

Planning Guide

Public Swimming Pools and Spas/Hot Tubs IN PRINCE GEORGE'S COUNTY



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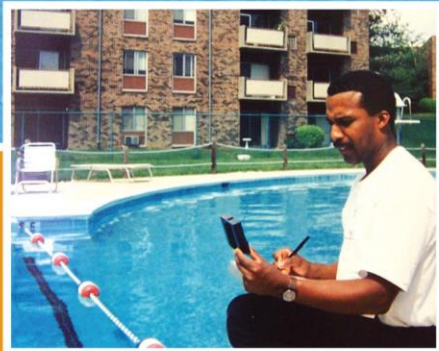


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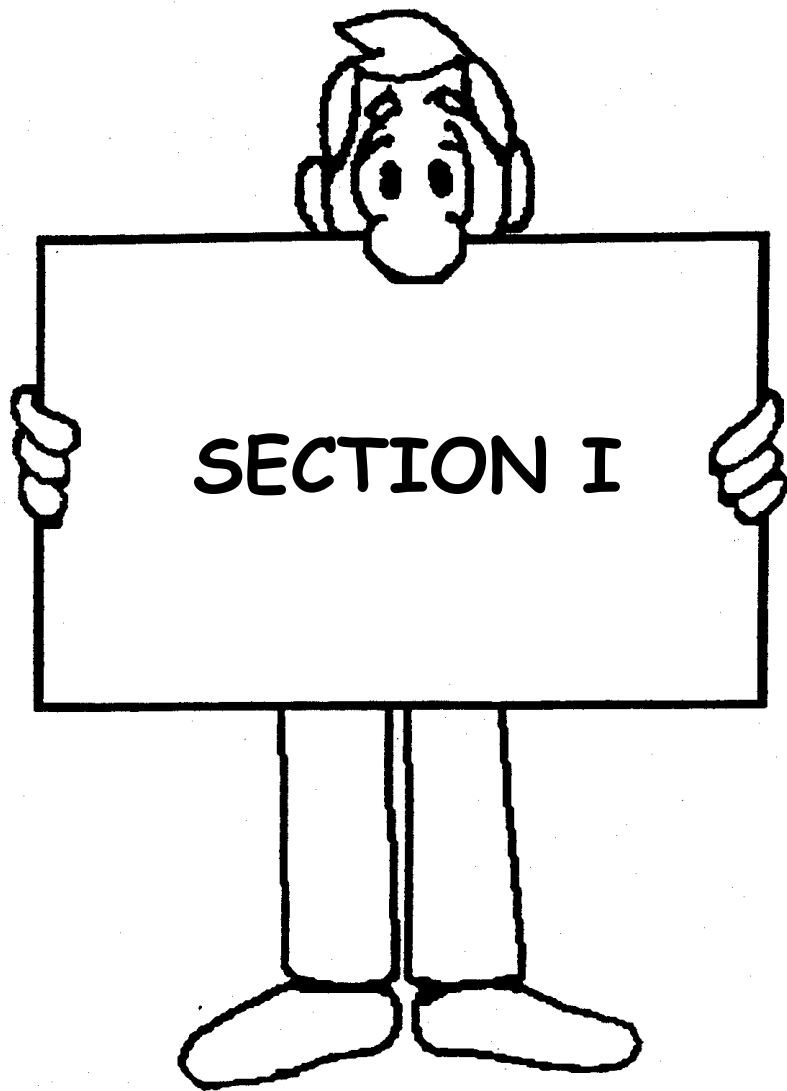
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Checklist for Submitting Plans for Public Swimming Pools

PLEASE NOTE: The Prince George’s County Code Governing Public Swimming Pools (Subtitle 5) is more stringent than the Code of Maryland Regulations (COMAR) 10.17.01 in their definition of a public swimming pool. All pools that are open to the public are considered *public*. These include, but are not limited to, motel, hotel, apartment, health club, and community association swimming pools. Be advised that plans are **not** forwarded to the Health Review Section of the Department of Permitting, Inspections and Enforcement (DPIE) by any other office or agency. Plan submittals must be made directly by the applicant and are retained as part of the Health Review Section’s permanent record. A plan review application along with the associated fee must be submitted with the plans. This document is intended to assist in the preparation of plans only. For complete information, please refer to COMAR 10.17.01, the American National Standard for Public Swimming Pools (ANSI/NSPI-1 2003) and U.S.C. §8003.

I. Site Plans:

- A. Indicate that drainage from the surrounding areas will not enter the pool enclosure. Indicate that emergency vehicles and equipment will have convenient access to the pool enclosure and filter area. *Refer to COMAR 10.17.01.20.*

- B. **Barriers** – Surround the entire pool and the required deck area. *Refer to COMAR 10.17.01.21.*
 - 1. Minimum six-foot high barrier measured from outside the pool enclosure.
 - 2. Minimum four-foot wide main access gate which is:
 - a) Located toward the shallow end of the pool,
 - b) Hung to open away from the pool and
 - c) Lockable with a latch release located at least 54 inches from grade level.
 - 3. Maximum vertical clearance of four inches between grade and bottom of barrier as measured from outside the enclosure.
 - 4. Design of fences must meet the following:
 - a) Opening in barrier must not allow the passage of a four-inch diameter sphere, and
 - b) No footholds or openings that make the fence easy to climb.
 - 5. Windows and doors to pool area must have locks or latches to prevent unauthorized entry.

- C. **Deck** – Surround the entire perimeter of the pool. *Refer to COMAR 10.17.01.22.*
 - 1. Continuous four-foot unobstructed width and an average six-foot width.
 - 2. Slope ¼ to ½ inch per foot to deck drains or other points of discharge away from the pool.

3. Constructed of an impervious, skid resistant material. Deck cannot trap dirt or support/harbor algae.
 4. A brick, stone, aggregate or similar deck surface must have a sub deck in the required deck area.
 5. Joints between concrete slabs and coping made watertight.
 6. Anchors for recreational equipment must be fitted with a flush cap or plug.
 7. Electrical junction boxes must be located in such a manner to eliminate potential tripping hazards.
- D. **Drinking Fountains** – One per 5,000 square feet of water surface and located within the pool enclosure. *Refer to COMAR 10.17.01.34C.*
- E. **Hose Bibbs** – Placed on the deck at 150 foot intervals and provided with vacuum breakers. *Refer to COMAR 10.17.01.34D.*

II. Water Supply and Disposal:

Indicate public or private water and sewer. If private, contact the Environmental Protection/Policy Program, Environmental Health/Disease Control Division, Prince George's County Health Department at (301) 883-7681.

A. **Water Supply** – *Refer to COMAR 10.17.01.34E.*

1. Fill spout must be:
 - a) Braced,
 - b) Equipped with a flexible cover on the tip,
 - c) Provided with an air gap of two times the pipe diameter,
 - d) Located so that the fill spout does not constitute a tripping hazard,
 - e) Installed within ten inches of a ladder or handrail and
 - f) Directly connected to public water source with an approved backflow prevention device.

