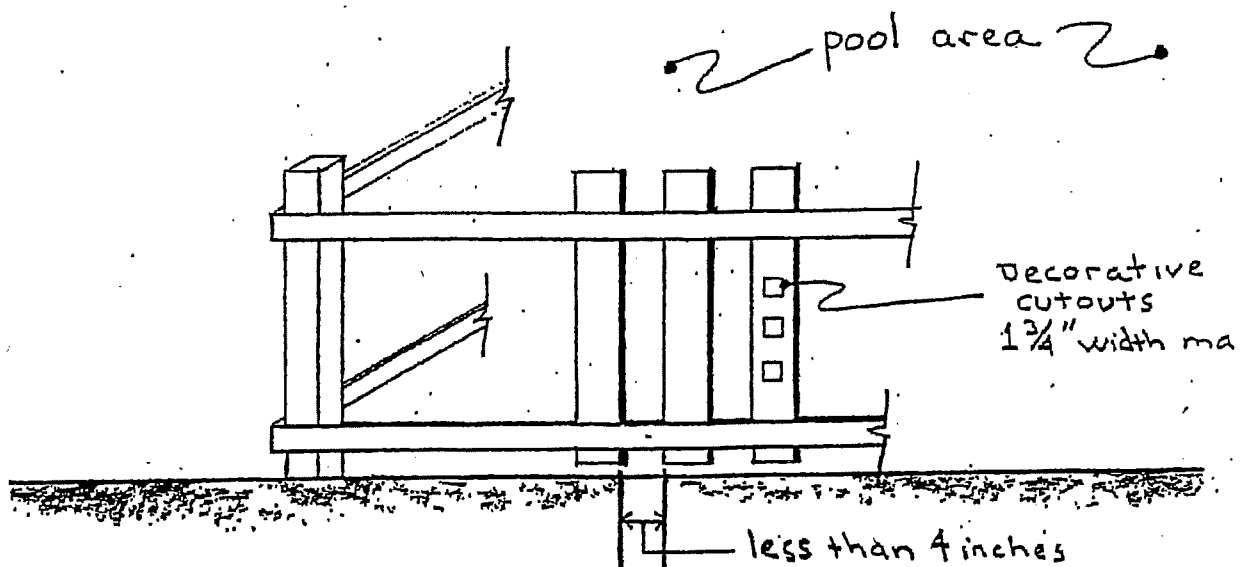
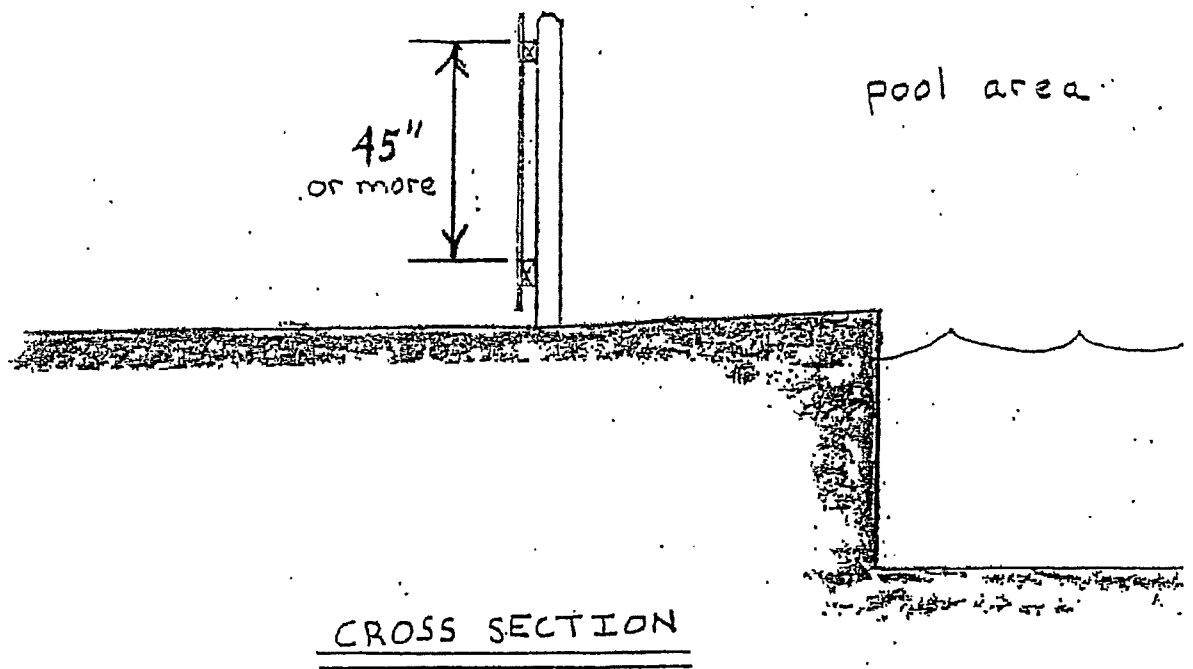




