

OWNER'S MANUAL

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MASTER SPAS®

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SAVE THESE INSTRUCTIONS

Included with your new swim spa is a safety sign. The sign is for you and your guest's protection and is suitable for outdoor use in wet locations. The sign should be placed in a location visible to all users of the swim spa.

Please take time to point out the physical location of the safety sign and the importance of the safety precautions displayed on the safety sign to all of your guests. Remember, your safety and the safety of anyone who enjoys the use of your swim spa is our utmost concern.

The sign should be mounted with screws or another type of permanent fastener. Additional or replacement signs can be obtained from your dealer or direct from the factory.

INTRODUCTION

It's time to relax! You now have your very own portable swim spa by Master Spas, Inc. By fully understanding the operation of each of the features of your new Swim Spa, you will be assured of many years of hassle-free, hot water therapy and fun.

Your safety is of paramount importance to the Master Spas family. We urge you to read and become thoroughly familiar with all safety aspects addressed in this manual.

Through reading and totally understanding the important information in your owner's manual, you will realize that you now own **THE ULTIMATE RELAXATION MACHINE!**

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| NO DIVING | DANGER: DIVING MAY RESULT IN SERIOUS INJURY OR DEATH. |  |
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IMPORTANT SAFETY INSTRUCTIONS

When installing and using this electrical equipment, basic safety precautions should be observed including the following:

READ AND FOLLOW ALL INSTRUCTIONS

WARNING – To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

A wire conductor is provided on this unit to connect a minimum 6 AWG (13.302mm²) solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe, or conduit within 5 feet (1.5m) of the unit

(For cord-connected/convertible units)

DANGER – Risk of injury.

- a) Replace damaged cord immediately.
- b) Do not bury cord.
- c) Connect to a grounded, grounding type receptacle only.

(For units intended for indoor use only)

WARNING – For indoor use only. This unit is not intended for outdoor use.

(For units intended for outdoor use only)

WARNING – For outdoor use only. This unit is not intended for indoor use.

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IMPORTANT SAFETY INSTRUCTIONS (CONT.)

(For units with GFCI)

WARNING – This product is provided with a ground-fault circuit interrupter located on the front panel of selected swim spas and on the power cord of 120 volt convertible swim spas. The GFCI must be tested before each use. With the product operating, open the service door. When the product stops operating, this merely indicates that the door is equipped with an electrical interlock. Next, push the test button on the GFCI and close the service door. The product should not operate. Now open the service door, push the reset button on the GFCI and close the service door. The product should now operate normally. When the product fails to operate in this manner, there is a ground current flowing indicating the possibility of an electric shock. Disconnect the power until the fault has been identified and corrected.

DANGER – Risk of Accidental Drowning. Extreme caution must be exercised to prevent unauthorized access by children. To avoid accidents, ensure that children cannot use this swim spa unless they are supervised at all times.

DANGER – Risk of Injury. The suction fittings in this swim spa are sized to match the specific water flow created by the pump. Should the need arise to replace the suction fittings or the pump, be sure that the flow rates are compatible.

Never operate swim spa if the suction fittings are broken or missing. Never replace a suction fitting with one rated less than the flow rate marked on the original suction fitting.

DANGER – Risk of Electric Shock. Install at least 5 feet (1.5m) from all metal surfaces. As an alternative, a swim spa may be installed within 5 feet of metal surfaces if each metal surface is permanently connected by a minimum 8AWG (8.4mm²) solid copper conductor to the wire connector on the terminal box that is provided for this purpose.

DANGER – Risk of Electric Shock. Do not permit any electric appliance, such as a light, telephone, radio, or television, within 5 feet (1.5 m) of a swim spa.

WARNING – To reduce the risk of injury:

- a) The water in a swim spa should never exceed 40°C (104°F). Water temperatures between 38°C (100°F) and 40°C are considered safe for a healthy adult. Lower water temperatures are recommended for young children and when swim spa use exceeds 10 minutes.

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IMPORTANT SAFETY INSTRUCTIONS (CONT.)

- b) Since excessive water temperatures have a high potential for causing fetal damage during the early months of pregnancy, pregnant or possibly pregnant women should limit swim spa water temperatures to 38°C (100°F).
- c) Before entering a swim spa, the user should measure the water temperature since the tolerance of water temperature- regulating devices varies.
- d) The use of alcohol, drugs, or medication before or during swim spa use may lead to unconsciousness with the possibility of drowning.
- e) Obese persons and persons with a history of heart disease, low or high blood pressure, circulatory system problems, or diabetes should consult a physician before using a swim spa.
- f) Persons using medication should consult a physician before using a swim spa since some medication may induce drowsiness while other medication may affect heart rate, blood pressure, and circulation.

(For swim spas with a gas heater)

WARNING – Risk of Suffocation. This swim spa is equipped with a gas heater and is intended for outdoor use only unless proper ventilation can be provided for an indoor installation.

HYPERTHERMIA

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 98.6° F.

THE SYMPTOMS OF HYPERTHERMIA INCLUDE:

- Dizziness • Fainting • Drowsiness • Lethargy
- Increase in Internal Body Temperature

THE EFFECTS OF HYPERTHERMIA INCLUDE:

- Unawareness of Impending Hazard • Failure to Perceive Heat • Failure to Recognize the Need to Exit Swim Spa • Physical Inability to Exit Swim Spa • Fetal Damage in Pregnant Women • Unconsciousness Resulting in a Danger of Drowning

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| NO DIVING | DANGER: DIVING MAY RESULT IN SERIOUS INJURY OR DEATH. |  |
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IMPORTANT SAFETY INSTRUCTIONS (CONT.)

DANGER – To reduce the risk of injury to persons, do not remove the suction grate. Suction through drains and skimmers is powerful when the jets in the swim spa are in use. Damaged covers can be hazardous to small children and adults with long hair. Should any part of the body be drawn into these fittings, turn off the swim spa immediately. As a precaution, long hair should not be allowed to float in the swim spa.

WARNING – Install the swim spa so that water can be easily drained out of the compartment containing electrical components so as not to damage equipment. When installing the swim spa make sure to allow for an adequate drainage system to deal with any overflow water. Please allow for at least 2 feet of clearance around the perimeter of the swim spa to provide enough room to access for servicing. Contact your local dealer for their specific requirements.

WARNING – The swim spa should be covered with an approved locking cover when not in use, to prevent unauthorized entry and injuries.

WARNING – People with infections, sores or the like should not use the swim spa. Warm and hot water temperatures may allow the growth of infectious bacteria if not properly disinfected.

CAUTION – Safe temperatures for swimming or aquatic exercise is around 80°F.

CAUTION – Risk of Electrical Shock. Do not leave CD compartment open. CD controls are not to be operated while inside the swim spa.

CAUTION – Replace components only with identical components.

WARNING – Risk of Electric Shock. Do not connect any auxiliary components (for example, additional speakers, headphones, additional audio/ video components etc.) to the system. These units are not provided with an outdoor antenna.

Do not service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

If the power supply cord(s) are damaged, water is entering the speaker, CD compartment, or any other component in the electrical equipment compartment area, the protective shield is showing signs of deterioration, or there are signs of other potentially hazardous damage to the unit, turn off the circuit breaker from the wall and refer servicing to qualified personnel.

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IMPORTANT SAFETY INSTRUCTIONS (CONT.)

The unit should be subjected to periodic routine maintenance once every quarter to make sure that the it is operating properly.

DANGER – Risk of Electric Shock. A green colored terminal or a terminal marked G, GR, Ground, Grounding or the symbol shown in Figure 14.1 of UL 1563 is located inside the supply terminal box or compartment. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electric supply service panel with a continuous copper wire equivalent in size to the circuit conductors supplying this equipment.

At least two lugs marked “Bonding Lugs” are provided on the external surface or on the inside of the supply terminal box or compartment. To reduce the risk of electric shock, connect the local common bonding grid in the area of the swim spa to these terminals with an insulated or bare copper conductor not smaller than 6AWG.

All field installed metal components such as rails, ladders, drains, or other similar hardware within 3m of the swim spa shall be bonded to the equipment grounding bus with copper conductors not smaller than 6AWG.

SAVE THESE INSTRUCTIONS

Safety Instructions

WARNING: CHILDREN SHOULD NOT USE SWIM SPAS OR HOT TUBS WITHOUT ADULT SUPERVISION

AVERTISSEMENT: NE PAS LAISSER LES ENFANTS UTILISER UNE CUVE DE RELAXATION SANS SURVEILLANCE

WARNING: DO NOT USE SWIM SPAS OR HOT TUBS UNLESS ALL SUCTION GUARDS ARE INSTALLED TO PREVENT BODY AND HAIR ENTRAPMENT.

AVERTISSEMENT: POUR ÉVITER QUE LES CHEVEUX OU UNE PARTIE DU CORPS PUISSENT ÊTRE ASIPIRES, NE PAS UTILISER UNE CUVE DE RELAXATION SI LES GRILLES DI PRISE D'ASPIRATION NE SONT PAS TOUTES EN PLACE

WARNING: PEOPLE USING MEDICATIONS AND/OR HAVING AN ADVERSE MEDICAL HISTORY SHOULD CONSULT A PHYSICIAN BEFORE USING A SWIM SPA OR HOT TUB.

AVERTISSEMENT: LES PERSONNES QUI PRENNENT DES MÉDICAMENTS OU ONT DES PROBLÈMES DE SANTÉ DEVRAIENT CONSULTER UN MÉDECIN AVANT D'UTILISER UNE CUVE DE RELAXATION

WARNING: PEOPLE WITH INFECTIOUS DISEASES SHOULD NOT USE A SWIM SPA OR HOT TUB

AVERTISSEMENT: LES PERSONNES ATTEINTES DE MALADIES INFECTIEUSES NE DEVRAIENT PAS UTILISER UNE CUVE DE RELAXATION

WARNING: TO AVOID INJURY EXERCISE CARE WHEN ENTERING OR EXITING THE SWIM SPA OR HOT TUB.

