

Proposal for:
City of Key West
SPLASH PAD

Presented by:
JT Almon
Rep Services, Inc
407-831-9658
jtalmon@repservices.com

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952.445.5135 | 877.632.0503 | aquatix.playlsi.com



Thank you for the opportunity

Thank you for this opportunity to submit our response to the referenced request for proposal. Enclosed you'll find detailed descriptions of the extensive level of services by Aquatix by Landscape Structures.

In addition, we are providing a conceptual 3d design with supporting product information and a products and services proposal.

Understanding that you may be in the very initial design concept stages and that the project may evolve, please note the following qualifications of Aquatix's proposal:

- The enclosed design is an initial concept and has been designed in order to fit the space and types of features indicated in the request for proposal.
- Aquatix's project design is to be a recirculation system.
- Aquatix's mechanical components to be housed above ground in a housing or equipment room provided by others.

Please let me know if I may assist you further as I look forward to hearing from you!

Sincerely,
Amy Altman
Aquatix Sales Manager
Direct: 952-345-6440
Email: amyaltman@playlsi.com



From large-volume water features to Urban structures, we do more with your water and always keep fun at a premium.

Big fun, big value

Our splash pad structures and ground sprays are designed for kids young and old. We understand that play value for little kids is just as important as durable structures, flexible product options and dollar-for-dollar value are to "big" kids.

Waterplay Consultants

Like any good architect, we aim for long-lasting value. That's why we engineer our splash pads with prefabricated, top-of-the-line mechanical systems that offer years of reliable, easy-to-use operation.

Passion, experience and dedication

With over 25 years in the water entertainment business, you might say that we live and breath water (but without gills). We enjoy sharing our passion with our customers—it's what drives us to provide hands-on service and go the extra mile with our concept and construction design services.



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Front view for: **City of Key West** SPLASH PAD

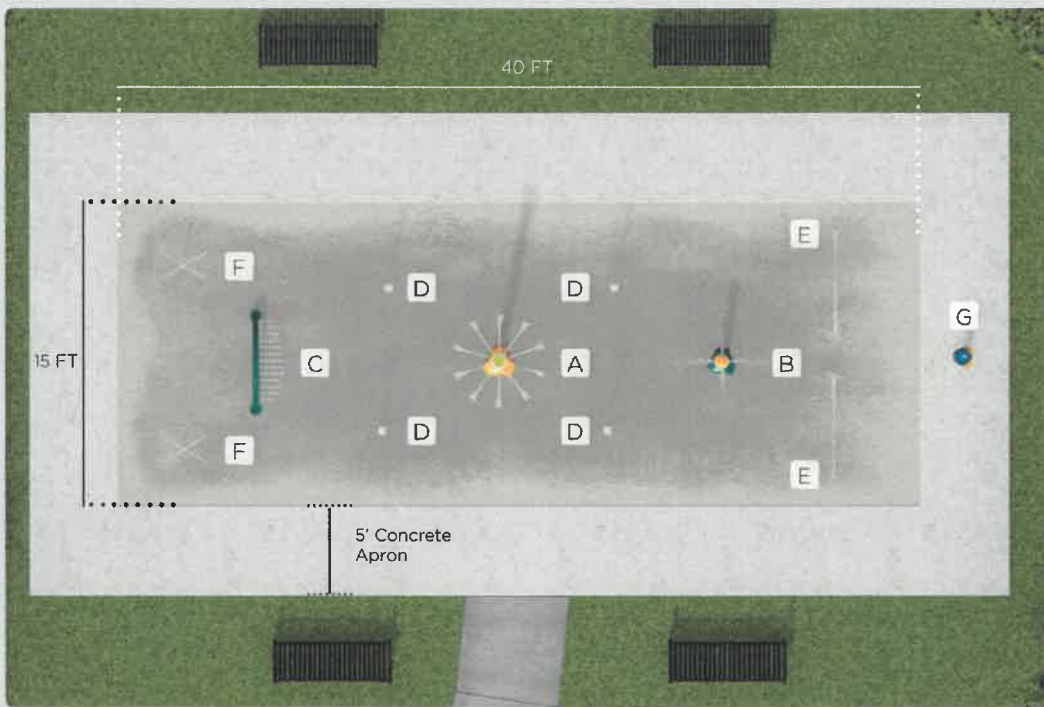


*All products are shown as conceptual only.



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Overhead view for: **City of Key West** SPLASH PAD



Overall pad dimensions:
40' x 15'

- A** Water Shower @ 5 gpm
- B** Misting Water Post @ 5 gpm
- C** Tot Arch @ 10 gpm
- D** (4) Stream Jet @ 5 gpm
- E** (2) Arch Jet @ 5 gpm
- F** (2) Sea Crawler @ 5 gpm
- G** Aquavator

Total system Flow Rate: 60 GPM

Front view for: **City of Key west** SPLASH PAD



*All products are shown as conceptual only.

DESIGN CONCEPT

PRODUCT SELECTION

MECHANICAL OVERVIEW

EQUIPMENT & SERVICES

SPECIFICATIONS

Front view for: **City of Key West** SPLASH PAD



*All products are shown as conceptual only.

Water Shower



The **Water Shower** is a structure that emits a heavy crown jet nozzle effect from the top of the tubular structure to users below.



Flow range 5 to 20 GPM
18.92 to 75.71 LPM

Size 9' 0" x 0' 6"
2.74 x .15 m

Splash zone 15' 0" Diameter
4.57 m Diameter

Misting Water Post



The **Misting Water Post** is a structure that emits multiple misting sprays around the perimeter of the post onto users



Flow range 5 to 10 GPM
18.93 to 37.85 LPM

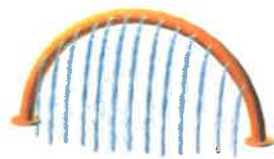
Size 4' 0" x 0' 6"
1.22 x .15 m

Splash zone 10' 0" Diameter
3.05 m Diameter

Tot Arch



The **Tot Arch** is a structure that emits multiple streams of water from a low horizontal semi circle arch bar onto users. This small scale structure is a great activity for early age children.



Standard flow	10 GPM 37.85 LPM
Size	5' 0" x 2' 6" 1.52 x .79 m
Splash zone	6' 0" x 6' 0" 1.83 x 1.83 m

Stream Jet



The **Stream Jet** is a ground spray element that emits a single stream of water upward. The feature flow rates can be adjusted to increase or decrease the spray height. The Stream Jet is designed for wet deck applications with no standing water.



Maximum flow	10 GPM 37.85 LPM
Standard flow	5 GPM 18.93 LPM
Minimum flow	1 GPM 3.78 LPM
Size	5' 0" x 0" 3" 1.52 x .09 m
Splash zone	5' 0" x 0" 3" 1.52 x .09 m

Arch Jet

Sea Crawler



The **Arch Jet** is a ground spray element that emits a single stream of water arching outward. The feature flow rates can be adjusted to increase or decrease the spray height and projection. The Arch jet is designed for wet deck applications with no standing water.



The **Sea Crawler** is a ground spray element that emits a single stream of water upward and four arching streams of water. The Sea Crawler is designed for wet deck applications with no standing water.



Maximum flow	10 GPM 37.85 LPM
Standard flow	5 GPM 18.93 LPM
Minimum flow	1 GPM 3.78 LPM
Size	5' 0" x 3' 6" 1.52 x 1.1 m
Splash zone	8' 0" x 5' 0" 2.44 x 1.52 m



Standard flow	5 GPM 18.93 LPM
Size	2' 0" x 2' 6" .61 x .76 m
Splash zone	4' 6" Diameter 1.37 m Diameter

Mechanical overview for: **City of Key West SPLASH PAD**

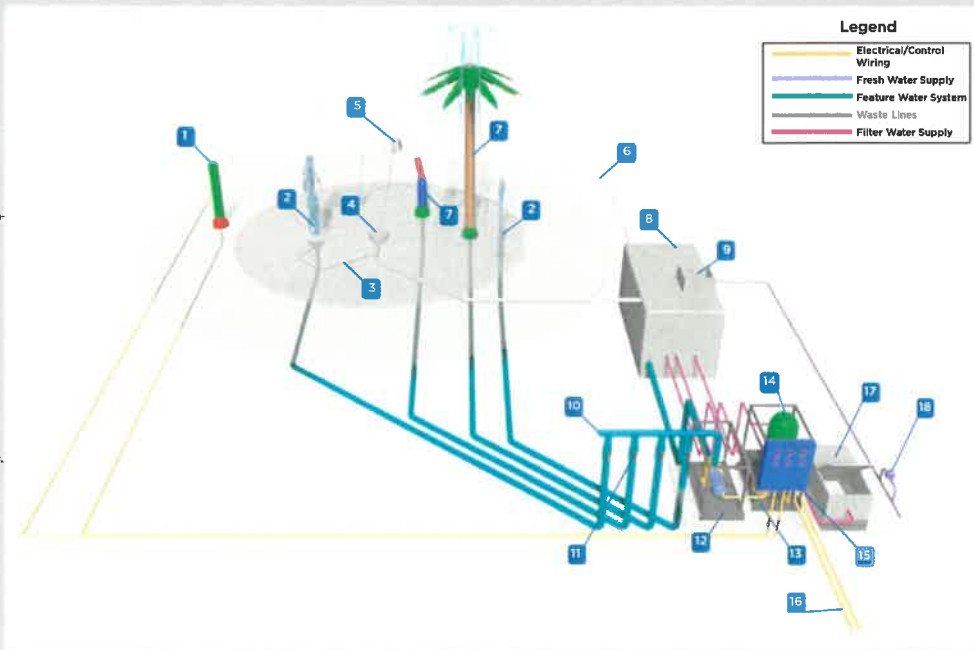
Recirculation System

Recirculation System Overview

Aquatix' recirculation systems allow for splash pad design to focus on creating enhanced water play in a safe environment without being dictated by water consumption concerns. When utilizing a recirculation system, product selections are based on their play value, product flow rates, and interactive value. ARC's recirculation system provides this enhanced experience in a water quality treatment system that is safe & easy to operate. Each recirculation system meets or exceeds local health department specifications for water quality.

- 1 **Aquator**
Touch sense activator
- 2 **Ground Spray**
Flush spray feature with various nozzle effects
- 3 **Embed Pod Drain**
Drain to waste to eliminate standing water in ground spray pod
- 4 **Collector Box**
Main drain with dual port to collect all splash pad water to return to tank &/or waste
- 5 **Drain to Waste Valve Box**
To have electrical solenoid valve for diverting rain water to waste
- 6 **Drain Line to Waste**
Take waste water to sanitary or sewer system
- 7 **Water Play Structures**
Above grade spray feature with various water activities
- 8 **Underground Water Reservoir Tank**
To be pre-fabricated & pre-plumbed with water level control, inlet loop, floating skimmer, & submersible pump out system
- 9 **Lockable Man Way with Ladder Access**
Provides easy access for maintenance of water reservoir tank
- 10 **Distribution Manifold**
Pre-plumbed, pre-fabricated with winterization blow-out-port
- 11 **Manual Valves**
Manually control each spray feature's spray height and distance
- 12 **Feature Pump Skid**
UL listed, pre-fabricated, & pre-plumbed feature pump skid with adjustable legs
- 13 **Filtration Skid and Automated Chemical Controller**
UL listed, pre-fabricated, and pre-plumbed filtration skid & automated chemical controller
- 14 **Sand or Cartridge Style Filter**
Provided with sand media or cartridges
- 15 **System Control Panel**
UL Listed Control panel for total system controls and feature operation controls including operational hours, duration of time, sequencing of events, & on/off controls
- 16 **Main Power Supply**
Typically 460-230V, 3 Phase, 60 Hz & 115/20V, 1 Phase, 60 Hz
- 17 **Chemical Treatment**
Ph adjustment reservoir and pump
- 18 **Water Fill Supply**
Municipal water supply with pressure regulator (20 to 30 PSI) & back-flow preventer (typically 7')

Optional Equipment
 Above or below grade equipment enclosures, UV sanitization system, & in-line water heater



Quote for: **City of Key West**

Water Play Features

- 1 Water Shower**
- 1 Misting Water Post**
- 1 Tot Arch - SS**
- 4 Stream Jet**
- 2 Arch Jet**
- 2 Sea Crawler**

Water play feature design notes:

- All above water play features are to be the standard product of Aquatix by Landscape Structures.
- All above ground structures are flange mounted to concrete pad.
- All above ground features are offered in the following colors: Denim, Blue, Lagoon, Sky, Peacock, Grass, Green, Leaf, Limon, Black, Brown, Acorn, Plum, Cranberry Red, Tangerine, Yellow, Buttercup, and White.
- All ground spray features are imbed and installed prior to concrete being poured.

Quote for: **City of Key West**

Mechanical System

Recirculation System

1 Filtration Skid

A pre-plumbed, pre-wired, integrated equipment system mounted on an epoxy skid. System to consist of main motor control panel, filtration pump, cartridge filtration system, automatic chemical treatment controller, gauges, and flow meter. System to be capable of 140 gpm filtration rates.

1 Chemical Treatment

To consist of Chlorine Erosion Feeder, Liquid Acid Pump, and (1) Chemical Solution Crock.

1 Feature Skid

A pre-plumbed, pre-wired, integrated equipment system mounted on an epoxy skid. System to consist of a self-priming feature pump with integral hair and lint strainer, check valves, isolation valves, gauges, and flow switch. System to be capable 60 gpm feature flow rates.

1 Distribution Manifold

A pre-plumbed distribution manifold for all water activities. Manifold to be connected to feature pump discharge and have all discharge lines with manual flow control to water play elements.

1 Prefabricated Water Reservoir

To consist of a 3000 gallon concrete vessel complete with access hatch, access ladder, venting pipes, water level control float, overflow outlet, submersible pump out system, mounting hardware and all piping and electrical connections specific to project design.

1 Aquavator

To consist of a low voltage touch sensor within the cap of the bollard. When patrons touch the top of the bollard a signal will go to the control panel to activate feature supply system for set duration of time.

Quote for: **City of Key West**

Mechanical System

Recirculation System Continued

1 Control Panel - On/Off

To be an UL listed project specific designed control panel that will provide complete operating system power distribution and system controls for an all on / off splash pad system.

1 Collector Box

To consist of a 18" diameter fiberglass or PVC basin with grate top. Each collector box has a nominal capacity of 250 gpm gravity supply to water containment vessel.

1 Rain Diverting Waste Valve Box

To consist of an electric solenoid valve housed in a plastic burial housing that will allow for collector boxes to drain to waste when feature pumping system is not operating.

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Design Services

Design & Construction drawings:

Including: All design and construction drawings for splash pad project construction to consist of construction of concrete pad, mechanical system, electrical and control systems, inbed spray fixtures / collector box installation details, water plays structure assembly / installation on concrete splash pad, equipment systems installation and hookups.

Splash Pad Design Notes:

1. Aquatix design services are based on ideal site locations and conditions.
2. Aquatix design services do not include soil corrections, demolition planning, site elevation plans, utility planning / design or relocation of utilities. (i.e. based on water, waste and power being available at designed areas of splash pad by others.)
3. All permits and costs of permits are not included in our splash pad design package.
4. Design package will be prepared based on Aquatix interpretation of Local health code.
5. Design & Construction drawings do not include sealed Engineer Stamp.

Any additional drawings associated with project outside of splash pad to be made by others. (sidewalks, landscaping, electrical)

Quote for: **City of Key West**

Optional Adders

Optional Services:

Sealed Mechanical & Structural Engineering Stamp -

Aquatix to have drawings stamped by a licensed PE in the State of project.

System Startup and Training -

Aquatix to provide (1) factory direct technician for (2) day of system startup, balancing, and owner training.

Optional Products:

Random Sequencing Upgrade -

Sequencing upgrade to allow features to randomly turn on and off independently. Upgrade includes the additional of electric solenoid valves on each of the feature supply lines and individual timers to interface with each solenoid valve. Valves to be preplumbed and prewired on above distribution manifold.

UV Disinfection System -

To consist of a Delta UV disinfection unit that is UL listed, NSF certified and cryptosporidium evaluated, and EPA registered. Unit has electronic controller that has UV monitors. Unit to be capable of the filtration flow rate of 70 gpm. To be provided loose. Plumbing and electrical connections by others.

Underground Mechanical Vault Enclosure -

To be a fiberglass watertight vessel that will house filtration and feature systems. Vault to be designed so that prefabricated systems, control panel, and distribution manifold can be installed prior to cap enclosure. Vault to have access hatch, ladder entry, interior light, power ventilation, float activated submersible pump, and all watertight mechanical and electrical penetrations.

***Aquatix offers on-site supervision and startup services at additional costs.**

***Above filtration system pricing is based on the use of cartridge filters. Sand filtration systems are available at additional costs.**

***Water heaters are offered at additional costs.**

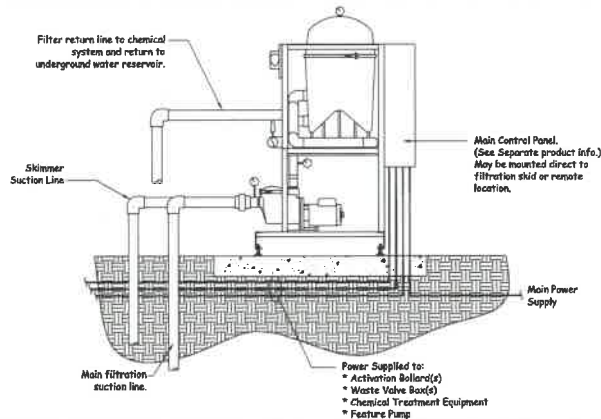
***UV sanitization systems are recommended and offered at additional costs.**

***Equipment Enclosures are offered at additional costs (otherwise mechanical equipment to be stored in above ground equipment enclosure, by others).**

Specifications for: MECHANICAL COMPONENTS



Filtration Skid to be UL listed system capable of filtration rates from 50 gpm to 300 gpm. Filtration Systems flow rate should be based on a minimum of 30 minute turnover rate. System equipment to be pre-plumbed using all schedule 80 PVC pipe & fittings, pre-wired and mounted on an epoxy painted steel skid with adjustable leveling legs. Skid system to have main motor control panel that will operate filtration pump, feature pump, water fill system, chemical treatment system, and collector box drain to waste valve. System to be tested prior to shipment.

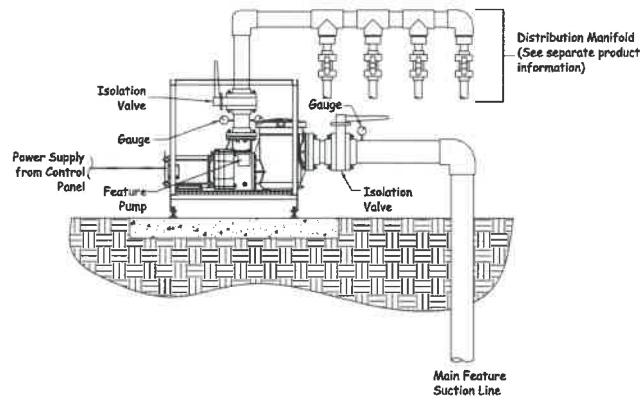


System may consist of the following components:

- Epoxy painted steel skid with adjustable leveling legs.
- Self priming filtration pump with integral hair and lint strainer.
- Sand or Cartridge filter with pressure gauge and pressures/air relief valve.
- Main system panel with GFCI breakers, time clocks, and needed relays.
- Automatic chemical controller for monitoring and adjustment of Chlorine & pH.
- Inline Pilot type flow meter.
- Pump vacuum Gauge
- Pump pressure Gauge
- Flow Switch

Filtration Skid

Specifications for: MECHANICAL COMPONENTS



Feature Skid

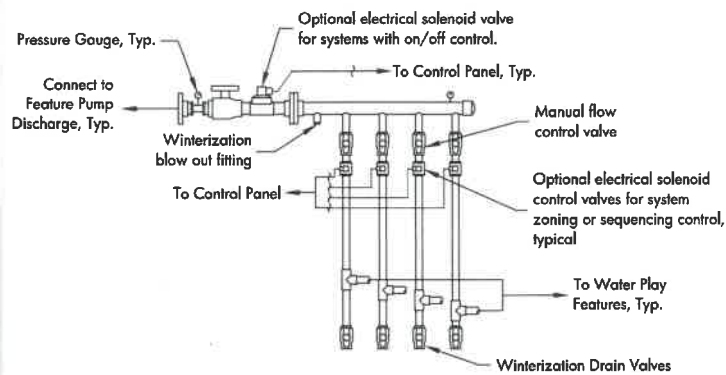
Feature Skid to be UL listed system capable of flow rates from 250 gpm to 3000 gpm. System equipment to be pre-plumbed using all schedule 80 PVC pipe & fittings and mounted on a epoxy painted steel skid with adjustable leveling legs. System to be tested prior to shipment.

May consist of:

- Self-Priming feature pump with hair and lint strainer.
- Pump suction check valve and isolation valve.
- Pump discharge isolation valve.
- Pump vacuum gauge
- Pump pressure gauge

Specifications for: MECHANICAL COMPONENTS

Distribution Manifold

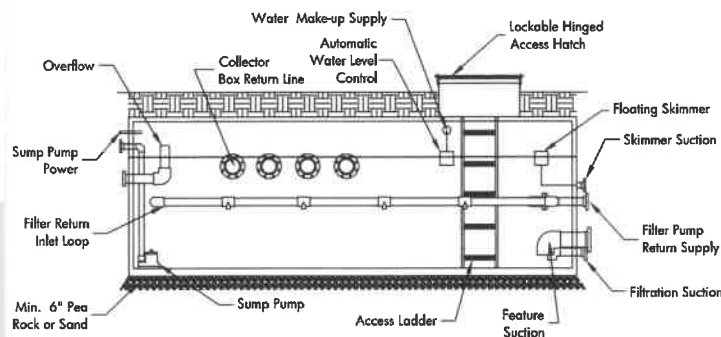


Distribution Manifolds are pre-plumbed water delivery systems from feature pumping system to water play features. Standard distribution manifolds consist of manual flow control valves that regulate water flow levels to each water element for on/off control systems. When creating water play zones or sequencing water play activities, standard distribution manifolds can be upgraded with electric valves or solenoid valves.

May Consist of:

- Available in Stainless Steel or Schedule 80 Gas Welded PVC prefabricated manifold
- Manual flow control valves
- Electrical solenoid valves
- Winterization blow out
- Pressure gauge

Specifications for: MECHANICAL COMPONENTS



Water Reservoir

Water Reservoir tank is a pre-cast Concrete vessel with lockable access hatch, service ladder and required plumbing connection. Tanks manufactured of 5000 PSI concrete to meet ASTM C-913 & C-1227 standards. Tank size to be per project requirements based on splash pad feature flow rate, size of pad, and environmental surroundings.

May consist of:

- Pre-plumbed with interior suction and outlet fittings
- Perimeter filtration return loop
- Floating skimmer
- Submersible pump for pumping out vault
- Overflow line
- Automatic water fill valve
- All watertight mechanical and electrical penetrations.

Specifications for: MECHANICAL COMPONENTS



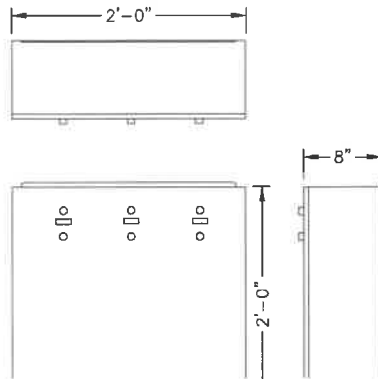
Aquavator

Aquavator is a structure that has a low voltage touch sensor within the cap of the bollard. When patrons touch the top of the bollard a signal will go to the control panel to activate water flow. Activation bollards activate the entire splash pad features or designed zoned areas.

May consist of:

- Stainless steel 6" diameter structure with 150 lb mounting flange
- Mounting hardware
- Touch sensor
- 6" base skirt

Specifications for: MECHANICAL COMPONENTS



Control Panel

Control Panels are used to control simple on/off operations of water play activities or incorporate operation interface Programmable Logic Controller, (PLC), to create splash pad zoning or sequencing activities.

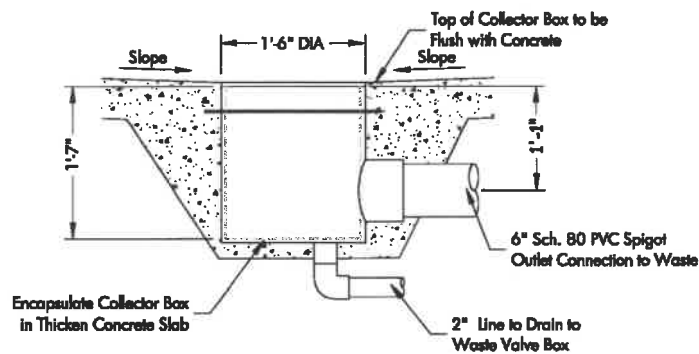
All control panels to be U.L. listed and may incorporate the following:

- Pump(s) motor starters
- GFCI circuit breakers
- Time clock controls to set hours of operation and set duration time of activated devices
- VFD pump controls
- Flow switch controls
- Pressure transducer controls
- Power feeds to manifold distribution solenoid valves
- Activation Bollard relay switches
- Chemical treatment system power feed
- Vault internal electrical distribution
- Waste valve box relay & power feed
- Water heater relay
- All NEMA rated components
- NEMA 4 enclosure

*All control panels are designed for specific project needs and require the following GFI protected power supplies:
 230/460V/3PH./60HZ and 120V/Single Phase/60HZ

Specifications for: MECHANICAL COMPONENTS

Collector Box

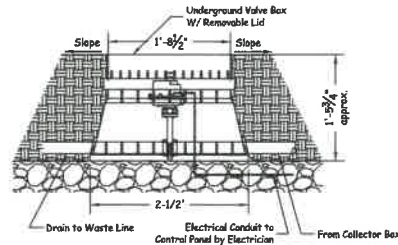
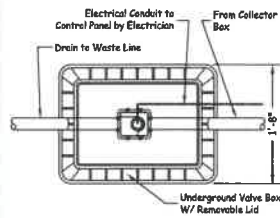


Collector Box to consist of 18 inch diameter PVC sump for collection of splash pad recirculation water. Each collector box is capable of 250 gpm gravity drainage using a 6 inch drain pipe sloped at 1/8 inch per foot slope to water reservoir tank.

May consist of:
•Structural plastic grating.

Collector box to have an auto drain feature that will evacuate all water to waste when system is not in operation. This feature minimizes the potential contamination of the underground reservoir tank.

Specifications for: MECHANICAL COMPONENTS



Waste Valve Box

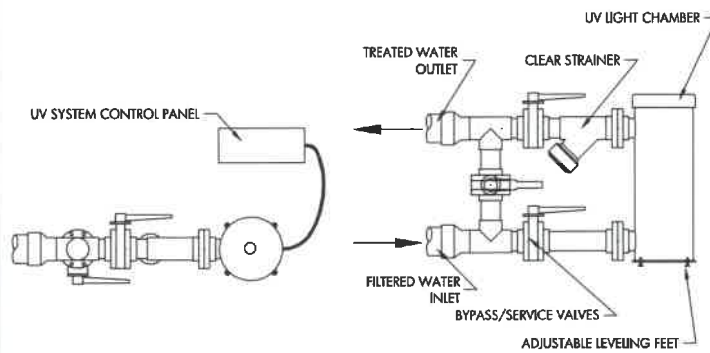
The **Waste Valve Box** is an electrical solenoid valve housed in a fiberglass burial box that allows the collector box(s) to drain all water to waste when system is not in operation. Water to be evacuated through underground waste line from collector box through waste valve box to either site drainage area or waste. Waste valve box minimizes the potential for contamination of underground reservoir. Waste valve box size & quantity to be based on evacuating 1 inch rain fall per hour over entire splash pad drainage area.

Waste Valve Box water:

- Fiberglass burial box with removable lid
- Motorized rain diverting valve
- (2) Drain line connection ports

Specifications for: MECHANICAL COMPONENTS

Optional



Ultra Violet Disinfection

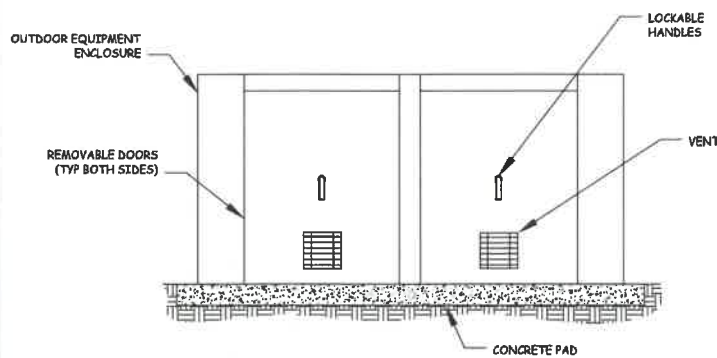
Ultra Violet Disinfection to be a secondary sanitization system for recirculation system. UV system can be installed on filtration or feature pumping system.

- May Consist of:**
- Spare UV bulb
 - UV system control panel
 - Service valves
 - Strainer
 - Alarm output

Specifications for: MECHANICAL COMPONENTS

Optional

Recirculation System Equipment Enclosure



Equipment Enclosure to be a safe, lockable enclosure that will be directly mounted to a concrete support pad next to water play area.

May Consist of:

- Above ground mechanical system.
- Lockable access doors for servicing equipment systems.
- Must be installed on a concrete support pad (by others) with stainless steel anchorage hardware