

Zones) shall comply with the following:

1. All wood, including floor sheathing, shall be pressure-preservative-treated in accordance with AWP A U1 for the species, product, preservative, and end use or be the decay-resistant heartwood of redwood, black locust, or cedars. Preservatives shall be listed in Section 4 of AWP A U1.
2. Materials and installation methods used for flooring and interior and exterior walls and wall coverings shall conform to the provisions of FEMA Technical Bulletin 2 / August 2008.

*(Fire Prevention and Building Safety Commission; 675 IAC 14-4.4-35; filed Nov 26, 2019, 11:43 a.m.: 20191225-IR-675190330FRA)*

**675 IAC 14-4.4-36 Section R322.2.1; elevation requirements**

Authority: IC 22-13-2-2; IC 22-13-2-2.5; IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7

Sec. 36. Delete the text of SECTION R322.2.1 and substitute to read as follows:

1. Buildings and structures in flood hazard areas not designated as Coastal V Zones shall have the lowest floors (including basement) elevated to or above the design flood elevation.
2. Buildings and structures in flood hazard areas designated as Coastal A Zones shall have the lowest floors (including basement) elevated to or above the base flood elevation.
3. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated at least 2 feet greater than the flood depth number (specified on the FIRM) above the highest adjacent grade. If no flood depth is specified, 2 feet (610 mm) will be used as the flood depth.

*(Fire Prevention and Building Safety Commission; 675 IAC 14-4.4-36; filed Nov 26, 2019, 11:43 a.m.: 20191225-IR-675190330FRA)*

**675 IAC 14-4.4-37 Section R322.3.2; elevation requirements**

Authority: IC 22-13-2-2; IC 22-13-2-2.5; IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7

Sec. 37. Change the text of SECTION R322.3.2 to read as follows:

1. Buildings and structures erected within coastal high-hazard areas (V Zones) and Coastal A Zones shall be elevated so that the bottom of structural members supporting the lowest floor, with the exception of piling, pile caps, columns, grade beams, and bracing, are elevated to or above the design flood elevation.
2. Basement floors that are below grade on all sides are prohibited.
3. The use of fill for structural support is prohibited.
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios, and walkways.
5. Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.5 and R322.3.6.

*(Fire Prevention and Building Safety Commission; 675 IAC 14-4.4-37; filed Nov 26, 2019, 11:43 a.m.: 20191225-IR-675190330FRA)*

**675 IAC 14-4.4-38 Section R326; swimming pools, spas, and hot tubs**

Authority: IC 22-13-2-2; IC 22-13-2-2.5; IC 22-13-2-13

Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7

Sec. 38. Delete the text of SECTION R326 and substitute as follows:

**SECTION R326.1 SPECIAL PROVISIONS.**

SECTION R326.1.1. Residential swimming pools are Class 2 structures according to IC 22-12-1-5. Enforcement of Section R326 is the responsibility of local units of government.

SECTION R326.1.2. The provisions of Section R326 are not intended to restrict the appropriate use of materials,

equipment, or methods of design not specifically described in this rule.

SECTION R326.1.3. The enforcing official may require submission of evidence or proof that substantiates any claims made regarding the appropriate use of materials, equipment, or methods of design.

SECTION R326.1.4. This section shall not authorize a variance from or modification of any rule of the fire prevention and building safety commission except pursuant to variance authority provided for in IC 22-13-2-7 and IC 22-13-2-11.

SECTION R326.2 DEFINITIONS.

SECTION R326.2.1 DEFINITIONS; GENERAL.

For the purpose of this code, the definitions in this section apply throughout Section R326.

SECTION R326.2.2 DEFINITIONS "A".

"ABRASION HAZARD" means a sharp or rough surface that could cause injury under normal use.

"ACCESSIBLE" means, when applied to a fixture, connection, appliance, or equipment, having access thereto, but may require the removal of an access panel, door, or similar obstruction. "Readily accessible" means direct access without the necessity of removing any panel, door, or similar obstruction.

"AGITATION" means the mechanical or manual movement to dislodge the filter aid and dirt from the filter element.

"AIRBREAK" means a physical separation that may be a low inlet into the indirect waste receptor from the fixture, appliance, or device indirectly connected.

"AIR BUMP ASSIST BACKWASH" means, in a diatomite type filter, the compressing of a volume of air in the filter effluent chamber (by means of an air compressor or by the water pressure from the recirculating pump) that, when released, rapidly decompresses and forces water in the filter tank through the elements in a reverse direction dislodging the filter aid and accumulated dirt and carrying them to waste.

"AIRGAP" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet conveying water or waste to a tank, plumbing fixture receptor, or other device and the flood level rim of the receptacle.

"APPROVED" means, as to materials, equipment, design, and types of construction, acceptance by the code official by one (1) of the following methods:

1. Investigation or tests conducted by recognized authorities.
2. Investigation or tests conducted by technical or scientific organizations.
3. Accepted principles.

The investigation, tests, or principles shall establish that the materials, equipment, and types of construction are safe for the intended purpose.

"APPROVED AGENCY" means an established and recognized agency regularly engaged in conducting tests or furnishing inspection services, when such agency has been approved by the state building commissioner.

SECTION R326.2.3 DEFINITIONS "B".

"BACKWASH" means the process of thoroughly cleaning the filter medium or elements, or both, by the reverse flow of water.

"BACKWASH CYCLE" means the time required to backwash the filter system thoroughly.

"BACKWASH PIPE" means a type of "filter waste discharge piping" as defined in Section R326.2.7.

"BACKWASH RATE" means the rate of application of water through a filter during the backwash cycle expressed in gallons per minute per square foot of effective filter area.

"BASIN" means any vessel constructed of man-made materials and designed to hold water to be used as a swimming pool, spa, or hot tub.

"BATHER" means a person using the pool and adjoining deck areas for the purpose of water sports or related activities.

"BODY FEED" means the continuous addition of controlled amounts of filter aid during the operation of a diatomite type filter to maintain a permeable filter cake. If added as a slurry, this may be referred to as a slurry feed.

"BOOSTER PUMP SYSTEM" means a device used to provide hydraulic support for certain types of equipment such as the following:

1. Pool cleaning systems.

2. Chlorinators.
3. Solar systems.
4. Therapy jets.
5. Water features.

"BREAKPOINT CHLORINATION" means the addition of a sufficient amount of chlorine to water to destroy the combined chlorine present.

SECTION R326.2.4 DEFINITIONS "C".

"CARTRIDGE" means a filter component of either the depth or surface type having fixed dimensions and designed to remove suspended particles from water flowing through the unit.

"CARTRIDGE, DEPTH TYPE" means a filter cartridge with a medium relying on penetration of particulates into the medium for removal and providing adequate holding capacity of such particulates.

"CARTRIDGE, SURFACE TYPE" means a filter cartridge with a medium relying on retention of particles on the surface of the cartridge for removal.

"CHEMICAL FEEDER" means any device used to feed chemicals such as sanitizers, pH adjusters, and algicide into a pool or spa.

"CHEMICAL FEEDER OUTPUT RATE" means the weight or volume of active ingredients delivered by a chemical feeder expressed in units of weight of volume and time.

"CHEMICAL FEED RATE INDICATOR" means a mechanism that will produce reproducible results expressed in units of weight or volume of chemical per unit of time or per unit of volume of water. The mechanism may:

1. be a direct reading instrument; or
2. require the use of a reference chart.

"CHEMICAL PIPING" means piping that conveys concentrated chemical solutions from a feeding apparatus to the circulation piping.

"CIRCULATION SYSTEM" means an arrangement of mechanical equipment or components, or both, designed to ensure even distribution of heat, chemicals, and filtrated water throughout the pool or spa. The term includes filters, pumps, strainers, disinfectant, or other chemical feed devices, piping, inlets, drains, overflow fittings, and other appurtenances.

"CODE OFFICIAL" means the local building official as authorized under IC 36-7-2-9 and local ordinance.

"CORROSION-RESISTANT" means capable of maintaining original surface characteristics under the prolonged influence of the use environment.

"COVE" means the radius between the wall and the floor.

SECTION R326.2.5 DEFINITIONS "D".

"DECKS" means those areas surrounding a pool that are specifically constructed or installed for use by bathers.

"DEEP AREAS" means the portions of a pool having water depths in excess of five (5) feet.

"DESIGN HEAD" means the total head requirement of the circulation system at the design rate of flow.

"DESIGN RATE OF FLOW (DESIGN FILTER RATE)" means the rate of flow in a system that is used for design calculation. (The volume of the pool, spa, or hot tub in gallons divided by the number of minutes in the turnover time.)

"DIATOMITE FILTER" means one designed to filter water through a thin layer of filter aid such as diatomaceous earth or volcanic ash. Diatomite filters may be of the pressure or vacuum type.

"DISTRIBUTION SYSTEM, LOWER" means those devices used in the bottom of a sand type filter to:

1. collect the water uniformly during the filtering; and
2. distribute the backwash water uniformly during the backwashing.

"DISTRIBUTION SYSTEM, UPPER" means those devices designed to distribute the water entering a sand type filter in a manner such as to prevent movement or migration of the filter media. This system shall also properly collect water during filter backwashing unless other means are provided.

"DIVING BOARD" means a recreational mechanism for entering a swimming pool, consisting of a semi-rigid board that derives its elasticity through the use of a fulcrum mounted below the board.

"DIVING EQUIPMENT, MANUFACTURED" means manufactured diving equipment and shall include diving boards, jump boards, and spring boards. Architectural features such as decorative rocks and elevated bond beams

are not considered to be manufactured diving equipment.

SECTION R326.2.6 DEFINITIONS "E".

"EFFECTIVE FILTRATION AREA" means the total surface area through which the design flow rate will be maintained during filtration.

SECTION R326.2.7 DEFINITIONS "F".

"FACE PIPING" means the piping, with all valves and fittings, that is used to connect the filter system together as a unit.

"FILTER" means a device that separates solid particles from water by circulating the water through a porous substance (a filter medium element).

"FILTER AID" means a type of finely divided media used to coat a septum type filter, usually diatomaceous earth or volcanic ash. (Note: Alum, as used on the bed of a sand filter, is also referred to as a filter aid.)

"FILTER, CARTRIDGE" means a filter that uses a porous cartridge as its filter medium.

"FILTER CYCLE" means the operating time between cleaning or backwash cycles.

"FILTER, DIATOMACEOUS EARTH" means a filter that uses a thin layer of diatomaceous earth as its filter medium that periodically must be replaced.

"FILTER ELEMENT" means that part of a filter that supports the surface upon which the filter aid is deposited (usually in diatomite filters).

"FILTER MEDIA" means the finely graded material that entraps suspended particles (sand, anthracite).

"FILTER, PERMANENT MEDIUM" means a filter that under normal use will not have to be replaced.

"FILTER RATE" means the rate of application of water to a filter expressed in gallons per minute per square foot of effective filter area.

"FILTER ROCK" means graded, rounded rock or gravel, or both, not subject to degradation by common pool chemical used to support filter media.

"FILTER SAND" means a specially graded type of permanent filter media.

"FILTER SEPTUM" means that part of the filter element in a diatomite type filter upon which a cake of diatomite or other nonpermanent filter aid may be deposited.

"FILTER WASTE DISCHARGE PIPING" means piping that conducts wastewater from a filter to a drainage system. Connection to drainage system is made through an airgap or other approved method.

"FLOOR" means the interior bottom pool surface and consists of that surface from a horizontal plane up to a maximum of a forty-five (45) degree slope.

"FLOW BALANCE VALVE" means a device to regulate the effluent from the skimmer housing of each of a combination of two (2) or more surface skimmers.

"FREEBOARD" means the clear vertical distance in a sand type filter between the top of the filter media and the lowest outlet of the upper distribution system.

"FRESH WATER" means water having a specific conductivity less than a solution containing six thousand (6,000) parts per million of sodium chloride.

"FRICTION LOSS" means the pressure drop expressed in feet of water or psi caused by liquid flowing through the piping and fittings.

SECTION R326.2.8 DEFINITIONS "H".

"HEAD LOSS" means the total pressure drop in pounds per square inch (kilo Pascals) or feet (meters) or head between the inlet and the outlet of a component.

"HIGH RATE SAND FILTER" means a sand filter designed for flows in excess of five (5) gallons per minute per square foot.

"HYDROJET BOOSTER PUMP SYSTEM" means a system whereby one (1) or more hydrojets are activated by the use of a pump that is completely independent of the filtration and heating system of a spa.

"HYDROJETS" means a fitting that blends air and water creating a high velocity, turbulent stream of air enriched water.

SECTION R326.2.9 DEFINITIONS "I".

"INDIRECT WASTE PIPE" means a pipe that does not connect directly with the drainage system but conveys liquid wastes by discharging into a plumbing fixture, interceptor, or receptacle that is directly connected to the



drainage system.

"INLET FITTING" means a fitting or fixture through which circulated or hydrojetted water enters a pool, spa, or hot tub.

