

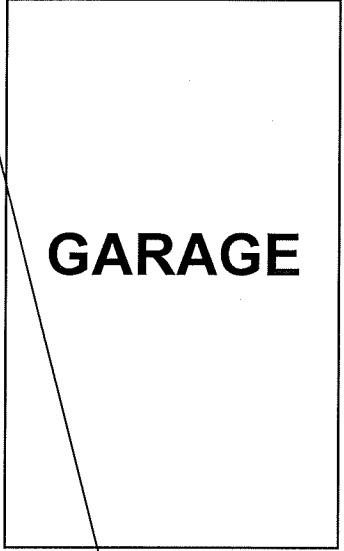


SWIMMING POOL & HOT TUB/SPA REGULATIONS

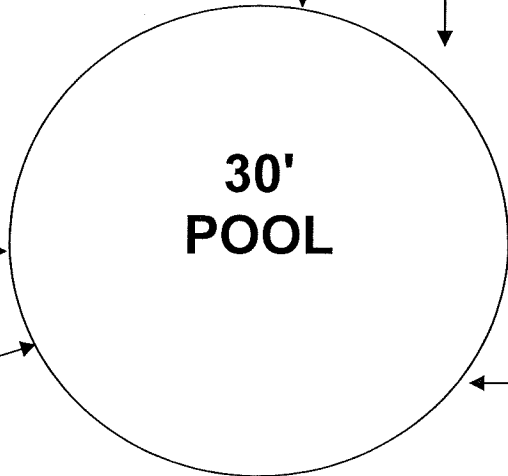
- 1.) All swimming pools, hot tubs and spas are to be installed in accordance with the City of Warren Ordinance-2015 Michigan Residential Code and 2017 Michigan Electrical Code.
- 2.) Property owners installing swimming pools, hot tubs, or spas capable of holding water 24" deep or more must obtain a building and electrical permit from the Building Division prior to installation.
- 3.) Submit (2) copies of plot plans accurately showing dimensions of the pool or spa, distances to lot lines, existing building locations, electrical wire location and indicate fence enclosure (note sample sheet), along with a completed building permit application.
- 4.) Submit (2) copies of pool construction specs and fence details for in ground pools. (including a full cross section showing compliance to ANSI/APSP/ICC-5-2011)
- 5.) No pool shall encroach on any front yard, side yard, or be located in any easement.
- 6.) All pools are to be provided with a filtration system adequate to keep water clean and free of foreign matter.
- 7.) A four (4) foot high or adequate barrier shall be sufficient enough to make the pool inaccessible to small children. Gates shall be self closing and self latching, with the proper latch height. Note: 2015 ISPSC 305.3.1-305.3.3
- 8.) All appurtenant electrical installations shall comply with the Michigan Electrical Code Electrical permits and inspections are required. Consult Electrical Inspector for details. (Note sample sheets).
- 9.) Swimming pools are to be wired and inspected before any swimming is allowed. Call (586) 574-4504 with address and electrical permit number to schedule an inspection.
- 10.) Swimming pools are to be inspected by the building inspector after an electrical approval is obtained. Call (586) 574-4504 with the address and building permit number to schedule an inspection.
- 11.) All doors with direct access to the pool through the wall shall comply with 2015 ISPSC 305.4 (in ground pools).
- 12.) No pool shall be within 10' of an overhead wire or within 5' of an underground wire.
- 13.) Hose bibs to be protected with a vacuum break device.

Edison Wires

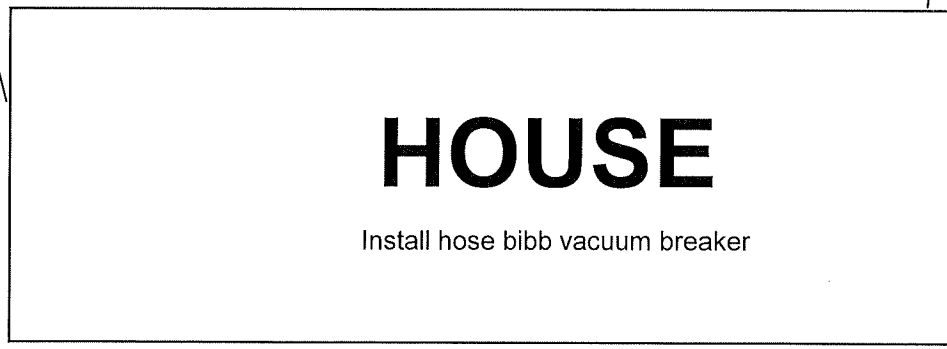
Lot Line



GARAGE



**30'
POOL**



HOUSE

Install hose bibb vacuum breaker

Lot Line

25' If Corner Lot Line

6' Min
(or one ft off any easement)
10' Min

6' Min

10' Min

5' MIN

SEE NOTE
BELOW**

Underground Wires

Edison
Telephone
Cable Wires

**NOTE: setbacks vary from side property lines.

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 (610mm) 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 AAG103 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 AG108.

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 AG108.

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 AG108.

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 AG108

SECTION AG 105 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 and in-ground, above-ground 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 (51mm) 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, 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 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 all 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 household activities. The alarm shall automatically reset under all conditions. The alarm system shall be equipped with a manual means, such as 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 protections, 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 above ground 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 prevail 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 openings 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 climb the barriers.

AG105.5 Barrier exceptions. Spas or hot tubs with a safety cover which complies with ASTM F 1346, 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" x 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:

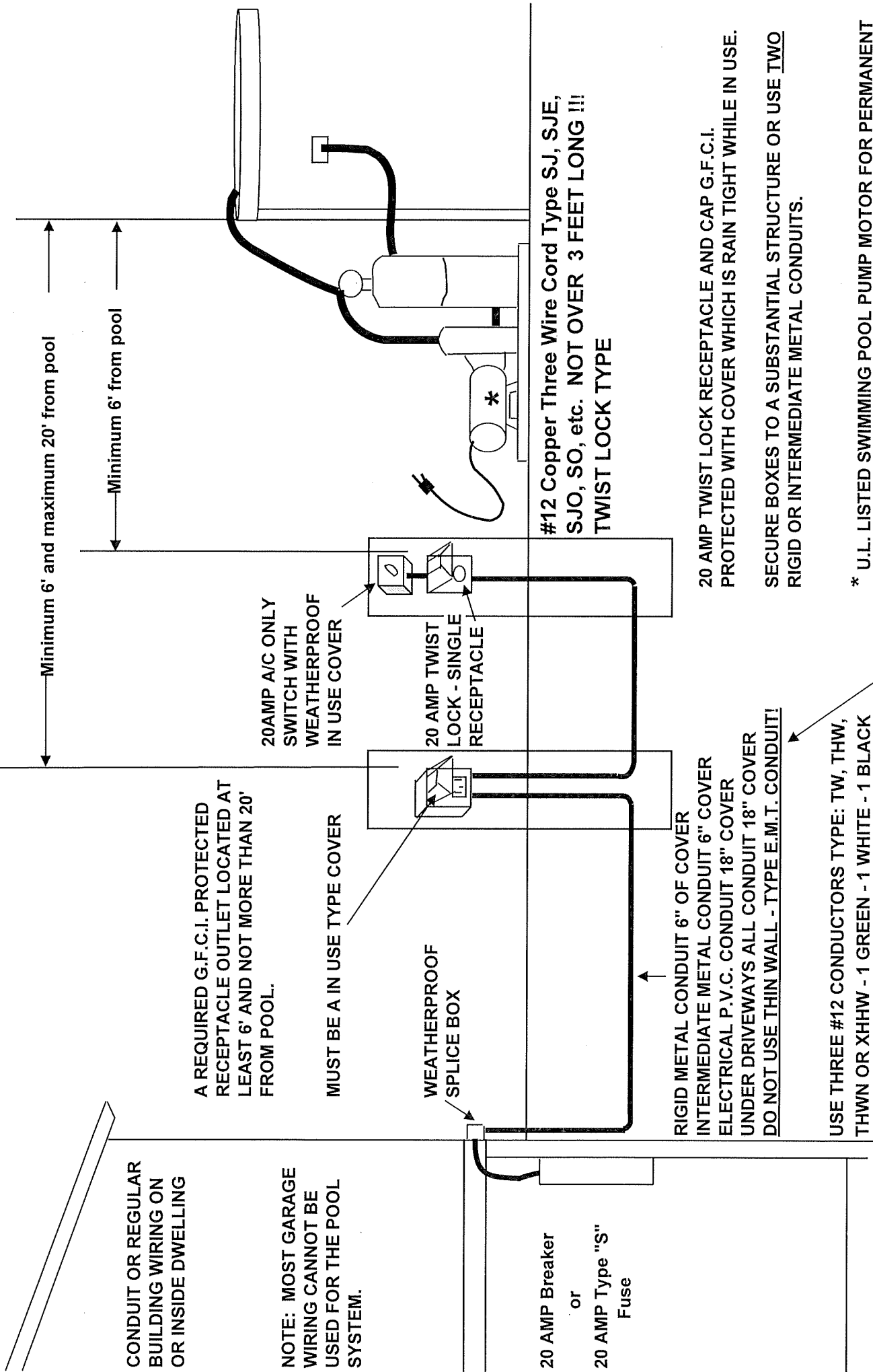
1. Safety vacuum release system conforming to ASME A112.19.17, or
2. An approved gravity drainage system