NOTE: *All other submerged water inlets and hose bibb connections must be protected by a properly installed backflow prevention device.*

B. **Backwash Disposal/Treatment** – *Refer to COMAR 10.17.01.31 and .34*

1. Storm Sewer – Discharge of backwash must comply with the Maryland Department of the Environment's (MDE) Discharge Regulations, COMAR 26.08.01-26.08.04. Contact MDE for additional information at (410) 537-3634.

2. Sanitary Sewer – Discharge of backwash must be approved by the Washington Suburban Sanitary Commission (WSSC).
3. Subsurface Sewage Disposal System – Approved plans and acceptable soil percolation tests must precede the installation of such a system. Information regarding this option can be obtained by contacting the aforementioned Environmental Protection/Policy Program.
4. Recirculation – Install NSF International (NSF) approved commercial filters, adequately sized to accommodate the flow of recirculated water.

III. Pool Shell:

Refer to ANSI/NSPI.

- A. **Surface** – Smooth, easily cleanable, slip-resistant, and light colored.
- B. **Transitional Radius** - *Refer to ANSI/NSPI.*
- C. **Slope-**
 1. Shallow slope – not greater than 1:12 feet.
 2. Transition slope (point of first slope change to deep end) – not greater than 1:3 feet.
- D. **Diving Area** – Must conform to the enclosed Exhibit N-1/N-2 or the requirements of the appropriate competition sanctioning association. *Refer to COMAR 10.17.01.27.*
- E. **Handholds** – Must be:
 1. Provided around the perimeter in areas where water depths exceed three feet six inches,
 2. Located at intervals of no more than four feet and
 3. Located no higher than 12 inches above water level.
- F. **Transition Point** – The point between the shallow and deep areas must be marked by a four-inch row of tile or paint of color contrasting with the pool bottom.
- G. **Underwater Seat Benches** – When provided must:
 1. Have a maximum horizontal seat bench depth of 20 inches below the waterline,
 2. Be visually set apart and
 3. Have a slip-resistant surface.

IV. Associated Equipment:

- A. **Ladders or Stairs** – There must be at least two means of entry/exit located to serve both ends of the pool. Swimming pools over 30 feet in width shall provide entries/exits on both sides of the deep area of the pool. *Refer to ANSI/NSPI Sections 23.1 – 23.1.7.*
- B. **Lighting** – All indoor pools and pools used during the nighttime must be provided with overhead/deck and underwater lights that provide even illumination of the water, deck, and walkways. *Refer to COMAR 10.17.01.32.*
- C. **Lifeguard Stands** – Provide one elevated lifeguard chair per 3,000 square feet of water surface area. The chair must be positioned so that all areas of the pool can be monitored. A deck level lifeguard chair is permitted adjacent to shallow water. *Refer to ANSI/NSPI Section 18.4 and COMAR 10.17.01.40C.*
- D. **Rope and Float Line** – Must be:
 - 1. Located at the transition point,
 - 2. Provided with visible floats at intervals no greater than 7 feet apart and
 - 3. Securely fastened to wall anchors.
- E. **Depth Markers** - Must be:
 - 1. Located a maximum of 25 feet apart on pool walls and deck,
 - 2. Located at every depth change,
 - 3. At transition points and
 - 4. A minimum four-inch high, slip resistant and of a color contrasting with the background.
- F. **Telephone** – Must have direct dial access to 911 without the use of a coin or a switchboard operator and be located within pool enclosure.
- G. **Ventilation** – Indoor pools must provide:
 - 1. A ventilation system capable of exhausting 1½ cubic feet per minute (cfm) of air per square foot of enclosed area, or dehumidifying the recirculated air from the enclosure and
 - 2. Provide adequate make-up air to replace the air exhausted by the ventilation system.

V. Circulation System:

- A. **Pool Fittings** -
 - 1. Inlets – Must:
 - a) Meet minimum quantity of one inlet per three hundred square feet of pool surface area, or fraction thereof,

- b) Be placed to provide even distribution and
 - c) Have an Underwriters Laboratories (UL) approved cover that is adjustable for flow regulation. (Submit specification sheet)
2. Main Drain Outlets – Must:
- a) Meet minimum quantity of two main drain outlets located at the lowest point of pool floor,
 - b) Be spaced a minimum of three feet from edge to edge,
 - c) Not be isolated to create a single outlet per pump,
 - d) Hydraulically balanced,

e) Be equipped with securely attached suction outlet covers (submit specification sheet indicating flow rate for covers) that complies with ANSI/NSPI, 15 U.S.C §8003 and

- f) Equipped with hydrostatic relief valves as needed to relieve the hydrostatic pressure from groundwater when the pool is empty.

B. Surface Debris Removal System –

1. Gutters – Must:
- a) Be fully recessed, partially recessed or rolled out,
 - b) Provide a handhold around a minimum of 50 percent of the pool perimeter and
 - c) Be connected to the circulation system through a surge tank sized at one gallon per square foot of water surface area.
2. Skimmers – Must be:
- a) NSF approved, or the equivalent. (Submit name of manufacturer and model number),
 - b) Provided at a rate of one skimmer per 500 square feet of pool area, and
 - c) Equipped with a flow regulating device.
3. Skimmers that are **not** provided with a vented lid must be connected to:
- a) A minimum two-inch diameter equalization line, equipped with an ANSI/NSPI, 15 U.S.C. §8003 approved suction outlet cover, installed at least one foot below the overflow level of the skimmer. (*Refer to note below*),

- b) A main drain line,
- c) A vent or
- d) Another skimmer that cannot be isolated by a valve or other means.

NOTE: *An equalization line must be connected to the main drain line in a pool that does not have sufficient water depth for the installation of the line through the pool wall below the skimmer throat.*

C. **Surface to Bottom Flow Ratio -**

1. Piping for skimmers must be designed to accommodate 80 percent of the flow and piping for main drains must be designed to accommodate 20 percent of the flow.
2. Piping for gutters must be designed to accommodate 50 percent of the flow and piping for main drains must be designed to accommodate 50 percent of the flow.

D. **Turnover Rates** – The flow through a circulation system must be maintained between the minimum turnover rate and the design capacity of the filter system and associated piping. Rates must not exceed the following:

1. Standard swimming and diving pool - 480 minutes
2. Water recreational attraction and therapy pool - 360 minutes
3. Wading pool - 120 minutes.

VI. Circulation System Components:

Circulation system must be designed using Hazen-Williams head loss calculations. The calculations with filter pressure differentials in both clean and dirty conditions must be submitted for review. *Refer to COMAR 10.17.01.25 C and .26.*

A. **Piping** – Must be:

1. Capable of being drained or otherwise protected from damage by freezing,
2. Color-coded, permanently tagged at the valves or labeled by other approved means,
3. Adequately supported by piers or hangers,
4. Designed so that the maximum water velocity in the drain piping does not exceed six feet per second when 100 percent of the circulation system design flow is drawn through the drain piping of any single drain and
5. Equipped with NSF approved multiport valves.

NOTE: *A pool cannot be interconnected with a spa/hot tub or wading pool (except during filling) and spray pool.*

B. **Pumps** – Must be:

1. NSF approved, or the equivalent. (Submit the name of the manufacturer and model number),
2. Sized using the manufacturer's pump performance curve. (Submit the curve),
3. Provided with a hair and lint strainer and

4. Self-priming when the pump elevation is higher than normal water level.

C. **Filters** – Must be:

1. NSF approved, or the equivalent. (Submit the name of the manufacturer, model number and specification sheet),
2. Equipped with a manual air bleeding device,
3. Sized properly with a filtration capacity sufficient to operate between the required turnover rate and the filter design flow rate. *Refer to COMAR 10.17.01.25E* and
4. Provided with a spare set of cartridges and an adequate size soaking vat, if cartridge filters are used.

D. **Control Equipment** –Must include: (*Refer to Exhibit O*)

1. An approved flow meter per *COMAR 10.17.01.25 A (4)*,
2. Influent and effluent pressure gauges,
3. Vacuum gauge installed on the influent side of the pool pump and
4. Sight glass on systems where backwash is not readily observable.

E. **Chemical Feeders** – Must be:

1. NSF approved, or the equivalent. (Submit the name of the manufacturer and model number),
2. Sized to be compatible with the system's design flow rate thus providing the minimum required disinfectant residual,
3. Provided with an encased (i.e. pvc pipe) discharge line if the horizontal run is greater than five feet,
4. Provided with a minimum 20 gallon capacity solution container equipped with a lid,
5. Provided with a flow meter if the feeder is an erosion type and
6. Able to establish breakpoint when combined chlorine level is over 0.2 ppm.

NOTE: *For chlorine gas feeders refer to COMAR 10.17.01.26 D. For ozone systems refer to COMAR 10.17.01.26 G. For carbon dioxide feeders refer to COMAR 10.17.01.26 F.*

F. **Vacuum System** – Must be:

1. Provided for cleaning purposes,
2. On a separate line if the pool has more than four skimmers or is on a gutter system. (Skimmer outlet pipes may be used for vacuuming purposes for circulation systems with four or fewer skimmers),
3. Connected, when an integral part of the circulation system, before the pump hair and lint strainer. (The line must have a valve which must remain in the closed position when the system is not in use) and
4. Provided with fittings installed approximately one foot below the water surface and equipped with flush, removable caps. (Caps must be in place when system is not in use).

VII. Wading Pools:

A. A pool with a water depth of 24 inches or less that is intended for use by children. Minimum turnover rate - 120 minutes.

B. **Barrier** – Surround the entire pool and the required deck area. Must have:

1. Minimum height of 36 inches,
2. Entrance gate with a latch,
3. Maximum two-inch separation between the deck and the bottom of the barrier and
4. No opening that allows the passage of a sphere four inches in diameter.

NOTE: *If a wading pool is installed adjacent to the main pool and is visible from that lifeguard station, then a separate lifeguard is not required at the wading pool.*

VIII. Water Recreation Attraction:

A pool that provides recreational activity involving either total or partial immersion in the water. It may include: lap and/or spray pools, tube ride, water slide and wave pool. The pools must meet the standards for water recreational attractions as set forth in *COMAR 10.17.01.16*. Minimum turnover rate - 360 minutes.

IX. Therapy Pool:

A pool that is exclusively used for treatment purposes. Therapy pools must meet the standards set forth in *COMAR 10.17.01.18 and .19 A (3)*. Minimum turnover rate - 360 minutes.

X. Equipment Room:

Houses the circulation, filtration, and disinfection equipment. (*Refer to COMAR 10.17.01.23 and 29.*) The equipment room must:

1. Be protected from the weather,
2. Be supplied with a minimum of 20 foot candles of artificial light,
3. Be provided with mechanical exhaust ventilation sized at a minimum of two cfm per square foot of floor area. (Adequate make-up air must be provided to replace the air exhausted.),
4. Be provided with a hose bibb equipped with a vacuum breaker,
5. Have an impervious floor sloped to a floor drain,
6. Have adequate floor area for safe access to all equipment,
7. Have a lockable door and
8. Have a minimum ceiling height of seven feet six inches.

NOTE: *All chemicals must be stored in accordance with material safety data sheets for that particular chemical.*

XI. Pool Water Heaters:

Must conform to *ANSI/NSPI Article 14*, and state/local plumbing codes. A thermometer must be installed on the return line to the pool.

XII. Bathhouse:

Must be within 100 feet of the pool entrance gate so bathers must pass through showers before entering pool.

A. Showers -

1. Minimum of two shower heads per 100 bathers (each sex). One additional shower head for each sex for each additional 50 bathers.
2. An approved pressure-balanced, anti-scald device that limits the delivered water temperature to below 115°F must be installed on each shower.
3. Non-glass soap dispensers must be provided to the shower stalls.

NOTE: *At least 50 percent of the showers must be within the bathhouse.*

B. Water Closets/Urinals -

1. One water closet and one urinal for the first 100 male bathers. One additional fixture each for each additional 200 male bathers or major fraction thereof.
2. Two water closets for the first 100 female bathers. One additional fixture for each additional 100 female bathers or major fraction thereof.

C. Lavatories -

1. One fixture for the first 100 male bathers. One additional fixture for each additional 200 male bathers or major fraction thereof.
2. Two fixtures for the first 100 female bathers. One additional fixture for each additional 100 female bathers or major fraction thereof.
3. Unbreakable mirrors must be installed over the lavatories. Submit specification sheet for mirrors.
4. Non-glass soap dispensers must be provided at each lavatory.
5. Slip resistant, smooth, cleanable floors must be sloped not less than $\frac{1}{4}$ inch per foot to floor drain.
6. Durable, waterproof partitions must be designed to provide a waterway between partitions and floor to permit thorough cleaning.
7. Sanitary method of storing clothing and personal accessories must be provided. Dressing booth shall be provided for females.
8. A minimum of 20 foot candles of light must be provided.
9. Mechanical exhaust ventilation sized in accordance with Section 403 of the current International Mechanical Code must be provided.
10. Hose bibb with an approved vacuum breaker must be provided.

NOTE: A designated space must be provided for first aid treatment and the manager's office.

XIII. Plumbing:

Submit a complete set of plumbing drawings.

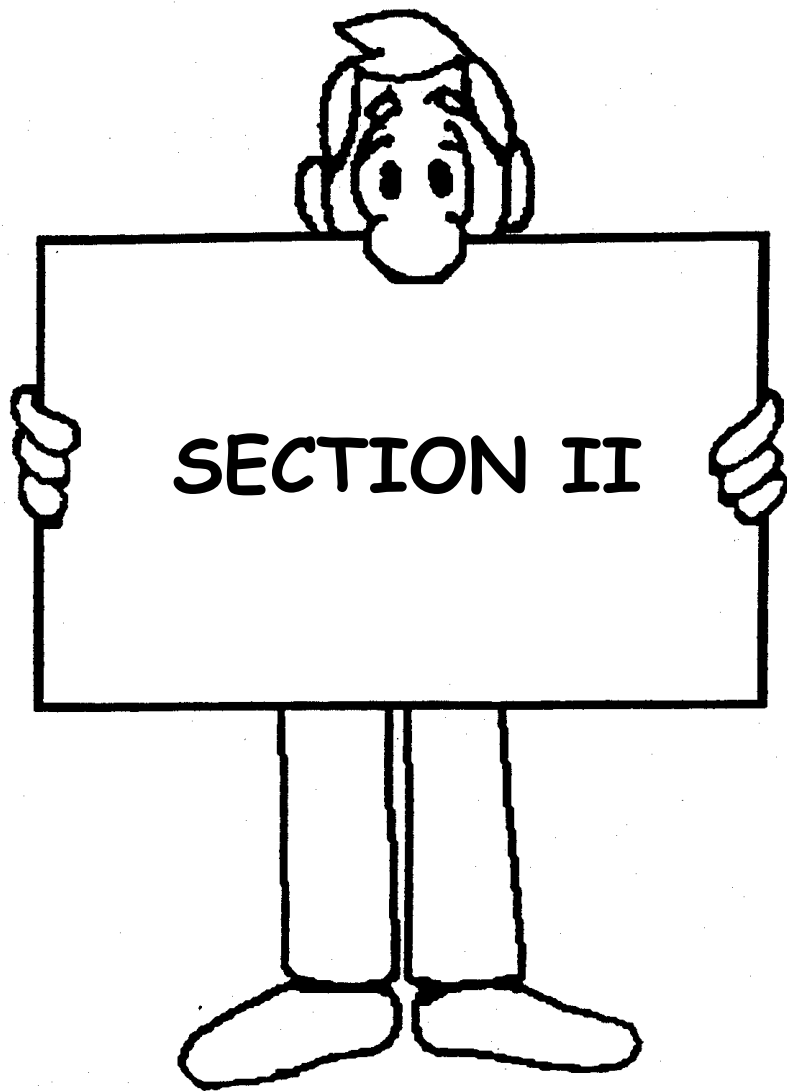
XIV. Population Design:

- A. Maximum number of bathers is determined by pool size.
 - 1. One bather per 12 square feet of water surface in shallow area (five feet of water depth or less).
 - 2. One bather per 300 square feet designated for each diving board in the deep area.
 - 3. One bather per 15 square feet in the remaining portion of the deep area (water depth exceeding five feet).
- B. Number of bathhouse fixtures based on 50 percent female, 50 percent male population.

XV. Owner Responsibility:

Submit a letter signed by the owner of the pool which indicates agreement to the following statement:

“I hereby acknowledge that all items either listed or shown in these plans and specifications as not in contract (NIC), by others, or equivalent, are my responsibility. I also realize that this entire project must be completed in accordance with the approved plans and specifications and all conditions listed in the construction permit prior to the issuance of an operating permit by the Secretary.”



Checklist for Submitting Plans for Spas/Hot Tubs

PLEASE NOTE: Plans are **not** forwarded to the Health Review Section of the Department of Permitting, Inspections and Enforcement (DPIE) by any other office or agency. Plan submittals must be made directly by the applicant and are retained as part of the Health Review Section's permanent record. A plan review application along with the associated fee must be submitted with the plans. This document is intended to assist in the preparation of plans only. For complete information, please refer to the Code of Maryland Regulations (COMAR) 10.17.01, 15 U.S.C. §8003 and the American National Standard for Public Spas (ANSI/NSPI-1 1999).

I. Site Plans:

- A. Indicate that drainage from the surrounding areas will not enter the spa/hot tub enclosure. Indicate that emergency vehicles and equipment will have convenient access to the spa/hot tub enclosure and filter area. *Refer to COMAR 10.17.01.20.*

- B. **Barriers** – Surround the entire outdoor spa/hot tub and the required deck area. *Refer to COMAR 10.17.01.21.*
 - 1. Minimum six-foot high barrier measured from outside the spa/hot tub enclosure.
 - 2. Minimum four-foot wide main access gate which is:
 - a) Hung to open away from the spa/hot tub and
 - b) Lockable with a latch release located at least 54 inches from grade level.
 - 3. Maximum vertical clearance of four inches between grade and bottom of barrier as measured from outside the enclosure.
 - 4. Design of fences must meet the following:
 - a) Openings in the barrier must not allow the passage of a four-inch diameter sphere and
 - b) No footholds or openings that make the fence easy to climb.
 - 5. Windows and doors to spa/hot tub area must have locks or latches to prevent unauthorized entry.

- C. **Deck** – Surround the entire perimeter of the spa/hot tub. *Refer to COMAR 10.17.01.22.*
 - 1. A minimum four feet (4') continuous, unobstructed deck, including the coping, shall be provided around at least fifty percent (50%) of the spa.
 - 2. Slope ¼ to ½ inch per foot to deck drains or other points of discharge away from the spa/hot tub.
 - 3. Constructed of an impervious, skid resistant material. Deck cannot trap dirt or support/harbor algae.

4. A brick, stone, aggregate or similar deck surface must have a sub deck in the required deck area. A wood deck must have gravel and plastic ground barrier or a concrete sub deck.
5. Joints between concrete slabs and coping made watertight.
6. Electrical junction boxes must be located in such a manner to eliminate potential tripping hazards.
7. Risers for steps for the deck must be uniform and have a maximum height of 7½ inches. The minimum tread depth must be 10 inches.

D. **Drinking Fountains** – One per 5,000 square feet of water surface and located within the spa/hot tub enclosure. *Refer to COMAR 10.17.01.34.C.*

E. **Hose Bibbs** – Placed on the deck at 150 foot intervals and provided with vacuum breakers. *Refer to COMAR 10.17.01.34.D.*

II. Water Supply and Disposal:

Indicate public or private water and sewer. If private, contact the Environmental Protection/Policy Program, Environmental Health/Disease Control Division, Prince George’s County Health Department at (301) 883-7681.

A. **Water Supply** – *Refer to COMAR 10.17.01.34.*

1. Fill spout must be:
 - a) Braced,
 - b) Equipped with a flexible cover on the tip,
 - c) Provided with an air gap of two times the pipe diameter,
 - d) Located so that the fill spout does not constitute a tripping hazard,
 - e) Installed within ten inches of a ladder or handrail and
 - f) Directly connected to public water source with an approved backflow prevention device.

