

TITLE 178 NAC 4 PUBLIC SWIMMING POOL DESIGN AND CONSTRUCTION STANDARDS

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NEBRASKA DEPARTMENT OF
HEALTH AND HUMAN SERVICES

178 NAC 4

TITLE 178 ENVIRONMENTAL HEALTH

CHAPTER 4 PUBLIC SWIMMING POOL DESIGN AND CONSTRUCTION STANDARDS

4-001 SCOPE AND AUTHORITY: These regulations establish standards for swimming pool design, review, construction, approval, and related requirements. The authority for these regulations is found in Neb. Rev. Stat. §§71-4301 through 71-4307.

4-001.01 Related Regulations: Persons designing and/or constructing swimming pools may want to consult other regulations and/or codes which may apply, such as standards for special types of swimming pools, electrical codes, plumbing codes, water and wastewater regulations. It is the responsibility of the design professional to insure that the requirements of all other applicable codes (i.e., boilers, electrical, building, plumbing, fire, ventilation, etc.) are met. The construction approval by the Department does not supersede any other approvals which may also be required. If conflicts with other applicable local, state, or federal regulations occur, the most restrictive regulation governs.

4-002 DEFINITIONS

Additional inspections means inspections required to determine if violations discovered in previous inspections have been corrected.

Bathhouse means any building adjacent to the swimming pool used by the swimmers and bathers for changing clothes. The term "bathhouse" includes accompanying bather preparation facilities.

Beginning Construction or similar terms in these regulations means the start of work on items that are specifically mentioned in these regulations.

Boundary line means a line between the shallow and deep areas marked in contrasting color and at least 4 inches wide on the floor and walls of the pool, and by a safety rope and floats equipped with float keepers.

Certificate of competency means a certificate obtained as a result of attendance and successful completion, as shown by passing a test, of a Nebraska swimming pool operator's training clinic approved by the Department.

Class A Pool means a pool operated by a municipality, political subdivision, or governmental agency; or a pool intended for use for accredited competitive aquatic events such as Federation Internationale de Natation, U.S. Swimming, U.S. Diving, National Collegiate Athletic Association, National Federation of State High School Associations, etc.

Class B pool means a swimming pool operated at a facility including, but not limited to, an apartment, a condominium, a property owner association, a child care facility, and lodgings such as hotels and motels.

Class C pool means a spa.

Class D pool means a wading pool.

Class E pool means a spray park.

Class F pool means a swimming pool at a health club, fitness center, or community fitness center.

Deck means the area surrounding a pool, which is specifically constructed or installed for use by bathers.

Deep area means those areas of a swimming pool where the water is more than 5 feet deep.

Department means the Department of Health and Human Services.

Design Professional means a professional engineer or professional architect registered by the Nebraska Board of Engineers and Architects to practice in the State of Nebraska.

Drop slide means a slide that discharges to a pool with a drop more than 2 inches to the water surface.

Lazy River Ride means a water recreation attraction designed to convey patrons around a relatively flat course using an artificially created current.

Main drain means a submerged suction outlet typically located at the bottom of a pool or spa to conduct water to a recirculating pump.

Nebraska swimming pool operator means an individual (1) who has a current certificate of competency or (2) who has successfully completed the pool operator training course by the National Swimming Pool Foundation, the Aquatic Facility Operator course approved by the National Recreation and Park Association, or an equivalent course approved by the Department, and who maintains certification as required by the certifying organization.

Owner means the owner or the owner's representative.

Patron means a person using a public swimming pool. Patron also means a bather or swimmer.

Person, in 178 NAC 4-003.12 and 4-005 means any individual, firm, partnership, association, corporation, company, municipality, political subdivision, community government agency, club, organization, or other entity owning or operating a swimming pool as defined in Neb. Rev. Stat. § 71-4301. In all other instances, person means individual.

Spa means a specific type of swimming pool, such as a hot tub or whirlpool designed for recreational use which is not intended to be drained, cleaned, and refilled after each individual use. It may include, but is not limited to, hydrojet circulation, hot water, cold water, mineral baths, air induction systems, or any combination thereof.

Special Purpose Pool means a swimming pool that is operated for special purposes and incorporates features distinguishing it from a traditional swimming pool. Special purpose pools include, but are not limited to wave pools, zero depth pools, water slide splash pools, lazy river rides, and pools with fountains and/or other interactive water features.

Spray Park means a pool providing recirculated water to spray features with no permanent standing water accessible to pool patrons.

Substantial Modification or Improvement means construction that changes the depth, shape, piping, pumping, or other basic design features of a public swimming pool in a manner that affects pool patron safety or recirculation system design; changes a pool's deck; changes the basic design of a diving board; or adds a special feature. Work not considered a substantial modification or improvement includes maintenance and repairs. Maintenance does not include total shell replacement.

Suction Outlet means a fitting, fitting assembly, cover/grate, and related components that provide a localized low pressure area for the transfer of water from a swimming pool. This may also include the transfer of water for slides, spray features, skimmer equalizer lines, etc.

Swimming Pool (pool) means any artificial basin of water modified, improved, constructed, or installed solely for the purpose of public swimming, wading, diving, recreation, or instruction. Swimming pool includes, but is not limited to, a pool serving a community, a subdivision, an apartment complex, a condominium, a club, a camp, a school, an institution, a park, a manufactured home park, a hotel, a motel, a recreational area, or a water park. Swimming pool includes a spa, hot tub, or whirlpool or similar device which (1) is designed for recreational use and not to be drained, cleaned, and refilled after each individual use and (2) may consist of elements, including, but not limited to, hydrojet circulation, hot water, cold water, mineral baths, air induction systems, or any combination thereof. Swimming pool does not include an artificial lake, a pool at a private residence intended only for the use of the owner and guests, or a pool operated exclusively for medical treatment, physical therapy, water rescue training, or training of divers.

Unblockable Drain means a drain that has minimum dimensions of 18 inches by 23 inches or 29 inches diagonally.

Variance means written approval from the Department to allow a design, or substantial modification or improvement that does not conform to the requirements in 178 NAC 4. A variance will not be given for any design, modification or improvement that endangers the health or safety of the patrons.

Virginia Graeme Baker Act (VGB) means 15 USC Sec. 8001 et seq.

Wading Pool means a pool that is no more than 24 inches deep that is intended for use by young children.

Wave pool means a special purpose pool with wave generating equipment and a design which provides for control of the waves within the side walls and dissipation of the waves at a zero depth shallow end.

Zero Depth Pool means a swimming pool where the pool floor intersects the water surface along a portion of its perimeter.

4-003 PLANS AND SPECIFICATIONS: Plans, specifications, and a swimming pool data sheet (Attachment 2 which is incorporated herein by reference) for new swimming pools or substantial modifications or improvements to existing pools must be prepared by a design professional. All plans and specifications must be submitted to the Department in triplicate for review and written approval prior to beginning construction, with plans laid out on sheets having a minimum size of 11 by 17 inches. Additional sets may be submitted for formal designation as approved copies if desired. Plans and specifications for substantial modifications or improvements must include all applicable portions of the swimming pool. The owner of a pool may submit plans and specifications for changes to existing pools for erosion type feeders and solution type feeders instead of a design professional.

4-003.01 Content: Plans, specifications, and attachments submitted for formal approval must be an accurate record of the proposed construction and contain sufficient information to demonstrate to the Department that the proposed swimming pool or substantial modifications or improvements will meet the standards contained herein and must include, at a minimum, the following documentation and information: (If the information submitted is not sufficient for the Department to determine if the project meets the standards, the Department may require additional information.)

1. Location and Owner: Name and address of the proposed, modified or improved public swimming pool facility; and the name, address, and phone number of the owner.
2. Scale and Northpoint.
3. Designer Information: Name, date, address, phone number, professional seal and signature of the design professional.

4. Plot Plan: A plot plan of the property to be used, indicating the location of proposed and existing structures; as well as the location of the proposed swimming pool, pool enclosure, and deck.
5. Detailed Plans: All detailed plans for a swimming pool must be legible and must be drawn to a suitable scale. The detailed plans for facilities must show:
 - a. Construction Details: Complete construction details for the swimming pool, deck and pool enclosure, including dimensions, elevations, and appropriate cross sections for the swimming pool.
 - b. Recirculation System: Schematic diagrams and plan view of the pool water treatment and recirculation systems, pool equipment room or enclosure.
 - c. Piping: Size and location of all piping.
 - d. Specifications: Complete, detailed specifications for the construction of the swimming pool, bathhouse, recirculation system, filtration system, disinfection equipment and all other appurtenances.
6. Fees
 - a. Initial Fee: When the design professional's plans and specifications are submitted, an initial review fee of \$100 plus 0.5% of his/her estimate of the cost of the project described in the documents to be reviewed up to a maximum of \$7,600 must be included.
 - b. Final Fee: Upon completion of the project, the owner must submit documentation of the contract or actual cost of the project in the form of the actual contract or invoice(s) to the Department for the purpose of determining the final fee amount. Payment of the final fee amount must be made prior to final inspection, except that amounts of \$25 or less are not required to be paid or refunded;
 - c. Variance Fee: A \$300 fee must accompany each variance request.
 - d. Engineering Inspection Fee: The final inspection conducted by the Department review engineers is included in the review fee. A fee of \$400 for each additional inspection conducted by the Department must be paid prior to the date of the additional inspection. The engineering inspection fee is separate from and in addition to the operational inspection fees required in 178 NAC 2. Pools owned by a municipal corporation are exempt from inspection fees.

- e. There is a fee of \$1000 in addition to the plan review fee if construction is begun or completed on items specifically outlined in these regulations prior to obtaining approval from the Department.
7. Operation and Maintenance Manual: The design professional must provide 2 copies of a manual for operation of the pool to the owner or owner's representative.

4-003.02 Data Sheet: The design professional or owner (See 178 NAC 4-003) must submit a swimming pool data sheet (Attachment 2) for each swimming pool with the plans and specifications.

4-003.03 Preliminary Plans: The design professional may submit preliminary plans, specifications, or concepts to the Department for review prior to preparation of construction documents, allowing 30 working days for comment by the Department. An initial fee for review of preliminary plans must be submitted with the plans as required in 178 NAC 4-003.01 item 6.a. This fee will be credited toward the review fee required when final plans and specifications are submitted for review. Any comments or agreements made regarding preliminary plans do not constitute approval to construct the project. If preliminary plans are submitted for a project, reference to any correspondence must be included in the final plan submittal.

4-003.04 Final Plans: All swimming pool data sheets, the initial fee, and construction documents for formal approval of a public swimming pool must be submitted for review and comment or approval at least 30 working days prior to planned construction or installation. Time must be allowed for the incorporation of changes if required.

4-003.05 Construction Approval: The Department must approve final plans, specifications, a swimming pool data sheet, and other relevant data before construction or installation of any new swimming pool or substantial modification or improvement to any swimming pool may begin. Upon approval of the plans and specifications, the Department will issue a construction permit. A construction permit is valid for a period of 2 years from the date of issuance. If construction is not started within 2 years from the issuance of the permit, the owner or the design professional must request a time extension in writing prior to the expiration of the construction permit and the Department must approve it with an expiration date in order for it to continue to be valid.

