

Offices of the County Executive • 101 Monroe Street • Rockville, Maryland 20850

Subject Manual on Public Swimming Pool Construction	Number 22-12
Originating Department Department of Health and Human Services	Effective Date

Montgomery County Department of Health and Human Services Regulation on:

MANUAL ON PUBLIC SWIMMING POOL CONSTRUCTION

Issued by: County Executive Regulation No. 22-12 COMCOR

Authority: Code Section 51-12 Supersedes: Regulation No. 61-91

Council Review: Method (2) under Code Section 2A-15

Register Vol.30 No.5

Comment Deadline: May 30, 2013 Effective Date: Sunset Date: None

SUMMARY:

This regulation has been revised to coincide with State

regulations and current industry standards.

ADDRESS:

Director, Department of Health and Human Services

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BACKGROUND

INFORMATION:

This regulation establishes the construction standards for public pools in Montgomery County in order to protect the health and welfare of the pool users. It has been in effect since 1971 with this version incorporating the requirements of the State of Maryland COMAR 10.17.01: Public Swimming Pools and Spas. Pool management companies, the City of Gaithersburg, the

City of Rockville, and the Montgomery County

Department of Recreation commented on the revisions and several changes were made at the request of these

organizations.



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Section 1: Definitions

This regulation adopts the definitions contained in the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, unless superseded or amended by the following definitions:

- 1. A.N.S.I. means the American National Standard Institute for Public Swimming Pools.
- 2. Approving Authority means the Director of the Department of Health and Human Services or the Director's designee.

[Approving Authority - The director of the Department of Health and designated agents.]

- [Bather Any person using the spa, pool, and adjoining deck areas for the purpose of water sports, recreation, therapy or related activities.]
- 3. Decks [- Those] means those areas surrounding a pool which are specifically constructed or installed for use by [bathers] patrons.
- 4. Deep Area [- That area on the deep side of the transition point in the swimming pool] means swimming pool water depth that exceeds five feet.
- 5. Diving Pool [- A] means a swimming pool intended for use exclusively by divers.
- 6. Dry Deck means all pedestrian surface areas within the pool enclosure not subject to frequent splashing or constant wet foot traffic. Landscape areas are not included in this definition.
- 7. Egress means the manner of exiting the pool.
- [F.I.N.A. International Amateur Swimming and Diving Federation.]
- 8. Floor [- The] means the interior bottom pool surface which consists of that surface from a horizontal plane up to a maximum of a [45 degree] 1:3 slope.
- 9. Handrail [- A] means a corrosion resistant tube or bar extending above and returning to the horizontal surface of the pool deck, curb or coping and located at each side of each ladder and in the center or on one side of each stairway.



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- 10. Hazard means a condition or situation that could cause injury or illness to a patron or pool personnel.
- 11. Hydrostatic Relief [- A] means a method of reducing the water pressure around an empty or partially filled pool.
- 12. Immediate Premises means the area within the enclosed boundaries of the pool site.
- [N.C.A.A. National Collegiate Athletic Association.]
- 13. Non-Swimming Area [- Any] means any portion of a pool where water depth, offset ledges or similar irregularities would prevent safe swimming activities.
- 14. N.S.P.I. [-] means the National Spa and Pool Institute.
- 15. Overflow System [- Perimeter] means perimeter type overflows, surface skimmers and surface water collection systems of various design and manufacture.
- 16. Patron means any person using a Public Swimming Pool, the adjoining deck area, or the immediate premises for the purposes of water sports, recreation, therapy, or related activities.
- 17. Private Spa means any outdoor bathing structure that is:
- a. a self-contained unit in which all control, water heating, and water circulating equipment is an integral part of the unit;
- b. built on the grounds of a single-family private residence;
- c. used solely by the owner, immediate family, tenants, or guests; and
- d. not used for swimming, diving, or wading.
- 18. Private Swimming Pool [- Any] means any swimming pool that is:
- a. built on the grounds of a single family residence; and



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- b. used solely by the owner, immediate family, tenants, and guests.
- 19. Public Swimming Pool [- Any] means any swimming pool, except a private swimming pool or private spa, which is intended to be used collectively, [by numbers of persons] by a number of persons for swimming, diving, wading or recreational bathing. Public [Pools] Swimming Pools [are categorized by the following classes] include:
- 1. [Class A General Use] A Public Pool [- Any pool] that is:
- a. not a Public Spa; and
- <u>b.</u> <u>is</u> [including diving, wading and training] intended for public recreational use [and competition] <u>such as swimming, diving, wading, therapy, competition or associated activity.</u>
- 2. [Class C Special Purpose Pool Any pool intended for public, recreational and therapeutic uses other than swimming, wading, diving or general recreational use which is not drained, cleaned or refilled for each user. This standard excludes units used in conjunction with the private practices of physicians and/or physical therapists]

A Public Spa that is:

- a. intended for public recreational and therapeutic uses other than swimming, diving, or wading; and
- b. is not drained, cleaned, or refilled for each user.
- 20. Shallow Area [- That area on the shallow side of the transition point in the swimming pool] means an area where the water depth is five feet or less.

[Spa - Class C pool.]

- 21. [Steps] Stairs, Recessed [Steps] Stairs, Ladders and Recessed Treads [- Those] means those means of entry and exit to and from the pool.
- [1] <u>a</u>. [Steps] <u>Stairs</u> [- A] <u>means a</u> riser and tread or series of risers and treads extending down from the deck into the pool.
- [2] b. Recessed [Steps] Stairs [- A] means a riser and tread or series of risers and treads



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extending down from the deck to the pool floor with the bottom riser or tread termination at the pool wall (thus creating a "stair well").

- [3] c. Ladders [- A] means a series of vertically separated treads or rungs either connected by vertical rail members or independently fastened to an adjacent vertical pool wall.
- [4] d. Recessed Treads [- A] means a series of vertically spaced cavities in the pool walls creating tread areas for stepholes.
- 22. Swimming Pool [- Any], whether public or private, means any artificial structure, basin, chamber or tank, except a private spa, either above or below ground, which is used or intended to be used for the primary purpose of swimming, diving, wading or recreational bathing. A [Swimming] swimming pool includes all [appurtenant] associated equipment, structures and facilities located within a common enclosure. A unit used in conjunction with the private practice of a physician or physical therapist is not a swimming pool.
- 23. Toxic [- An] means an adverse physiological effect on man or the environment.
- <u>24.</u> Training Pool [- A] means a pool not normally in excess of 3.5' deep at its points of maximum depth and usually reserved for use by persons learning to swim.
- <u>25.</u> Transition Point [- That] <u>means the</u> place in the floor of the pool between water depths of 4'6" and 5'6" where an abrupt change in slope occurs. The transition point must be at the 5' depth in pools having a constant slope.
- <u>26.</u> Turnover [- The] <u>means the</u> time required to [recirculate] <u>circulate</u> the entire pool volume of water through the filtration system and back to the pool.
- [U.S.S. United States Swimming.]
- 27. Vertical [- A] means a line or surface running perpendicular to the plane of the horizon; a truly plumb line.
- 28. Wading Pool [- A pool] means a Public Pool [not in excess] that is a maximum of 24" deep [at its maximum depth] and [usually reserved] primarily intended for use by [small] children.

[Walls - The interior pool wall surfaces consisting of surfaces from the vertical to a 45 degree



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slope.]

- 29. Water Line[-]:
- [1] <u>a</u>. Skimmer system the water line is the midpoint of the operating range of the skimmers.
- [2] b. Overflow Systems [The] the water line is the height of the overflow rim.
- 30. W.S.S.C. [-] means the Washington Suburban Sanitary Commission.

Section II: Plans and Inspections

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards.

- A. Plans and specifications requirements.
- 1. [Two copies] One copy of the plans and specifications must be submitted to the Approving Authority.
- 2. Plans and specifications must include sufficient information to permit detailed review for compliance with the Ordinance and this Manual.
- 3. Plans and specifications must be drawn to scale and contain these elements:
- a. [Class] Type of pool as defined in Section I.
- b. Location diagram.
- c. Site plan, including location of roads, utilities and drainage.
- d. Swimming Pool layout, including appurtenances.
- e. Piping layout, including summary table of pool fittings and complete hydraulic calculations for determining dynamic head.



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- f. Filter room layout.
- g. Bathhouse plan, unless no bathhouse required.
- h. Equipment specifications, including performance curves for circulating pumps to be used, as prepared and certified by the manufacturer. Make and model number must be submitted for all NSF equipment. Specifications sheets must be submitted for all non-NSF equipment.
- i. Structural sections.
- i. Finish schedule of all surfaces.
- k. Copy of the Opinion of the Board of Appeals, when applicable.
- NOTE: Review by the Approving Authority does not include review for compliance with the Building Code, the Plumbing Code or the Electrical Code. Separate plans must be submitted to the Department of [Environmental Protection] Permitting Services for building and electrical approval, to WSSC for plumbing approval, or the City of Rockville or the City of Gaithersburg as applicable.
- B. Inspection requirements.
- 1. An inspection and pressure test must be performed by the Approving Authority of the circulation piping [must be made by the Approving Authority] before the pool bottom is installed.
- 2. Prior to licensure, the [pool] <u>Swimming Pool</u> must be inspected for compliance with the plans, especially the circulation piping and the installed equipment.
- 3. Prior to licensure, an operating test, checking flow distribution in the [pool] Swimming Pool and performance of equipment must be completed satisfactorily.
- 4. The owner must provide for inspection of manufacturers' manuals for the installed equipment and written instructions for the operation of the particular pool.

