

Rules Governing Public Swimming Pools



Swimming Pools, Tattoos and
State Institutions Branch

Public Swimming Pool Program Overview

Jim Hayes

Branch Head

Swimming Pools, Tattoos and State Institutions

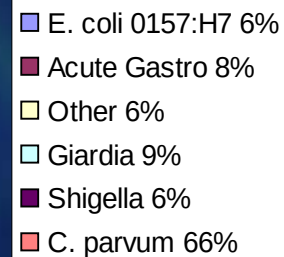
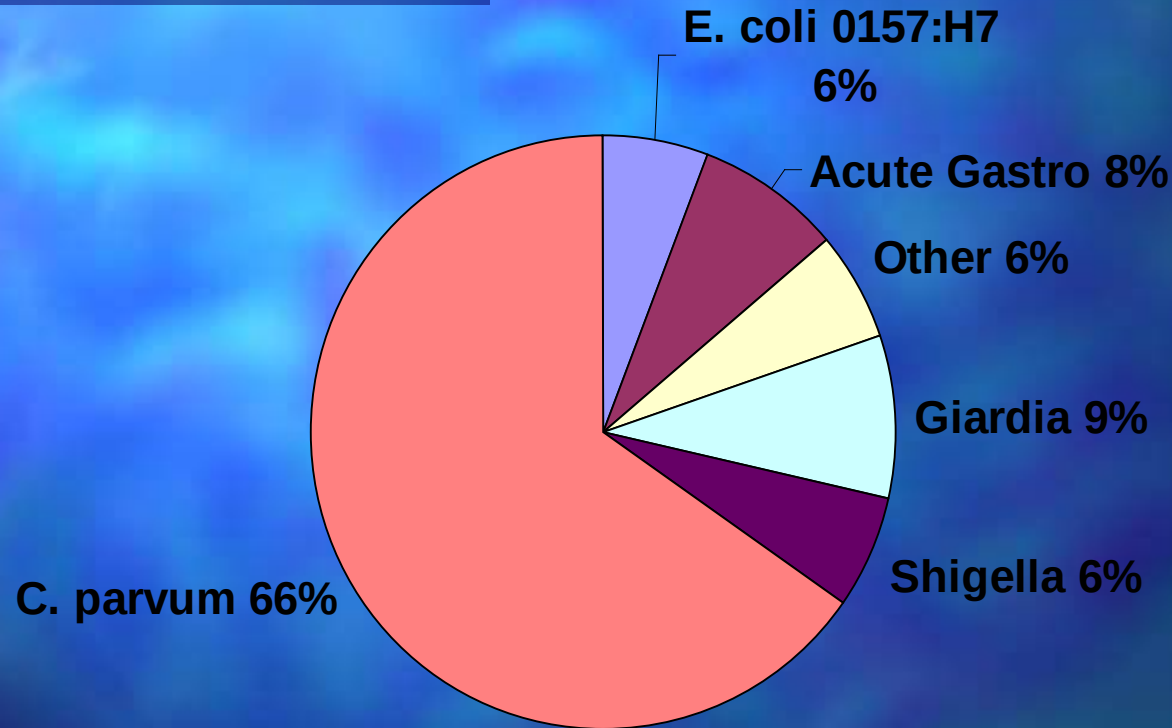
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Diseases Associated with Swimming Pools

- Skin Diseases-colonization and inflammation of the dermal layer
 - Pseudomonas aeruginosa
- GI-spread by ingestion of contaminated water
 - Bacteria
 - E coli, Shigella
 - Viruses
 - Norovirus, Hepatitis A, Adenoviruses, Enteroviruses
 - Parasites
 - Cryptosporidium, Giardia
- Respiratory-inhaled into sinuses or lungs
 - Legionella pneumophila

Causes of Gastroenteritis at Treated Water Venues



Disinfection Time for Fecal Contaminants in Chlorinated Water*

■ E. coli	Less than 1 minute
■ Hepatitis A	16 minutes
■ Giardia	20-45 minutes
■ Cryptosporidium	9600 minutes (10080 min/week)

*1 ppm chlorine at pH 7.5 and 25 C

Table courtesy of: Centers for Disease Control and Prevention

Cryptosporidium

- Diarrhea 1 to 2 weeks
- Outer shell permits long survival and resistance to chlorine
- One of the most common waterborne diseases in U.S.
- Spread by ingestion of parasites



Ohio 2000

- 700 cases of cryptosporidiosis linked to a private swim club
- Outbreak lasted 2 months
- Median age of victims was 6 years old
- 93.6% of victims swam in the pool

Nebraska 2000

- 225 cases of cryptosporidiosis associated with two private swim clubs
- Outbreak lasted 3 months until the end of swimming season
- Median age of cases was 10 years old
- Competitive swimmers reported swimming at both clubs while symptoms persisted

New York 2005

- Nearly 4,000 cases of Cryptosporidiosis linked to spray park
- Holding tanks were found to contain Cryptosporidium

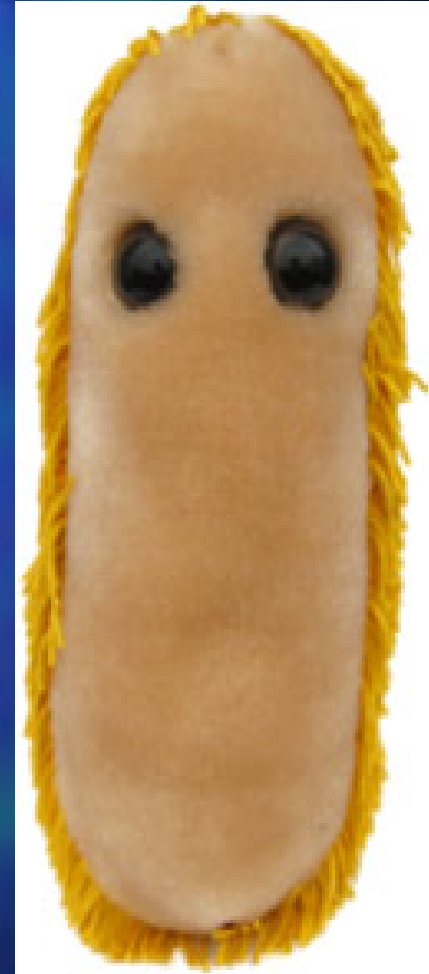
Giardia

- Diarrhea 2 to 6 weeks or longer
- Outer shell allows long survival outside the body
- Common cause of waterborne illness in the U.S.
- Spread by ingestion of parasites



Shigella

- Diarrhea, fever, stomach cramps
- Sometimes bloody diarrhea
- Lasts 5 to 7 days
- Asymptomatic carriers
- Spread by ingesting contaminated food or water

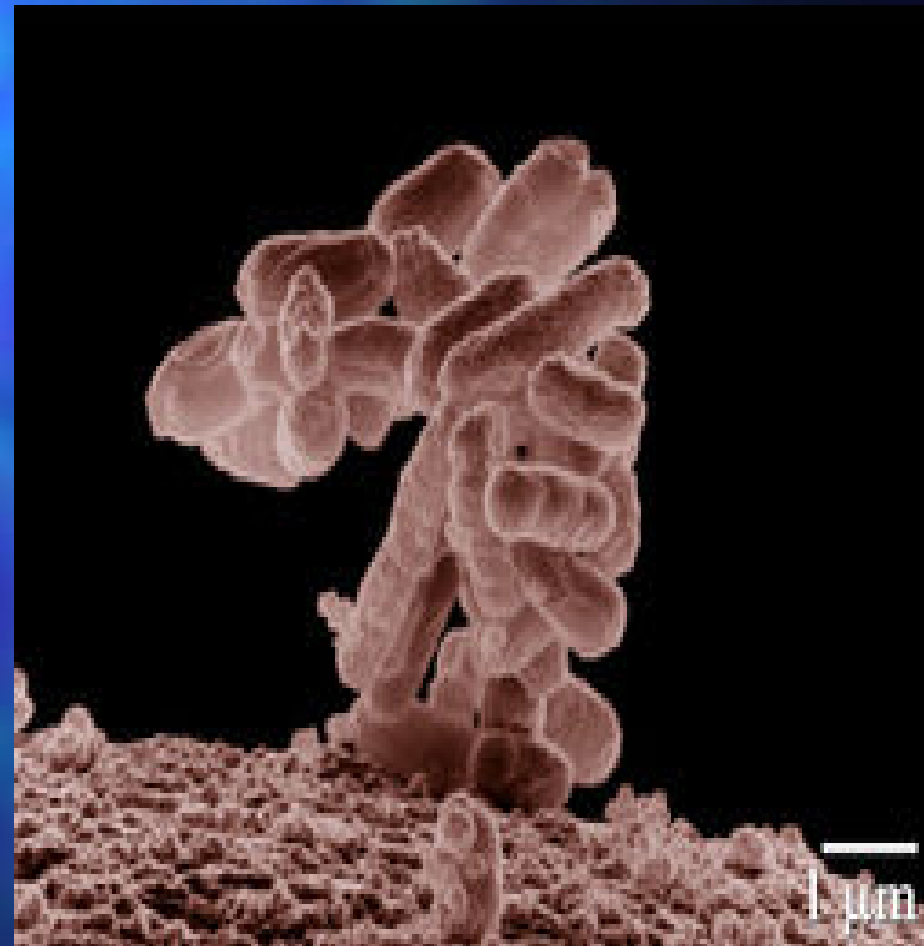


Gastroenteritis from Interactive Fountain Florida 1999

- 3 cases initially reported with common exposure to interactive fountain (spray pad)
- Interviews of park visitors found 38 (44%) of 86 contacted had symptoms
- Shigella and Cryptosporidium identified
- 3,800 gallon holding tank, chlorinator, 30 minute turnover, no filter

E. Coli 0157:H7

- Severe bloody diarrhea and abdominal cramps
- Can cause HUS
- Some asymptomatic carriers
- Has caused outbreaks at water parks



Norovirus Gastroenteritis at Swim Club in Vermont 2004

- 53 (28%) of 189 swimmers contacted had symptoms (vomiting, diarrhea, stomach cramps, chills and fever)
- Median age 13 years
- Fecal contamination had occurred
- Chlorinator feed tube was blocked
- Multiple lapses in pool maintenance

Pseudomonas

- Itchy rash over much of body with some bumps or blisters
- Can also cause sore throat, nose, eyes, ears
- Rash goes away in several days
- Commonly found in spas



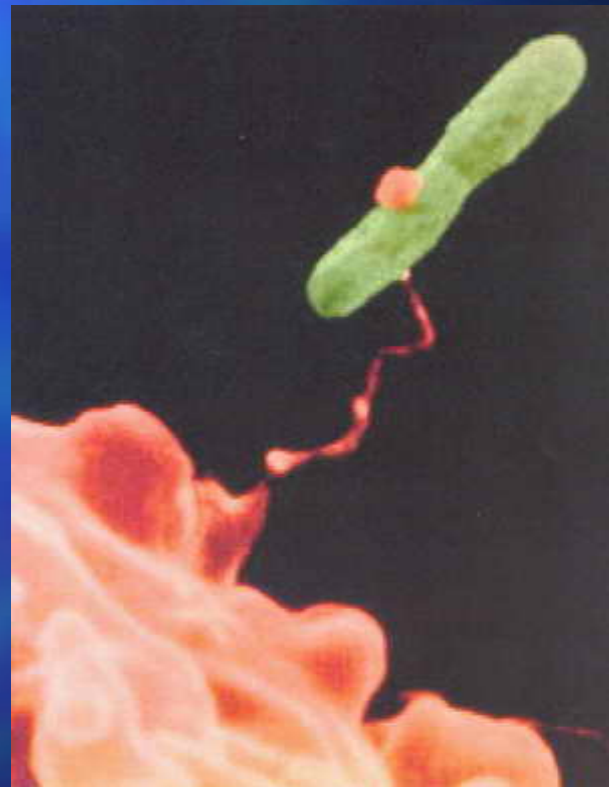
Staphylococcus (Impetigo)

- Causes itchy blisters and skin rash
- Spreads to other areas on skin
- Can cause serious systemic infections
- Associated with spa use



Legionella

- Bacteria causes Legionnaires Disease and Pontiac Fever
- Malaise, fever, nausea vomiting, diarrhea, may progress to cough and pneumonia
- Caused by inhaling contaminated droplets



Legionnaires Disease from Whirlpool Spa Display

- 23 cases, 22 hospitalized, 2 died
- Case/control study questionnaire indicated 93% of cases compared to 27% of controls visited the same home improvement center within the last 2 weeks
- Legionella was cultured from the filter of a spa that had been operating on display

Legionnaires Disease in NC Vacation Cottages

- Two outbreaks reported at cottages with pools and spas in recent years
- Unregulated pools are visited by pool operators only 1-2 times a week
- Lapses in maintenance result in growth of Legionella

Contributing Factors

- High bather density
- Fecal accident / use by infants and toddlers
- No disinfection / inadequate disinfection
- Cross contamination
- Combined adult/child pool filtration system
- No filtration / inadequate filtration

How Do We Prevent Disease Spread in Swimming Pools?

- Filtration and circulation of water
- Disinfection
- Management of Fecal Accidents
- Routine maintenance

Injuries Associated with Swimming Pools



- Drowning
- Entrapment
- Slips and Falls
- Chemical Burns
- Diving Injuries
- The Keys to Injury Prevention are Supervision, Construction and Maintenance at Pool

Dead People

- Several deaths each year in NC public swimming pools
- Deaths have occurred every year since pool program started in 1990
- Most are drowning victims not found in time to be revived

Drowning in Swimming Pool

- People swimming in apartment pool notice a man at the bottom of 8 feet deep pool
- “Because it was so cloudy you could not look down there and see somebody”

Drowning in Swimming Pool

- 17 year old boy drowns in pool at an inn
- Witnesses thought he was playing when he got in over his head
- Witnesses 9 and 12 year old children unable to rescue and went for help

Drowning in Swimming Pool

- Child care providers take day care class on outing to a guarded pool
- One child found unconscious in shallow water
- Rescuers unable to revive child

Drowning in Spa

- Couple found dead in apartment spa

Injured People

- Head and neck injuries from diving into shallow water most common
- Near-drowning often causes brain damage
- Slips and falls
- Chemical injuries
- Electrocution
- Suction injuries

Neck Injury Paraplegia

- Drunken man dives into shallow end of motel pool at night and breaks neck
- Questionable deck lighting
- Painted depth markers on deck beginning to fade
- Underwater lights were on

Neck Injury Paraplegia

- Child dives repeatedly into 4 feet of water to retrieve toy and breaks neck
- Some irregular depth markers on building walls and columns, but missing in pool
- Lawsuit claimed child could not judge depth of water
- Case settled out of court

Near Drowning

- Child found by swimmers on bottom of a guarded country club pool
- Revived by rescuers but remains profoundly brain damaged
- Pool water was so cloudy no one knows how long she was beneath the water

Near Drowning

- Man seen swimming alone in pool by apartment maintenance man
- Maintenance man later noticed clothing, but no swimmer and investigated
- Drowning victim revived, but remained hospitalized in unknown condition

Fall From Pool Slide

- Child falls backwards off ladder to slide and sustains brain injury upon hitting deck
- Untrained attendant delays calling rescuers
- Loose handrail on ladder

Chlorine Gas Exposure

- Eight pre-school aged children hospitalized after chlorine gas bubbled out of return inlets at swim club
- Pump had turned off and chemical controller continued to feed hypochlorite and acid to return line
- Chemical reaction released chlorine gas

Chemical Burns

- Nine children at a water park suffer chemical burns while swimming
- Large amount of soda ash was added while children were in the pool

Electrocutions

- 16 year old lifeguard killed turning on pool pump in flooded equipment room wearing flip flops
- Construction worker sitting on diving board as pool is filled is electrocuted when water touches his feet

Suction Drain Injuries

- Four suction drain entrapments including three eviscerations have been reported in North Carolina public wading pools

Regulation of Public Swimming Pools in NC

- Counties regulated pools individually
- State of NC Rules developed in early 90's - Tourism and growth
- Several revisions to rules

Suction Hazard / Entrapment Video

G.S. 130A-280

- “Public swimming pool” means any structure, chamber, or tank containing an artificial body of water used by the public for swimming, diving, wading, recreation, or therapy regardless of whether a fee is charged for its use.



G.S. 130A-280



■ This article does not apply to

- a private pool serving a single family dwelling and used only by the residents of the dwelling and their guests.
- therapeutic pools used in physical therapy programs operated by medical facilities licensed by the Department of Human Resources or operated by a licensed physical therapist,
- therapeutic chambers drained, cleaned and refilled after each individual use
- Quarries or other earthen bottom bodies of water
- Flow-through Pools



.2508 Definitions

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.2508 Definitions

- Public Swimming Pools are divided into 4 types:
 - Swimming Pools
 - Spas
 - Wading Pools (including children's activity pools)
 - Specialized water recreation attractions
 - Waterslide plunge pools and run out lanes, wave pools, rapid rides, lazy rivers, interactive play attractions, and training pools



Swimming Pool



Interactive Play Attraction



Children's Activity Pool
or Wading Pool



Spa or Hot Tub

.2508 Definitions

- Remodeled means renovations requiring disruption of major portions of the pool shell or deck, changes in the pool profile, or redesign of the pool hydraulic system. Remodeled does not include equipment replacement or repair or addition of outlets for the purpose of reducing suction hazards.

.2508 Definitions

- Repair means repair of existing equipment, replastering or repainting of the pool interior, replacement of tiles or coping or similar maintenance activities. This term includes replacement of pool decks where the Department has determined that no changes are needed to underlying pipes or other pool structures.

.2509 Plan Review and Approval

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- Plans prepared by a registered professional engineer or registered architect
- Pools constructed by licensed swimming pool contractors
- The Department shall respond within 30 days, or the plans are deemed approved.

.2510 Public Swimming Pool Operation Permits

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- Each pool permitted separately
- Annual permits
- New pools must meet design and construction requirements to be permitted.
- Pools built before May 1, 1993 can be permitted without complying with the design and construction requirements of Rules .2512 through .2534

.2511 Inspections

N.C. Department of Environment and Natural Resources Division of Environmental Health		Demerit Score: _____ Date of Insp/Chg: _____ Status Code: _____		Health Department Current Facility ID: _____ Old Facility ID: _____	
Inspection of Swimming Pool					
Water Supply: ☐ Community ☐ Non-Transient Non-Community ☐ Transient Non-Community ☐ Non-Public Water Supply		Water sample taken today? ☐ YES ☐ NO ☐ Inspection ☐ Name Change ☐ Re-Inspection ☐ Verification of Closure ☐ Visit ☐ Status Change			
Wastewater System: ☐ Community ☐ On-Site Systems					
Name of Establishment: _____		Pool Operator: _____			
Location Address: _____		Mailing Addr.: _____			
City: _____ State: NC Zip: _____		City: _____ State: _____ Zip: _____			
		Points Deducted (Circle)		* Indicates critical item (6-point demerit)	
WATER QUALITY: (2535)					
*1. Water clear enough to clearly see bottom of pool and pool drain		6			
*2. Disinfectant residual provided by: free chlorine = _____ (at least 1.0 ppm or 2.0 ppm where required); bromine = _____ (at least 2.0 ppm); or biguanide = _____ (30 to 50 ppm)		6			
*3. Pool water pH = _____ (7.2 to 7.8)		6			
*4. Water temperature of heated pool _____ °F; does not exceed 90°F (swimming pool) or 104°F (spa)		6			
5. Daily written records of water quality and test kit kept on site		4			
POOL MAINTENANCE:					
*6. Main drain covers secured and in good repair, no suction hazard. Single drains protected by April 1, 2006 (2537, 2539)		6			
7. Pool walls and floor kept clean, free of debris and in good repair (2537)		4			
8. Surface skimmers (with weirs, baskets and covers) or gutters clean, in good repair, and functioning properly, no floating debris (2518, 2537)		4			
9. Depth markings and no diving markers or signs visible and properly located (2523, 2537)		4			
10. Safety ropes with floats and contrasting color bands provided at shallow area breakpoints (2515, 2523)		2			
11. Diving equipment, ladders, steps and handrails properly placed, in good repair (2517, 2521)		2			
12. Inlets and other fittings in place and in good repair (2537)		4			
13. Contrasting hand on steps and benches (2521, 2516, 2532)		4			
14. Spa timer working properly (2537)		4			
PREMISES:					
*15. Body hook and ring buoy with throw rope or lifeguard with rescue tube provided and properly located (2530, 2537)		6			
16. Fence or barrier with self-closing, self-latching gates properly constructed and maintained (2528, 2537)		4			
17. Decks unobstructed, properly drained, free of trip hazards (2522, 2537)		4			
18. Lifeguards present or warning signs posted (2530)		4			
19. Signs prohibit glass containers or pets in pool area (2530)		4			
20. Caution signs posted at hot water signs (2532)		4			
21. Pool and deck lighting provided at pools that operate at night (2524, 2537) ...		4			
*22. Emergency telephone provided (2530)		6			
EQUIPMENT ROOM:					
23. Chlorine or bromine automatic feeders that meet NSF Standard 50 (2535)		4			
24. Approved pump, filter, and flow meter operating properly (2518, 2519)		4			
25. Equipment and chemicals kept in a dry, well-ventilated enclosure (2533, 2534, 2537)		2			
26. Valves and pipes identified by color codes or labels (2518)		2			
27. Filter backwash discharged through an air gap (2513)		2			
DRESSING AND SANITARY FACILITIES:					
28. Bathroom or rest rooms accessible; shower sign posted (2526)		2			
29. Required fixtures provided, clean, and in good repair (2526)		2			
30. Approved water source, no cross connections (2512)		2			
31. Sewage disposed of in a properly operating sewage system (2513)		2			
32. Floors smooth, slip-resistant, kept clean (2526)		2			
33. Hose bibbs and floor drains provided (2526)		2			
Inspection Conducted by: _____		EHS I.D.# _____		Comment Sheet Attached ☐ Yes ☐ No	
Report received by: _____					
Purpose: General Statute 190A-282 requires the Commission for Health Services to adopt rules governing Public Swimming Pools. 15A NCAC 18A .2511 specifies the contents of an inspection form to record the results of inspections. This form is developed to be used in making inspections of public swimming pools, spas, wading pools and water recreation attractions. Preparation: Local environmental health specialists will complete the form every time they conduct an inspection and fee copies for: 1. Original to be left with the responsible person; 2. Copy for the local health department; 3. Copy for the Environmental Health Services Section, Division of Environmental Health. Disposition: This form may be destroyed in accordance with Standard 7, Inspection Records, of the Records Disposition Schedule published by the N.C. Division of Archives and History. Additional forms may be ordered from: Division of Environmental Health, 1630 Mail Service Center, Raleigh, NC 27605-1630.					
DEHS-2548 (Revised 10/05)					

.2511 Inspections

- Pools which open on or after April 1 and close on or before October 31 shall be inspected at least once during the period of operation-**Seasonal Pool**
- Pools that operate longer than the April to October season shall be inspected at least twice a year-**Annual Pool**
- .2511 Offers a reference for 2, 4, or 6 point demerit violations

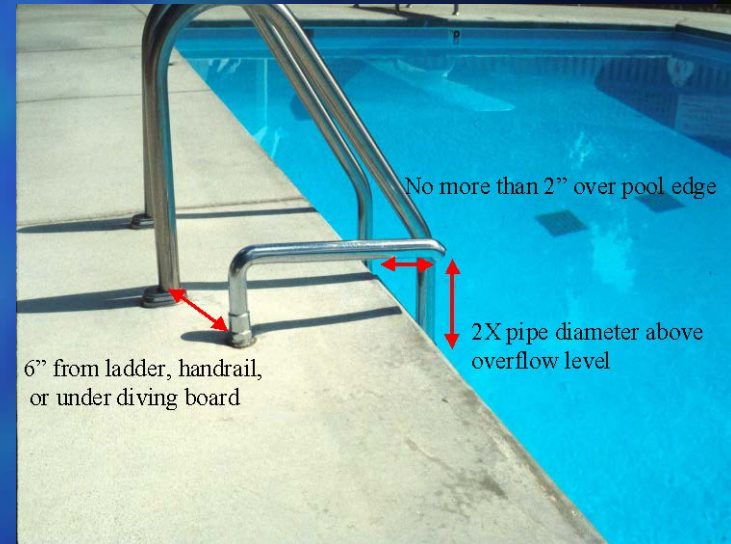
.2512 Water Supply

.2512 Water Supply

- Water supplying the swimming pool and plumbing fixtures shall meet the requirements for a Municipal water supply or individual well
- Must comply with:
 - *Rules Governing Public Water Systems*, or
 - *Rules Governing the Protection of Private Water Supplies*
- Can approve the use of non-potable water for purpose of filling a swimming pool