4-003.06 Review of Plans and Specifications: The Department will issue a comment letter to the design professional when review of the plans and specifications does not indicate compliance with Title 178 NAC 4 or inadequate information is provided for a complete review. The design professional must address issues identified in the Department's comment letter within 60 calendar days from the date of issuance of the comment letter unless the owner and/or design professional request in writing and the Department approves an extension of time. If the design professional does not respond in writing to the Department's comment letter within 60 days from issuance of the comment letter, the Department will deny the construction permit for the project. When a project is

denied for construction, new sets of plans and specifications, along with a new review fee as specified in 178 NAC 4-003.01 item 6.a., must be submitted to the Department for review and written approval prior to construction.

4-003.07 Construction: All new swimming pools and substantial modifications or improvements must be completed in accordance with approved plans and specifications or approved change orders.

4-003.08 Certification: The design professional or the owner (see 178 NAC 4-003), as appropriate, must certify in writing to the Department on Attachment 3 which is incorporated herein by reference that the pool and all appurtenances have been constructed in accordance with approved plans and specifications, prior to a final inspection.

4-003.09 Final Inspection: The Department will conduct a final inspection and note any deficiencies, which must be resolved, before the Department will issue a permit to operate the pool. The Department has the right of entry at any reasonable time to the swimming pool and accompanying facilities for this purpose.

4-003.10 Final Approval: If no deficiencies are found when the Department conducts the final inspection or when any deficiencies that were found in the Department's final inspection have been corrected, the Department may issue a permit to operate the pool.

4-003.11 Denial: The Department may refuse to issue a construction permit for failure to comply with any of the provisions of Neb. Rev. Stat. §§ 71-4301 to 71-4307 or 178 NAC 4. The Department will inform the engineer and the swimming pool owner, in writing, of the factual basis of the denial and the statutory or regulatory provisions supporting the decision. The denial will become final 30 days after the mailing of the notice, unless the swimming pool owner, within the 30-day period, requests a hearing in writing. The hearing shall be conducted in accordance with the Nebraska Administrative Procedure Act and 184 NAC 1, the Department's Rules of Practice and Procedure for Administrative hearings.

4-003.12 Record Drawings: Pools that are already constructed or on which construction has begun without prior plan review and approval will not be issued a permit to operate until after the record drawing plans and specifications have been reviewed and approved by the Department. If the pool is being operated without appropriate approval, the permit may be suspended or revoked after the applicant or the person to whom the permit has been issued is given notice in writing of the failure to comply with Neb. Rev. Stat. §§71-4301 through 71-4307 or the rules and regulations developed under those statutes. If the permit is suspended or revoked, the person to whom the permit has been issued may request a hearing before the Department within 30 days of mailing of notice of the suspension or denial. On the basis of evidence presented at the hearing, the Department will affirm or revoke its previous action. In addition, whenever any work for which a construction permit is required has been started before an operating permit has been issued the following will apply:

1. All construction work must cease until the record drawings have been reviewed and approved by the Department;
2. 45 working days must be allowed for review after receipt of the swimming pool data sheets, the initial fee, and record documents;
3. The Department may require that construction not done in accordance with the regulations be corrected before a facility is used.

4-004 VARIANCES

4-004.01 General: A variance request must be prepared by a design professional (or owner if 178 NAC 4-003 applies) in writing a minimum of 30 working days before construction begins. A variance must be requested on Attachment 1 to 178 NAC 4, which is incorporated herein by reference. A variance may not pose an increased public health or safety risk.

4-004.02 New Projects: A request for a variance may be made for a new project where the design professional believes that a variation in the standards does not endanger the health or safety of the patrons.

4-004.03 Existing Projects: A variance request for a modification to existing swimming pools may be made where space and/or other circumstances prevent the project from meeting the current requirements and where the Department determines that a variation in the standards does not endanger the health or safety of the patrons.

4-004.04 The Department will review and approve or disapprove requests for a variance on a case-by-case basis.

4-005 DENIAL, SUSPENSION, OR REVOCATION OF PERMIT; POOL CLOSING

4-005.01 The Department may deny, suspend, or revoke any permit for construction of a swimming pool for failure to comply with any provisions of Neb. Rev. Stat. §§ 71-4301 to 71-4307 or 178 NAC 2 or 4.

4-005.02 Before a permit is denied, suspended, or revoked, the Department will send a written notice to the owner or the Nebraska swimming pool operator enumerating instances of failure to comply with Neb. Rev. Stat. §§ 71-4301 to 71-4307 or 178 NAC 2 or 4. If the permit is denied, suspended, or revoked, the owner may request a hearing before the Department within 30 days of mailing of notice of denial, suspension, or revocation. On the basis of the evidence presented at the hearing, the Department will affirm or revoke its previous action.

4-005.03 The denial, suspension, or revocation of the permit will terminate and the permit will be issued or reissued, as the case may be, upon proper application and upon the presentation of evidence sufficient to show that the deficiencies causing the denial, suspension, or revocation have been corrected.

4-005.04 Whenever the Department finds that a swimming pool is being constructed, improved, altered, or equipped, in violation of any of the provisions of Neb. Rev. Stat. §§ 71-4301 to 71-4307 or 178 NAC 2 or 4, the Department may grant a reasonable amount of time, in its opinion, to change or modify the construction or provide for the proper equipment needed to bring the pool into compliance with Neb. Rev. Stat. §§ 71-4301 to 71-4307 or 178 NAC 2 or 4.

If the Department, upon inspection and investigation of a swimming pool, finds conditions that warrant prompt closing of the pool, the Department must notify the owner or the Nebraska swimming pool operator that the pool must be closed. The Department may also provide written notice to the sheriff and the county attorney of the county in which the pool is located. It is the duty of the sheriff and county attorney to enforce the notice from the Department. If and when the owner or Nebraska swimming pool operator of the pool has, in the opinion of the Department, complied with the provisions of Neb. Rev. Stat. §§ 71-4301 to 71-4307 or Title 178 NAC 2 or 4, the Department may authorize in writing the re-opening of the pool.

4-006 DESIGN STANDARDS: The following standards are adapted from the *Recommended Standards for Swimming Pool Design and Operation*, 1996 , by the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers. Copies are available from Health Education Services, A Division of Health Research Inc., P.O. Box 7126, Albany, New York 12224, Phone: 518-439-7286. 178 NAC 4-006.09 and 4-006.12A are used with permission from ANSI/NSPI-1, 2003, American National Standards for Public Swimming Pools, ANSI/NSPI, 2111 Eisenhower Ave., Alexandria VA 22314. Phone: 703-838-0083.

4-006.01 Existing licensed swimming pools constructed or under construction prior to September 14, 2010 which do not fully comply with the design and construction requirements of these regulations may be continued in use as long as the swimming pool meets the current operating requirements in 178 NAC 2, poses no significant health or safety risks in the opinion of the Department, and is operated and maintained as designed.

4-006.02 Safety Requirements: The following safety requirements must be met at all pools unless otherwise specified in these regulations.

1. Water Depth must be plainly marked at or above the water surface on the vertical pool wall and on the edge of the deck at maximum and minimum points of break between the deep and shallow portions and at intermediate increments of depth, spaced at no more than 25-foot intervals. Depth markings must be in numerals at least 4 inches high and in a color contrasting with the background. Where depth markings cannot be placed on the vertical walls above the water level, or space does not allow 4-inch letters, other means must be used so that markings are plainly visible to persons in the pool.

2. Each lifeguard on duty must have within arm's reach a rescue tube equipped with a 6-foot long strap or tow rope. Class B and Class F pools must provide either a rescue tube or a ring buoy, United States Coast Guard approved, or its equivalent, with an attached rope at least as long as the width of the pool;
3. Class B and Class F pools must provide a shepherd's crook type of pole having blunted ends with a minimum length of 12 feet;
4. Class A pools must have a backboard equipped with at least 3 straps.
5. First aid kit
 - a. Each Class A pool must have a first aid kit which contains the following materials –
 - (1) 3 units triangular bandage,
 - (2) 2 units 1" tape,
 - (3) 6 units 3" x 3" plain gauze pad,
 - (4) 2 units 2" x 6 yds. gauze roller bandage,
 - (5) 1 unit tweezer, bandage scissor,
 - (6) 1 unit Red Cross First Aid Book or an equivalent substitute,
 - (7) 1 unit assorted bandages, such as Band-aids,
 - (8) 1 unit latex-free gloves (or equivalent),
 - (9) 1 unit rescue breathing face shield or mask, and
 - (10) 1 unit emergency response pack for cleaning up blood.
 - b. All other pools must have a first aid kit.
6. Swimming pools must have an accessible working telephone with emergency telephone numbers prominently posted.
7. A properly operating carbon monoxide detector is required in the pool enclosure for indoor pools where gas or propane is used for heating and in enclosed mechanical rooms where there is a gas or propane fueled water heater.
8. Chemical safety
 - a. Chemical storage containers must be clearly labeled and treatment chemicals must be stored and handled in accordance with the manufacturer's recommendations.
 - b. A warning sign stating "AUTHORIZED PERSONNEL ONLY" must be placed on the door of rooms where chemicals are used or stored, or where bulk containers are located.

4-006.03 Signs: All pool regulations must be stated on signs with clear, legible print.

4-006.03A At swimming pools where lifeguard service is not continuously provided, a warning sign must be placed in plain view of the user and must state: "WARNING – NO LIFEGUARD ON DUTY", in letters at least 4 inches high, and "CHILDREN UNDER THE AGE OF 16 MUST NOT USE POOL WITHOUT AN ADULT IN ATTENDANCE" in letters at least 2 inches high.

4-006.03B Pool regulations must be conspicuously posted in the swimming pool area, or in the dressing rooms at all swimming pools, including wading pools. Signs

must have the title "Pool Regulations" in letters at least 4 inches high and must list the following regulations:

- No person is permitted to use the pool without first having taken a warm water shower, using soap.
- No person having an obvious communicable disease, skin eruption, cut, sore or lesion, eye, ear, nose, or throat infection, is permitted to use any public swimming pool.
- Spitting or spouting of water, blowing the nose, or any other similar activity in the swimming pool is strictly prohibited.
- No running, boisterous or rough play, except supervised water sports, is permitted in the pool, or on the runways, diving boards, floats, platforms, or in the dressing rooms.
- Maximum patron load is ____ individuals.

4-006.03C Spa regulations must be conspicuously posted in the spa area. Signs must have the title "Spa Regulations" in letters at least 4 inches high and must list the following regulations –

- No individual is permitted to use the spa without first having taken a warm water shower, using soap.
- Pregnant women, elderly individuals, and individuals suffering from heart disease, diabetes, or high or low blood pressure should not enter the spa/hot tub without prior medical consultation and permission from their doctor.
- Do not use the spa/hot tub while under the influence of alcohol, tranquilizers, or other drugs that cause drowsiness or that raise or lower blood pressure.
- Do not use at water temperatures greater than 104 degrees Fahrenheit (40°C).
- Do not use alone.
- Unsupervised use by children under the age of 16 is prohibited.
- Enter and exit slowly.
- Observe reasonable time limits (that is, 10-15 minutes), then leave the water and cool down before returning for another brief stay.
- Long exposure may result in nausea, dizziness, or fainting.
- Keep all breakable objects out of the area.
- Maximum patron load is ____ individuals.