Section III: Site and Utilities

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator



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certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards.

- A. Location requirements.
- 1. A [swimming pool] <u>Swimming Pool</u> must not be located in a 100-year flood plain unless the pool deck and equipment is established at elevations to protect them from flooding.
- 2. Storm drainage must not discharge into the [pool] <u>Swimming Pool</u> enclosure [unless adequate drains are provided to handle the water flow].
- 3. The water surface of indoor [pools] <u>Swimming Pools</u> must not be located directly below waste pipes.
- 4. The water surface of any [pool] <u>Swimming Pool</u> must not be located directly under power wires.
- 5. Roof top [pools] Swimming Pools must be located reasonably close to the elevators.
- 6. Emergency access to the [pool] <u>Swimming Pool</u> and deliveries to equipment areas must be possible by means of:
- a. ability to drive a vehicle directly to the equipment area and [pool enclosure] <u>immediate</u> premise; or
- b. ability to drive a vehicle to a point within reasonable distance of the [pool] <u>Swimming Pool</u>. The point must be connected with the pool by a hard surface walk containing no steps or grades exceeding 15%; or
- c. elevators and nearby stairways in the case of roof top and/or indoor [pools] <u>Swimming Pools</u>. The elevators and stairways must be of such dimensions as to permit manipulation of a loaded litter.
- 7. Public water supply and sewer must be available to the site, [unless these utilities can be reasonably extended to the site,] or an approved individual water supply system and/or an approved individual sewage disposal system can be installed satisfactorily on the site.
- 8. The location of the site must permit the removal of backwash water in accordance with the requirements of [the Maryland Water Resources Administration and/or] W.S.S.C., the City



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of Rockville, or the City of Gaithersburg as applicable.

- 9. Swimming [pools] <u>Pools</u> must discharge into sanitary sewer systems where such systems are available and service is granted by W.S.S.C. or other operating agency.
- B. [Fencing] Barrier requirements.
- 1. All outdoor [swimming pool] Swimming Pool areas must be enclosed by [an ornamental wire, wood stave or other type] a barrier designed so as to minimize the possibility of unauthorized or unwary persons entering the pool area. [Entrances through the barrier must be provided with gates having locks and must be located so that the points of access for the users of the pool, through the barrier or from the bathhouse, are on a part of the pool deck adjacent to the shallow area.] The [fence or] barrier must not be less than 72 inches in height [, measured on the outside, and 42 inches in height, measured on the inside]. The Approving Authority may grant an exemption from the barrier being 72 inches in height [where the pool is an ancillary feature of the entire operation and is located on spacious grounds away from population centers]. If an exemption is granted, the [fence or] barrier must not be less than [42] 60 inches in height, measured from the deck. [A lockable gate, at least 42 inches wide, must be provided in the fence or barrier for direct emergency access to the deck area.]
- 2. All wading pools must be surrounded by a fence or barrier at least 42 inches in height. A gate must be provided.
- 3. Sand beaches and other unpaved areas which are designed for use by [bathers] <u>patrons</u> and which have surface material which will cling to the feet, must be separated from the pool deck by a fence, planting, or other permanent barrier and access to the deck is gained only at controlled access points. Areas designed primarily for spectator use must be separated from areas used by [bathers] <u>patrons</u> by a fence, partition, or other physical means. Entrance to these areas must not be through areas normally used by [bathers] <u>patrons</u>.
- C. Utility requirements.
- 1. If a public water supply is available to the site on which the pool is located, water from the public water system must be used to serve the pool and all plumbing fixtures.
- The potable water supply system must meet the requirements established by the Maryland State Department of Health and Mental Hygiene and the Montgomery County Code for potable water service and must be able to maintain minimum pressure under all normal



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usages.

- 3. All portions of the potable water supply system serving the [swimming pool] <u>Swimming Pool</u> and auxiliary facilities must be protected against backflow.
- 4. Potable water introduced into the [swimming pool] Swimming Pool, either directly or to the [recirculation] circulation system, must be supplied through an air gap of at least [1 ½] 2 pipe diameters or other approved means.
- 5. If a public sewerage system is available to the site on which the pool is located, connection must be made to the system. Swimming [pools] <u>Pools</u> must discharge into sanitary sewer systems where such systems are available and service is granted by W.S.S.C. or other operating agency.
- 6. The sewerage system must be adequate to serve the facilities including the bathhouse, locker room, and related accommodations in accordance with the requirements of the Maryland State Department of Health and Mental Hygiene and the Montgomery County Code and/or [WSSC] W.S.S.C.
- [7. When wash water from diatomaceous earth filters is to be discharged into a storm sewer or watercourse, a retention basin equal to or greater than 2 filter volumes or a pressure separation tank of sufficient size to handle one complete backwash must be provided to settle out the foreign material.]

Section IV: Sizing of Pools

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards:

- A. [The pool must be sized to the expected bather population, where this is predictable. Unless competent evidence to the contrary is shown, the minimum design population for:] The capacity of the pool, which is the maximum number of persons permitted in the pool at any given moment, is established as follows:
 - 1. A [general use, competitive, community or neighborhood] <u>Public</u> [pool] <u>Pool</u> equals 1.33 times the stated family membership. The total capacity of the pool(s) is



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is a minimum requirement.

- 2. [A general use or competitive pool serving an apartment or condominium project equals 0.25 times the sum of the total number of apartments plus the total number of bedrooms, including efficiencies.] A Public Pool serving an apartment or condominium project equals the sum (C) of the total number of apartments (A) plus the total number of bedrooms (B) multiplied by 0.125; (A+B) x 0.125 = C. Public Pools After deduction of the 300 square feet for each diving board or platform, one person is allotted for every 20 square feet of Deep Area and one person for every 12 square feet of shallow area. One additional person is allotted for each diving board or platform.
- 3. [A community or neighborhood pool in a Planned Unit Development serving families obligated under recorded covenants running with the land to pay an assessment for use of pool facilities without having to explicitly express an interest to join the pool as a member equals 0.86 times the number of such families. Multiple pool facilities held by or for such families will be considered in the aggregate total capacity. At no time must the total aggregate capacity of such pools be less than the capacity required for the total number of families being served.] Public Spas One person is allotted for every 9 square feet of total water area.
- B. [The capacity of the pool, which is the maximum number of persons permitted in the pool at any given moment, is established as follows:] Pool and enclosure capacities must be determined by the Approving Authority in writing and must be conspicuously posted by the owner at the pool.
 - [1. The total capacity of the pool(s) is predicated upon the existence of walk and deck area equal to the total water area(s), which is a minimum requirement.
 - 2. Class A pools After deduction of 300 square feet for each diving board or platform, one person is allotted for every 20 square feet of deep area and one person for every 10 square feet of shallow area. One additional person is allotted for each diving board or platform.
 - 3. Class C pools One person is allotted for every 7 square feet of total water area.
 - 4. Wading pools and training pools One person is allotted for every 10 square feet of surface area.
- C. For periods of maximum use, additional enclosure capacity is allotted at the rate of one



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person for every 20 square feet of usable enclosure area above that required for pool, deck, and walk-areas as set forth in Section IV. B.1 above. This additional capacity may not be used to increase membership total and must not be in excess of 45% of the total calculated capacity of the pool.

D. Pool and enclosure capacities must be established by the Approving Authority in writing and must be conspicuously posted by the owner at the pool.]

Section V: Pool Shell and Appurtenant Fixtures

This regulation adopts the pool and spa safety and operator certification sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, as the operating standards of this regulation unless superseded or amended by the following specific standards:

A. General.

- 1. The [swimming pool] <u>Swimming Pool</u> structure must be constructed of materials which are non-toxic to man and the environment, resistant to permanent deformation, impervious and enduring, can withstand the design stresses, will provide a watertight structure, and have a smooth and easily cleanable surface without cracks or joints, excluding structural joints.
- 2. Wood, sand, or earth must not be permitted for surfaces in a [swimming pool] Swimming Pool.
- 3. The floor of all pools must be white, light colored, or light colored patterns in order to facilitate the identification of any objects within the pool.
 - 4. The surfaces within a [swimming pool] <u>Swimming Pool</u> intended to provide footing for [bathers] <u>patrons</u> must be designed to provide a slip-resistant surface. The roughness or irregularity of such surfaces must not cause injury or discomfort to the feet.
 - 5. An adequate means of hydrostatic relief must be provided.
- 6. There must be no hazardous protrusions, including underwater ledges, from the floor or walls of the pool into the water. [This should not be construed to mean ladders or stairs or underwater seat benches in spas.]