.2512 Water Supply

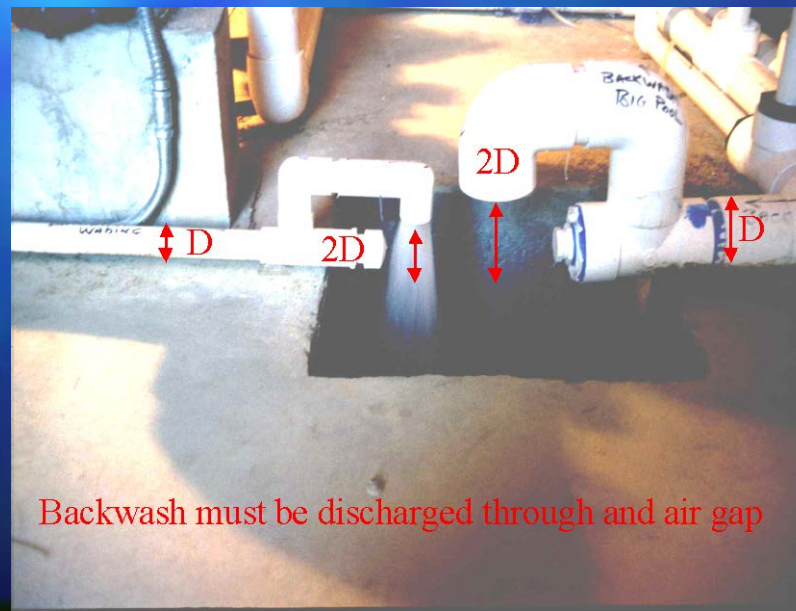
- Water introduced to the pool must be supplied through:
- An Air gap
- A pipe applied atmospheric vacuum breaker
- A pressure type anti-siphon vacuum breaker
- A reduced-pressure principle backflow preventer



.2513 Sewage Systems and Other Wastewater Disposal

.2513 Sewage Systems and Other Wastewater Disposal

- Sewage shall be disposed of in a public sewer system or properly operating sanitary sewage system
- Backwash from the filters and deck drainage can be discharged into the sewer, storm drain, or natural drainage course but it must have a suitable air gap



.2514 Materials of Construction

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- Inert, non-toxic, impervious and permanent
- Watertight
- Smooth and cleanable
- White or light colored
- Slip-resistant in areas < 3 feet deep



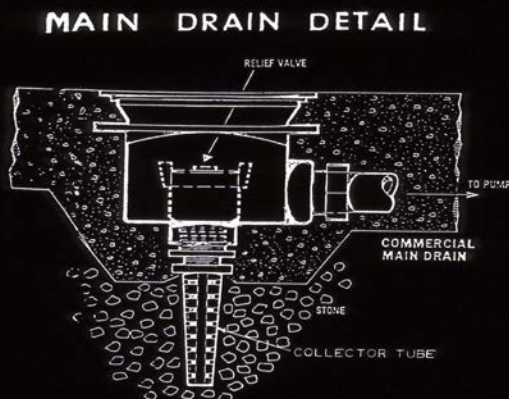
.2514 Materials of Construction

- Sand or earth bottoms are prohibited
- Vinyl liners are prohibited except 60 mil thick vinyl can be used as the surface coating on an approved pool shell

.2515 Design Details

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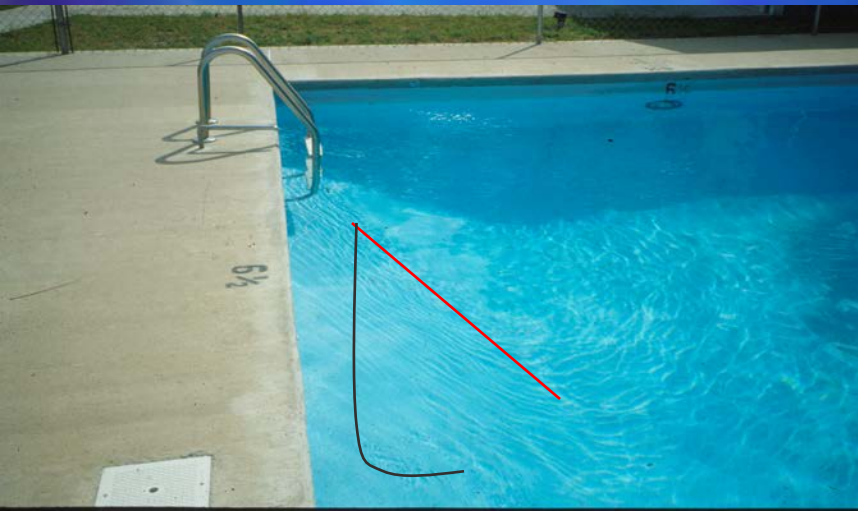
- A hydrostatic relief valve shall be provided
- The depth of shallow end must be between 3 and 3.5 feet
- Connections for safety lines shall be recessed in the walls



.2516 Pool Profile

.2516 Pool Profile

- Vertical walls of a public swimming pool shall not exceed 11 degrees from plumb
- Corners formed by the intersection of walls and floors shall be radiused
- Hopper bottom pools are prohibited



.2516 Pool Profile

- If underwater Benches must :
- Be located where water depth does not exceed 4 feet
- Not protrude more than 18 inches from pool wall
- Be marked with contrasting color band on leading edge
- Not project into swim lanes



.2516 Pool Profile

- The slope of the pool floor in areas less than 5 feet deep shall not exceed 1:10
- The slope of the pool floor in areas greater than 5 feet deep shall not exceed 1:3



.2517 Diving Equipment



.2517 Diving Equipment

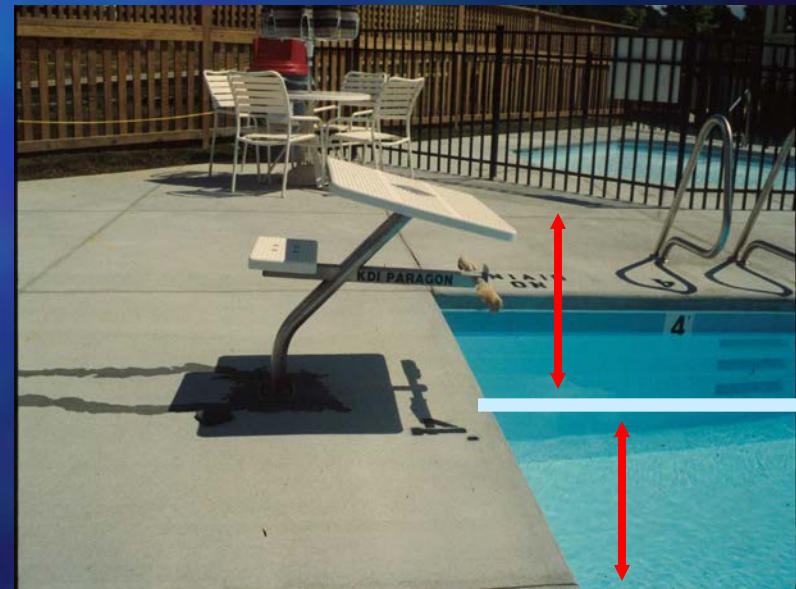
- Diving boards shall be installed
 - according to the manufacturer's recommendations and
 - in compliance with table 1A and 1B
- Diving facilities in excess of 3 meters shall meet FINA guidelines



.2517 Diving Equipment

■ Starting Platforms

- Pools less than 3 feet, 6 inches can not use starting platforms
- Pools 3.5 to 4 feet deep can use a starting platform that is 18 inches or less above the water surface
- Pools 4 feet deep or more can use starting platforms up to 30 inches above the water surface



.2518 Circulation System

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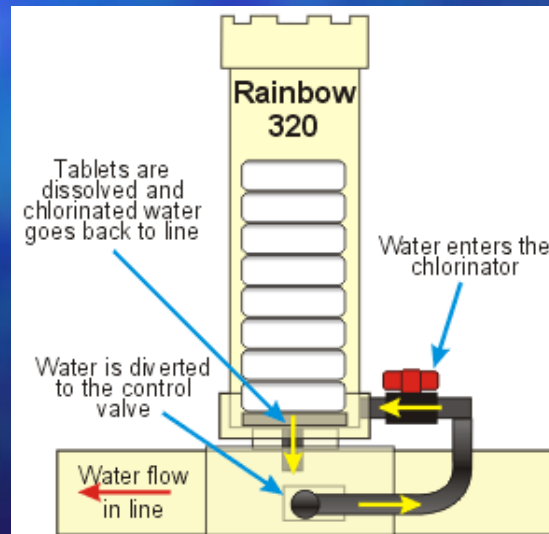
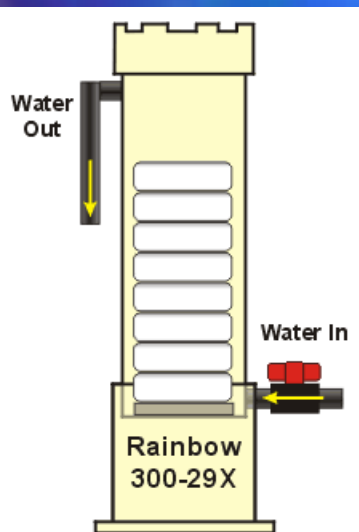
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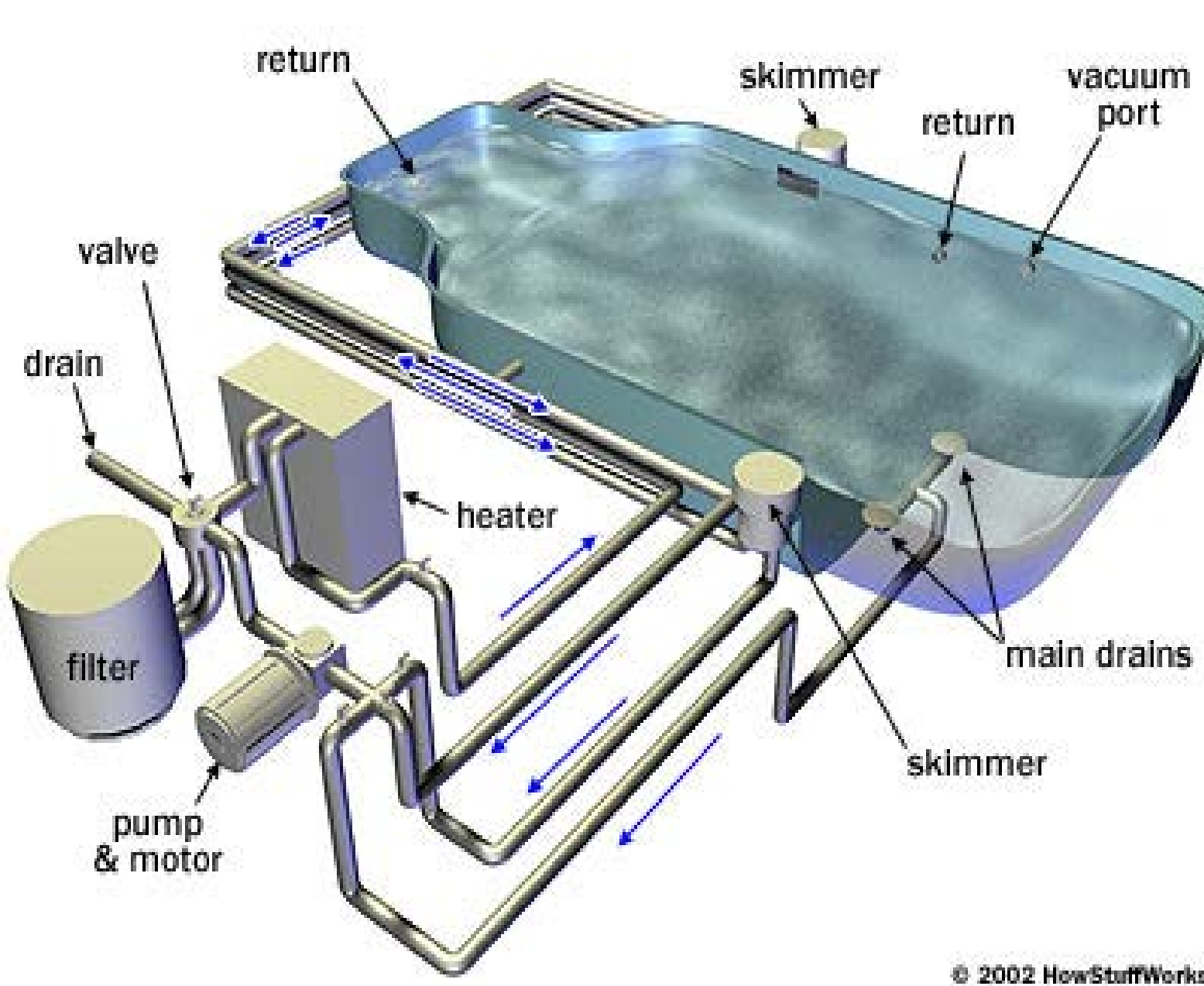
.2518 Circulation System

- The circulation system is responsible for filtering and disinfecting the pool water
- Consists of pump, filter, and disinfectant feeder (all must be NSF listed)
- Suction side of pool consists of
 - main drains
 - skimmer or gutter system
 - vacuum
- Discharge side of the pump to the pool through the “inlets” or “returns”









Suction:

- Main Drains
- Skimmers
- Vacuum Port

Discharge:

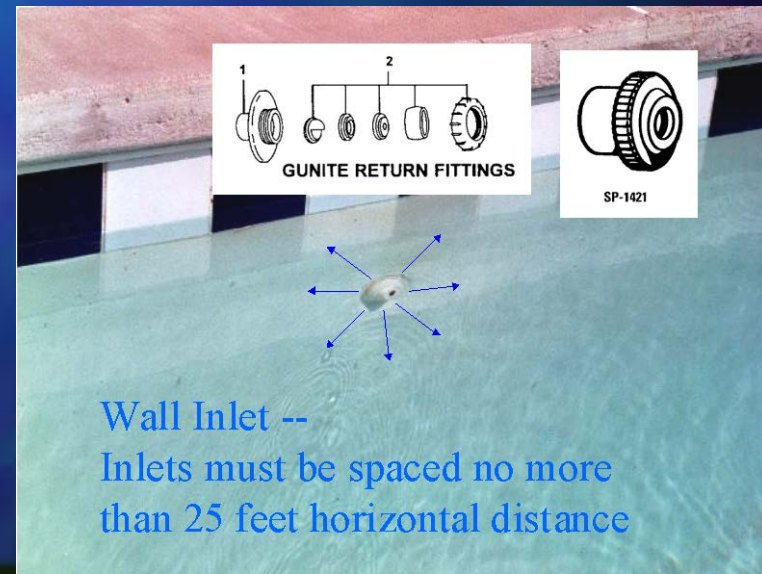
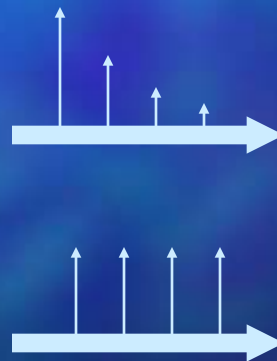
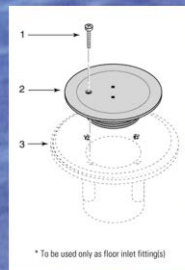
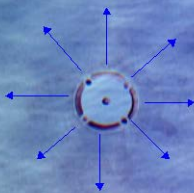
- Returns (aka Inlets)

.2518 Circulation System

■ Inlets

- Arranged to provide uniform circulation
- 1 inlet for every 20 gallons per minute of return water flow
- No more than 25 feet of horizontal distance between inlets

Floor Inlet



.2518 Circulation System

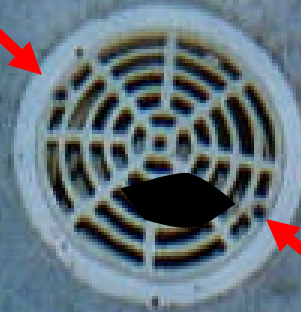
■ Drains

- New pools must have at least two main drains connected by “T” piping
- Outlet grates must be anchored
- The maximum opening in the grate shall not be more than 1/2 inch



Main Drain Covers

Missing
Broken
Cracked
Damaged or
Loose

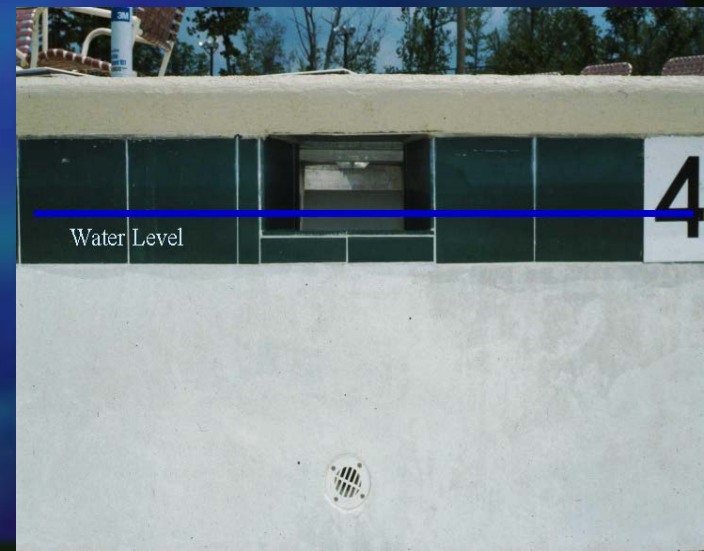




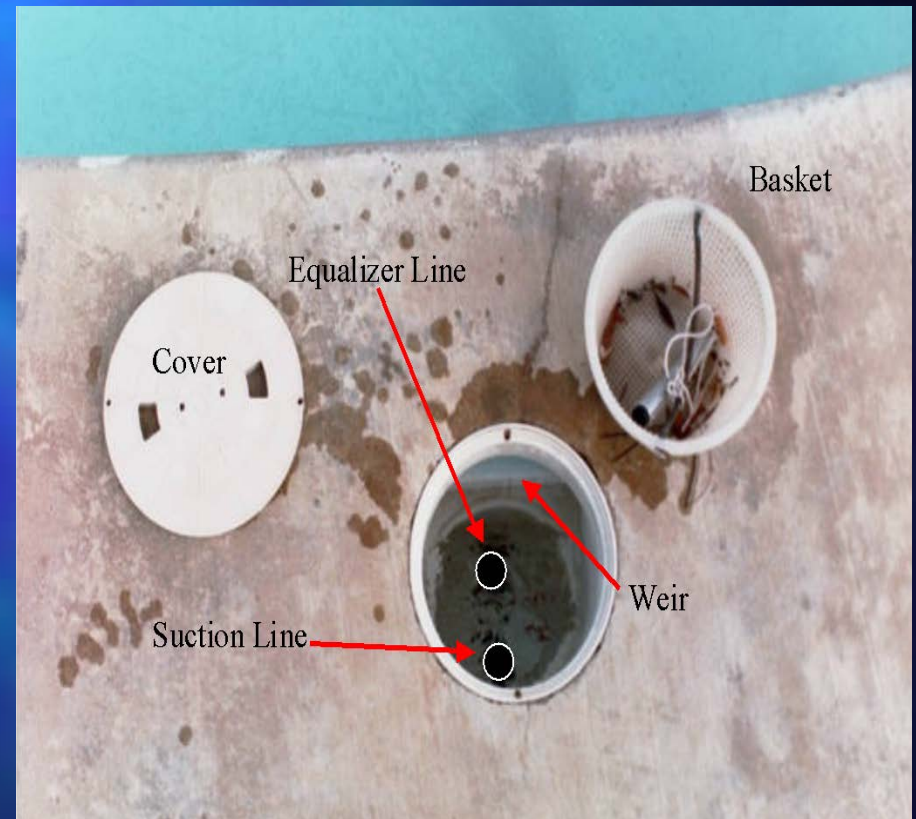
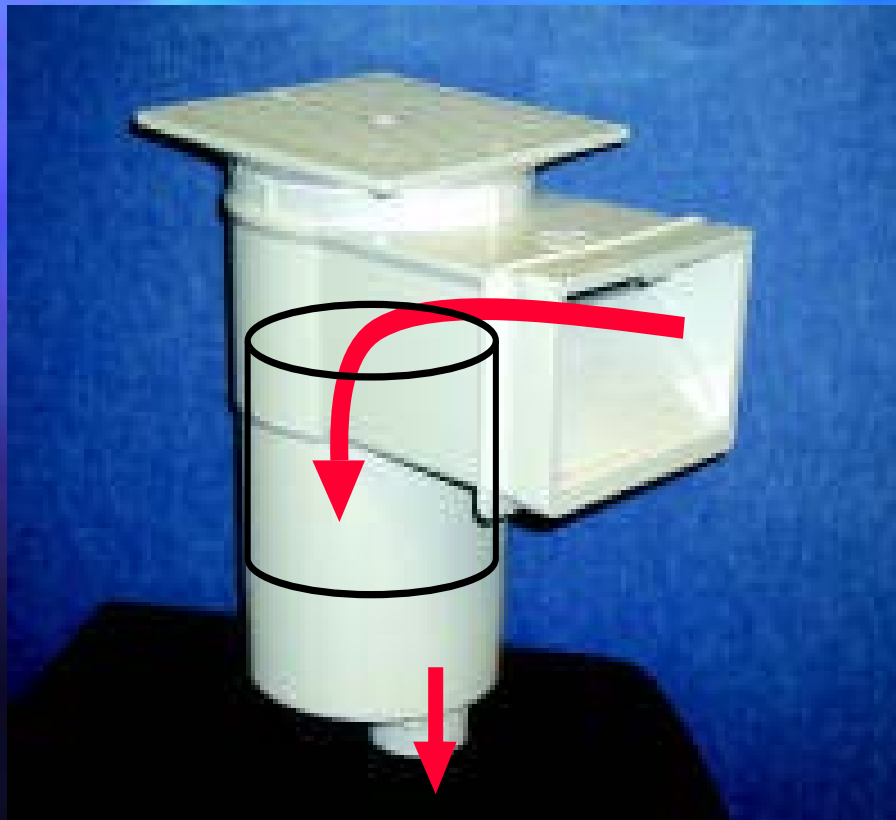
Check the main drain cover
with an extendable pole to
see if the cover is loose

Surface Skimmers

- Skimmers NSF listed
- One skimmer for every 400 square feet (100 ft² for spas) or portion thereof
- Pipes and circulation system designed to handle flow of 30 gpm per skimmer
- Skimmers protected from air entrainment

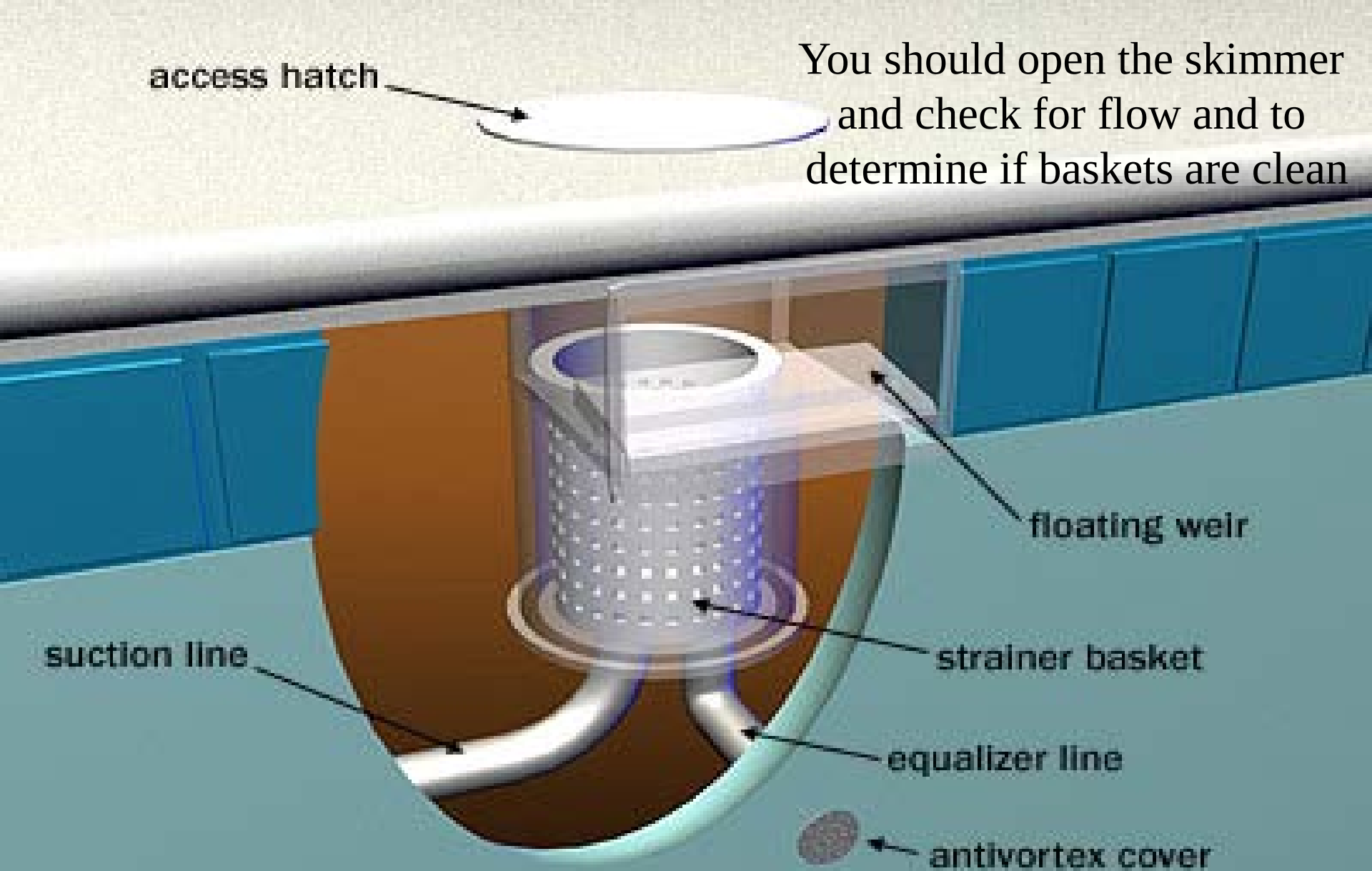


Skimmer Anatomy



access hatch

You should open the skimmer and check for flow and to determine if baskets are clean



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Imagine courtesy of HowStuffWorks.com





Surface Overflow or
“guttered” pools
offer an alternative
to skimmers

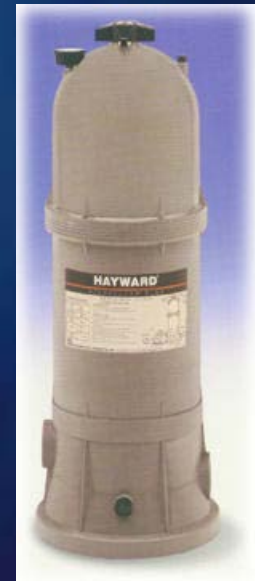


.2519 Filters

.2519 Filters

- Basically 3 types of filters
 - Sand, Diatomaceous earth, or Cartridge
- Sand filter designed for 15gal/min/sqft
- Diatomaceous earth designed for 2-2.5 gal/min/sqft
- Cartridge filter designed for 0.375 gal/min/sqft
 - do not have to be backwashed

Sand, DE and Cartridge Filters



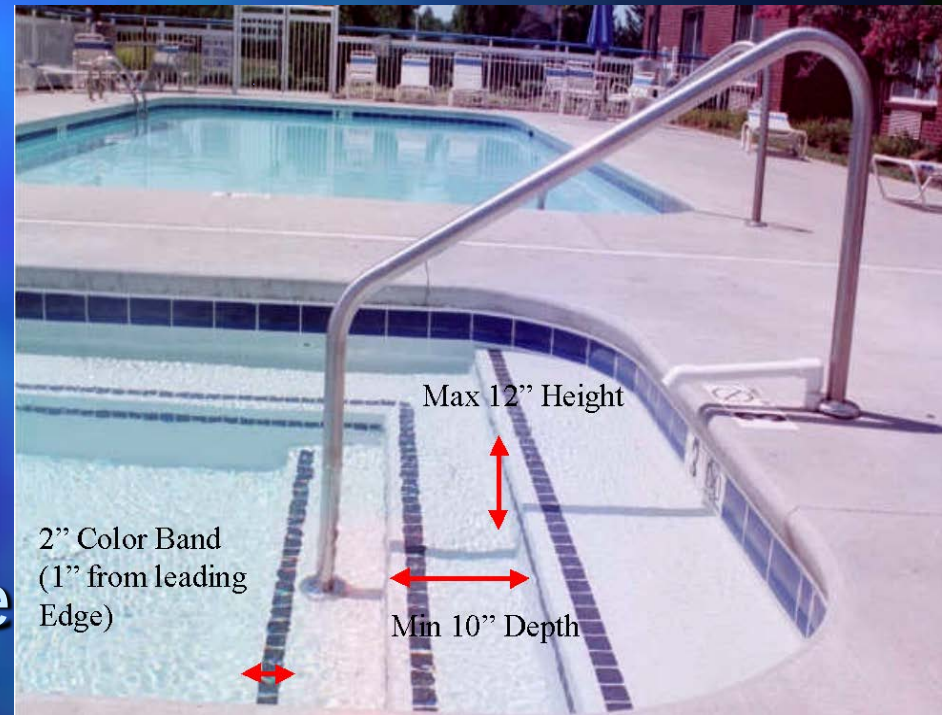
.2521 Ladders, Steps and Stairs

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- Required in all pools more than 2 feet deep (not required in wading pools)
- One required for every 75 feet of shallow area perimeter
- At least one required in deep area (one on each side of deep areas more than 30 feet wide)

.2521 Ladders, Steps and Stairs

- Stairs must have:
- Minimum depth of 10 inches
- Maximum height of 12 inches
- 2 inch wide contrasting color band on leading edge of each stair
- Handrail within 18 inches of leading edge of bottom step

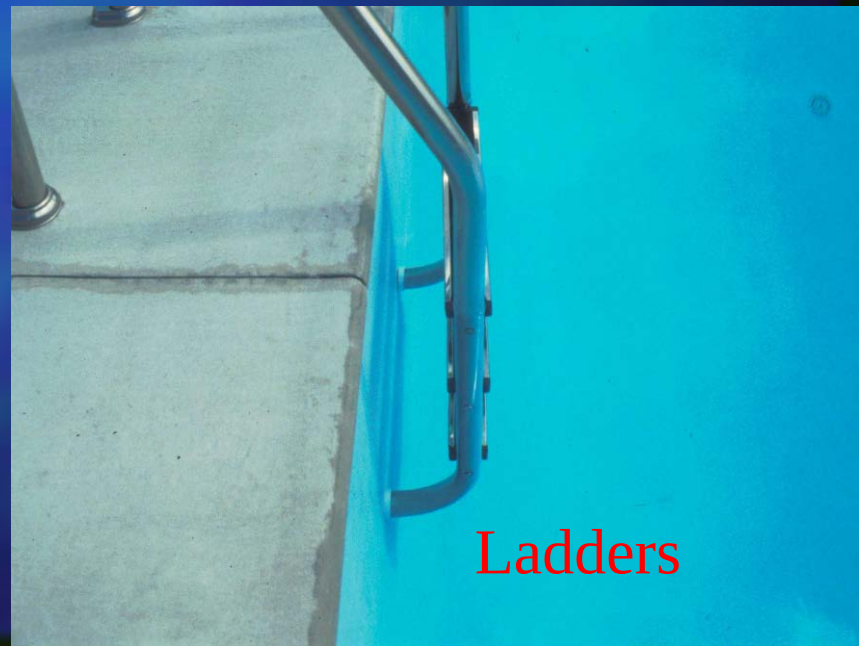




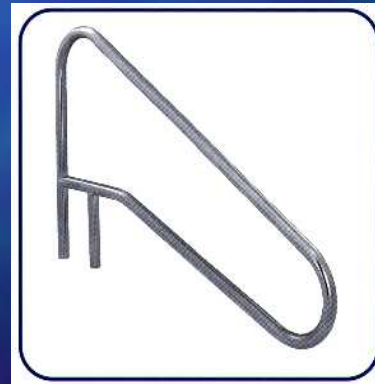
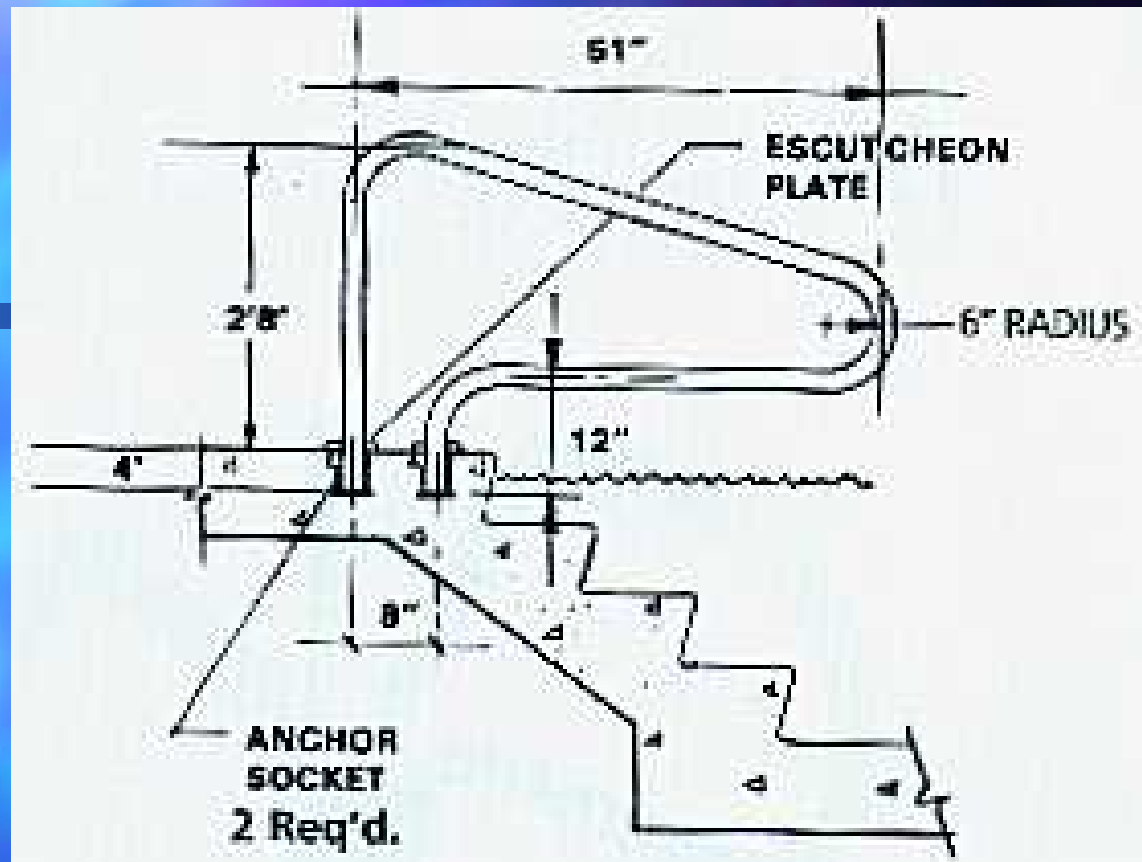
Handrails

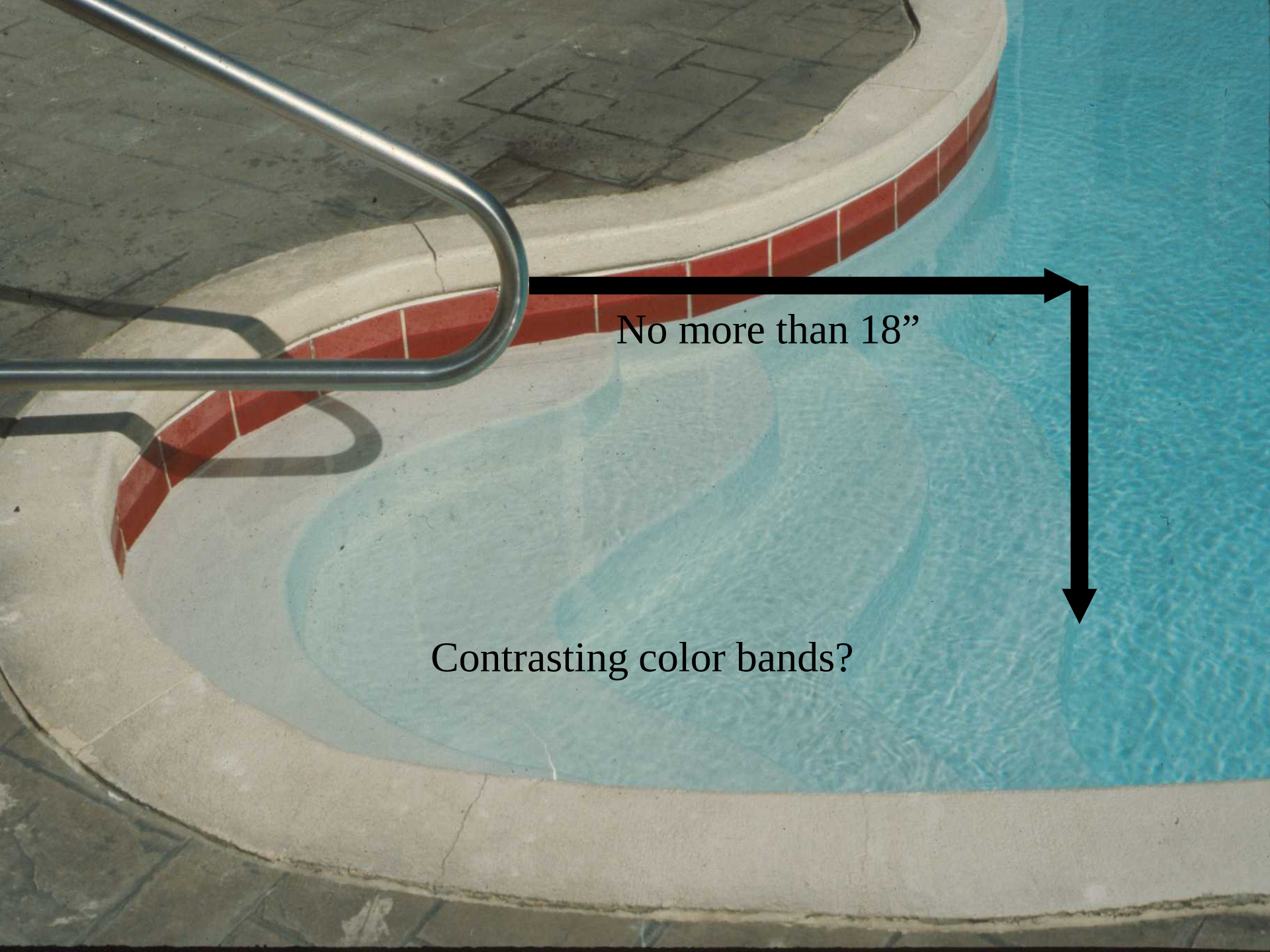


Recessed Steps



Ladders





No more than 18"

Contrasting color bands?

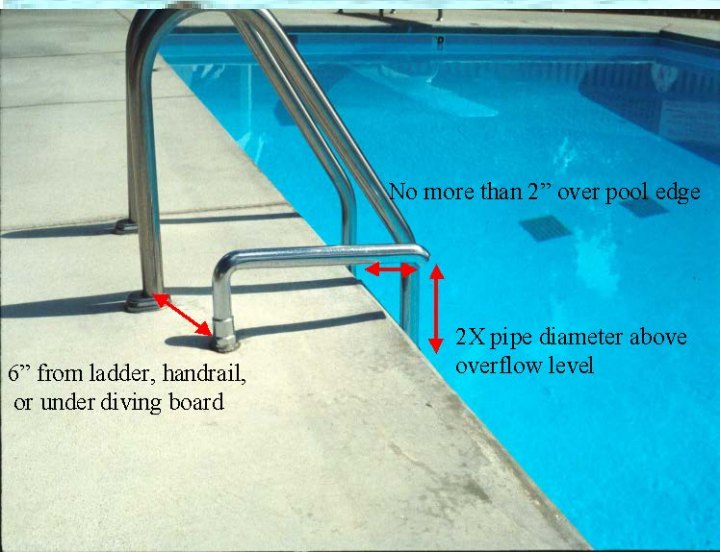
.2522 Decks

.2522 Decks

- 8 feet of clear walk space for swimming pools 1,600 square feet or larger
- 6 feet at outdoor swimming pools less than 1600 square feet
- 5 feet at indoor swimming pools and around diving equipment
- 4 feet at wading pools and
- 4 feet at least half-way around spas



Items that are allowed to be within
the required pool deck:



Ladders

Hand rails

Lifeguard stands

Properly located fill spouts



.2522 Decks

- Requires that when structures cover pools, including temporary domes, they shall be constructed to maintain a vertical clearance of at least seven feet from all parts of the required clear walk space.



.2523 Depth Markings and Safety Ropes

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.2523 Depth Markings and Safety Ropes

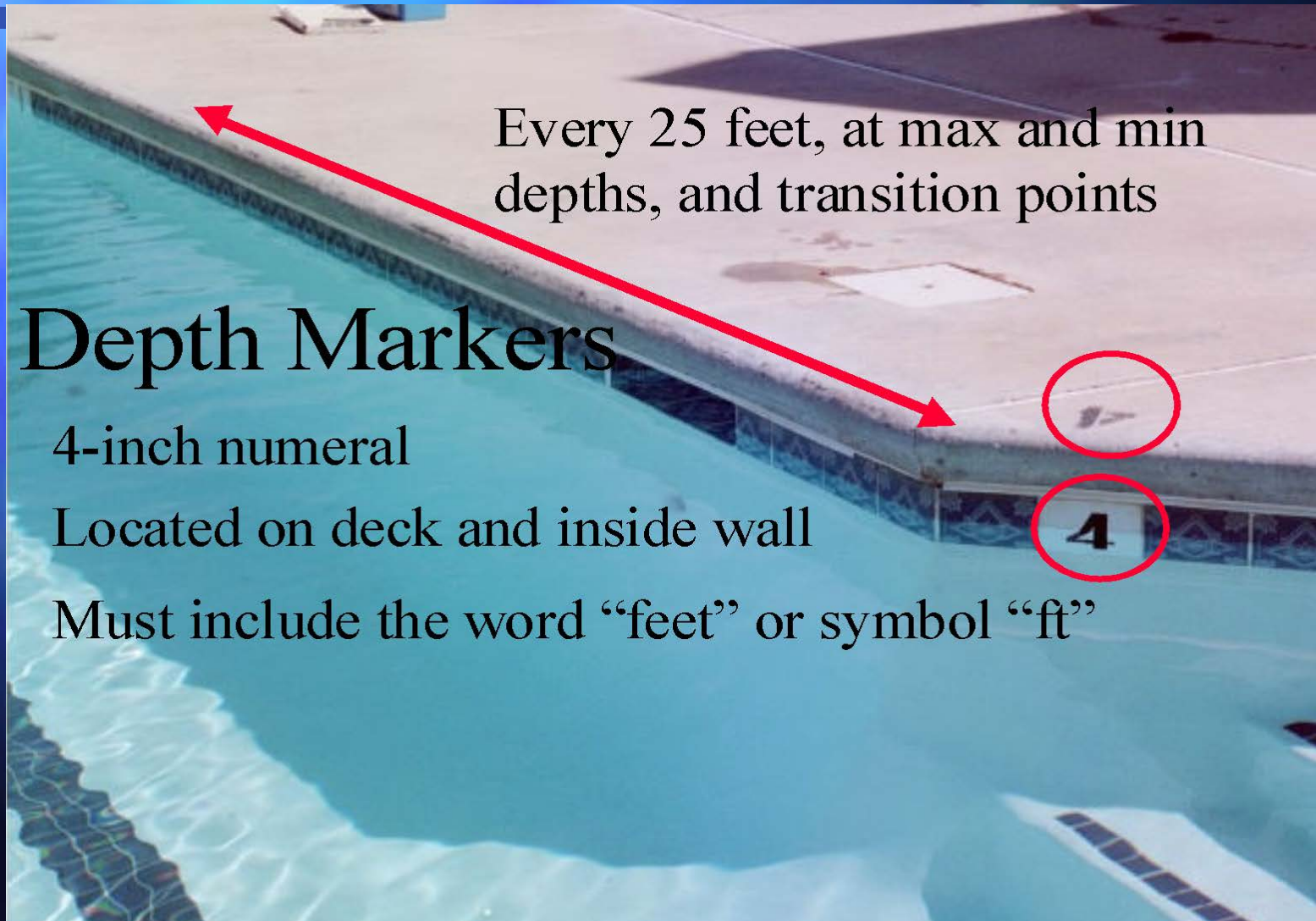
Every 25 feet, at max and min depths, and transition points

Depth Markers

4-inch numeral

Located on deck and inside wall

Must include the word “feet” or symbol “ft”



“No Diving” Sign

- Must be posted on the deck in areas of the pool less than 5 feet deep
- Must be located at least every 25 feet along the pool edge
- Shall consist of the words “No Diving” in four inch letters or a 6” x 6” tile with the international symbol for no diving

NO
DIVING



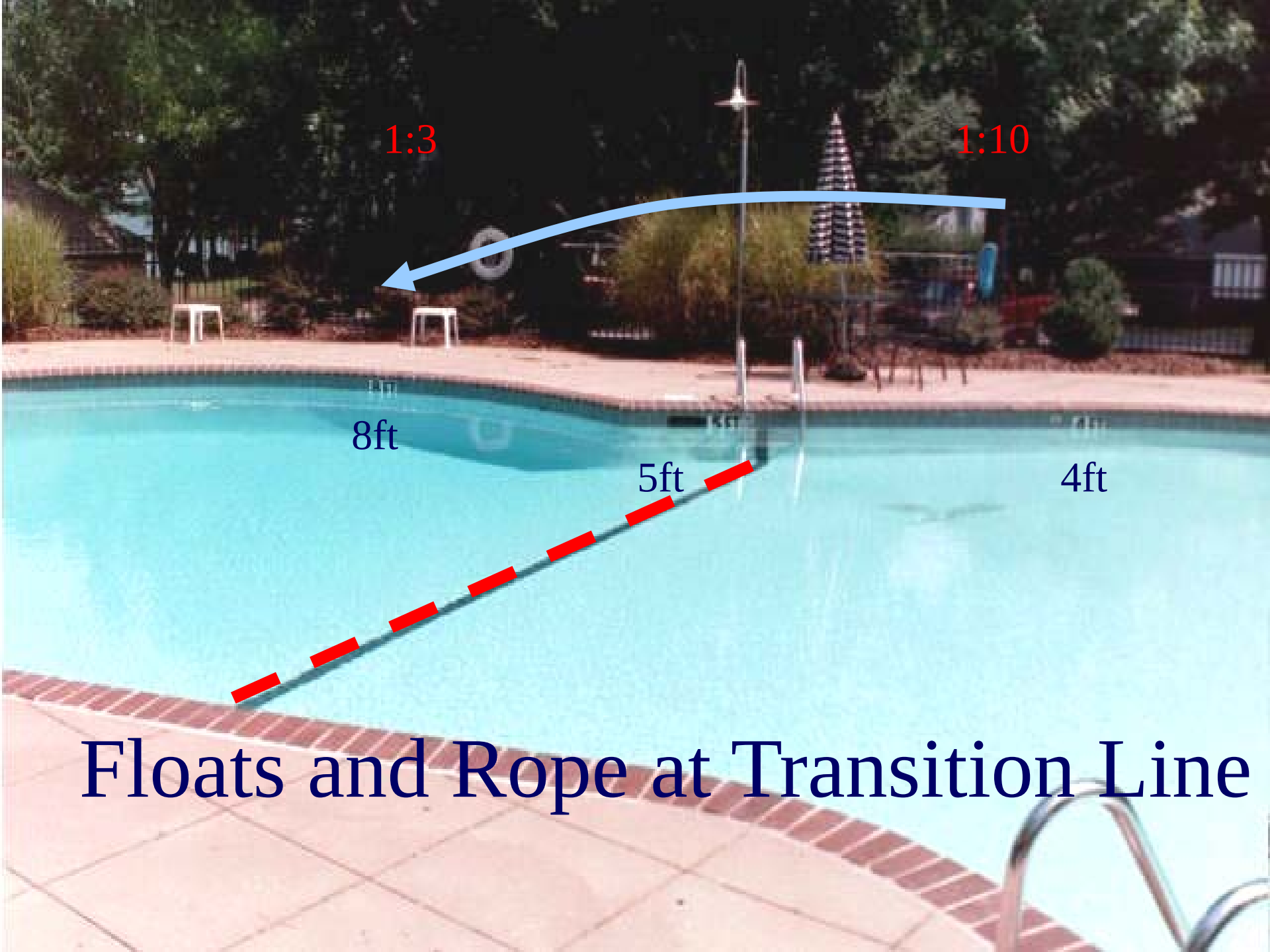
NO DIVING

4

FT



NO DIVING



1:3

1:10

8ft

5ft

4ft

Floats and Rope at Transition Line

2 Inch Wide Contrasting
Color Band on Floor

3/4 Inch Diameter Safety Rope

Floats must be spaced no
greater than 5 feet apart

Connections Must be
Recessed in the wall





Uniform-1:10 slope on the pool floor---No transition line needed

.2524 Lighting and Ventilation

.2524 Lighting and Ventilation

- Artificial lighting shall be provided at all indoor pools and at outdoor pools used at night
- 0.6 watts or 10 lumens per square foot of deck area when underwater lighting is used
- 2 watts or 33.5 lumens per square foot of pool area when underwater lighting is not used



.2524 Lighting and Ventilation

- Underwater lighting shall provide at least 0.5 watts or 8.35 lumens per square foot of water surface
- Must light the whole pool
- Fixtures shall be installed so as not to create hazards

.2525 Heater and Temperature Requirements

.2525 Heater and Temperature Requirements

- Pool heaters shall be designed for the purpose intended
- Controls must assure operating range is maintained below the maximum temperature of 104° F for spas and 90° F for swimming pools



.2526 Dressing and Sanitary Facilities

.2526 Dressing and Sanitary Facilities

- Bathhouses are required except at:
 - hotels, motels, condominiums and apartments
- Toilets are required at hotels, motels, condominiums and apartments if the farthest unit is more than 300 feet walking distance from the pool
- Determine number of fixtures on the size of the pool

.2526 Dressing and Sanitary Facilities

- Pools must post a sign directing pool users to shower before entering the pool
- Floors shall be slip resistant and shall be sloped to floor drains
- Hot water shall not exceed 110 degrees F
- Shatterproof mirrors



Please **SHOWER**
BEFORE
ENTERING POOL





.2527 Swimming Pool Slides

.2527 Swimming Pool Slides

- Labeled for use in public swimming pools
- Installed in accordance with manufacturer's instructions



.2528 Fences

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.2528 Fences



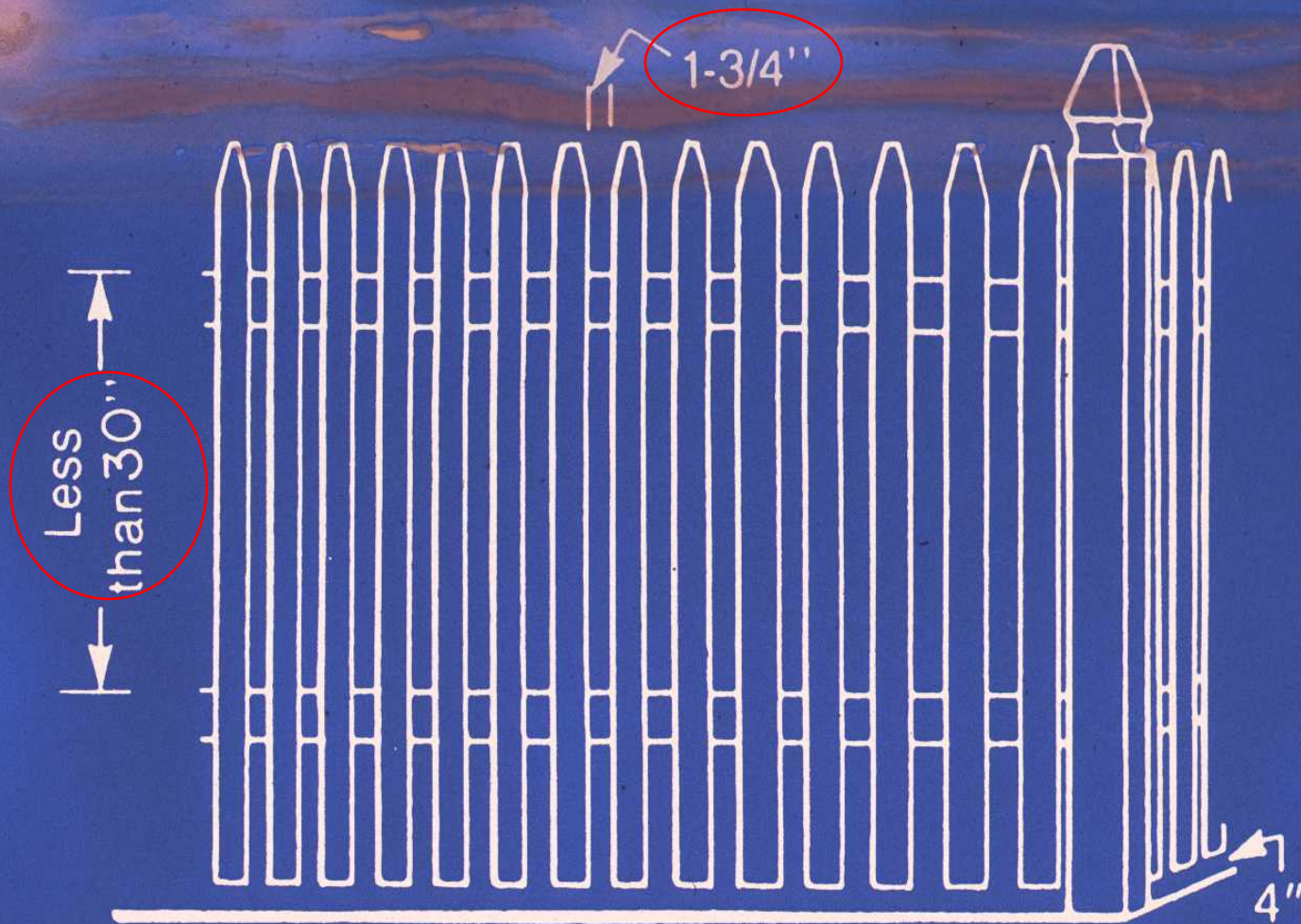
- Pool must be protected by a fence, wall, building, or other enclosure, or any combination thereof, which completely encloses the swimming pool area
- Fence must not afford external handholds or footholds.
- Use of wire mesh is limited to 2 1/4 inch or less



.2528 Fences

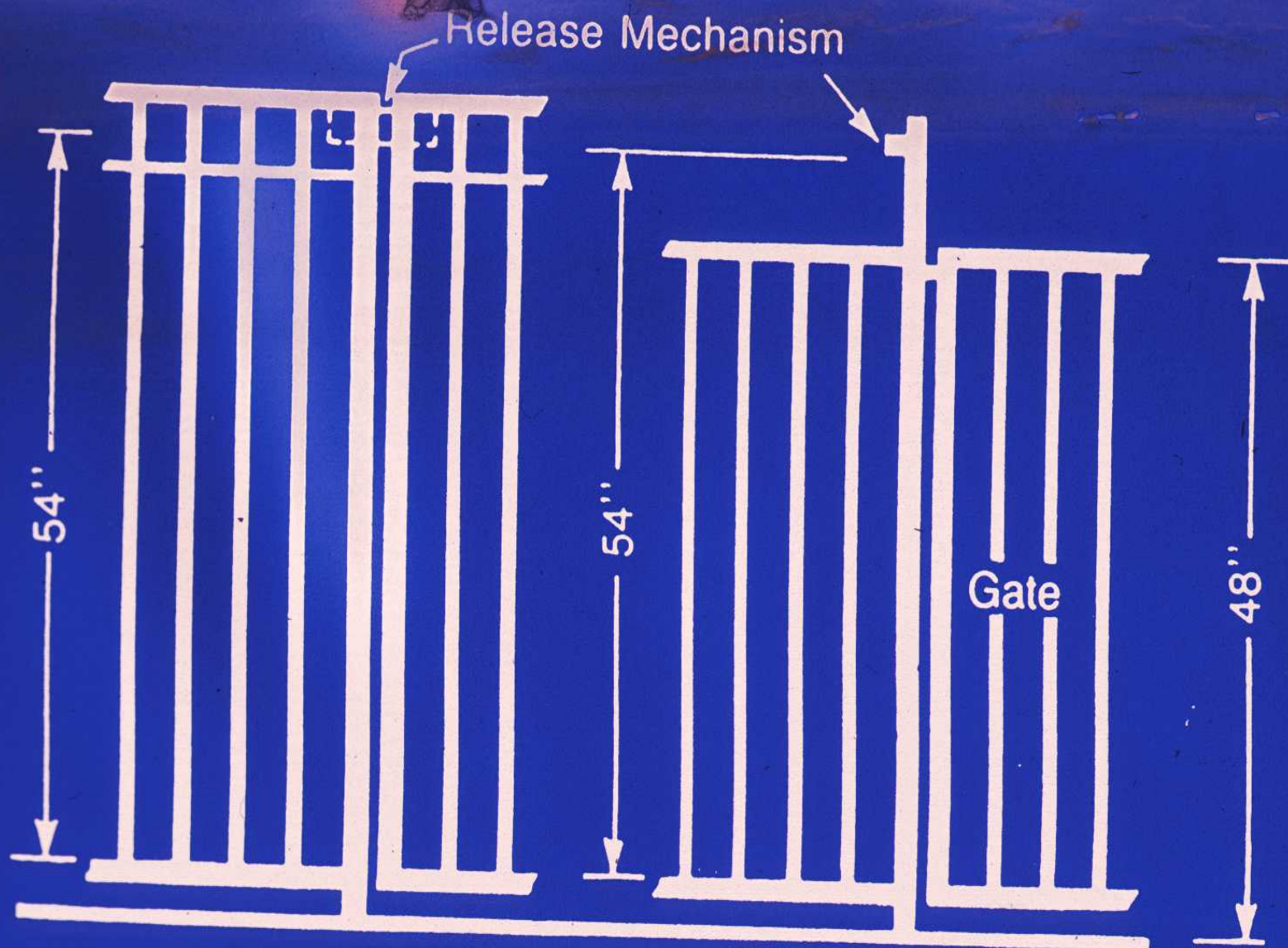
- Gates must be equipped with self-closing and self-latching closure mechanisms





PARA. 4: IF HORIZONTAL MEMBERS ARE LESS THAN 30'' APART, VERTICAL SPACING SHALL NOT EXCEED 1-3/4''.





RELEASE MECHANISM LOCATED AT 54" OR
HIGHER FROM THE BOTTOM OF THE GATE.

Gate must open
“away” from the pool

48” tall

$>1\frac{3}{4}$ ”

18” barrier,
openings $<1/2$ ”

Latch 54” or
3” from top of a 48”
fence with an 18”
barrier

30” between rails

4” sphere



.2530 Safety Provisions

.2530 Safety Provisions (Signs)

- “WARNING NO LIFEGUARD ON DUTY”
(4 inch minimum letter size)
- “CHILDREN SHOULD NOT USE THE
SWIMMING POOL WITHOUT ADULT
SUPERVISION”
- “ADULTS SHOULD NOT SWIM ALONE”

WARNING

NO LIFEGUARD

4" Letters

ON DUTY

1" Letters

**CHILDREN SHOULD NOT USE
THE SWIMMING POOL WITHOUT
ADULT SUPERVISION. ADULTS
SHOULD NOT SWIM ALONE.**

Mon 1/8
9:21 pm

The Jamie Kennedy Experiment

Time Left: 0:19

5
KTLA

List: All Sub



POOL RULES

1. NO RUNNING.
2. NO BOISTEROUS OR ROUGH PLAY.
3. NO DIVING ALLOWED IN AREAS OF THE POOL LESS THAN 5 FEET DEEP OR IN POOLS NOT APPROVED FOR DIVING.
4. CHILDREN SHOULD NOT USE THE SWIMMING POOL WITHOUT ADULT SUPERVISION.
5. ADULTS SHOULD NOT SWIM ALONE.
6. NO PERSON UNDER THE INFLUENCE OF ALCOHOL OR DRUGS SHOULD USE THE POOL.
7. NO PERSON WITH SKIN, EYE, EAR OR NASAL INFECTIONS ALLOWED IN THE POOL.
8. NO PERSON WITH COMMUNICABLE DISEASE ALLOWED IN THE POOL.
9. NO ANIMALS OR PETS ALLOWED IN THE POOL OR ON THE DECK.
10. NO GLASS ALLOWED IN THE POOL OR ON THE DECK.
11. ALL PERSONS USING POOL DO SO AT THEIR OWN RISK. OWNERS AND MANAGEMENT ARE NOT RESPONSIBLE FOR ACCIDENTS OR INJURIES.
12. POOL IS FOR PRIVATE USE. MEMBERS AND GUEST ONLY.
13. MANAGEMENT RESERVES THE RIGHT TO DENY USE OF THE POOL TO ANYONE AT ANYTIME.
14. THIS POOL IS OPEN FROM _____ A.M. TO _____ P.M.
15. THE MAXIMUM NUMBER OF SWIMMERS ALLOWED IN THE POOL IS _____.
16. A FIRST AID KIT IS LOCATED _____.
17. EMERGENCY TELEPHONE (or other notification device) IS LOCATED _____.

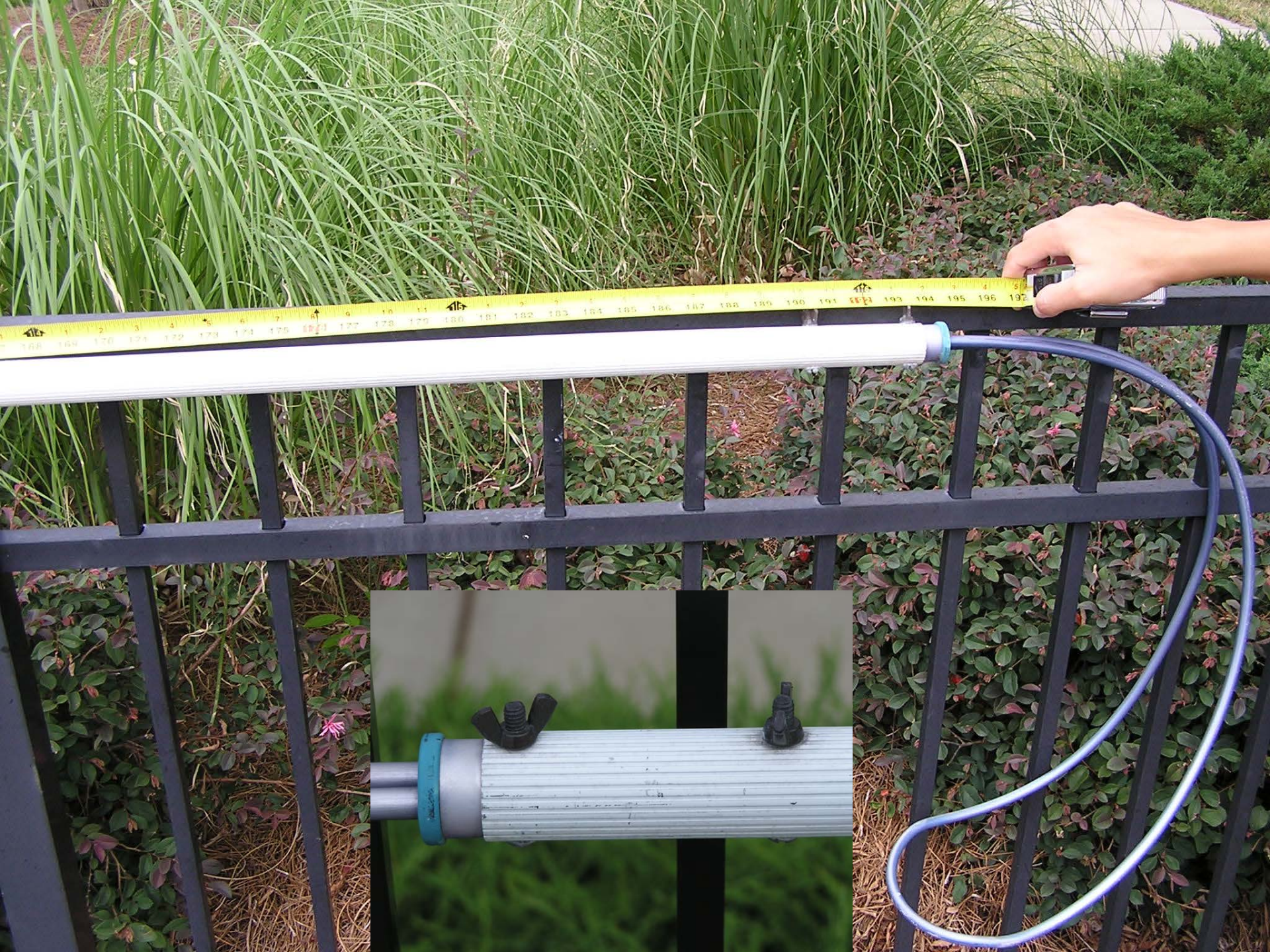
No Pets and
No Glass

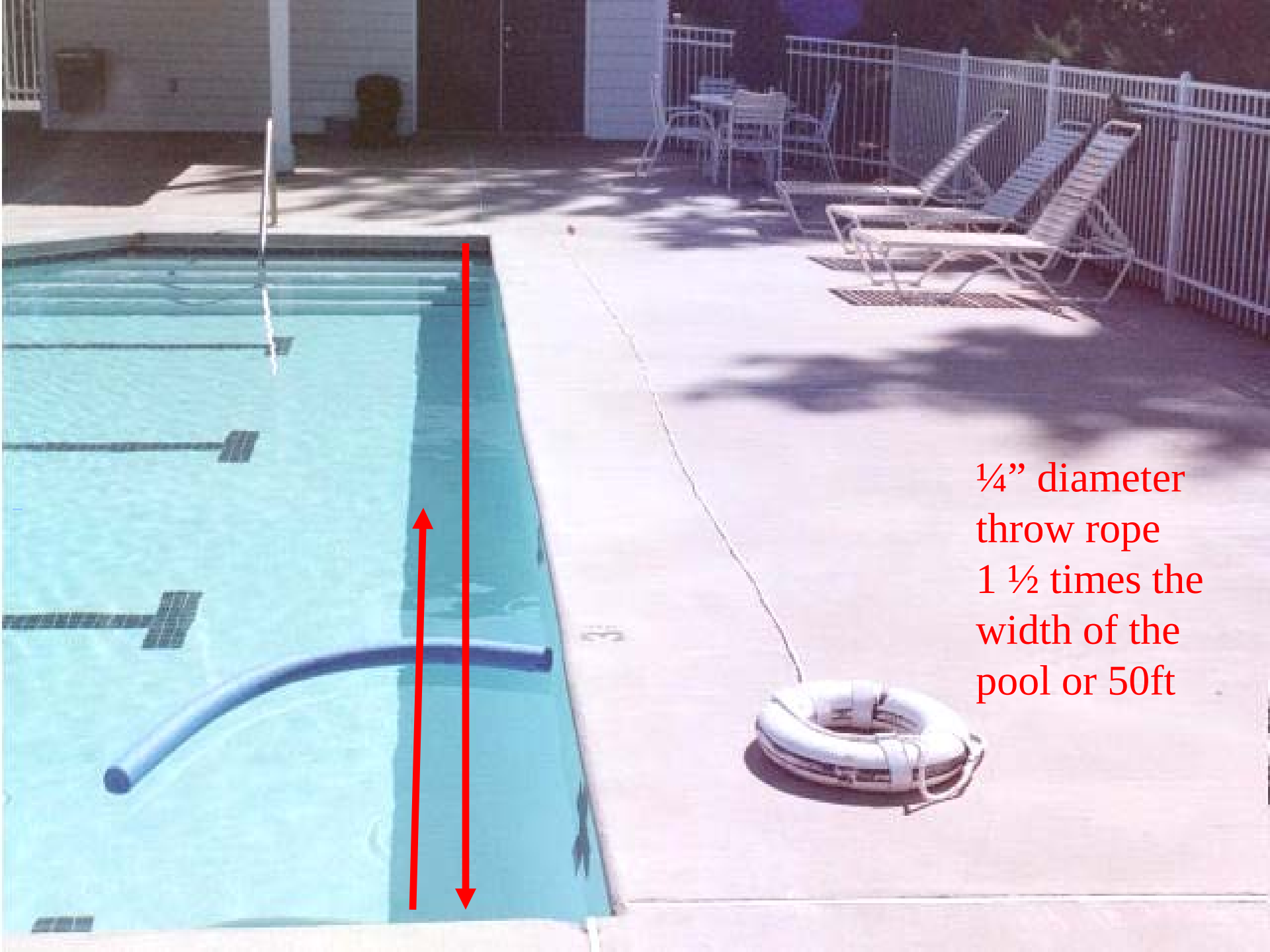
1 Unit of Lifesaving Equipment

12feet min pole
with a body hook

USCG approved ring buoy
with throw rope

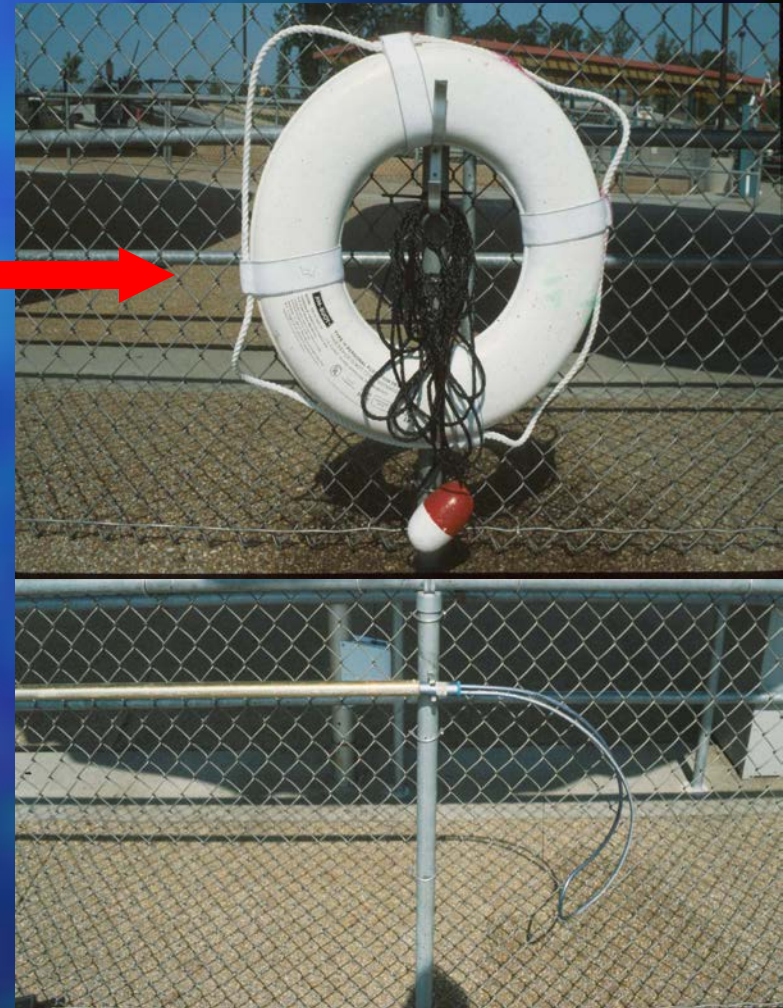






$\frac{1}{4}$ " diameter
throw rope
 $1\frac{1}{2}$ times the
width of the
pool or 50ft

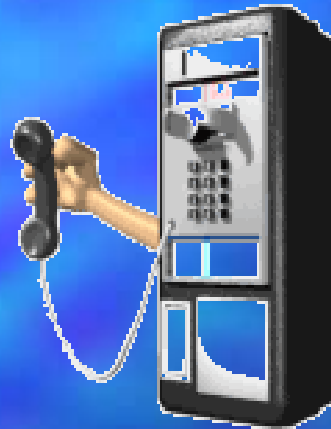
The Rescue tube / Rescue can will only be accepted in substitute for the ring buoy where it is used by a trained lifeguard





Pool Phones

Capable of directly dialing 911



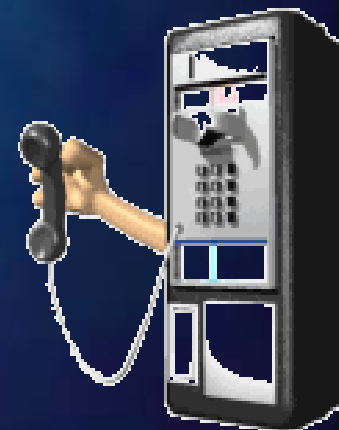
Accessible to all pool users and located within 300 feet of the pool (75 feet by 2005)





.2530 Safety Provisions(cont)

- Effective April 1, 2005 requires that the telephone capable of directly dialing 911 or other emergency notification system shall be permanently affixed to a location inside the pool enclosure or outside the enclosure within 75 feet of a bather entrance.
- Requires that the telephone shall be visible from within the pool enclosure or a sign shall be posted indicating the location of the emergency telephone.
- Requires that a sign with legible letters shall be posted at the telephone providing dialing instructions, address of the pool location and the telephone number.





.2530 Safety Provisions (cont)



- Requires where the telephone does not directly access 911, the emergency notification system shall meet the following requirements:
 - 1. Provide 24 hour monitoring of all incoming calls by a telecommunicator who answers only emergency calls; and
 - 2. Be capable of routing calls to the local 911 telecommunicator via the 911 dedicated trunk line; and
 - 3. Electronically transfer Automatic Number Identification and Automatic Locator Identification for the emergency telephone at the pool to the Enhanced 911 system for all calls routed to 911.

.2531 Wading Pools

.2531 Wading Pools



- Located near the shallow end of the swimming pool
- Separated from swimming pool by a fence
- Separate circulation system to filter water 12 times every 24 hours
- Maximum pool depth of 24 inches
- Free chlorine must be no less than 2ppm

.2531 Wading Pools-Children's Activity Pools



- Separate filter and feature pump systems
- 1 hour turnover rate
- At least 2ppm free chlorine residual in water and at least 1ppm free chlorine residual in water coming off the feature
- Valves are required to adjust water flow in the features with the manufacturer's recommendations

.2532 Spas and Hot Tubs



Redneck Swimming Pool

.2532 Spas and Hot Tubs

- Separate circulation system to filter water every 30 minutes
- Two separate drains connected by “T” pipe for hydrotherapy pump
- 15 minute timer on air blowers and hydrotherapy pumps
- 1 skimmer per 100 ft² of surface area
- Hot water caution sign required if > 90° F

Typical Spa





Heated Spas can
not exceed 104F

CAUTION: SPA RULES

1. Pregnant women, elderly persons, and persons suffering from heart disease, diabetes, or high or low blood pressure should not enter the spa/hot tub without prior medical consultation and permission from their doctor.
2. Do not use the spa/hot tub while under the influence of alcohol, tranquilizers, or other drugs that cause drowsiness or that raise or lower the blood pressure.
3. Do not use alone.
4. Unsupervised use by children is prohibited.
5. Persons using the spa/hot tub must shower before entering. No oils, body lotion, and minerals in the water.
6. all person using spa/hot tub do so at their own risk. Owners and management are not responsible for accidents or injuries.
7. Enter and exit slowly.
8. Observe reasonable time limits (that is, 10-15 minutes), then leave the water and cool down before returning for another brief stay.
9. Long exposure may result in nausea, dizziness, or fainting.
10. Keep all breakable objects out of the area.
11. Emergency telephone (or other notification device) is located ON The wall.

.2533 Equipment Room

.2533 Equipment Room

- Weatherproof structure
- 7 feet minimum ceiling height
- 3 feet of walkway to access equipment
- Lockable door
- Lighting provided
- Natural or forced ventilation



.2534 Chemical Storage Room

.2534 Chemical Storage Room

- Dry, weatherproof structure with a minimum 7 foot ceiling height
- Natural or continuous forced ventilation
- Shelves or other provisions for dry storage of chemicals
- Lighting required
- Chemicals which can react must be stored separately

MURIATIC ACID

CORROSIVE



31.45%
68.55%

FOR SWIMMING POOLS: Muriatic acid is a strong acid. A pH check should be made at the beginning of the swimming season and after heavy rain. The pH should be between 7.2 and 7.8. Use muriatic acid to adjust the pH of your pool and to bring the water to the proper level.

FOR ETCHING CONCRETE: Always wear protective clothing. Muriatic acid will etch concrete and masonry. It will also etch metal. Do not use on painted surfaces. Use on concrete and masonry. Apply with a brush or sponge. Rinse thoroughly with water. Usually 1 to 2 minutes. Repeat if necessary. Do not use on painted surfaces. Do not use on metal.

NOTICE: THE SELLER MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, AS TO THE ACCURACY OF THE INFORMATION ON THIS LABEL. THE USER ACCEPTS THE RISK OF INJURY OR DAMAGE TO PERSONS OR PROPERTY BY THE USE OF THIS PRODUCT. THE USER SHALL BE RESPONSIBLE FOR THE PROPER HANDLING, STORAGE AND USE OF THIS PRODUCT. THE USER SHALL ACCEPT AND USE THIS PRODUCT AT HIS OWN RISK.

PROtech

TRICHLOR

Stabilized Chlorinating Sticks
For Chlorinators and Skimmers

KEEP OUT OF REACH OF CHILDREN

Good Room



Bad Room



.2535 Water Quality Standards

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Water Balance Parameters

- Water Balance has many parameters:
 - pH
 - Total Alkalinity
 - Calcium Hardness
 - Total Dissolved Solids
 - Temperature

Water Balance

Water Balance tells us one of three things about the water in a pool:

- 1 – Corrosive – Dissolves Calcium Carbonate, Grout and Concrete (and other things)
- 2 – Scaling – Deposits Calcium Carbonate (Scale)
- 3 – Balanced – Not Corrosive nor Scaling

pH

- Rule .2535(1) states “The chemical quality of the water shall be maintained in an alkaline condition at all times with the pH between 7.2 and 7.8”



What is pH?

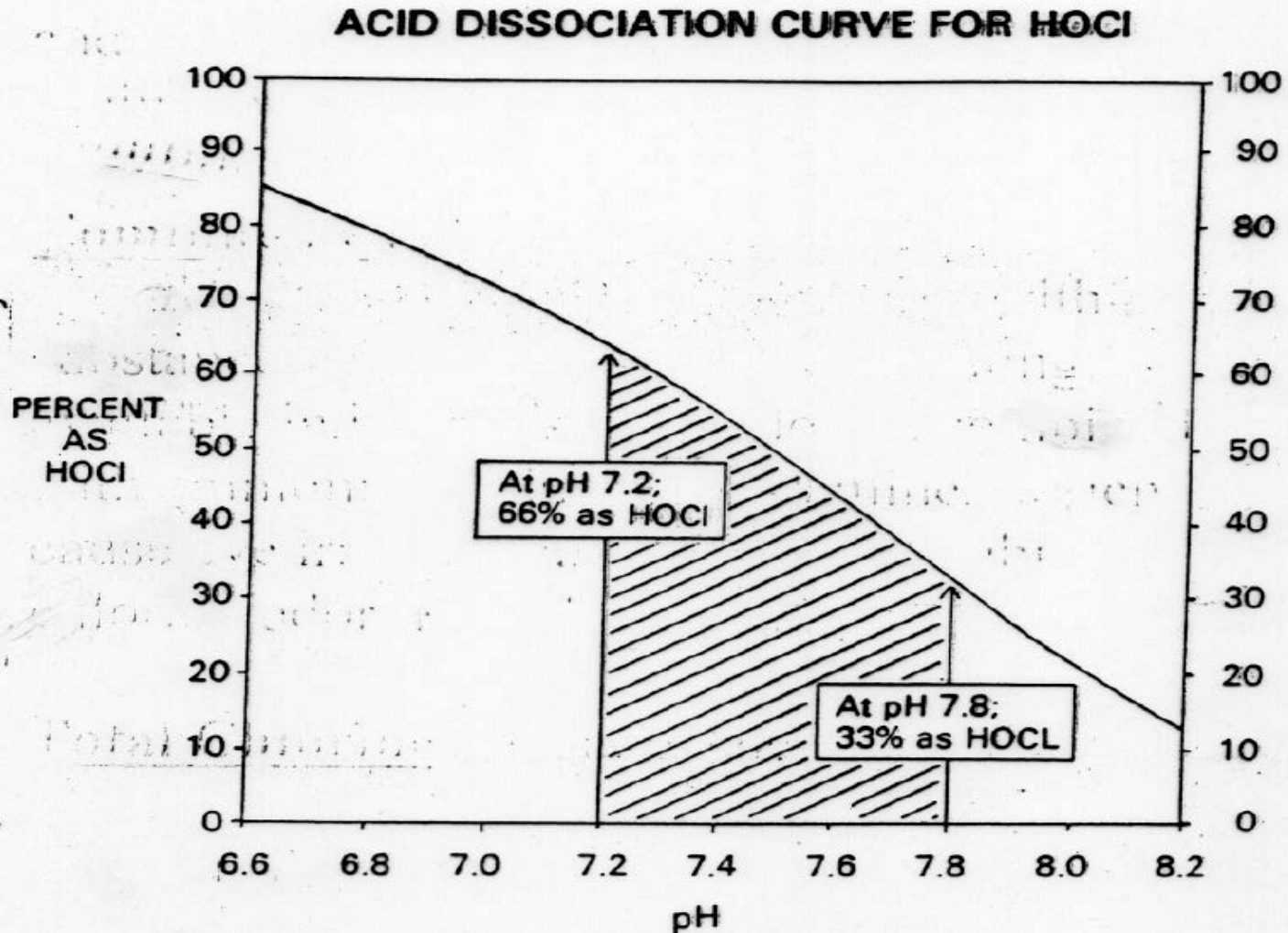
- It is the negative logarithm of the hydrogen ion concentration of a substance or solution
- $\text{pH} = -\log_{10}[\text{H}^+]$
- The pH scale is 0 to 14 with 7 being neutral
- Simply stated, pH tells us how acidic or basic (alkaline) a substance is

Why is pH so important?

There are two reasons why it is important to maintain pH between 7.2 and 7.8

1. – Chlorine Efficiency
2. – Bather Comfort

How pH Affects Chlorine



Bather Comfort

- A pH of 7.5 is ideal for bather comfort.
- It is comfortable for both the eyes and the skin.
- The pH of tears is approximately 7.5

pH and Pool Problems

Low pH

- Corrosion
- Eye and skin irritation
- Loss of chlorine
- Loss of alkalinity
- Etching of plaster

High pH

- Scaling
- Eye and skin irritation
- Chlorine activity is slowed / inefficient
- Scaling causes short filter runs, reduced circulation and cloudy pool water

Factors Affecting pH

Lowers pH

- Trichlor
- Acid Rain
- Windblown Acidic Compounds
- Makeup Water

Raises pH

- Liquid Chlorine
- Calcium Hypochlorite
- Urine
- Makeup Water

How is pH adjusted

- pH is raised by adding Sodium carbonate (Soda ash)
- pH can be lowered by adding Muriatic acid, Sodium bisulfate or Carbon dioxide
- Many larger pools are using Carbon dioxide to lower pH – why are they using it and how does it work?

Total Alkalinity

- The proper total alkalinity level is essential in maintaining the pH of the water
- TA is the measure of alkaline materials (mostly carbonates and bicarbonates) in the water.
- TA determines the water's resistance to changes in pH (It is the buffering capacity of the water)
- Ideal range for TA: 80 to 120 ppm

Total Alkalinity Problems

If Total Alkalinity is too low (Below 80 ppm)

- pH bounce
- Corrosion

If Total Alkalinity is too high (Above 120 ppm)

- Upward drift of pH and pH “lock”
- Scale formation

How is Total Alkalinity Adjusted

- Total Alkalinity is raised by adding Sodium bicarbonate (Baking soda)
- Sodium carbonate (Soda ash) that is added to raise pH will also raise Total Alkalinity somewhat
- Muriatic acid and Sodium bisulfate will lower Total Alkalinity

Calcium Hardness

- CH is a measurement of the Calcium and Magnesium content of the water.
- Low CH = Corrosion
- High CH = Scaling
- Ideal Range: 200 to 400 ppm
- Raise CH with Calcium chloride
- Lower CH by diluting the pool water with softer water

Water Clarity

- Rule .2535(2) states “The clarity of the water shall be maintained such that the main drain grate is visible from the pool deck at all times.”
 - Algae
 - Total Dissolved Solids

Disinfection of Pool Water

- The most common disinfectants used for pools are chlorine and bromine
- Biguanides can also be used in pools
- Other disinfection chemicals and processes can be approved as long as they meet the criteria in Rule .2535(3)(a-f)

Chlorine



- When chlorine is used as the disinfectant, a free chlorine residual of at least 1 ppm must be maintained. This applies to swimming pools and spas.
- Wading pools, children's activity pools, and interactive play attractions must maintain a free chlorine residual of at least 2 ppm.
 - Children's activity pool water features must maintain a free chlorine residual of at least 1 ppm.

Cyanuric Acid

- Pools using chlorine must be stabilized with cyanuric acid – except at indoor pools or where it can be shown that cyanuric acid is not necessary to maintain a stable free chlorine residual.
 - Some chlorine products contain cyanuric acid
- The cyanuric acid level shall not exceed 100 parts per million.

Unstabilized vs. Stabilized

- Unstabilized Chlorine – is a chlorine source that is not protected from UV rays in sunlight.
- Stabilized Chlorine – is a chlorine source that contains cyanuric acid, which protects the chlorine from degradation by UV rays in sunlight.

Types of Chlorine Used in Pools

- Sodium Hypochlorite – liquid, inexpensive, bulky and heavy, raises pH
- Calcium Hypochlorite – tablet or granular, easy to handle and store, raises pH
- Trichloroisocyanuric Acid – easy to handle, stabilizer (Cyanuric Acid) is built in, lowers pH and TA and raises cyanuric acid levels.
- **The use of chlorine in its elemental (gaseous) form is prohibited.**

How Chlorine Works

- When a chlorine compound is added to water it reacts with the water and produces Hypochlorous Acid – the active disinfectant – and a by product.
- Hypochlorous Acid dissociates at higher pH's to form inactive hydrogen ions and hypochlorite anions.
- Remember – chlorine is 66% effective at pH 7.2 and only 33% effective at pH 7.8

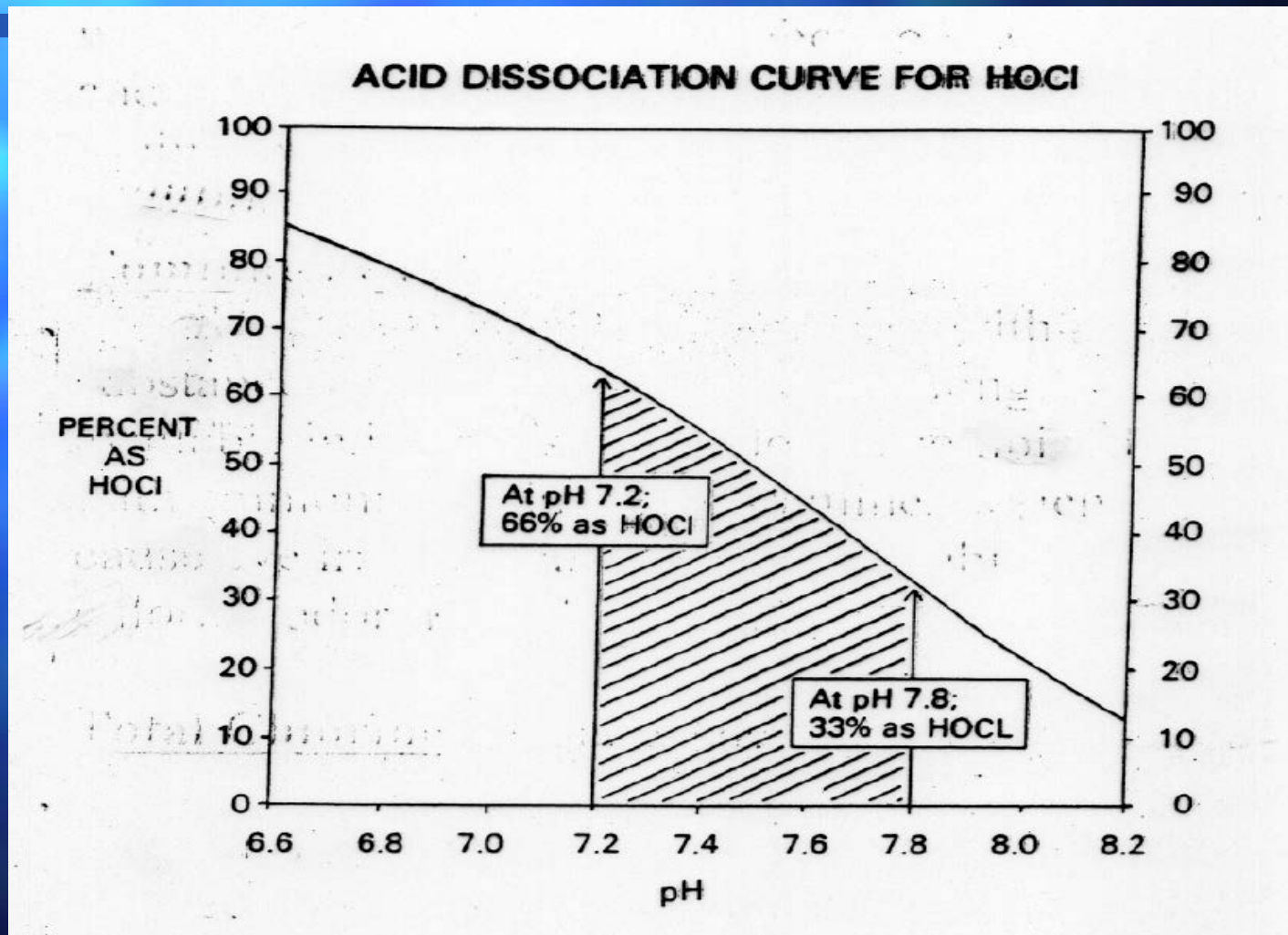
Disinfection Time for Fecal Contaminants in Chlorinated Water*

■ E. coli	Less than 1 minute
■ Hepatitis A	16 minutes
■ Giardia	20-45 minutes
■ Cryptosporidium	9600 minutes (10080 min/week!)

*1 ppm chlorine at pH 7.5 and 25 C

Table courtesy of: Centers for Disease Control and Prevention

How pH Affects Chlorine



Free Chlorine Residual

- Free Chlorine Residual – The amount of chlorine in the pool that has not reacted with a substance other than water. It is “free” and available to disinfect pool water and oxidize organic substances. It is the active form of chlorine in water (HOCl – Hypochlorous Acid) responsible for killing bacteria.

Combined Chlorine

- Combined Chlorine is chlorine in the pool that has reacted with a substance other than water. It is no longer available in its “free” state. Chlorine combined with ammonia produces chloramines that cause eye irritation and an objectionable chlorine odor. **Maintain below 0.2 ppm.**

Determining Combined Chlorine

- Total Cl = Free Cl + Combined Cl
- To determine the Combined Cl you must know the Total and Free Cl levels.

Total Chlorine 2.0 ppm

- Free Chlorine 1.5 ppm

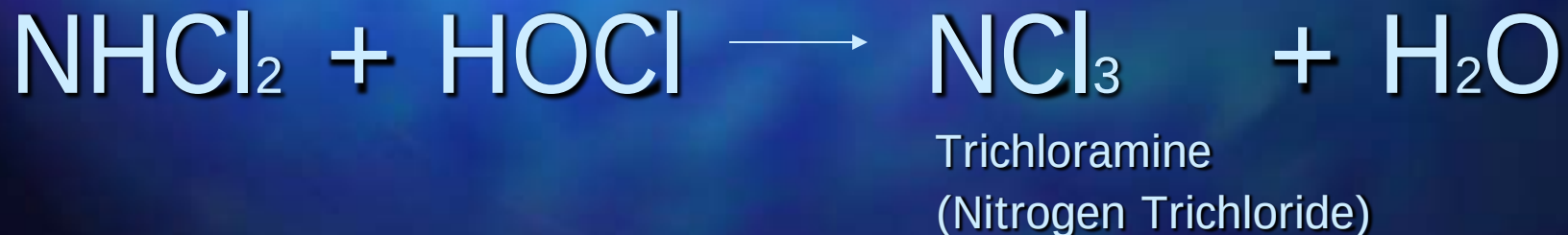
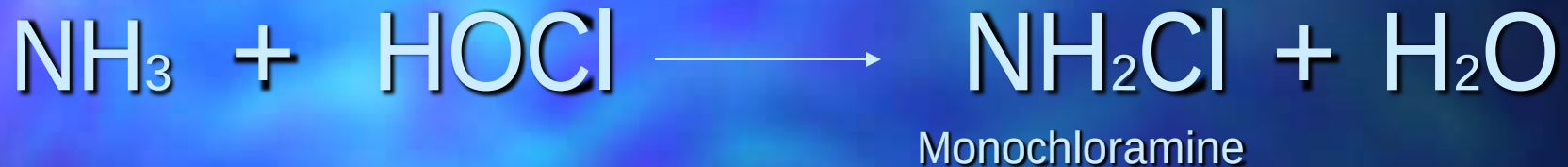
= Combined Chlorine 0.5 ppm

- Mathematical Relationship → $TC = FC + CC$
 $CC = TC - FC$

What causes combined chlorine?

Chlorine and Nitrogen

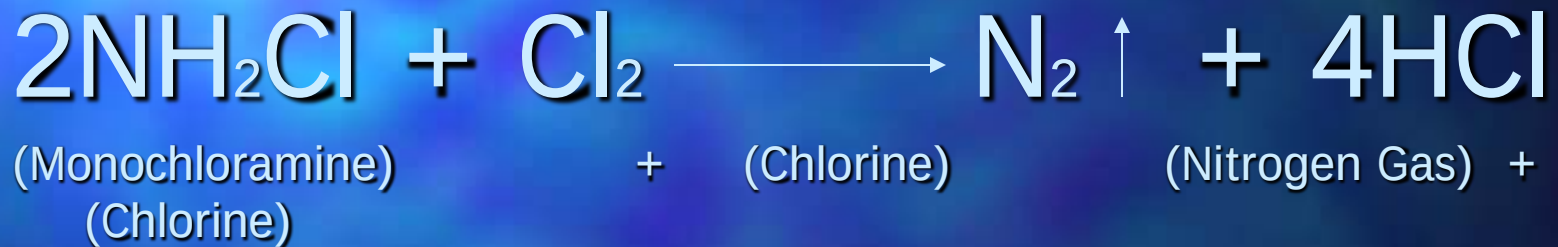
Hypochlorous acid (HOCl) reacts with nitrogen compounds to form chloramines or combined chlorine



“Freeing” Up The Chlorine

Breakpoint Chlorination

Breakpoint chlorination is the process of adding sufficient chlorine to chemically convert chloramines to inert nitrogen gas.

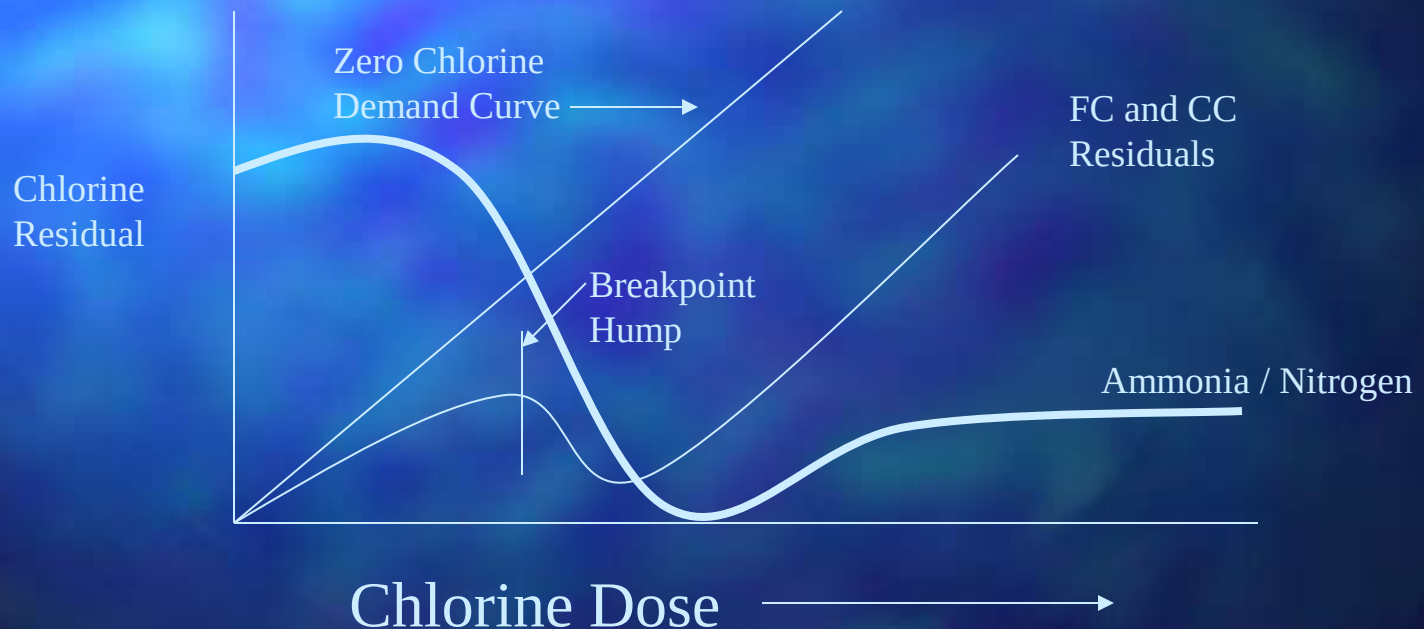


The ppm of added chlorine required to achieve breakpoint is the combined chlorine level x 10

Breakpoint Phenomenon

$$\text{Dosage FC} = \text{CC} \times 10$$

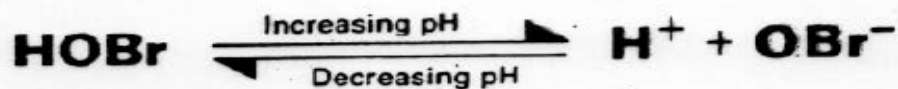
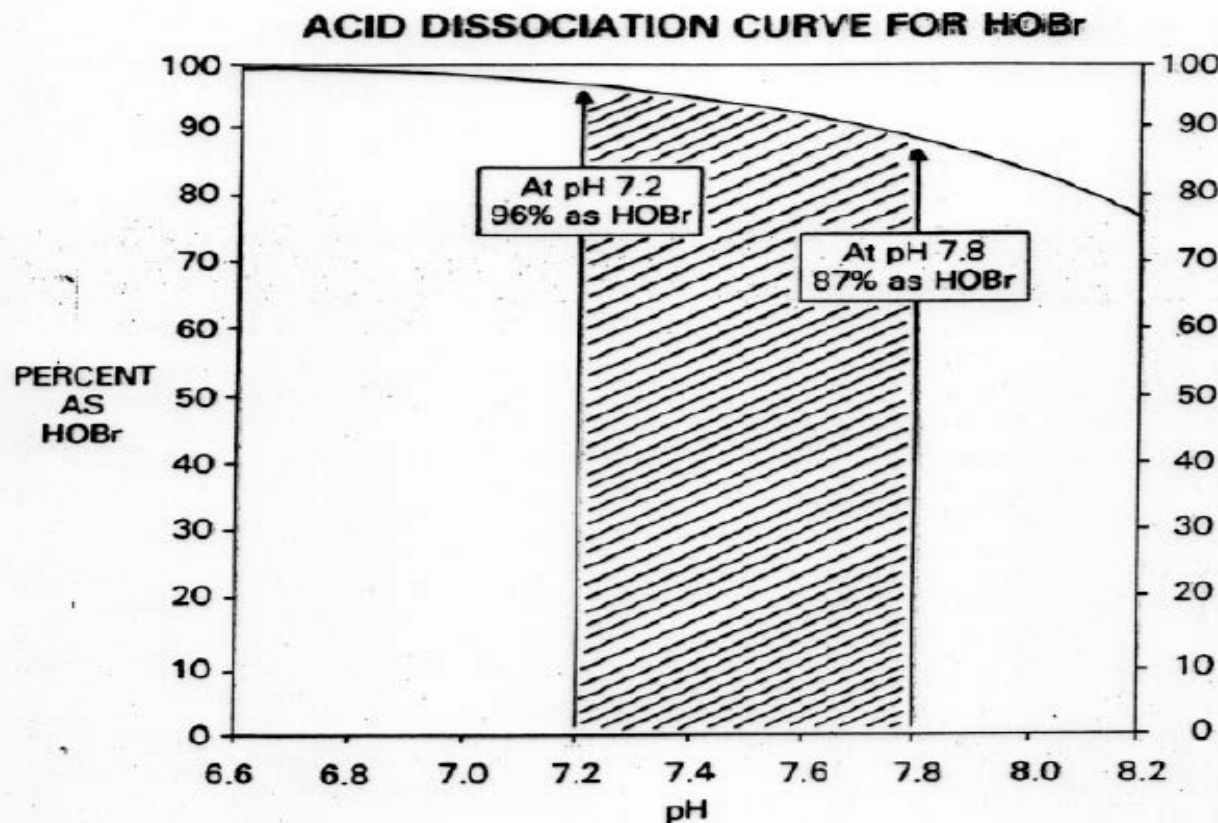
This dosage will minimize the CC level



Bromine

- When bromine or compounds of bromine are used as the disinfectant, a free bromine residual of at least 2 parts per million shall be maintained.
- Bromine can be measured with the same DPD test kits that are used to measure chlorine.

How pH Affects Bromine



Chloramines vs. Bromamines

<u>Property</u>	<u>Chloramines</u>	<u>Bromamines</u>
Odor	Unpleasant	Very little
Eye Irritation	High	Reduced
Skin Irritation	High	Low
Stability	Stable	Unstable
Disinfectant	Poor	Very good
Shock Needed	Yes	No

Automatic Chemical Feeders

- When chlorine or bromine is used as a disinfectant, automatic chemical feeders shall be used.
- Automatic Chemical Feeders for chlorine and bromine shall meet NSF/ANSI Standard 50.
- Automatic chlorine and bromine feeder pumps shall be automatically prevented from operating when the circulation pump is not in operation.

Automatic Chemical Pumps

- Automatic chlorine and bromine feeder pumps shall be automatically prevented from operating when the circulation pump is not in operation. This can be accomplished 3 ways:
- 1. Have both the chlorine (or bromine) feeder pump and the circulation pump wired on the same electrical circuit.
- 2. Have the chlorine (or bromine) feeder pump connected to a pressure switch that will shut off power to the feeder pump if circulation stops.
- 3. Have the chlorine (or bromine) feeder pump connected to a flow switch that will shut off power to the feeder pump if circulation stops.

Erosion Feeder vs. an Automatic Chemical Feeder

Erosion Feeder



Automatic Chemical Controllers



Biguanide

- When biguanide is used as the disinfectant a residual of 30 to 50 parts per million shall be maintained.
- Baquacil and Softswim are two trade names of biguanide.
- Need a biguanide test kit to measure residual
- Does not require automatic chemical feeder
- pH shall be maintained between 7.2 and 7.8

Alternative Disinfectants

- Silver / copper ion systems – Copper concentration cannot exceed 1 ppm and must maintain at least 1 ppm free chlorine
- Ozone generators – Must maintain 1 ppm free chlorine
- Ultraviolet light – Must maintain 1 ppm free chlorine

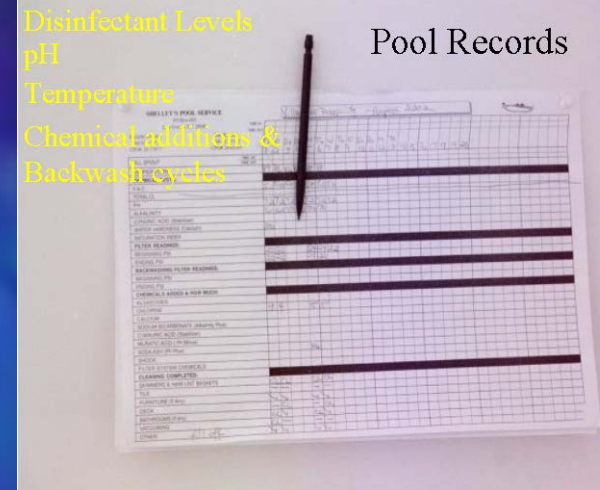
Test Kits



- Must be maintained at each pool site.
- Must be capable of measuring disinfectant level, pH, and total alkalinity.
- Pools using cyanuric acid and or chlorinated isocyanurates must have a test kit capable of measuring cyanuric acid levels.



Daily Records



- The pool operator shall inspect the pool at least daily and maintain written records including the following information:
 - Daily recording of the disinfectant residual in the pool
 - Daily recording of pool water pH
 - Daily recording of water temperature in heated pools; recording of activities pertaining to pool water maintenance including chemical additions and filter backwash cycles; and
 - Weekly recording of total alkalinity and cyanuric acid levels

Water Temperature

- Water temperature in heated swimming pools shall not exceed 90 degrees Fahrenheit and in heated spas shall not exceed 104 degrees Fahrenheit.

Fecal and Vomitus Accidents



- The pool operator shall take the following steps to manage fecal and vomitus accidents
 - a) Direct everyone to leave all pools in which water containing the feces or vomit is circulated and do not allow anyone to enter the pool(s) until decontamination is completed;
 - b) Remove as much of the feces or vomit as possible using a net or scoop and dispose of it in a sewage treatment and disposal system;
 - c) Raise the free available chlorine to 2 ppm at a pH 7.2 to 7.5 and test to assure the chlorine concentration is thoroughly mixed throughout the pool;

Fecal and Vomitus Accidents

- d) For accidents involving formed stools, or vomit maintain the free available chlorine concentration at 2 ppm for at least 25 minutes or at 3 ppm for at least 19 minutes before reopening the pool.

For accidents involving liquid stools increase the free chlorine residual and closure time to reach a CT inactivation value of 9600 then backwash the pool filter before reopening the pool.

CT refers to the concentration (C) of free available chlorine in ppm multiplied by time (T) in minutes.

Example: 20 ppm for 480 minutes (8hrs) = 9600CT

Pool Chemicals – Review

- Chlorine / Bromine – disinfects water
- Cyanuric acid – stabilizes chlorine
- Muriatic acid – lowers pH and TA
- Sodium bisulfate – lowers pH and TA
- Sodium carbonate (Soda Ash) – raises pH
- Sodium bicarbonate (Baking Soda) – raises TA
- Calcium chloride – raises CH

Testing Pool Water

- Always use a DPD test kit.
- OTO measures only total chlorine and it is a known human carcinogen.
- Follow the directions on the test kit.
- Get sample 12-18 inches below the surface, 6 inches from wall and away from inlets.
- Always hold dropper bottles vertical when adding reagent to the test vial.

Testing Pool Water (continued)

- Don't touch test tablets with your fingers.
- Don't cover the test vials with your fingers.
- Read test in shade, using a white background and with sunglasses off.
- Read immediately – don't wait.
- Dispose of test water in a deck drain – don't throw it back in the pool.

.2539 Suction Hazard Reduction and .2543 Water Recreation Attractions

Phil Thompson

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Swimming Pools, Tattoos and State Institutions

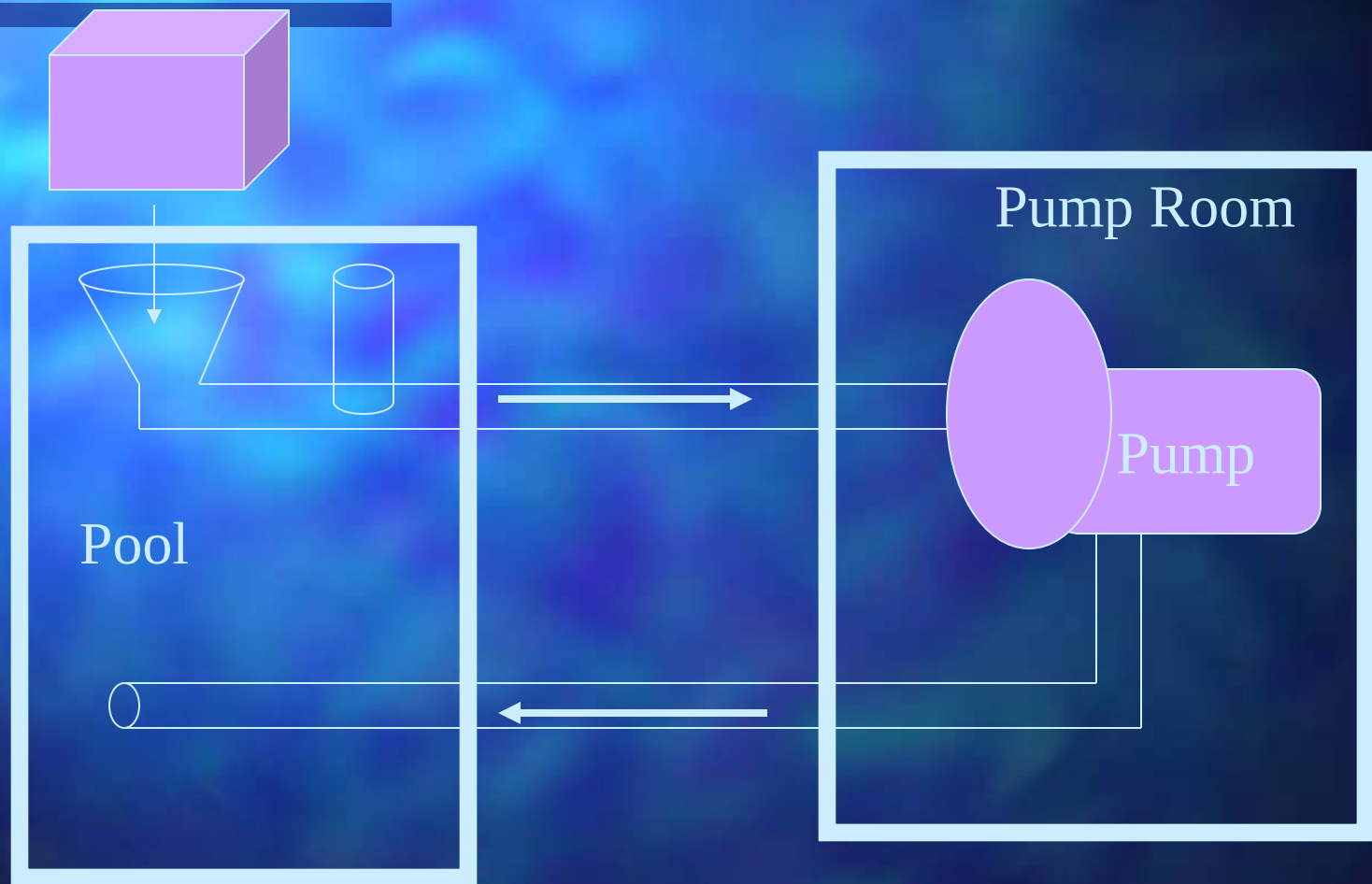
336-446-6905

Phil.Thompson@ncmail.net

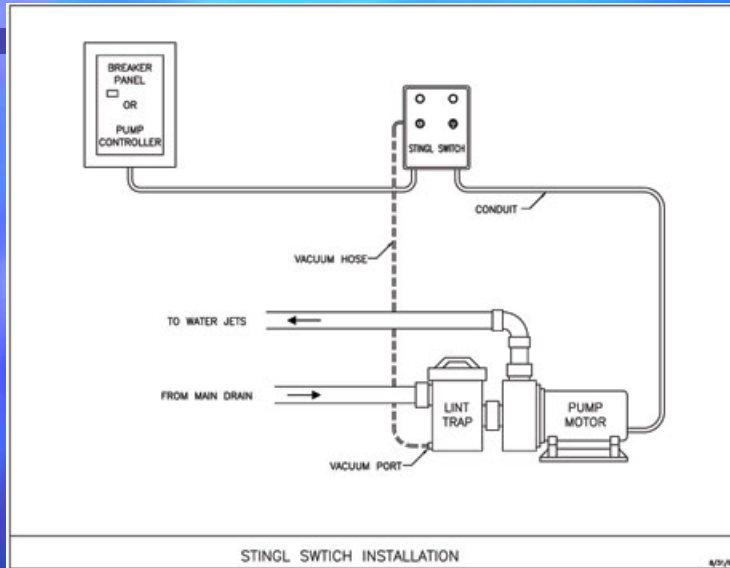
.2539 Suction Hazard Reduction

- All single drain public wading pools that use a single main drain must post a sign stating “WARNING To prevent serious injury do not allow children in wading pool if drain cover is broken or missing”

Anatomy of a Suction Hazard



.2539 Suction Hazard Reduction

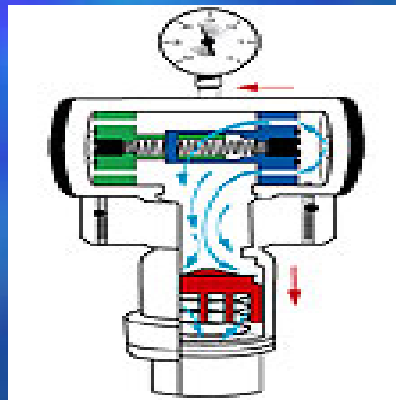




.2539 Suction Hazard Reduction

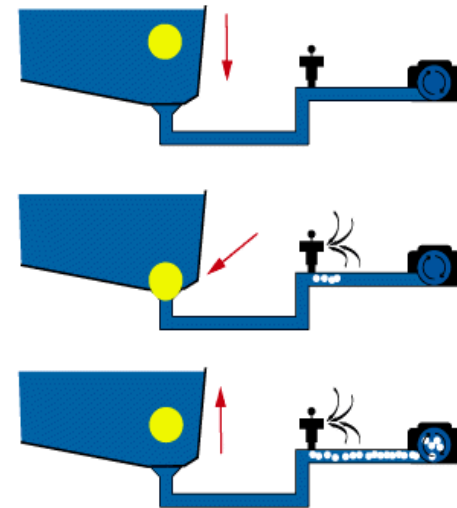
- Requires that no public swimming shall operate with a single outlet to any pump.
- Requires pools where flow from a single drain is balanced with flow from a surface skimmer to:
 - 1. Keep the skimmer valve in the open position and immobilized with a lock, tie or other method to secure against tampering.
 - 2. By April 1, 2006 install a safety vacuum release system on the drain piping and single drains smaller than 12 inches in diameter shall be protected by an anti-entrapment drain cover meeting AMSE/ANSI A112.19.8M

Safety Vacuum Release Systems

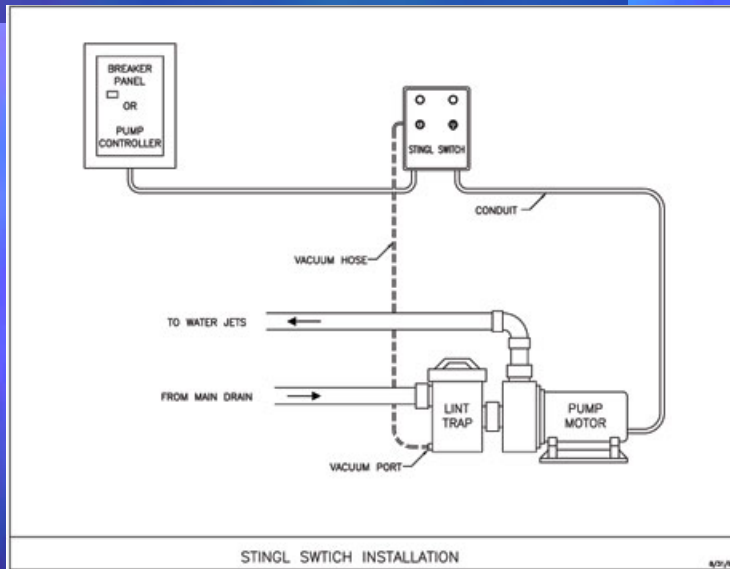


Vac-Alert

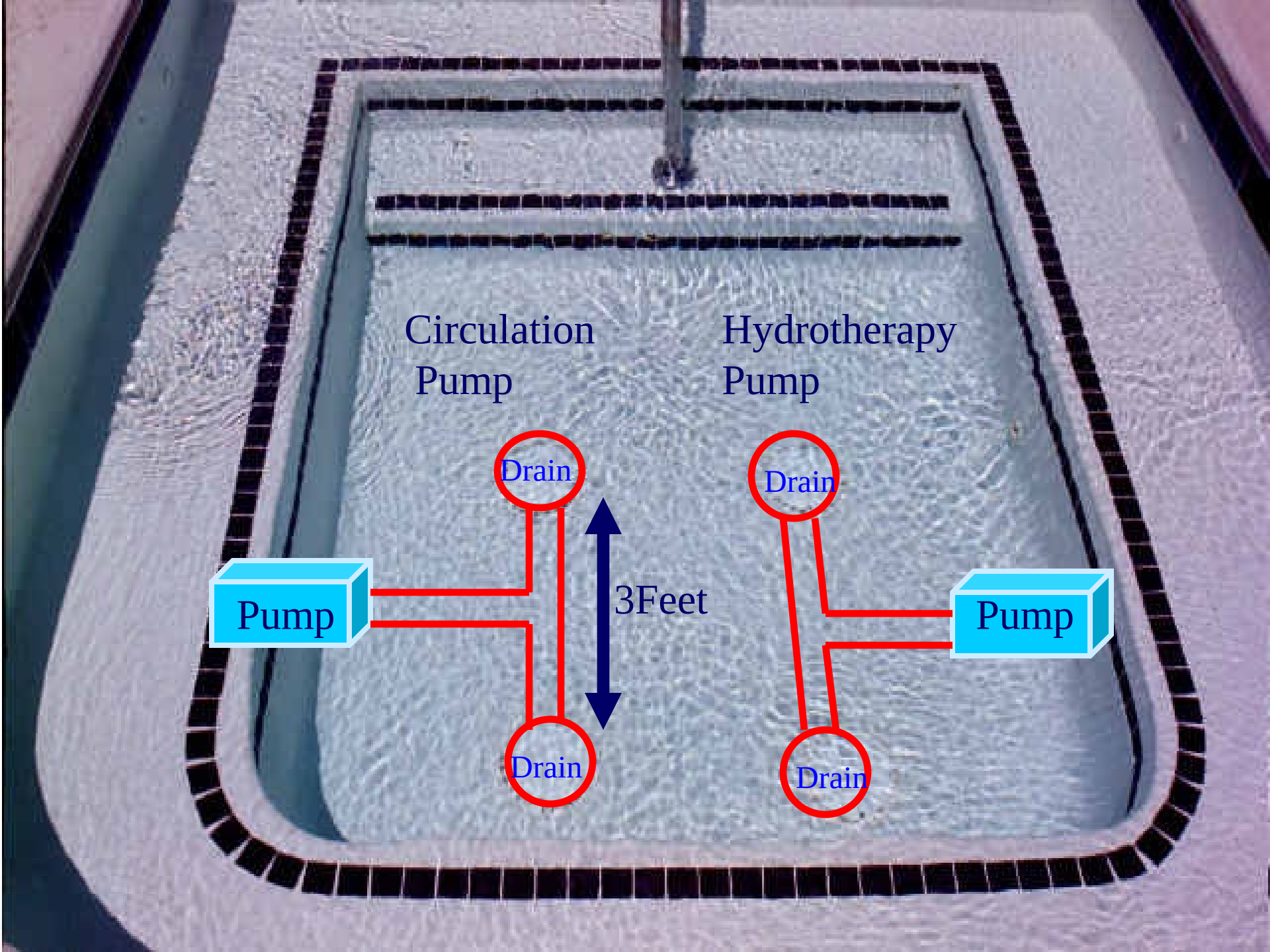
how it works



.2539 Suction Hazard Reduction



- Must be installed by April 1, 2006



Circulation
Pump

Hydrotherapy
Pump

Drain

Drain

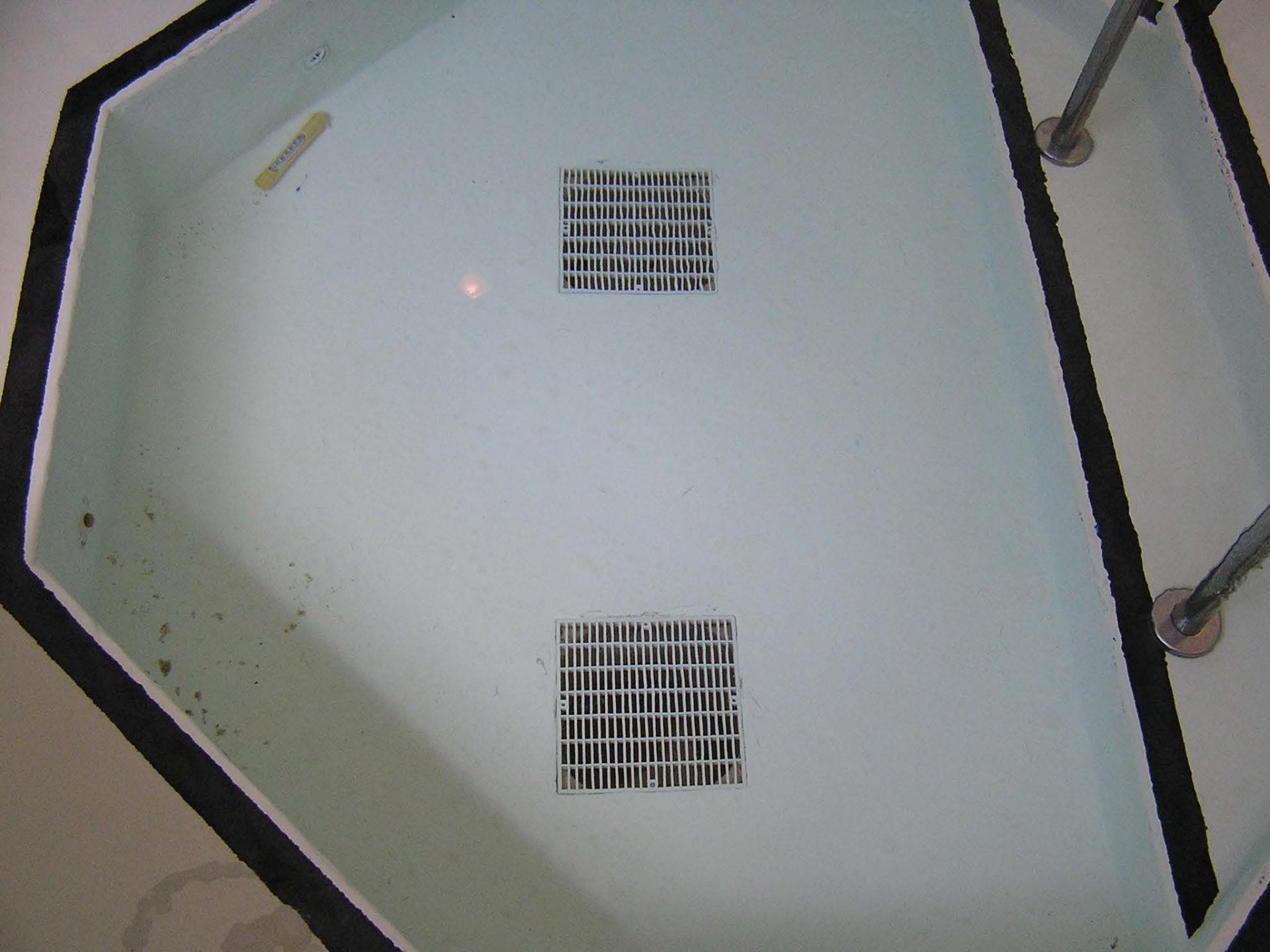
Pump

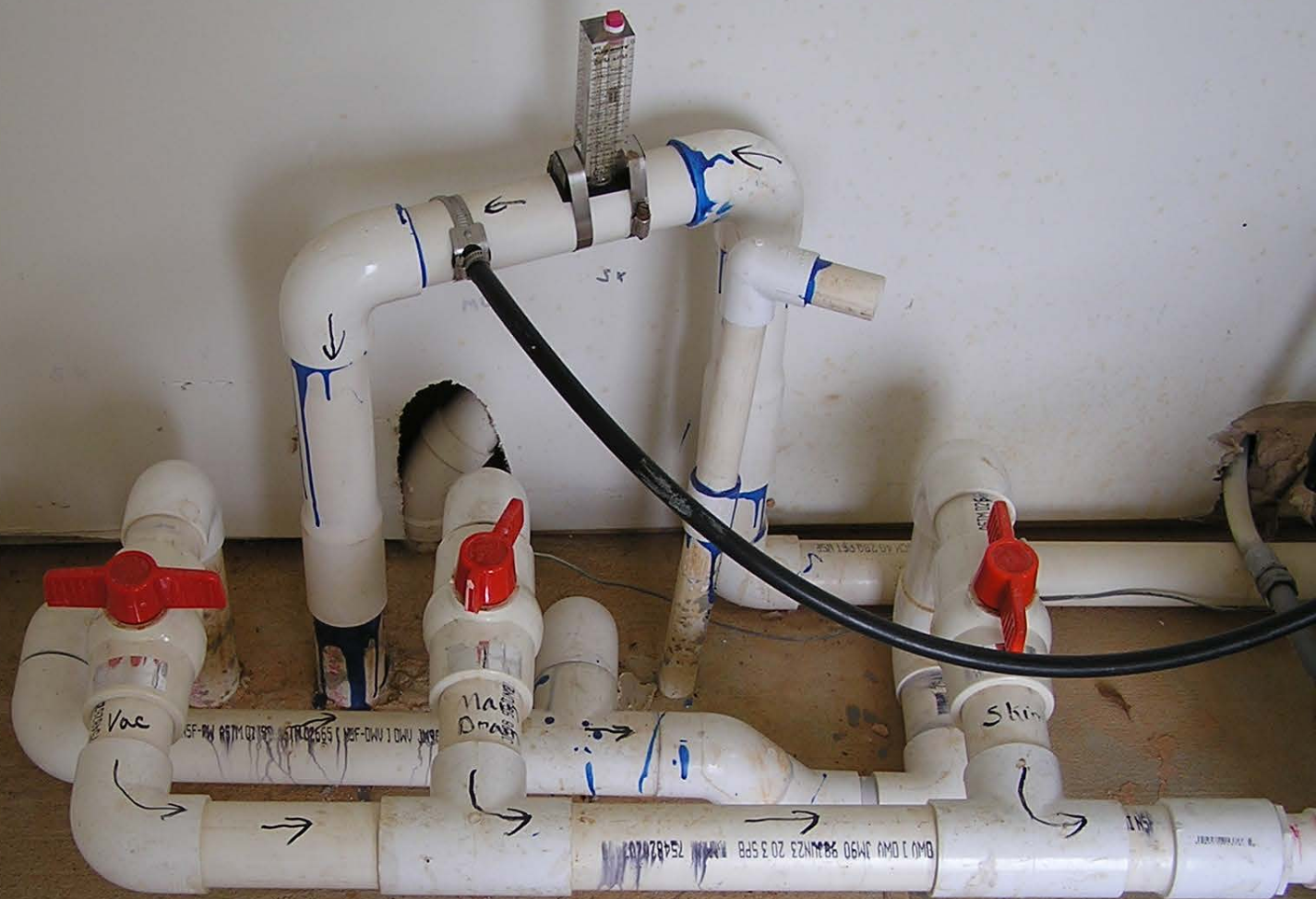
Pump

3Feet

Drain

Drain





Suction hazards on vacuum lines



.2543 Water Recreation Attractions

.2543 Water Recreation Attractions

Lazy river



- Water Recreation Attractions can deviate from the rules in respect to pool profile, depth, freeboard, flow dynamics, and surface skimming systems

Wave pool

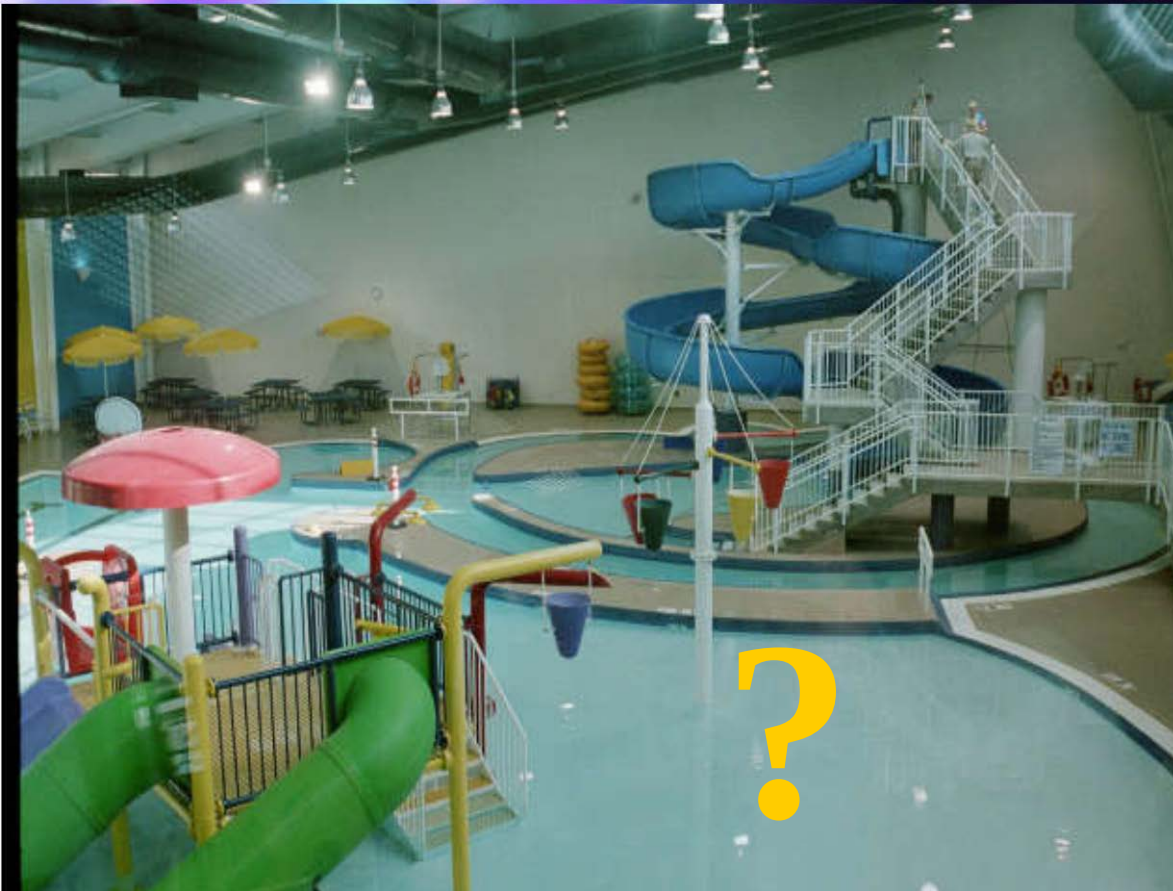


Wave pool



Water slide





.2537 Maintenance and Operation

Cindy Williams

Regional Environmental Health Specialist

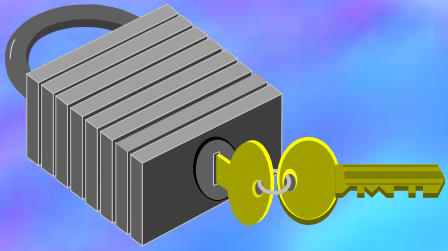
Pools, Tattoos and State Institutions

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.2537 Maintenance and Operation

- .2537 Addresses issues at pools built prior to the effective date of the rules
- Allows older pools built before 1993 to obtain a permit each year
- Pools not meeting the requirements of .2537 should not be issued a permit at the beginning of the season
- **Gives a basic set of standards that all pools are required to meet regardless of age**
- Separates the standards for new construction and older pool design



Intent to Suspend Items

- .2537 (a), (b)1-16, (c)
- Translation--Pools built before 1993 can operate with problems as long as those problems don't violate one of the rules in section .2537
 - Demerit points will be taken but the pool operational permit can be issued as long as none of the deficiencies appear in .2537
- (a) all public swimming pools constructed or remodeled on or after May 1, 1991 shall be maintained and operated in accordance with the Rules of this section.
- (b) On or after May, 1993 all public swimming pools including those constructed prior to May 1, 1991 shall be maintained and operated in accordance with the following:

.2537(b) Maintenance and Operation

- (1) All safety provisions of Rule .2530 of this section shall be met
 - Body hook and
 - Ring buoy or lifeguard with rescue tube
 - Warning signs
 - Telephone capable of directly dialing 911 or other emergency notification system

.2537(b) Maintenance and Operation

- (2) Decks shall be structurally sound and shall be free of trip hazards or offsets greater than one-half inch resulting from deterioration or changes from the original deck profile

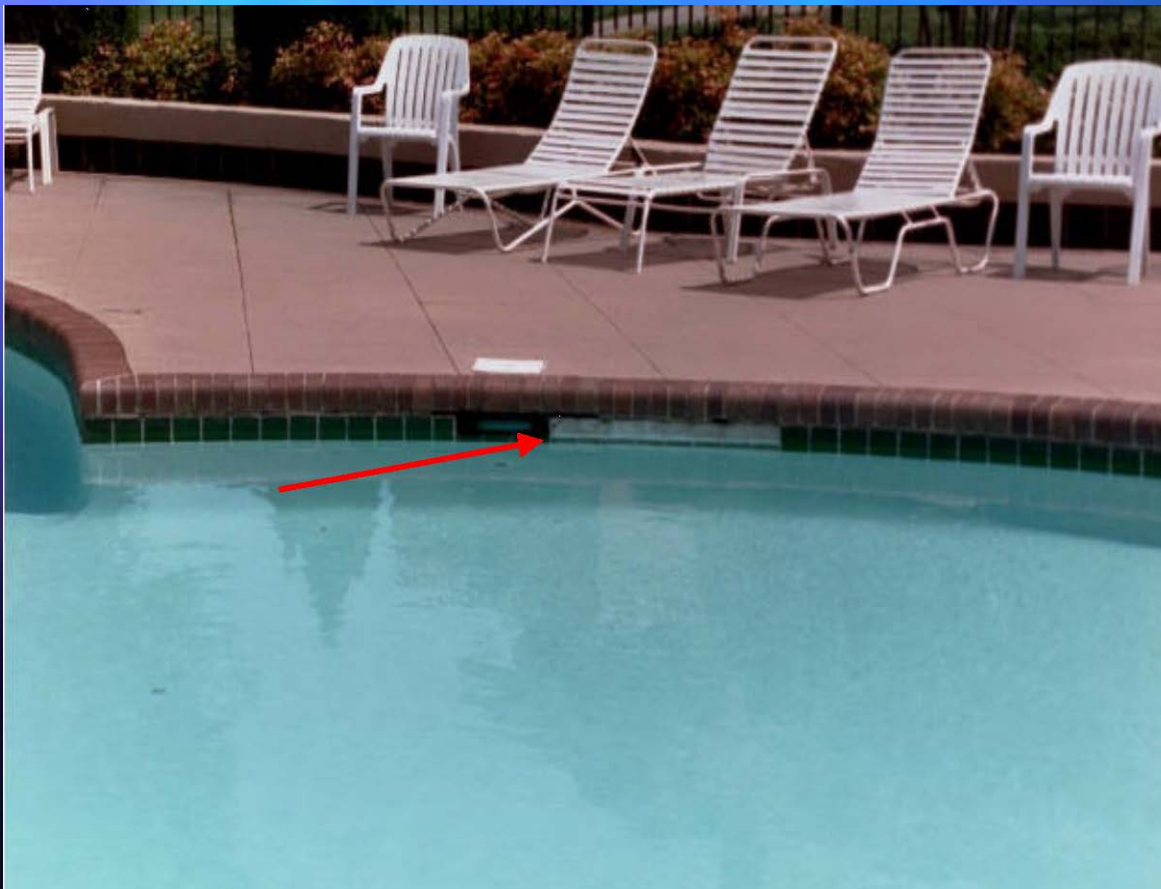


...offsets greater than one-half inch resulting from deterioration or changes from the original deck profile



.2537 (b) Maintenance and Operation

- (3) There shall be no loose coping



.2537 (b) Maintenance and Operation

- (4) Artificial lighting shall be provided for all pools used when natural lighting is not sufficient to make all parts of the pool and pool area clearly visible



.2537 (b) Maintenance and Operation

- Swimming pools shall be protected by a fence, wall, building, or other enclosure, or any combination thereof, which completely encloses the swimming pool area. All gates and doors shall be equipped with self-closing and positive-latching closure mechanisms.
- Existing waterside flumes and other appurtenances are not required to be located inside the fence.



.2537 (b) Maintenance and Operation

- (6) Depth markings shall be provided as required in .2523

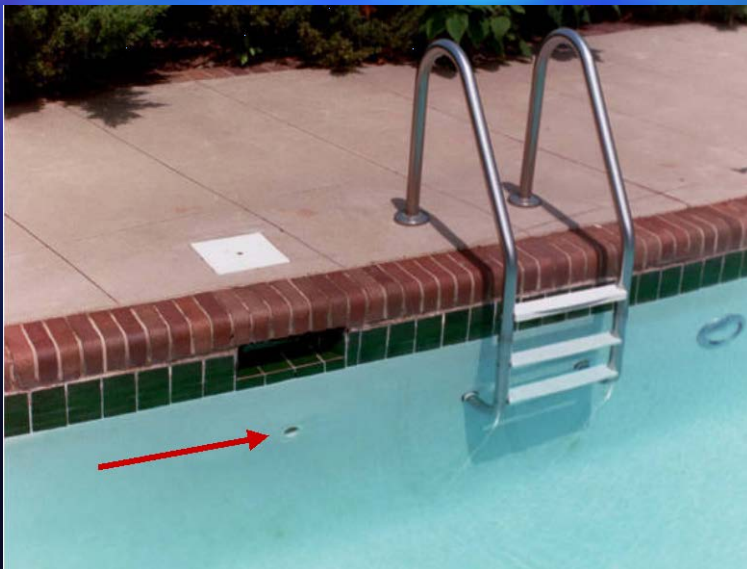


Depth Markers



.2537 (b) Maintenance and Operation

- (8) Damaged face plates or fittings shall be repaired or replaced
 - Vacuum line cover, equalizer covers, inlet covers (all other fittings besides main drain covers)



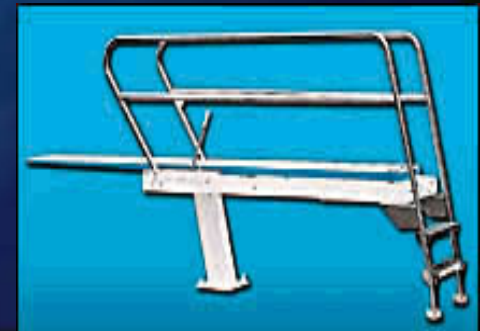
.2537 (b) Maintenance and Operation

- (9) Underwater light niches shall be maintained or covered so as not to present a potential hazard to bathers



.2537 (b) Maintenance and Operation

- (10) Diving equipment and pool slides including stairs and railings shall be maintained in good working order



.2537 (b) Maintenance and Operation

- (11) A timer switch which allows no more than 15 minutes of operation without manual resetting shall be used to control air blowers and hydrotherapy pumps on heated spas.



.2537 (b) Maintenance and Operation

- (7) Drain covers shall be in good condition and securely attached -- **6 Point Item**

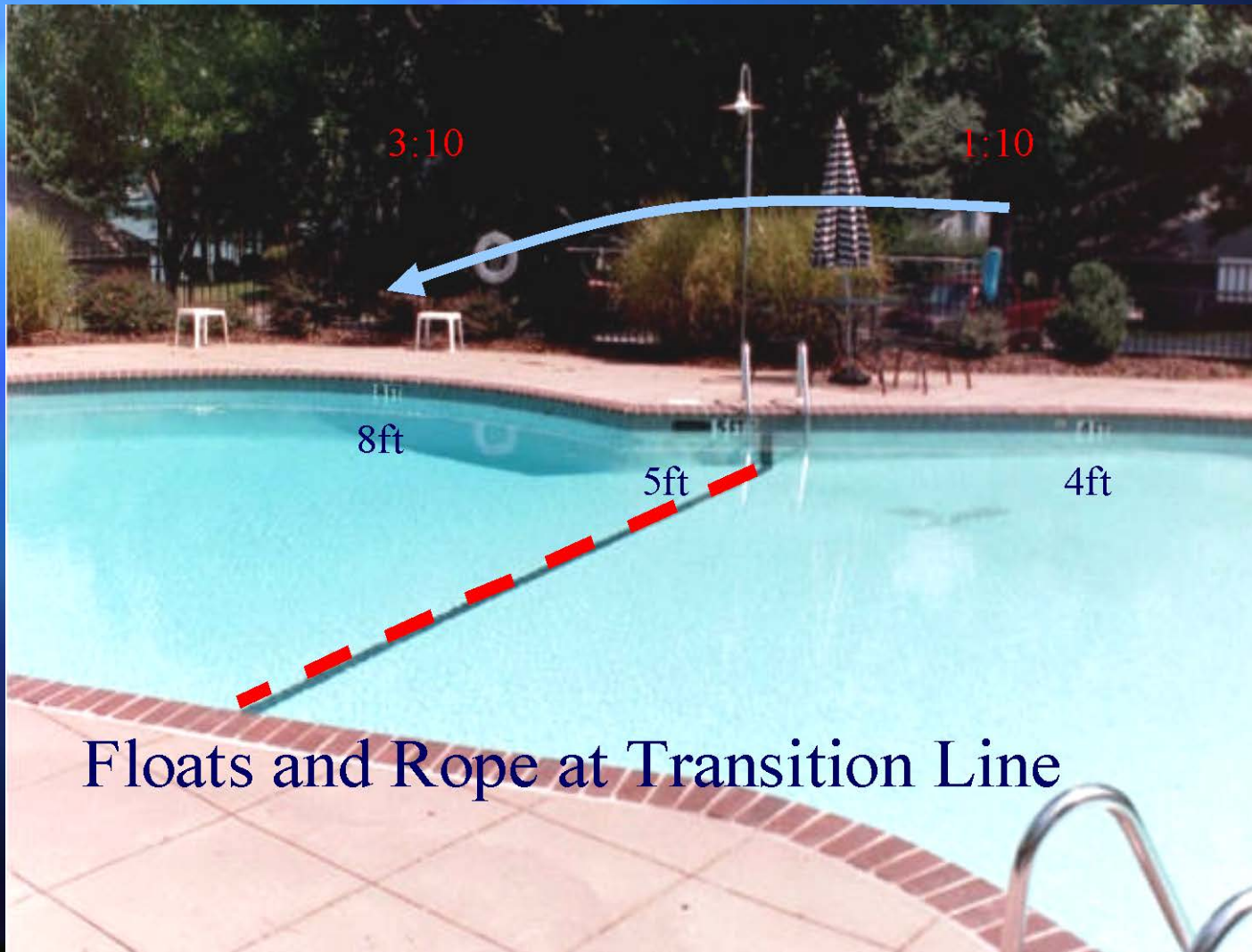


.2537 (b) Maintenance and Operation

- (12) All breaks in grade of the pool bottom including the leading edge of stair treads and seats and the tops of breakpoints where the slope of the bottom changes at a depth of five feet (15m) or less shall be marked with a contrasting color band by May 1, 2000.



Transition Line



.2537 (b) Maintenance and Operation

- (13) On or after May 1, 1996 all heated spas shall post a caution sign as specified in Rule .2532 of this section.



.2537 (b) Maintenance and Operation

- (14) Pool maintenance shall include removal of debris from the water surface and bottom of the pool



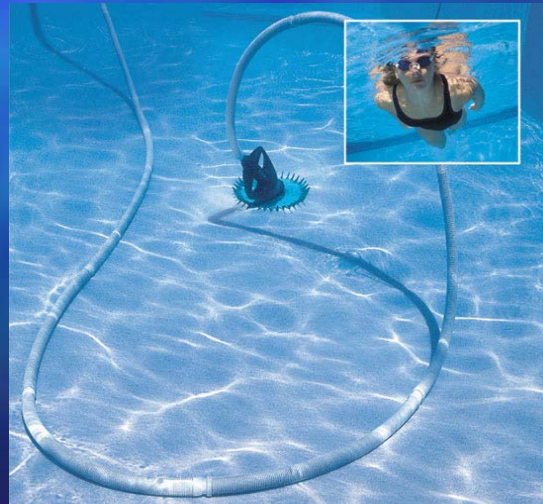
.2537 (b) Maintenance and Operation

- (15) All pool chemicals shall be stored in a clean, dry, well ventilated area and shall be organized so as to prevent chemicals from reacting.



.2537 (b) Maintenance and Operation

- (16) No submersible pumps or mechanical pool cleaning equipment shall be placed or used in the pool while bathers are in the pool.



.2537(c) Maintenance and Operation

- (c) The owner of a public swimming pool shall provide for the operation of the pool by a person or persons who shall be responsible to the owner for operation, maintenance, pool safety and record keeping. The pool owner shall maintain documentation that the person responsible for operating the pool has been trained on:
 - pool equipment operation,
 - disease and injury prevention,
 - pool water chemistry,
 - and regulatory requirements for public swimming pools.

Public Swimming Pool Inspections and Permit Actions

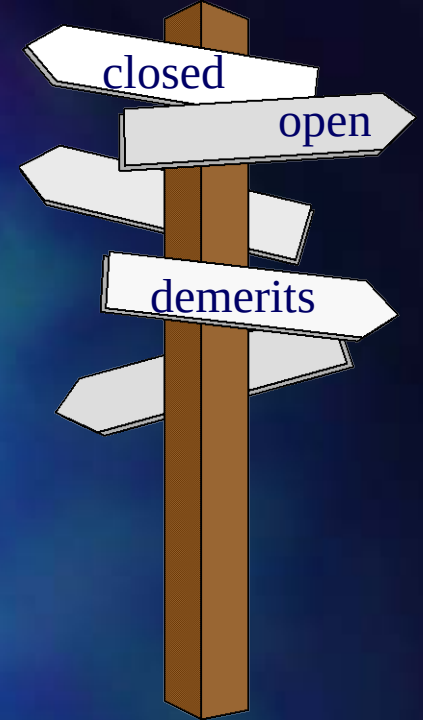
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Choices in Scoring System



- 1- General Comment-No demerit points taken
- 2- Take demerit points and document violation
- 3- Take demerit points and issue a 30-Day Intent to Suspend
- 4- Take demerit points and Issue an Immediate Permit Suspension

Demerit Values on Inspection Form

- 2 Point demerit items
 - Document violation and take points
- 4 Point demerit items
 - Either take the points and document or
 - take the points and issue 30 day intent to suspend--**Use .2537 as a reference**
- 6 Point demerit items
 - Permit immediately suspended until violation is corrected



Permit Suspensions at Pools

- Check as many of the 6-point demerit items as soon as possible in the inspection:
- Water Clarity
- Disinfectant Level
- pH
- Temperature
- Safety Equipment
- Drain Covers
- Telephone

6-Point Demerit Violations

Pool “Closed”

- Notify the responsible person of the issue
- Have the responsible person ask the bathers to get out of the pool
- Continue the inspection and allow the responsible person to make corrections
- Document violation, take demerit points, place on “E” status and fill out Immediate Suspension Form
- Ask owner to lock gates and/or post “pool closed” sign

Pool “Open”

- Notify the responsible person of the issue
- Have the responsible person ask the bathers to get out of the pool
- Continue the inspection and allow the responsible person to make corrections
- Document violation, take demerit points, place on “A” status

Paperwork



Pool Inspection Form

- Pools that are “closed” must be placed on “E” status
- Be sure to document that the pool permit is suspended until re-inspection verifies corrections have been made
- Inspect all pools the same--If a pool was constructed before the effective date of the rules it must still meet all the requirements of section .2537

Suspension / Revocation Form

- When a pool permit is suspended, a suspension/revocation form must accompany the inspection form
- The suspension/revocation effectively communicates that the operation permit is suspended. Don't rely on the inspection form only.
- List the specific reasons and quote the rule for the situation that has caused the suspension.

“Pool Closed” Sign

**SPA
OUT OF
ORDER**

**WE'RE SORRY
MANAGEMENT**

?

.2530 Requirement for “CLOSED” Pools

- Requires that pool closed signs be provided and posted at bather entrances whenever an operation permit is suspended for water quality or safety violations.



Quiz Time

- **CLOSE YOUR MANUALS!**
- See if you can spot the problems in these bad exam-pools!
- 1-Find the violation
- 2-Where would you mark it on the inspection form?
- 3-Would you take any type of permit action? (Suspension or intent to suspend)

POINT

POOL POLICIES:

Residents and Guests Only

(Resident must accompany guest)

No Glass Containers

No Pets in or around Pool

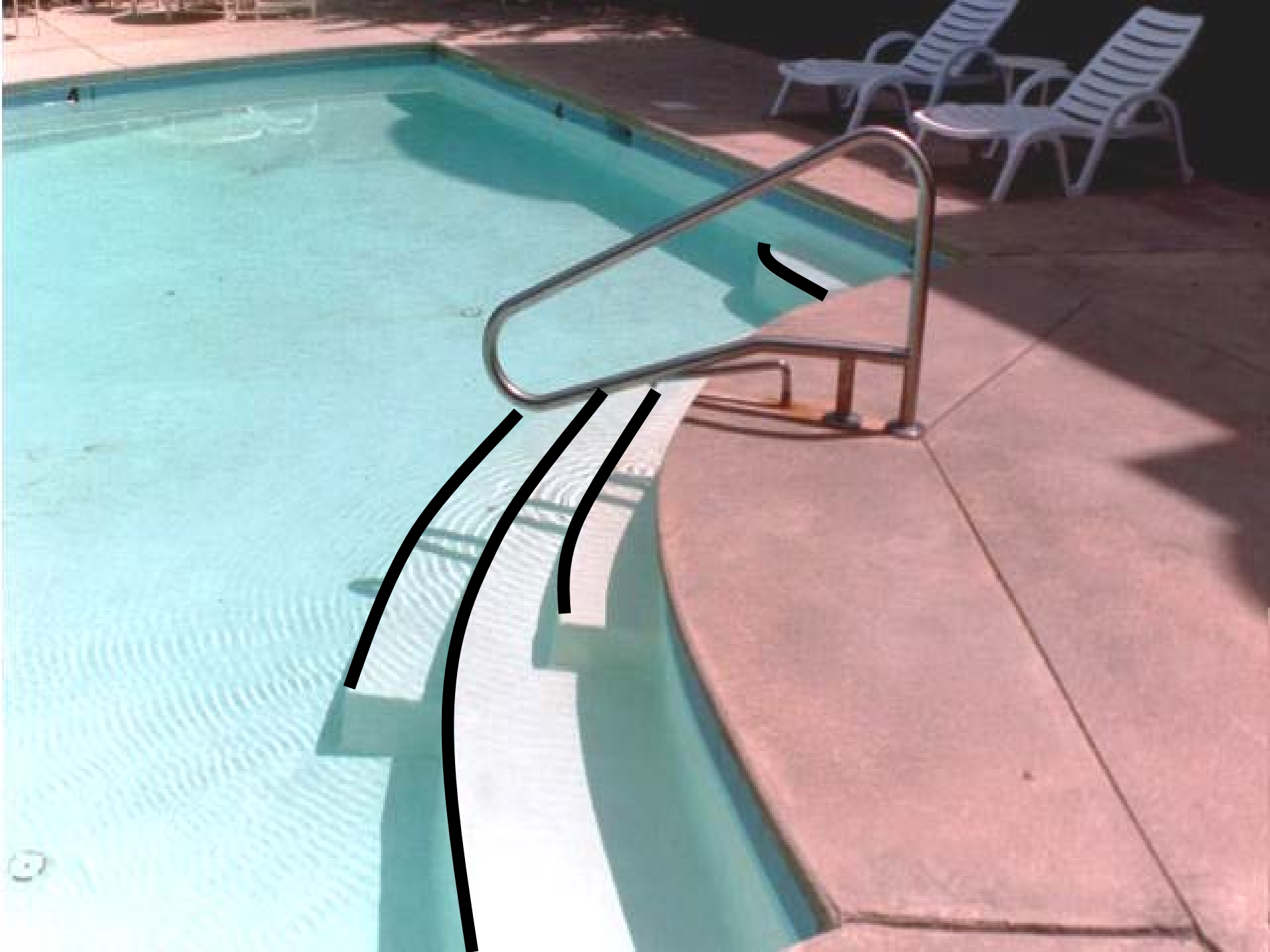
No Running or Pushing

Children must be accompanied by Parents

No Lifeguard—Swim at your own Risk

NO STEREOS, RADIOS OR OTHER
AUDIBLE SOUND EQUIPMENT
USED IN THE SWIMMING POOL
AND/OR TENNIS COURT AREA
OTHER THAN WITH EARPHONES
NO SOUND SPILLOVER.

- * WARNING: NO LIFE GAURD ON DUTY
- * ADULTS SHOULD NOT SWIM ALONE
- * CHILDREN SHOULD NOT USE THE SWIMMING POOL WITHOUT ADULT SUPERVISION





3ft

4ft

5ft







Calcium
Chloride

Chloride

General
Chemical

4-1 GALLON PLASTIC BOTTLES





A.

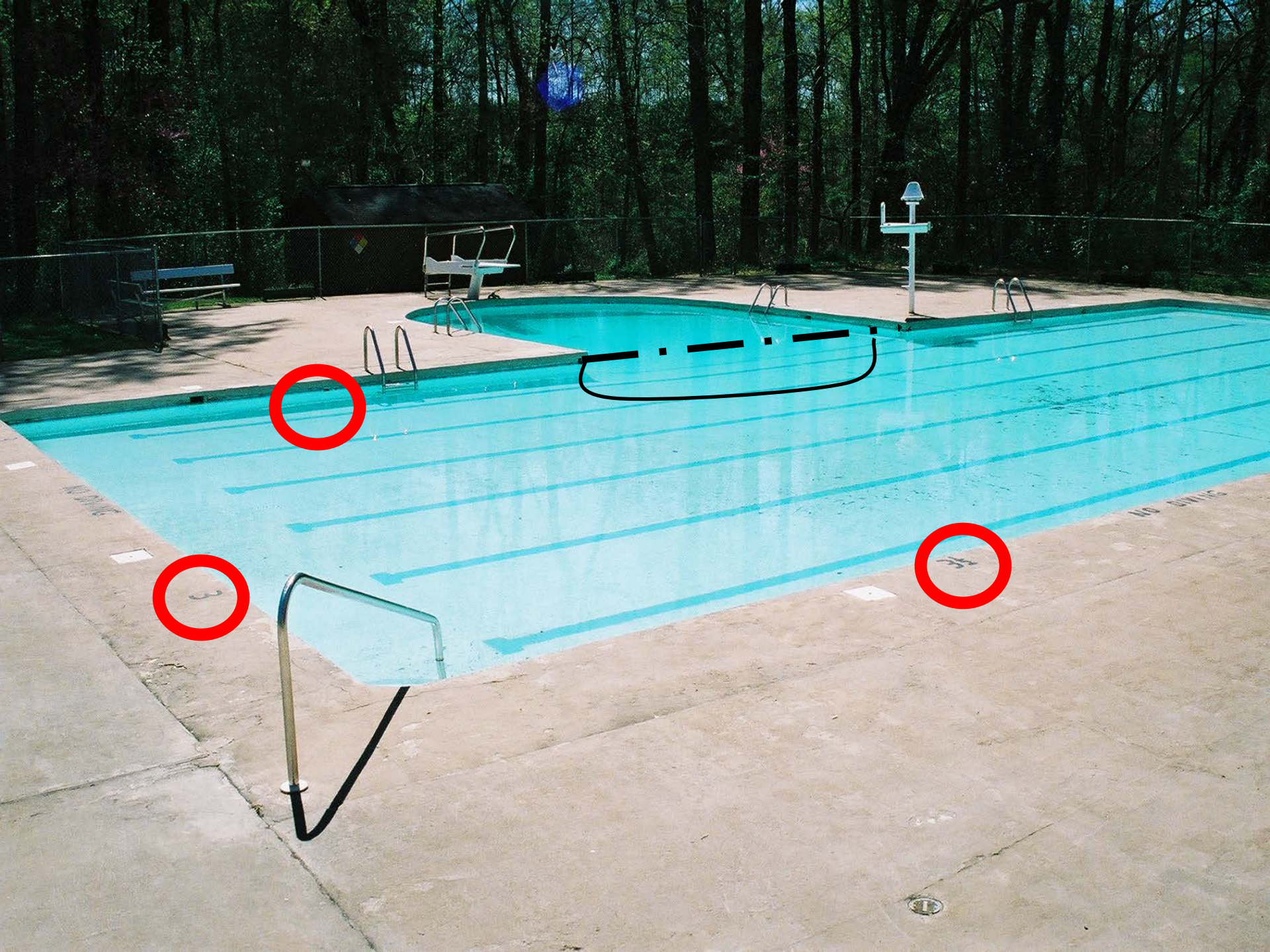


B.



C.

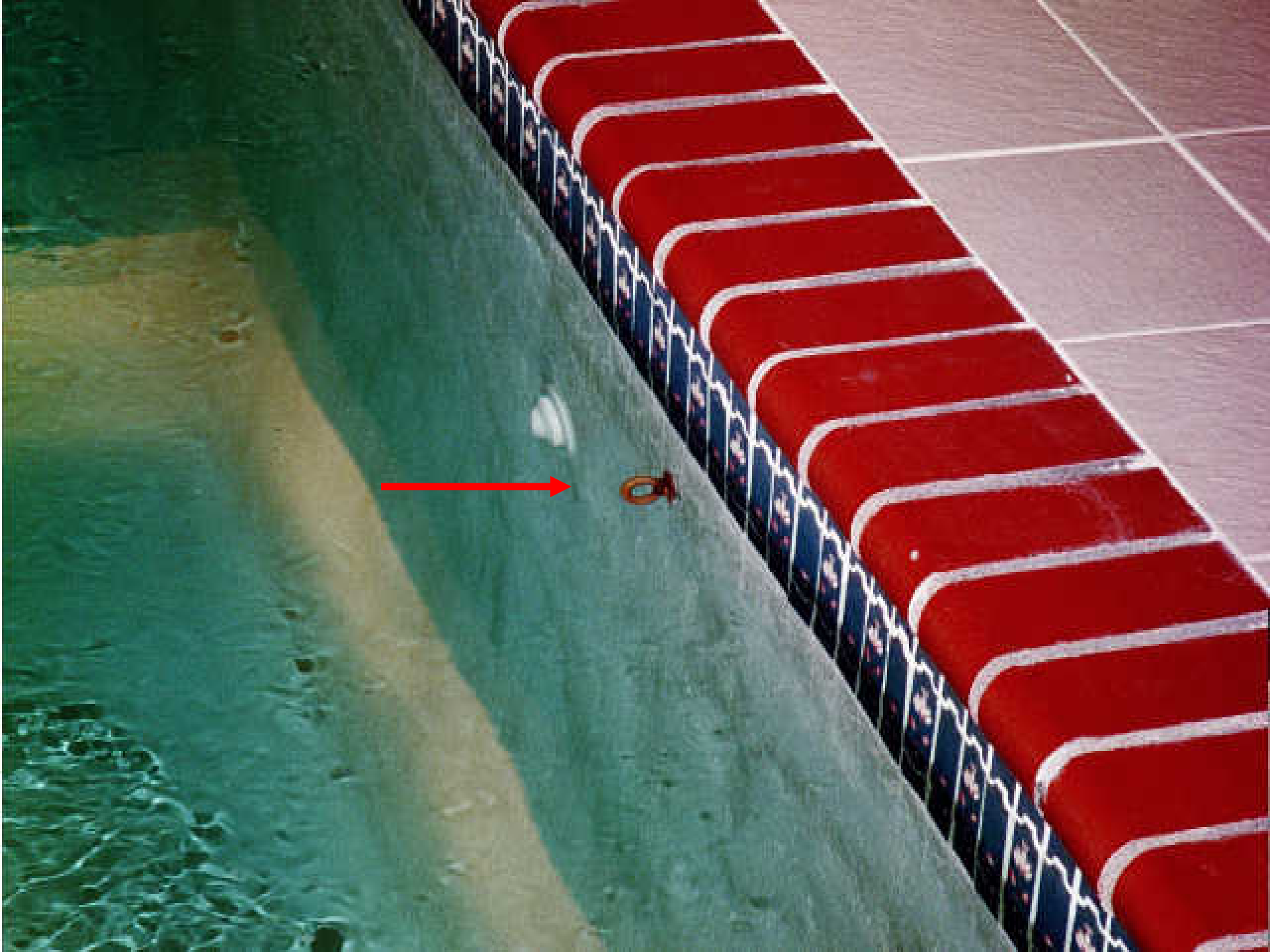










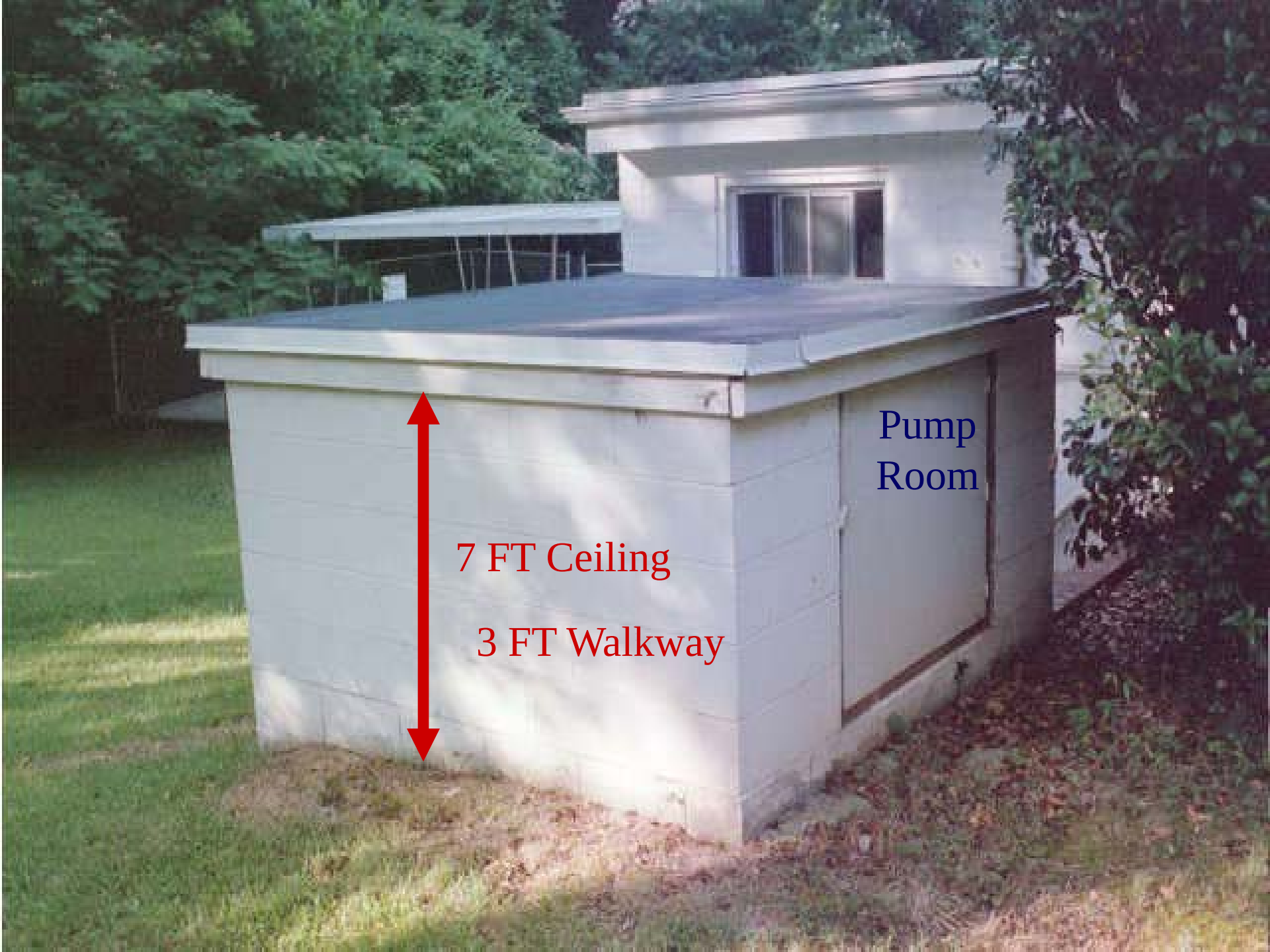


Pool Rules

- 
- No running.
 - No boisterous or rough play.
 - No diving allowed in areas of the pool less than 5 feet deep or in pools not approved for diving.
 - Children should not use the swimming pool without adult supervision.
 - Adults should not swim alone.
 - No person under the influence of alcohol or drugs should use the pool.
 - No person with skin, eye, ear or nasal infection allowed in the pool.
 - No person with communicable disease allowed in the pool.
 - No animals or pets allowed in the pool or on the pool deck.
 - No glass allowed in the pool or on the deck.
 - All persons using pool do so at their own risk.
 - Owners and management are not responsible for accidents or injuries.
 - Pool is for private use. Members and guests only.
 - Management reserves the right to deny use of the pool to anyone at anytime.
 - This pool is open from 7:00 a.m. to 11:00 p.m.
 - The maximum number of swimmers allowed in the pool is 100.
 - A first aid kit is located Front Desk.
 - Emergency telephone (or other identification device) is located in Pool Area.

Thank you for your attention and cooperation.





Pump
Room

7 FT Ceiling

3 FT Walkway





CAUTION
SHALLOW
WATER
NO DIVING



NO DIVING
NO LIFEGUARD
ON DUTY

NO DIVING

NO DIVING

POOL RULES

- 1 WARNING: NO LIFEGUARD ON DUTY.
- 2 SHOWER BEFORE ENTERING POOL.
- 3 NO ANIMALS IN OR ON POOL DECK.
- 4 NO FOOD OR DRINK IN POOL OR ON DECK.
- 5 **NO DIVING.**
- 6 CHILDREN UNDER 12 YRS. OLD MUST BE ACCOMPANIED BY AN ADULT.
- 7 BATHING LOAD _____ PERSONS.
- 8 EMERGENCY ASSISTANCE # _____

POOL HOURS

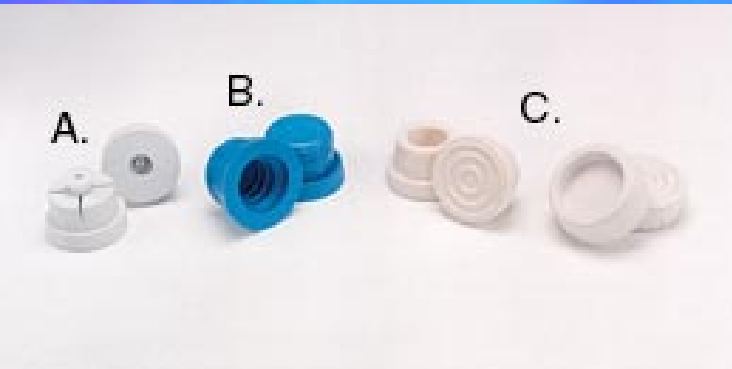
8:00 AM TO 10:00 PM



**No Glassware
Allowed in
Pool Area.**







4 FT





3 1/2 FT 1.1 M. NO DIVING

**NO
DIVING**





Thanks!