On the same or on a separate sign there must also be a sign stating "No one under the age of 5 years is permitted in spa."

4-006.04 Maximum Swimming Pool Patron Loading

4-006.04A Designation of Areas: For purposes of computing patron load, those portions of the swimming pool 5 feet or less in depth are designated the "shallow

area.” Those portions of the swimming pool over 5 feet in depth are designated the “deep area.”

4-006.04B Area Loading

4-006.04B1 Shallow Area: 15 square feet of pool water surface area must be provided for each patron. This also applies to spray parks without standing water.

4-006.04B2 Deep Area: 25 square feet of pool surface area must be provided for each patron.

4-006.04C Diving or Slide Area: Where a separate designated diving or slide area is provided, and other swimmers are not allowed in this area, it may be excluded from the surface area used for computing patron load; however, 10 patrons must be included for each board, platform or slide.

4-006.04D Additional Area Allowance: Additional allowance will be made on the basis of 1 additional patron per each 50 square feet of pool deck in excess of the minimum area of deck required, and 1 additional patron per each 100 square feet of picnic and play area within the enclosure.

4-006.05 Lifeguard Chairs

4-006.05A All Class A swimming pools, and those swimming pools which elect to have a lifeguard on duty, must provide a lifeguard chair for each 2,000 square feet of water surface area.

<u>Water Surface Area in Sq. Ft. (meters)</u>	<u>Minimum Number of Chairs</u>
Less than 2,000 (<186)	0
2,000 to 3,999 (187-372)	1
4,000 to 5,999 (373-557)	2
6,000 to 7,999 (558-743)	3

4-006.05B At least 1 chair must be located so the lifeguard is able to maintain surveillance of all pool floor areas having a depth of 5 feet or greater,

4-006.05C All lifeguard chairs must be –

1. Located so the guard is not required to protect a segment greater than 180 degrees;
2. Placed at waterside locations to minimize the effect of glare on the water; and
3. Placed to give complete coverage of the pool(s).

4-006.06 Construction Material

4-006.06A Materials: Swimming pools must be constructed of materials which are inert, stable, non-toxic, watertight and enduring. Sand or earth bottoms are not permitted.

4-006.06B Finish: Bottom and sides must be white or a light color, with a smooth and easily cleanable surface. The finish surface of the bottom in shallow areas [5 feet or less in depth] must be slip-resistant.

4-006.07 Design, Detail and Structural Stability: All swimming pools and appurtenances must be designed and constructed to withstand all anticipated loading. A hydrostatic relief valve and/or a suitable underdrain system must be provided for in-ground pools. The design professional is responsible for ensuring the stability of the pool design for both full and empty conditions.

4-006.07A Shape: The shape of any swimming pool must be such that the circulation of pool water and control of swimmers' safety are not impaired. There may not be any underwater projections or obstructions which would endanger patron safety or interfere with proper pool operation.

4-006.07B Bottom Slope: The bottom of the pool must slope toward the main drain. Where the water depth is less than 5 feet, the bottom slope must not exceed 1 foot vertical in 12 feet horizontal (1:12). Where the water depth exceeds 5 feet, the bottom slope must not exceed 1 foot vertical in 3 feet horizontal (1:3).

4-006.07C Area Marked: The boundary line between the shallow and deep areas must be marked by a line of contrasting color at least 4 inches wide on the floor and walls of the pool, and by a safety rope and floats equipped with float keepers. Safety rope anchors must be recessed.

4-006.07D Pool Walls: Walls of a swimming pool must be either:

1. Vertical for water depths of at least 6 feet, or
2. Vertical for a distance of at least 3 feet below the water level, below which the wall may be curved to the bottom with a radius not greater than the difference between the depth at that point and 3 feet, provided that the vertical is interpreted to permit slopes not greater than 1 foot horizontally for each 5 feet of depth of sidewall (11 degrees from vertical), or
3. At water depths of 3 feet or less a transitional radius must not exceed 8 inches and must be tangent to the wall and floor.

4-006.07E Ledges: Ledges must not extend into the pool unless they are essential for support of the upper wall construction.

4-006.07F Pools Without Gutters: Coping or cantilevered deck may project from a swimming pool or spa wall to provide a handhold for users. The coping or deck must be rounded, have a slip-resistant surface finish, and must not exceed 3-1/2 inches in thickness. The overhang of the coping or deck must not exceed 2 inches or be less than 1 inch. All corners created by coping or cantilevered deck must be rounded in both the vertical and horizontal dimensions to eliminate sharp corners. The handgrip must not be more than 9 inches above the minimum skimmer operating level.

4-006.07G Diving Areas: The minimum dimensions of the swimming pool and appurtenances in the diving area must conform to 178 NAC 4 Table 1. (Note: These diving area dimensions may not meet the requirements of NCAA, US Diving, FINA, NF of SHSA, or AAU. Where competitive diving or competitive-type diving boards are used, compliance with NCAA, U.S. Diving, FINA, NF of SHSA, or AAU requirements is recommended.)

4-006.07G1 Head Room: There must be a completely unobstructed clear distance of 16 feet above the diving board measured from the center of the front end of the board. This area must extend at least 8 feet behind, 8 feet to each side, and 16 feet ahead of the measuring point.

4-006.07G2 Diving Boards and Platforms: Diving boards and platforms in excess of 3 meters in height are prohibited except where special design considerations and control of use are provided.

4-006.07G3 Steps and Guard Rails for Diving Boards: Supports, platforms and steps for diving boards must be designed and constructed to safely carry the maximum anticipated loads. Steps must be of corrosion-resistant material, easily cleanable and of non-slip design. Handrails must be provided at all steps and ladders leading to diving boards more than 1 meter above the water. Platforms and diving boards which are more than 1 meter high must be protected with guard rails at least 36 inches high, extending at least to the edge of the water. Boards or platforms 3 meters (9.8 ft.) or higher, when permitted, must have an effective side barrier.

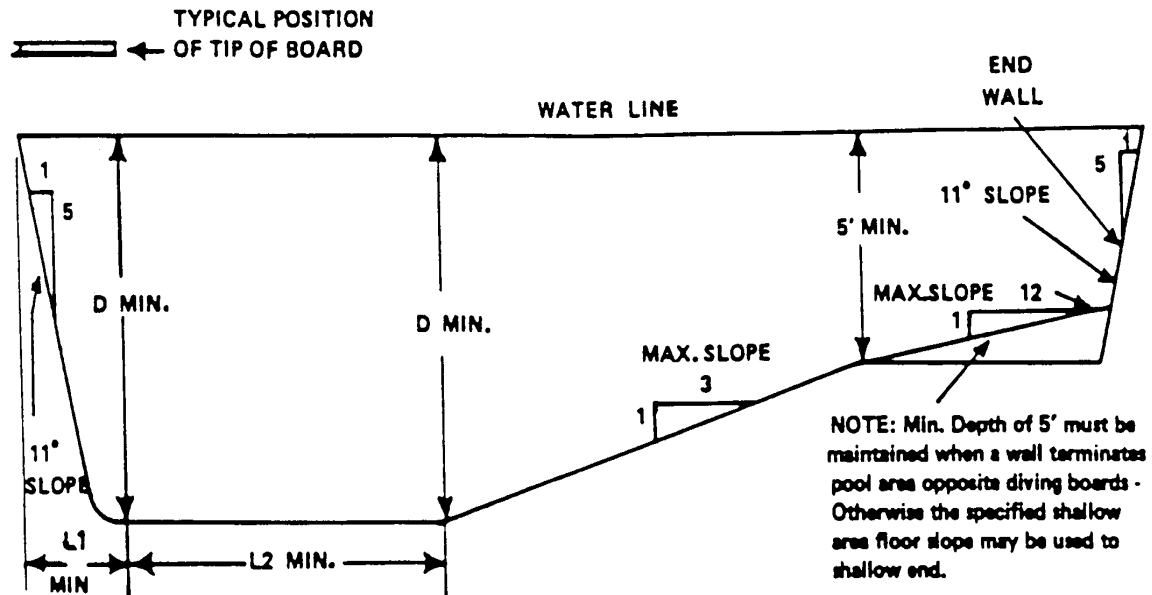


TABLE 1
MINIMUM DIMENSIONS FOR
POOLS WITH DIVING EQUIPMENT

		MINIMUM DIMENSIONS			
Maximum Board Height Over Water	Maximum Diving Board Length	D	L ₁	L ₂	POOL WIDTH
26" (2/3 meter)	10'	8' - 6"	2' - 6"	10' - 0"	20' - 0"
30" (3/4 meter)	12'	9' - 0"	3' - 0"	10' - 0"	20' - 0"
1 meter	16'	10' - 0"	4' - 0"	12' - 0"	20' - 0"
3 meter	16'	12' - 0"	6' - 0"	12' - 0"	24' - 0"

4-006.07G4 Placement of boards must observe the following minimum dimensions. With multiple board installations minimum pool widths must be increased accordingly. For diving boards or platforms greater than 20 inches in width, add ½ of the width over 20 inches to the following dimensions.

Center line of 1 meter or less board to pool side 10' - 0"
 Center line of 3 meter board to pool side 12' - 0"
 Center line distance between adjacent boards 10' - 0"

4-006.08 Ladders, Recessed Steps, Stairs

4-006.08A Location: Recessed steps, ladders, or stairs must be provided at the shallow end. Ladders or recessed steps must be provided at the deep end. If the pool is over 30 feet wide, the steps, ladders, or stairs must be installed on each side.

4-006.08B Ladders: Pool ladders must be corrosion-resistant and must be equipped with slip-resistant treads. All ladders must be designed to provide a handhold. There must be a clearance of not more than 6 inches or less than 3 inches between any ladder and pool wall. Treads must be no more than 12 inches apart.

4-006.08C Recessed Steps: Recessed steps must be readily cleanable, slip-resistant, and must be arranged to drain into the pool. Recessed steps must have a minimum tread of 5 inches and a minimum width of 14 inches. Steps must be no more than 12 inches apart.

4-006.08D Handrails: Where recessed steps or ladders are provided, there must be a handrail at the top of each side thereof, extending over the coping or edge of the deck.

4-006.08E Stairs and Stair Handrails: Where stairs are provided, they must be located in a corner of the pool or be recessed. All stair areas must have a handrail within reach. Stairs must have slip-resistant finish, a minimum tread of 12 inches, and a maximum rise of 12 inches.

4-006.09 Underwater Seats, Benches, and Swimouts:

4-006.09A Swimouts

1. Must be designed to be located completely outside of the perimeter shape of the pool.
2. The horizontal surface must be 20 inches maximum below water line.
3. A minimum unobstructed surface of 240 square inches must be provided.
4. When used as an entry/exit access, swimouts must be provided with a step to meet the pool stair requirements.
5. The leading edge must be visibly set apart.
6. Swimouts are allowed in the deep or shallow area of the pool.