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- 7. The maximum horizontal distance of the tip of the diving board or platform from Point A may vary plus or minus 3" to allow for construction tolerance on [Class A pools (see Chart I, Section V)] <u>Public Swimming Pools</u>.
 - [8. Maximum diving board height over water must have a plus or minus 3" construction tolerance on Class A pools to allow for construction variances only.]
- B. Floor.
- 1. The slope of the shallow area floor must be uniform, must slope to [completely] drain, and must not exceed 1' of fall in 12'. [horizontally. Class C pool] <u>Public Spa</u> floors must slope to drain.
 - 2. The slope of the [deep area] <u>Deep Area</u> floor must be uniform, must slope to [completely] drain, and must not exceed 1' of fall in [2' horizontally] <u>3'</u>. [Such slopes are not intended to provide any less water depths than those specified if the pool is intended for diving.]
 - 3. All corners formed by the intersection of walls or by the intersection of walls and floors must [be rounded for easy cleaning] have a minimum 6" cove radius in water depths greater than 3 feet. For additional guidance, see [NSPI] the current standards established by A.N.S.I.
- C. <u>Means of Swimming Pool Entry/Egress:</u> [Steps] <u>Stairs</u>, Recessed [Steps] <u>Stairs</u>, Ladders, and Recessed Treads.
 - 1. [Type A and C pools] <u>Public Swimming Pools</u> must have:
 - a. In the diving well: 1 ladder for each 75' of perimeter but no less than 2 ladders.
- b. In the shallow area: [1 ladder or set of stairs] one means of entry/egress for each 75' of perimeter and approximately evenly spaced.
 - c. Not less than two [ladders] means of entry/egress at any one pool [without a diving well].
- 2. No [ladder] means of entry/egress [need] needs to be provided at pools where the maximum water depth does not exceed 24 inches.



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- [3. The requirement for ladders in Class C pools may be waived by the Approving Authority.]
 - [4] 3. [Steps] Stairs, recessed [steps] stairs, ladders, and recessed treads should be so located so as not to interfere with racing lanes.
 - [5] 4. [A handrail extending above and returning to the horizontal surface of the pool deck, curb, or coping must be provided at each side of each ladder and in the center or on one side of each stairway. Ladder steps or stairways must be located and constructed to prevent entanglement or trapping and must be located at points along the perimeter which are naturally convenient to the bathers.] All handrails must meet the standards established by A.N.S.I.
- [6] 5. Ladder treads must be constructed so as to reduce the possibility of slipping, be self-draining, and be at least 3" in width over the stepping surface.
- [7] $\underline{6}$. The design and construction of pool [steps] $\underline{\text{stairs}}$ must conform to the following:
 - a. Each [step] $\underline{\text{stair}}$ tread must have minimum unobstructed horizontal dimensions of 10" x 24".
- b. Risers at the centerline of the treads must have a maximum uniform height of 12".
 - c. [Step] <u>Stair</u> treads must have slip-resistant surfaces.
- [d. Handrails, if removeable, must be installed in such a way that they must be removed with tools.]
- [8] 7. The design and construction of recessed treads in the pool wall [, when provided, must conform to the following:] must meet the standards established by A.N.S.I.
- [a. Stepholes at the centerline must have a uniform vertical spacing of 12" maximum and 7" minimum.
- b. Maximum vertical distance between the pool coping edge and the uppermost recessed tread must be 12".
- c. Stepholes must have a minimum tread depth of 5" and a minimum width of 12".
- d. Stephole treads must drain into the pool to prevent the accumulation of dirt.]



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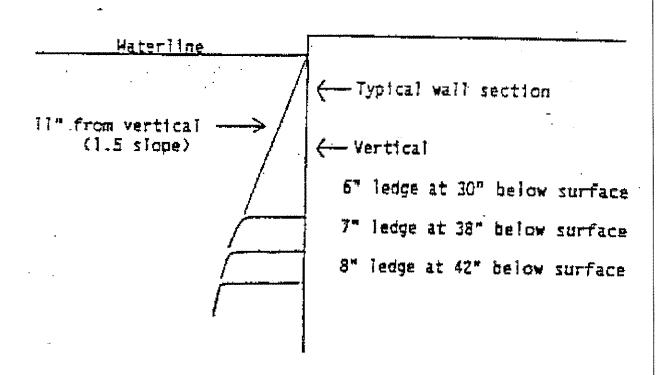
- [9] 8. Pool [steps and recessed steps] stairs must be painted or tiled on the nosing with a contrasting color to indicate a drop to the next level.
- D. Special Features.
- 1. Underwater seat benches, when provided, must not be over 20" below the water line and must be:
- a. visually set apart from the surrounding pool surfaces by a contrasting color or visual image such as provided by colored tile nosing, etc;
- b. completely recessed in either a separate alcove or wall indentation especially designed for that purpose when located in the [deep area] <u>Deep Area</u> of a pool; and
- c. provided with a slip-resistant surface.
- 2. Off-set ledges, when provided, must fall within an 11 degree line from vertical starting at the junction of the pool wall and water line. Ledges must have a maximum width of 8" and a slip-resistant surface.

DIAGRAM BELOW:

- 1. 11" should be 11°
- 2. 1.5 should be 1:5



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- E. Wading Pools.
- 1. Wading pools must be separate and physically set apart from shallow water areas of [swimming pools] Swimming Pools by at least 6' of deck. Wading pools must not adjoin the main pool where the water in the main pool is in excess of 4' deep.
- 2. Wading pools must have a maximum water depth of 24".
- 3. Walls in wading pools must be vertical or within 11 degrees of vertical except for the lower 6", which must be radiused to the floor. Walls must not extend more than 6" above the water line at any point.
- 4. Floors of wading pools must be uniform and sloped to drain with a maximum slope of 1' in 12'.
- F. Pool Depths.
- 1. [Class A] <u>Public</u> [swimming pools] <u>Swimming Pools</u> must have a minimum depth of water in the shallow end of the main swimming area of 3' with a 3'6" minimum if racing lanes are



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provided.

- 2. [Class C pools] Public Spas must have depths as required for their intended use.
- 3. [Class A] <u>Public Swimming</u> [pools] <u>Pools</u> intended for diving must [provide the minimum dimensions called for in Chart I for boards up to and including 3 meters. For diving platforms or boards above 3 meters, apply in its entirety, FINA, USS, or NCAA standards,]:
- a. comply with COMAR 10.17.01 (2013) if constructed after the effective date February 10, 1997;
- b. come into compliance with COMAR 10.17.01 (2013) once altered if constructed before February 10, 1997; or
- c. maintain the pool, including appurtenant structures and equipment, in the manner most recently approved before the adoption of COMAR 10.17.01 (2013) provided:
 - i. any appurtenant structures and equipment consists of the same or equivalent materials having the same specifications, operating characteristics, and certification; and
 - <u>ii.</u> the pool does not create a hazard as determined by the approving authority that threatens the health and safety or an individual using the pool.
- [4. Point A is a base reference point for Class A pools designed for diving and is the horizontal location of the tip of the diving equipment.]

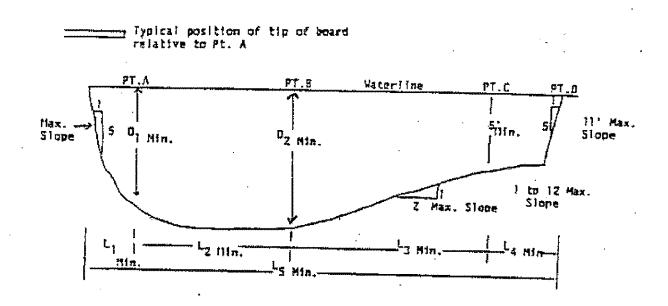
[(This drawing does not show the shallow portion of pool)

CHART I



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NOTE: L₄ is a minimum dimension to allot sufficient length opposite the board. This may of course be lengthened to fore the shallot portion of the pool.

RELAT D DIVI NG EQU PME NT	JI	MINIMUM DIMENSIONS						MINIM UM WID TH OF PO OL AT:			
M a x D i	M ax. Boa	D .	D	L	L.	L			Р	P	P



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ing Board Length	rd Height Over Sater											
1 0 '	2 8 '	7	8	2	8	1	7	2	. 1	1	. 1	
1 2 '	3 3	7	8	3	9	1	4	2	1	2	2	
1 6	1 m	1	1	4	2	4	2	3	2	2	2	



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	· e t e r										
1 6 '	3 meters	1	1	6	2	1	0	4	2	2	2

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

Class A Only

1 Meter or Deck Level Board to Pool Side
9'
(measured from centerline of board)
3 Meter Board to Pool Side
11'

1 Meter or Deck Level board to 3 Meter Board
10'

1 Meter or Deck Level to another 1 Meter or

1 IVIOLOT OF ESCAL ESCAL TO MICHIGAN A AVAILABLE OF

Deck Level Board 8'

3 Meter to another Meter Board 10'

Section VI: [Deck and Appurtenant Fixtures] Decks

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards:

A. [Deck] General Standards.

1. There must be a walk or deck around the entire perimeter of the pool. [Class C pools may obtain an exemption for reduced deck area.]