NOTE: All other submerged water inlets and hose bibb connections must be protected by properly installed backflow prevention device.

B. **Backwash Disposal/Treatment** – *Refer to COMAR 10.17.01.31 and .34*

1. Storm Sewer – Discharge of backwash must comply with the Maryland Department of the Environment’s (MDE) Discharge Regulations, COMAR 26.08.01-26.08.04. Contact MDE for additional information at (410) 537-3634.
2. Sanitary Sewer – Discharge of backwash must be approved by the Washington Suburban Sanitary Commission (WSSC).

3. Subsurface Sewage Disposal System – Approved plans and acceptable soil percolation tests must precede the installation of such a system. Information regarding this option can be obtained by contacting the aforementioned Environmental Protection/Policy Program.
4. Recirculation – Install NSF International (NSF) approved commercial filters, adequately sized to accommodate the flow of recirculated water.

III. Spa/Hot Tub Shell:

Refer to ANSI/NSPI-2 1999.

- A. **Surface** – Smooth, easily cleanable, slip-resistant, inert, non-toxic, durable and light colored.
- B. **Floor Slope** - Not greater than 1:12 feet.
- C. **Water Depth** – Maximum depth of four feet from the water line.
- D. **Seat Depth** – Maximum depth of 28 inches from the water line.
- E. **Handholds** – Must be:
 1. Provided around the perimeter in areas where water depths exceed three feet six inches,
 2. Located at intervals of no more than four feet and
 3. Located no higher than 12 inches above water level.
- F. **Protection** – A means must be provided to protect the spa/hot tub shell from damage due to freezing.

IV. Associated Equipment:

- A. **Ladders, Steps, Seats, or Recessed Treads** – Must be:
 1. Equipped with one handrail (or ladder) for each fifty feet of perimeter or a portion thereof, to designate the point of entry and exit.
 2. Designed and constructed in accordance with *ANSI/NSPI 5.6*.
- B. **Lighting** – All indoor spas/hot tubs and ones used during nighttime must be provided with overhead/deck and underwater lights that provide even illumination of the water, deck, and walkways. Lights must be shielded or shatterproof. *Refer to COMAR 10.17.01.32.*
- C. **Depth Markers**- Must be:
 1. Provided at a minimum quantity of two on opposite sides of the spa/hot tub,
 2. Located a maximum of 25 feet apart on the deck adjacent to spa/hot tub and
 3. A minimum of four-inch high, slip resistant and of a color contrasting with the background.

- D. **Telephone** – Must have direct dial access to 911 without the use of a coin or a switchboard operator and be located within pool enclosure.
- E. **Ventilation** – Indoor spa/hot tub must provide:
1. A ventilation system capable of exhausting 1½ cubic feet per minute (cfm) of air per square foot of enclosed area, or dehumidifying the recirculated air from the enclosure and
 2. Provide adequate make-up air to replace the air exhausted by the ventilation system.
- F. **Clock** – Must be provided and be visible to spa/hot tub users.
- G. **Safety signs** – Must be provided in compliance with *COMAR 10.17.01.40.F and ANSI/NSPI, Sections 18.5 – 18.6.*

V. Circulation System:

A. Spa/Hot Tub Fittings -

1. Inlets - Must:
 - a) Be placed to provide even distribution, and
 - b) Have Underwriters Laboratories (UL) approved cover that is adjustable for flow regulation.
2. Main Drain Outlets – Must:
 - a) Meet minimum quantity of two main drain outlets located a minimum three feet apart at the lowest point of spa/hot tub floor,
 - b) Not be isolated to create a single outlet per pump,
 - c) Be equipped with securely attached suction outlet covers that complies with ANSI/NSPI, 15 U.S.C §8003 and
 - d) Equipped with hydrostatic relief valves as needed to relieve the hydrostatic pressure from groundwater when the spa/hot tub is empty, as appropriate.

Note: Refer to the Consumer Safety Product Commission (CSPS) for an approved list of suction outlet covers at <http://www.poolsafety.gov/draincman.html>.

B. Surface Debris Removal System -

1. Gutters- Must:

- a) Be fully recessed, partially recessed or rolled out,
 - b) Provide a handhold around the perimeter of the spa/hot tub and
 - c) Be connected to the circulation system through a surge tank sized at not less than 2½ gallons per square foot of water surface area.
2. Skimmers – Must be:
- a) NSF approved, or the equivalent. (Submit the name of the manufacturer and model number),
 - b) Provided at a rate of one skimmer per 150 square feet, or fraction thereof, of the water surface area and
 - c) Equipped with a flow regulating device.
3. Skimmers that are **not** provided with a vented lid must be connected to:
- a) A minimum two-inch diameter equalization line, equipped with ANSI/NSPI, 15 U.S.C. §8003 approved suction outlet cover, installed at least one foot below the overflow level of the skimmer (*Refer to note below*),
 - b) A main drain line,
 - c) A vent or
 - d) Another skimmer that cannot be isolated by a valve or other means.

NOTE: *An equalization line must be connected to the main drain line in a spa/hot tub that does not have sufficient water depth for the installation of the line through the spa/hot tub wall below the skimmer throat.*

C. Surface to Bottom Flow Ratio -

1. Piping for skimmers must be designed to accommodate 80 percent of the flow and piping for main drains must be designed to accommodate 20 percent of the flow.
2. Piping for gutters must be designed to accommodate 50 percent of the flow and piping for main drains must be designed to accommodate 50 percent of the flow.

D. Turnover Rates – The flow through a circulation system must be maintained between the minimum turnover rate and the design capacity of the filter system and associated piping. Rate must not exceed 30 minutes.

VI. Circulation System Components:

Circulation system must be designed using Hazen-Williams head loss calculations. The calculations with filter pressure differentials in both clean and dirty conditions must be submitted for review. *Refer to COMAR 10.17.01.25 C and .26.*

A. A swim spa must have:

1. Clearly identified controls for the swim jets and
2. A shut-off switch for the swim jets that is accessible from within the swim spa.

B. A spa/hot tub hydro jet circulation system must:

1. Not be connected to a spa/hot tub filtration system and
2. Have a shut-off switch.

C. **Piping** – Must be:

1. Capable of being drained or otherwise protected from damage by freezing,
2. Color-coded, have permanently tagged valves or labeled by other approved means,
3. Adequately supported by piers or hangers,
4. Designed so that the maximum water velocity in the drain piping does not exceed six feet per second when 100 percent of the circulation system design flow is drawn through the drain piping of any single drain and
5. Equipped with NSF approved multiport valves.

NOTE: *A spa/hot tub cannot be interconnected with a pool or wading pool (except during filling) and spray pool.*

D. **Pumps** – Must be:

1. NSF approved, or the equivalent. (Submit the name of the manufacturer and model number),
2. Sized using the manufacturer's pump performance curve. (Submit the curve),
3. Provided with a hair and lint strainer,
4. Self-priming when pump elevation is higher than normal water level and
5. Protected from damage due to freezing.