4-006.09B Underwater seats and benches must conform to the following:

1. Must be located completely inside of the perimeter shape of the pool.
2. The horizontal surface must be 20 inches maximum below water line.
3. An unobstructed surface must be provided that is a minimum of 10 inches deep and a minimum of 24 inches wide.
4. Must not be used as the required entry/exit access.
5. Underwater seats may be located in deep areas of the pool where diving equipment (manufactured or constructed) is installed, provided they are located outside of the minimum water envelope for diving equipment.
6. Are allowed in conjunction with pool stairs.
7. Leading edge must be visually set apart.

4-006.10 Decks: An unobstructed deck at least 5 feet wide must entirely surround the pool. Infringements or variations are allowed only when specifically permitted by the Department. The deck must be of a uniform, easily cleaned, impervious material with a slip-resistant finish. Wood decks are expressly prohibited within 5 feet of the pool. The deck must be protected from surface runoff.

4-006.10A Slope: The deck must be sloped away from the pool unless drains are provided to intercept water on the way back to the pool, and must be sloped to provide positive drainage of all deck areas.

4-006.10B Drainage: Deck drains, when used, must be no more than 25 feet apart, and no single drain can serve more than 400 square feet of area. Continuous trench-style drains may be designed to handle areas greater than 400 square feet. There must be no direct connection between the pool deck drains and the storm or sanitary sewer or plumbing drainage systems unless there is a means that is acceptable to the Department. They must not drain to the pool gutter or recirculation systems.

4-006.10C Roll-Out Gutters: If the pool is equipped with roll-out, deck-level gutters, not more than 5 feet of deck may be sloped toward the gutters.

4-006.10D Carpeting: Carpeting is not permitted on pool decks.

4-006.10E Hose Bibs: At least 1 hose bib with an appropriate backflow preventer must be provided to facilitate cleaning the deck areas.

4-006.10F Pool Concessions: Where concessions are provided, an area or areas separate from the pool deck must be designated for serving and consuming food or drink.

4-006.10G Drinking Fountain: A minimum of 1 drinking fountain must be located in the swimming pool area for Class A swimming pools. Each drinking fountain must be connected to a water system that meets the requirements of 178 NAC 4-006.13A.

4-006.11 Barriers: The pool area must be completely surrounded by an effective barrier not less than 6 feet high. Any special purpose areas inside the barrier must be fenced or constructed to control traffic. These areas must be designed so they will not drain onto the deck. Any entrance to the pool area must be provided with a self-closing and latching gate/door capable of being locked unless another means of controlling access is provided. The operating controls for the self-latching device must be located at least 48" above the exterior ground surface or pool deck. Barrier openings must be small enough that a 4-inch sphere is not able to pass through.

4-006.12 Lighting, Electrical and Ventilation Requirements

4-006.12A Lighting: During periods of operation sufficient illumination must be provided to allow visibility of all portions of the pools, including the bottom. Illumination must be provided by natural and/or artificial means.

4-006.12A1 Overhead lighting must provide a minimum of 3 foot candles of illumination at the pool water surface and the adjacent deck area.

4-006.12A2 Underwater lighting must provide a minimum of 1/2 watt per square foot of pool water surface.

4-006.12A3 Underwater lighting requirements may be waived when the overhead lighting provides a minimum of 15 foot candles of illumination at the pool water surface.

4-006.12B Electrical: All electrical installations must conform to the requirements of the State Electrical Act, Neb. Rev. Stat. §§ 81-2101 through 81-2143.

4-006.12C Heating and Ventilation

4-006.12C1 Room Ventilation: Bathhouses, mechanical equipment rooms, storage areas and indoor swimming pool enclosures must be heated and ventilated. Room ventilation must prevent direct drafts on swimmers and must minimize condensation damage. Dehumidifier, air conditioner, and heat exchanger installations must comply with 178 NAC 4-006.13E and 4-006.13F.

A fuel-burning heating unit must be provided with air for combustion and vented to the outdoors.

4-006.13 Water Supply and Waste Water Disposal

4-006.13A Water Supply: Water supplied to a public swimming pool and all related plumbing fixtures, including drinking fountains, sinks and showers, must use water from a public water system (PWS). If a PWS is not available, ground water quality must meet the requirements for coliform bacteria and nitrates that apply to a transient public water system (See 179 NAC 2-002 and 179 NAC 3).

4-006.13B Cross-Connection Control: All portions of the water distribution system serving a public swimming pool and related facilities must be protected against backflow and back siphonage. Water introduced into the pool, either directly or to the recirculation system, must be through an air gap or an appropriate approved backflow preventer as required by the Department.

4-006.13C Sanitary Wastes: An approved method for disposing of sanitary sewage must be provided at a public swimming pool. Where available, a municipal sanitary sewage system must be used. If an individual treatment system must be used, approval of the system must be obtained from the Nebraska Department of Environmental Quality.

4-006.13D Backflow Prevention: In a public swimming pool, the recirculation system and pool deck drains must be protected against the backflow of waste water in a manner approved by the Department.

4-006.13E Condensate: Condensate must not be introduced to the pool water or any part of the recirculation system.

4-006.13F Heat Exchangers: Any heating, dehumidification or cooling system which is connected in any way with the pool recirculation system must contain only nontoxic heat transfer media.

4-006.14 Recirculation System: Each swimming pool must be provided with a separate recirculation system, which will convey, clarify, chemically balance and disinfect the swimming pool water. The recirculation system must include pumps, piping, filters, chemical feed equipment, and associated controls and monitoring devices.

4-006.14A Components: Recirculation system components must be certified to ANSI/NSF Standard 50 by an organization accredited by the American National Standards Institute.

4-006.14B Recirculation Rate: A swimming pool recirculation system must be capable of processing 1 pool volume of water within a given period of time based on

depth of water. The following table must be used as minimum design standards for recirculation rate.

Pool Turnover Rate Table

Type or Depth of Pool	Required Turnover Rate
Spray parks with no standing water	1 system volume of water every 30 minutes or less for a water treatment tank
Pool areas less than or equal to 2 feet in water depth	1 pool volume of water every 1 hour or less
Pool areas greater than 2 feet but less than or equal to 3 feet in water depth	1 pool volume of water every 2 hours or less
Pool areas greater than 3 feet but less than or equal to 5 feet in water depth	1 pool volume of water every 4 hours or less
Pool areas greater than 5 feet in water depth	1 pool volume of water every 6 hours or less
Plunge Pool for Flume Slide	1 pool volume of water every 1 hour or less

For a single pool with varying water depths, the total pool recirculation rate may be obtained by summing the recirculation rates required for each depth portion in accordance with the above table.

4-006.14C Materials: Recirculation system components in contact with the swimming pool water must be of non-toxic material, resistant to corrosion, and able to withstand operating pressures. Acceptable materials are copper, stainless steel, cast iron, ductile iron, plastics approved for potable water contact or other materials suitable for potable water contact.

4-006.14D Pipe Sizing: Swimming pool recirculation system piping must be designed so that the water velocity does not exceed 10 feet per second on the discharge side of the recirculation pump, and 6 feet per second in suction piping. Gravity piping must be sized in accordance with accepted engineering practice with consideration of available head.

4-006.14E Drainage and Installation: All equipment and piping must be designed and fabricated to drain completely by use of drain plugs, drain valves or other means. All piping must be supported continuously or at sufficiently close intervals to prevent sagging. All suction piping must be sloped in 1 direction, preferably toward the pump. All supply and return pipelines to the pool must be provided with insertable plugs or valves to allow the piping to be drained to a point below the frost line. Provision must be made for expansion and contraction of pipes.

4-006.14F Pipe and Valve Identification: All exposed piping must be clearly marked to indicate function. All valves must be marked to indicate use.

4-006.14G Overflow Systems: All pools must be designed to provide continuous skimming (removal of surface water). Makeup water supply equipment must be provided to maintain continuous skimming.

4-006.14G1 Gutters (Perimeter Overflow Systems): The gutter must extend around the full perimeter of the swimming pool except at stairways and ramps (6 feet or less in width) entering the swimming pool. It must be level within a tolerance of plus or minus 1/8 inch. Piping connections must be provided to permit water to flow from overflows to the recirculation system.

4-006.14G1a Size and Shape: The gutter system must be designed to allow continuous removal of water from the pool's upper surface at a rate of at least 125 percent of the recirculation rate. The gutter must be designed to serve as a handgrip and to prevent entrapment of arms or legs. It must permit ready inspection, cleaning and repair.

4-006.14G1b Outlets: Drop boxes, converters, return piping or flumes used to convey water from the gutter must be designed to handle at least 125 percent of the recirculation rate. Drainage must be sufficient to minimize flooding and prevent backflow of skimmed water into the pool.

4-006.14G1c Surge Capacity: All overflow systems must be designed with an effective surge capacity of not less than 1 gallon for each square foot of pool surface area. Surge must be provided within a surge tank, in the gutter or filter above the normal flow line, or elsewhere in the system. Surge tanks, gutters, and filter tanks must have overflow pipes to convey excess water to waste. Surge tanks must be provided with means for complete draining. In-pool surge is allowed only with an engineered perimeter gutter system which includes an integral surge weir for each 500 square feet of water surface, and a tank to allow balancing of main drain and gutter flows.

4-006.14G2 Skimmers: The use of skimmers is limited to pools with widths of 30 feet or less.

4-006.14G2a Construction: Skimmers must be installed in the pool walls, be sturdy, and be constructed of corrosion-resistant materials. Surface skimmers must bear the ANSI/NSF 50 certification mark or be certified to ANSI/NSF Standard 50 by an organization accredited by the American National Standards Institute.

4-006.14G2b Number: At least 1 surface skimmer must be provided for each 500 square feet of surface or fraction thereof. Additional skimmers may be required to achieve effective skimming. At least 2 skimmers must be provided.

4-006.14G2c Location: Skimmers must be so located as to provide effective skimming of the entire water surface with minimum interference and short-circuiting.

4-006.14G2d Flow Rate: Skimmers must provide for a flow-through rate of 30 gallons per minute or 3.75 gallons per minute per lineal inch of weir, whichever is greater. Skimmer piping must be designed to handle a minimum of 100% of the pool turnover rate.

4-006.14G2e Control: Skimmers must have weirs that adjust automatically and operate freely and continuously with variations of at least 4 inches in water level. All skimmed water must pass through an easily removable and cleanable basket or screen before encountering control valves or entering the pump suction line. Each skimmer must be equipped with a device to control flow. If a skimmer is connected directly to the recirculation pump suction pipe, it must include a device to prevent an airlock in the suction line. If equalizer pipes are used, they must pass an adequate amount of water to meet pump suction requirements should the water in the pool drop below the weir level. The equalizer pipes must be located at least 1 foot below the lowest overflow level of the skimmer. A valve or equivalent device that will remain tightly closed under normal operating conditions, but automatically opens when the water level drops below the minimum operating level of the skimmer, must be provided on each equalizer pipe. Equalizer lines must have covers that comply with the ASME/ANSI A112.19.8-2007 or -2008 or other standard approved under the federal Virginia Graeme Baker (VGB) Act.

4-006.14G3 Balancing: The recirculation system must be balanced to provide for optimum and uniform skimming.