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- 2. Pool decks must be constructed of concrete or other impervious masonry material having non-slip finish.
- [3. Decks, ramps, and similar surfaces including step treads and coping must be slip-resistant.
- 4. The roughness or irregularity of such surfaces must not cause injury or discomfort under intended use.]
- [5] $\underline{3}$. Synthetic deck surfaces may be approved by the Approving Authority.
- [6. The average minimum continuous unobstructed deck width, which may include the coping, is as follows:
- a. Class A 6' or as approved by the Approving Authority
- b. Class C 3' or as approved by the Approving Authority
- c. Wading 4']
- [7] 4. [A minimum of 4' walk width must be provided on the sides and rear of any diving equipment.] A deck clearance of 24" must be provided around [any other] deck equipment which is 36" or less in height above the deck and 36" deck clearance around all other deck equipment.
- [8] 5. Dressing room exits to pool must be to the shallow area of the pool. At least 15' of deck must be provided between the dressing room door and the pool edge or as approved by the Approving Authority.
- [9] <u>6</u>. Joints where pool coping meets concrete decks must be caulked and made water tight and must not allow water to pass to the ground beneath.

B. Deck Drainage.

- [10] 1. Joints in decks must be provided to control cracks which may be hazardous due to a change in elevation, separation of surfaces, or movement of the slab.
- [11] 2. Where deck work joins concrete work other than the pool, these areas must be protected by expansion joints filled with a non-rigid material such as mastic to adequately protect the pool from the pressures of relative movements.



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- [12] <u>3</u>. Decks must be edged, radiused, or otherwise relieved so as to provide no exposed sharp corners.
- [13] 4. Except for ramps, [all walks, decks, and terraces of Class A pools] dry decks must have a uniform slope of not less than 1/4" per foot and not greater than 1/2" per foot to drains [or points at which the water will have a free, unobstructed flow to points of disposal].
- [14] <u>5</u>. [Class C pool] <u>Public Spa</u> decks must be sloped to drain and shall prevent standing water.
- [15] <u>6</u>. Drainage must be adequate to remove pool splash water, deck cleaning water, [and] rain water, and drain away from the pool.
- [16] 7. Site drainage must be provided to prevent standing water.
- [17] 8. [Where splash is permitted to run off the edge of the deck slab into a grassy area used by bathers, provision must be made to intercept this run-off and conduct it to a point of disposal.] Drain covers must be suitable for bare foot traffic and flush with the deck.
- [18.Every effort must be made to avoid the installation of valves in or under any decking work.]
- [19] $\underline{9}$. Water to the pool must be introduced only through an air gap of at least $[1 \frac{1}{2}]$ $\underline{2}$ times the pipe diameters.
- [20] 10.[An over-the-rim spout] Fill spouts must be located under a diving board, within 10 inches adjacent to a ladder or handrail, or in front of a lifeguard stand whose supports are immediately adjacent to the pool or spa rim, or otherwise properly shielded so as not to create a hazard. Its open end must have no sharp edges and be provided with a flexible cover on the tip of the fill spout.
- [21.Deck work must be designed and installed in accordance with the engineering practices required in the area of the installation.]
- [B. Lifeguard Chairs
- 1. At least one elevated lifeguard chair must be provided for each 2,000 square feet of water surface area or fraction thereof. The lifeguard chair or chairs must be located so that the



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entire bottom area of the pool is collectively visible from the lifeguard chair(s) on the perimeter of the swimming pool, and the lifeguard's field of vision does not have to exceed 90° to the right and left of the center line of the chair.

- 2. Where a pool is provided with more than one lifeguard chair and pool width is 45' or more, they must be located on each side of the pool.
- 3. A swimming pool which meets all of the following conditions is exempt from the requirements for a lifeguard chair:
 - a. The greatest water surface dimension is equal to or less than 35'.
- b. The maximum depth does not exceed 5'.
 - c. The shape of the pool is such that the entire bottom of the swimming pool can be seen by a person standing at any location on the edge of the pool.]
- C. [Diving Towers, Platforms, and Boards] Perimeter Deck.
- 1. [Distances between adjacent diving boards and platforms and side walls in Class A pools, must conform to Chart I in Section V, or as specified by the appropriate activity (FINA, USS, NCAA, etc.) whichever is more restrictive.] A minimum of 4' in un-obstructive width must surround the pool perimeter.
- 2. [When in use, diving units must be securely anchored to the deck.] The perimeter deck shall be flush with pool wall/coping or as the Approving Authority allows.
 - 3. [At Class A pools there must be a completely unobstructed clear vertical distance of 13' above any diving board or platform measured from the center of the front end of the board or platform. This area must extend horizontally at least 8' behind, 8' to each side and 16' ahead of Point A. (See Chart I, Sec. V).] Access to areas of the perimeter deck may be restricted from patrons use.
 - [4. Unless the diving equipment manufacturer specifies otherwise, the minimum distance to be used between the center line of the rear hold down and the front fulcrum of all fulcrum actuated diving equipment must be the following with a construction tolerance of plus or minus

8' board 40"

10' board 52"

12' board 62"



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- 5. Supports, platforms, steps, and ladders for diving equipment must be of sufficient structural strength to safely carry the anticipated loads. Steps and ladders must be constructed of corrosion-resistant material, must be easily cleanable, and must have treads of slip-resistant design. All diving stands higher than 21", measured from the deck to the top butt end of the board, must be provided with steps and/or a ladder.
- 6. Platforms and diving boards which are one meter or higher must be protected with at least one guard rail. The guard rail on one meter diving equipment must be at least 30" above the diving board and extend to the edge of the pool wall. All platforms or diving boards higher than one meter must have guard rails which are at least 36" above the platform or diving board and extend to the edge of the pool wall. Additional protection should be provided to prevent divers falling through guard rails on boards and platforms above one meter.
- 7. Foot contact surfaces of diving boards or platforms must be entirely covered with non-slip material.
- 8. Fixed platforms, except solid islands, are prohibited.]
- D. [Swimming Pool Slides] <u>Dry Deck.</u>

[The requirements of the U.S. Consumer Product Safety Commission Safety Standard for Swimming Pool Slides as published in the Federal Register, January 1, 1984, Title 16, Commercial Practices, Part 1207 Standards for Swimming Pool Slides, as amended, must be used.]

- 1. Must be continuous and an un-obstructed circulation path in conformance with ADA requirements for an Accessible Route.
- 2. Shall connect all site amenities, entrances, and exists as required by ADA requirements.
- E. Fixtures.
 - Hose bibs must be provided around the perimeter of the deck so that all parts of the pool deck area may be reached with 100' of hose and are placed so that no tripping hazard is created. All hose bibs must be equipped with a backflow preventer.
 - 2. No less than one drinking fountain must be provided for each 2,500 square feet of



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water surface or fraction thereof, and no drinking fountain must be located more than 100' from any point inside the pool enclosure.

3. Rinse devices such as showers or foot sprays, designed to rinse loose foreign matter from the body, [must] may be provided at access points to the deck from unpaved areas.

F. Lifeguard Chairs.

- 1. At least one elevated lifeguard chair must be provided for each 2,000 square feet of water surface area or fraction thereof. The lifeguard chair or chairs must be located so that the entire bottom area of the Swimming Pool is collectively visible from the lifeguard chair(s) on the perimeter of the Swimming Pool, and the lifeguard's field of vision does not have to exceed 90° to the right and left of the center line of the chair.
- 2. Where a Swimming Pool is equipped with more than one lifeguard chair and the pool width is 45' or more, each lifeguard chair must be located on opposite sides of the pool.
- 3. A Swimming Pool which meets all of the following conditions is exempt from the requirements for a lifeguard chair:
 - a. The greatest water surface dimension is equal to or less than 35'.
- b. The maximum depth does not exceed 5'.
- c. The shape of the Swimming pool is such that the entire bottom of the Swimming Pool can be seen by a person standing at any location on the edge of the Swimming Pool.

Section VII: [Illumination] Lighting

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards:

A. Artificial lighting must be provided at all indoor and outdoor [pools] <u>Swimming Pools</u> which are to be used at night or when daylight is insufficient. Lighting fixtures must be of



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entire pool area. <u>Lighting must be installed to minimize reflection from the water surface so</u> the visibility of the pool or spa bottom is not obscured.