E. **Filters** – Must be:

1. NSF approved, or the equivalent. (Submit the name of the manufacturer, model number and specification sheet),
2. Equipped with a manual air bleeding device,
3. Sized properly with a filtration capacity sufficient to operate between the required turnover rate and the filter design flow rate. *Refer to COMAR 10.17.01.25E,*
4. Provided with a spare set of cartridges and an adequate size soaking vat, if cartridge filters are used and
5. Protected from damage due to freezing.

F. **Control Equipment** Must include: – *Refer to Exhibit O.*

1. An approved flow meter per *COMAR 10.17.01.25 A (4)*,
2. Influent and effluent pressure gauges,
3. Vacuum gauge installed on influent side of spa/hot tub pump and
4. Sight glass on systems where backwash is not readily observable.

G. **Chemical Feeders** – Must be:

1. NSF approved, or the equivalent. (Submit the name of the manufacturer and model number),
2. Sized to be compatible with the system's design flow rate thus providing the minimum required disinfectant residual,
3. Provided with an encased (i.e. pvc pipe) discharge line if the horizontal run is greater than five feet,
4. Provided with a minimum 20 gallon capacity solution container equipped with a lid,
5. Installed in compliance with *ANSI/NSPI Section 17,*
6. Provided with a flow meter if the feeder is an erosion type and
7. Able to establish breakpoint when the combined chlorine level is over 0.2 ppm.

NOTE: *For chlorine gas feeders refer to COMAR 10.17.01.26 D. For ozone systems refer to COMAR 10.17.01.26 G and ANSI/NSPI Section 16.5. For carbon dioxide feeders refer to COMAR 10.17.01.26 F.*

H. **Vacuum System** – Must be:

1. Provided for cleaning purposes,
2. On a separate line if the spa/hot tub has more than four skimmers or is on a gutter system. (Skimmer outlet pipes may be used for vacuuming purposes for circulation systems with four or fewer skimmers),
3. Connected, when an integral part of the circulation system, before the pump hair and lint strainer (The line must have a valve which must remain in the closed position when the system is not in use) and
4. Provided with fittings installed approximately one foot below the water surface and equipped with flush, removable caps. (Caps must be in place when system is not in use).

Note: *Disposal of effluent from the draining spa/hot tub must comply with all State and local codes and regulations*

I. **Air Induction System** - Must be designed and installed in compliance with ANSI/NSPI Article XIII.

VII. Equipment Room:

Houses the circulation, filtration, and disinfection equipment. *Refer to COMAR 10.17.01.23.and 29.* The equipment room must:

1. Be protected from the weather,
2. Be supplied with a minimum of 20 foot candles of artificial light,
3. Be provided with mechanical exhaust ventilation sized at a minimum of two cfm per square foot of floor area. (Adequate make-up air must be provided to replace the air exhausted.),
4. Be provided with a hose bibb equipped with a vacuum breaker,
5. Have an impervious floor sloped to a floor drain,
6. Have adequate floor area for safe access to all equipment,
7. Have a lockable door and
8. Have a minimum ceiling height of seven feet-six inches.

NOTE: *All chemicals must be stored in accordance with material safety data sheets for that particular chemical.*

VIII. Spa/Hot Tub Water Heaters:

Must conform to *ANSI/NSPI Article XIV* and the State/local plumbing codes. A thermometer must be installed on the return line to the spa/hot tub. The temperature of the incoming make-up water should not exceed 104°F.

IX. Bathhouse:

Must be within 100 feet of the spa/hot tub entrance gate so bathers must pass through showers before entering spa/hot tub

A. Showers –

1. Minimum of two shower heads per 100 bathers (each sex). One additional shower head for each sex for each additional 50 bathers.
2. An approved pressure-balanced, anti-scald device that limits the delivered water temperature to below 115°F must be installed on each shower.
3. Non-glass soap dispensers must be provided to the shower stalls.

NOTE: *At least 50 percent of the showers must be within the bathhouse.*

B. Water Closets/Urinals –

1. One water closet and one urinal for the first 100 male bathers. One additional fixture each for each additional 200 male bathers or major fraction thereof.
2. Two water closets for the first 100 female bathers. One additional fixture for each additional 100 female bathers or major fraction thereof.

C. Lavatories –

1. One fixture for the first 100 male bathers. One additional fixture for each additional 200 male bathers or major fraction thereof.
2. Two fixtures for the first 100 female bathers. One additional fixture for each additional 100 female bathers or major fraction thereof.
3. Unbreakable mirrors must be installed over the lavatories. Submit specification sheet for mirrors.
4. Non-glass soap dispensers must be provided at each lavatory.
5. Slip resistant, smooth, cleanable floors must be sloped not less than ¼ inch per foot to floor drain.
6. Durable, waterproof partitions must be designed to provide a waterway between partitions and floor to permit thorough cleaning.

7. Sanitary method of storing clothing and personal accessories must be provided. Dressing booth shall be provided for females.
8. A minimum of 20 foot-candles of light must be provided.
9. Mechanical exhaust ventilation sized in accordance with Section 403 of the current International Mechanical Code must be provided.
10. Hose bibb with approved vacuum breaker must be provided.

NOTE: *A designated space must be provided for first aid treatment and the manager's office.*

X. Plumbing:

Submit a complete set of plumbing drawings.

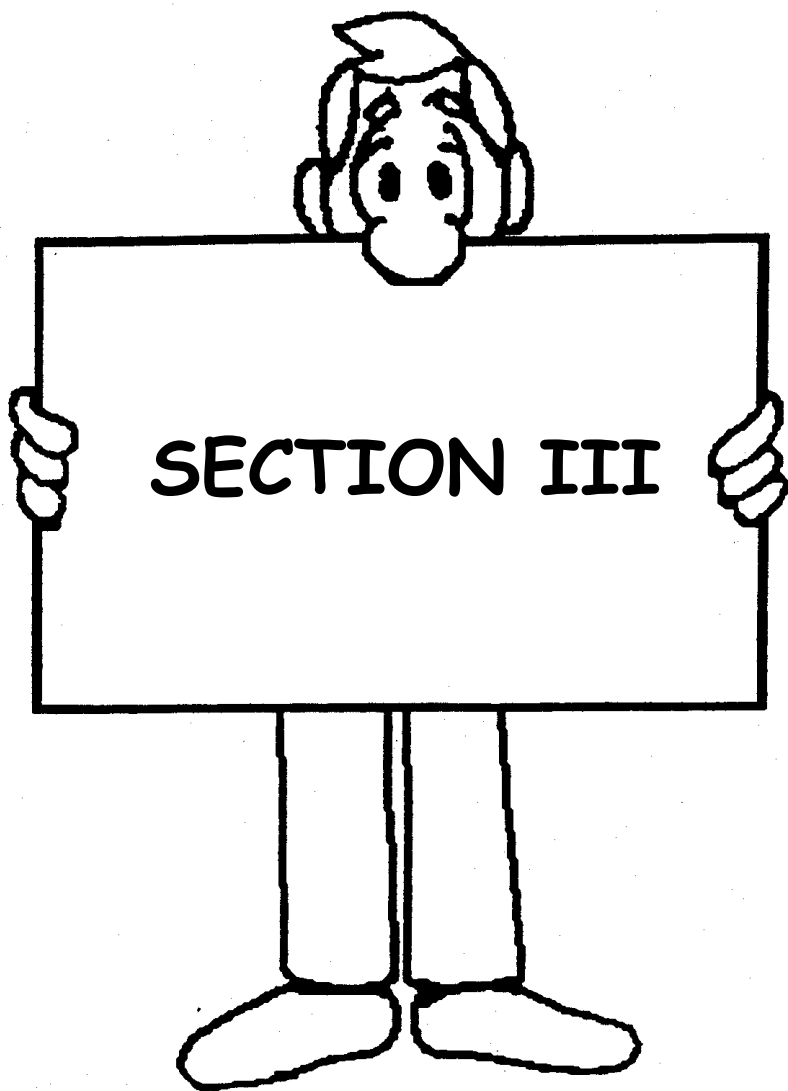
XI. Population Design:

- A. Maximum number of bathers is determined by spa/hot tub size. One bather is allowed for every 9 square feet of water surface.
- B. Number of bathhouse fixtures is based on 50 percent female, 50 percent male population.

XII. Owner Responsibility:

Submit a letter signed by the owner of the spa/hot tub which indicates agreement to the following statement:

“I hereby acknowledge that all items either listed or shown in these plans and specifications as not in contract (NIC), by others, or equivalent, are my responsibility. I also realize that this entire project must be completed in accordance with the approved plans and specifications and all conditions listed in the construction permit prior to the issuance of an operating permit by the Secretary.”



Miscellaneous Exhibits



Prince George's County Department of Permitting, Inspections & Enforcement Building Plan Review Division – Health Review Section

General Health Department Notations Public Swimming Pools and Spas/Hot Tubs

PLEASE NOTE: The following statements must be included on all plans submitted to the Health Review Section for review and approval.

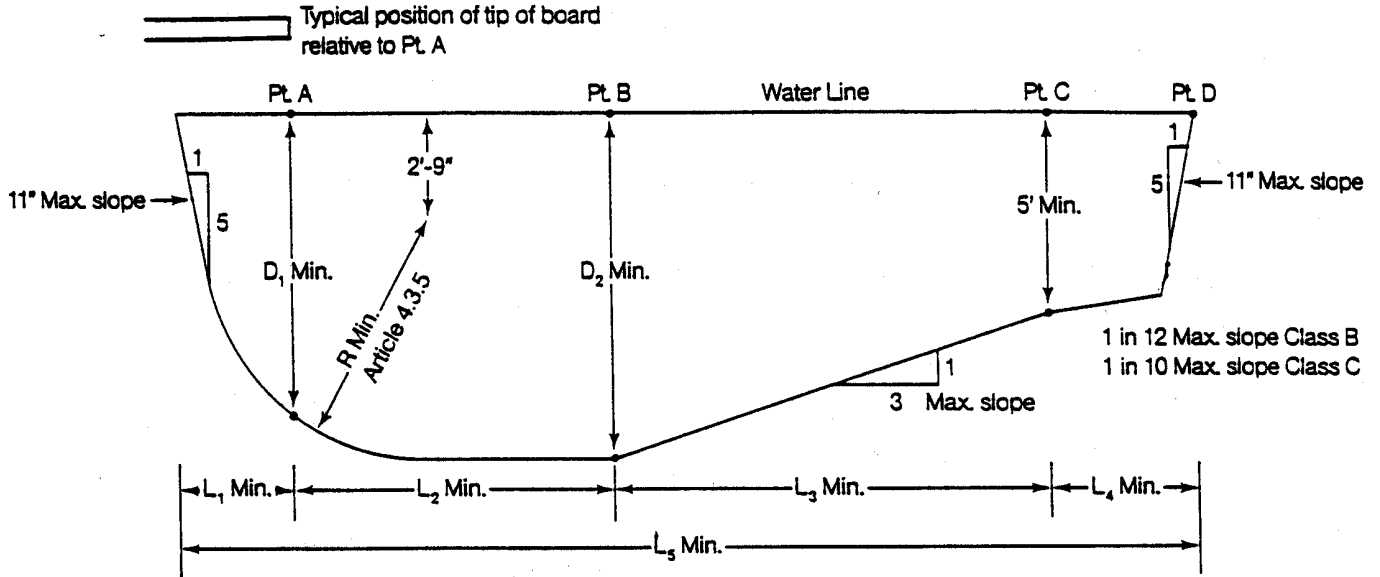
1. The deck will be constructed of impervious, skid resistant material and sloped $\frac{1}{4}$ to $\frac{1}{2}$ inch per foot to deck drains or other points of discharge away from the pool/spa. Joints between deck sections and coping stones will be sealed/caulked so watertight.
2. Electrical juncture boxes will be located in such a manner to eliminate potential tripping hazards. Anchors for recreational equipment will be fitted with a flush cap/plug.
3. The pool/spa/hot tub shell surface will be smooth, easily cleanable, slip-resistant and light colored. Spa/hot tub shell will also be inert, non-toxic, durable, and protected from damage due to freezing.
4. Depth markers will be a minimum of 4 inches high, slip resistant and a color contrasting with the background. Transition points will be marked by a 4 inch row of tiles/paint in a color contrasting with the pool bottom and be provided with a rope and float line.
5. Main drain outlets will be equipped with hydrostatic relief valves as needed to relieve the hydrostatic pressure from the groundwater when the pool/spa is empty.
6. Equalization lines will be a minimum 2 inches in diameter and installed at least 1 foot below the overflow level of the skimmer.
7. The circulation system piping will be capable of being drained or otherwise protected from damage by freezing; color-coded, have permanently tagged valves or labeled by other approved means; and adequately supported by piers or hangers.
8. All chemical discharge lines longer than 5 feet will be encased in pvc.
9. All chemicals will be stored in a minimum 20 gallon container equipped with a lid and in accordance with the applicable material safety data sheet (MSDS).
10. Vacuum line will have a valve which remains in the closed position when the system is not in use; and the fittings will be installed approximately one foot below the water surface and equipped with flush, removable caps.
11. All showers will have an approved, pressure-balanced, anti-scald device installed that limits the water temperature to below 115°F.
12. Bathhouse partitions will be designed to provide a waterway between the partitions and floor and constructed of durable, waterproof materials.
13. A clock will be provided and be visible to spa/hot tub users.
14. Safety signs in compliance with the Code of Maryland Regulations (COMAR) 10.17.01.40F and the American National Standard for Public Spas (ANSI/NSPI-2 1999), Sections 18.5-18.6 will be provided to the spa/hot tub area.

Exhibit N-1

Note: THIS EXHIBIT REFERS TO POOLS CONSTRUCTED PRIOR TO FEBRUARY 1997. IT IS TAKEN FROM ANSI/NSPI-1
1991

MINIMUM DIMENSIONS FOR DIVING PORTION OF CLASS B AND C POOLS

(This drawing does not show the shallow portion of the pool)



Note: L_4 is a minimum dimension to allow sufficient length opposite the board. This may of course be lengthened to form the shallow of the pool.

Related Diving Equipment		MINIMUM DIMENSIONS								MINIMUM WIDTH OF POOL AT:		
MAX. DIVING BOARD LENGTH	MAX. BOARD HEIGHT OVER WATER	D_1	D_2	R	L_1	L_2	L_3	L_4	L_5	PT.A	PT.B	PT.C
10'	26" (2/3 meter)	7'-0"	8'-6"	5'-6"	2'-6"	8'-0"	10'-6"	7'-0"	28'-0"	16'-0"	18'-0"	18'-0"
12'	30" (3/4 meter)	7'-6"	9'-0"	6'-0"	3'-0"	9'-0"	12'-0"	4'-0"	28'-0"	18'-0"	20'-0"	20'-0"
16'	1 Meter	8'-6"	10'-0"	7'-0"	4'-0"	10'-0"	15'-0"	2'-0"	31'-0"	20'-0"	22'-0"	22'-0"
16'	3 Meter	11'-0"	12'-0"	8'-6"	6'-0"	10'-6"	21'-0"	0	37'-6"	22'-0"	24'-0"	24'-0"

L_2 , L_3 and L_4 combined represents the minimum distance from the tip of board to pool wall opposite diving equipment.

For board heights exceeding 3 meters see Article 4.5.2.

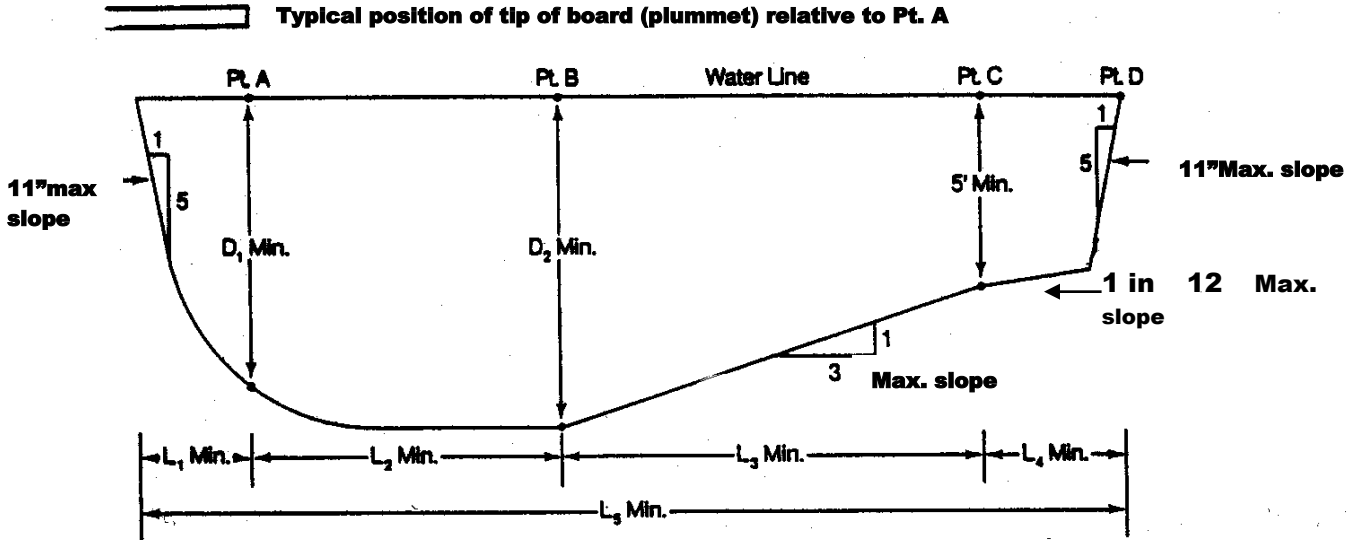
*NOTE: Placement of board shall observe the following minimum dimensions. With multiple board installations minimum pool widths must be increased accordingly.

Deck Level Board to Pool Side	8'
1 Meter Board to Pool Side	10'
3 Meter Board to Pool Side	11'
1 Meter or Deck Level Board to 3 Meter Board	10'
1 Meter or Deck Level Board to another 1 Meter or Deck Level Board	8'
3 Meter to another 3 Meter Board	10'

Exhibit N-2

NOTE: THIS EXHIBIT REFERS TO POOLS CONSTRUCTED AFTER FEBRUARY 1997

MINIMUM DIMENSIONS FOR DIVING PORTION OF POOLS [This drawing does not show the shallow portion (D₃) of the pool]



Note: L₄ is a minimum dimension to allow sufficient length opposite the board. This may of course be lengthened to form the shallow of the pool

Related Diving Equipment		MINIMUM DIMENSIONS							
MAX. DIVING BOARD LENGTH	MAX. BOARD HEIGHT OVER WATER	D ₁	D ₂	D ₃	L ₁	L ₂	L ₃	L ₄	L ₅
10'	20" (Deck Level)	6'-0"	9'-0"	3'-0"	2'-6"	15'-0"	15'-0"	24'-0"	56'-6"
12'	39" (1 Meter)	6'-0"	10'-0"	3'-0"	4'-10"	18'-0"	15'-0"	24'-0"	61'-10"
16'	120" (3 Meter)	6'-0"	12'-6"	3'-0"	4'-10"	20'-0"	22'-6"	24'-0"	71'-4"

L₂, L₃ and L₄ combined represent the minimum distance from the tip of board to pool wall opposite diving equipment.

Note: Diving platforms and board heights exceeding 3 meters must be in compliance with Article 4.5.4 of the American National Standard for Public Swimming Pools (ANSI/NSPI-1 1991).

***NOTE:** Placement of board shall observe the following minimum dimensions. With multiple board installations minimum pool widths must be increased accordingly.

Height Measured Upward From Plummet	13'
Clearance For Above Height Measured:	
Forward of Plummet	16'
Behind Plummet	8'
To Both Sides of Plummet	8'
Distance Between Plummetts of Adjacent Boards	10'
Deck Level Board to Side Wall	10'
1 and 3 Meter Boards to Side Wall	12'

Exhibit O

GENERAL POOL CIRCULATION PATTERN