"INTERACTIVE PLAY ATTRACTION" means a water attraction, including, but not limited to, splash pads, spray pads, and manufactured devices using sprayed, jetted, or other water sources contacting the users, not incorporating standing or captured water as part of the user activity area, and not utilizing a pool or spa circulation system.

SECTION R326.2.10 DEFINITIONS "J".

"JUMP BOARD" means a recreational mechanism that has a coil spring, leaf spring, or comparable device located beneath the board that is activated by the force exerted in jumping on the board.

SECTION R326.2.11 DEFINITIONS "L".

"LADDERS" means the following:

"DECK LADDER" means a ladder for deck access from outside the pool.

"IN-POOL LADDER" means a ladder located in a pool to provide ingress and egress from the deck.

"LIMITED ACCESS LADDER" means a ladder with provision for making entry inaccessible when a pool is not in use, that is, swing-up, slide-up, or equivalent.

"LINER" means the membrane that acts as a container for the water, usually categorized as one (1) of the following:

1. "EXPANDABLE LINER" means a liner that is constructed of a material that has the capability of stretching into a greater depth of irregular shape other than the original constructed dimensions.

2. "HOPPER LINER" means a liner that is used to obtain greater depth by geometrical pattern construction on the liner bottom or floor to fit a predetermined size and shape.

"LISTED" means equipment or materials included in a list published by an organization engaged in product evaluation, that maintains periodic inspection of production of listed equipment or materials, and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

"LOWER DISTRIBUTION SYSTEM" (underdrain) means those devices used in the bottom of a permanent medium filter to collect the water during the filtering and to distribute the water during the backwashing.

SECTION R326.2.12 DEFINITIONS "M".

"MAIN OUTLET" means the outlet fitting or fittings at or near the deepest portion of a swimming pool, spa, or hot tub through which water passes to the recirculating system. This outlet is often referred to as the "main drain".

"MAKE-UP WATER" means fresh water used to fill or refill the pool.

"MULTIPOINT VALVE" means a valve for various filter operations, which combines in one (1) unit the function of two (2) or more single direct flow valves.

SECTION R326.2.13 DEFINITIONS "N".

"NET POSITIVE SUCTION HEAD" or "NPSH" means the head available at the entrance or eye of an impeller to move and accelerate the water entering the eye. This head is the gauge pressure at the suction flange of the pump plus the velocity head.

"NONSWIMMING AREA" means any portion of a pool where water depth, offset ledges, or similar irregularities would prevent normal swimming activities.

"NPSH, AVAILABLE" means a function of the system in which the pump operates the available NPSH at the desired rate of flow.

"NPSH, REQUIRED" means a function of the pump design that varies among different makes, and a valve that must be supplied by the pump manufacturer.

SECTION R326.2.14 DEFINITIONS "P".

"PERIMETER OVERFLOW SYSTEM" means a continuous channel formed into the sidewall entirely around the perimeter of the pool, unless interrupted by steps, into which surface pool water is continuously drawn during normal operation to provide a skimming action.

"PINCHING HAZARD" means any configuration of components that would pinch or entrap the fingers or toes of a bather.

"POOL" includes the following:

"COMBINATION POOL" means a pool used for swimming and diving.

"VANISHING EDGE POOL" means a pool where the top of one (1) or more of the basin wall or walls is submerged with no adjacent deck or decks.

"WADING POOL" means a shallow pool having a maximum depth of twenty-four (24) inches and intended for children's play.

"WHIRLPOOL". See "SPA".

"ZERO-DEPTH ENTRY POOL" means a water attraction having a sloped entrance to where the water depth is zero (0) inches at the shallowest point.

"POOL DEPTH" means the distance between the floor of pool and the waterline.

"POOL PLUMBING" means all chemical, circulation, filter waste discharge piping, deck drainage, and water filling systems.

"POSITIVE DISPLACEMENT" means the mechanical displacement of a volume of fluid.

"PRECIPITATE" means a solid material that:

1. is forced out of a solution by some chemical reaction; and
2. may settle out or remain as a haze in suspension (turbidity).

"PRECOAT" means the initial coating of filter aid on the septum of a diatomaceous earth filter.

"PUMP DISCHARGE PRESSURE" means the actual gauge reading measured in pounds per square inch taken at the discharge outlet of a pump.

"PUNCTURE HAZARD" means any surface or protrusion that would puncture a bather's skin under casual contact.

#### SECTION R326.2.15 DEFINITIONS "R".

"RAPID SAND FILTER" means a filter designed to be used with sand as the filter media.

"RATED PRESSURE" means that pressure that is equal to or less than the designed pressure and appears on the data plate of the equipment.

"RECEPTOR" means an approved plumbing fixture or device of such material, shape, and capacity as to adequately receive the discharge from indirect waste piping, so constructed and located as to be readily cleaned.

"RECESSED TREADS" means a series of vertically spaced cavities in the pool wall creating tread areas for steps.

"REMOVABLE" means capable of being disassembled with the use of only a simple tool such as a screwdriver, pliers, or a wrench.

"RETURN PIPING" means that part of the piping between the filter and the pool or spa through which passes the filtered water. (This piping frequently is referred to as "effluent piping".)

"ROPE AND FLOAT LINE" (transition rope) means a continuous line not less than one-fourth (1/4) inch in diameter that is supported by buoys and attached to opposite sides of a pool to separate the deep and shallow ends.

#### SECTION R326.2.16 DEFINITIONS "S".

"SALINE WATER" means water having a specific conductivity in excess of a solution containing six thousand (6,000) parts per million of sodium chloride.

"SEPARATION TANK" means a device used to clarify filter rinse or wastewater. It is sometimes called a "reclamation tank".

"SEPTUM" means that part of the filter element consisting of cloth, wire screen, or other porous material on which the filter cake is deposited.

"SHALLOW AREAS" means those portions of a pool ranging in water depth from two (2) to five (5) feet.

"SKIM FILTER" means a surface skimmer combined with a vacuum filter.

"SPA" means any spa that incorporates hot water jets, cold water jets, aeration systems, or any combination of the same for hydromassage.

"SPA, PERMANENT" means a spa in which the water-heating and water-circulating equipment is not an integral part of the product. Permanent spas may employ:

1. separate components such as an individual filter, pump, heater, and controls; or
2. assembled combinations of various components.

"SPA, PORTABLE, RESIDENTIAL" means a spa in which all control, water-heating, and water-circulating

equipment is an integral part of the product. Portable residential spas may be permanently wired or cord-connected. The spa shall be movable and aboveground.

"SPRAY RINSE, MANUAL" means a spray system intended to be used manually for the washing of filter aid or accumulated dirt, or both, from a filter surface either in place or after removal from the filter tank. This is usually accomplished by means of a hose and nozzle.

"STATIC SUCTION LIFT" means the vertical distance in feet from the center line of the pump impeller to the level of water in the pool.

"STEPS" means a tread or series of treads extending down from the deck and terminating at the pool bottom.

"STEPS, RECESSED" means a step or series of steps that are recessed so that all risers are located outside the pool wall.

"STEPS, RECESSED STEPS, LADDERS, AND RECESSED TREADS" means methods of pool ingress and egress that may be used alone or in conjunction with one another.

"STRAINER" means a device used to remove hair, lint, leaves, or other coarse material on the suction side of a pump.

"SUCTION PIPING" means that portion of the circulation piping located between the pool structure and the inlet side of the pump and usually includes the following:

1. Main outlet piping.
2. Skimmer piping.
3. Vacuum piping.
4. Surge tank piping.

"SURFACE SKIMMER" means a device designed to continuously remove surface film and water and return it through the filter as part of the recirculation system, usually incorporating a self-adjusting weir, a collection tank, and a means to prevent air lock of the pump. It is sometimes referred to as a "recirculating overflow", a "mechanical", or an "automatic skimmer".

"SWIMMING POOL" means any artificial basin of water constructed, modified, or improved for wading, swimming, or diving. The term does not include artificial lakes. The term includes the following:

1. "SWIMMING POOL, IN-GROUND" means any pool whose sides rest in partial or full contact with the earth.
2. "SWIMMING POOL, ON-GROUND" means any pool whose sides rest fully above the surrounding earth.
3. "SWIMMING POOL, RESIDENTIAL" means any in-ground pool or on-ground pool capable of a water depth greater than forty-two (42) inches (one thousand sixty-seven (1,067) mm), and all pools installed inside a residence, regardless of water depth, whether or not served by electrical circuits of any nature, and which is intended for noncommercial use as a swimming pool by not more than two (2) owner families and their guests.

#### SECTION R326.2.17 DEFINITIONS "T".

"TOTAL DISCHARGE HEAD" means the value in feet of water that a pump will raise water above its center line.

"TOTAL DYNAMIC HEAD" or "TDH" means the arithmetical difference between the total discharge head and total suction head (a vacuum reading is considered as a negative pressure). This value is used to develop the published performance curve.

"TOTAL DYNAMIC SUCTION LIFT" or "TDSL" means the arithmetical total of static suction lift, friction head loss, and velocity head loss working on the suction side of the pump.

"TOTAL SUCTION HEAD" means the value in feet of water that a pump will lift by suction.

"TOXIC" means having an adverse physiological effect on humans.

"TRAP" means a fitting or device so designed and constructed as to provide, when properly vented, a liquid seal that will prevent the back passage of air without materially affecting the flow of sewage or wastewater through it.

"TRIMMER VALVE" means a flow adjusting device that is used to proportion flow over the skimming weir and flow through the main suction line from the main outlet or the vacuum cleaning line.

"TURNOVER TIME" means the period of time required to circulate a volume of water equal to the pool capacity.  
SECTION R326.2.18 DEFINITIONS "U".

"UNDERWATER LIGHT" means a fixture designed to illuminate a pool from beneath the water surface, further defined as:

1. "DRY NICHE LIGHT" means a light unit placed behind a watertight window in the pool wall; or
2. "WET NICHE LIGHT" means a watertight and water-cooled light unit placed in a submerged, wet niche in the pool wall and accessible only from the pool.

"UPPER DISTRIBUTION SYSTEM" means those devices designed to distribute the water entering a permanent medium filter in a manner so as to prevent movement or migration of the filter medium. This system shall also properly collect water during filter backwashing unless other means are provided.

SECTION R326.2.19 DEFINITIONS "V".

"VACUUM PIPING" means the piping from the suction side of a pump connected to a vacuum fitting located at the pool and below the water level to which underwater cleaning equipment may be attached.

"VELOCITY" means a measurement of the motion of liquids usually expressed in feet per second.

"VERTICAL" means a truly plumb line of surface running perpendicular to the plane of the horizon.

SECTION R326.2.20 DEFINITIONS "W".

"WADING AREA" means the portions of a pool having water depths of two (2) feet or less.

"WALLS" means interior pool wall surfaces consisting of surfaces from the vertical to a forty-five (45) degree slope.

"WASTE PIPING" means piping that conveys wastewater.

"WATERLINE" means one (1) of the following:

1. The waterline for the skimmer system shall fall in the midpoint of the operating range of the skimmers.
2. The waterline for the overflow system shall be established by the height of the overflow rim or the mid-level of surge weirs, if present.

"WIDTH OR LENGTH" means the actual water dimension taken from wall to wall at the waterline.

"WINTERIZING" means the procedure for preparing pools from freezing weather. The term includes chemical treatment of the standing water, plus physical and chemical protection of the pool and its equipment against freezing.

"WORKING PRESSURE" means the maximum operating water pressure recommended by the manufacturer.

SECTION R326.3 STRUCTURAL DESIGN.

SECTION R326.3.1. Prior to construction, rehabilitation, or alteration of a permanently installed residential pool, plans and specifications shall be submitted to the local authority when required by local ordinance for review, approval, and issuance of a permit to construct or rehabilitate.

SECTION R326.3.2. The structural design and materials used shall be in accordance with generally accepted structural engineering practices. Sand or earth shall not be permitted as an interior finish in a swimming pool.

SECTION R326.3.3. In all outdoor pools, the pool shell and appurtenances, piping, filter system, pump, motor, and other components shall be so designed and constructed to facilitate protection from damage due to freezing.

SECTION R326.3.4. The surfaces within the pool intended to provide footing for bathers shall be designed and constructed to provide a slip-resisting surface. The roughness or irregularity of such surfaces shall not provide an abrasion hazard to the feet during normal use.

SECTION R326.3.5. The colors, patterns, or finishes of the pool interior shall not obscure the existence or presence of objects or surfaces within the pool.

SECTION R326.4 MATERIALS OF CONSTRUCTION.

SECTION R326.4.1. Swimming pools and all appurtenances thereto shall be constructed of materials that:

1. are nontoxic to humans and the environment;
2. are impervious and reasonably enduring;
3. can withstand the stresses that the pool was designed to receive;
4. will provide a watertight structure with a smooth and easily cleaned surface without cracks or joints, excluding structural joints; and
5. a smooth, easily cleaned surface finish shall be applied to, attached to, or installed.

SECTION R326.5 DIMENSIONAL DESIGN.

SECTION R326.5.1. No limits are specified for the shape of swimming pools except that consideration shall be given to the shape from the standpoint of safety and circulation of the swimming pool water.