- B. Fixtures, electrical equipment, and wiring must be installed in conformity with the Montgomery County Electrical and Building Code and the National Electrical Code adopted therein, and must be installed so as to create no hazard of burning, electrical shock, mechanical injury, or temporary blinding by glare to the [bathers] patrons and so that lifeguards can clearly see every part of the pool area without being blinded by glare.
- C. Where underwater lighting is used, no less than 1.25 watts must be employed per square foot of water surface in water over 5' deep and not less than .75 watts must be employed per square foot of water surface in water [under] 5' deep or less.
- D. Where underwater lighting is used, and night swimming is permitted, area lighting must be provided for the deck areas and directed toward the deck areas away from the pool surface insofar as practical. At least 0.6 watts per square foot of deck area or at least 15 footcandles must be provided.
- [E. Where underwater lighting is not employed and night swimming is permitted, area and pool lighting combined must be provided at not less than 2 watts per square foot of deck and water surface areas.
- F. Lighting information must be furnished based on light from tungsten filament incandescent lamps. Equivalent light produced by other acceptable means may be approved.
- G. Skylights must be constructed of shatterproof materials or materials which disintegrate upon impact into harmless particles.
- H. All pool and area lights must be protected from breakage by a shatterproof shield or must be provided with a shatterproof bulb.
- I. Except at indoor pools with shielded fixtures, fixtures must not be located directly over the water surface.]

Section VIII: Safety

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless



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superseded or amended by the following specific standards:

- A. There must be no protrusions, extensions, means of entanglement, or other obstructions which can cause entrapment or injury to the [bather] <u>patron</u>. There must be no hazardous obstruction extending from the [pool] <u>Swimming Pool</u> wall or floor [into the clear area of the diving portion of the pool].
- B. Handholds must be provided around the perimeter of the [pool] Swimming Pool and must not be more than 9" above [the normal water level of the pool] or 3" below the static water level. [Bullnose coping not over 2-1/2" thick for the outer 2" is acceptable. Handholds, if not continuous, must not be more than 4' apart.] The overhang for coping or cantilevered decking shall not be greater than 2" nor less then 1" and shall not exceed 2 1/2" in thickness for the last 2" of the overhang.
- C. A lifeline must be provided at or within 1' of the transition point and on the shallow side of that point. Its position must be marked with [colored] floats at not greater than 5' spacing. The lifeline must be 1/2" inch minimum in diameter, its terminals must be securely anchored, be of corrosion-resistant material, and be of a type which has no projection which may constitute a hazard to [bathers] patrons.

D. Depth Markers [—Class A pools].

- 1. Depth of water in feet must be [plainly and conspicuously] <u>clearly and permanently</u> marked at or above the water line on the vertical pool wall [or an adjacent vertical wall] and on the top of coping or edge of the deck [or walk next to the pool] <u>within 12" of the pool wall</u>. Markings must be at maximum and minimum points, at all points of slope change, and at no more than 2' increments of depth. Such marking must be spaced at no more than 25' intervals and must be arranged to be uniformly located on both sides of the [pool] <u>Swimming Pool</u> as well as both ends. In the case of irregularly shaped [pools] <u>Swimming Pools</u>, such markings must also designate depths at all major deviations in shape.
- 2. The depth marking numbers must be at least 4" minimum height, be a contrasting color with the background, and be permanent. Markings on the vertical pool wall must be [in the uppermost portion of the wall and be] positioned to be read from the water side. Markings on the deck must be [within 18" of the water edge and] positioned to be read while standing on the deck facing the water. Deck markings must be slip-resistant.
- 3. Depth markers shall be marked in units of feet and inches. Abbreviations of "FT"



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and "IN" may be used in lieu of "FEET" and "INCHES".

- E. [At Class C indoor pools which are individually enclosed] <u>Indoor Public Spas may not be</u> individually enclosed.
 - [1. Locking doors between the pool and the area used by the guard are prohibited.
 - 2. If doors are provided in the enclosure, windows at least 2' by 2' square must be provided.
- 3. Windows in enclosure doors or open passage ways into the enclosure must not be designed with clothes hooks or curtain hooks which would allow items to be hung restricting the view of the pool by the guard.]

Section IX: Circulation Systems

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards:

A. General.

- 1. [Purification of the pool water must be accomplished by the continuous addition of fresh or recirculated water containing a disinfectant and other appropriate chemicals. The water treatment equipment must be capable of controlling and maintaining bacteriological quality, turbidity or clarity, disinfectant content, and pH in accordance with the Rules and Regulations Governing Operation of Public Swimming Pools adopted by the State Department of Health and Mental Hygiene and/or as set forth in the Montgomery County Manual on Public Swimming Pool Operation, or as approved by the Approving Authority.] A circulation system consisting of pumps, piping, return inlets and suction outlets, filters, and all associated equipment shall be provided for the complete circulation of water. All new Public Pools and Public Spas must have separate dedicated filtering systems.
- 2. The time required for complete water turnover at [Class A swimming pools] <u>Public Swimming Pools</u> and [diving pools] <u>Diving Pools</u> must not exceed 480 minutes, at training pools must not exceed 240 minutes, at wading pools must not exceed 120 minutes, and at [Class C pools] <u>Public Spas</u> must not exceed 30 minutes.



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- 3. [All public pools must be provided with an accurate indicator measuring the rate of flow through the filter system with an appropriate range permanently etched and readable in gallons per minute.] Circulation components must meet the standards established by both the A.N.S.I. and the National Sanitation Foundation. The circulation components must be installed per the manufacturer's specifications and be accessible for inspection, repair, or replacement.
- [4. Equipment furnished must be provided with installation and operating instructions.
- 5. Materials used in the circulation system must comply with the appropriate requirements of the National Sanitation Foundation standards.
 - 6. Equipment must be designed and fabricated to drain the pool water from the equipment, together with exposed face piping, by removal of drain plugs and manipulating winter drain valves or by other methods.]
 - [7] 4. Swimming Pool inlets and outlets must be provided and arranged to produce a uniform circulation of water so as to maintain water clarity and a uniform disinfectant residual throughout the pool.
 - [8] 5. In [wading pools and Class C pools] <u>Public Spas</u>, when only one skimmer is provided, the main drain and skimmer must be connected <u>prior to any valves</u> to prevent entrapment.
- B. Inlets All <u>Swimming</u> [pools] <u>Pools</u>.
- 1. Inlets, adjustable for flow regulation, must be located either in the wall at least 12" below normal water level or in the floor of the pool.
 - 2. Inlets must be provided at a minimum rate of one for every 20' of wall perimeter or fraction thereof.
 - 3. Inlets must not be less than $1 \frac{1}{2}$ " in diameter. [No reduction in the number of inlets will be allowed for increased size of inlets.]
 - 4. Inlets from the circulation system must be designed so as not to constitute [projecting surfaces hazardous] a hazard to the [bather] patron.
- C. Outlets All Swimming [pools] Pools.



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- 1. At [Class A pools] <u>Public Swimming Pools</u> utilizing side-wall inlets, main drain outlets must be provided in the deepest part of the pool to drain the pool and to return at least 30% of the design rate of flow to the filtration system.
- [2. At Class C pools utilizing side wall inlets, main drain outlets must be provided within 2" of the deepest part of the pool to drain the pool and return at least 30% of the design rate of flow to the filtration system.]
- [3] 2. At [pools] <u>Public Swimming Pools</u> utilizing bottom inlets, provision must be made in the deepest part of the pool for draining the pool.
- [4] 3. When the main drain outlets are used for pool pump suction, they [must be located to produce a reasonably uniform circulation of water throughout the deep section of the pool and] must not be spaced more than 20' on center. An outlet must not be more than 15' from each side wall. Main drain sumps must be hydrologically balanced.
- [5] 4. [The total water velocity through grate openings must not exceed 2' per second. The opening area in the grates shall be of such design as to prevent physical entrapment of fingers, toes, etc.] All main drain sumps and covers must conform with the federal requirements of the Virginia Graeme Baker Act.
- [6. The main drain piping must be of sufficient size to permit cleaning. There must be no direct physical connection between the pool drain or recirculation system and the sanitary sewerage system. The discharge of water from the pool drain and recirculation system must be arranged so as to preclude the possibility of the back-up of non-potable water into the pool or its piping system. Water discharged to a sanitary sewerage system must be through an air gap of at least 1 1/2 pipe diameters.
- 7. Outlet drain gratings must have a total area of at least four times the area of the discharge pipe and must be designed so as not to be readily removed by or create any hazard to bathers. The area requirement for outlet gratings will not apply to the face area of anti-vortex plates. In no case must the face velocity exceed 6' per second.]
- D. [Overflows All pools] <u>Surface Skimming Systems.</u>
 - 1. [Overflow devices] A surface skimming device must be provided at all [pools] Public Pools to receive water and floating material from the pool surface as part of the circulation system.