AG106.4 Dual drain separation. Single or multiple pump circulation systems shall be provided with a minimum of two (2) suction outlets of 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).

PERMANENT SWIMMING POOL WIRING

2015 MRC



CONDUIT OR REGULAR BUILDING WIRING ON OR INSIDE DWELLING

NOTE: MOST GARAGE WIRING CANNOT BE USED FOR THE POOL SYSTEM.

20 AMP Breaker
or
20 AMP Type "S"
Fuse

A REQUIRED G.F.C.I. PROTECTED RECEPTACLE OUTLET LOCATED AT LEAST 6' AND NOT MORE THAN 20' FROM POOL.

MUST BE A IN USE TYPE COVER

20AMP A/C ONLY SWITCH WITH WEATHERPROOF IN USE COVER

WEATHERPROOF SPLICE BOX

20 AMP TWIST LOCK - SINGLE RECEPTACLE

#12 Copper Three Wire Cord Type S_J, S_JE, S_JO, S_O, etc. NOT OVER 3 FEET LONG !! TWIST LOCK TYPE

RIGID METAL CONDUIT 6" OF COVER
INTERMEDIATE METAL CONDUIT 6" COVER
ELECTRICAL P.V.C. CONDUIT 18" COVER
UNDER DRIVEWAYS ALL CONDUIT 18" COVER
DO NOT USE THIN WALL - TYPE E.M.T. CONDUIT!

USE THREE #12 CONDUCTORS TYPE: TW, THW, THWN OR XHHW - 1 GREEN - 1 WHITE - 1 BLACK
Individual wires in conduit
DO NOT USE MULTICONDUCTOR CABLES!

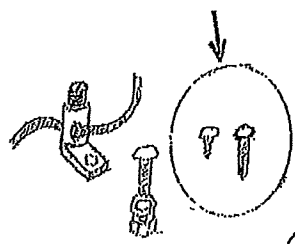
20 AMP TWIST LOCK RECEPTACLE AND CAP G.F.C.I. PROTECTED WITH COVER WHICH IS RAIN TIGHT WHILE IN USE.
SECURE BOXES TO A SUBSTANTIAL STRUCTURE OR USE TWO RIGID OR INTERMEDIATE METAL CONDUITS.

* U.L. LISTED SWIMMING POOL PUMP MOTOR FOR PERMANENT POOLS.
DO NOT USE A MOTOR LISTED FOR STORABLE POOLS!!

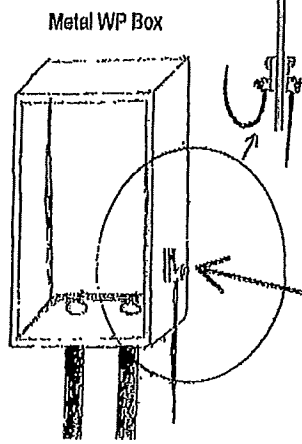
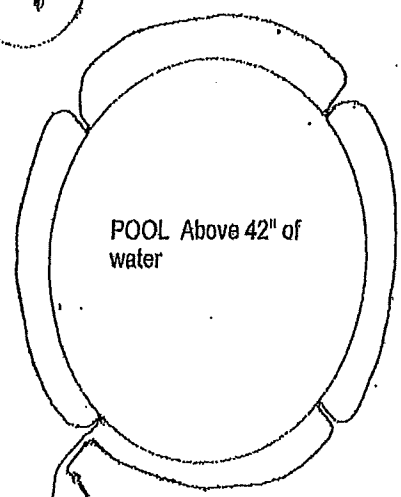
MUST ALSO COMPLY WITH BONDING REQUIREMENTS ON NEXT PAGE

2017 Michigan Electrical Code
Permanant Pool Bonding & Grounding
#8 Solid Bare Copper, 18"-24" from pool 4"-6" deep

DO NOT USE



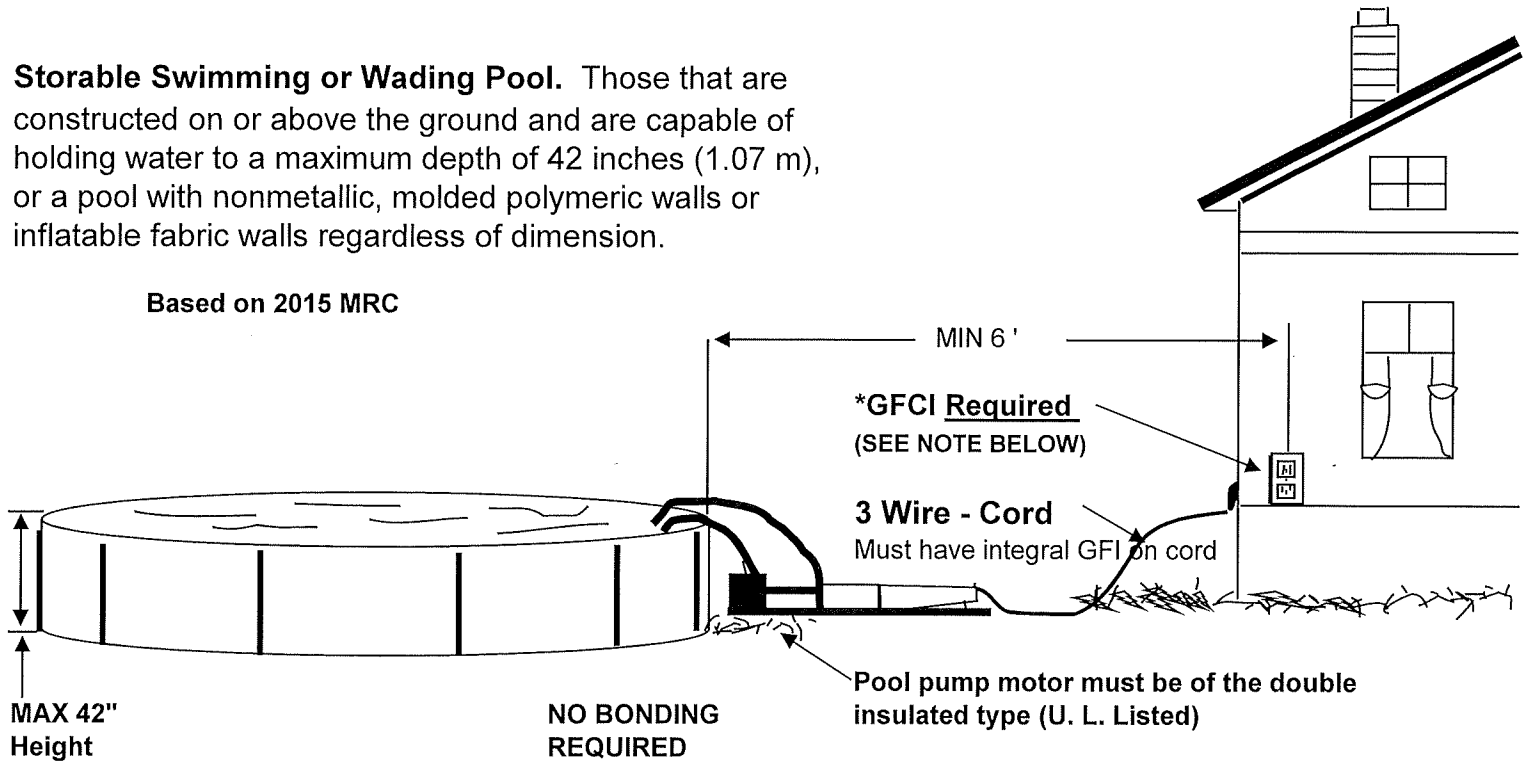
Lugs and hardware to be nonferrous metal (stainless steel, bronze, brass, copper) Note: all lugs must be pool rated!!!



To Water Bond Device
To Pump Motor
To equipment grounding conductor on circuit feeding pump motor
Bond all Metal within 6' of Pool to Bonding Grid

Storable Swimming or Wading Pool. Those that are constructed on or above the ground and are capable of holding water to a maximum depth of 42 inches (1.07 m), or a pool with nonmetallic, molded polymeric walls or inflatable fabric walls regardless of dimension.

Based on 2015 MRC



STORABLE POOLS ONLY. The type of pump suitable for use with storable pools has a 25' flexible cord and attachment plug. It is marked:

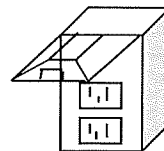
"This Pump is for Use with Storable Pools Only. - **DO NOT USE** with Permanently Installed Pools.

A storable pool is constructed so that it may be readily disassembled for storage and reassembled to its original integrity. A permanently installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage." Cords may **NOT** be shortened nor shall attachment caps be changed to a different type. If a listed double insulated pump motor comes with a shorter cord, the assembly must be located so that the cord will reach an electrical outlet at least ten feet away from the pool.

LISTING MARK. The UL Listing Mark for these products accompanies the product name "Underwater Lighting Fixture for Above Ground Storable Swimming Pool."

DOUBLE INSULATION. Pumps with a minimum 25' supply cord are double insulated and have inaccessible metal parts grounded with the equipment grounding conductor terminated at the attachment plug. These pumps do not have a bonding connector.

GFCI. These units are intended for connection to circuits protected by ground fault circuit interrupts and are marked, "**WARNING** - Risk of electric shock. Connect only to a grounding type receptacle protected by a ground fault circuit interrupter (GFCI)." Pump must have integral GFI on cord.



NOTE: Outlet will require a Raintite while in use cover.
Distance from pool to receptacle shall be at least 10'.

Outdoor Swimming Pools

Lighting Fixtures and Ceiling Suspended Paddle Fans

Lighting fixtures and ceiling suspended paddle fans that are over or within 5 feet of the pool are acceptable if located 12 feet or more above the maximum water level. GFCI Protection not required.

And

Existing lighting fixtures (not ceiling suspended paddle fans) that are located within 5 feet of the pool must be at least 5 feet above the maximum water level and be rigidly attached to the existing structure. GFCI protection must be provided for the branch circuit.

And

Light fixtures that are installed between 5 feet and 10 feet from the pool must be GFCI protected unless they are not less than 5 feet above the maximum water level and are rigidly attached to the structure.

IMPORTANT!

Light fixtures in the wall of the pool must comply with the Michigan Residential Code or the NEC if a Commercial Installation.

See the instructions that accompany the fixture and install according to the type of pool being wired either a permanent or storable type.

INDOOR SWIMMING POOLS

Lighting Fixtures and Ceiling Suspended Paddle Fans

Lighting Fixtures and Ceiling Suspended Paddle Fans that are over or within 5 feet of the pool are acceptable if located 12 feet or more above the maximum water level. G.F.C.I. protection not required.

Or

Fixtures and Ceiling Suspended Paddle Fans that are of the totally enclosed type and have G.F.C.I. protection for the branch circuit are acceptable providing the distance from the Fixture or Paddle is not less than 7 feet 6 inches above the maximum water level.

And

Existing lighting fixtures (not ceiling suspended paddle fans) that are located within 5 feet of the pool must be at least 5 feet above the maximum water level and be rigidly attached to the existing structure. G.F.C.I. protection must be provided for the branch circuit.

And

Light fixtures that are installed between 5 feet and 10 feet from the pool must be G.F.C.I. protected unless they are not less than 5 feet above the maximum water level and are rigidly attached to the **structure.**

Important!

Light fixtures in the wall of the pool must comply with the Michigan Electrical Code or the NEC if a Commercial Installation.

See the instructions that accompany the fixture and install according to the type of pool being wired either a permanent or storable type