UNION COUNTY ENGINEER
DIVISION OF BUILDING REGULATIONS

Residential Pool Permit Requirements

- FEES: A nonrefundable permit application fee of $25.25 and a nonrefundable plan review fee of $40.40 will be due at the time of application. (payable to Union County Building Department) Total due at time of application is $65.65.

- Pools will be charged a building permit fee of $50.50 building and $50.50 electrical permit fee. A mechanical fee of $40.40 will apply if your pool is heated as well as a gas piping fee of $40.40.

- Provide a zoning permit from the township/municipality

- Health Department site plan approval

**All plan submittals require two complete sets each stapled together**

- Provide detailed plot plans showing distances to any structures, fence or barricade location and locations of any utilities in the area, underground or overhead, well and septic system location

- Provide manufacturer drawings of pool or structural drawings of concrete pool

- Provide fence, barricade, gate, door closure and or alarm description

- Show location of pool equipment and electrical requirements

- Show electrical disconnect locations, wiring information and electrical over current device information. Provide adequate information to show compliance with Article 680 of the 2014 National Electric Code

- Show location of related or unrelated electrical devices or equipment in vicinity of pool

- Complete the questions on the attached pages and make sure your drawings show all the required information

---

TO SCHEDULE AN INSPECTION

Call (937) 645-3019

You must have your building permit # and address to schedule inspections

233 West Sixth Street • Marysville, Ohio 43040 • 937.645.3018 • 937.645.3161 Fax • engineer@co.union.oh.us
1. Yes  No  (Circle One)  
Are there any underground utilities within 5 feet of the pool (ie) electric, phone, TV cable, etc. if so the provisions of Article 680.10, 2014 NEC shall apply? Show location on your site plan.

2. Yes  No  (Circle One)  
Are there any overhead conductors in the vicinity of the pool, if so Article 680.8, 2014 NEC, overhead conductor clearance’s table shall apply. Show location on your site plan.

3. Yes  No  (Circle One)  
Provide details showing the installation of the required equipotential bonding grid and any metal parts requiring bonding at metallic structural components, under water lighting, metal fittings, electrical equipment, metal wiring methods and associated metallic parts per Article 680.26, 2014 NEC. Include an overhead view of the required equipotential bonding grid as required per Article 680.26, 2014 N.E.C. (ie) type of material, location of the grid material embedment, etc.

4. Yes  No  (Circle One)  
Will there be any underwater pool lighting? If so provide a complete detail showing how many, what type, wiring methods used, branch circuit wiring, equipment grounding and any associated parts and fittings, per Article 680.23, 2014 NEC.

5. Yes  No  (Circle One)  
Will there be any lighting fixtures, lighting outlets, or ceiling suspended (paddle) fans installed above the pool or the area extending 5 feet horizontally from the inside walls of the pool? per Article 680.22, B, 2014 NEC. Show location on your site plan.

6. Yes  No  (Circle One)  
For dwelling unit(s) where a permanently installed pool is installed no fewer than one 125 volt 15 or 20 ampere receptacle shall be located not less than 6 feet from and not more than 20 feet from the inside wall of the pool per Article 680.22 A-3, 2014 NEC. And also have GFCI protection per Article 680.22 –A-4, 2014 NEC. Show the location on your drawing and indicate GFCI.
7. Show wiring methods on plans (i.e.) RMC, IMC, RNC, etc.

This applies to all exterior wiring at dwelling units and must contain a copper equipment grounding conductor sized in accordance with Article 250.122 but not smaller than 12 AWG. Other wiring methods and materials shall be permitted in specific locations or applications as covered in Article 680.21 2014 NEC (ie) flexible connections, cord and plug connections, double insulated pool pumps.

8. Yes  No  (Circle One)
One or more means to disconnect all ungrounded conductors shall be provided for all utilization equipment other than lighting. Each means shall be accessible and within sight from its equipment, per Article 680.12, 2014 NEC.

9. Will there be any specialized pool equipment (Circle all that apply)
   Underwater audio equipment
   Electrically operated pool covers which complies with ASTM F 1346
   Deck area heater

   If so Article 680.27, 2014 NEC shall apply. Provide details for the installation, manufacturers installation instructions may suffice.

10. Will there be a diving board? If so, provide a diagram showing clearances meeting the ANSI/NSPI-5 requirements.

11. Yes  No  (Circle One)
Will there be a pool water heater? If yes, please provide installation instructions along with a one-line diagram for the gas piping system and or electric as required per the manufacturer. Show required on/off switch and type of ignition system per Article 403.9.1, 2012 IECC.
   Pool covers are required for heated pools per Article 403.9.3, 2012 IECC.

12. Please provide details for entrapment protection for the suction outlets per AG 106. When applicable, show the required dual drain separation, atmospheric vacuum relief system and VGB grate covers.
APPENDIX G

SWIMMING POOLS, SPAS AND HOT TUBS

SECTION AG101
GENERAL
AG101.1 General. The provisions of this appendix shall control the design and construction of swimming pools, spas and hot tubs installed in or on the lot of a one- and two-family dwelling.

SECTION AG102
DEFINITIONS
AG102.1 General. For the purposes of these requirements, the terms used shall be defined as follows and as set forth in Chapter 2.

ABOVE-GROUND/ON-GROUND POOL. See “Swimming pool.”

BARRIER. A fence, wall, building wall or combination thereof which completely surrounds the swimming pool and obstructs access to the swimming pool.

HOT TUB. See “Swimming pool.”

IN-GROUND POOL. See “Swimming pool.”

RESIDENTIAL. That which is situated on the premises of a detached one- or two-family dwelling or a one-family townhouse not more than three stories in height.

SPA, NONPORTABLE. See “Swimming pool.”

SPA, PORTABLE. A nonpermanent structure intended for recreational bathing, in which all controls, water-heating and water-circulating equipment are an integral part of the product.

SWIMMING POOL. Any structure intended for swimming or recreational bathing that contains water over 24 inches (610 mm) deep. This includes in-ground, aboveground and on-ground swimming pools, hot tubs and spas.

SWIMMING POOL, INDOOR. A swimming pool which is totally contained within a structure and surrounded on all four sides by walls of said structure.

SWIMMING POOL, OUTDOOR. Any swimming pool which is not an indoor pool.

SECTION AG103
SWIMMING POOLS
AG103.1 In-ground pools. In-ground pools shall be designed and constructed in conformance with ANSI/NSPI-5 as listed in Section AG107.

AG103.2 Above-ground and on-ground pools. Above-ground and on-ground pools shall be designed and constructed in conformance with ANSI/NSPI-4 as listed in Section AG107.

SECTION AG104
SPAS AND HOT TUBS
AG104.1 Permanently installed spas and hot tubs. Permanently installed spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-3 as listed in Section AG107.

AG104.2 Portable spas and hot tubs. Portable spas and hot tubs shall be designed and constructed in conformance with ANSI/NSPI-6 as listed in Section AG107.

SECTION AG105
BARRIER REQUIREMENTS
AG105.1 Application. The provisions of this chapter shall control the design of barriers for residential swimming pools, spas and hot tubs. These design controls are intended to provide protection against potential drownings and near-drownings by restricting access to swimming pools, spas and hot tubs.

AG105.2 Outdoor swimming pool. An outdoor swimming pool, including an in-ground, aboveground or on-ground pool, hot tub or spa shall be provided with a barrier which shall comply with the following:

1. The top of the barrier shall be at least 48 inches (1219 mm) above grade measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between grade and the bottom of the barrier shall be 2 inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above grade, such as an aboveground pool, the barrier may be at ground level, such as the pool structure, or mounted on top of the pool structure. Where the barrier is mounted on top of the pool structure, the maximum vertical clearance between the top of the pool structure and the bottom of the barrier shall be 4 inches (102 mm).

2. Openings in the barrier shall not allow passage of a 4-inch-diameter (102 mm) sphere.

3. Solid barriers which do not have openings, such as a masonry or stone wall, shall not contain indentations or protrusions except for normal construction tolerances and tooled masonry joints.

4. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is less than 45 inches (1143 mm), the horizontal members shall be located on the swimming
pool side of the fence. Spacing between vertical members shall not exceed 1.75 inches (44 mm) in width. Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

5. Where the barrier is composed of horizontal and vertical members and the distance between the tops of the horizontal members is 45 inches (1143 mm) or more, spacing between vertical members shall not exceed 4 inches (102 mm). Where there are decorative cutouts within vertical members, spacing within the cutouts shall not exceed 1.75 inches (44 mm) in width.

6. Maximum mesh size for chain link fences shall be a 2.25-inch (57 mm) square unless the fence is provided with slats fastened at the top or the bottom which reduce the openings to not more than 1.75 inches (44 mm).

7. Where the barrier is composed of diagonal members, such as a lattice fence, the maximum opening formed by the diagonal members shall not be more than 1.75 inches (44 mm).

8. Access gates shall comply with the requirements of Section AG105.2, Items 1 through 7, and shall be equipped to accommodate a locking device. Pedestrian access gates shall open outward away from the pool and shall be self-closing and have a self-latching device. Gates other than pedestrian access gates shall have a self-latching device. Where the release mechanism of the self-latching device is located less than 54 inches (1372 mm) from the bottom of the gate, the release mechanism and openings shall comply with the following:

8.1. The release mechanism shall be located on the pool side of the gate at least 3 inches (76 mm) below the top of the gate, and

8.2. The gate and barrier shall have no opening greater than 0.5 inch (12.7 mm) within 18 inches (457 mm) of the release mechanism.

9. Where a wall of a dwelling serves as part of the barrier one of the following conditions shall be met:

9.1. The pool shall be equipped with a powered safety cover in compliance with ASTM F1346; or

9.2. All doors with direct access to the pool through that wall shall be equipped with an alarm which produces an audible warning when the door and its screen, if present, are opened. The alarm shall sound continuously for a minimum of 30 seconds immediately after the door is opened and be capable of being heard throughout the house during normal house-hold activities. The alarm shall automatically reset under all conditions. The alarm system shall be equipped with a manual means, such as a touchpad or switch, to temporarily deactivate the alarm for a single opening. Such deactivation shall last for not more than 15 seconds. The deactivation switch(es) shall be located at least 54 inches (1372 mm) above the threshold of the door; or

9.3. Other means of protection, such as self-closing doors with self-latching devices, which are approved by the governing body, shall be acceptable so long as the degree of protection afforded is not less than the protection afforded by Item 9.1 or 9.2 described above.

10. Where an aboveground pool structure is used as a barrier or where the barrier is mounted on top of the pool structure, and the means of access is a ladder or steps, then:

10.1. The ladder or steps shall be capable of being secured, locked or removed to prevent access, or

10.2. The ladder or steps shall be surrounded by a barrier which meets the requirements of Section AG105.2, Items 1 through 9. When the ladder or steps are secured, locked or removed, any opening created shall not allow the passage of a 4-inch-diameter (102 mm) sphere.

AG105.3 Indoor swimming pool. All walls surrounding an indoor swimming pool shall comply with Section AG105.2, Item 9.

AG105.4 Prohibited locations. Barriers shall be located so as to prohibit permanent structures, equipment or similar objects from being used to clumb the barriers.

AG105.5 Barrier exceptions. Spas or hot tubs with a safety cover which complies with ASTM F1346, as listed in Section AG107, shall be exempt from the provisions of this appendix.

SECTION AG106
ENTRAPMENT PROTECTION FOR SWIMMING POOL AND SPA SUCTION OUTLETS

AG106.1 General. Suction outlets shall be designed to produce circulation throughout the pool or spa. Single outlet systems, such as automatic vacuum cleaner systems, or other such multiple suction outlets whether isolated by valves or otherwise shall be protected against user entrapment.

AG106.2 Suction fittings. All Pool and Spa suction outlets shall be provided with a cover that conforms with ANSI/ASME A112.19.8M, or a 12" × 12" drain grate or larger, or an approved channel drain system.

Exception: Surface skimmers

AG106.3 Atmospheric vacuum relief system required. All pool and spa single or multiple outlet circulation systems shall be equipped with atmospheric vacuum relief should grate covers located therein become missing or broken. Such vacuum relief systems shall include at least one approved or engineered method of the type specified herein, as follows:

1. Safety vacuum release system conforming to ASME A112.19.17, or

2. An approved gravity drainage system

AG106.4 Dual drain separation. Single or multiple pump circulation systems shall be provided with a minimum of two (2) suction outlets of the approved type. A minimum horizontal or vertical distance of three (3) feet shall separate such outlets. These suction outlets shall be piped so that water is drawn through them simultaneously through a vacuum relief-protected line to the pump or pumps.
AG106.5 Pool cleaner fittings. Where provided, vacuum or pressure cleaner fitting(s) shall be located in an accessible position(s) at least (6) inches and not greater than twelve (12) inches below the minimum operational water level or as an attachment to the skimmer(s).

SECTION AG107
ABBREVIATIONS

AG107.1 General.

ANSI—American National Standards Institute
11 West 42nd Street, New York, NY 10036

ASTM—American Society for Testing and Materials
1916 Race Street, Philadelphia, PA 19103

NSPI—National Spa and Pool Institute
2111 Eisenhower Avenue, Alexandria, VA 22314

SECTION AG108
STANDARDS

AG108.1 General.

ANSI/NSPI

ANSI/NSPI-3-99 Standard for Permanently Installed Residential Spas .......................... AG104.1

ANSI/NSPI-4-99 Standard for Above-ground/On-ground Residential Swimming Pools .......... AG103.2

ANSI/NSPI-5-99 Standard for Residential In-ground Swimming Pools .......................... AG103.1

ANSI/NSPI-6-99 Standard for Residential Portable Spas ........................................ AG104.2


ASTM


ASME

Swimming pools and spas bring to mind relaxation and enjoyment. Users also expect them to be safe—but like so many things in the built environment, pools and spas can pose hazards if improperly designed, constructed, maintained and used. Although reports to the U.S. Consumer Product Safety Commission of entrapment incidents have declined in recent years even as the number of pools and spas in the nation has increased, these sometimes tragic occurrences have received a great deal of attention in the media and in legislative arenas.

The Association of Pool & Spa Professionals (APSP, formerly the National Spa and Pool Institute), an international trade association representing the swimming pool, spa and hot tub industry, has responded by developing the American National Standards Institute (ANSI) accredited ANSI/APSP-7, American National Standard for Suction Entrapment Avoidance in Swimming Pools, Wading Pools, Spas, Hot Tubs and Catch Basins. A voluntary consensus standard, ANSI/APSP-7 represents the most current and comprehensive approach to entrapment prevention by articulating how existing technologies and methods can be applied to
protect bathers from entrapment hazards in both new and existing installations.

**Hazards**

ANSI/APSP-7 addresses and articulates methods to prevent all five recognized suction entrapment hazards.

- **Hair entrapment**—hair knotted or snagged in an outlet cover.
- **Limb entrapment**—a limb inserted or sucked into an outlet opening with a broken or missing cover, resulting in a mechanical bind or swelling.
- **Body suction entrapment**—suction applied to a large portion of the body, resulting in entrapment.
- **Evisceration/disembowelment**—suction applied directly to intestines through an unprotected sump or suction outlet with a missing or broken cover.
- **Mechanical entrapment**—jewelry, swimsuit, hair decorations, finger or toe, etc. caught in the opening of an outlet or cover.

The three basic underlying physical phenomena that govern these hazards are water flow rate through an outlet or cover (the cause of hair entrapment), mechanical concern (the cause of limb, clothing and jewelry entrapment), and suction or differential pressure (the cause of body entrapment and evisceration). Many of the entrapment mitigation provisions previously incorporated into safety codes do not protect against all three phenomena, and therefore do not protect against all five forms of entrapment. For example, a child can get a limb mechanically trapped in an exposed pipe or sump if the cover is missing or broken even if there is no water circulation or pressure.

**Mitigation**

Although there are a variety of standards aimed at specific components such as suction outlet (drain) covers and safety vacuum release system (SVRS) devices, these can only address one or two of the possible pool and spa entrapment hazards. ANSI/APSP-7 incorporates performance-based criteria for each of the five hazards, allowing national, state and local authorities to prescribe clear, effective mitigation provisions for use by designers, builders and safety inspectors.

First, it includes an option for pools and spas to be built without a main drain. There is a popular miscon-
is the result of testing which shows that an SVRS may only activate when there is blockage of the sole source of suction. Hence, there is no technical merit in mandating the use of SVRS devices where dual suction outlets comply with ANSI/APSP-7. SVRS devices also cannot protect against evisceration, limb, hair or mechanical entrapment. For reference, see “Association of Pool and Spa Professionals Technical Committee Report on Suction Outlet Safety and the Effectiveness of ANSI/APSP-7,” available from the APSP website at http://apsp.org/S4/index.aspx.

For existing single-outlet installations, ANSI/APSP-7 allows a single outlet if there is an equalizer line piped through the second port of a skimmer with an ASME-compliant cover, an ASME-compliant venturi debris removal system or an ASME-compliant channel outlet at least 3 inches wide by 31 inches long. If none of these is present, then an entrapment hazard exists and one of the following remedies must be provided:
* installation of an additional ASME/ANSI A112.19.8 compliant outlet;
* conversion of a suction outlet to an inlet, changing pipe and flow;
* conversion to a gravity flow system;
* installation of an engineered vent system;
* installation and testing of a manufactured SVRS; or
* permanent disablement of the single outlet by filling it with concrete or a glue-in plug, reversal of the flow, or disconnection from the circulation system.

**Conclusion**

ANSI/APSP-7 is the most comprehensive performance standard for the prevention of pool and spa entrapment. Recently adopted by the State of Florida and currently under review in a number of other major jurisdictions, it not only provides designers, builders and homeowners a range of options for the prevention of pool and spa entrapment, but leaves the door open for new technologies such as automatic pump/motor shut-off systems.

For more information, visit the APSP website at http://apsp.org.

**SHAJEE SIDDIQUI** is Director of Product Safety and Compliance for Jandy Pool Products, Inc., and currently serves as ANSI/APSP-7 Suction Entrapment Avoidance Standard Writing Committee Chairman.
Pool pump wiring to be installed in 3/4” PVC electric conduit. Buried a minimum 18” below grade. Minimum 12-2 UF type wire. GFCI protected at the house or at the receptacle with an inuse cover installed.
Pool

Connection to the pool shell and/or water bond

#8 bare copper wire 18" to 24" away from the pool, buried 4'-6" below grade

Connection to the pool pump, filter motor

Water bond to be a minimum 9 3/4 inches per Article 680.26-C

2011 NEC
To move overhead or underground power lines you will need to call your local utility company and you may need to involve an independent electrician. Phone or cable wires are allowed, however, if any lines or pipes are cut during digging, Scioto Valley is not responsible. All costs associated with moving or repairing utility lines is the responsibility of the homeowner.

The Entire System of an above ground swimming pool including the pool wall and frame, the pool water, the ground directly around the pool wall, the pump and filter system and all the electrical circuits feeding the pool equipment, MUST BE GROUNDED BY CONNECTORS AND BONDING WIRE that meets or exceeds the standards set forth in the 2008 National Electric Code Book (NEC). Most electricians are aware of the codes for bonding of the equipment and electrical receptacles. Many are unaware of the requirements to bond to the pool water and the earth surrounding the pool wall.

At the time of installation, SV’s installers will install a 6' bonding wire and bonding lug and leave it facing the pump & filter for the electrician to connect to the rest of the bonding system.

At the time of installation, SV’s installers will install a 3’ Stainless Steel Pipe in the front of the pump. By doing this, the pool water will be in direct contact with 14 sq. in. of the pipe. (code requires 9 sq. in.) We will also leave an approved bonding clamp on the Stainless pipe to which the electrician can connect to the rest of the bonding system.

Permits, Zoning, Fencing, Gates, & Door Alarm Requirements

Unlike the National Electric Code (NEC), the barricade regulations regarding above ground pools varies from city to city and county to county throughout Ohio. In that we are located in the state capital, and that the City of Columbus (unlike most cities) reaches far into the suburbs, you will need to always check with your local building department for their specific details on Zoning, Fencing, Gates, and Alarms. Some of the specific questions are:

- If you need a building permit for an above ground pool and how much?
- Where are you allowed to locate your pool... distance from house, structures, property lines, etc?
- What type of barricades are required to protect small children from getting into the pool?
  - Does your yard require a fence & at what height? (4'-6' is the normal requirement)
  - Do the gate closures need to comply with the National Code of 54" self closing and self latching gates?
  - Do the doors leading out to your pool area require Door Alarms?

In general if any of the above code requirements present a problem, the pool industry has created what are known as Self-Fencing Pools, with self-closing and self-latching Entry Systems to meet the requirements of barricade issues. We at Scioto Valley will help in any way to help you solve these issues.
ABOVE GROUND POOL
Model #: BS680AG

BOND SAFE 680
(Patent Pending and UL Listed)

IMPORTANT SAFETY INSTRUCTIONS

The integrity of the bonding connection should be periodically inspected.

READ AND FOLLOW ALL INSTRUCTIONS

Included: One bonding plate, (1) rubber sealing washer, (2) flat washers, (2) lock washers, (2) nuts and (1) bonding lug

Instructions for installation:

1. First, drill a 3/16 inch hole in the rear of the skimmer casing where the skimmer basket is held. Locate the bonding plate as close to the bottom of the skimmer casing as possible allowing for enough room inside of the skimmer for the bonding plate.

2. Place the rubber washer on the base of the threaded stud on the bonding plate.

3. Push threaded stud through the 3/16 inch hole previously drilled.

4. Secure with a flat washer, lock washer and nut in that order. *CAUTION: Do not over tighten*

5. Use the 2nd flat washer, 2nd lock washer and 2nd nut to secure the bonding lug.

6. Last, connect solid copper wire, not smaller than no. 8 AWG, to the bonding lug. The copper wire should also connect to motor and all metal parts of the swimming pool within 5 ft. of the inside wall of the swimming pool.

For any questions please call:
(781) 760 - 8320

http://www.bondsafe680.com/aboveground.html

6/5/2011