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- [2. The devices must freely admit the water without backsplash and promptly dispose of it to the circulation system.]
- [3]2. The size of the [overflow piping] <u>surface skimming system</u> must accommodate at least [80] 70% of the design rate-of-flow when side wall inlets are used, and 100% of the design rate-of-flow, when bottom inlets are used.
- [4]3. The [overflow system] <u>surface skimming system</u> must be designed and constructed [so that the] <u>to skim the pool surface when</u> water level of the pool is maintained at the operating level of the rim or weir device.
- [5]4. [Perimeter type overflow systems, when used as the only overflow system on a pool, must extend around the entire perimeter of the pool unless interruptions are approved by the Approving Authority.] When a perimeter or gutter system is used, it must extend around the entire perimeter of the pool. Gutters must be located near the top of the pool and designed so that the channel is accessible for cleaning and presents no hazard to the patron. The lip of the gutter must be level throughout the pool and designed to serve as a handhold for patrons. The gutter bottom must slope toward outlets spaced no more than 15' apart. The outlet drains must not be less than 2" in diameter and the total open area of the grating must be at least 1 1/2 times the cross-section of the outlet pipe. Connection to the suction side of the circulation pump must be through a surge tank.
- [6. Overflow devices must employ any of the following methods:
- a. Along the entire perimeter of the pool a collecting channel must be constructed into which the pool water overflows through openings in the side walls. The openings must be placed level, be spaced no less than 10' on centers around the entire perimeter of the pool, be at least 2" high, and be of such width as to produce a flow between 1.67 and 4.0 gallons per minute per inch of weir width. The pool water level must be maintained by a float-controlled make-up water supply.
- b. In roll out or deck level overflows, the lip or coping of the pool must be level throughout the periphery of the pool and designed to serve as a handhold for bathers. A system of grating or slots, as continuous as structural considerations permit, must surround the pool no more than 30" from the pool edge. The walk and deck both must slope not more than 1/4" per foot towards the grating or slots, which present no entrapment or injury hazard to the bather. Connection to the suction side of the recirculation pump must be through a surge tank. The pool water level must be maintained by a float-controlled make up water supply. In the case of competitive pools, the ends of the pool must provide a visual barrier that can be seen by swimmers.



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- c. Overflow gutters must be located near the top of the pool and designed so that the overflow channel is accessible for cleaning and presents no entrapment or injury hazard to the bather. The lip of the overflow gutter must be level throughout the periphery of the pool and designed to serve as a handhold for bathers. The gutter bottom must slope toward outlets spaced no more than 15' apart. The outlet drains must not be less than 2" in diameter and the total orifice area of the grating must be at least 1 1/2 times the cross-section of the outlet pipe. Connection to the suction side of the recirculation pump must be through a surge tank.]
- 5. [d.] Floating weir type skimmers must be recessed into the pool walls [in such manner and numbers that the rate-of-flow over the skimmer weirs lies between 1.67 and 4.0 gallons per minute per inch of weir]. There must be one skimmer provided for each 30' of pool perimeter. Every outdoor pool must be equipped with at least 2 skimmers located in opposite corners, one of which is the north or northeast corner. The skimmers must [meet standards of the National Sanitation Foundation relating to Recessed Automatic Surface Skimmers for Swimming Pools and] come equipped with a device for regulating the water flow through the outlet pipe [over the entire range from the design flow rate to shutoff]. All new and replacement skimmers must conform with the federal requirements of the Virginia Graeme Baker Act.
- [7] <u>6</u>. In wading pools which use floating weir type skimmers, only one skimmer will be required when any of the following conditions are met:
 - a. All pool dimensions are less than 20'.
 - b. The surface area is less than 200 square feet.
 - c. The additional skimmer would provide a rate-of-flow less than 1.67 gallons/minute per inch of weir.
 - <u>d.</u> <u>The skimmer equalizer line must be connected to the main drain sump.</u>
 - e. The skimmer suction line and the main drain line are connected prior to any valves.
- E. Piping System.
 - 1. The piping system must be designed so that it is possible to fill the pool, circulate



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the pool water through the treatment equipment, return it to the pool, wash the filters, discharge filtered water to waste [or, in the case of diatomaceous earth filters only, return the filtered water to the side of the filter elements holding the filter media], drain the entire system, disinfect the [recirculated] <u>circulated</u> water, add other necessary chemicals, and heat the pool water where heating units are provided.

- [2. Pool piping must be sized to permit the rated flows for filtering and cleaning without exceeding the total head developed by the pump at the rated flow. In no case must the rate of friction losses in the piping on the suction side of the pump exceed 6' per 100' of pipe nor in the piping on the discharge side of the pump exceed 12' per 100' of pipe based on the Hazen-Williams formula. The velocity of water in the pipe must not exceed 6' per second on the suction side of the pump nor 10' per second on the discharge side of the pump.]
- [3] 2. All pool piping must be supported by piers, hangers, or other means [to prevent settling which could result in rupture, trapping of dirt or air, or prevent drainage of the pipe. Flexible pipe must be supported or encased along its entire length].
- [4] 3. All pipes must be capable of being drained or otherwise protected from damage caused by freezing.
- [5] 4. The piping system in the filter room must be labeled by color coding, permanently tagged valves, or other means. It must be accompanied by a corresponding diagram outlining proper operation and backwash procedures.
- [6. Where dissimilar metals, which may set up galvanic electric currents, are used in piping or filter installations, provision must be made to resist electrolytic corrosion.]
 - [7] 5. The water from [a wading pool] all new and remodeled Public Swimming Pools and Public Spas must be circulated through a separate, properly sized and approved filter system.
 - [8] <u>6</u>. At all installations where water from the pool is returned to an [open tank] <u>equipment room</u> located below the normal water level of the pool, control valves [to prevent the flooding of the tank] must be installed <u>on the suction manifold and the return line</u>.
- F. Pumps.



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- 1. The pumping equipment must have the ability to [recirculate] <u>circulate</u> the pool water at the required [recirculation] <u>circulation</u> rate at or near maximum efficiency against the maximum total dynamic head developed immediately prior to washing of the filters.
- [2 When the recirculation pump is used for supplying backwash water to the filters, it must have the ability to supply water to backwash the filters at the design backwash flow rate.]
- [3] 2. Self-priming pumps must be provided when the elevation of the pumps is higher than the normal water level in the pool.
- [4] <u>3</u>. Pumps must be accessible for inspection and service. [Replacement parts must fit with existing parts in the pump without the need for redrilling mounting holes or otherwise altering the replacement part of the pump.]
- [5. The design and construction of the pump and component parts must allow safe operation.
- 6. Where a mechanical seal is provided, components of the seal must be corrosion-resistant and capable of operating under conditions normally encountered in swimming pool operation.
- 7. Proper direction of rotation for the pump must be clearly indicated by an arrow on the pump data plate, on a separate plate attached to the pump, or cast into the pump itself.
- 8. All motors must have as a minimum an open drip-proof enclosure as defined by National Electrical Manufacturers Association standards and constructed electrically and mechanically so they will perform satisfactorily and safely under the conditions of load and environment normally encountered in swimming pool installations.
 - 9. All motors must have thermal overload protection, either built in or in the line starter, to provide locked rotor and running protection.]
 - [10] 4. The motor frame must contain adequate provision [for proper grounding] and be properly grounded.
 - [11] <u>5</u>. Pumps used on [public swimming pools] <u>Public Swimming Pools</u> must meet the safety performance requirements of <u>A.N.S.I.</u> and the National Sanitation Foundation standards covering pumps.



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- [12. At all installations where it is possible for water from the pool to pass through the pumps before it passes through the filters or where vacuum cleaners discharge to the pump suction, a hair and lint catcher fabricated of or coated with corrosion resistant material must be provided to prevent hair, lint, and debris from reaching the pumps. The hair and lint catcher must be a pot-type strainer basket placed in the pump suction line.]
- 6. A cleanable strainer shall be provided upstream of the circulation pump(s) to remove solids, debris, hair, lint, etc., on all pressure filter systems.
 - [13. Holes in the hair and lint catcher must not pass particles larger than 1/4" in their minimum dimension.
 - 14. Hair and lint catcher baskets must be designed so that they are easily removable for cleaning. In the case of a pot-type strainer basket placed in the pump suction line, valves must be provided to prevent overflowing of water through the basket access opening when the hair and lint catcher is being cleaned.]
 - [15] 7. A spare strainer basket must be provided for each unit.

G. Filtration.

[Recirculation] <u>Circulation</u> systems must be equipped with [single or multiple] filters which pass the water and retain the suspended matter and have the following characteristics:

- 1. Filter requirements General.
- a. Filters must be designed to maintain pool water under anticipated operating conditions in accordance with section IX.A.2 of this standard.
- b. Filters must be designed so that filtration surfaces can be inspected and serviced.
- c. Filters must meet the [safety performance standards of the National Sanitation Foundation standards covering filters] standards established by both the A.N.S.I. and National Sanitation Foundation.
- 2. Design Rates.