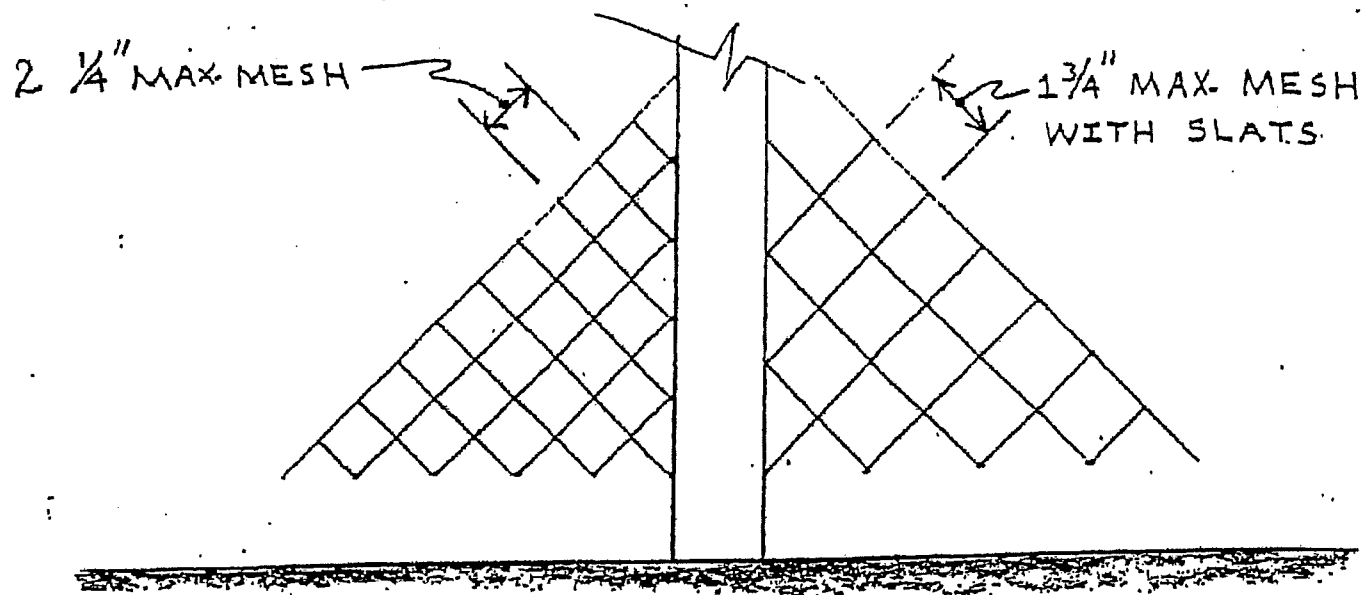
CROSS SECTION



ISOMETRIC

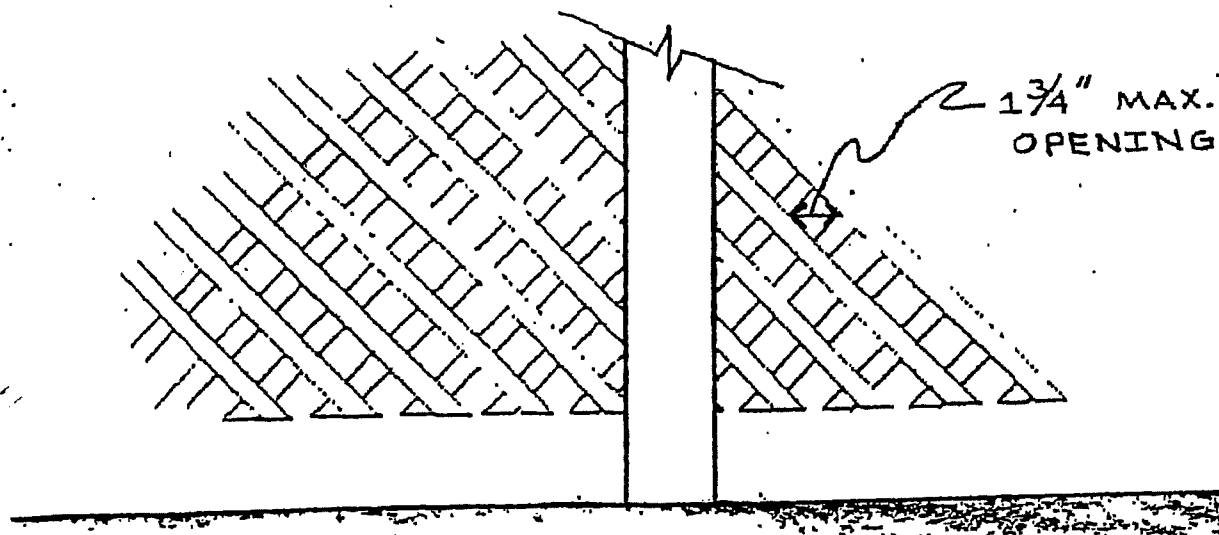


## CHAIN LINK FENCE



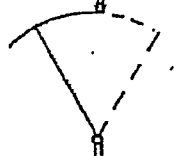
## ELEVATION

## LATTICE FENCE



## ELEVATION

ACCESS GATE OTHER  
THAN PEDESTRIAN  
ACCESS GATE



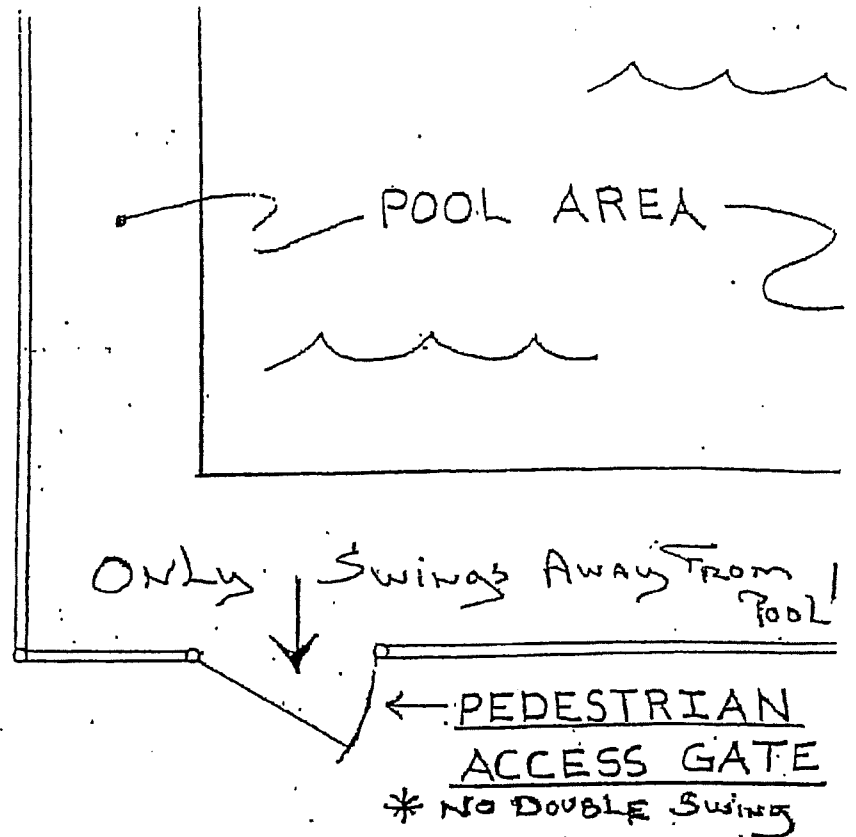
HOUSE

POOL AREA

SHALL: COMPLY  
- EQUIPPED TO ACCOMMODATE A  
LOCKING DEVICE,  
- SELF-LATCHING.

SITE PLAN





SHALL: COMPLY

- EQUIPPED TO ACCOMODATE A LOCKING DEVICE,
- OPEN OUTWARDS AWAY FROM POOL,
- SELF-CLOSING,
- SELF-LATCHING.

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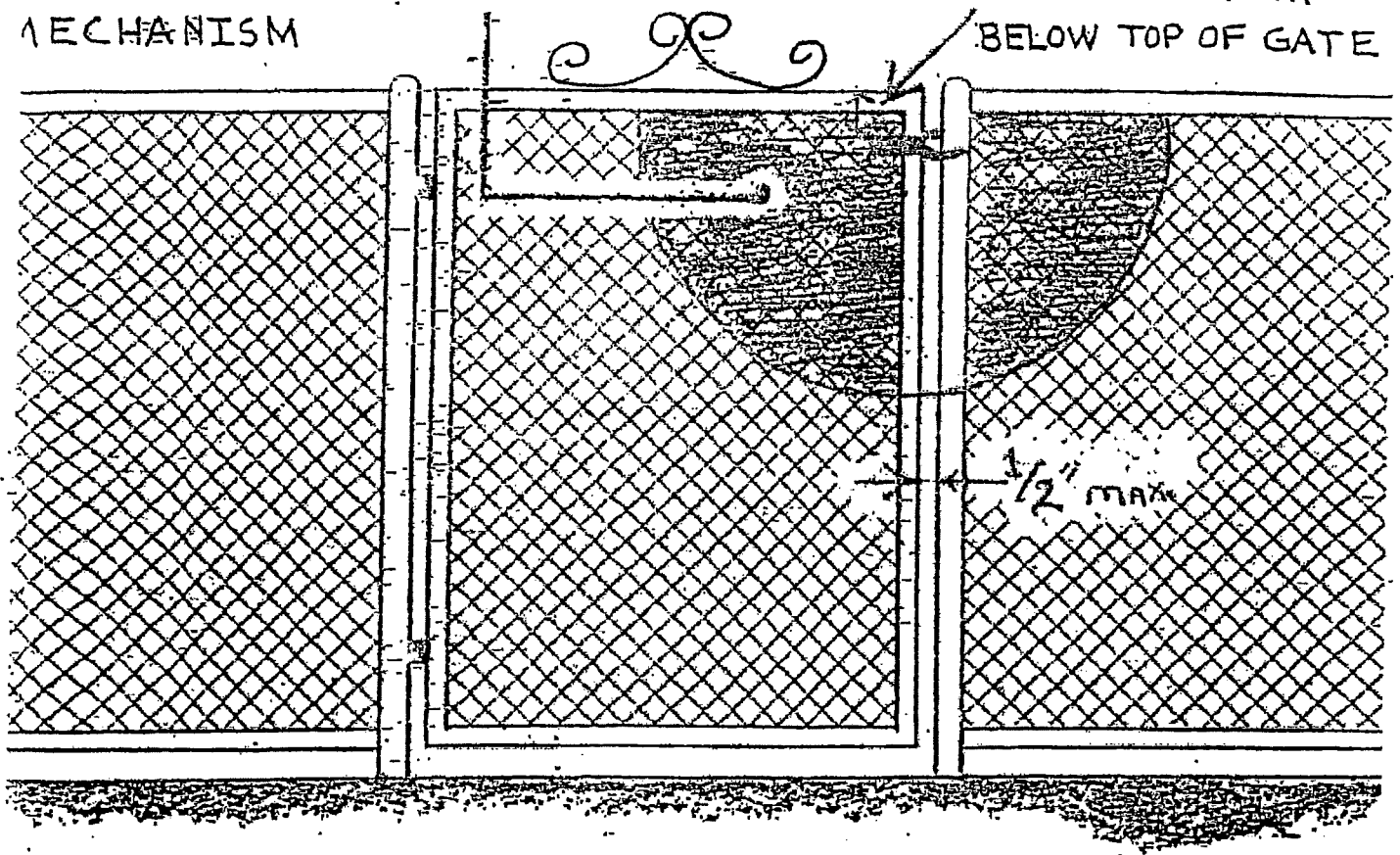
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SITE PLAN

ACCESS GATE OR PEDESTRIAN ACCESS GATE

1/2" MAXIMUM OPENING WITHIN  
18" OF THE RELEASE  
MECHANISM

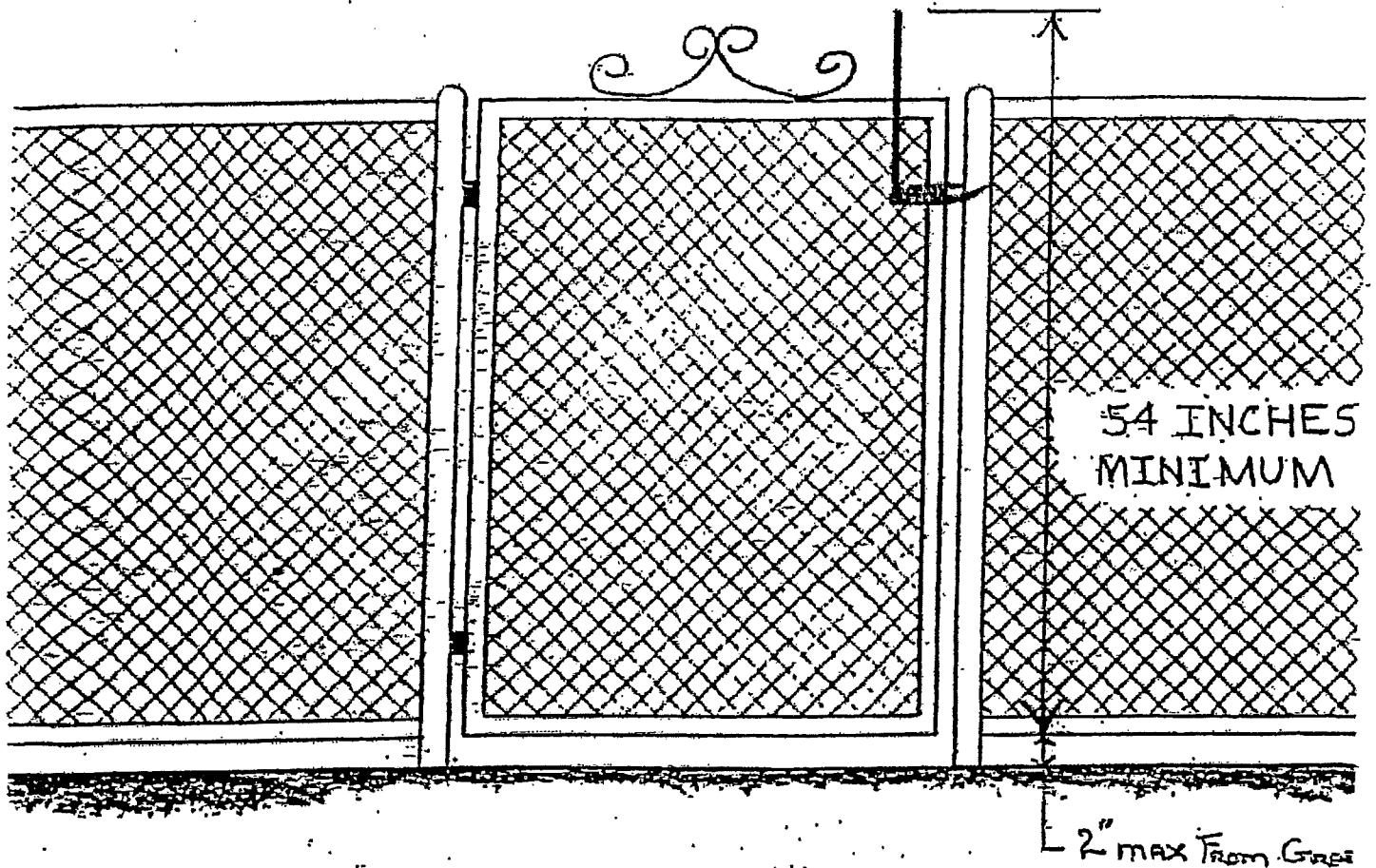
3" MINIMUM  
BELOW TOP OF GATE



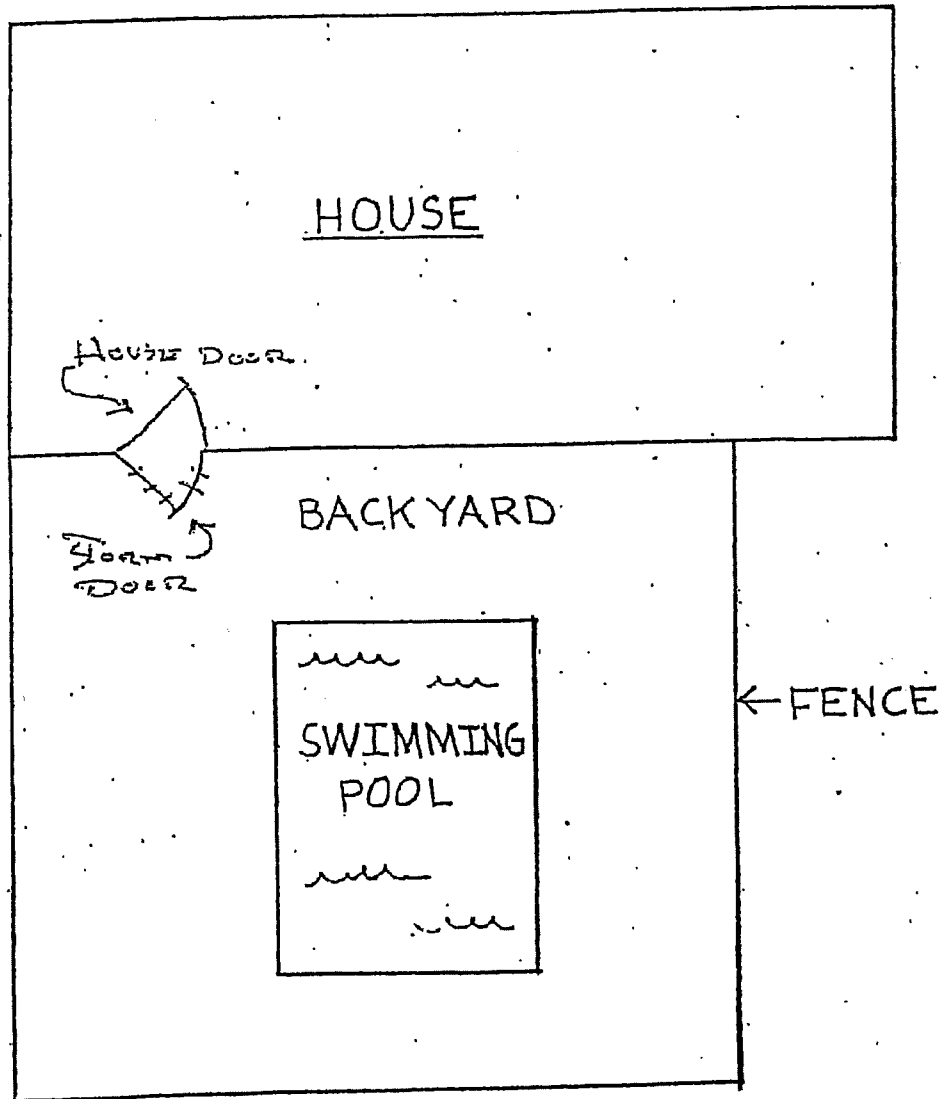
INSIDE POOL AREA ONLY

ELEVATION

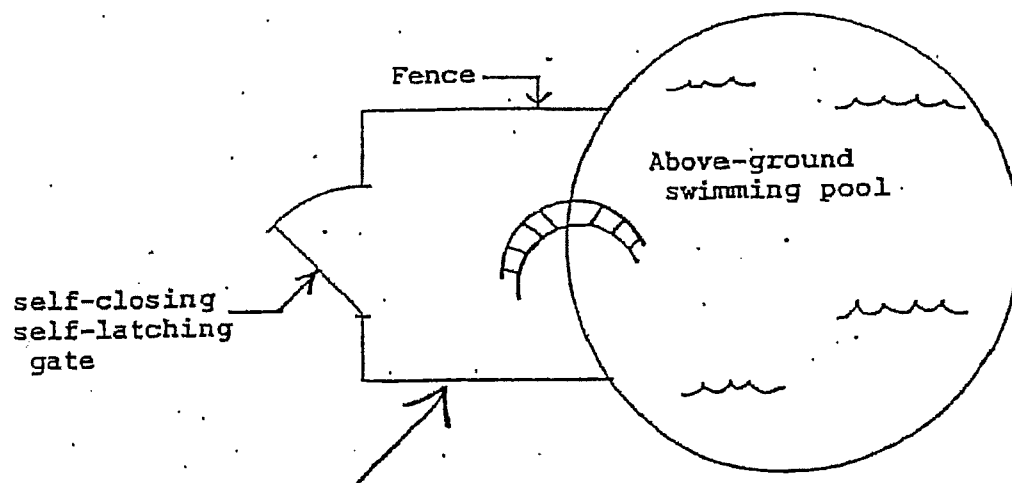
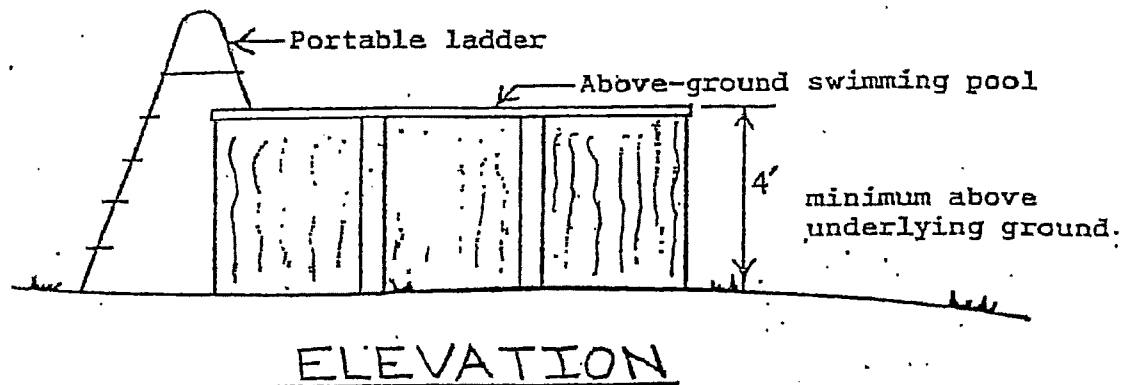
ACCESS GATE OR PEDESTRIAN ACCESS GATE

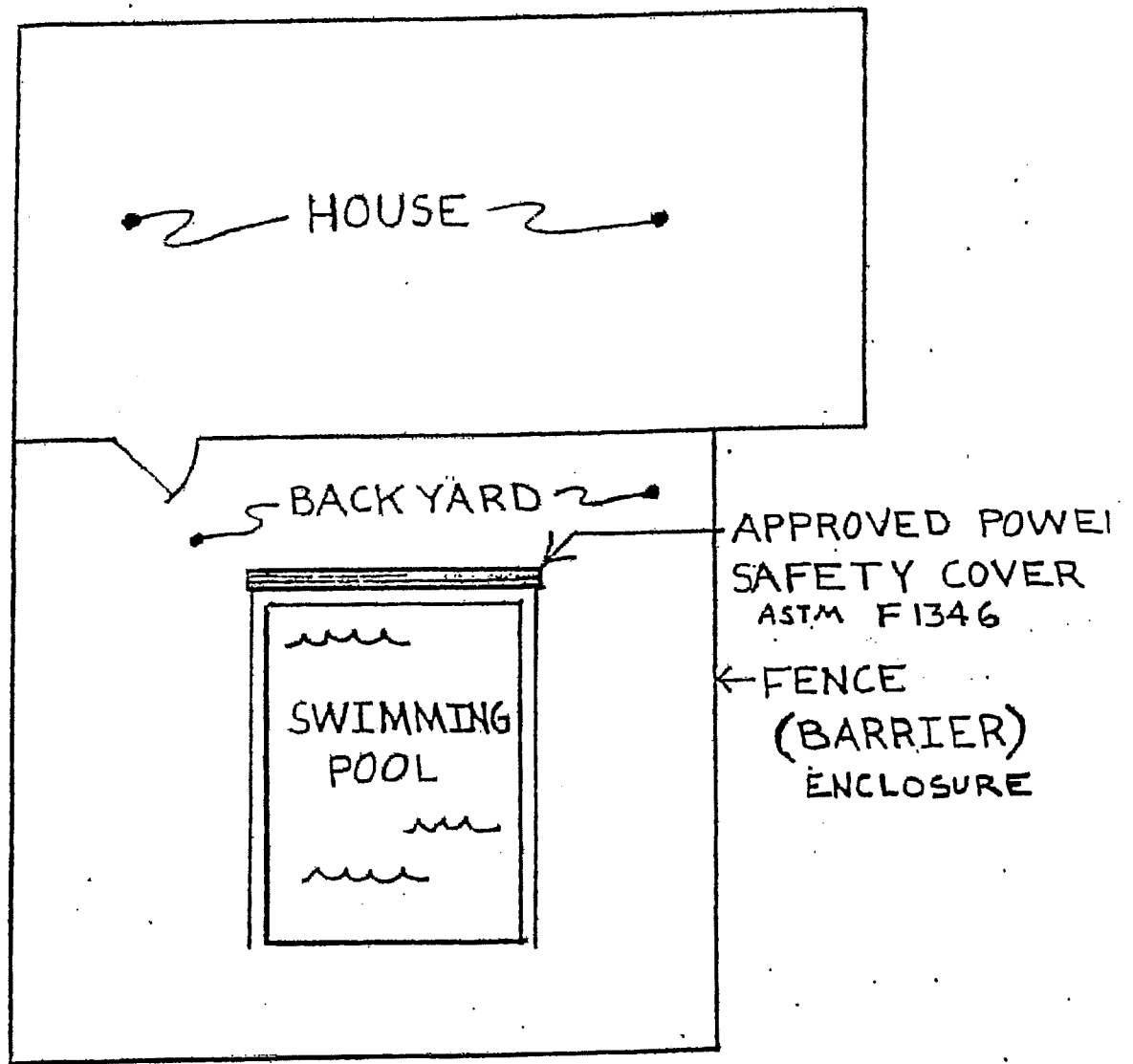


ELEVATION



SITE PLAN

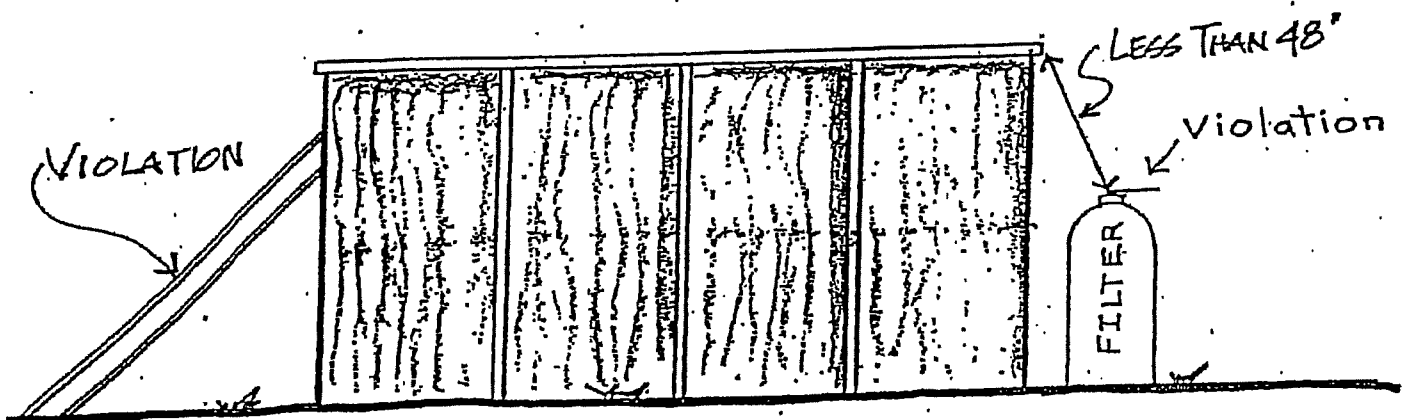




SITE PLAN

"PROHIBITED LOCATIONS"

ABOVE GROUND SWIMMING POOL



ELEVATION

ADDED - 5/10/02

ALARM  
DEACTIVATION SWITCH  
OR TOUCHPAD

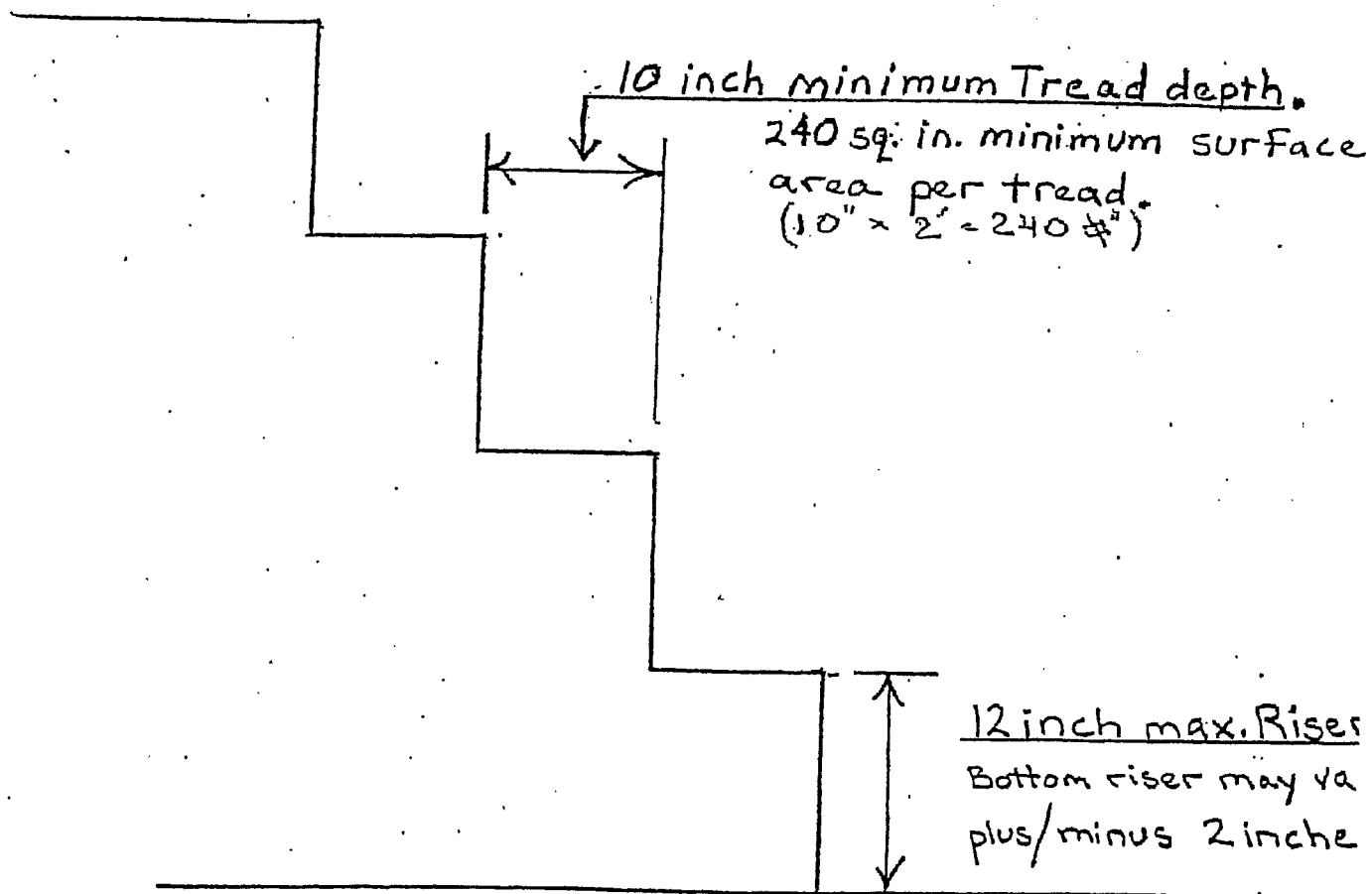
54" MINIMUM

ELEVATION

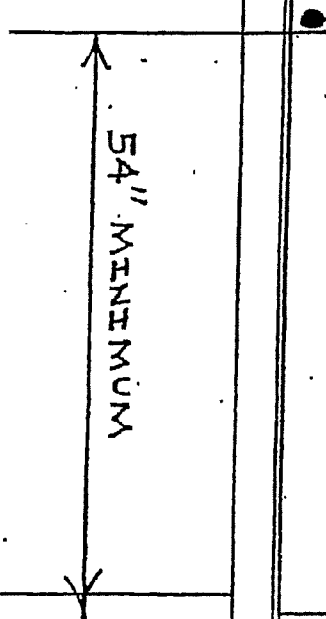


# PUBLIC AND PRIVATE SWIMMING POOLS

## Steps and Ladders



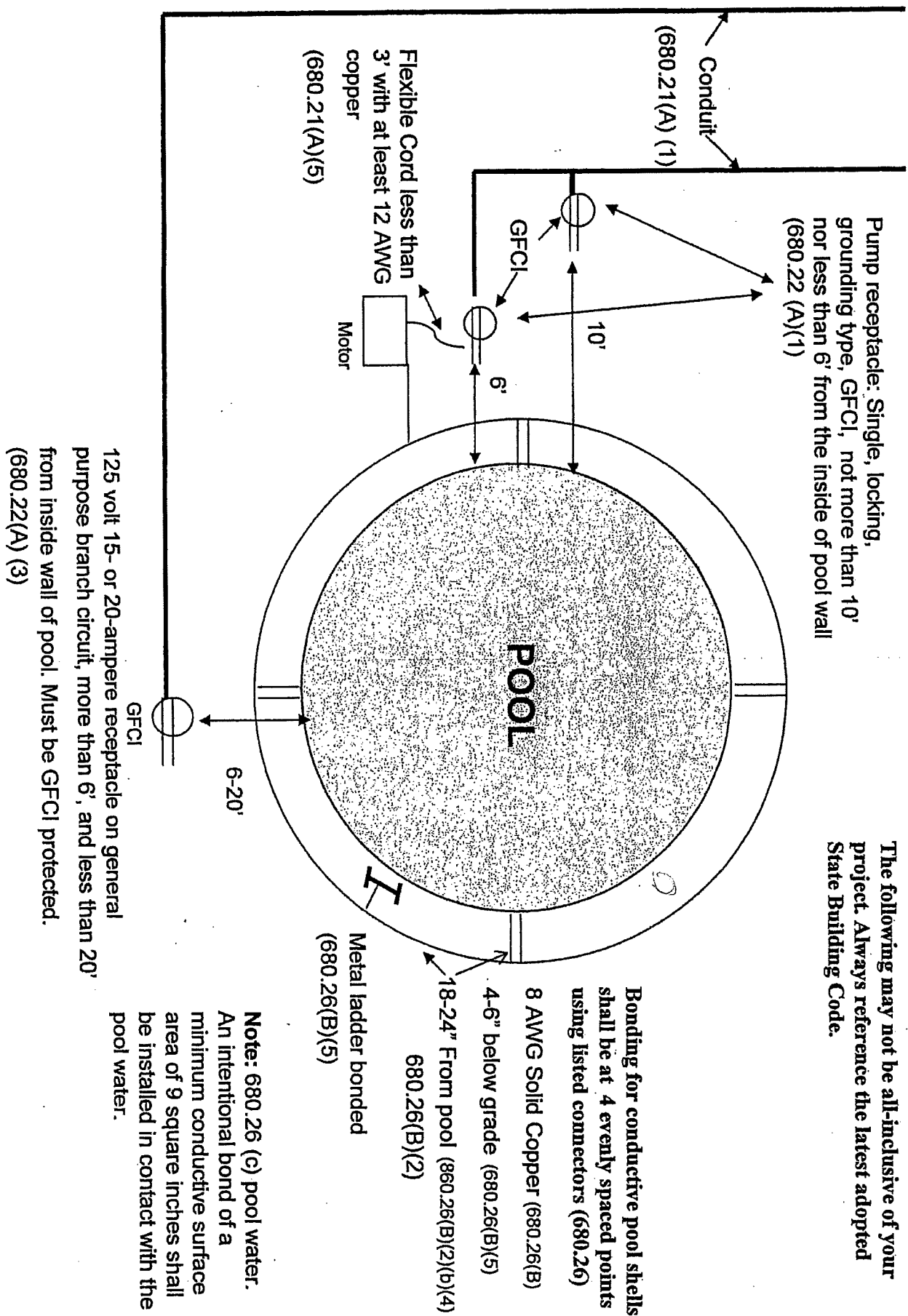
SELF-CLOSING AND  
SELF-LATCHING DEVICE  
SWING AWAY FROM POOL



ELEVATION

## Above Ground Pools (2011 NEC)

The following may not be all-inclusive of your project. Always reference the latest adopted State Building Code.



## **ENERGY CODE REQUIREMENTS FOR POOL**

**N1103.8 Pools.** Pools shall be provided with energy conserving measures in accordance with Sections N1103.8.1 through N1103.8.3.

**N1103.8.1 Pool heaters.** All pool heaters shall be equipped with a readily accessible on-off switch to allow shutting off the heater without adjusting the thermostat setting. Pool heaters fired by natural gas or LPG shall not have continuously burning pilot lights.

**N1103.8.2 Time switches.** Times switches that can automatically turn off and on heaters and pumps according to a pre-set schedule shall be installed on swimming pool heaters and pumps.

**Exceptions:**

1. Where public health standards require 24- hour pump operation.
2. Where pumps are required to operate solar- and waste-heat-recovery pool heating systems.

**(Amd) N1103.8.3 Pool covers.** Heated pools shall be equipped with a vapor retardant pool cover on or at the water surface. Pools heated to more than 90 degrees F (32 degrees C) shall have a pool cover with a minimum insulation value of R-12.

**Exception:** Pools deriving more than 60 percent of the energy for heating from site-recovered energy or solar energy source.

## **SECTION AG108 STANDARDS**

### **AG108.1 General.**

#### **ANSI/NSPI**

ANSI/NSPI-3-99 Standard for  
Permanently Installed Residential Spas.....AG104.1

ANSI/NSPI-4-99 Standard for Above-ground/  
On-ground Residential Swimming Pools.....AG103.2

ANSI/NSPI-5-2003 Standard for  
Residential In-ground Swimming Pools.....AG103.1

ANSI/NSPI-6-99 Standard for  
Residential Portable Spas.....AG104.2

#### **ANSI/APSP**

ANSI/APSP-07-06 Standard for Suction  
Entrapment avoidance in Swimming Pools,  
Wading Pools, Spas, and Hot Tubs and  
Catch Basins.....AG106.1

#### **ASCE**

ASCE/SEI-24-05 Flood Resistant  
Design and Construction.....AG103.3

#### **ASTM**

ASTM F 1346-91 (2003) Performance  
Specification for Safety Covers and Labeling  
Requirements for all Covers for swimming Pools,  
Spas and Hot Tubs.....AG105.2, AG105.5

#### **UL**

UL 2017-2000 Standard for General-purpose  
Signaling Devices and Systems- with Revisions  
Through June 2004.....AG105.2

**(ADD) AG105.6 Temporary enclosure.** A temporary enclosure shall be installed prior to the electrical bonding inspection of any in-ground swimming pool unless the permanent barrier specified in Section AG105.2 is in place prior to the commencement of installation. The temporary enclosure shall be a minimum of 4 feet (1219 mm) in height, shall have no openings that will allow passage of a 4-inch sphere and shall be equipped with a positive latching device on any openings.

**(ADD) AG105.7 Pool alarm.** Pursuant to section 29-265a of the Connecticut General Statutes, no building permit shall be issued for the construction or substantial alteration of a swimming pool at a residence occupied by, or being built for, one or more families unless a pool alarm is installed with the swimming pool. As used in this section, "pool alarm" means a device that emits a sound of at least 50 decibels when a person or object weighing 15 pounds or more enters the water in a swimming pool.

**Exception:** Hot tubs and portable spas shall be exempt from this requirement.

## **SECTION AG106 ENTRAPMENT PROTECTION FOR SWIMMING POOL AND SPA SUCTION OUTLETS**

**AG106.1 General.** Suction outlets shall be designed and installed in accordance with ANSI/APSP-7.

## **SECTION AG107 ABBREVIATIONS**

ANSI- American National Standards Institute  
11 West 42<sup>nd</sup> Street  
New York, NY 10036

APSP- Association of Pool and Spa Professionals  
NSPI- National Spa and Pool Institute  
2111 Eisenhower Avenue  
Alexandria, VA 22314

ASCE- American Society of Civil Engineers  
1801 Alexander Bell Drive  
Reston, VA 98411-0700

ASTM- ASTM International  
100 Barr Harbor Drive,  
West Conshohocken, PA 19428

UL- Underwriters Laboratories, Inc.  
333 Pfingsten Road  
Northbrook, IL 60062-2096

8. Access gates shall comply with the requirements of Section AG105.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism and openings shall comply with the following:
  - 8.1. The release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate; and
  - 8.2. The gate and barrier shall have no opening larger than  $\frac{1}{2}$  inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.
9. Where a wall of dwelling serves as part of the barrier, one of the following conditions shall be met:
  - 9.1. The pool shall be equipped with a powered safety cover in compliance with ASTM F 1346; or
  - 9.2. Doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and/or its screen, if present, are opened. The alarm shall be listed and labeled in accordance with UL 2017. The deactivation switch(es) shall be located at least 54 inches (1372 mm) above the threshold of the door; or
  - 9.3. Other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body, shall be acceptable as long as the degree of protection afforded is not less than protection afforded by Item 9.1 or 9.2 described above.
10. Where an above-ground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure and the means of access is a ladder or steps, the ladder or steps shall be surrounded by a barrier which meets the requirements of Section AG105.2, Items 1 through 9.

**AG105.3 Indoor swimming pool.** Walls surrounding an indoor swimming pool shall comply with Section AG105.2, Item 9.

**AG105.4 Prohibited locations.** Barriers shall be located to prohibit permanent structures, equipment or similar objects from being used to climb them.

**AG105.5 Barrier exceptions.** Spas or hot tubs with a safety cover which complies with ASTM F 1346, as listed in Section AG107, shall be exempt from the provisions of this appendix.

## SECTION AG105 BARRIER REQUIREMENTS

**AG105.1 Application.** The provisions of this chapter shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drownings and near-drownings by restricting access to swimming pools, spas and hot tubs.

**(AMD) AG105.2 Outdoor swimming pool.** An outdoor swimming pool, including an in-ground, above-ground or on-ground pool, hot tub or spa shall be surrounded by a barrier which shall comply with the following:

1. The top barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an above-ground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).
2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.
3. Solid barriers which do not have openings, such as a masonry or stone wall, shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.
4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming pool side of the fence. Spacing between vertical members shall not exceed 1 ¾ inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ inches (44 mm) in width.
5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1 ¾ inches (44 mm) in width.
6. Maximum mesh size for chain link fences shall be a 2 ¼-inch (57 mm) square unless the fence has slats fastened at the top or the bottom which reduce the openings to not more than 1 ¾ inches (44 mm).
7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 1 ¾ inches (44 mm).



### **SECTION AG103 SWIMMING POOLS**

**AG103.1 In-ground pools.** In-ground pools shall be designed and constructed in conformance with ANSI/NSPI-5 as listed in Section AG108.

**AG103.2 Above-ground pools and on-ground pools.** Above-ground and on-ground pools shall be designed and constructed in conformance with ANSI/NSPI-4 as listed in Section AG108.

**AG103.3 Pools in flood hazard areas.** In flood hazard areas established by Table R301.2(1), pools in coastal high hazard areas shall be designed and constructed in conformance with ASCE 24.

### **SECTION AG104 SPAS AND HOT TUBS**

**AG104.1 Permanently installed spas and hot tubs.** Permanently installed spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-3 as listed in Section AG108.

**AG104.2 Portable spas and hot tubs.** Portable spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-6 as listed in Section AG108.

## SECTION AG102 DEFINITIONS

**AG102.1 General.** For the purposed of these requirements, the terms used shall be defined as follows and as set forth in Chapter 2.

**ABOVE-GROUND/ON-GROUND POOL.** See "Swimming pool."

**BARRIER.** A fence, wall, building wall or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

**HOT TUB.** See "Swimming pool."

**IN-GROUND POOL.** See "Swimming pool."

(Amd) **RESIDENTIAL.** For the purpose of this Section, "Residential" means situated on the premises of a detached one- or two-family dwelling or which is accessory to an individual one-family townhouse for the exclusive use of its residents and invited guests.

**SPA, NONPORTABLE.** See "Swimming pool."

**SPA, PORTABLE.** A nonpermanent structure intended for recreational bathing, in which all controls, water-heating and water-circulating equipment are an integral part of the product.

**SWIMMING POOL.** Any structure intended for swimming or recreational bathing that contains water over 24 inches (610 mm) deep. This includes in-ground, above-ground, and on-ground swimming pools, hot tubs and spas.

**SWIMMING POOL, INDOOR** A swimming pool which is totally contained within a structure and surrounded on all four sides by the walls of the enclosed structure.

**SWIMMING POOL, OUTDOOR.** Any swimming pool which is not an indoor pool.

## Appendix G SWIMMING POOLS, SPAS, AND HOT TUBS

**AG101.1 General.** The provisions of this appendix shall control the design and construction of swimming pools, spas and hot tubs installed in or on the lot of a one – or two-family dwelling.

**AG101.2 Pools in flood hazard areas.** Pools that are located in flood hazard areas established by Table R304.2(1), including above-ground pools, on-ground pools and in-ground that involve placement of fill, shall comply with Sections AG101.2.1 or AG101.2.2.

**Exception:** Pools located in riverine flood hazard areas which are outside of designated floodways.

**AG101.2.1 Pools located in designated floodways.** Where pools are located in designated floodways, documentation shall be submitted to the building official, which demonstrates that the construction of the pool will not increase the design flood elevation at any point within the jurisdiction,

**AG101.2.2 Pools located where floodways have not been designated.** Where pools are located where design flood elevations are specified but floodways have not been designated, the applicant shall provide a floodway analysis that demonstrates that the proposed pool will not increase the design flood elevation more than 1 foot (305 mm) at any point within the jurisdiction.