SECTION R326.5.2. There shall be no protrusions, extensions, means of entanglement, or other obstructions in the swimming area that can cause the entrapment or injury of the bather.

SECTION R326.5.3. There shall be construction tolerances allowed on all dimensional designs. Overall length, width, and depth in the deep end may vary plus or minus three (3) inches. All other overall dimensions may vary plus or minus two (2) inches unless otherwise specified.

SECTION R326.6 WALLS.

SECTION R326.6.1. Walls shall not be greater than eleven (11) degrees from plumb for a minimum depth of two (2) feet nine (9) inches from the waterline in deep areas or two (2) feet three (3) inches in the shallow areas. Below these depths the wall may be curved to join the floor. An exception to this section is walls on Type 1 and special purpose pools shall be plumb as is shown in Section R326.10.9, Figure R326.10(5).

SECTION R326.7 FLOOR SLOPE.

SECTION R326.7.1. Floor slopes shall be in compliance with the following:

1. All slopes shall be uniform.
2. The slope of the floor from the shallow end wall towards the deep end shall not exceed one (1) foot in seven (7) feet (1:7) to the point of the first slope change.
3. The point of the first slope change shall be:
  - 3.1. defined as the point at which the floor slope exceeds one (1) foot in seven (7) feet (1:7); and
  - 3.2. not less than six (6) feet from the shallow end wall.
4. The slope of the floor from the point of the first slope change to the deep end wall shall not exceed one (1) foot in three (3) feet (1:3).

SECTION R326.8 WATER DEPTH.

SECTION R326.8.1. Water depths at the shallow end of the swimming area shall be two (2) feet nine (9) inches minimum and three (3) feet six (6) inches maximum, except for special purpose pools.

SECTION R326.8.2. No minimum water depth shall be specified in a nonswimming area. The nonswimming area shall be visually set apart.

SECTION R326.8.3. Pools of the type where manufactured diving equipment is permitted shall have the area and depth of water in compliance with the drawings for Type I through Type V pools.

SECTION R326.8.4. Where manufactured diving equipment is installed, it shall:

1. conform to the specifications set forth in Section R326.15; and
2. be so located in the diving area of the pool so as to provide the minimum dimensions for area and depth of water as shown on drawings of Type I through Type V pools.

SECTION R326.8.5. The tip of the manufactured diving equipment shall be located at point "A", which is the reference point for all other dimensions.

SECTION R326.9 MINIMUM VERTICAL CLEARANCES.

SECTION R326.9.1. Minimum unobstructed headroom from the top of the manufactured diving equipment shall be provided for diving in accordance with Table R326.9.1 unless greater dimensions are called for by the manufacturer.

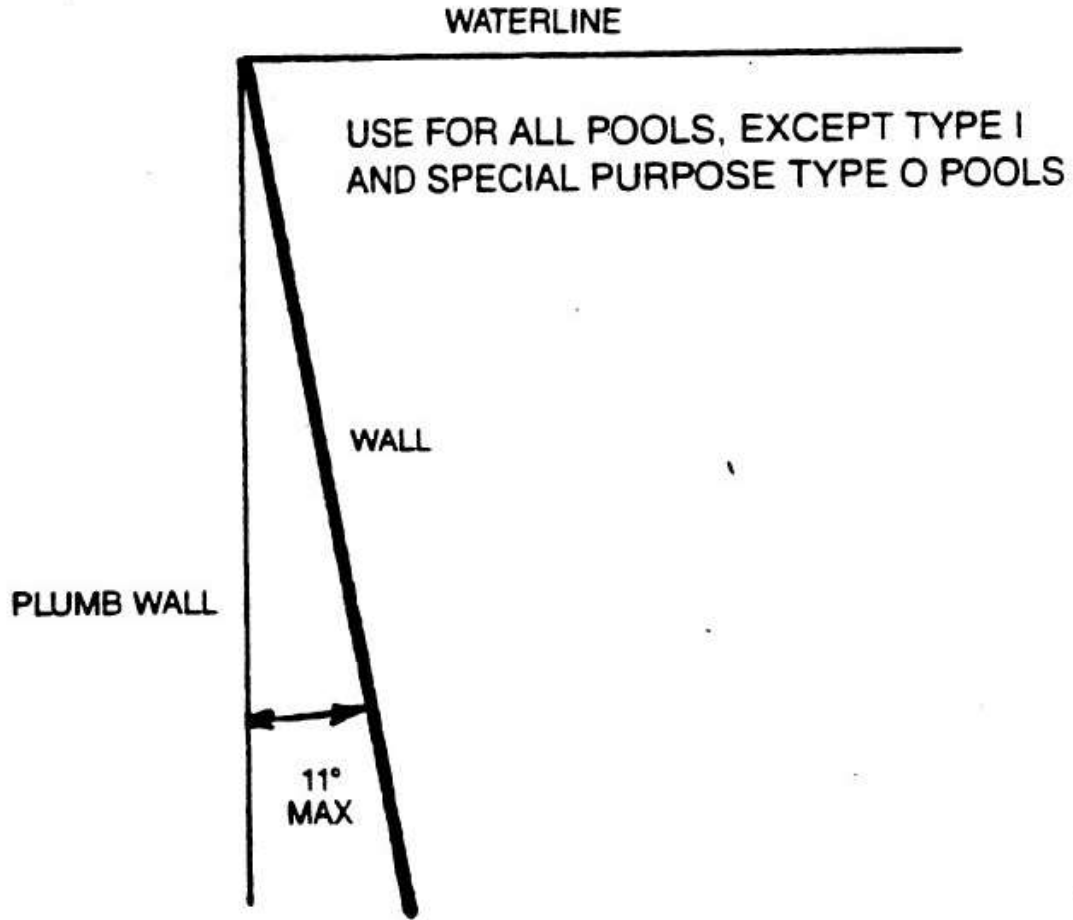
TABLE R326.9.1	
POOL TYPE	MINIMUM HEADROOM ABOVE BOARD
I	12 feet
II	12 feet
III	12 feet
IV	13 feet
V	14 feet

SECTION R326.10 POOL TYPES

SECTION R326.10.1. Residential pools shall be further classified into types as an indication of the suitability of a pool for use with diving equipment as shown in Section R326.10.2, Figure R326.10(1). Diving equipment classified at a higher type shall not be used on a pool of a lesser type.

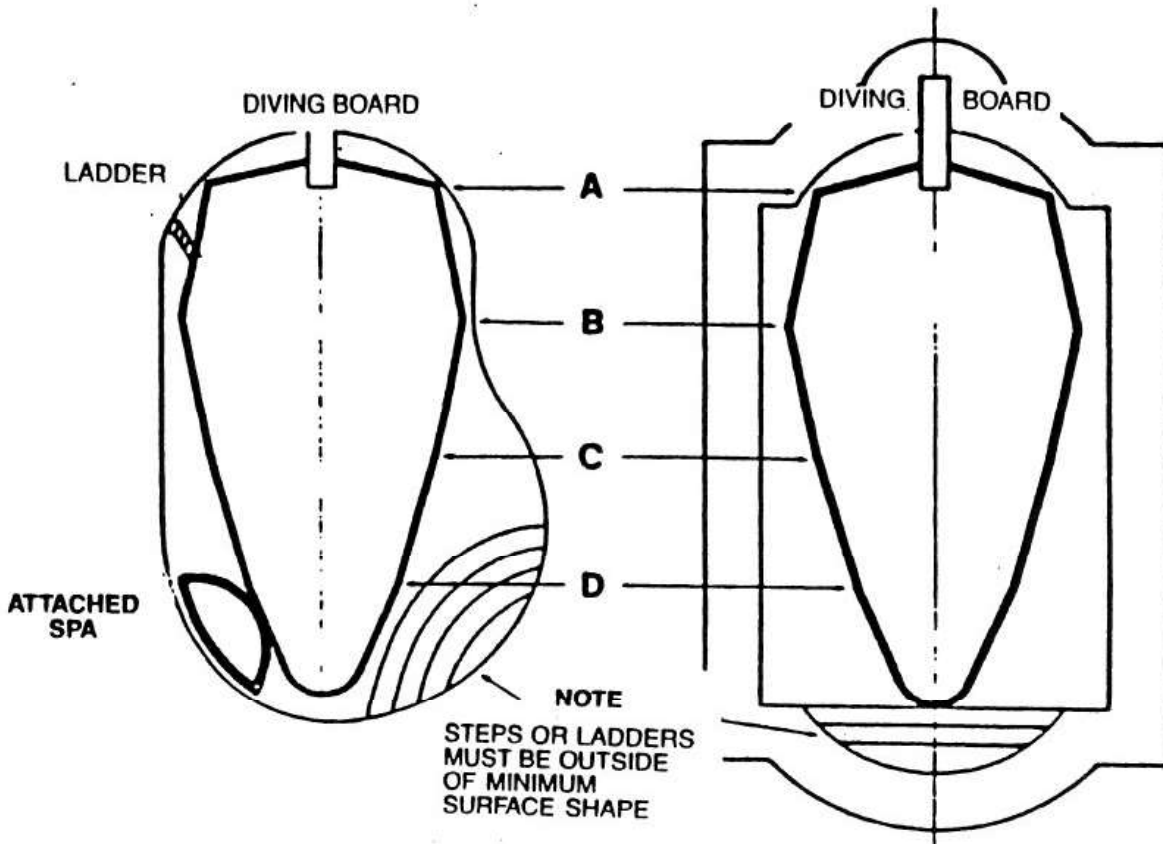
Page 71

FIGURE R326.10(2)  
MAXIMUM ALLOWABLE WALL SLOPE



SECTION R326.10.7. This section contains Figure R326.10(3), relationship of minimum top view dimensions to steps or stairs.

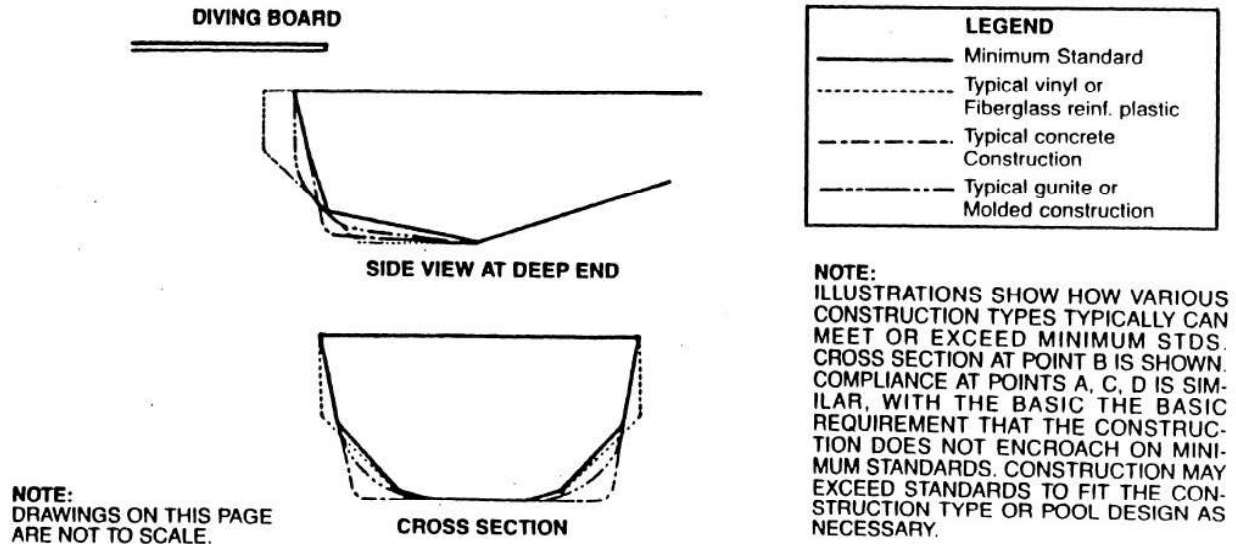
FIGURE R326.10(3)  
MINIMUM TOP VIEW DIMENSIONS TO STEPS OR STAIRS





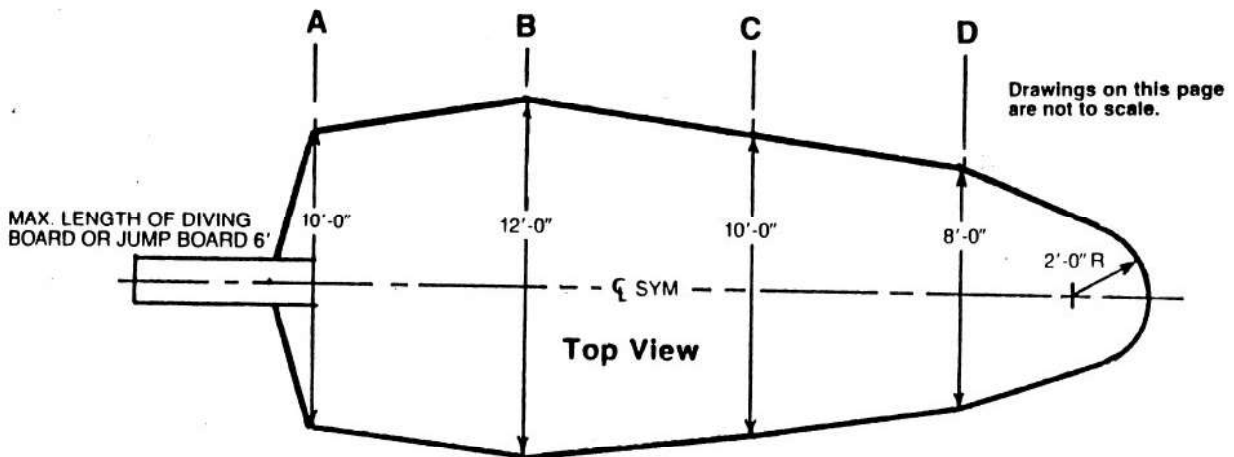
SECTION R326.10.8. This section contains Figure R326.10(4), relationship of vinyl, fiberglass, gunite, and concrete construction to minimum requirements.

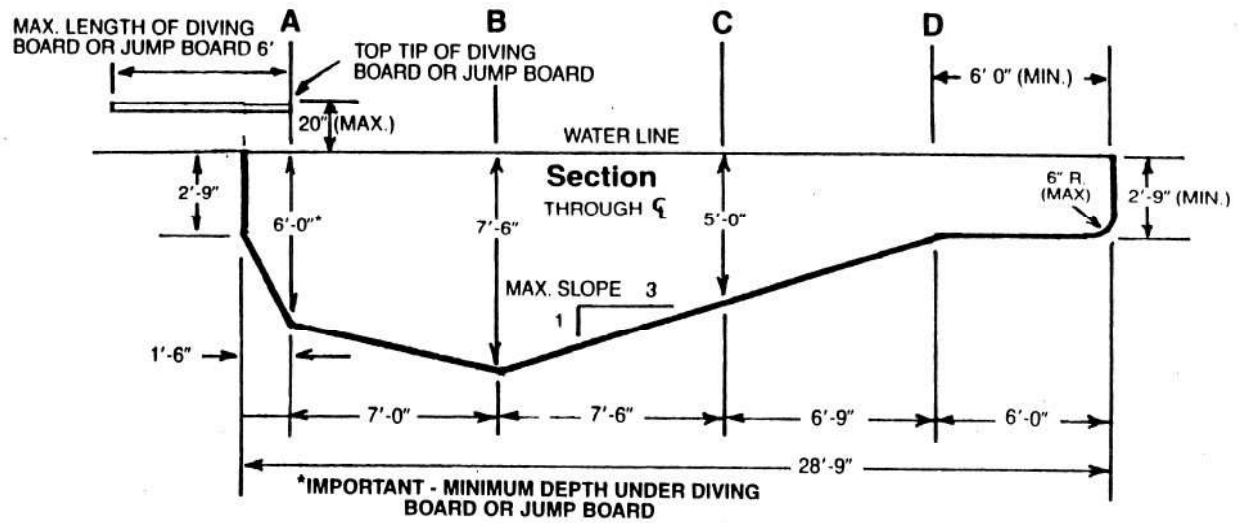
FIGURE R326.10(4)  
RELATIONSHIP OF VINYL, FIBERGLASS, GUNITE, AND CONCRETE CONSTRUCTION TO MINIMUM REQUIREMENTS



SECTION R326.10.9. This section contains Figure R326.10(5), minimum dimensions for a Type I pool.

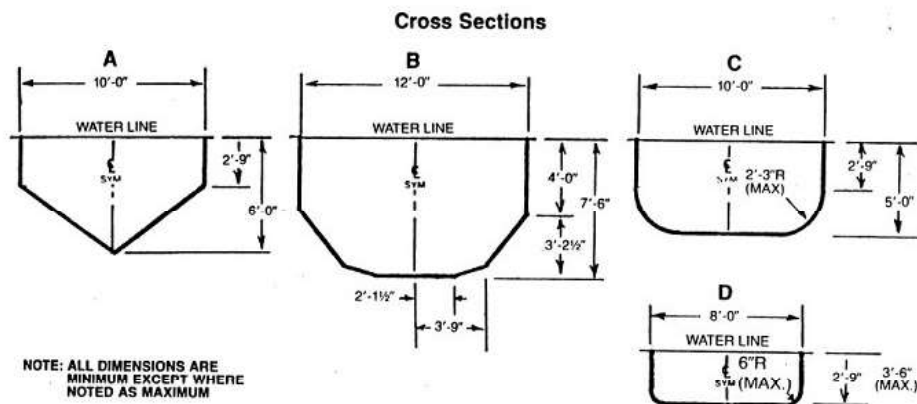
FIGURE R326.10(5)  
MINIMUM DIMENSIONS FOR A TYPE I POOL





Minimum Water Envelope at Points A, B, C & D.

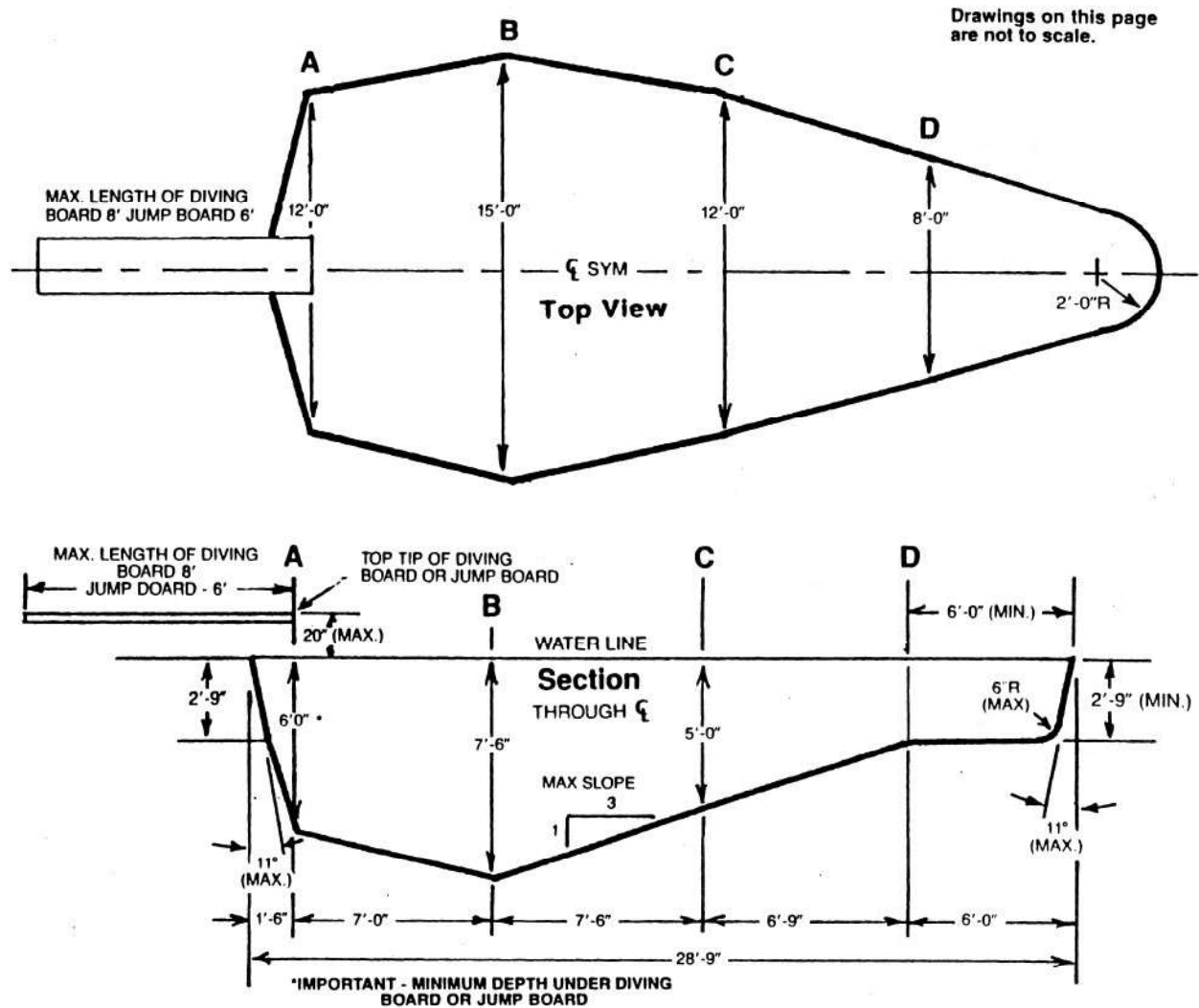
Pool Type I



SECTION R326.10.10. This section contains Figure R326.10(6), minimum dimensions for a Type II pool.

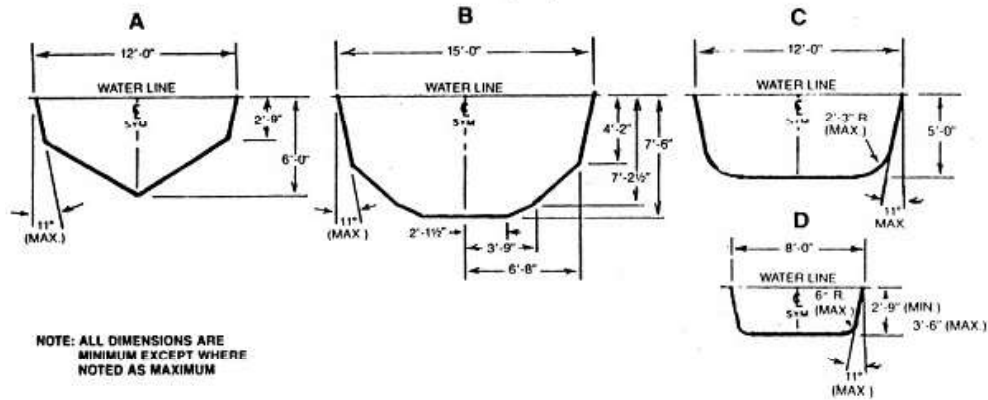
FIGURE R326.10(6)

MINIMUM DIMENSIONS FOR A TYPE II POOL



**Minimum Water Envelope at Points A, B, C & D.**

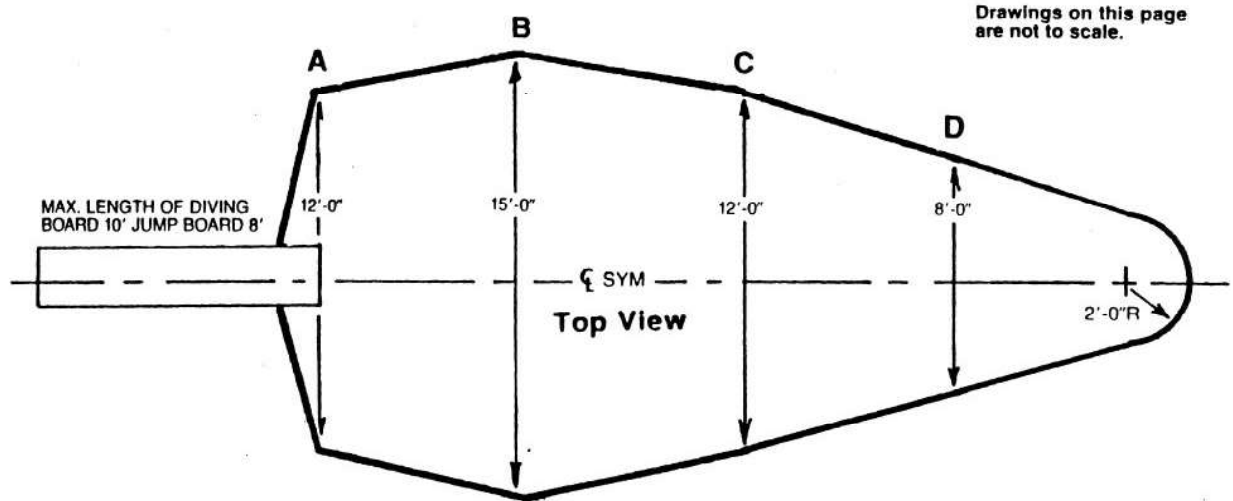
**Pool Type II**

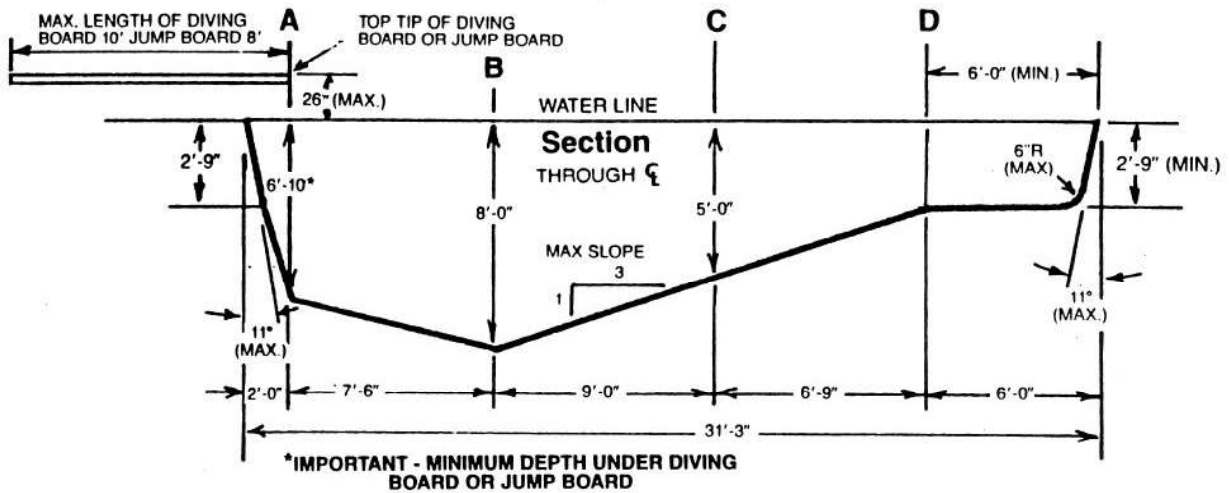


SECTION R326.10.11. This section contains Figure R326.10(7), minimum dimensions for a Type III pool.

FIGURE R326.10(7)

**MINIMUM DIMENSIONS FOR A TYPE III POOL**

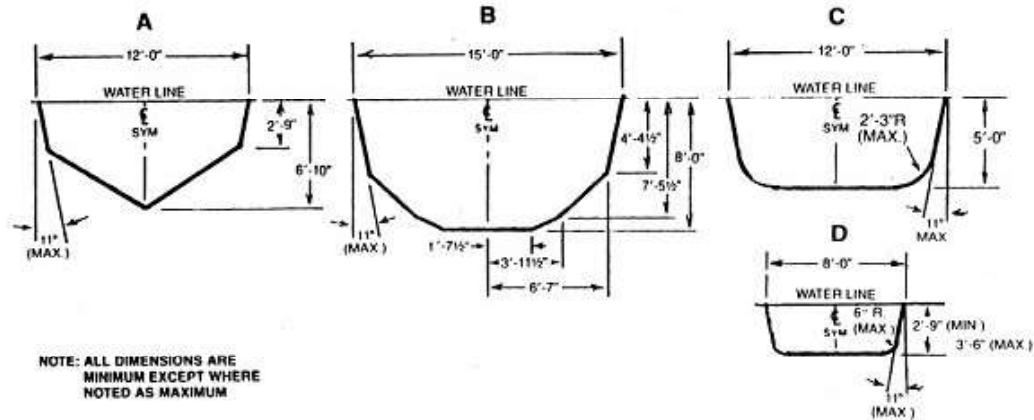




Minimum Water Envelope at Points A, B, C & D.

Pool Type III

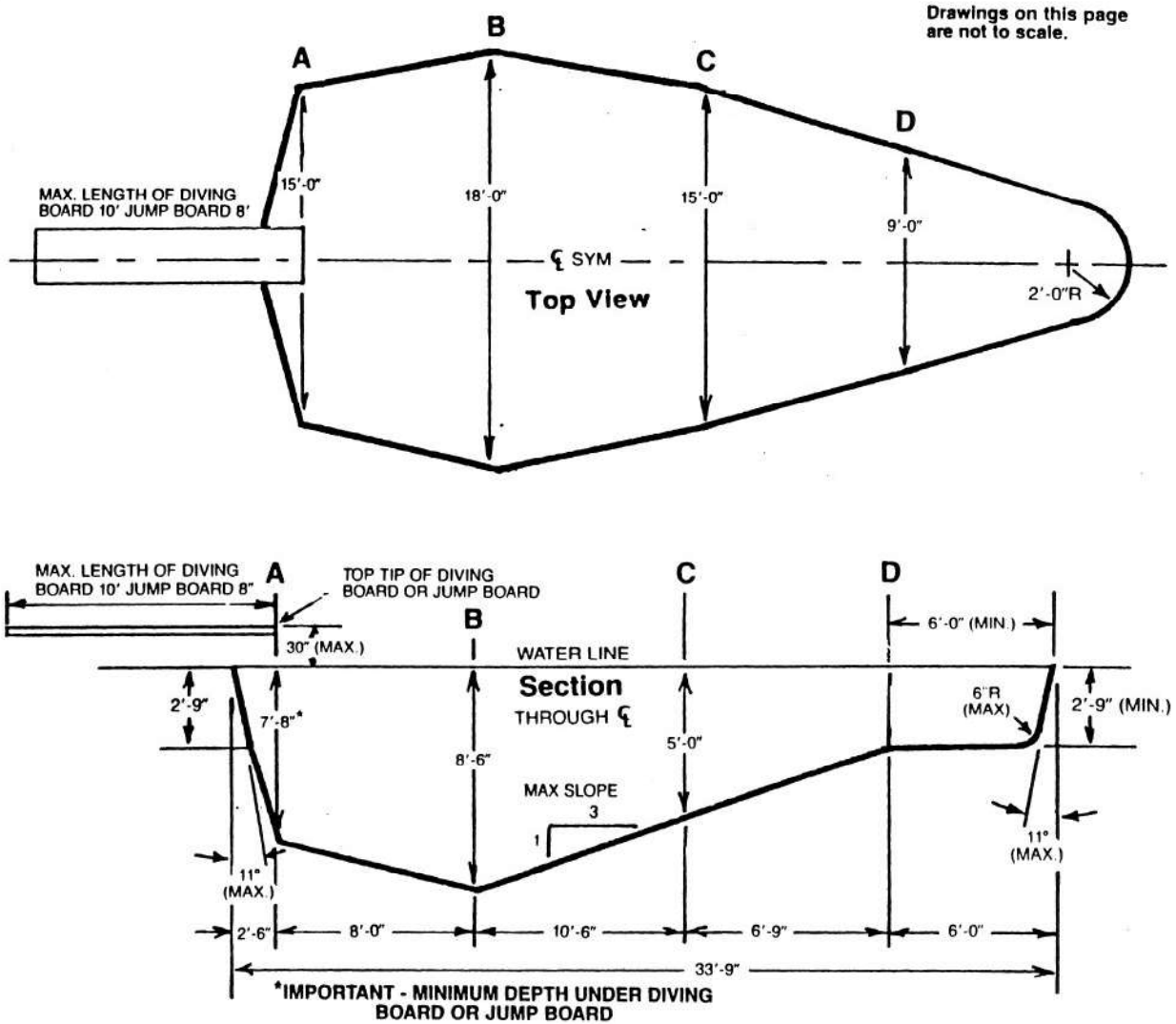
#### Cross Sections



SECTION R326.10.12. This section contains Figure R326.10(8), minimum dimensions for a Type IV pool.

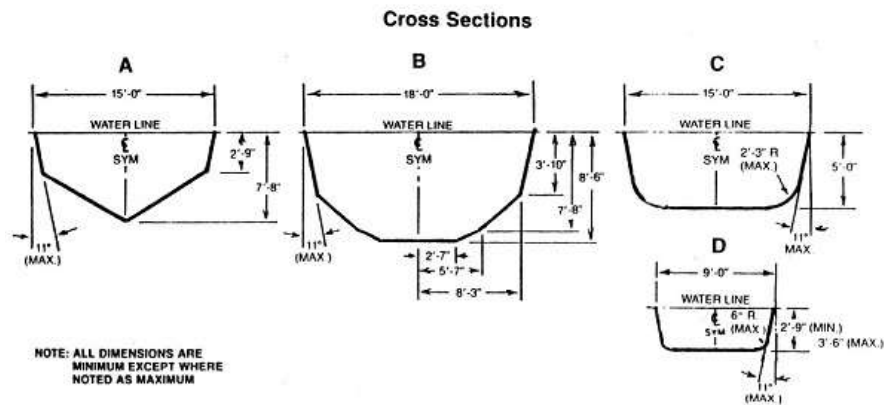
FIGURE R326.10(8)

MINIMUM DIMENSIONS FOR A TYPE IV POOL



Minimum Water Envelope at Points A, B, C & D.

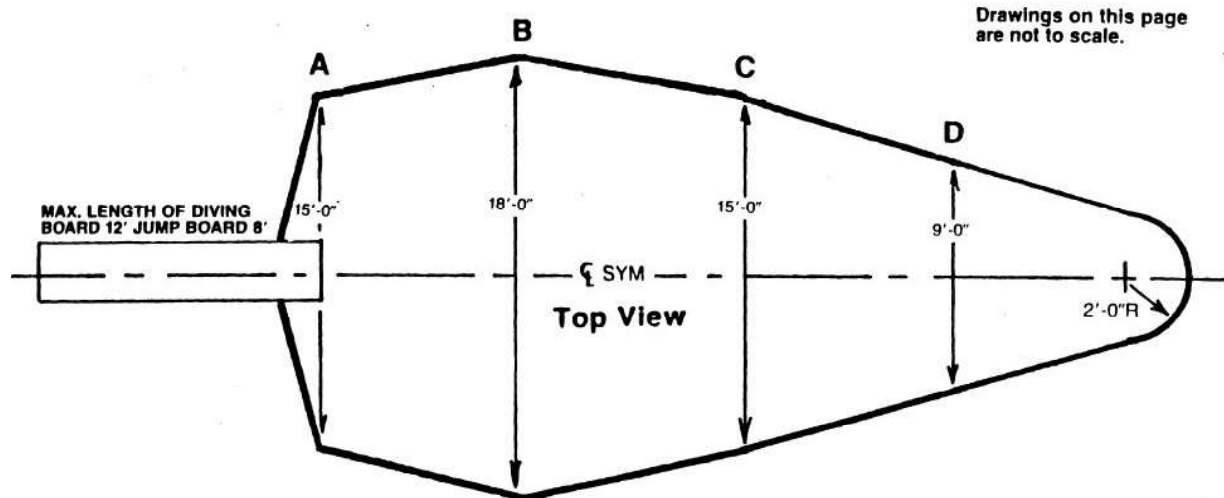
Pool Type IV

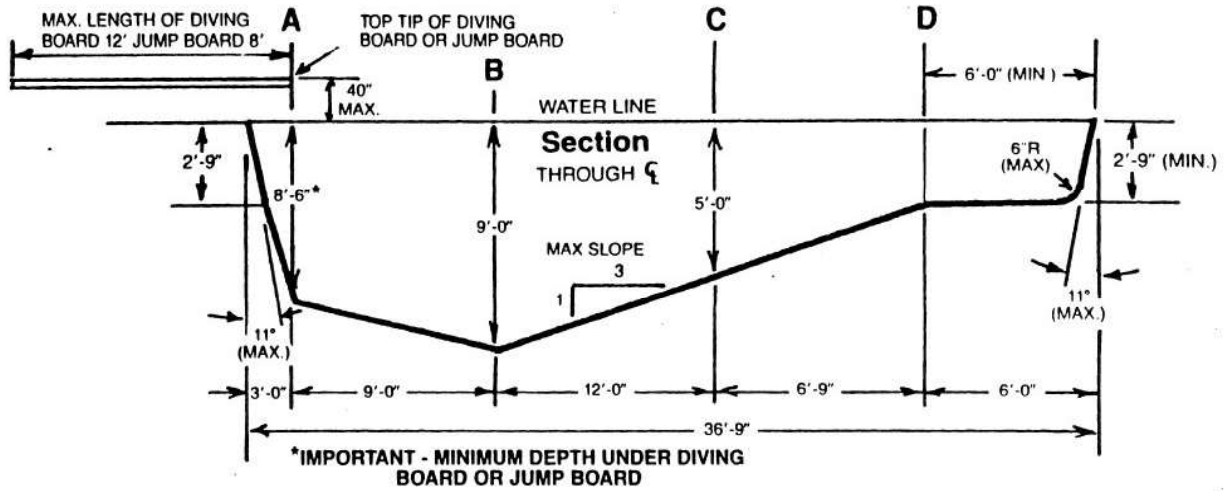


SECTION R326.10.13. This section contains Figure R326.10(9), minimum dimensions for a Type V pool.

FIGURE R326.10(9)

MINIMUM DIMENSIONS FOR A TYPE V POOL

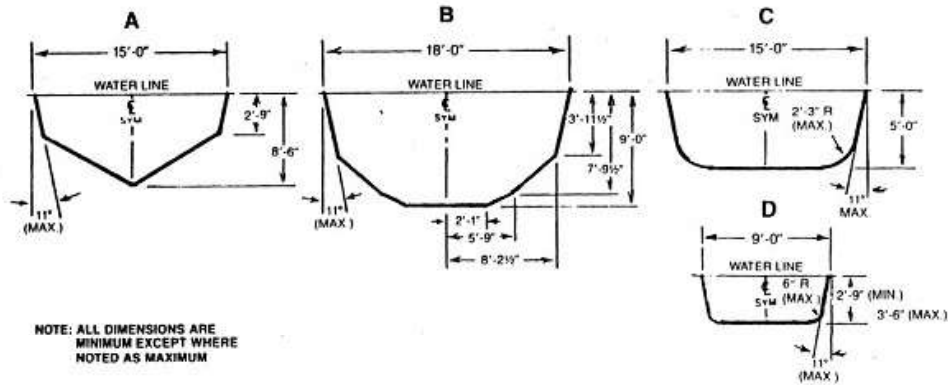




Minimum Water Envelope at Points A, B, C & D.

Pool Type V

Cross Sections

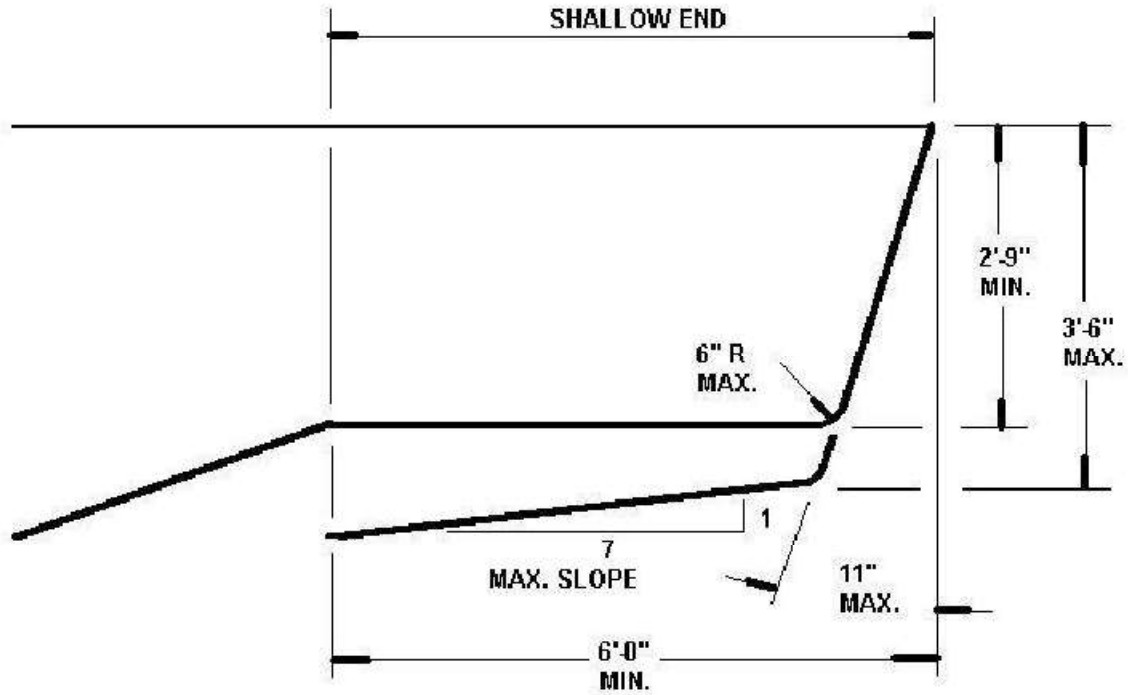




SECTION R326.10.14. This section contains Figure R326.10(10), shallow end detail for pool Types II through V.

FIGURE R326.10(10)

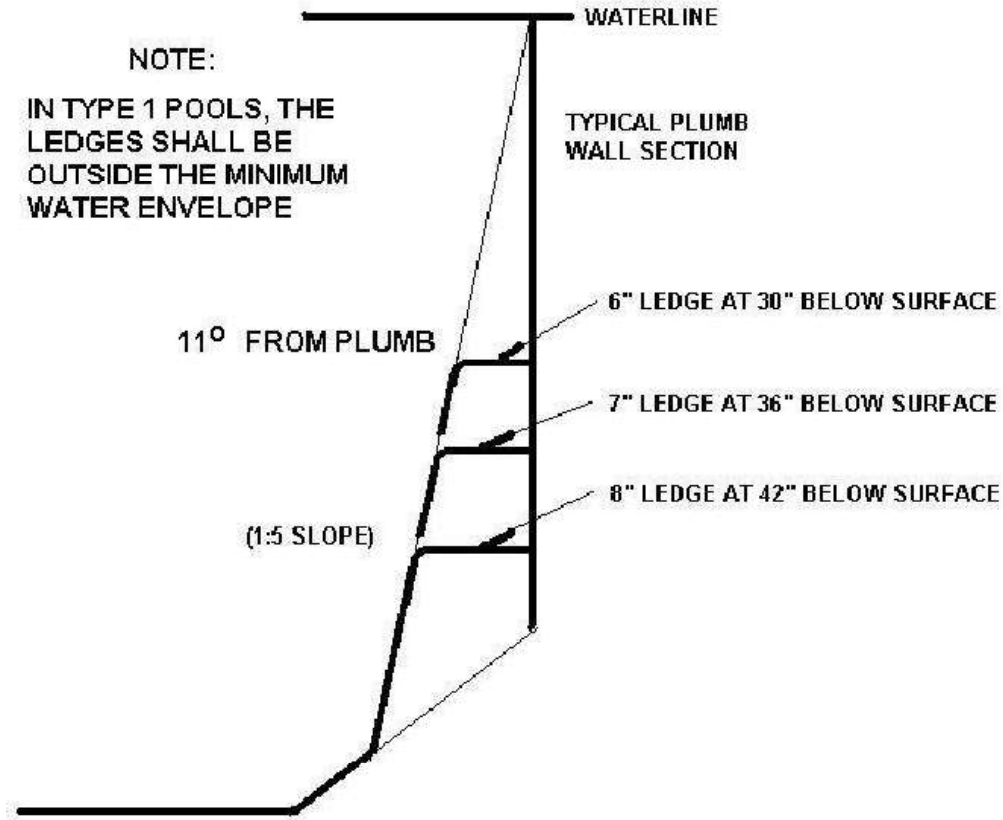
SHALLOW END DETAIL FOR POOL TYPES II THROUGH V



**Figure 4-10**  
**Shallow End Detail**

SECTION R326.11 OFFSET LEDGES AND UNDERWATER SEAT BENCHES.

SECTION R326.11.1. Offset ledges, when provided, shall fall within eleven (11) degrees from plumb starting at the junction of the pool wall and waterline and shall have a slip-resisting surface. Maximum width shall be eight (8) inches. The typical allowable dimensions are based on the depths shown as follows:



SECTION R326.11.2. Underwater seat benches, where provided, shall:

1. have a maximum horizontal seat bench depth of twenty (20) inches below the waterline;
2. be visually set apart;
3. have a slip-resisting surface; and
4. be located fully outside of the required minimum diving water envelope if the pool is designed for use with manufactured diving equipment.

Underwater seat benches shall be permitted in the deep end of the pool only if they are either completely recessed, shaped to be compatible with the slope of the pool wall, or in a corner of the pool.

#### SECTION R326.12 DECKS AND DECK EQUIPMENT

SECTION R326.12.1. Deck work shall be designed and installed so as to include the quality of subbase, concrete mix design, reinforcing, joints, and finishes. Work performed in accordance with the recommended practices of the American Concrete Institute (ACI) Standard 302.1R-80, "Guide for Concrete Floor and Slab Construction", may be deemed acceptable.

SECTION R326.12.2. Decks, ramps, coping, and similar step surfaces shall be slip-resisting and easily cleanable.

SECTION R326.12.3. Special features in or on decks such as markers, brand insignias, or similar features shall conform to this section.

SECTION R326.12.4. Steps outside the pool perimeter are not required to comply with the provisions of Section R326,

but shall be constructed in accordance with all other applicable provisions of this code.

SECTION R326.12.5. Excavation areas shall be adequately compacted when they support the deck or decks.

SECTION R326.12.6. Decks shall be sloped to effectively drain either to perimeter areas or to deck drains. Drainage shall remove pool splash water, deck cleaning water, and rainwater without leaving standing water.

SECTION R326.12.7. The minimum slope of decks shall be:

1. one-eighth (1/8) inch per one (1) foot (1/8:12) for textured, hand-finished concrete decks;
2. one-fourth (1/4) inch per one (1) foot (1/4:12) for exposed aggregate concrete decks; and
3. one-half (1/2) inch per one (1) foot (1/2:12) for indoor/outdoor carpeting decks.

SECTION R326.12.8. The maximum slope for all decks other than wood decks shall be one (1) inch per foot except for ramps. The maximum slope for wood decks shall be one-eighth (1/8) inch per foot except for ramps. Expansion gaps shall be based on good engineering practices with respect to the type of wood used.

SECTION R326.12.9. The maximum voids between adjoining concrete slabs, and between concrete slabs and expansion joint material, shall be three-sixteenths (3/16) inch of horizontal clearance with a maximum difference in vertical elevation of one-fourth (1/4) inch.

SECTION R326.12.10. Construction joints where pool coping meets concrete decks shall be watertight and shall not allow water to pass to the ground beneath.

SECTION R326.12.11. The areas where the decks join pool coping shall be designed and installed so as to protect the coping and its mortar bed from damage as a result of reasonable movement of adjoining decks.

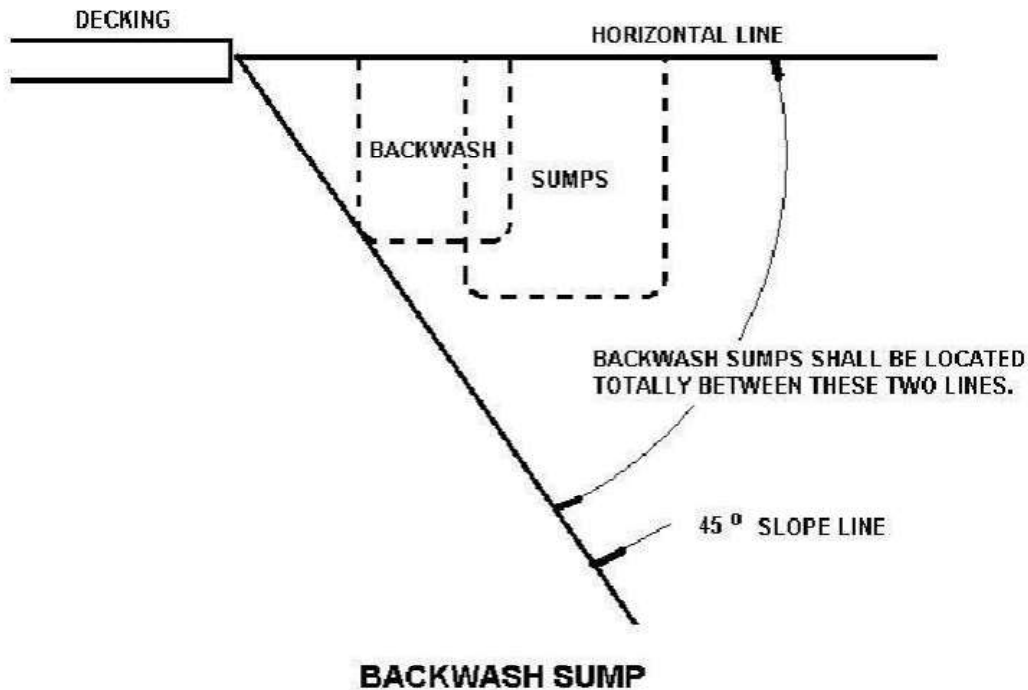
SECTION R326.12.12. Joints in decks shall be provided to minimize the potential for cracks due to a change in elevations, separation of surfaces, or movement of the slab.

SECTION R326.12.13. The areas where decks join concrete work shall be protected by expansion joints to protect the pool adequately from the pressures of relative movements.

SECTION R326.12.14. Decks shall be edged, have a radius, or be otherwise relieved to eliminate sharp corners.

SECTION R326.12.15. Site drainage shall be provided so as to direct all perimeter deck drainage as well as general site and roof drainage away from the pool.

SECTION R326.12.16. If used, an open pit or leaching design for backwash sump purposes shall be located so that it falls completely below adjacent decks and fully outside a line projected forty-five (45) degrees downward and away from such decks as shown below.



#### SECTION R326.13 CIRCULATION PIPING.

SECTION R326.13.1. Circulation system piping, other than that integrally included in the manufacture of the pool, shall be subject to an induced static hydraulic pressure test (sealed system) at twenty-five (25) pounds per square inch for thirty (30) minutes. This test shall be performed before the deck is poured, and the pressure shall be maintained through the deck pour.

SECTION R326.13.2. Valves installed in or under any decks shall provide a minimum ten (10) inches diameter access cover and valve pit to facilitate servicing.

SECTION R326.13.3. A hose bibb with a vacuum breaker shall be provided for washing down the entire deck area.

#### SECTION R326.14 POOL EGRESS.

SECTION R326.14.1. All pools shall have a means of entry/exit in the shallow end consisting of one (1) ladder, stairs, or recessed treads. Where two (2) or more entries/exits are used, the ladders, stairs, or recessed treads may be used in combination. All treads shall have slip-resisting surfaces.

SECTION R326.14.2. Where water depths are twenty-four (24) inches or less at the pool wall, the areas shall be considered as providing their own natural mode for entry/exit.

SECTION R326.14.3. For pools over thirty (30) feet in width, both sides of the deep portions of the pool shall have entries/exits provided.

SECTION R326.14.4. A means of entry/exit for the shallow end shall be located between the shallow end wall and the cross section at point "D". Where required, entry/exit for the deep end shall be between the deep end wall and the cross section at point "B". (Refer to Section R326.10.2, Figure R326.10(1))

SECTION R326.14.5. Ladders, stairs, recessed treads, or underwater seat benches shall be provided at the deep end of the pool if the water depth is over five (5) feet.

SECTION R326.14.6. The design and construction of protruding and recessed pool stairs shall conform to the following:

1. Step treads shall have a minimum unobstructed horizontal depth of ten (10) inches and a minimum unobstructed surface area of two hundred forty (240) square inches.
2. Risers at the center line of the treads shall have a maximum uniform height of twelve (12) inches with the bottom riser height allowed to vary plus or minus two (2) inches from the uniform riser height.
3. The vertical distance between the pool coping edge, deck, or step surface, which shall be slip-resisting, and the

uppermost step tread shall be a maximum of twelve (12) inches.

SECTION R326.14.7. If handrails are used with stairs, they shall conform to the following:

1. Handrails, if removable, shall be installed in such a way that they cannot be removed without the use of tools.
2. The leading edge of handrails facilitating stairs and pool entry/exit shall be not more than eighteen (18) inches plus or minus three (3) inches horizontally from the vertical plane of the bottom riser, where applicable.
3. The outside diameter of handrails shall be between one (1) inch and two (2) inches.

SECTION R326.14.8. Underwater seats or benches may be provided as part of the stairs or recessed treads.

SECTION R326.14.9. The design and construction of pool ladders shall conform to the following:

1. Pool ladders shall be made entirely of corrosion-resistant materials.
2. Ladders shall provide two (2) handholds or two (2) handrails.
3. Below the water level, there shall be a clearance of not more than six (6) nor less than three (3) inches between any ladder tread edge measured from the pool wall side of the tread and the pool wall.
4. The clear distance between ladder handrails shall be a minimum of seventeen (17) inches and a maximum of twenty-four (24) inches.
5. There shall be a uniform height between ladder treads with a seven (7) inch minimum distance and a twelve (12) inch maximum distance.
6. Ladder treads shall have a minimum horizontal depth of one and one-half (1 1/2) inches.
7. The vertical distance between the top tread and the pool coping or deck shall be a maximum of twelve (12) inches.

SECTION R326.14.10. The design and construction of recessed treads in the pool wall shall conform to the following:

1. Recessed treads at the center line shall have a uniform vertical spacing of twelve (12) inches maximum and seven (7) inches minimum.
2. The vertical distance between the pool coping edge, deck, or step surface and the uppermost recessed tread shall be a maximum of twelve (12) inches.
3. Recessed treads shall have a minimum depth of five (5) inches and a minimum width of twelve (12) inches.
4. Recessed treads shall drain into the pool to prevent accumulation of dirt.
5. Each set of recessed treads shall be provided with a pair of handrails, grab rails, or handholds to serve all treads and risers.

#### SECTION R326.15 DIVING EQUIPMENT.

SECTION R326.15.1. Supports, platforms, stairs, and ladders for manufactured diving equipment shall be designed to carry the anticipated loads. Stairs and ladders shall be of corrosion-resistant material, easily cleanable, and with slip-resisting tread. All manufactured diving stands higher than twenty-one (21) inches measured from the deck to the top butt end of the board shall be provided with stairs or a ladder, or both. Step treads shall be self-draining.

SECTION R326.15.2. Platforms and manufactured diving equipment of one (1) meter or higher shall be protected with guard rails, which shall be at least thirty (30) inches above the diving board and extend to the edge of the pool wall.

SECTION R326.15.3. Manufactured diving equipment shall be:

1. designed for swimming pool use; and
2. installed in accordance with the manufacturer's recommendations provided with the equipment.

SECTION R326.15.4. A label shall be permanently affixed to the manufactured diving equipment or jump board and shall include not less than the:

1. manufacturer's name and address;
2. board equipment length;
3. identification as to diving or jump board;
4. fulcrum setting specifications, if applicable;
5. date of manufacture; and
6. reference to manufacturer's safety standard, if any, that the board will meet.

SECTION R326.15.5. Manufactured diving equipment suitable for installation on a lower pool type may be installed on any higher pool type providing no less a water envelope is provided from the tip of the board than called for in the lower type. Manufactured diving equipment of a greater type, for example, Type III, shall not be installed on a pool of lesser type, for example, Type II. In addition, the following provisions apply:

1. Manufactured diving equipment shall have slip-resisting tread surfaces.
2. Manufactured diving equipment shall be permanently anchored to the pool deck. The edge of the board at the tip end shall be level with the water surface. The tip end of the board over the pool water surface may be higher than the butt end of the board. Refer to manufacturer's recommendations.

SECTION R326.16 SWIMMING POOL SLIDES.

SECTION R326.16.1. Swimming pool slides shall meet the requirements of 16 CFR 1207, Safety Standard for Swimming Pool Slides as published by the U.S. Consumer Product Safety Commission, 4330 East-West Highway, Bethesda, Maryland 20814. Slides, where provided for use with swimming pools, and shall have a permanent label or separate certificate indicating conformance with the rules of the Consumer Product Safety Commission contained at 16 CFR 1207.

SECTION R326.16.2. Swimming pool slides in residential swimming pools shall terminate such that the following applies:

1. The end of the slide is not more than twelve (12) inches above the pool deck.
2. The depth of the water at the end of the slide meets the manufacturer's recommendations or thirty-six (36) inches, whichever is greater.
3. The distance from the end of the slide is not less than twenty (20) feet measured along the axis of travel.
4. The depth of water described in item 2, or a gradually increasing depth, shall be maintained for not less than ten (10) feet beyond the end of the slide. This depth of water may gradually decrease beyond that point to a minimum water depth of twenty-four (24) inches. For this requirement a maximum slope of one (1) in seven (7) (1:7) shall be considered "gradual".

SECTION R326.16.3. Swimming pool slides shall be installed in accordance with the manufacturer's installation instructions and specifications.

SECTION R326.17 CIRCULATION SYSTEM.

SECTION R326.17.1. A circulation system consisting of pumps, piping, return inlets and suction outlets, filters, and other necessary equipment shall be provided for complete circulation of water through all parts of the pool. This circulation system shall be capable of maintaining water clarity and chemistry requirements.

SECTION R326.17.2. The equipment shall be of adequate size to turn over the entire pool water capacity at least once every twelve (12) hours. Water clarity shall be maintained. When standing at the pool's edge at the deep end, the deepest portion of the pool floor shall be visible.

SECTION R326.17.3. Circulation system components that require replacement or servicing shall be:

1. accessible for inspection, repair, or replacement; and
2. installed according to the manufacturer's instructions.

SECTION R326.17.4. Pool equipment shall be:

1. properly supported to prevent damage from misalignment, settlement, and other causes; and
2. mounted so as to minimize the potential for the accumulation of debris and moisture following manufacturer's instructions.

SECTION R326.17.5. The water velocity in the pool piping shall not exceed ten (10) feet per second for discharge piping and eight (8) feet per second for suction piping, unless summary calculations are provided to show that the greater flow is possible with the pump and piping provided. In copper pipes, the velocity shall not exceed eight (8) feet per second for suction and discharge piping. Pool piping shall be sized to permit the rated flows for filtering.

SECTION R326.17.6. The circulation system piping and fittings shall be:

1. nontoxic;
2. considered to be process piping; and
3. of material able to withstand operating pressures and operating conditions.

SECTION R326.17.7. Equipment shall be designed and fabricated to drain the pool water from the equipment, together with exposed face piping, by removal of drain plugs and manipulating valves, or by other methods. Refer to manufacturer's recommendations for specific information on draining the system.

SECTION R326.17.8. A pressure or vacuum gauge or other means of indicating system conditions shall be provided in the circulation system in an easily readable location.

SECTION R326.17.9. Time clocks may be used to set the operating period of the circulation system. When time clocks

are used, they shall also govern the operating time of appurtenant devices such as chemical or disinfectant feeders, slurry feeders, heaters, or similar devices, that are dependent upon circulation pump flow.

SECTION R326.17.10. Written operation and maintenance instructions shall be provided for the circulation system.

SECTION R326.18 FILTERS.

SECTION R326.18.1. Filters shall be designed so that after cleaning per manufacturer's instructions the system can provide the water clarity noted in Section R326.17.1.

SECTION R326.18.2. Filters shall be designed so that filtration surfaces can be inspected and serviced.

SECTION R326.18.3. On pressure-type filters, a means shall be provided to permit the release of internal pressure.

SECTION R326.18.4. Any filter incorporating an automatic internal air release as its principal means of air release shall have lids that provide a slow and safe release of pressure as a part of its design.

SECTION R326.18.5. Any separation tank used in conjunction with any filter tank shall have a manual means of air release or a lid that provides a slow and safe release of pressure as it is opened as a part of its design.

SECTION R326.18.6. Pressure filters and separation tanks shall:

1. have operation and maintenance instructions permanently installed on the filter or separation tank; and
2. include a precautionary statement warning not to start up the system after maintenance without first opening the air release and proper reassembly of the filter and separation tank.

The statement shall be visible and noticeable within the area of the air release.

SECTION R326.18.7. Piping furnished with the filter shall be of suitable material capable of withstanding one and one-half (1 1/2) times the working pressure. The suction piping shall not collapse when there is a complete shutoff of flow on the suction side of the pump.

SECTION R326.19 PUMPS.

SECTION R326.19.1. A pump and motor shall be provided for circulation of the pool water. Performance of all pumps shall meet or exceed the conditions of flow required for filtering, cleaning, if applicable, and the filters against the total dynamic head developed by the complete system.

SECTION R326.19.2. With all pressure filter systems a cleanable strainer or screen shall be provided upstream of the circulation pumps to remove solids, debris, hair, lint, and other similar items.

SECTION R326.19.3. Pumps and motors shall be accessible for inspection and service.

SECTION R326.19.4. The design and construction of the pumps and component parts shall provide safe operation that is not hazardous to the operator or maintenance personnel.

SECTION R326.19.5. Where a mechanical pump seal is provided, components of the seal shall be corrosion-resistant and capable of operating under conditions normally encountered in pool operation.

SECTION R326.19.6. Proper direction of rotation for the pump shall be clearly indicated on the pump.

SECTION R326.19.7. All motors shall:

1. have as a minimum an open drip-proof enclosure; and
2. be constructed electrically and mechanically to perform satisfactorily and safely under the conditions of load and environment normally encountered in swimming pool installations.

SECTION R326.19.8. Motors shall be capable of operating the pumps under full load with a voltage variation of plus or minus ten percent (10%) from the nameplate rating. If the maximum service factor of the motor is exceeded (at full voltage), the manufacturer shall indicate this on the pump curve.

SECTION R326.19.9. All motors shall have thermal or current overload protection, either built-in or in the line starter, to provide locked rotor and running protection.

SECTION R326.19.10. Where the pump is below the waterline, valves shall be installed on permanently connected suction and discharge lines, located in an accessible place outside the walls of the pool, where they shall be readily and easily accessible for maintenance and removal of the pump.

SECTION R326.20 RETURN INLETS AND SUCTION OUTLETS.

SECTION R326.20.1. Return inlets and suction outlets shall be provided and arranged to produce a uniform circulation of water and maintain a uniform disinfectant residual throughout the entire pool. Where skimmers are used, the return inlets shall be located so as to help bring floating particles within range of the skimmers.

SECTION R326.20.2. The number of return inlets shall be based on a minimum of one (1) return inlet per six hundred (600) square feet of pool surface area, or fraction thereof. Return inlet fittings shall be installed of sufficient pipe size

or quantity to allow a full design turnover rate of the circulation system in accordance with the manufacturer's recommendations for return inlets.

SECTION R326.20.3. Return inlets from the circulation system shall be designed so as not to constitute a hazard to the bather.

SECTION R326.20.4. The pool shall not be operated if the suction outlet grate is missing, broken, or secured in such a way that it can be removed without the use of tools.

SECTION R326.20.5. If the suction outlet system, such as a filtration system, booster system, automatic cleaning system, solar system, or other similar system, has a single suction outlet, or multiple suction outlets that can be isolated by valves, each suction outlet shall protect against bather entrapment by:

1. an antivortex cover;
2. a twelve (12) inch by twelve (12) inch (12 x 12) grate or larger; or
3. other means acceptable to the local authority.

SECTION R326.20.6. Where provided, the vacuum cleaner fittings shall be located in accessible positions at least six (6) inches and not greater than eighteen (18) inches below the minimum operating water level or as an attachment to the skimmers.

#### SECTION R326.21 SURFACE SKIMMER SYSTEMS.

SECTION R326.21.1. A surface skimming system shall be:

1. provided on all residential swimming pools; and
2. designed and constructed to skim the pool surface when the water level is maintained within the operational parameters of the system's rim or weir device.

SECTION R326.21.2. Skimming devices shall be designed and installed so as not to constitute a hazard to the bather.

SECTION R326.21.3. Where automatic surface skimmers are used as the sole overflow system, at least one (1) surface skimmer shall be provided for each eight hundred (800) square feet or fraction thereof of the water surface area. Nominal recessed areas such as stairs and spas, shall not be considered in the calculation. Where skimmers are used, they shall be located to maintain effective skimming action over the entire surface of the pool.

#### SECTION R326.22 ELECTRICAL REQUIREMENTS.

SECTION R326.22.1. The requirements of 675 IAC 17, the Indiana Electrical Code, shall be followed in the installation of all electrical equipment wiring or appliances in the pool area or vicinity of the pool's circulation system, for all in-ground, on-ground, and therapeutic residential swimming pools, and ornamental fountains. Construction and installation of electric wiring and equipment associated with all spas, hot tubs, and hydromassage bathtubs, whether permanently installed or storable, shall comply with requirements of Chapter 42 of this code.

#### SECTION R326.23 HEATERS.

SECTION R326.23.1. Swimming pool heaters shall be of an "approved" type.

SECTION R326.23.2. Heaters shall be properly sized.

SECTION R326.23.3. The heaters shall be installed according to the manufacturer's recommendations, but not less than the following:

1. The heater shall be installed on a concrete (or equivalent) base unless it is specifically designed for installation on a combustible surface.
2. When installing the heater, adequate clearances shall be maintained on all sides and over the top of the unit. Consult manufacturer's instructions for proper clearances.
3. In order to ensure proper combustion, the heater shall have adequate ventilation installed as follows:
  - 3.1. When installing a heater indoors, proper openings to the room are required. The heater shall be installed in accordance with 675 IAC 18, the Indiana Mechanical Code, and the manufacturer's recommendations for properly sized air openings to the enclosure.
  - 3.2. All fossil fuel heaters shall be supplied with some type of venting system for either indoor or outdoor installation. These draft or venting devices shall be installed according to the manufacturer's recommendations and shall not be modified.
  - 3.3. When installing a heater that will be using propane gas, special precautions shall be noted. Propane gas is heavier than air and, therefore, can create special problems when the heater is installed in a pit or in an enclosed area. Whenever installing a heater with propane gas, the manufacturer's ventilation



recommendations shall be followed.

SECTION R326.23.4. The heater gas supply and pipe sizing shall:

1. be adequate; and
2. comply with manufacturer's recommendations.

When installing a gas-fired heater, the gas line shall be run from the gas meter as directly as practical.

SECTION R326.23.5. The heater circulation system shall comply with the manufacturer's recommendations. Precautions shall be taken to avoid siphonage of hot water into the pump or filter. When manufacturers recommend metal pipe, that is, copper and heat sinks, they shall be installed vertically connected to the heater to prevent heat damage to plastic circulation pipe. Heater piping shall be designed to avoid excessive friction losses through the pipe or bypass valves, or both, as required. When installing bypass valves, caution shall be taken to ensure adequate flow through the heater at all times.

SECTION R326.23.6. The water piping system shall be installed according to the manufacturer's recommendations. When manufacturers recommend precautions to eliminate siphonage so that the heater does not destroy the filter or any plastic pipe that is being used, the manufacturer's recommendations shall be followed. NOTE: When installing a heater and a filter system, adequate provisions shall be made so that the heater does not cause excessive pressure drop to the filter system. Refer to manufacturer's requirements or recommendations, or both, for installation of bypass valves. Excessive flow that causes pressure drop can be eliminated by the installation of an external or an automatic bypass valve. When installing a bypass valve, caution shall be noted so that there is always adequate flow through the heater.

SECTION R326.23.7. A time clock is recommended, and when used it shall be set long enough to properly filter the water and allow enough time for proper heating of the pool. It is recommended that a dual time clock or fireman's switch be used in conjunction with the heater to shut the heater off approximately one-half (1/2) hour before the filter system shuts down.

#### SECTION R326.24 WATER SUPPLY.

SECTION R326.24.1. The water supply serving the pool, which may come from a variety of sources, shall meet 327 IAC, the rules of the environmental rules board, before the bather uses the pool.

SECTION R326.24.2. No direct mechanical connection shall be made between the potable water supply and the swimming pool, chlorinating equipment, or the system of piping for the pool unless it is protected against backflow and siphonage in a manner approved by 675 IAC 16, the Indiana Plumbing Code, or through an air gap meeting that same code.

SECTION R326.24.3. An over-the-rim spout, if used, shall be located under a diving board, adjacent to a ladder, or otherwise properly shielded so as not to create a hazard. Its open end shall:

1. have no sharp edges; and
2. not protrude more than two (2) inches beyond the edge of the pool.

#### SECTION R326.25 WASTEWATER DISPOSAL.

SECTION R326.25.1. Backwash water shall be discharged into a sanitary sewer through an approved air gap or into an approved subsurface disposal system or by other means in accordance with 675 IAC 16, the Indiana Plumbing Code, and 327 IAC, the rules of the environmental rules board.

#### SECTION R326.26 DISINFECTANT; OXIDATION; CHEMICAL FEEDER REQUIREMENT.

SECTION R326.26.1. Disinfectant equipment, oxidation equipment, and chemical feeders, hereafter referred to jointly as "equipment", shall be capable of precisely introducing a sufficient quantity of an approved disinfecting agent or other chemical to maintain one (1) milligram per liter of free chlorine residual.

SECTION R326.26.2. Manufacturer's instructions shall be used in installing chemical feeders. The installation and use of chemical feeders shall conform to the following:

1. Where using chemical feeders, it is extremely important that they be installed downstream from the filter and heater. An exception is equipment specifically labeled for feeding to the suction side of the pump.
2. If the chemical feeder is equipped with its own pump, it shall be installed so it introduces the gas or solution downstream from the heater and, if possible, at a position lower than the heater outlet fitting.
3. Chemical feed pumps shall be wired so they cannot operate unless the filter pump is running. If the chlorinator has an independent timer, the filter and chemical feed pump timers shall be interlocked.
4. A check valve shall be installed in the piping between the heater and the point of chemical feed.

SECTION R326.26.3. The installation of ozone generating equipment shall be limited to low ozone output generating equipment. The installation and use of ozone generating equipment shall conform to the following:

1. Installation of ozone generating equipment shall allow for indications of operation or malfunction to be easily observed. The equipment shall be installed in a manner such that a malfunction will not endanger operators or pool users.
2. Ozone generating equipment shall be used in conjunction with other chemical treatments to meet the chemical operating parameters in this section. Normal maintenance and monitoring of water chemistry shall be followed.
3. If the equipment is capable of exposing maintenance or service personnel to ozone concentrations exceeding five hundred (500) parts per million, a self-contained breathing apparatus approved for ozone usage shall be provided. If a distinct, pungent odor is smelled when the ozone generating equipment is operating, the equipment shall be shut down, and the area shall be ventilated. The equipment shall be inspected and repaired as necessary by qualified service personnel.
4. Manufacturer's recommendations shall be used to determine where and how ozone shall be injected.

SECTION R326.27 SAFETY FEATURES.

SECTION R326.27.1. A residential pool shall be provided with a suitable handhold around its perimeter in areas where depths exceed three (3) feet six (6) inches. Handholds shall be provided no farther apart than four (4) feet and shall consist of any one (1) or a combination of items listed as follows:

1. Coping, ledge, or deck along the immediate top edge of the pool that provides a slip-resisting surface of at least four (4) inches minimum horizontal width and located at or not more than twelve (12) inches above the waterline.
2. Ladders, stairs, or seat ledges.
3. A secured rope or railing placed at or not more than twelve (12) inches above the waterline.

SECTION R326.27.2. Rope anchor devices shall be installed at a minimum of one (1) foot and a maximum of two (2) feet on the shallow end side of a point of change in floor slope. In pools where the slope change occurs in water depths less than four (4) feet six (6) inches, a transition rope supported by buoys shall be installed.

SECTION R326.27.3. Access to residential pools shall be restricted by one (1) of the following means:

1. Walls or fencing not less than four (4) feet high and completely surrounding the pool and deck area with the exception of self-closing and latching gates and doors, both capable of being locked.
2. Other means not less than four (4) feet high and deemed impenetrable by the enforcing authority at the time of construction and completely surrounding the pool and deck area when the pool is not in use.
3. A combination of item 1 and item 2 that completely surrounds the pool and deck with the exception of self-closing and latching gates and doors which are capable of being locked. This applies to item 1, item 2, and this item only.
4. A power safety pool cover that:
  - 4.1. shall provide a continuous connection between the cover and the deck, so as to prohibit access to the pool when the cover is completely drawn over the pool;
  - 4.2. shall be mechanically operated such that the cover cannot be drawn open or retracted without the use of a:
    - 4.2.1. key; or
    - 4.2.2. key and switch; or
    - 4.2.3. touch pad with a personal access code;
  - 4.3. is installed with track, rollers, rails, guides, or other accessories necessary to accomplish item 4.1 and item 4.2, in accordance with the manufacturer's instructions; and
  - 4.4. shall bear an identification tag indicating that the cover satisfies the requirements of ASTM F 1346-91 (2018), Standards Performance Specification for Safety Covers and Labeling Requirements for All Covers for Swimming Pools, Spas, and Hot Tubs, as published by ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania 19428-2959 for power safety pool covers.

SECTION R326.27.4. Not less than the following lifesaving equipment shall be installed with each residential swimming pool:

1. A ring or throwing buoy fitted with forty (40) feet of one-fourth (1/4) inch diameter line.
2. A pole not less than twelve (12) feet in length.

3. Access to a telephone.

*(Fire Prevention and Building Safety Commission; 675 IAC 14-4.4-38; filed Nov 26, 2019, 11:43 a.m.: 20191225-IR-675190330FRA)*

**675 IAC 14-4.4-39 Section R401.3; drainage**

Authority: IC 22-13-2-2; IC 22-13-2-2.5; IC 22-13-2-13  
Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7

Sec. 39. Delete the first sentence of the text of SECTION R401.3 without substitution. *(Fire Prevention and Building Safety Commission; 675 IAC 14-4.4-39; filed Nov 26, 2019, 11:43 a.m.: 20191225-IR-675190330FRA)*

**675 IAC 14-4.4-40 Section R403.1; general**

Authority: IC 22-13-2-2; IC 22-13-2-2.5; IC 22-13-2-13  
Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7

Sec. 40. Delete the word "continuous" in the first sentence of the text of SECTION R403.1 without substitution. *(Fire Prevention and Building Safety Commission; 675 IAC 14-4.4-40; filed Nov 26, 2019, 11:43 a.m.: 20191225-IR-675190330FRA)*

**675 IAC 14-4.4-41 Table R403.4; minimum depth (D) and width (W) of crushed stone footings<sup>a, b</sup> (inches)**

Authority: IC 22-13-2-2; IC 22-13-2-2.5; IC 22-13-2-13  
Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7

Sec. 41. Change the title of TABLE R403 to read as follows: TABLE R403.4 MINIMUM DEPTH (D) AND WIDTH (W) OF CRUSHED STONE FOOTINGS<sup>a, b</sup> (inches). *(Fire Prevention and Building Safety Commission; 675 IAC 14-4.4-41; filed Nov 26, 2019, 11:43 a.m.: 20191225-IR-675190330FRA)*

**675 IAC 14-4.4-42 Section R403.1.1.1; size of footings supporting piers and columns**

Authority: IC 22-13-2-2; IC 22-13-2-2.5; IC 22-13-2-13  
Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7

Sec. 42. Add SECTION R403.1.1.1 to read as follows: SECTION R403.1.1.1 SIZE OF FOOTINGS SUPPORTING PIERS AND COLUMNS. Size of footings supporting piers and columns shall comply with TABLE R403.2. *(Fire Prevention and Building Safety Commission; 675 IAC 14-4.4-42; filed Nov 26, 2019, 11:43 a.m.: 20191225-IR-675190330FRA)*

**675 IAC 14-4.4-43 Section R403.1.4.1; frost protection**

Authority: IC 22-13-2-2; IC 22-13-2-2.5; IC 22-13-2-13  
Affected: IC 22-12; IC 22-13; IC 22-14; IC 22-15; IC 36-7

Sec. 43. Change SECTION R403.1.4.1 as follows:

(1) Change the text of SECTION R403.1.4.1 to read as follows:

Except where otherwise protected from frost, foundation walls, piers, and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:

1. Extended below the frost line specified in Table R301.2(1).
2. Constructed in accordance with Section R403.3.
3. Constructed in accordance with ASCE 32.
4. Erected on solid rock.

Footings shall not bear on frozen soil unless the frozen condition is permanent.

(2) Change the EXCEPTIONS of SECTION R403.1.4.1 to read as follows:

1. Protection of freestanding accessory structures with an area of 721 square feet (67 m<sup>2</sup>) or less shall not be required when constructed in accordance with TABLE R309.