[The filtration rate in gallons per minute per square foot of filter surface must be in accordance with the manufacturer recommendations and the National Sanitation



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Foundation Testing Laboratory for the particular model of filter.] <u>Maximum flow rate of filters must not exceed the requirements established by both the A.N.S.I. and National Sanitation Foundation.</u>

- 3. [A] On pressure type filters, a pressure gauge or gauges with an appropriate range must be provided [in connection with all filters].
- 4. A means must be provided to permit release of air which enters the filter tank. [This may be automatic, manual, or where upflow design is used, air must be expelled through the filter tank.] Any filters incorporating an automatic internal air release as its principal means of air release must have lids which provide a slow and safe release of pressures as a part of its design and must have a manual air release in addition to automatic releases. Any separation tank used in conjunction with a filter tank must have a manual means of air release or a lid which provides a slow and safe release of pressures as they are opened as a part of its design.
- 5. Separation tanks must have a precautionary statement warning the user not to start up the filter pump without first opening the air release unless automatic air vents are a part of the tank and system. The statement must be visible and noticeable within the area of the air release.
- [6. Pressure Sand Filters Class A only

Pressure sand filters must meet the standards of the National Sanitation Foundation relating to Sand Type Filters for Swimming Pools.

- 7. Pressure and Vacuum Diatomaceous Earth Filters Class A or C.
- a. Pressure and Vacuum diatomaceous earth filters must meet the standards of the National Sanitation Foundation relating to Diatomite type filters for Swimming Pools.
- b. On pressure filter installations provision must be made for pre-coating the filter. Media must not be introduced through the skimmers.
- c. Piping must be arranged to permit the circulation of water, during the pre-coating operation, within the pump and filter system without discharge to the pool.]
- [8] 6. [Other Filters –Class A only] <u>Filters must be sized to accommodate or exceed the design flow rate of the system as per manufactured instructions.</u>



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[Standard rate gravity sand and pressure and gravity anthracite filters must meet the following requirements:

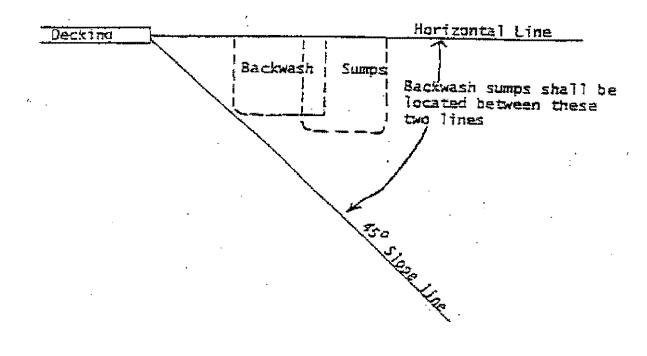
- a. The filter bed must consist of at least 21" of silica sand, free of earth and other materials, having an effective size between 0.40mm and 0.55mm and a uniformity coefficient not in excess of 1.75; or the filter bed shall consist of at least 21" of anthracite coal having an effective size between 0.6mm and 0.8mm and uniformity coefficient not in excess of 1.80; or the filter bed shall consist of a combination of anthracite and sand in which case at least the upper 6" of the bed is anthracite and the remainder sand as specified above.
- b. The filter bed must be supported by graded gravel or other porous media capable of supporting the entire filtering media and distributing both the water to be filtered and the backwash water over the entire filter surface.
- c. The backwash rate must not be less than 12 gallons per minute per square foot of filter surface in sand filters and not less than 9 gallons per minute per square foot of filter surface in anthracite filters.
- d. The free board must be adequate to prevent the filter media from being carried off to waste but allow the foreign matter taken from the water to pass to waste when the filter is backwashed.
- e. The underdrain system must provide for the uniform collection of filtered water from and the uniform distribution of backwash water over the entire bed area and the ratio of total under drain orifice area to total area of filter bed is not less than 0.25 of 1%.
- 9. Cartridge type filters with cloth cartridges may be approved for use at Class C pools only. They must meet the standards of the National Sanitation Foundation Testing Laboratory for Cartridge Type Filters.]
- [10] 7. [At Class C pools utilizing cloth cartridge type filters, a second complete set of filter elements must be provided in good condition.] Public Pools utilizing cartridge type filters must provide a second complete set of approved filter elements.
- [11] 8. A tub of sufficient size to hold 1 complete set of filter elements must be provided for cleaning cartridge filter elements.
- H. A suction type cleaner must be provided for each pool site.



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- 1. If the suction cleaner is operated by the [recirculation] circulation pump, the suction cleaner line must be connected ahead of the hair and lint catcher. Sufficient pool connections must be provided to allow easy access to all parts of the pool bottom with the cleaner.
- 2. Portable cleaners may be approved by the Approving Authority.
- I. Waste Water Disposal.
 - 1. [Backwash water may be discharged into a sanitary sewer only with the approval of the Washington Suburban Sanitary Commission, or into storm drains by means approved by appropriate State and local authorities.] Backwash water must be discharged into a sanitary sewer or by means approved by the Approving Authority. No direct connection is permitted between the backwash line and sanitary sewer.
 - [2. Backwash sumps of the open pit or leeching design must be located so that they fall completely below adjacent deck work and fully outside a line projected 45 degrees downward and away from such deck work (see diagram following):



BACKWASH SUMP]



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- [3] 2. [Calculations must be submitted showing that the backwash sump or holding tank is of sufficient size to handle the backwash volume.] A holding tank of sufficient size to handle a backwash volume (minimum 2 minute volume) must be provided. The holding tank must provide an appropriate air gap from the end of the backwash line and connect to sanitary sewer by a maximum 2" pipe.
- [4. Prior to releasing large volumes of water from a pool to the surface waters of Montgomery County for maintenance or cleaning, the water must be retained for at least 48 hours after the last disinfection. This allows for the dissipation of the disinfectant. This requirement does not apply to the short backwashing procedure inherent in the day to day operation of a pool.]
- J. Suitable equipment capable of feeding disinfectants, coagulants, chemicals for pH adjustment, and other required chemicals to the water being [recirculated] <u>circulated</u> must be provided in all pools.
 - 1. [Chemical feeding equipment must conform to the standards of the National Sanitation Foundation Standards relating to Adjustable Output Rate Chemical Feeding Equipment and Flow Thru Chemical Feeding Equipment for Swimming Pools.] Sanitizing equipment must meet the standards established by both the A.N.S.I. and National Sanitation Foundation and be capable of introducing a sufficient quantity of approved sanitizer to maintain the appropriate levels required under all conditions of intended use.
 - [2. All chemical feeders must:
 - (a) deliver the required amount of chemical solution against the maximum back pressure developed at the point of injection; and
- (b) permit control of output with reasonable accuracy.
 - 3. Where calcium hypochlorite, sodium hypochlorite, or other approved compounds are utilized as the disinfecting agent, a positive displacement or erosion type chemical feeder must be provided to inject the chemical solution into the recirculation line.]
 - [4] 2. [A method for supplying diatomaceous earth to diatomaceous earth filters and coagulants to standard rate sand and anthracite filters must be provided. Introduction of diatomaceous earth, coagulants, and chemicals through the skimmers is prohibited.] Public Swimming Pools must have independent sanitizing feed systems. Supplemental feeding of sanitizers via the skimmer are prohibited when the pool is in use. Un-dissolved sanitizer



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must not be present within the skimmer when the pool is in use. Chemical feeders must be installed in accordance with the manufactures specification.

- a. Chemical fee pumps must be wired so they can not operate unless there is unless there is adequate return flow to properly disburse the chemical throughout the pool as designed.
- b. Chemical feed pumps that are controlled by automatic sensing devices are required to have another redundant method to insure pumps will not operate when there is inadequate flow.
 - [5] 3. Solution containers of sufficient size to adequately serve the pool and constructed of corrosion resistant material must be provided for each machine head of the positive displacement type feeder.
- [6] $\underline{4}$. No chemical feeder may feed more than one pool.
- [7] 5. [Where chlorine gas feeding equipment is provided the following conditions must apply:] The use of chlorine gas feeding equipment must be approved by the Approving Authority prior to installation.
- [a. The equipment and stored gas must be located in an enclosure, at or above ground level, which separates it from all other building uses by a gas-tight, corrosion-resistant partition. The room must be equipped with a lockable door in an outside wall. Equipment and stored gas must not be located in any high hazard area or above the first floor of buildings for human habitation.
- b. A forced air vent, capable of producing one air change per minute and terminating so as to create the least amount of hazard during an emergency, must be installed at floor level. Switches for exhaust fans must be located outside the enclosure. Fresh air supply must be introduced to the enclosure through appropriate openings located near the ceiling.
- c. The enclosure must be equipped with facilities for fastening the chlorine cylinders in place during storage or use.
 - d The gas feeding equipment must be of a solution feed type capable of delivering chlorine at its maximum rate without releasing chlorine gas to the atmosphere.
 - e. The water supply, if any, for the gas feeding equipment must produce the flow rate and pressure required by the manufacturer's specifications for proper operation of the equipment. Where other than recirculated water is used, the supply line shall be



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equipped with an electric shut off valve wired to the recirculation pump and be equipped with a properly installed backflow preventer. Failure of the water supply must automatically shut off the release of chlorine from the cylinder.]