4-006.14H Main Drain System and Suction Outlets: Main drains of the pool must be installed in the pool floor at the deepest point, and must comply with ASME/ANSI A112.19.8-2007 or -2008 or other standard approved under the federal VGB Act.

4-006.14H1 Number: 2 or more main drains or suction outlets, or a single unblockable main drain or suction outlet must be installed. Dual main drains or suction outlets must be connected in parallel, and must not permit any drain to be individually valved off.

4-006.14H2 Spacing: Dual main drains or suction outlets must be at least 3 feet apart but not greater than 20 feet on centers, and main drains must be provided not more than 15 feet from each side wall.

4-006.14H3 Field Fabricated Main Drains or Suction Outlets: Must be certified by a design professional per ASME/ANSI A112.19.8-2007 or -2008 or other standard approved under the federal VGB Act. The open area of the grate must be large enough so the flow velocity does not exceed 1.5 feet per second through the openings. Openings in grates must not be over 1/2-inch wide. Gratings or drain covers must not be removable without the use of tools.

4-006.14H4 Piping: The main drains and associated piping must be designed to carry 100 percent of the recirculation rate, and must be equipped with a valve.

4-006.14I Anti-entrapment for Existing Pools

4-006.14I(1) All pools must be equipped with anti-entrapment devices or systems that comply with the ASME/ANSI A112.19.8-2007 or -2008 performance standard, or any other standard approved under the federal VGB Act; and

4-006.14I(2) All pools with a single main drain other than an unblockable drain must be equipped, at a minimum, with 1 or more of the following devices or systems designed to prevent entrapment by pool or spa drains that meets the safety requirements of any ASME/ANSI or ASTM performance standard if there is such a standard for such device or system, or any applicable consumer product safety standard:

1. Safety Vacuum Release System: A safety vacuum release system which ceases operation of the pump, reverses the circulation flow, or otherwise provides a vacuum release at a suction outlet when a blockage is detected, that has been tested by an independent third party and found to conform to ASME/ANSI standard A112.19.17-2007 or ASTM standard F2387.
2. Suction-Limiting Vent System: A suction-limiting vent system with a tamper-resistant atmospheric opening.
3. Gravity Drainage System: A gravity drainage system that utilizes a collector tank.
4. Automatic Pump Shut-Off System: An automatic pump shut-off system.
5. Drain Disablement: A device or system that disables the drain may be allowed per a design professional's certification and Department review and approval.
6. Other Systems: Any other system determined by the Department to be at least as effective as the systems described in items 1 through 5 above at preventing or eliminating the risk of injury or death associated with pool drainage systems.

4-006.14J Pumps and Strainers

4-006.14J1 Strainers: A cleanable strainer or screen must be provided to remove solids, debris, hair, and lint on all pressure filter systems before entering the pump. The strainer must have a quick-opening cover. At least 1 spare strainer basket must be provided. In systems where the filter is located on the suction side of the pump, strainers are not required.

4-006.14J2 Pumping Equipment: A pump and motor must be provided for the recirculation of the swimming pool water. The pump must provide the recirculation flow rate, and the filter backwash rate unless a separate backwash pump is provided against the total dynamic head generated in the recirculation system. The pump must be self-priming or must be installed so that there is a net positive suction head on the pump inlet whenever the pump is operating. The Department may permit multiple pumps. A gauge which indicates pressure and/or vacuum, as appropriate, must be installed on the pump suction header, and a pressure gauge must be installed on the discharge side of the pump.

4-006.14J3 Pumps and motors must be readily accessible for inspection and service.

4-006.14K Flow Measurement and Control

4-006.14K1 Flow Measurement: A flow meter or other device which gives a continuous indication of the flow rate in gallons per minute in the recirculation system must be provided. Flow meters must have a measurement capacity of at least 1.5 times the design recirculation flow rate, and must be accurate within 10% of the actual flow rate. The indicator must have a range of readings appropriate for the anticipated flow rates, and be installed where it is readily accessible for reading and maintenance, and with straight pipe upstream and downstream of any fitting or restriction in accordance with the manufacturer's recommendation.

4-006.14K2 Flow Regulation: A device for regulating the rate of flow must be provided in the recirculation pump discharge piping.

4-006.14L Inlets: The recirculation system must have inlets adequate in design, number and location to insure effective distribution of treated water and maintenance of uniform disinfectant residual throughout the swimming pool.

4-006.14L1 Number: The number of return inlets must be based on a minimum of 1 return inlet per 300 square feet of pool surface area or fraction thereof. Wall inlets must be spaced not over 20 feet apart, with 1 inlet within 5 feet of each corner of the pool and 1 in each recessed step area.

4-006.14L2 Location: Wall inlets must be located at least 12 inches below the design water surface, or not less than 6 inches if designed to provide downward flow. Bottom inlets must be uniformly spaced, with a separating distance of no greater than 20 feet.

4-006.14L3 Type: Inlet fittings must be of the adjustable rate-of-flow type. Directional flow inlets must be used with skimmer-type pools. Floor inlets must not project from the pool floor. Wall inlets must not extend from the wall more than 2 inches.

4-006.15 Filtration (General): A swimming pool water treatment system must have 1 or more filters. Filters must bear the NSF/ANSI Standard 50 certification mark or be certified to ANSI/NSF Standard 50 by an organization accredited by the American National Standards Institute. They must be installed with adequate clearance and facilities for ready and safe inspection, maintenance, disassembly and repair.

4-006.15A Sand Filters

4-006.15A1 Filter Rate: The design filtration rate of rapid sand filters must not exceed 3 gallons per minute per square foot of filter area. High-rate sand filters must not exceed a filtration rate of 15 gallons per minute per square foot. Higher rates may be used if the filter has been successfully tested against NSF/ANSI Standard 50 at the higher rate. The sand filter system must be equipped to backwash each filter at a rate of 15 gallons per minute per square foot of filter bed area, or as recommended by the manufacturer. A flow meter or other device which gives a continuous indication of the flow rate in gallons per minute to indicate the backwash rate for rapid sand filters must be provided. The backwash water must be discharged to waste through a suitable air gap.

4-006.15A2 Filter Media: Sand or other media must be carefully graded and meet the manufacturer's recommendation for pool use.

4-006.15A3 Accessories: Accessories must include both an influent pressure gauge and an effluent pressure gauge or a differential pressure gauge, a backwash sight glass, and an air relief valve. The filter system must have valving and piping to allow isolation, drainage, and backwashing of individual filters, if needed for proper operation.

4-006.15B Diatomaceous Earth- (DE) Type Filters

4-006.15B1 Filter Rate: The design filtration rate for pressure or vacuum filters must be not greater than 1.5 gallons per minute per square foot of effective filter area, except that a maximum filtration rate of 2 gallons per minute per square foot may be allowed for vacuum DE filters only where continuous "body feed" is provided.

4-006.15B2 Precoating: The filter piping must be designed to refilter or waste the effluent until a uniform body coat is applied.

4-006.15B3 Regenerative-Type Filters: Regenerative-type filters must meet the same standards as other pressure filters. Bumping (or agitating) by air or manual means must be provided for, and provision for inspection of elements must be provided.

4-006.15B4 Accessories: Accessories for vacuum filters must include a vacuum gauge and a vacuum limit switch interconnected with the pump. Pressure filters require a backwash sight glass, effluent pressure gauge, influent pressure gauge and air relief valve. Valving and piping must be provided to allow isolation, drainage, and backwashing of individual filters, if needed for proper operation.

4-006.15C Cartridge-Type Filters

4-006.15C1 Filter Rate: The design filtration rate for surface-type cartridge filters must not exceed 0.375 gallons per minute per square foot.

4-006.15C2 Cleaning and Disinfection: Equipment and facilities must be provided for cleaning and disinfection of filter elements.

4-006.15C3 Accessories: Accessories must include both an influent and an effluent pressure gauge or a differential pressure gauge and an air relief valve.

4-006.15C4 Spare Cartridges: An extra set of cartridges, with at least 100% filter area, must be provided.

4-006.16 Disinfection and Chemical Application Equipment

4-006.16A Chemical Feed Equipment: Feeders must be of sturdy construction and materials which will withstand wear, corrosion or attack by the chemical to be used therein, and which are not adversely affected by repeated, regular adjustments or other normal use conditions. The design must minimize potential for blockage.

4-006.16A1 Maintenance: Feeders must be capable of being easily disassembled for cleaning and maintenance.

4-006.16A2 Intended Use: The chemical feeder must be used only for chemicals recommended for use by the feeder manufacturer.

4-006.16A3 Safeguards: The feeders must incorporate antisiphon safeguards so that the chemical cannot continue to feed into the swimming pool, the pool piping system, or the swimming pool enclosure if any type of

failure of the pool equipment occurs. Chemical feed systems must be designed to prevent chemical feed when water is not flowing from the recirculation system to the pool.

4-006.16A4 Cyanuric Acid and Indoor Pools

1. Cyanuric acid will not be allowed in new indoor pools.
2. When replaced, a chemical feed system must not use cyanuric acid or stabilized chlorine.

4-006.16B Disinfection: Swimming pools must be designed to provide for continuous disinfection of the pool water with a chemical which is an effective disinfectant, and which imparts an easily measured, active residual.

4-006.16B1 Disinfectant Feeders: An automatic feeder which is easily adjustable must be provided for the continuous application of disinfectant.

4-006.16B2 Capacity: Feeders must be capable of supplying disinfectant at a rate of 0.1 pound per day chlorine (or equivalent) per gallon per minute recirculation flow. This equates to a minimum of 8 parts per million in the recirculation flow. The chemical feed system must be designed to provide a 24-hour supply of disinfectant.

4-006.16B3 Hypochlorinators: Where hypochlorinators are used, feed must be capable of being continuous under all conditions of pressure in the recirculation system.

4-006.16B4 Other Disinfectants: The Department will accept other disinfecting materials or methods when it has been adequately demonstrated that they provide a satisfactory residual which is easily measured and that they are otherwise equally effective under conditions of use as is the chlorine concentration required in 178 NAC 2-005.02D, create no objectionable physiological effects, are not dangerous to public health, and do not impart toxic properties to the water. Feed equipment must bear the ANSI/NSF-50 certification mark or be certified to ANSI/NSF Standard 50 by an organization accredited by the American National Standards Institute and must be installed in accordance with the manufacturer's instructions.

4-006.16C Test Equipment: The owner of each swimming pool must have at least the following testing equipment at the pool:

1. Chlorine/Bromine Test Kit or FAS-DPD (Ferrous Ammonium Sulfate-Diethyl-P-Phenylene Diamine) Test Kit: If other halogens are used, an appropriate scale must be provided. Electronic residual monitoring devices may be used in addition to the test kit.

2. pH Test Kit: A pH test kit with a range from 7.0 to 8.0, accurate to the nearest 0.2 pH unit.
3. Alkalinity Test Kit: The alkalinity test range must be at least 60 to 400 parts per million (mg/L) as CaCO₃.
4. Cyanuric Acid Test Kit: Where cyanurates are used, a test kit to measure the cyanuric acid concentration must be provided. It must permit readings to at least 100 parts per million (mg/L) with maximum increments of 25 parts per million (mg/L).

4-006.17 Bathhouse

4-006.17A General: All Class A pools must have a bathhouse. The term bathhouse refers to the dressing, shower, and sanitary facilities which must be provided adjacent to the swimming pools. All class B, C, D, E, and F swimming pools are required to have minimum sanitary facilities (toilets and sinks). Omission of part or all of the pool-side shower and toilet facilities may be approved by the Department when adequate facilities are conveniently available as determined by the Department.

4-006.17B Design Criteria

4-006.17B1 Bathhouse Routing: Location of the bathhouse must be designed so that the patrons must pass through the bathhouse to enter the pool. The layout of the bathhouse must be designed so that the patrons, on leaving the dressing room, pass the toilets, then the showers on route to the swimming pool.

4-006.17B2 Bathhouse Design: Floors of the bathhouse must be of smooth-finish material with slip-resistant surface, impervious to moisture, easily cleanable and sloped at least 1/4 inch per foot to drains. Carpeting is not permitted in shower and toilet areas.

4-006.17B3 Fixture Requirements: Unless exempted by 178 NAC 4-006.17A, bathhouse facilities must be provided based on maximum patron load designed for the swimming pool according to the following fixture schedule. Fixtures provided in family changing rooms or other unisex restroom facilities which are available to swimming pool patrons may be included in the required male or female fixture count, but not both.

Total Patron Load	Fixtures Required Male				Fixtures Required Female		
	Toilets	Urinals	Sinks	Showers	Toilets	Sinks	Showers
0-50	1	1	1	1	2	1	1
51-100	1	1	1	1	2	1	1
101-150	1	2	1	2	3	1	2
151-200	1	2	1	2	3	1	2
201-250	2	2	1	3	4	2	3
251-300	2	3	2	4	5	2	4
301-400	2	3	2	5	5	2	5
401-500	3	3	2	6	6	2	6
501-1000	3	4	2	7	7	2	7
1001-1500	4	5	2	10	9	2	10
1501-2000	5	6	2	15	11	2	15
2001 or more	6	7	3	20	13	3	20

4-006.17B3a Showers and Sinks: Showers must supply water at a temperature of at least 90 degrees Fahrenheit (32°C) and no more than 115 degrees Fahrenheit (46°C) and at a rate of at least 1.5 gallons per minute per shower head. Sinks must supply water at a temperature of at least 90 degrees Fahrenheit (32°C) and no more than 115 degrees Fahrenheit (46°C). Single temperature fixtures must supply water at a temperature of at least 90 degrees Fahrenheit (32°C) and no more than 105 degrees Fahrenheit (41°C).

4-006.17B4 Suits and Towels: Where towels and/or swimming suits are furnished, facilities must be provided for storage of clean and collection of used items.

4-006.17B5 Foot Baths: The use of foot baths is prohibited.

4-006.17B6 Hose Bibs: Hose bibs must be provided and located to enable the entire bathhouse area to be flushed. All hose bibs must be provided with approved back-siphonage devices to protect the water distribution system for the pool and appurtenant facilities at all times against cross-connection.

4-006.18 Miscellaneous

4-006.18 A Pool Cleaning System: A system must be provided to remove dirt and other foreign material from the bottom of the pool. Built-in vacuum lines must not be used.

4-006.18B Starting Blocks: Starting blocks, when provided, must be located where the water depth is at least 5 feet. They must be removable.

4-006.18C Sand Area Rinse Showers: Sand areas are not allowed inside the pool enclosure unless separated by an effective barrier to control access to the swimming pool deck. Persons entering the swimming pool from the sand area must pass a water spray or shower which effectively removes sand from the bathers. Drainage must not be directed to the pool.

4-006.18D Boilers: Where boilers are provided, the design professional must attest that they meet the Boilers Inspection Act, Neb. Rev. Stat. §§ 48-719 through 48-743.

4-006.19 Spray Parks: Except as modified by 178 NAC 4-006.19, compliance is required with all other applicable portions of 178 NAC 4-006. A spray park is a constructed water play area with sprays, jets and other water features designed so that users have full body contact with the water. A spray park includes no standing water. A spray park uses water that is potable, recirculated independently or from a swimming pool. Spray parks are also called “wet decks,” “splash pads,” “interactive play attractions,” “spray pads,” or “water recreation attractions.” A play area with sprays or other features that uses only potable water that is not circulated (the water drains to waste) is not included in this definition.

4-006.19A General

4-006.19A1 Surface Material: The surface of a spray park must be impervious and durable. Padding specifically designed for the application may be used with play features. The padding must be water resistant or must permit full drainage without retaining water in its structure. Walking surfaces must be slip-resistant.

4-006.19A2 Surface Slopes: The splash zone must be properly sloped so that only water from the sprays flows back to the water treatment tank. Areas adjacent to the splash zone must be sloped away from the collection drains. Plants or vegetation within the immediate area of the splash zone are prohibited.

4-006.19A3 Spray Park Drains must not be directly connected to a pump. At least 2 drains must be provided. The openings in the drain covers (grates) must be no wider than ½ inch. Drain covers must be securely fastened to the drain structure so that they cannot be removed without tools. Drains and the associated piping must be designed for 125% of the flow into the spray park (play feature and recirculation, as applicable).

4-006.19A4 Play Features: Play features and sprays must be designed and installed so that they do not create a safety hazard.

4-006.19A4a Surface Sprays must be flush with the spray park surface. Spray openings must be ½ inch or less.

4-006.19A4b Above ground features must not present a tripping hazard. Features must not have sharp edges or points, or rough surfaces. Above ground features must be of corrosion-resistant materials or provided with a corrosion-resistant coating.

4-006.19A4c Atomized Mists: All foggers and jet nozzle sprays that produce finely atomized mists must be connected to a separate potable water source.

4-006.19B Water Treatment Tank: The recirculation system must be independent from any adjacent swimming pool. The recirculation system components and design must comply with all other applicable parts of 178 NAC 4-006 except as modified by 178 NAC 4-006.19.

4-006.19B1 Water Volume: The minimum water volume for a spray park must be 5 minutes of the flow in gallons per minute of the spray features and the recirculation system combined or 4,000 gallons, whichever is the larger volume.

4-006.19B2 Rate: The recirculation flow rate through the treatment system must provide a turnover of 30 minutes or less.

4-006.19B3 Tank Volume: The water treatment tank must have a volume of at least 125% of the volume specified in 178 NAC 4-006.19B1. The tank must be accessible for cleaning and inspection.

4-006.19B3a Drain: The water treatment tank must be provided with a drain to waste so that all of the water in the tank can be easily removed. (The drain must not be directly connected to a sanitary drainage system.)

4-006.19B3b Skimming: The water treatment tank must be provided with at least 2 skimmers or a fixed weir overflow system must be provided. The skimmers must be accessible for cleaning and service.

4-006.19B3c Automatic level control: The water level in the water treatment tank must be automatically maintained at the overflow (skimming) level.

4-006.19B4 Separate Systems: The recirculation (treatment) system and the play feature pump(s) and piping must be separate. The play feature pump system must be designed so that it will not operate if the recirculation system pump is not operating.

4-006.19B5 Play Feature Piping: The play feature pump suction within and return to the water storage tank must be designed to prevent short-circuiting of the water to

the extent possible. The suction intake from the recirculation pump must be located in the lowest portion of the water treatment tank. Play features and piping must automatically drain into the water treatment tank when the play features are not operating. An easily readable flow meter that complies with the requirements of 178 NAC 4-006.14K1 must be installed in the play feature circulation system.

4-006.19B6 Treated Water Distribution: The treated water distribution system in water storage tank must be designed to maintain water quality as outlined in 178 NAC 2.

4-006.19B7 Sample Tap: A readily accessible sample tap must be available in the equipment area that allows sampling of the water in the play feature piping.

4-006.20 Fountains, sprays, or similar features in a swimming pool are permitted only in water depths not exceeding 2 feet. These features must be of a nonclimbable design, unless specifically manufactured and marketed as a climbing structure. Water supplied to these fountains must come from the recirculation system after filtration. Water supplied to these fountains may also come from the main swimming pool excluding the surge tank main drain, gutters, skimmers, and depths of less than 2 feet. Dedicated wading or zero depth pools not exceeding 2 feet in depth must use filtered water.

4-006.21 Bridges and Overhead Obstructions: Bridges and overhead obstructions over the pool must be designed so they will not introduce any contamination to the pool water. The minimum height of the bridge or obstruction must be at least 8 feet from the bottom of the pool and at least 4 feet above the surface of the pool. Minimum 42-inch high handrails must be provided along each side of the bridge. The walking surfaces must be constructed of concrete or other nonabsorbent material having a smooth slip-resistant finish.

4-006.22 Spas: A spa is a specific type of swimming pool, such as a hot tub or whirlpool designed for recreational use which is not intended to be drained, cleaned, and refilled after each individual use. It may include, but not be limited to, hydrojet circulation, hot water, cold water, mineral baths, air induction systems, or any combination thereof. A pool used under direct supervision of qualified medical personnel is excluded.

4-006.22A General: Requirements for conventional swimming pools may be modified or waived for spas at the discretion of the Department. Except as modified by 178 NAC 4-006.22, compliance is required with all other applicable sections of 178 NAC 4-006.

4-006.22B Physical Separation: A spa pool must be physically separate from any other pool, and there must be no commingling of water between a spa pool and another pool or spa pool.

4-006.22C Patron Load: The patron load must not exceed 1 person per 3 lineal feet of seat or bench measured at the front edge.

4-006.22D Maximum Depths: The maximum water depth must be 4 feet measured from the water line. The maximum depth of any seat or sitting bench must be 2 feet measured from the water line.

4-006.22E Stairs, Ladders, and Recessed Treads: Stairs, ladders, or recessed treads must be provided when spa depths are greater than 2 feet. A spa must be equipped with at least 1 means of egress with handrails for each 50 feet of perimeter or portion thereof.

4-006.22F Deck Widths: A 5-foot minimum width, continuous, unobstructed deck, which may include the coping, must be provided on 2 sides or 50% or more of the spa. When the spa is adjacent to another pool, the spa must be located at the shallow end, with a minimum distance of 5 feet between the 2 bodies of water.

4-006.22G Water Temperature Controls: Controls must be provided to prevent water temperatures in excess of 104 degrees Fahrenheit (40°C). The controls must be accessible only to the Nebraska swimming pool operator.

4-006.22H Spa Drainage: Means to completely drain the spa must be provided to allow frequent draining and cleaning. Water suction outlets must conform to 178 NAC 4-006.14H (new) or 178 NAC 4-006.14I (existing).

4-006.22I Surface Skimmers: 1 surface skimmer must be provided for each 100 square feet or major fraction thereof of surface area.

4-006.22J Recirculation System Inlets: A minimum of 2 inlets must be provided.

4-006.22K Air Induction Systems: An air induction system, when provided, must prevent water back-up that could cause electrical shock hazards. Air intake sources must not permit the introduction of toxic fumes or other contaminants.

4-006.22L Disinfectant Feeders: Gas chlorinators must not be used.

4-006.22M Recirculation Rate: The recirculation rate must provide 30 gallons per minute per skimmer, or provide a 30-minute turnover, whichever provides a greater flow rate.

4-006.22N Agitation Systems: The agitation system must be separate from the water treatment recirculation system. The agitation system must be connected to a timer located out of reach of a person in the spa. The timer must not exceed 15 minutes.

4-006.22O An emergency shutoff switch must be located within sight of the spa, at least 5 feet horizontally from the inside walls of the spa, and must be clearly labeled. This control must disable all spa circulation, agitation, air induction systems, as well as other associated mechanical, chemical feed and electrical devices.

4-006.22P Roofs or canopies over spa pools, when provided, must be constructed so that moisture or condensation from the roof or canopy will not drain into the spa pool. Where a roof or canopy covers the spa pool, the height from the rim of the spa pool to the lowest point of the canopy must be at least 7-1/2 feet.

4-006.22Q All room heating units must be isolated or protected from contact with spa or tub users to prevent injury. The pool or tub room-heating unit must be capable of maintaining a temperature of 75°F to 82°F.

4-006.22R An in-line thermometer on the spa/hot tub water return line is required.

4-006.23 Wading Pools: A wading pool is a pool that is no more than 24 inches deep that is intended for use by young children.

4-006.23A General: Wading pools require special consideration in design because of the type of user, the relatively small volume of water, and the shallowness of the water. Except as modified by 178 NAC 4-006.23, compliance is required with all other applicable parts of 178 NAC 4-006.

4-006.23B Recirculation

4-006.23B1 Rate: The recirculation rate must provide a turnover of 1 hour-or less.

4-006.23B2 Separate System: A wading pool must have a separate recirculation system from other swimming or wading pools.

4-006.23B3 Surface Skimming: Intermittent fixed weir overflow structures, including gutters, scuppers, and drains at zero depth may be used. The overflow system must have a hydraulic capacity of at least 125 percent of the recirculation flow rate.

4-006.23B4 Skimmer Equalizer Line: A skimmer equalizer line may be connected to the main drain.

4-006.23B5 Inlets: Inlets must be designed and located to distribute treated water to all parts of the wading pool and to move debris to the overflow and drain systems.

4-006.23C Safety

4-006.23C1 Barrier and Location: When a wading pool is in the same enclosure as a supervised swimming pool, there must be a barrier at least 3 feet high between the wading pool and the swimming pool. When a wading pool is adjacent to a swimming pool, it must be near the shallow end of the

pool. A self-closing, self-latching gate must be between the wading pool and the swimming pool.

4-006.23C2 Barrier: Stand-alone wading pools or wading pools associated with unsupervised swimming pools must have a barrier, as required by 178 NAC 4-006.11.

4-006.23C3 Depth Marking: Signs must be provided at the pool indicating the maximum depth in addition to other required depth markings.

4-006.23C4 Steps or Ladders: Steps or ladders are not required at wading pools.

4-006.24 Wave Pools: A wave pool is a special-use pool with wave generating equipment and a design which provides for control of the waves within the side walls and dissipation of the waves at a zero depth shallow end.

4-006.24A General: Wave pools require special consultation with the Department for consideration of design variations and areas where potential problems may exist. Requirements for conventional swimming pools may be modified or waived for wave pools at the discretion of the Department. Except as modified by 178 NAC 4-006.24, compliance is required with all other applicable sections of 178 NAC 4-006.

4-006.24B Depths: The water depth may be reduced to zero at the shallow end to allow for safe access and for dissipation of the waves.

4-006.24C Gutters: Overflow gutters must be provided, but may be omitted along the side of the pool with the wave generating equipment if effective skimming devices are provided instead. Continuous skimming must be provided during the quiescent period over the entire length of the gutter. The zero depth end must have a continuous trench with a grate.

4-006.24D Decks and Ladders

4-006.24D1 Barriers: A safety railing or other effective barrier at least 42 inches in height must be provided to prevent swimmers from entering the pool at any location other than the zero water depth end. It must have at least 1 intermediate-height rail or rope.

4-006.24D2 Runout: Runout areas sloping down toward the zero depth trench must not exceed 4 feet.

4-006.24D3 Access: Deck areas accessible to swimmers may be omitted along the side of the pool with the wave generating equipment.

4-006.24D4 Ladders: Ladders must be of a recessed design.

4-006.24E Waves

4-006.24E1 Magnitude: The wave generating equipment must not be capable of producing waves of a magnitude which could cause swimmers to have contact with the pool bottom in the deep end.

4-006.24E2 Emergency Shutoff: An emergency shutoff for the wave generating equipment must be provided at every lifeguard chair at a minimum. At least 4 emergency shutoffs must be provided.

4-006.24F Openings

4-006.24F1 Inlet: The zero depth area must have bottom inlets.

4-006.24F2 Openings to Wave Generating Equipment: Openings to wave generating equipment must be designed to prevent entrapment of swimmers.

4-006.25 Zero Depth Pools

4-006.25A General: Except as modified by 178 NAC 4-006.25, zero depth pool facilities must comply with all other applicable provisions of 178 NAC 4-006.

4-006.25B Zero Depth End: A gutter or trench with a grate cover is required along all zero depth areas. It must be at an elevation that allows effective skimming at the trench at all times.

4-006.25C Runout: Runout areas sloping toward the zero depth trench must not exceed 6 feet.

4-006.25D Bottom Inlets: A system of bottom inlets must be provided in the shallow end, designed to provide the minimum of a 2-hour turnover for that area.

4-006.26 Pool Slides: All slides used at pools must be specifically designed and intended for use with a pool, and for the specific application. An emergency shutdown control must be provided for all water slides. This control must stop all water flow on the slide and must be mounted in the pool area, no more than 50 feet from the slide for lifeguards or for slide users, if no lifeguards are present. Water slides require special consultation with the Department for consideration of design variations and areas where potential problems may exist. Requirements for swimming pools may be modified or waived for water slides at the discretion of the Department. Except as modified by 178 NAC 4-006.26, compliance is required with all other applicable sections of 178 NAC 4.

4-006.26A Entry: Slide entry areas must be designed so the rider is able to properly enter and position him/herself before sliding down the chute. This area

must be a small platform or a less-sloped portion of chute, with well-placed assist bars.

4-006.26B Handrails: Slides must have handrails on both sides of the ladder or steps. Platforms and landings must have guardrails not less than 42 inches high, with an effective barrier such that a 4-inch diameter sphere cannot pass through. Handrail height must not be less than 34 inches and not more than 38 inches high, with balusters or ornamental patterns such that a 4-inch diameter sphere cannot pass through.

4-006.26C Pump Intake: Water from the surge tank and water leaving the pool for recirculation (for example, main drain, gutter, skimmers, main drain line) must not be used for pump intakes. (See 178 NAC 4-006.14H.)

4-006.26D Children's Activity Slides: Children's activity slides are small slides with a low exit velocity designed by the manufacturer for use by small children at pools. They must be designated by the manufacturer for use in 24 inches or less of water, and installed accordingly.

4-006.26E Drop Slides: A drop slide is a slide which discharges to a pool with a drop of more than 2 inches to the water surface.

4-006.26E1 Landing Area: There must be a drop slide landing area extending 5 feet on either side of the center line of the slide and from the back wall to 20 feet in front of the slide terminus. This area must not infringe on the required landing areas for other drop slides, water slides, or diving equipment.

4-006.26E2 Landing Area Designation: The drop slide landing area must be clearly designated by float ropes. A slide mounted in a separate diving area may be allowed to use the diving area separation as long as access to the diving well is restricted to patrons using the slide and diving equipment.

4-006.26E3 Slide Terminus: The terminus of the chute must extend beyond the pool wall, and be so oriented that the safety area in front of the slide does not interfere with the safety area of another slide or other pool equipment.

4-006.26E4 Exit Angle: The maximum angle of the slide runway at the exit must be between zero degrees and 11 degrees, measured downward from horizontal.

4-006.26E5 Water Depth: The area from the slide terminus outward 6 feet in front of the slide terminus must have a depth as established from the table below. The slide must be constructed so the rider enters the water in this 6-foot area. If the depth is 5 feet or less, the bottom in this area must have a maximum slope of 1 inch in 12 inches (1:12), and the slide must be located at least 5 feet from any change to steeper slope of the pool bottom.

Water Depth from the Slide Terminus to 6 Feet in Front of the Terminus (see above)	Corresponding Maximum Exit Height Above the Water
4 feet minimum	2 to 12 inches
>4 to 8 feet minimum	greater than 12 to 42 inches (Subject to interpolation)

4-006.26E6 Maximum Drop: The maximum drop height at the terminus of the slide must not exceed 42 inches.

4-006.26F Flume Water Slides: A flume water slide consists of 1 or more flumes entering a plunge pool or dedicated plunge area of a multiple use pool at or near the water level.

4-006.26F1 Flumes

4-006.26F1a Position: A flume must be perpendicular to the plunge pool wall for a distance of at least 10 feet from the exit end of the flume.

4-006.26F1b Clearances: The distance between the side of a flume terminus and a plunge pool side wall must be at least 4 feet. The distance between sides of adjacent flume terminuses must be at least 6 feet. The distance between a flume exit end and the opposite side of the plunge pool, excluding steps, must be at least 20 feet.

4-006.26F1c Elevation: A flume must terminate at a depth between 6 inches below the plunge pool operating water surface level and 2 inches above the water surface level. The flume must not exceed a 1-in-ten slope for a distance of at least 10 feet from its exit end.

4-006.26F1d Design: The design of the flume must minimize abrupt contact with the slide and prevent people from being airborne.

4-006.26F2 Plunge Pools

4-006.26F2a Depths: The plunge pool operating water depth at the end of a flume must be 3 to 4 feet. A depth of at least 3 feet must be maintained in front of the flume for a distance of at least 10 feet, from which the pool floor may have a constant slope upward.

4-006.26F2b Plunge Area: The plunge area in multi-use pools must be designated by float ropes, and each area must have ladders, steps, or stairs for egress.

4-006.26F3 Flume Pumps

4-006.26F3a Check Valves: Each flume pump discharge pipe must have a check valve.

4-006.26F3b Walkways: A 4-foot minimum width, surfaced walkway or steps must be provided between the plunge pool deck and the steps leading to the top of the flume(s).

4-006.26F3c Pump Reservoir: If a separate pump reservoir is provided, it must have a main drain and surface skimmer, both connected to the recirculation system.

4-006.27 Lazy River Rides: Except as modified by 178 NAC 4-006.27, compliance is required with all other applicable parts of 178 NAC 4.

4-006.27A Construction Material: Lazy River Rides must be constructed of concrete or other impervious materials with a nontoxic, smooth and slip-resistant finish. These rides must be of such shape and design as to be operated in a safe and sanitary manner.

4-006.27B Water Depth: The maximum water depth of the Lazy River Ride must not exceed 4 feet.

4-006.27C Decks: Decking must be provided at the entrance and exit points as necessary to provide safe patron access but must not be smaller than 10 feet in width and length. Additional decking along the ride course is not required except that decking is required at lifeguard locations and emergency exit points.

4-006.27D Emergency Exit Locations: Access and exit must be provided at the start and end of the ride only, except that emergency exit locations may be located along the ride course as necessary to provide for the safety of the patrons.

4-006.27E Patron Loading: 25 square feet of Lazy River water surface area must be provided for each patron.

THESE AMENDED RULES AND REGULATIONS replace Title 178 NAC 4, Public Swimming Pool Design and Construction Standards, effective June 8, 2004.

178 NAC 4 Attachment 1

Application for a Variance
One variance request per form
\$300 fee per variance

Project Number P- _____

PART I (To be completed by the applicant):

1. Name of Owner _____

Street Address _____ City _____

State _____ Zip _____ Telephone (____) _____

2. Name of Plan, Project, or Product _____

Street Address _____ City _____

State _____ Zip _____ Telephone (____) _____

3. Name of Contractor _____

Street Address _____ City _____

State _____ Zip _____ Telephone (____) _____

4. Engineer's/Architect's Name and Nebraska License # _____

5. State reason(s) for variance request. Attach 3 copies of applications, drawings, specifications, photos, etc., that clearly illustrate this variance request. (Attach separate sheet if necessary.)

6. Specific section(s) of 178 NAC 4 for which variance is requested.

7. State hardship and justification as to why the variance would relieve the hardship. (Attach separate sheet if necessary.)

7. State any additional reason or provide any technical documentation to support your supposition that a variance would not likely result in an impairment to public health. (Attach a separate sheet if necessary.)

- Approved
 Disapproved

Engineering Services Program Manager

Date

Comments:

178 NAC 4 Attachment 2

Swimming Pool Data and Check Sheet

Please fill out a separate Attachment 2 for each pool and/or spa.

Name of Pool:			
Address of Pool:	Street:		
	City:	State:	Zip: _____
Telephone:		Fax:	

Owner of Pool:			
Address of Owner:	Street:		
	City:	State:	Zip: _____
Telephone:		Fax:	

Name of Engineering/Architectural Firm:			
Address:	Street:		
	City:	State:	Zip: _____
Telephone:		Fax:	
Engineer's/Architect's Seal and Signature:			

Estimated Pool Cost:	\$
Initial Review Fee [\$100.00 + 0.5% of Estimated Pool Cost (Maximum \$7600.00)]:	\$
Estimated Start Date of Construction:	

Pool Type			
<input type="checkbox"/> Indoor		<input type="checkbox"/> Outdoor	
Purpose/Type of Pool (Check One):			
<input type="checkbox"/> Standard Swimming Pool	<input type="checkbox"/> Zero Depth Pool	<input type="checkbox"/> Wave Pool	<input type="checkbox"/> Slide Plunge Pool
<input type="checkbox"/> Wading Pool	<input type="checkbox"/> Diving Pool	<input type="checkbox"/> Spray Park	<input type="checkbox"/> Other

Variance: If a variance is being requested, please fill out Attachment 1.

Construction Approval (4-001)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are all the requirements of other applicable codes, i.e., electrical, ventilation, building, plumbing, fire, etc., met?

Design Standards (4-006)			
Safety Requirements (4-006.02)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will the depth markings be 4 inches high on the deck and vertical wall, and be no more than 25 feet intervals with a contrasting color to the background?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will a rescue tube/tow rope, and backboard be provided? (Class A)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will a shepherd's crook, rescue tube/ring buoy be provided? (Class B and F)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will a state approved first aid kit be provided?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will a telephone with emergency numbers be provided?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will chemical storage be labeled?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Carbon monoxide detector provided?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will a "No Lifeguard" sign be provided? (Class B and F)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will the pool sign have the exact language required in 178 NAC 4-006.03?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will the spa sign have the exact language required in 178 NAC 4-006.03?

Patron Loading (4-006.04)			
			Shallow Area (5 ft or less): ft ² 15 ft ² /patron = patrons
			Deep Area (5 ft or greater): ft ² 25 ft ² /patron = patrons
			Total Patron Load Based on Swimming Pool: patrons

Lifeguard Chairs (4-006.05)			
			Water Surface Area: ft ² Minimum number of chairs:

Construction Material (4-006.06)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Material inert, stable, non-toxic, watertight, slip resistant and enduring? Material:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Finish: white or light color? What is the color of the pool?

Structural Stability (4-006.07)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are swimming pools, spas and appurtenances (slides, platforms, main drains, etc.) constructed to withstand anticipated loading?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is there a boundary between the shallow and deep area of contrasting color at least 4 inches wide?

Decks (4-006.10)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the deck unobstructed 5 feet around the pool? What is the slope? in/ft Deck Drainage to: Grade Indirect Drains
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will at least 1 hose bib with a backflow preventer be provided?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will 1 drinking fountain be provided? (Class A ONLY)

Barriers (4-006.11)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the pool completely surrounded by a barrier not less than 6 feet high?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is there a self closing/latching gate with a latching mechanism at 48 inches or is there another means of controlling access?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the barrier such that a 4-inch sphere cannot pass through?

Lighting, Electrical and Ventilation Requirements (4-006.12)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the pool intended for nighttime use?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are 3 foot candles of lighting provided for overhead lighting?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is 1/2 watt per square foot of lighting provided for underwater lighting?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are underwater requirements waived due to 15 foot candles of illumination provided at the water surface?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does electrical conform to the State Electrical Act?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is ventilation provided per the appropriate regulating agency?

Water Supply and Waste Water Disposal (4-006.13)		
Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Recirculation System (4-006.14)		
Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overflow System (4-006.14G)		
Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Skimmers (4-006.14G2)		
Number:		Make:
Model:		Skimmer Pipe Size:
Yes	No	N/A
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Main Drain System Outlet (4-006.14H)			
Number (2 minimum or a single unblockable):		Make:	Model Number: _____
Size:		Pipe Size:	
Effective open area of each main drain: _____ sq. in.			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Pump Data (4-006.14J)						
	Number Installed	Spare Basket(s)	Make	Model	Capacity (gpm)	Hp
Swimming Pool						
Wading Pool						
Slide						
Other						
Yes	No	N/A				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will pumps and motors be readily accessible for inspection and service?			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are pumps self-priming or have a net positive suction head?			

	Swimming Pool	Wading Pool	Zero Depth Pool	Other
Volume	gal.	gal.	gal.	gal.
Surface Area	sq. ft.	sq. ft.	sq. ft.	sq. ft.
Perimeter (feet)	ft.	ft.	ft.	ft.
Filtered Return Water Flow Rate	gpm	gpm	gpm	gpm
Turnover Times	hrs.	hrs.	hrs.	hrs.

Flow Measurement and Control (4-006.14K)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the flow meter measured in gpm, capable of measurement of at least 1.5 times the recirculation rate, and accurate to 10% of the actual flow rate?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the flow meter installed in a straight pipe upstream and downstream of any fitting, and such that it is accessible for reading and maintenance?

Inlets (4-006.14L) (Check all that apply)			
<input type="checkbox"/> Wall Inlets—Number of Wall Inlets:		<input type="checkbox"/> Floor Inlets—Number of Floor Inlets:	
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are inlets located at least 12 inches below water level or not less than 6 inches if designed for downward flow?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are inlet fittings of the adjustable rate-of-flow type, are directional flow with skimmer type pools, not projecting from the floor (floor inlets), and do not extend from the wall more than 2 inches (wall inlets)?

Filtration (4-006.15)				
	Sand	D.E.	Cartridge	Other
Pressure				
Vacuum				
Gravity				
Maximum Capacity gpm/ft ²				
Effective Surface Area ft ²				
Manufacturer				
Model				
Other				
Yes	No	N/A		
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will filters be installed with adequate clearance and facilities for easy and safe inspection, maintenance, disassembly, and repair?	

Sand Filters (4-006.15A) (Check One)			
<input type="checkbox"/> Rapid Sand Filter		<input type="checkbox"/> High-Rate Sand Filter	
		<input type="checkbox"/> Backwash rate gpm/ft ²	
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the filter NSF approved?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Are the following included? <input type="checkbox"/> Influent Pressure Gauge <input type="checkbox"/> Effluent Pressure Gauge or Differential Pressure Gauge <input type="checkbox"/> Backwash Site Glass (rapid sand filter ONLY) <input type="checkbox"/> Air Relief Valve
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is valving, piping setup for isolation, drainage, and backwashing for individual filters?

Disinfection and Chemical Application Equipment (4-006.16)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is the disinfection system NSF approved?
Manufacturer:		Model #:	
Chemical Used:		Type of Disinfection Equipment:	
<input type="checkbox"/>	Chlorine gals/day	<input type="checkbox"/>	Gas
<input type="checkbox"/>	Bromine gals/day	<input type="checkbox"/>	Liquid NaOCl
<input type="checkbox"/>	Other (specify)	<input type="checkbox"/>	Erosion Feeder
		<input type="checkbox"/>	% Chlorine//Bromine
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does feeder have anti-siphon safeguards?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Can the feeder supply disinfectant at a rate of 0.1 pound per day chlorine (or equivalent) per gallon per minute of recirculation flow? This equates to 8 parts per million.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Maximum concentration of disinfectant in the recirculation stream = ppm.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If hypochlorinators are used, will the feed be capable of being continuous under all conditions of pressure in the recirculation system?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will a test kit be provided that will be able to test applicable parameters indicated in 178 NAC 4-006.16C?

Bathroom (4-006.17) (Class A Pools ONLY, if applicable)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Does the bathroom have a smooth finish, slip resistant, impervious to moisture, easily cleanable and sloped ¼ inch to the drains and no carpet?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will showers supply water at 1.5 gals/min?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will showers and sinks supply water at least 90° Fahrenheit (32° C) and no more than 115° Fahrenheit (45° C)?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Is a hose bib with a backflow device located for use in the entire bathroom?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minimum facilities (toilets and sinks) in Class B, C, D, E, F pools?

Miscellaneous (4-005.18)			
Yes	No	N/A	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will a system be provided to remove dirt and other foreign material from the bottom of the pool?
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Will boilers meet the Boilers Inspection Act?

Diving Boards (Indicate Number)			
Deck Level:		1 Meter:	3 Meter:
2/3 Meter:		3/4 Meter:	Other:

EFFECTIVE DATE
SEPTEMBER 14, 2010

NEBRASKA DEPARTMENT OF
HEALTH AND HUMAN SERVICES

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Slides (4-006.26)			
Height of slide exit above water:		feet	
Slide pump capacity:		gpm	
Number of Suction Outlets		Make:	Model:
Effective open area of each suction outlet:			

178 NAC 4 Attachment 3

Certification of Construction

Pursuant to Title 178 NAC 4, construction of the _____

located at _____

was completed on _____, 20_____

I certify that to the best of my knowledge and belief, said construction has been performed in substantial compliance with Title 178 NAC 4, and in accordance with the approved plans and specifications or approved change orders.

Signature

Date

PE/AIA License # _____

Final Fee

In accordance with 178 NAC 4-003.01 item 6.b., documentation of the contract or actual cost of the project must be provided to the Department for the purpose of determining the final fee amount. Payment of the final fee amount must be made to the Department before the project is placed into service.

Final contract or actual project cost \$ _____