AVERTISSEMENT: POUR ÉVITER DES BLESSURES, USER DE PRUDENCE EN ENTRANT DANS UNE CUVE DE RELAXATION ET EN SORTANT

WARNING: DO NOT USE DRUGS OR ALCOHOL BEFORE OR DURING THE USE OF A SWIM SPA OR HOT TUB TO AVOID UNCONSCIOUSNESS AND POSSIBLE DROWNING

AVERTISSEMENT: POUR ÉVITER L'ÉVANOUISSEMENT ET LA NOYADE ÉVENTUELLE, NE PRENDE NI DROGUE NI ALCOOL AVANT D'UTILISER UNE CUVE DE RELAXATION NI QUAND ON S'Y TROUVE

WARNING: PREGNANT OR POSSIBLY PREGNANT WOMEN SHOULD CONSULT A PHYSICIAN BEFORE USING A SWIM SPA OR HOT TUB.

AVERTISSEMENT: LES FEMMES ENCEINTES, QUE LEUR GROSSESSE SOIT CONFIRMÉE OU NON, DEVRAIENT CONSULTER UN MÉDECIN AVANT D'UTILISER UNE CUVE DE RELAXATION

WARNING: WATER TEMPERATURE IN EXCESS OF 38°C MAY BE INJURIOUS TO YOUR HEALTH

AVERTISSEMENT: IL PEUT ÊTRE DANGEREUX POUR LA SANTÉ DE SE PLONGER DANS DE L'EAU A PLUS DE 38°C

WARNING: BEFORE ENTERING THE SWIM SPA OR HOT TUB MEASURE THE WATER TEMPERATURE WITH AN ACCURATE THERMOMETER

AVERTISSEMENT: AVANT D'UTILISER UNE CUVE DE RELAXATION MESURER LA TEMPÉRATURE DE L'EAU À L'AIDE D'UN THERMOMÈTRE PRÉCIS

Safety Instructions

WARNING: DO NOT USE A SWIM SPA OR HOT TUB IMMEDIATELY FOLLOWING STRENUOUS EXERCISE

AVERTISSEMENT: NE PAS UTILISER UNE CUVE DE RELAXATION IMMÉDIATEMENT APRÈS UN EXERCISE FATIGANT

WARNING: PROLONGED IMMERSION IN A SWIM SPA OR HOT TUB MAY BE INJUROUS TO YOUR HEALTH

AVERTISSEMENT: L'UTILISATION PROLONGÉE D'UNE CUVE DE RELAXATION PEUT ÊTRE DANGEREUSE POUR LA SANTÉ

WARNING: DO NOT PERMIT ELECTRIC APPLIANCES (SUCH AS LIGHT, TELEPHONE, RADIO, OR TELEVISION) WITHIN 1.5 M OF THIS SWIM SPA OR HOT TUB

AVERTISSEMENT: NE PAS PLACER D'APPAREIL ÉLECTRIQUE (LUMINAIRE, TÉLÉPHONE, RADIO, TÉLÉVISEUR, ETC) À MOINS DE 1.5 M DE CETTE CUVE DE RELAXATION

CAUTION: MAINTAIN WATER CHEMISTRY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION

ATTENTION: LA TENEUR DE L'EAU EN MATIÈRES DISSOUTES DOIT ÊTRE CONFORME AUX DIRECTIVES DU FABRICANT

Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above the normal body temperature of 37°C. The symptoms of hyperthermia include drowsiness, lethargy, and an increase in the internal temperature of the body. The effects of hyperthermia include

- (a) unawareness of impending hazard;
- (b) failure to perceive heat;
- (c) failure to recognize the need to exit swim spa;
- (d) physical inability to exit swim spa;
- (e) fetal damage in pregnant women; and
- (f) unconsciousness and danger of drowning.

WARNING: THE USE OF ALCOHOL OR DRUGS CAN GREATLY INCREASE THE RISK OF FATAL HYPERTHERMIA IN HOT TUBS AND SWIM SPAS

LA CONSOMMATION D'ALCOOL OU DE DROGUE AUGMENTE CONSIDÉRABLEMENT LES RISQUES D'HYPERTHERMIE MORTELLE DANS UNE CUVE DE RELAXATION.

Overall Design Information

About our Swim Spas

The Master Spa Inc. swim spa is a high grade acrylic with an underlying fiberglass reinforced shell, self contained frame, therapy jets and patented propulsion swim system. This swim spa may be installed completely in ground, partially in ground, or above ground level. The associated mechanical and electrical components are normally installed in a separate equipment room or in a lower level mechanical room below the floor surface.

Since code and regulation requirements vary between states and local agencies, permits and compliance with varying health, electrical, plumbing, building, and safety, agencies is solely the responsibility of the owner. It is imperative that the owner or the design representative consult with all local and state regulatory agencies that have jurisdiction over installation of factory built commercial spas. Should any of these codes require that installation vary from the recommendations in this guide, contact Master Spas Inc. for assistance.

Serviceability and Equipment Access

The design information relating to structural, electrical, architectural, and plumbing design should be adhered to so as to insure serviceability of the swim spa in the future. Non compliance with these requirements could result in the warranty being voided.

PREPARATION OF THE SWIM SPA SITE

The owner will be responsible for all site preparation before and after delivery of the swim spa. All utilities (water, sanitary, electrical, and etc.), mechanical pit, and applicable swim spa area structures must be designed and installed by the owner. For information concerning details of these requirements, consult the technical specifications included in this manual.

SPECIFICATIONS FOR SWIM SPA ROOM AREA

If installed indoors, the recommendation for the area in which the swim spa is contained is at least 3 feet of separation between outer edge of swim spa and interior wall around perimeter and 8 feet high. This is to allow adequate room for installation and proper deck space in the swim spa area. Extra space for shower, storage cabinets, dehumidifiers, changing areas, and showers should be integrated into these plans. Room dimensions may vary depending on local and state regulatory requirements.

Temperature control and proper air handling (which should include humidity control) in the swim spa room must be integrated into the room design to maintain a comfortable and safe environment for the room occupants. Swim spa rooms are normally kept at 85 degrees Fahrenheit and swim spa water temperatures are typically kept below 93 degrees Fahrenheit. This helps keep the differential between the swim spa and room temperatures to a minimum. The surface area of the water is 93 square feet. Under these conditions the evaporation rate per day will be approximately 15-20 gallons per day.

Overall Design Information

UTILITIES

Water Supply: The owner will need to provide a fresh water source to the swim spa room for replenishing the water in the swim spa.

Sanitary: A sump pit (if applicable) that includes a pump or floor drains that connect to the main drainage system must be provided by the owner.

Gas: The swim spa can be heated by a gas heater. When using any gas fired appliance care must be taken to provide adequate combustion air and also proper ventilation of flue gases. See appliance manufactures recommendations for information guidelines.

Electrical Service: Electrical service must be provided by the owner.

Communications: It is highly recommended that a telephone line be installed in the area of the control panel for communication in case of emergencies.

MECHANICAL AREA

The area in and around the swim spa must be accessible for maintenance on swim spa shell, electrical control system, and equipment. Included in this manual are drawings that show minimum dimensions for this area. Sump pumps, drains, lighting, and HVAC controls must be designed before installation to ensure proper operation once the swim spa is installed.

The swim spa should be drained using a portable sump pump that is to be supplied by the owner. Care must be taken during the planning stages to make sure that drains are adequate to carry the sump discharge when the swim spa is drained for maintenance.

The floor of the swim spa area should be designed by a structural engineer to carry the combined weight of the swim spa, water and bather load. This floor area must be completely level to support the swim spa correctly. See "Overall Design Information" section for weight specifications.

Should the mechanical area be enclosed care must be taken to maintain an ambient temperature that is typical for enclosed mechanical rooms containing pool equipment. The equipment list below can be used to help determine the correct HVAC requirements during the design stages. This is a recommended list of standard and optional equipment in a typical swim spa installation:

- 1- 11 kw electric and or gas heater
- 1- 1.5 hp filter pump
- 1- 1.5 hp therapy pump
- 1- 2.0 hp therapy pump
- 1- 50 amp (40 amp maximum ampacity) propulsion drive assembly
- 1- Freeze Protect Circuit

Typical Work Involved for Installation of Master Spas Swim Spa

GENERAL CONTRACTOR INSTALLATION

The swim spa room and mechanical area are to be constructed as per the owners design and following the guidelines set forth by local codes and the Master Spas Installation Guide.

All shipping and delivery fees are the responsibility of the owner, unless otherwise specified.

An opening in the building large enough to accommodate the swim spa will have to be planned for. See "Overall Design Information" section for dimensional specifications. The minimum path dimensions for the swim spa from the unloading site to the swim spa area should be approximately 10 feet wide by 6 feet 8 inches high (a site survey should be conducted and good judgement decisions should be made prior to installation day to prevent delays in the completion date due to space limitations). The swim spa is supported by its own steel frame and should remain upright to avoid damage to the acrylic shell. In the event that the swim spa would have to be set into a different attitude so as to allow entry, care must be taken to insure that no damage is done to the acrylic shell or supporting metal frame work.

Once the swim spa has been moved to the designated area it must be set on the previously constructed structural floor area. If the unit is to be recessed below the swim spa room floor, rigging will be needed to set it properly.

The acrylic on the swim spa should be protected during the construction process at all times. A temporary platform constructed of plywood and floor joists covered with a tarp is recommended. This will keep construction debris from accumulating in the swim spa and mechanical areas. Never use clear materials to protect the swim spa shell. Any damage caused by the use of clear protective materials, will not be covered by the warranty.

A conduit running from the swim spa to the control area will be needed. This conduit should be sized appropriately to allow for the control and VFD power cables to be routed.

Once the electrical and plumbing phases are completed, the swim spa will need to be cleaned, filled and the operation sequence started.

Typical Work Involved for Installation of Master Spas Swim Spa

ELECTRICAL CONTRACTOR INSTALLATION

The swim spa comes with its own GFCI breaker and must be wired according to the wiring diagram supplied in the drawings section. This GFCI is a special device that is unique to this swim spa. This special GFCI is designed to protect the patented propulsion system drive only. It must be wired directly to the incoming electrical service. DO NOT install a separate GFCI breaker on this system. The installation will require the purchase of a separate sub panel to feed the swim spa control panel. An electrical wiring schematic is supplied in the drawings section.

All materials, equipment and labor needed to connect each electrical component must be provided.

Wiring and conduit must be installed as required by local jurisdiction codes to all of the system components listed below:

- 1- 11 kw electric and or gas heater (where installed)
- 1- filter pump
- 1- Pump 1 therapy pump
- 1- Pump 2 therapy pump
- 1- 50 amp (40 amp maximum ampacity) propulsion drive assembly
- 1- Freeze Protect Circuit (where installed)

The low voltage system interface wiring connecting the timer, emergency shut off, and swim spa control must also be installed as per code.

The conduit termination point should be sealed with a UL Listed sealing device. All wiring must be routed through metal conduit that is sized for the wire gauge being used. The conduits shall be terminated using a Liquidtite conduit. GFCI nuisance tripping and motor noise is reduced when using the metal conduit. In the event that local codes have additional requirements they must be followed.

The swim spa equipment must be grounded by way of a bonding wire in addition to the normal ground wiring of the electrical components. The use of this bonding wire will reduce nuisance tripping of the GFCI breaker. The gauge of this bonding wire must be the same gauge as the live conductor to insure that it is capable of carrying the current in the case of a short circuit.

Wire used must be a minimum of 75 degree centigrade stranded copper rated MTW or THHN. Solid copper wire of any kind is NOT to be used unless used to bond metal parts per local code.

The electrical components used to operate this unit should be wired per the component manufacturers recommendations. All electrical components shall be protected by a G.F.C.I. The propulsion controller requires the installation of a special G.F.C.I. which has been supplied with the swim spa. All other electrical components will need to be supplied by a circuit protected by a G.F.C.I. and installed in accordance with Local, and State law, and the NEC. In the event that one requirement is more restrictive, the more restrictive requirement shall be used.

Master Spas can supply an optional control box that allows for most electrical control devices to be housed in a UL approved box and comprises of all UL approved components. Taking advantage of this control box will allow for a simple and quick electrical installation. Refer to the "Technical Drawings" section of this manual for electrical installation schematics used to wire this control box.

Typical Work Involved for Installation of Master Spas Swim Spa

The optional Control Box is capable of controlling the circulation pump (24 hour continuous), both therapy pumps, lights, propulsion system, e-stop, and timer.

Before connecting to the swim spa electrical components, check the incoming power to confirm a voltage level of 216 – 264 VAC.

PLUMBING CONTRACTOR INSTALLATION

Provide all materials, equipment and labor needed to fulfill requirements set forth in the owner's contract. Install all interconnecting plumbing between the swim spa and the swim spa equipment as per the "Technical Drawings" section of this manual, and as required by local and state authorities having jurisdiction.

Install proper drains for maintenance and overflow. Provide drains in the sump area (if applicable), floor drains in the swim spa room and also a gravity drains capable of handling the portable sump pump used to drain the swim spa.

All of the valves, fittings, and piping must be at minimum Schedule 40 NSF-50 or equivalent approved PVC attached with appropriately rated glue.

When the electrical contractor has confirmed operation of the motors and associated equipment, the swim spa is to be filled and all plumbing installed on site hydrostatically tested as required by local and state authorities having jurisdiction.

MECHANICAL CONTRACTOR INSTALLATION

Provide all materials, equipment and labor needed to fulfill requirements set forth in the owner's contract. This will be done to satisfy conditions identified in the installation guide so as to provide proper ventilation, heating, dehumidifying, and air conditioning of the swim spa room. This also must be done in accordance with all applicable codes.

INITIALIZATION REQUIREMENTS

Electrical Contractor:

- Confirm power to systems.
- Before swim spa is filled confirm that all systems wiring conforms to installation guide wiring schematics and all local and state electrical codes.

General Contractor:

- Clean and fill the swim spa.
- Confirm that all work has been completed and swim spa is functioning correctly.

Plumbing Contractor:

- Confirm that all floor drains and sump pumps (if applicable) are fully operational
- Confirm that all plumbing is installed and conforms to proper configurations and that all valves are in the correct positions.
- Confirm that there are no leaks in the system.

Typical Work Involved for Installation of Master Spas Swim Spa

POSSIBLE AREAS OF CONCERN CHECK LIST

Requirements dealing with setbacks not followed causing problems accessing equipment for service and inspection or failures of specific components due to poor design layout.

Poor air circulation around swim spa equipment due to inadequate estimation of heat loads.

All applicable local and state codes must be considered during the early design stages. Failure to do so will many times result in last minute changes that will hold up the final occupancy permits and cause work order changes.

Installation parameters must be clearly defined in bid orders to ensure that changed work orders do not cause delays and add excessive costs to the project.

An overall access plan that will be used throughout the construction project should be in place before beginning. Responsibility for this plan rests with the architect/general contractor. As work will have to be done by several contractors at varying times the importance of this plan is paramount. Considerations for covering the acrylic swim spa shell, provisions for sealing areas open to adverse weather, etc. must be taken.

Should the swim spa be installed in an existing building care must be taken to consider all of the factors involved during the design and bid stage. Potential problem areas can be, existing plumbing and electrical wiring, heating and air-conditioning runs, structural barriers, etc. Care must be taken to insure that all of the aforementioned are addressed when planning for the delivery and moving the swim spa to its final location.

Installation Requirements

The Inspection. The swim spa owner or builder shall notify the authority having jurisdiction at specific, predetermined stages of construction and at the time of completion of the swim spa to permit inspections as may be required.

Installation. The swim spa and its equipment shall be supported to prevent damage from misalignment, settling, etc., and located in such a manner to allow access for inspection, servicing, removal and repair of component parts.

Sand or earth. Sand or earth shall not be used as an interior finish in a public swim spa.

Direct sunlight. Manufacturer's specifications shall be followed for providing a means to protect the swim spa when not in use from direct sunlight exposure.

Circulation system piping. Circulation system piping, other than that integrally included in the manufacture of the swim spa, shall be subject to an induced static hydraulic pressure test (sealed system) at 25 pounds per square inch (1.7577035 kg/sq. cm) for 30 minutes. This test shall be performed before the deck is poured, and the pressure shall be maintained throughout the deck pour.

Valves installed in or under any deck(s) shall provide a minimum of 9 inches (22.86 cm) diameter access cover and valve pit to facilitate servicing.

Hose bibb. A hose bibb with a vacuum breaker shall be provided for washing down the entire deck area.

Circulation system components. Components which require servicing shall be accessible for inspection and repair, and shall be installed in accordance to the manufacturer's specifications.

Swim spa equipment shall be properly supported to prevent damage from misalignment, settlement, operational movement, etc. The equipment shall be mounted so as to minimize the potential for the accumulation of debris and moisture, following manufacturer's specifications.

Equipment shall be designed and fabricated to drain the swim spa water from the equipment, together with the exposed face piping, by removal of drain plugs and by manipulating valves or by other methods.

In addition to programmed filtration times, recirculation equipment shall be in operation during the hours the swim spa is accessible for use.

All filter elements, media and other components which require servicing shall be accessible for inspection, removal and repair, and shall be installed in accordance with the filter manufacturer's instructions.

Pumps shall be accessible for inspection, service and maintenance

Grounding and bonding. Grounding and bonding required in a public swim spa shall comply with the requirements of the National Electrical Code (NEC)®, ANSI/UL 1563 Standard for Electric Hot Tubs, Spas and Associated Equipment and the authority having jurisdiction.

IMPORTANT NOTE. Requirements for grounding and bonding are particularly important and shall be adhered to.

Installation Requirements

Maintenance Disconnect Means. Disconnecting means shall be accessible, located within sight of the electrical equipment and shall be located at least 5 feet (1.524 m) horizontally from the inside walls of the swim spa.

Emergency Shut-off Switch. A clearly labeled emergency shutoff or control switch for the purpose of stopping the motor(s) that provide power to the re-circulation system and jet system shall be installed readily accessible to the users and at least 5 feet (1.524 m) away, adjacent to and within sight of the swim spa.

Installation. Heaters shall be installed in accordance with the authority having jurisdiction and in accordance with the manufacturer's specifications.

Backflow. No direct mechanical connection shall be made between the potable water supply and swim spa, sanitizing equipment or the system of piping for the swim spa, unless it is protected against backflow and back-siphonage in a manner approved by the authority having jurisdiction or through an air gap, meeting the latest ANSI A112.1.2 (R1991) standard.

Water temperature. The swim spa manufacture shall provide instructions stating that the temperature of the in-coming make-up water shall not exceed 104°F (40°C) as recommended in ANSI/UL 1563, Standard for Electric Hot Tubs, Spas and Associated Equipment.

Depth markers shall be positioned on the deck within 18 inches (45.72 cm) of the waterline.

Depth markers shall be positioned to be read while standing on the deck facing the water.

Depth markers in or on the deck surfaces shall be slip-resisting.

Clock. All public facilities shall have a clock which is visible to swim spa.

The swim spa operator shall be provided with an accurate thermometer $\pm 1^\circ\text{F}$ ($\pm 0.56^\circ\text{C}$) tolerance and shall periodically check to ensure that the maximum temperature does not exceed 104°F (40°).

A means to determine the swim spa temperature with a $\pm 1^\circ\text{F}$ ($\pm 0.56^\circ\text{C}$) tolerance shall be provided to the user.

Typical Code Requirements

The Inspection. The swim spa owner or builder shall notify the authority having jurisdiction at specific, predetermined stages of construction and at the time of completion of the swim spa to permit inspections as may be required.

Installation. The swim spa and its equipment shall be supported to prevent damage from misalignment, settling, etc., and located in such a manner to allow access for inspection, servicing, removal and repair of component parts.

Roofs or canopies. Solid roofs or canopies over swim spas shall be constructed so that water run-off does not drain into the swim spa.

Ladders. The design and construction of swim spa ladder(s), where used, shall conform to articles 5.6.3.1 through 5.6.3.6. As per BSR/APSP-2 Standard for Public Spas.

Swim spa ladder(s) shall be made entirely of corrosion-resisting materials.

Ladder treads shall have a slip-resisting surface.

Ladder(s) shall be provided with two (2) handholds/handrails.

The outside diameter of a ladder rail shall be between a minimum of one inch (1") [2.54 cm] and a maximum of one and nine-tenths inches (1.9") [4.826 cm].

Below the water level, there shall be a clearance of not more than six inches (6") [15.24 cm] nor less than three inches (3") [7.62 cm] between any ladder tread edge, measured from the swim spa wall side of the tread and the swim spa wall.

The clear spread between ladder handrails shall be a minimum of 17 inches (43.18 cm) and a maximum of 24 inches (60.96 cm).

Recessed treads. The design and construction of recessed treads, where provided, shall conform to Articles 5.6.4.1 through 5.6.4.5. As per BSR/APSP-2 Standard for Public Spas.

Recessed treads at the centerline shall have a uniform vertical spacing of 12 inches (30.48 cm) maximum and 7 inches (17.78 cm) minimum.

The Vertical distances between the swim spa coping edge, deck or step surface and the uppermost recessed tread shall be a maximum of 12 inches (30.48 cm).

Recessed treads shall have a minimum depth of 5 inches (12.7 cm) and a minimum width of 12 inches (30.48 cm).

Recessed treads shall drain into the swim spa to prevent the accumulation of dirt, and shall be slip-resisting.

Each set of recessed treads shall be provided with a set of handrails/grabrails/handholds to serve all treads and risers.

Typical Code Requirements

DECKS

New construction areas. These guidelines shall apply to deck area at or around immediately around the swim spa.

Work for concrete deck(s) shall be performed in accordance with local construction practices and the recommendations of the latest American Concrete Institute (ACI) Standard 302.1R-80, "Guide for Concrete Floor and Slab Construction".

Slip-resisting. All deck surfaces shall be of slip resisting materials, including but not limited to special deck features such as markers and brand insignias.

Special features. Special features in or on decks such as markers, brand insignias or similar items shall conform to this article.

Riser dimensions. Risers for deck steps shall be uniform and have a maximum height of 71/2 inches (19.05 cm). The minimum tread depth shall be 10 inches (25.4 cm).

Subgrade. The subgrade for decks shall be prepared and/or installed in accordance with engineering practices required in the area of installation or methods required by the authority having jurisdiction.

Unobstructed deck. A minimum 4 feet (1.2192 m), unobstructed deck, including the coping, shall be provided around at least 50 percent of the swim spa.

Slope. Decks shall be sloped to effectively drain towards the perimeter areas or to deck drains. Typical slopes for immediate swim spa decking are:

- a) 1/8 inch per 1 foot (1.04166 cm: 1 m) shall be provided for textured, hand-finished concrete decks;
- b) 1/4 inch per 1 foot (2.08333 cm: 1 m) for exposed aggregate concrete decks;
- c) 1/2 inch per 1 foot (4.1666 cm: 1 m) for indoor/outdoor carpeted concrete decks, unless an alternative drainage method is provided.

The maximum slope for wood decks shall be 1/8 inch per 1 foot (1.04166 cm: 1 meter).

Gaps shall be based on good engineering practices with respect to the type of wood used.

Expansion joints. Expansion control joints shall be provided to help control cracks due to expansion, contraction, and movement of the slab.

Sharp corners. Decks shall be chamfered or otherwise relieved to eliminate sharp corners.

Drainage. Site drainage shall direct all deck drainage as well as general site and roof drainage away from the swim spa. Where required, yard drains shall be installed to prevent the accumulation or puddling of site water in the general area of the deck(s) and related improvements.

Backwash sump. If used, a backwash sump shall be located so that it falls completely below adjacent deck(s) and fully outside a line projected 45° downward and away from the deck(s) or shall be designed to accommodate local soil conditions and the volume of backwash.

Typical Code Requirements

Circulation system piping. Circulation system piping, other than that integrally included in the manufacture of the swim spa, shall be subject to an induced static hydraulic pressure test (sealed system) at 25 pounds per square inch (1.7577035 kg/sq. cm) for 30 minutes. This test shall be performed before the deck is poured, and the pressure shall be maintained throughout the deck pour.

Valves installed in or under any deck(s) shall provide a minimum of 9 inches (22.86 cm) diameter access cover and valve pit to facilitate servicing.

Hose bibb. A hose bibb with a vacuum breaker shall be provided for washing down the entire deck area.

Filtration Duration. In addition to programmed filtration times, recirculation equipment shall be in operation during the hours the swim spa is accessible for use.

Grounding and bonding. Grounding and bonding required in a public swim spa shall comply with the requirements of the National Electrical Code (NEC)®, ANSI/UL 1563 Standard for Electric Hot Tubs, Spas and Associated Equipment and the authority having jurisdiction.

IMPORTANT NOTE. Requirements for grounding and bonding are particularly important and shall be adhered to.

Maintenance Disconnect Means. Disconnecting means shall be accessible, located within sight of the electrical equipment and shall be located at least 5 feet (1.524 m) horizontally from the inside walls of the swim spa.

Emergency Shut-off Switch. A clearly labeled emergency shutoff or control switch for the purpose of stopping the motor(s) that provide power to the re-circulation system and jet system shall be installed readily accessible to the users and at least 5 feet (1.524 m) away, adjacent to and within sight of the swim spa.

Installation. Heaters shall be installed in accordance with the authority having jurisdiction and in accordance with the manufacturer's specifications.

Support. Heaters shall be installed on a surface with sufficient structural strength to support the heater when it is full of water and operating. The heater shall be stable and not able to move after plumbing, gas and/or electrical connections are completed.

Combustible surfaces. If the heater requires a non-combustible mounting surface per the manufacturer's specification, it shall be placed on a concrete or other listed surface and comply with ANSI Z21.56a-1996 or with the authority having jurisdiction.

Clearances. All heaters shall be installed and maintained with the minimum clearances to combustibles for which the heater has been tested as specified by the manufacturer's specification.

Ventilation. All swim spas and their related components installed in an indoor swim spa environment, shall comply with the ventilation requirements of ANSI/ASHRAE 62-2001, Ventilation for Acceptable Indoor Air Quality, Table 2-Section 2.1. (For additional information on ventilation/ humidity guidelines for indoor swim spas, see the 1999 ASHRAE Handbook, HVCA Applications, I-P Edition, 4.5, 4.6. and 4.7*)

Typical Code Requirements

Make up air. When installing a fossil fuel heater indoors, proper openings to the room are required. The heater shall be installed in accordance with the authority having jurisdiction and the manufacturer's specifications for properly sized and located air openings to the enclosure.

Important safety consideration. Fossil fuel appliances like swim spa heaters produce poisonous carbon monoxide gas as a by-product of combustion. Proper venting of exhaust gases and the correct sizing of gas meters, gas supply piping, make-up air intake, etc. are critical installation considerations in preventing potential carbon monoxide gas poisoning or loss of life.

HEATING ENERGY SOURCE

Natural gas energy supply. The heater gas supply piping shall comply with manufacturer's specifications and ANSI/NFPA 54, National Fuel Gas Code.

Important safety note. Install a gas cock, properly sized and readily accessible outside the jacket, to stop the flow of natural gas at the heater for service or emergency shutdown.

Propane energy supply. Whenever a propane (LPG) appliance is installed, special attention shall be given to ensure that the storage tank, supply piping and regulator shall be adequately sized to ensure operating fuel pressures as specified by the appliance manufacturer. Consult the fuel supply company and ensure that the system is installed in accordance with the National Fuel Gas Code (ANSI Z223.1/NFPA 58-2004, or equivalent).

Important safety note. Propane gas is heavier than air and therefore can create an extreme hazard of explosion or suffocation if the heater is installed in a pit or enclosed area. NFPA -58 contains provisions for installing valves and other controls in pits and similar areas.

Important safety note. Install a gas cock, properly sized and readily accessible outside the jacket to stop the flow of propane (LPG) at the heater for service or emergency shutdown.

Electrical supply. Electric heating appliances shall be installed in accordance with the National Electrical Code (NEC) © and with the requirements of the authority having jurisdiction.

Important safety note. The requirements for grounding and bonding are particularly important and shall be adhered to.

Backflow. No direct mechanical connection shall be made between the potable water supply and swim spa, sanitizing equipment or the system of piping for the swim spa, unless it is protected against backflow and back-siphonage in a manner approved by the authority having jurisdiction or through an air gap, meeting the latest ANSI A112.1.2 (R1991) standard.

Water temperature. The swim spa manufacture shall provide instructions stating that the temperature of the in-coming make-up water shall not exceed 104°F (40°C) as recommended in ANSI/UL 1563, Standard for Electric Hot Tubs, Spas and Associated Equipment.

WASTE WATER DISPOSAL

Backwash water is permitted to be discharged into a sanitary sewer through an approved air gap into an approved subsurface disposal system or by other means approved by the authority having jurisdiction.

Typical Code Requirements

SANITIZING, OXIDATION EQUIPMENT AND CHEMICAL FEEDERS

Compliance. Sanitizing equipment, oxidation equipment and chemical feeders, shall comply with the most recent edition of ANSI/NSF-50 Circulation System Components and Related Materials for Swimming Pools, Spas and Hot Tubs. The sanitizing equipment and the chemical feeders shall be capable of introducing a sufficient quantity of a sanitizer.

Chemical feeders. The installation and use of chemical feeders shall conform to articles 17.2.1 through 17.2.2. As per BSR/APSP-2 Standard for Public Spas.

A chemical feed system shall be installed in accordance with the manufacturer's specifications.

Chemical feed pumps shall be wired so they cannot operate unless there is adequate return flow to properly disperse the chemical throughout the swim spa as designed.

Training. Personnel responsible for the operation of the sanitizing agent equipment shall be properly trained in the operation of that equipment, the procedure for performing and interpreting the required onsite chemical tests, and the appropriate emergency procedures.

If the equipment is located in a closed room and capable of exposing maintenance or service personnel to ozone concentrations exceeding federal, state, or local air standards, a self-contained breathing apparatus approved for ozone usage shall be provided. If a distinct, pungent odor is smelled when the ozone generating equipment is operating, the equipment shall be shut down and the area shall be ventilated. The equipment shall be inspected and repaired as required per the manufacturer's specifications.

SAFETY FEATURES

Public swim spas are for swimming, exercising, hydrotherapy and wading only. No diving boards, slides or other equipment are to be added to a public swim spa that in any way indicates that it may be used or intended for diving or sliding purposes.

Unauthorized access. The swim spa shall be secured to protect against unauthorized access. Consult the authority having jurisdiction for barrier guidelines. (See also ANSI/APSP-8, Model Barrier Code for Residential Swimming Pools, Spas and Hot Tubs).

Maintenance disconnect switch. Disconnecting means shall be accessible, located within sight of the swim spa electrical equipment and shall be located at least 5 feet (5') [1.524 m] horizontally from the inside walls of the swim spa.

The disconnecting means shall be clearly labeled "Safety Disconnecting Switch Use only." It shall not be used an emergency switch.

Emergency shut-off switch. A clearly labeled emergency shutoff or control switch for the purpose of stopping the motor(s) that provide power to the re-circulation system and jet system shall be installed readily accessible to the users and at minimum of 5 feet (1.52m) away, adjacent to and within sight of the swim spa.

Safety literature. The swim spa owner, or their representative shall be advised by the installing agent of the available publications related to swim spa safety. These documents may include but not limited to APSP booklets entitled: "Children Aren't Waterproof", "Pool and Spa Emergency Procedures for Infants and Children", "Layers of Protection" and "The Sensible Way to Enjoy Your Spa."

Typical Code Requirements

Instructions/safety signs. The installing agent shall provide instructions to inform the owner to post signage in a prominent location which states the safety, emergency and operational aspects of the swim spa. As a guide for language and layout of the safety signs, reference ANSI Z-535, Series of Standards for Safety Signs and Colors and ANSI/UL 1563, Standard for Electric Hot Tubs and Associated Equipment.

Swim spa use sign. The swim spa instructions shall inform the operator to post the swim spa use parameters sign in a prominent location adjacent to the entrance of the swim spa.

Safety signs shall include but not be limited to the messages below and shall comply with Appendix B.

13. Risk of Fetus Injury - Hot water exposure limitations vary from person to person. Pregnant women and small children should not use swim spa prior to medical consultation.
14. Risk of Drowning - Persons suffering from heart disease, diabetes, high or low blood pressure and other health problems should not enter the swim spa without prior medical consultation and permission from their doctor.
15. Risk of Drowning - Do not use the swim spa while under the influence of alcohol, narcotics, or other drugs that cause sleepiness, drowsiness or raise/lower blood pressure.
16. Risk of Child Drowning -Unsupervised use of swim spa by children is prohibited.
17. Risk of Injury - Before entering, check swim spa or temperature. Do not use the swim spa if the temperature is above 104°F (40°C).
18. Risk of Drowning - Use caution when bathing alone. Overexposure to hot water may cause nausea, dizziness and fainting. Lower water temperatures are recommended for extended use (exceeding 10-15 minutes) and for young children.
19. Risk of Injury - Enter and exit slowly.
20. Risk of Injury - Keep all breakable objects out of the swim spa.
21. Risk of Shock - Never place electrical appliances (telephone, radio, television, etc.) within 5 feet (1.524 m) of the swim spa.
22. Risk of Shock - The swim spa shall not be operated during severe weather conditions, i.e. electrical storms, tornadoes, etc.
23. Secure the facility against unauthorized access. (See also ANSI/APSP-8 Model Barrier Code for Residential Swimming Pools, Spas and Hot Tubs).
24. Risk of Drowning - Do not allow the use of or operate swim spa if the suction outlet cover is missing, damaged or loose.

Emergency telephone signs. A sign shall be posted in the immediate vicinity of the swim spa, stating the swim spa address, the location of the nearest telephone, and that emergency telephone numbers are posted by this telephone. Those emergency telephone numbers shall include the name and phone number of the nearest available police department, fire department, ambulance service, and/or rescue unit, and/or "911," if available.

Typical Code Requirements

Operational signs. Operational signs shall include but not be limited to the following messages:

7. Do not allow the use of or operate swim spa if the suction outlet cover is missing, damaged or loose.
8. Check swim spa temperature before each use. Do not enter the swim spa or if the temperature is above 104°F (40°C).
9. Secure the facility against unauthorized access. (See ANSI/APSP-8, Model Barrier Code for Residential Swimming Pools, Spas and Hot Tubs).
10. Keep all breakable objects out of the swim spa.
11. Swim spa shall not be operated during severe weather conditions, i.e. electrical storms, tornadoes, etc.
12. Never place electrical appliances (telephone, radio, television, etc.) within 5 feet (1.524 m) of the swim spa. Depth markers shall be positioned on the deck within 18 inches (45.72 cm) of the waterline.

Depth markers shall be positioned to be read while standing on the deck facing the water. Depth markers in or on the deck surfaces shall be slip-resisting.

Clock. All public facilities shall have a clock which is visible to swim spa.

The swim spa operator shall be provided with an accurate thermometer $\pm 1^\circ\text{F}$ ($\pm 0.56^\circ\text{C}$) tolerance and shall periodically check to ensure that the maximum temperature does not exceed 104°F (40°).

A means to determine the swim spa temperature with a $\pm 1^\circ\text{F}$ ($\pm 0.56^\circ\text{C}$) tolerance shall be provided to the user.

DRESSING FACILITIES FOR PUBLIC SWIM SPAS

The minimum criteria for dressing and sanitary facilities shall be based upon the anticipated maximum attendance of users and their gender.

OPERATION AND MANAGEMENT

Supervision/training. Public swim spas shall be maintained under the supervision and direction of a properly trained and certified operator who shall be responsible for the sanitation, safety, and proper maintenance of the swim spa and all physical, mechanical equipment and records. (Training can be obtained by completion of the National Swimming Pool Foundation's Pool/Spa Operator's Training Course CPO), and the National Parks and Recreation (AFO)

Instructions. Upon completion of construction of any public swim spa, the manager and the operators shall be given complete written and oral instructions by the builder as well as instructions for operating the swim spa and all equipment and for the continuous sanitation of the swim spa water.

Water temperature. Owner/operator should routinely check the in-swim spa water to ensure that the temperature does not exceed 104°F (40°C), as recommended in ANSI/UL 1563, Standard for Electric Hot Tubs, Spas and Associated Equipment. If adjustments are necessary, those adjustments shall be performed in accordance with manufacturer's specifications.

Typical Code Requirements

Rules and regulations for users shall be posted in a conspicuous place.

User load. The maximum user load shall not exceed one (1) person per 9 square feet (0.8361 sq. m) of surface area.

The user load limit shall be observed by the management. The maximum number of users to be allowed in the swim spa at one time shall be determined and will depend on a number of factors such as the design of the swim spa, user's use pattern, surface area of the swim spa, operating characteristics of the water purification system with the significant factors being the swim spa area and the sanitary and physical condition of the swim spa water under maximum usage.

OPERATING PERMITS

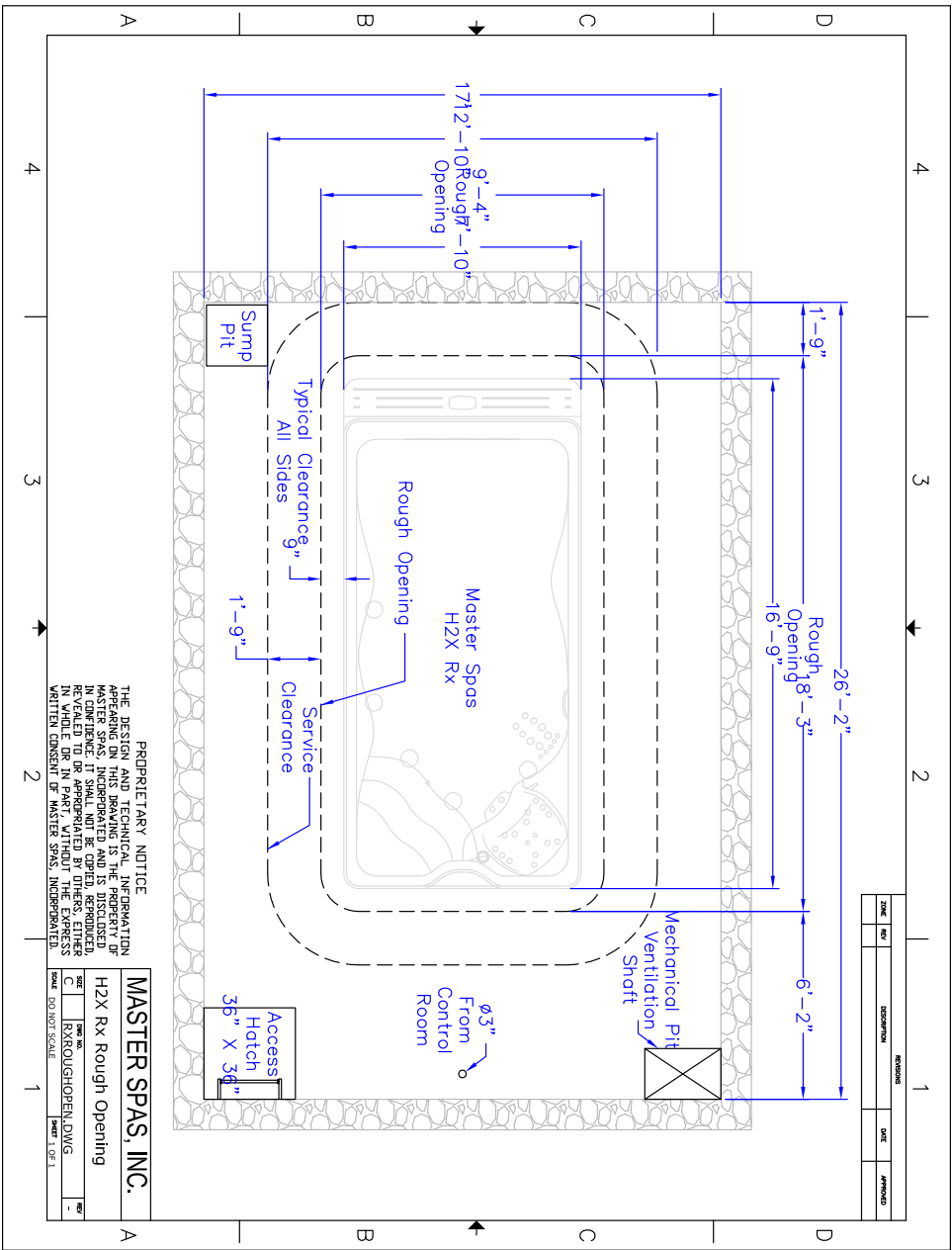
A public swim spa shall not operate until such time as the appropriate permit required has been submitted to the authority having jurisdiction.

The swim spa shall not be placed in operation until appropriate inspections show compliance with the guidelines of this standard. (Refer to articles 3.1.1 and 3.1.2). As per BSR/APSP-2 Standard for Public Spas

If the authority having jurisdiction makes a regular inspection of the swim spa to determine compliance with applicable permit or requirements, the swim spa owner and/or operator shall correct all noted deficiencies before placing the swim spa in operation and accessible to users. In the absence of such an inspection, the owner and/or operator shall perform a documented self-inspection of the swim spa and file in their records a checklist noting each deficiency noted and a follow-up statement after these have been corrected, and to maintain records for a period of three (3) years.

Should any inspections, including self-inspection, of the swim spa reveal a condition which does or may constitute a health or safety hazard for users, the owner and/or operator shall prevent any person from using it until the hazard has been satisfactorily corrected. If the authority having jurisdiction cited the violation, that agency shall be notified to make a follow-up inspection before the swim spa is reopened.

The revoked or suspended permit shall not be reissued or reinstated unless presented with evidence that the deficiencies which caused the revocation or suspension have been corrected. Such evidence shall be in the form of a re-inspection by the authority having jurisdiction.



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H2X Rx Rough Opening

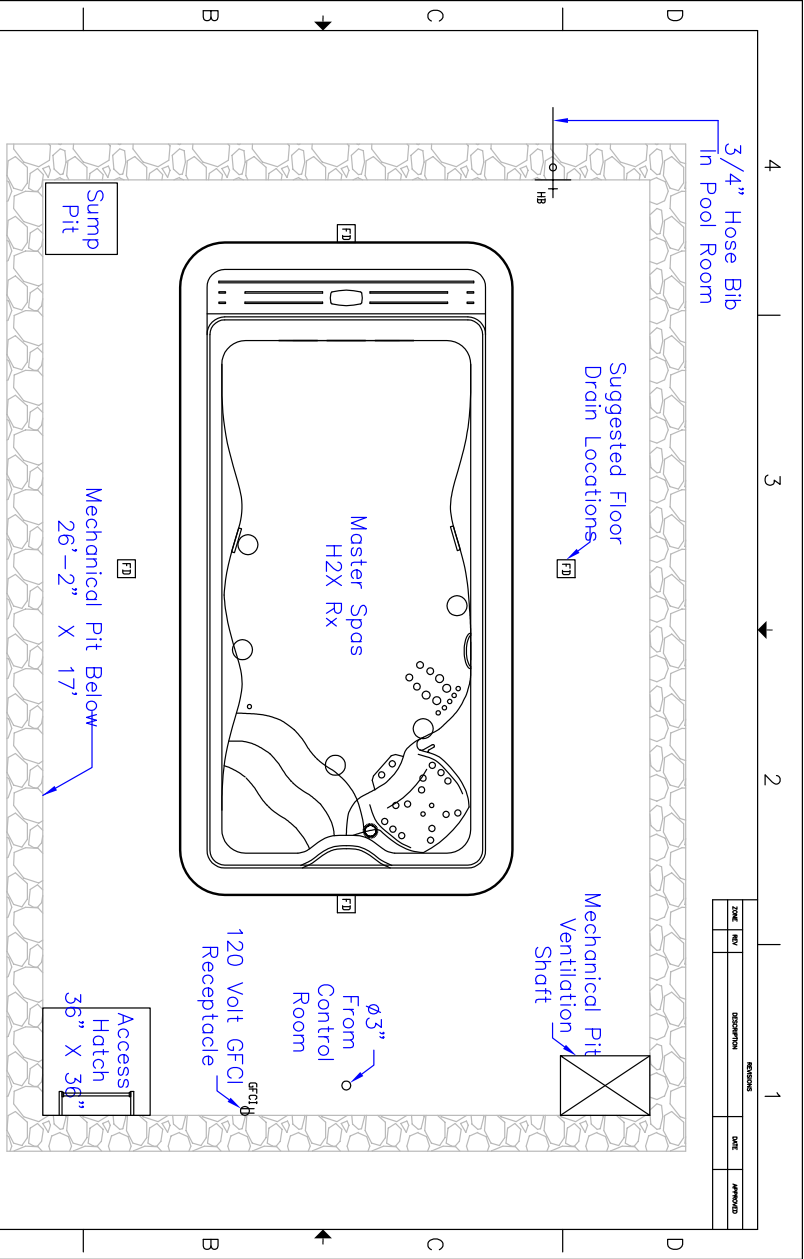
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BY: RYAN HOPPEN

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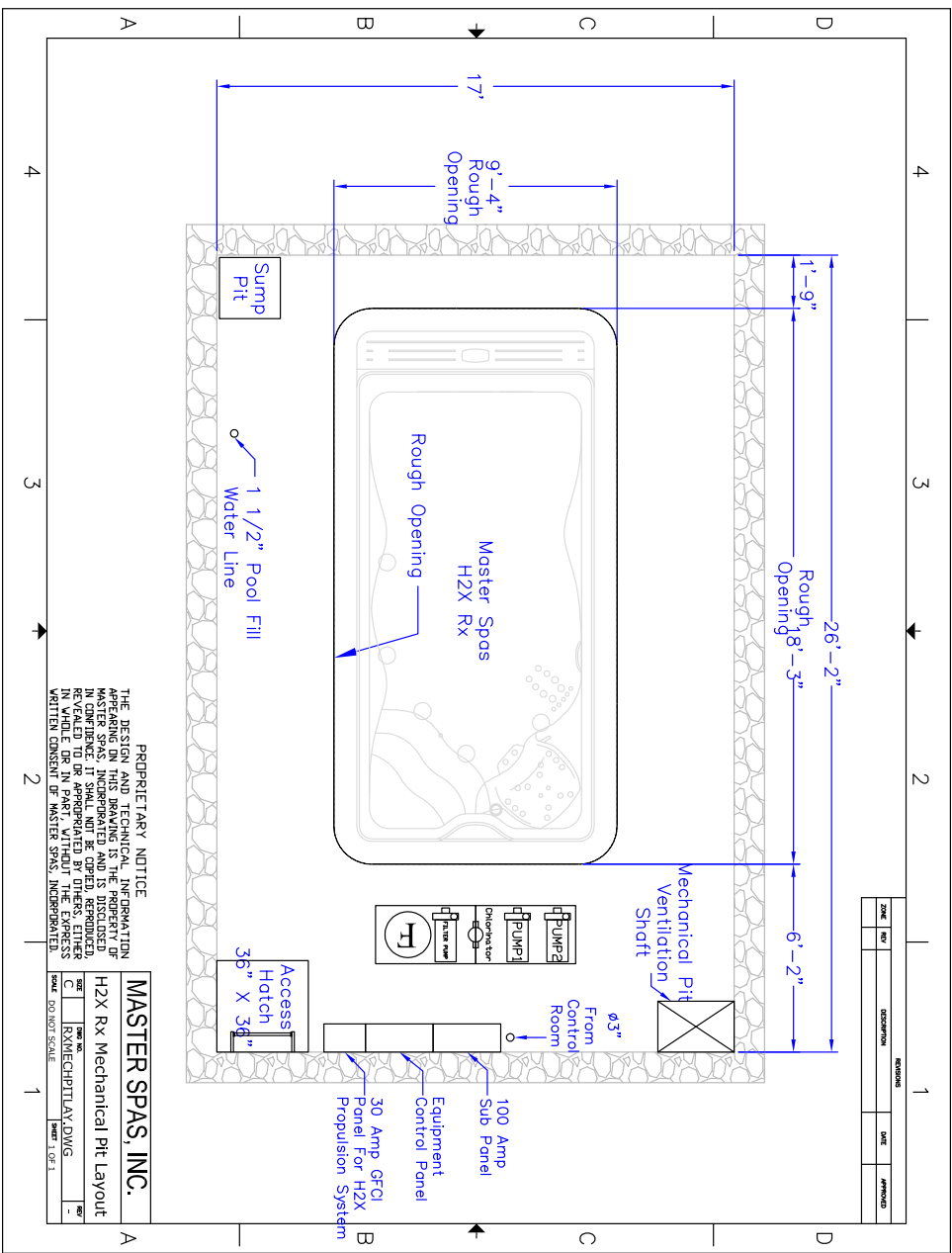
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H2X Rx Room Layout

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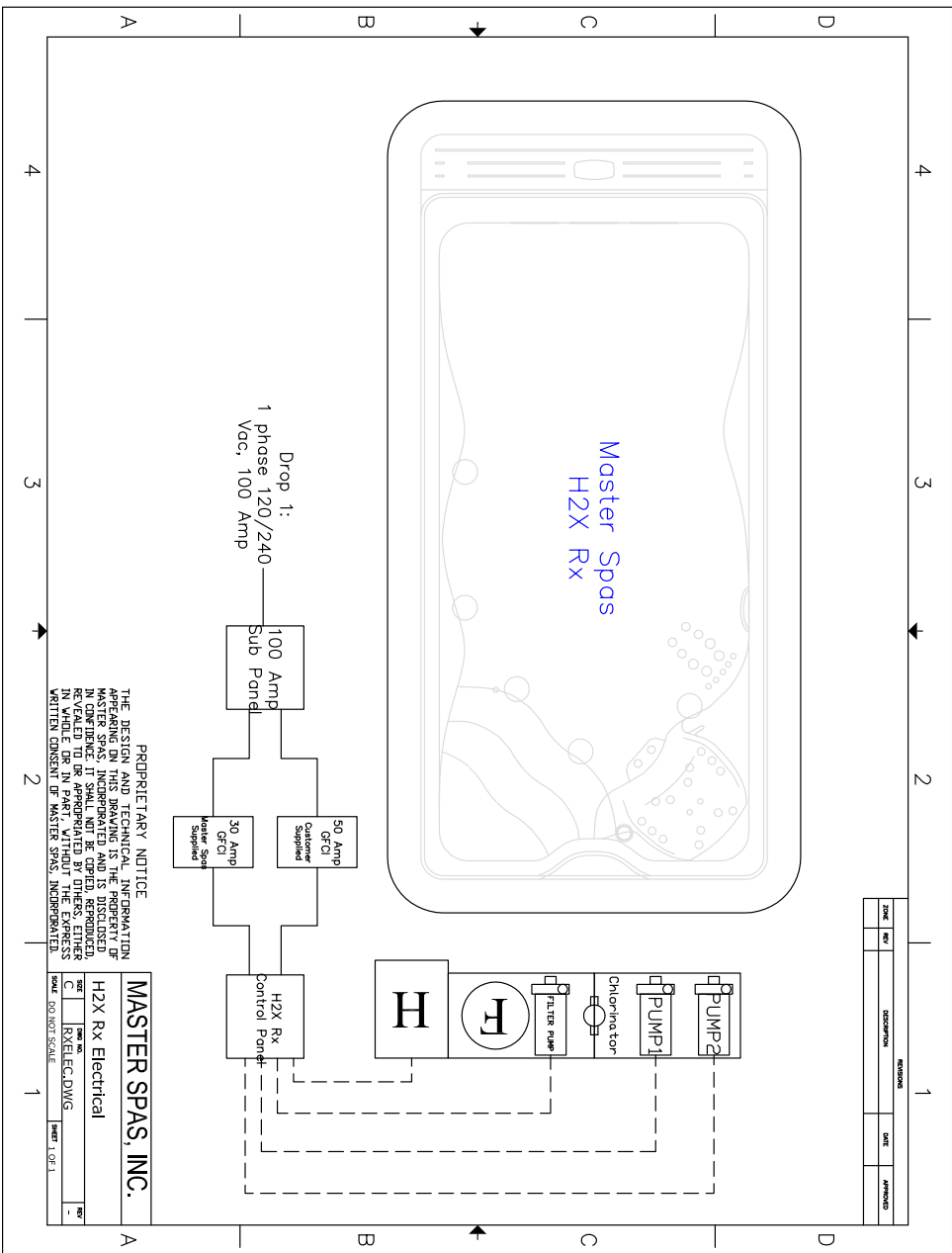
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H2X Rx Mechanical Pit Layout

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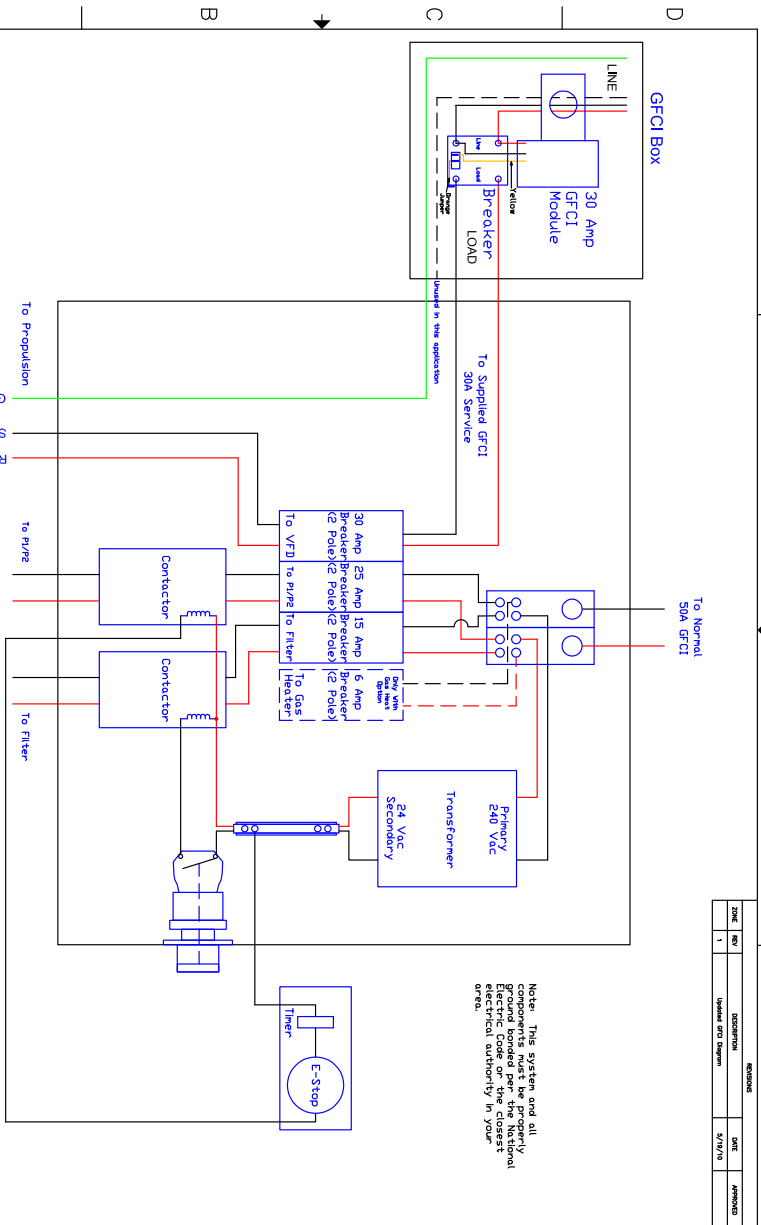
H2X Rx Electrical
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| | 1 | Updated GFCI Diagram | 5/17/19 | |

Note: This system and all components must be properly ground bonded per the National Electrical Code and local electrical authority in your area.



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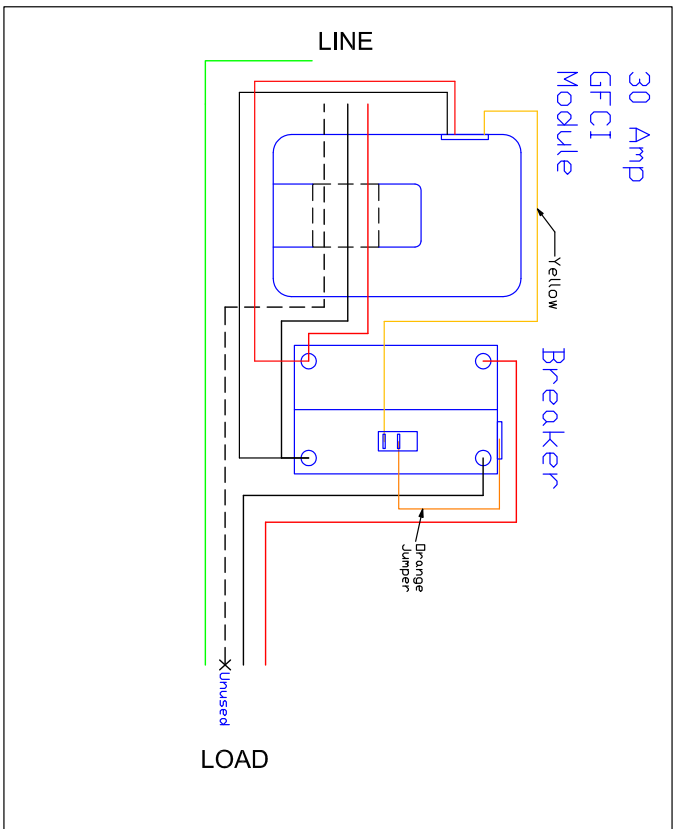
H2X Rx Electrical Controls

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GFCI Box



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Recommended Parts List H2X Rx Controls

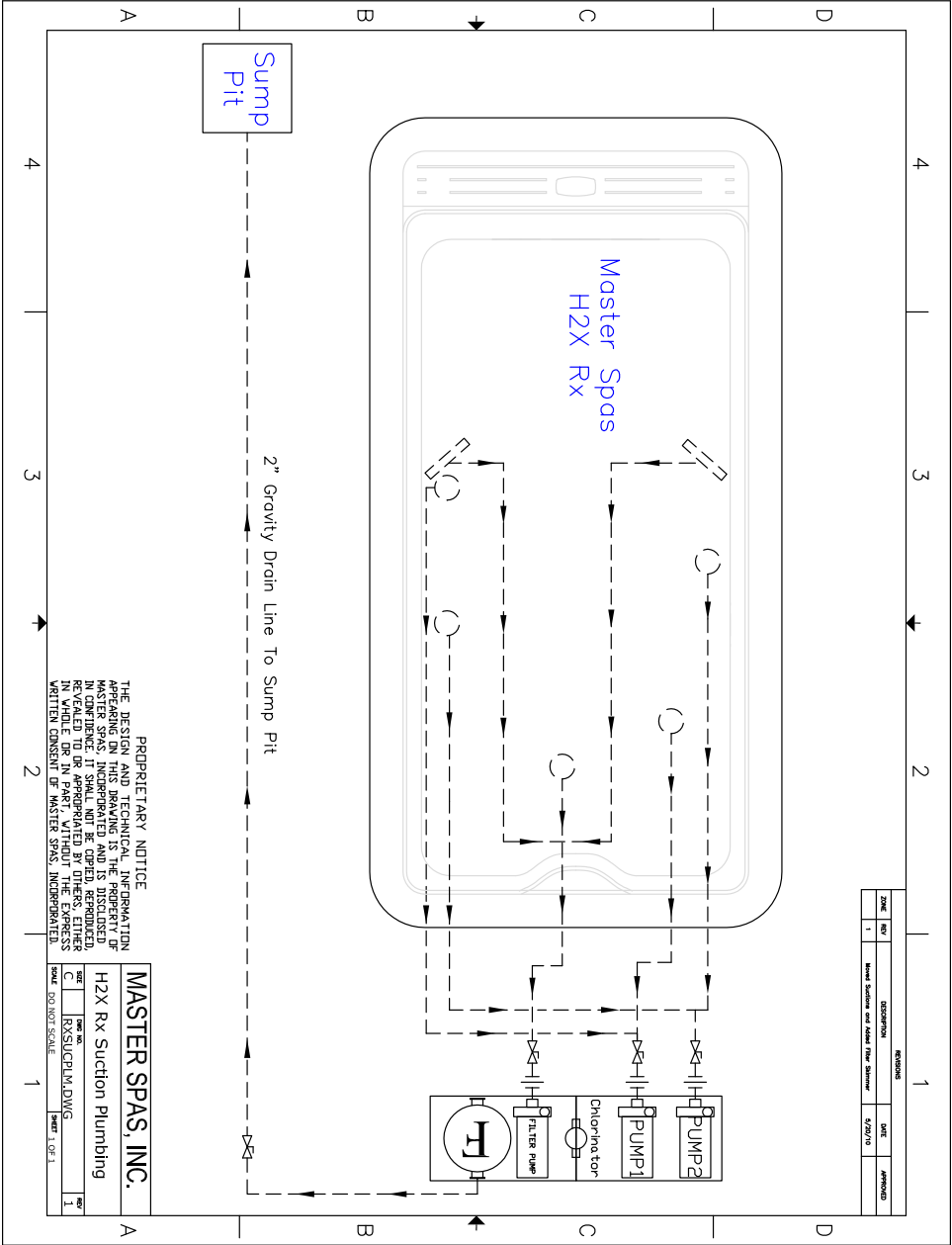
| Quantity | Short Description |
|----------|---|
| 2 | DIST BLK, FINGER SAFE, 175A, 1 POLE, 1 OPEN LINE, 4 OPEN LOAD, QTY1 |
| 2 | CONTACTOR 32A, 24VAC COIL, 54mm |
| 1 | CONTROL TRANSFORMER 75VA, 120x240VAC TO 12x24VAC |
| 1 | PB 22MM 4SCREWS W/ HOLES FOR 2PB 1ROW |
| 1 | 2SCREWS OPQ CVR GRY 4X HINGE 18X16X8IN |
| 1 | SUB-PANEL ALUMINUM FITS 18X16IN |
| 1 | SUPPLEMENTARY PROTECTOR 2 POLE 25A D CURVE |
| 1 | SUPPLEMENTARY PROTECTOR 2 POLE 30A D CURVE |
| 1 | SUPPLEMENTARY PROTECTOR 2 POLE 15A D CURVE |
| 1 | LEGEND PLATE, 60mm, 1/PK, E-STOP, YELLOW |
| 1 | PB, 22mm, PLASTIC, RED, TWST-REL, 60mm OPERATOR, 1 N.O. |
| 1 | PB, 22mm, PLASTIC, GRN, ON/OFF, 24V, LED ILLUM, FLUSH, 1 N.O. |
| 0.02 | TERMINAL BLOCK, GRY, 50/PK, 2-LEVEL, 30A, 10AWG, 600V |
| 1 | CTRL TRANS FUSE KIT UP TO 100VA FOR PRIMARY SIDE |
| 0.1 | HCTR 1 AMP CURRENT LIMITING CLASS CC FUSE 10 PACK |
| 0.1 | MEN 3 AMP TIME DELAY FUSE 10 PACK |

MASTER SPAS, INC.

H2X Rx Electrical Controls

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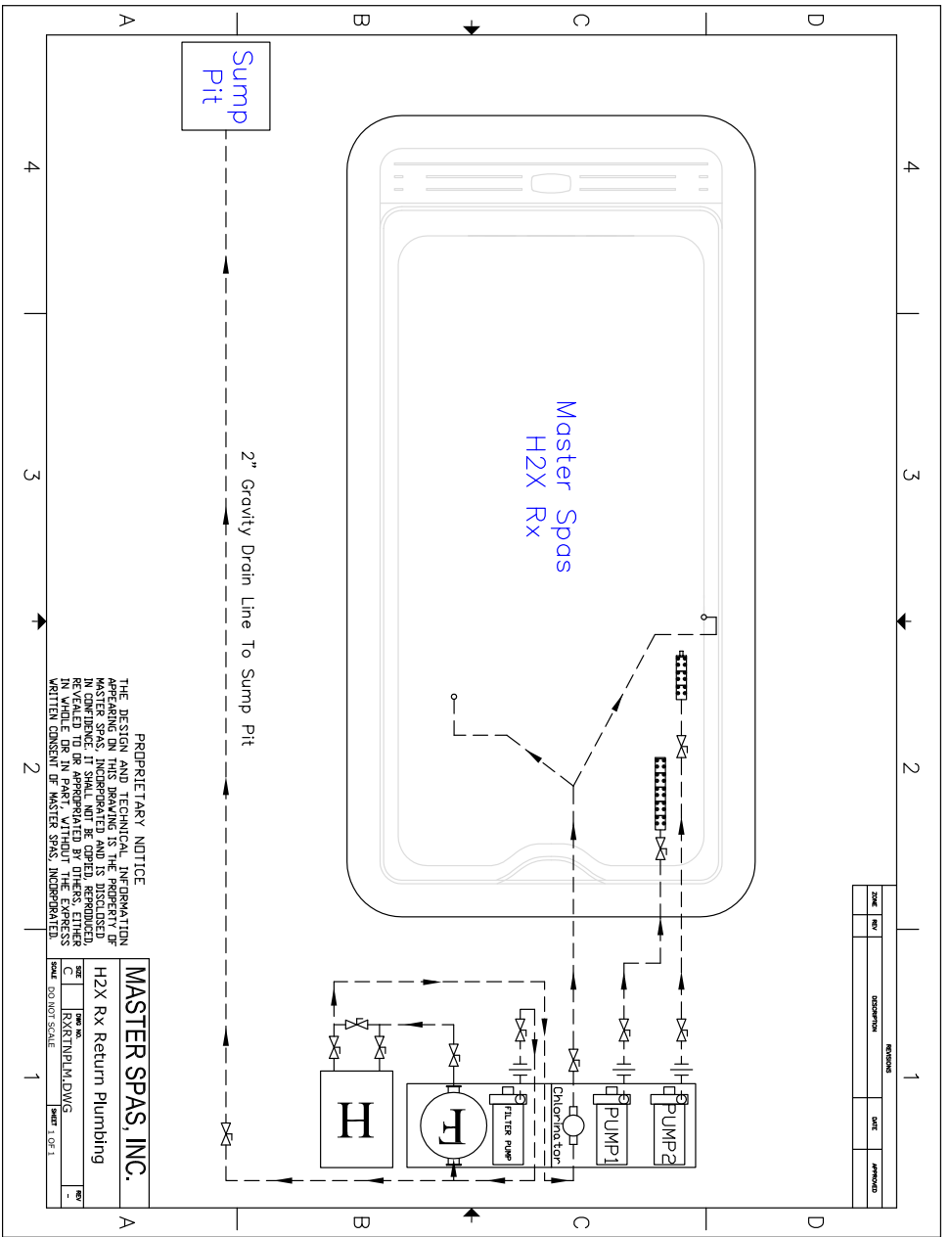
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| 1 | | Hot System and Sump Pit System | 5/20/19 |

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H2X Rx Suction Plumbing

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 STORAGE AND RETRIEVAL SYSTEM, WITHOUT
 THE WRITTEN CONSENT OF MASTER SPAS, INC.

MASTER SPAS, INC.

H2X Rx Return Plumbing

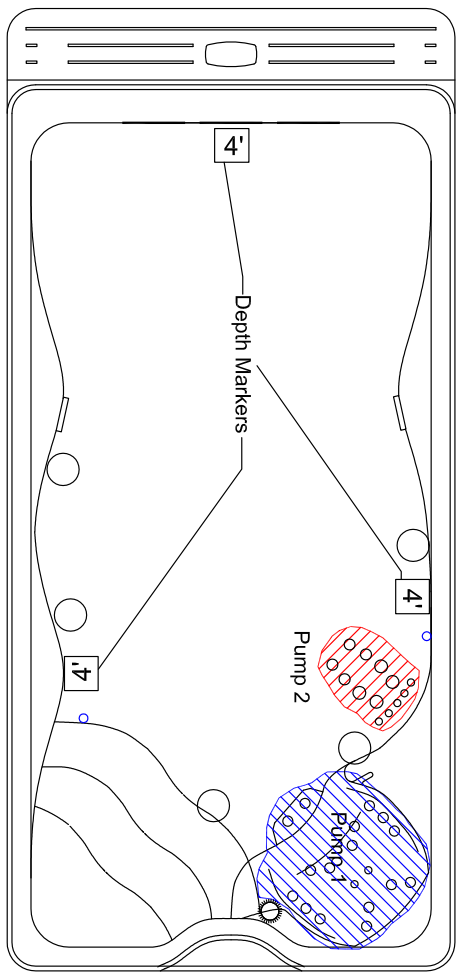
REV: 1

DATE: 10/1/11

SCALE: DO NOT SCALE

SHEET 1 OF 1

2010 H2X RX



Engineering Approval:

Master Spas

| Model | Date | Sheet |
|--------|---------|-------|
| H2X RX | 5/24/10 | 1 |

Controls R-U Valmassoi

Rev 1: Added Depth Markers (5/24/10)
 Rev 0: Original Drawing (10/15/09)



OWNER'S MANUAL

Manufactured by Master Spas,
one of the world's leading swim spa manufacturers.

6927 Lincoln Parkway
Fort Wayne, IN 46804
800.860.7727

The manufacturer reserves the right to change specifications or features without notice. As a manufacturer of swim spas and related products we stand behind every product we produce pursuant to those representations which are stated in our written limited warranty. Your dealer is an independent business person or company and not an employee or agent of the manufacturer. We cannot and do not accept any responsibility or liability for any other representations, statements or contracts made by any dealer beyond the provisions of our written limited warranty.

Rev. 201707