- 6. The use of Sodium Hypochlorite as a sanitizer in an elevated pool application (roof-top) must be approved by the Approving Authority prior to installation.
- K. Rate-of-flow meters must be installed on all [recirculation] circulation systems.
 - 1. There must be no impediments to flow upstream and downstream from the indicators for distances according to the manufacturer's directions.
 - 2. Meters must be placed to separately measure the flow to each pool.
 - 3. Rate-of-flow meters must be of types which:
 - a. read directly in gallons per minute;
 - b. have a scale that is permanently etched and calibrated by the manufacturer and covers the range in which the system will operate; and
 - c. [are capable of measuring flows of at least 1.25 times the design rate.] are capable of measuring between 90% of the minimum required flow rate and 110% of the maximum flow rate of the filter(s).
- L. Sight glasses must be provided on all backwash [, rewash and pre-coat recirculation] lines.

Section X: Public Swimming Pool Water Heaters

- The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards:
- A. The method of heating the pool water must produce a reasonably uniform water temperature throughout the pool and must not endanger the [bathers] <u>patrons</u> because of excessive heat or electrical shock.
- B. Heat exchangers must be designed to heat all or part of the [recirculated] <u>circulated</u> water



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and must be provided with thermometers mounted [in such places that the temperature of the water introduced to the pool can be read easily] on the return line after the heater effluent line(s) and be easily read. Heaters at indoor pools must be capable of maintaining the temperature of the pool water at not less than 74° F.

- C. An automatic temperature limiting device which will prevent the introduction of water in excess of [98] 88° F. to [Class A pools] Public Swimming Pools must be provided.
- D. At [Class C pools] <u>Public Spas</u> an automatic temperature limiting device which will prevent the introduction of water in excess of 104° F. to the pool must be provided.

Section XI: Equipment Areas

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards

A. Space.

- 1. Equipment areas or rooms must provide sufficient space and sufficient clearances between pieces of equipment as well as between equipment and walls, floor, and ceiling to permit:
 - a. [The manipulation of tools required for maintenance] <u>The maintenance</u>, operation, and replacement of equipment;
 - [b. Removal and replacement of component parts;
 - c. Scraping and painting of equipment surfaces;
 - d. Operation of equipment without risk of injury to the operator;]
 - [e] b. Storage of chemicals and supplies without blocking access to equipment;
 - [f] c. Free drainage of water to points of disposal; and
 - [g] \underline{d} . Cleaning of the room or area.
 - 2. 16" of clearance for maintenance and 6" for operation is minimum.



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B. Access.

- 1. Equipment areas must be made inaccessible to the [bathers] <u>patrons</u> by means of separate enclosed rooms or buildings. Entrance to the areas must be through lockable doors only.
- 2. Equipment areas must be easily accessible to the operator from the deck. [Doors, gates, hatches, or manholes] <u>Access</u> must be provided in any barrier located along the most direct route [between the operator's office and] <u>to</u> the equipment. Steps or ladders must be provided at the equipment area if it lies at a different elevation from the deck. [Handholds and observation ports for control purposes may be used.]
- [3. All face piping and manholes of buried filters must be freely accessible.]

C. Construction.

- 1. Floors of equipment areas must be finished in concrete or other impervious material and sloped to a drain so that no accumulation of water will occur. [All pump pits must be provided with floor drains.]
- 2. Natural or mechanical ventilation sufficient to maintain the equipment room in a relatively dry condition must be provided.
- 3. Sufficient artificial light (20 ft. candles minimum) to make controls and valves clearly visible must be provided.
- 4. Off the floor shelving of sufficient strength to handle the storage of chemical containers must be provided and constructed of a nonporous material.
- [5. Equipment must be protected from precipitation unless it is of weatherproof construction.]

Section XII: Bathhouses

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards



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A. General.

- 1. All [swimming pool] <u>Public Swimming Pool</u> installations, except those on the premises of motels or other transient residences [having all rooms with entrances convenient to the swimming pool and used exclusively by owners, employees, or guests of such establishments,] must include an adjacent bathhouse equipped with showers, toilets, [lavatory facilities] <u>sinks</u>, <u>and</u> dressing rooms [, first aid room, and an office].
- 2. When pool memberships are offered or to be offered at [swimming pools] Swimming Pools exempted above, the necessary bathhouse must be provided.

B. Layout.

- 1. The bathhouse must be laid out so that [bathers] patrons must pass the showers before entering the pool.
- 2. The bathhouse must contain space reserved for the manager's use and for first aid equipment and treatment.
 - [3. Where bathing suits, towels, or other linens are to be dispensed within the premises, separate facilities must be provided so that clean materials are not stored on shelves, handled in baskets, or passed out over counters which are to be used for the storing, handling, or receiving of dirty or used materials.]

C. Construction.

- 1. Floors of the bathhouse must be continuous throughout the area and relatively smooth, but with a slight texture to minimize slipping. To ensure complete draining, the floor of the bathhouse must be sloped not less than 1/4" per foot toward drains [or other points of disposal].
- 2. All partitions between the dressing room area, screen partitions, shower, toilet, and dressing room booths must be of durable material not subject to damage by water, and so designed that a water way is provided between the partition and floor to permit thorough cleaning of the floor areas with hoses and brooms and to increase circulation of air.
- 3. Lockers, wire baskets, hangers, hooks, or other sanitary means of storing clothing and personal accessories must be provided at each bathhouse.



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D. Light and Ventilation.

- 1. The bathhouse must be artificially illuminated to an intensity of not less than [10 foot candles] 15 footcandles on all parts of the floor surface at any time. All lights must be protected from breakage by a shatterproof shield.
- 2. The bathhouse must be provided with natural or mechanical ventilation to permit the maintaining of reasonably dry conditions.
- E. Showers, Toilets, and Lavatory Facilities.
 - 1. Minimum sanitary facilities must be provided. The minimum criteria for bathhouse plumbing fixtures is based upon the anticipated maximum attendance of [bathers] <u>patrons</u>. Plumbing fixtures for either sex is based upon a ratio of 50% of the total number of bathers being male and 50% being female, except where the pool is confined to use by one sex only, wherein 100% of plumbing fixture requirements must be provided for that sex.
 - 2. A minimum of one water closet combination, one [lavatory] <u>sink</u>, and one urinal must be provided for each 100 male bathers or fraction thereof.
 - 3. A minimum of two shower heads must be provided for the first [50] 100 males or fraction thereof. One shower head must be provided for each additional 100 male bathers or fraction thereof. Up to 50% of the required number of showers may be placed on the pool deck.
 - 4. A minimum of two water closet combinations and [lavatories] <u>sinks</u> must be provided in each bathhouse building for the first 100 females or fraction thereof. One additional water closet and [lavatory] <u>sink</u> shall be provided for each additional 100 females or fraction thereof.
 - 5. A minimum of two shower heads must be provided for the first [50] 100 females or fraction thereof. One shower head must be added for each additional [50] 100 females or fraction thereof. Up to 50% of the required number of showers may be placed on the pool deck.
 - 6. [Only tempered water must be provided at all shower heads. Water heater and thermostatically controlled mixing valves must be inaccessible to bathers and must be capable of providing 2 gpm of water at a minimum of 90° F. and a maximum of 140° F. (dual control fixtures) or 100°F. (single control fixtures) to each shower head.] Water



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temperature from all shower heads must be between a minimum of 90°F and a maximum of 115°F, and must be protected by an approved pressure balanced anti-scald device. A minimum flow rate of 2 gpm is required at all showerheads.

- 7. A soap dispenser must be provided at each [lavatory] sink and shower and the dispenser must be of all unbreakable construction.
- 8. Mirrors must be provided and must be unbreakable. Toilet paper and holders must be provided at each water closet combination.
- 9. Fixtures must be installed in accordance with the Washington Suburban Sanitary District Plumbing and Gas Fitting Code or other applicable plumbing code and must be protected against back siphonage.
- 10. Fixtures must be designed so that they may be readily cleaned. Frequent cleaning and disinfecting must not cause damage.
- 11. Trash containers must be provided in both men's and women's bathhouses. Covered trash receptacles must be provided in the women's bathhouse.
- 12. Hose bibs must be provided in the bathhouse so that the dressing rooms, showers, and toilet areas can be cleaned.

Section XIII: Food Service

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards:

No food or drink is permitted in the [immediate area of the swimming pool] Swimming Pool or on the [decks surrounding] decks within 6 feet of the pool. [Food and beverage may be allowed in the visitor and spectator area or in a similarly separated snack area for bathers.] Trash containers must be provided throughout the [entire pool compound to contain all trash and litter] immediate premises. A separate permit is required for the preparation and serving of food and drink under regulations governing Eating and Drinking Establishments.



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[Sec. 2.] Section XIV: Severability

The sections of the Code of Maryland Regulations (COMAR) 10.17.01 (2013), Public Swimming Pools and Spas, governing public pool and spa safety and pool and spa operator certification are incorporated for the operating standards of this regulation unless superseded or amended by the following specific standards:

If a court holds that part of this regulation is invalid, the invalidity does not affect other parts.

[Sec. 3.] Section XV: Effective Date

This regulation takes effect 30 days after approval by the County Council.

Isiah Leggett
County Executive

Approved as to Form and Legality
Office of the County Attorney

By: