SECTION 22 14 53

RAINWATER AND STORMWATER HARVESTING AND RECLAMATION SYSTEMS

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\*\* NOTE TO SPECIFIER \*\* Rainwater Management Solutions; Rainwater management. This section is based on the products of Rainwater Management Solutions, which is located at:  
1260 West Riverside Dr.  
Salem, VA 24153  
Toll Free Tel: 866-653-8837  
Tel: 540-375-6750  
Fax: 540-375-6751  
Email: [request info (cquillen@rainwatermanagement.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Rainwater+Management+Solutions&coid=48217&rep=&fax=540-375-6751&message=RE:%20Spec%20Question%20(15445rms):%20%20&mf=)  
Web: <https://www.rainwatermanagement.com>   
 [ [Click Here](http://www.arcat.com/arcatcos/cos48/arc48217.html) ] for additional information.  
Rainwater Management Solutions, based in Salem, VA, is an industry-leading supplier, system integrator, and professional services firm, specializing in turnkey solutions for rainwater and stormwater management. Our knowledgeable staff has a combined experience of over 60 years in the rainwater harvesting business. RMS provides complete rainwater harvesting systems and solutions for residential, commercial, industrial, and agricultural projects. The firm provides professional design and consulting services to its clients, which include development, engineering, and architectural firms seeking specialized rainwater and stormwater management system design capabilities. Many of our clients are focused on earning LEED points. RMS provides both residential and commercial solutions and has worked on small to very large scale projects. RMS is the exclusive dealer of WISY filters within North America.  
Water conservation and management is increasingly becoming a worldwide survival issue due to accelerating water shortages, property development and population growth, aging infrastructures, growing agricultural demands, a general warming trend, and the ever-increasing cost of and demand for natural water resources.  
RMS brings a commonsense, cost-effective approach to addressing the escalating issue of water conservation and management through its innovative rainwater harvesting system designs and its experienced, knowledgeable staff. The expertise of the staff encompasses industries directly impacted by water management issues.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete, add items below as required for the Project.

* + 1. Rain harvesting delivery systems.
       1. Above ground.
       2. Below ground.
    2. Pre-filtration systems.
       1. Above ground.
       2. Below ground.
    3. Pre-filtration system components.
    4. Post storage filtration and purifications systems.
    5. Post storage filtration and purification components.
    6. Delivery pumps and accessories.
    7. Domestic back-up components.
    8. Rain water controllers.
    9. Storage tanks.
       1. Polyethylene above ground,
       2. Corrugated metal above ground,
       3. Red cedar above ground
       4. Below ground.
       5. Polyethylene below ground.
       6. Fiberglass below ground.
       7. Modular below-ground.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Division 15 - Gray water plumbing piping systems.
    2. Section 22 14 00 - Facility Storm Drainage.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American National Standards Institute (ANSI):
       1. ANSI 78: Stormwater Harvesting System Design for Direct End-Use Applications.
  1. SYSTEM DESCRIPTION
     1. Design Intent: Custom and "off-the-shelf" rainwater harvesting systems consisting of manufactured components integrated into an automated system. The system shall collect rainwater from a roof via drains, downspouts and conveyance piping; and convey rainwater through, self-cleaning, gravity fed pre-filters. Filtered rainwater is then stored in a storage tank. Water is drawn from the storage tank and pumped through a packaged pumping system to an irrigation or end use plumbing system. The pumping package is designed to provide water at the desired design point on an on-demand basis.
     2. Design Requirements: Filter, store, and distribute harvested rainwater per ANSI 78.
     3. Water Disinfection Methods: May include sediment filtration, ultraviolet treatment, chlorine injection, carbon filtration, or a combination thereof.
  2. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: For system components; include dimensions, capacities, operating characteristics, utility connections, and accessories.
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
     3. Shop Drawings: Include system layout, components, accessories, details of construction, and relationship with adjacent construction.
     4. Manufacturer's Certificates: Certify products to meet or exceed specified requirements.
     5. Closeout Submittals: Operation and maintenance data.
        1. Provide instructions on operation, calibration, troubleshooting, and servicing equipment.
        2. Include layout drawings, parts lists, and component manufacturer's product data.
  3. QUALITY ASSURANCE
     1. System Integrator: Rainwater Management Solutions Incorporated.
     2. Manufacturer Qualifications:
        1. Minimum 10 years experience in work of this Section.
        2. Successful completion of minimum of 10 previous projects of similar scope and complexity.
     3. Installer Qualifications:
        1. Minimum 3 years experience in work of this Section.
        2. Successful completion of minimum of 3 previous projects of similar scope and complexity.
        3. Maintain factory trained technicians on staff to provide field service and warranty work.
  4. DELIVERY, STORAGE, AND HANDLING
     1. Do not deliver system components until time needed for installation, and after proper protection can be provided.
     2. Protect components from damage and corrosion.
     3. Leave protective coverings in place until just prior to installation.
  5. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
  6. WARRANTY
     1. Warranty: Submit manufacturer's standard limited warranty.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Rainwater Management Solutions, which is located at: 1260 West Riverside Dr.; Salem, VA 24153; Toll Free Tel: 866-653-8837; Tel: 540-375-6750; Fax: 540-375-6751; Email: [request info (cquillen@rainwatermanagement.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Rainwater+Management+Solutions&coid=48217&rep=&fax=540-375-6751&message=RE:%20Spec%20Question%20(15445rms):%20%20&mf=); Web: <https://www.rainwatermanagement.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 01 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Rainwater pre-filtration, storage, and pump systems. Delete Article if specifying systems or system components separately.

* 1. RAINWATER HARVESTING AND DELIVERY SYSTEMS
     1. Performance Requirements: Size systems to accommodate the rain harvesting capacity required for the given structure and structure location and meeting the design requirements.

\*\* NOTE TO SPECIFIER \*\* Delete paragraph not required. Either above or below ground systems.

* + 1. Above Ground Systems:

\*\* NOTE TO SPECIFIER \*\* Delete tank and pump systems not required.

* + - 1. Tank with Submersible Pump:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Low water cut off float switch for pump protection (N/O).
         5. Stainless steel smoothing inlet.
         6. Floating stainless steel suction filter.
         7. Submersible feed pump with check valve.
         8. Overflow.
         9. Pressure tank with tank tee.
         10. Check valve.
      2. Tank with Suction / Booster Pump:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Low water cut off float switch for pump protection (N/O).
         5. Stainless steel smoothing inlet.
         6. Floating stainless steel suction filter.
         7. Check valve.
         8. Overflow.
         9. Booster jet pump.
         10. Pressure tank with tank tee.
      3. Tank with Submersible Pump and Purification Kit:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Low water cut off float switch for pump protection (N/O).
         5. Stainless steel smoothing inlet.
         6. Floating stainless steel suction filter.
         7. Submersible feed pump with check valve.
         8. Overflow.
         9. Sediment filter.
         10. Carbon filter.
         11. UV light.
         12. Pressure tank with tank tee.
         13. Check valve.
      4. Tank with Suction, Booster Pump and Purification Kit:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Low water cut off float switch for pump protection (N/O).
         5. Stainless steel smoothing inlet.
         6. Floating stainless steel suction filter.
         7. Submersible feed pump with check valve.
         8. Overflow.
         9. Suction, booster pump.
         10. Pressure tank with tank tee.
         11. Water purification system.
      5. Tank with Submersible Pump and Pressure Difference Backup:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Low water cut off float switch for pump protection (N/O).
         5. Stainless steel smoothing inlet.
         6. Floating stainless steel suction filter.
         7. Submersible feed pump with check valve.
         8. Overflow.
         9. Pressure tank with tank tee.
         10. Check valve.
         11. Pressure gauge.
         12. Pressure regulator valve.
         13. RPZ - Backflow prevention device.
         14. Domestic water supply.
      6. Tank with Suction, Booster Pump and Pressure Difference Backup:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Low water cut off float switch for pump protection (N/O).
         5. Stainless steel smoothing inlet.
         6. Floating stainless steel suction filter.
         7. Check valve.
         8. Overflow.
         9. Suction, booster pump.
         10. Pressure tank with tank tee.
         11. Pressure gauge.
         12. Pressure regulator valve.
         13. RPZ - Backflow prevention device.
         14. Domestic water supply.
      7. Tank with Submersible Pump, Purification Kit and Pressure Difference Backup:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Low water cut off float switch for pump protection (N/O).
         5. Stainless steel smoothing inlet.
         6. Floating stainless steel suction filter.
         7. Submersible feed pump with check valve.
         8. Overflow.
         9. Check valve.
         10. Sediment filter.
         11. Carbon filter.
         12. UV light.
         13. Pressure tank with tank tee.
         14. Pressure gauge.
         15. Pressure regulator valve.
         16. RPZ - Backflow prevention device.
         17. Domestic water supply.
      8. Tank with Suction, Booster Pump, Purification Kit and Pressure Difference Backup:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Low water cut off float switch for pump protection (N/O).
         5. Stainless steel smoothing inlet.
         6. Floating stainless steel suction filter.
         7. Check valve.
         8. Overflow.
         9. Suction, booster Pump.
         10. Sediment filter.
         11. Carbon filter.
         12. UV light.
         13. Pressure tank with tank tee.
         14. Pressure gauge.
         15. Pressure regulator valve.
         16. RPZ - Backflow prevention device.
         17. Domestic water supply.
    1. Below Ground Systems:

\*\* NOTE TO SPECIFIER \*\* Delete tank and pump systems not required.

* + - 1. Tank with Submersible Pump:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Stainless steel smoothing inlet.
         5. Floating stainless steel suction filter.
         6. Submersible feed pump with check valve.
         7. Low water cut off float switch for pump protection (N/O).
         8. Multifunctional overflow device - WISY.
         9. Overflow.
         10. Pressure tank with tank tee.
         11. Check valve.
         12. Domestic water supply.
      2. Tank with Booster, Suction Pump:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Stainless steel smoothing inlet.
         5. Low water float switch for pump protection (N/O).
         6. Floating stainless steel suction filter.
         7. Multifunctional overflow device - WISY.
         8. Overflow.
         9. Booster, jet pump.
         10. Check valve.
         11. Pressure tank with tank tee.
         12. Domestic water supply.
      3. Tank with Submersible Pump and Purification Kit.
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Stainless steel smoothing inlet.
         5. Floating stainless steel suction filter.
         6. Submersible feed pump with check valve.
         7. Low water cut off float switch for pump protection (N/O).
         8. Multifunctional overflow device - WISY.
         9. Overflow.
         10. Sediment filter.
         11. Carbon filter.
         12. UV light.
         13. Pressure tank with tank tee.
         14. Check valve.
         15. Domestic water supply.
      4. Tank with Booster, Suction Pump and Purification Kit:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Stainless steel smoothing inlet.
         5. Floating stainless steel suction filter.
         6. Submersible feed pump with check valve.
         7. Low water cut off float switch for pump protection (N/O).
         8. Multifunctional overflow device - WISY.
         9. Overflow.
         10. Sediment filter.
         11. Carbon filter.
         12. UV light.
         13. Pressure tank with tank tee.
         14. Check valve.
         15. Domestic water supply.
      5. Below Ground Tank with Submersible Pump and Normally Closed Solenoid Valve for Municipal Backup:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Stainless steel smoothing inlet.
         5. Floating stainless steel suction filter.
         6. Submersible feed pump with check valve.
         7. Low water cut off float switch for pump protection (N/O).
         8. Overflow, multi-siphon, flap valve.
         9. Domestic water supply.
         10. RPZ backflow prevention device.
         11. Normally closed float switch.
         12. Normally closed solenoid valve.
         13. Pressure tank with tank tee.
         14. Spring check valve.
      6. Tank with Submersible Pump and Pressure Difference Municipal Backup with Check Valve:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Stainless steel smoothing inlet.
         5. Floating stainless steel suction filter.
         6. Submersible feed pump with check valve.
         7. Low water cut off float switch for pump protection (N/O).
         8. Multifunctional overflow device - WISY.
         9. Overflow.
         10. Pressure tank with tank tee.
         11. Check valve.
         12. Pressure gauge.
         13. Pressure regulator valve.
         14. RPZ backflow prevention device.
         15. Domestic water supply.
      7. Tandem Tanks with Submersible Pump and Purification:
         1. Rainwater Collection Point: Roof drains, gutters, etc.
         2. Vortex filter - WISY.
         3. First flush and excess water outlet.
         4. Stainless steel smoothing inlet.
         5. Tank equalization line.
         6. Floating stainless steel suction filter.
         7. Submersible feed pump with check valve.
         8. Low water cut off float switch for pump protection (N/O).
         9. Overflow flows from tank 1 to tank 2, and flows from tank 2 to grade or storm water system.

\*\* NOTE TO SPECIFIER \*\* Use this article to define a pre-filtration system for rain harvesting. Delete article if not required.

* 1. PRE-FILTRATION SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete paragraph not required. Either above or below ground system.

* + 1. Above Ground: Above ground tanks not included.

\*\* NOTE TO SPECIFIER \*\* Delete pre-filtration systems not required.

* + - 1. Roof Collection Package: For 1,100 sq ft (102.2 sq m).
         1. Garden Downspout Filter - WISY.
         2. Downspout converter kit.
         3. Hose and tension ring.
         4. Mounting clip and screw.
         5. Pump: Grundfos SBA 3-45 Submersible Package.
         6. Bulkhead and schedule 40 PVC fittings.
      2. Roof Collection Package: For 2,100 sq ft (195.1 sq m).
         1. WFF 100 Vortex Fine Filter - WISY.
         2. Extension tube.
         3. Wall mount bracket.
         4. Smoothing inlet.
         5. Grundfos SBA 3-45 submersible pump package.
         6. Bulkhead and schedule 40 PVC fittings.
      3. Roof Collection Package: 5,500 sq ft (511 sq m).
         1. WFF 150 Vortex Fine Filter - WISY.
         2. Extension tube.
         3. Wall mount bracket.
         4. Smoothing inlet.
         5. Grundfos SBA 3-45 submersible pump package.
         6. Bulkhead and schedule 40 PVC fittings.
      4. RMS 500-Gallon (1893 L) Package: ABG-5.
         1. Roof Collection Area: 1,600 sq ft (148.6 sq m).
         2. Recommended Usage: 20 gallons (75.7 L) per day.
         3. Delivered pre-plumbed, ready to install for above ground rainwater harvesting.

Tank: 500 Gallon (1893 L) Rotoplas Tank.

Diameter x Height: 48 x 73 in (1219 x 1854 mm).

Poly Downspout Filter with adapter kit, hose and tension ring.

PVC U-shaped Calming Inlet (pre-plumbed in tank by RMS).

PBC P-Trap (pre-plumbed in tank by RMS).

Floating Filter: 1-1/4 in (31.5 mm) with 7 ft (2134 mm) of food-grade suction hose.

Pump: 1 HP (0.75 kW) (0.75 kW) Grundfos MQ; 115V/1/60Hz, with protection cover.

Check Valve: 1 in (25 mm); quantity of two.

Tank gaskets, bulkheads, and fittings.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - * 1. Optional Additions:

Blind Insert for winterization - WISY.

Liquidator to gauge the water in the tank.

* + - 1. RMS 1000-Gallon (3785 L) Package: ABG-10.
         1. Roof Collection Areas: 2,100 sq ft (195.1 sq m).
         2. Recommended Usage: 75 gal (284.9 L) per day.
         3. Delivered pre-plumbed and ready to install for above ground rainwater harvesting.

Tank: 1,000-Gallon (3785 L) Rotoplas Tank.

Diameter x Height: 60 x 89 in (1524 x 2261 mm).

Vortex Filter - WISY: WFF100 with wall-mount bracket and flexible rubber couplings.

Smoothing Inlet: 4 in (102 mm).

Overflow Device: 4 in (102 mm).

Floating Filter: 1-1/4 in (31.5 mm) with 7 ft (2134 mm) of food-grade suction hose.

Pump: 1 HP (0.75 kW) Grundfos MQ; 115 V, 1 Ph, 60 Hz, with protection cover.

Check Valve: 1 in (25 mm); quantity of two.

Tank gaskets, bulkheads, and fittings.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - * 1. Optional Additions:

Blind insert for winterization - WISY.

Extension tube for WFF100 / WFF150 (helpful if installed indoors).

Sieve basket.

Liquidator to gauge the water in the tank.

RMS 1600-Gallon (6057 L) Package: ABG-16.

Roof Collection Area: 5,500 sq ft (511 sq m).

Recommended Usage: 100 gal (378.5 L) per day.

Delivered pre-plumbed and ready to install for above ground rainwater harvesting.

Tank: 1,600-Gallon (6057 L) Rotoplas Tank.

Diameter x Height: 86 x 72 in (325 x 273 mm).

WISY Vortex Filter: WFF150 with mounting bracket and flexible rubber couplings.

Smoothing Inlet: 4 in (102 mm).

Overflow Device: 4 in (102 mm).

Floating Filter: 1-1/4 in (31.5 mm) with 7 ft (2134 mm) of food-grade suction hose.

Pump: 1 HP (0.75 kW) Grundfos MQ; 115 V, 1 Ph, 60 Hz, with protection cover.

Check Valve: 1 in (25 mm); quantity of two.

Tank gaskets, bulkheads, and fittings.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - * 1. Optional Additions:

WISY Blind Insert for winterization.

Extension tube for WFF100/WFF150 (helpful if installed indoors).

Sieve basket.

Liquidator to gauge the water in the tank.

* + - 1. RMS 2500-Gallon (9463.5 L) Package: ABG-25.
         1. Roof Collection Area: 5,500 sq ft (511 sq m).
         2. Recommended Usage: 100 gal (378.5 L) per day.
         3. Delivered pre-plumbed and ready to install for your rainwater above ground harvesting.

Tank: 2,500-Gallon (9463.5 L) Rotoplas Tank.

Diameter x Height: 90 x 96 in (2286 x 2438 mm).

WISY Vortex Filer: WFF150 with mounting bracket and flexible rubber couplings.

Smoothing Inlet: 4 in (102 mm).

Overflow Device: 4 in (102 mm).

Floating Filter: 1-1/4 in (31.5 mm) with 7 ft (2134 mm) of food-grade suction hose.

Pump: 1 HP (0.75 kW) Grundfos MQ; 115 V, 1 Ph, 60 Hz, with protection cover.

Check Valve: 1 in (25 mm); quantity of two.

Tank gaskets, bulkheads, and fittings.

\*\* NOTE TO SPECIFIER \*\* Delete options not required.

* + - * 1. Optional Additions:

Blind insert for winterization - WISY.

Extension tube for WFF100 / WFF150 (helpful if installed indoors).

Sieve basket.

Liquidator to gauge the water in the tank.

* + 1. Below Ground Packages: Above ground tanks not included.

\*\* NOTE TO SPECIFIER \*\* Delete pre-filtration systems not required.

* + - 1. Roof Collection Package: For 1,100 sq ft (102.2 sq m).
         1. The components are for an installation with a below-ground tank.
         2. Garden downspout filter - WISY.
         3. Downspout converter kit.
         4. Mounting clip and screw.
         5. Flexible rubber coupling to connect filter to plumbing.
         6. Pump: Grundfos SBA 3-45 Submersible Package.
         7. Bulkhead and schedule 40 PVC fittings.
      2. Roof Collection Package: For 2,100 sq ft (195.1 sq m).
         1. The components are for an installation with a below-ground tank.
         2. WFF 100 Vortex Fine Filter - WISY
         3. Extension tube.
         4. Smoothing inlet.
         5. Multi-function overfow device.
         6. Pump: Grundfos SBA 3-45 Submersible Pump Package.
         7. Bulkhead and schedule 40 PVC fittings.
      3. Roof Collection Package: 5,500 sq ft (511 sq m).
         1. The components are for an installation with a below-ground tank.
         2. WFF 150 Vortex Fine Filter-WISY.
         3. Extension tube.
         4. Smoothing inlet.
         5. Multi-function Overfow Device.
         6. Pump: Grundfos SBA 3-45 Submersible Pump.
         7. Bulkhead and schedule 40 PVC fittings.
      4. RMS 1060 Modular Pre-Plumbed Package:
         1. Delivered pre-plumbed and ready to install for rainwater harvesting.
         2. The RMS 1060 Modular Package includes:

Vortex Fine Filter: WISY WFF100 with extension tube, mounted to tank.

Tank: 1,060 gallon (4012.5 L) Roth polyethylene tank with risers, gaskets, manhole covers.

Smoothing Inlet: 4 in (102. mm).

Overflow Device: Multi-function.

\*\* NOTE TO SPECIFIER \*\* Delete pump not required.

Pump: Goulds 1/2 HP (0.373 kW) 16SE0511:

Coarse Floating Filter: 1-1/4 in (32 mm) with 7 ft (2134 mm) food-grade suction hose.

Tank: 20 gallon (75.7 L) pressure tank and tank tee package.

Normally Open float switch for pump protection.

Power Requirement: 115 V, 1 Ph, 60 Hz.

Pump: Grundfos 1 HP (0.75 kW) SBA 3-45:

Floating filter with food-grade suction hose.

Normally open switch for pump protection.

Power Requirement: 115 V, 1 Ph, 60 Hz.

Tank gaskets, bulkheads, and fittings.

* + - 1. RMS 1500 Modular Pre-Plumbed Package:
         1. Delivered pre-plumbed and ready to install for rainwater harvesting.

Vortex Fine Filter: WISY WFF150 with extension tube, mounted to tank.

Tank: 1,500 gallon (5678 L) Roth polyethylene tank with risers, gaskets, manhole covers.

Smoothing Inlet: 4 in (102 mm).

Overflow Device: Multi-function.

\*\* NOTE TO SPECIFIER \*\* Delete pump not required.

Pump: Goulds 1 HP (0.75 kW) 1SC.

Coarse Floating Filter: 2 in (51 mm) with 7 ft (2134 mm) of food-grade suction hose.

Pressure Tank: 20-gallon (75.7 L) with tank tee.

Normally open float switch for pump protection.

Power Requirement: 230 V, 1 Ph, 60 Hz.

Pump: Grundfos 1 HP (0.75 kW) SBA 3-45

Floating Filter with food-grade suction hose.

Normally Open Switch for integrated pump protection.

Power Requirement: 115 V, 1 Ph, 60 Hz.

Tank gaskets, bulkheads, and fittings.

* + - 1. RMS 3000 Modular Pre-Plumbed Package:
         1. Delivered pre-plumbed and ready to install for rainwater harvesting.

Vortex Fine Filter: WISY WFF150 with extension tube, mounted to tank.

Tanks: Two 1,500-gallon Roth polyethylene tank with risers, gaskets, manhole covers, fittings necessary to create equalization lines between tank.

Smoothing Inlet: 4 in (102 mm).

Overflow Device: Multi-function.

\*\* NOTE TO SPECIFIER \*\* Delete pump not required.

* + - * 1. Pump: Goulds 1 HP (0.75 kW) 1SC.

Coarse Floating Filter: 2 in (51) with 7 ft (2134) of food-grade suction hose.

Pressure Tank: 20-gallon (75.7) with tank tee.

Normally open float switch for pump protection.

Power Requirement : 230 V, 1 Ph, 60 Hz.

* + - * 1. Pump: Grundfos 1 HP (0.75 kW) SBA 3-45.

Floating Filter: With food-grade suction hose.

Normally open switch for integrated pump protection.

Power Requirement: 115 V, 1 Ph, 60 Hz.

Tank gaskets, bulkheads, and fittings.

\*\* NOTE TO SPECIFIER \*\* Use this article to define pre-filtration components for a pre-filtration rain harvesting system Delete article if not required.

* 1. PRE-FILTRATION SYSTEM COMPONENTS

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. Inline Vertical Downspout Filters:

\*\* NOTE TO SPECIFIER \*\* Delete filter packages not required. Package below is primarily used for garden irrigation.

* + - 1. Polypropylene Raincatcher Package - WISY:
         1. Connects to a single vertical rainwater downspout. Filters large debris such as leaves and sticks from 1,600 sq ft (148.6 sq m) of roof area.
         2. Installs above-grade in vertical metal or plastic rainwater downpiping.
         3. Directs debris to stormwater system.
         4. Diverts 90 percent of rainwater to storage tank.
         5. Filter Element: None.
         6. Operates as a first flush device.
         7. Downspouts: Round.

\*\* NOTE TO SPECIFIER \*\* Delete kit if not required.

Rectangular Downspout Converter Kit: 20 in (508 mm) of vertical round pipe above the filter is required.

\*\* NOTE TO SPECIFIER \*\* Delete adapter not required.

Adapters: 2 x 3 in (51 x 76 mm).

Adapters: 3 x 4 in (76 x 102 mm).

* + - * 1. Overflow Protection: When tank is full.
        2. Filter: Stainless steel.
        3. Filter Mesh: 0.011 in (0.28 mm); 280 microns.
        4. Filter insert requires bi-annual cleaning and is dishwasher safe.
        5. Housing: UV-resistant polypropylene.
        6. Warranty: 10-year.

\*\* NOTE TO SPECIFIER \*\* Primarily used for irrigation, car washing or other non-potable uses.

* + - 1. Polypropylene Downspout Filter Package - WISY:
         1. Connects to a single vertical rainwater downspout. Filters precipitation from 1,600 sq ft (148.6 sq m) of roof area.
         2. Installs above-grade in vertical metal or plastic rainwater downpiping.
         3. Directs debris to stormwater system.
         4. Diverts 95 percent of rainwater to storage tank.
         5. Operates as a first flush device.
         6. Downspouts: Round.

\*\* NOTE TO SPECIFIER \*\* Delete kit if not required.

Rectangular Downspout Converter Kit: 20 in (508 mm) of vertical round pipe above the filter is required.

\*\* NOTE TO SPECIFIER \*\* Delete adapter not required.

Adapters: 2 x 3 in (51 x 76 mm).

Adapters: 3 x 4 in (76 x 102 mm).

* + - * 1. Overflow Protection: When tank is full.
        2. Filter Housing and Insert: Stainless steel.
        3. Filter Mesh: 0.011 in (0.28 mm); 280 microns.
        4. Maintenance: Bi-annual cleaning and is dishwasher safe.

\*\* NOTE TO SPECIFIER \*\* Primarily used for irrigation, car washing or other non-potable uses.

* + - 1. Garden Filter Collector Package - WISY:
         1. Connects to a single vertical rainwater downspout. Filters precipitation from 1,000 sq ft (92.9 sq m) of roof area.
         2. Installs above-grade in vertical metal or plastic rainwater downpiping.
         3. Directs debris to stormwater system.
         4. Diverts rainwater to storage tank.
         5. Operates as a first flush device.
         6. Downspouts: Round.

\*\* NOTE TO SPECIFIER \*\* Delete kit if not required.

Rectangular Downspout Converter Kit: 20 in (508 mm) of vertical round pipe above the filter is required.

\*\* NOTE TO SPECIFIER \*\* Delete adapter not required.

Adapters: 2 x 3 in (51 x 76 mm).

Adapters: 3 x 4 in (76 x 102 mm).

* + - * 1. Overflow Protection: When tank is full.
        2. Filter Housing and Insert: Stainless steel.
        3. Filter Mesh: 0.017 in (0.44 mm); 440 microns.
        4. Maintenance: Bi-annual cleaning and is dishwasher safe.
        5. Top Size: 3 in (76 mm).
        6. Top Size: 4 in (102 mm).

\*\* NOTE TO SPECIFIER \*\* Primarily used for irrigation, car washing or other non-potable uses.

* + - 1. Downspout Filter Package - WISY:
         1. Connects to a single vertical rainwater downspout. Filters precipitation from 1,600 sq ft (148.6 sq m) of roof area.
         2. Installs above-grade in vertical metal or plastic rainwater downpiping.
         3. Directs debris to stormwater system.
         4. Diverts 95 percent rainwater to storage tank.
         5. Operates as a first flush device.
         6. Downspouts: Round.

\*\* NOTE TO SPECIFIER \*\* Delete kit if not required.

Rectangular Downspout Converter Kit: 20 in (508 mm) of vertical round pipe above the filter is required.

\*\* NOTE TO SPECIFIER \*\* Delete adapter not required.

Adapters: 2 x 3 in (51 x 76 mm).

Adapters: 3 x 4 in (76 x 102 mm).

* + - * 1. Overflow Protection: When tank is full.
        2. Filter Housing and Insert: Stainless steel.
        3. Filter Mesh: 0.017 in (0.44 mm); 440 microns.
        4. Maintenance: Bi-annual cleaning and is dishwasher safe.
        5. Top Size: 3 in (76 mm).
        6. Top Size: 4 in (102 mm).

\*\* NOTE TO SPECIFIER \*\* Primarily used for irrigation, car washing or other non-potable uses.

* + - 1. Standpipe Filter Package - WISY:
         1. Connects to a single vertical rainwater downspout. Filters precipitation from 2,000 sq ft (185.8 sq m) of roof area.
         2. Installs in vertical metal or plastic rainwater downpiping and may be partially buried.
         3. Directs debris to the stormwater system.
         4. Diverts 95 percent of rainwater to underground storage tank.
         5. Operates as a first flush device.
         6. Downspouts: Round.

\*\* NOTE TO SPECIFIER \*\* Delete kit if not required.

Rectangular Downspout Converter Kit: 20 in (508 mm) of vertical round pipe above the filter is required.

\*\* NOTE TO SPECIFIER \*\* Delete adapter not required.

Adapters: 2 x 3 in (51 x 76 mm).

Adapters: 3 x 4 in (76 x 102 mm).

* + - * 1. Overflow Protection: When tank is full.
        2. Filter Housing and Insert: Stainless steel.
        3. Filter Mesh: 0.011 in (0.28 mm); 280 microns.
        4. Maintenance: Bi-annual cleaning and is dishwasher safe.
      1. Inline Downspout Filter Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

Hose and Tension Ring: Form a simple connection from the downspout filter to the storage tank. Ensures maximum efficiency.

Stainless Steel Mounting Clip and Screw: Mounts the WISY downspout filter plumb and level. Maximizes efficiency of filter.

For use with: Garden, downspout, and standpipe filters.

Downspout Converter Kit: Adapts downspouts from 2 x 3 in (51 x 76 mm) or 3 x 4 in (76 x 102 mm) to a circular pipe for use with a rainwater filter.

Blind Insert for Garden Filter: Restricts 100 percent of harvested rainwater from the storage tank and diverts all collected rainwater to the overflow. Can be used to winterize systems where no water is to be collected during winter months.

Blind Insert for Downspout Filter: Restricts 100 percent of harvested rainwater from the storage tank and diverts all collected rainwater to the overflow. Can be used to winterize systems where no water is to be collected during winter months.

* + 1. Vortex Fine Filters: For multiple downspouts connected to a single pipe into the vortex filter. Typically installed in underground piping systems but can be used in above ground applications.

\*\* NOTE TO SPECIFIER \*\* Filters are primarily used for site irrigation, toilet and urinal flushing, janitorial use, laundries, fire protection, evaporative cooling tower make-up, process water, or other non-potable uses. Delete filters not required.

* + - 1. Vortex Fine Filter - WFF100 - WISY:
         1. Precipitation Capacity: 2,150 sq ft (199.7 sq m) of roof area.
         2. Filter inlet can swivel for custom installation.
         3. Directs debris to stormwater system.
         4. Diverts 95 percent rainwater to storage tank.
         5. Connects to 4 in (102 mm) diameter pipe for above- or belowground storage.
         6. Extension tube: 20 in (508 mm) extension tube raises inspection opening to ground level.
         7. Filter Housing: Polypropylene.
         8. Filter Insert: Stainless steel.
         9. Filter Mesh: 0.011 in (0.28 mm); 280 microns.
         10. Maintenance: Bi-annual cleaning and is dishwasher safe.
      2. Vortex Fine Filter - WFF150 - WISY:
         1. Precipitation Capacity: 5,500 sq ft (511 sq m) of roof area.
         2. Filter inlet can swivel for custom installation.
         3. Directs debris to stormwater system.
         4. Diverts 95 percent rainwater to storage tank.
         5. Connects to 6 in (152 mm) diameter pipe for above or below ground storage.
         6. Extension tube: 20 in (508 mm) extension tube raises inspection opening to ground level.
         7. Filter Housing: Polypropylene.
         8. Filter Insert: Stainless steel.
         9. Filter Mesh: 0.011 in (0.28 mm); 280 microns.
         10. Maintenance: Bi-annual cleaning and is dishwasher safe.
      3. Vortex Fine Filter - WFF300 - WISY:
         1. Precipitation Capacity: 33,000 sq ft (3065.8 sq m) of roof area.
         2. Filter inlet can swivel for custom installation.
         3. Directs debris to stormwater system.
         4. Diverts 95 percent rainwater to storage tank.
         5. Connects to 12 in (305 mm) diameter pipe for above- or belowground storage.
         6. Extension tube: 24 in (610 mm) increment tube raises inspection opening to ground level.
         7. Filter Housing: Polypropylene.
         8. Filter Insert: Stainless steel.
         9. Filter Mesh: 0.015 in (0.38 mm); 380 microns.
         10. Maintenance: Bi-annual cleaning and is dishwasher safe.
         11. A shorter version of the WFF300 is available.
         12. Additional Items: Child-safety device, baseplate, and lid.

Lid Options:

\*\* NOTE TO SPECIFIER \*\* Delete lid options not required.

Poly sealed.

12 ton (10886.2 kg).

60 ton (54431.1 kg).

Optional Equipment:

\*\* NOTE TO SPECIFIER \*\* Delete optional equipment not required.

Filter lifting handle.

Seepage basket.

Blind insert for diversion.

* + - 1. Vortex Fine Filter - WFF300 Stainless Steel - WISY:
         1. Precipitation Capacity: 33,000 sq ft (3065.8 sq m) of roof area.
         2. Filter inlet can swivel for custom installation.
         3. Directs debris to stormwater system.
         4. Diverts 95 percent rainwater to storage tank.
         5. Filter Housing: Polypropylene.
         6. Filter Insert: Stainless steel.
         7. Filter Mesh: 0.015 in (0.38 mm); 380 microns.
         8. Maintenance: Bi-annual cleaning and is dishwasher safe.
         9. Pressure Build-Up: 87 lbs per sq ft (600 kPa) maximum.
         10. Flow Rate: 1,277 gal per min (4834 L per min).
         11. Parts Included: Filter lift handle, and lid.

Flange Connections:

\*\* NOTE TO SPECIFIER \*\* Delete flange connections not required.

Inlet: DN300/PN6 for above-ground storage.

Clean water outlet: DN200/PN6.

Dirty water outlet: DN300/PN6.

* + - * 1. Optional Equipment: WFF300 Gold Titan Filter.
      1. Vortex Filter Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

* + - * 1. Extension Tube for WFF100 / 150: 20 in (508 mm).

Brings vortex filter lid to grade on belowground installations. Available in 24 in (610 mm) long sections.

Burial depth: 6 ft (1829 mm) maximum.

* + - * 1. Mounting Bracket for WFF 100 / 150: Stainless steel.

Wall mounting bracket to install the WFF 100 or WFF 150 Vortex Fine Filters aboveground.

* + - * 1. Blind Insert for WFF100: Diverts 100 percent of collected rainwater away from the storage tank to winterized systems where no water is to be collected during winter months.
        2. Blind Insert for WFF150: Diverts 100 percent of collected rainwater away from the storage tank to winterized systems where no water is to be collected during winter months.

\*\* NOTE TO SPECIFIER \*\* The sieve baskets are not recommended for all applications.

* + - * 1. Sieve Basket for WFF 100: Allows collection of 100 percent of harvested rainwater by filtering and storing dirty, first-flush water normally rinsed through the vortex filter.
        2. Sieve Basket for WFF 150: Allows collection of 100 percent of harvested rainwater by filtering and storing dirty, first-flush water normally rinsed through the vortex filter.
        3. Lifting Handle: The WISY vortex filter should be inspected at least annually, and a lifting handle may be necessary to reach the filter if extensions are used.

\*\* NOTE TO SPECIFIER \*\* Delete size option not required.

Size: 25 in (635 mm).

Size: 39 in (991 mm).

* + 1. Rainwater Filters: Horizontal.

\*\* NOTE TO SPECIFIER \*\* Delete filters not required.

* + - 1. VIQUA 4.5 x 20 in (114 x 508 mm), 5 micron Sediment Filter:
         1. For use with IHS22-E4 system.
         2. Material: Polypropylene.
      2. LineAr100 Filter Stainless Steel - WISY:
         1. Capacity: 2,100 sq. ft. (195.1 sq m) of rood space.
         2. New Construction or Retrofits: Height difference between the rainwater inlet and the dirty water outlet is 2 in (51 mm).
         3. May be integrated into existing pipework.
         4. Can be placed inside a storage tank without changing the gradient of existing piping.
         5. Maintains a vertical filtration method. Leaves, moss and other suspended particles flush past filter into the drain outlet. Uniform pipe diameter throughout the LineAr 100 Rainwater Filter.
         6. Connects to 4 in (102 mm) piping for all three connections.
         7. Stainless Steel Filter: Removes particles larger than 0.017 in (0.44 mm); 440 microns from the water that enters the tank.
         8. Maintenance: 2 to 3 times per year.
      3. String Wound Filter: 1-Micron for Big Blue Housing
         1. Polypropylene filter cartridge for use with 20 in (508 mm) Big Blue Housing filtration systems designed to reduce sediment and fine particles during water filtration.
         2. Dimensions: 4.5 in (114 mm) diameter x 20 in (508 mm) long.
      4. Linear100 Filter Poly - WISY:
         1. Easily integrates into existing pipework due to a 2 in (51 mm) height difference between the rainwater inlet and the dirty water outlet.
         2. Filter may be directly inside a storage tank without changing the gradient of existing piping.
         3. Maintains a vertical filtration method. Leaves, moss and other suspended particles flush past filter into the drain outlet. Uniform pipe diameter throughout the LineAr 100 Rainwater Filter.
         4. Connects to 4 in (102 mm) piping for all three connections.
         5. Stainless Steel Filter: Removes particles larger than 0.017 in (0.44 mm); 440 microns from the water that enters the tank.
         6. Maintenance: 2 to 3 times per year.

\*\* NOTE TO SPECIFIER \*\* Filter systems from the storage tank prior to end use plumbing system. Delete article if not required.

* 1. POST STORAGE FILTRATION AND PURIFICATION SYSTEMS

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. VIQUA IHS22-D4 Integrated Filtration System:
       1. Pre-plumbed, fully integrated filtration system including micron filter housing, carbon filter housing and UV disinfection light.
       2. Flowrate: Under 10 gal per min (37.8 L per min).
       3. Filters: 0.0002 in (0.005 mm); 5 micron sediment filter and 0.0004 in (0.010 mm); 10 micron carbon filter included.
       4. Mounting: Metal bracket.
       5. Connections: 3/4 in (19 mm).
    2. VIQUA IHS22-E4 Integrated Filtration System:
       1. Pre-plumbed, fully integrated filtration system including micron filter housing, carbon filter housing and UV disinfection light.
       2. Flowrate: From 16 to 25 gal per min (60.6 to 94.6 L per min).
       3. Filters: 0.0002 in (0.005 mm); 5 micron sediment filter and 0.0004 in (0.010 mm); 10 micron carbon filter included.
       4. Mounting: Metal bracket.
       5. Connections: 1 in (25 mm).
    3. Tiny House Rainwater Harvesting Package:
       1. All the pre-filtration, pumping, and post-tank filtration elements necessary for smaller rainwater harvesting applications such as tiny houses, mobile homes, RVs, sheds, garages, and more.
       2. Pre-plumbed, and pre-wired, requiring only two plumbing connections and one electrical connection.
       3. Voltage: 12 Vdc or 110 Vac.
       4. Number of Downspouts: 1 or 2.

\*\* NOTE TO SPECIFIER \*\* Use this article to specify post storage filter system components to build a custom filtration system. Delete Article if not required.

* 1. POST STORAGE FILTRATION AND PURIFICATION COMPONENTS

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. Sediment Filtration:

\*\* NOTE TO SPECIFIER \*\* Delete filter options and cartridges not required.

* + - 1. Big Blue Sediment Filter Housing Package; 20 in (508 mm):
         1. Wrench for filter housing.
         2. Mounting bracket.
         3. Micron String Wound Filter Cartridge: 1 micron.
         4. Micron String Wound Filter Cartridge: 20 micron.
      2. Slim Sediment Filter Housing Package; 10 in (254 mm):
         1. Wrench for filter housing.
         2. Mounting bracket.
         3. Micron String Wound Filter Cartridge: 1 micron.
         4. Micron String Wound Filter Cartridge: 5 micron.
         5. Micron String Wound Filter Cartridge: 20 micron.
    1. Carbon Filtration:

\*\* NOTE TO SPECIFIER \*\* Delete filter option not required

* + - 1. Big Blue Carbon Filter Housing Package; 20 in (508 mm):
         1. Wrench for filter housing.
         2. Carbon filter insert.
         3. Mounting bracket.
      2. Slim Carbon Filter Housing Package; 10 in (254 mm):
         1. Wrench for filter housing.
         2. Carbon filter cartridge.
         3. Mounting bracket.
    1. Ultraviolet Lights:

\*\* NOTE TO SPECIFIER \*\* This light is ideal for residential uses. Delete UV light systems not required.

* + - 1. Viqua VH200 UV Light:
         1. Flowrate: 4 to 6 gal per min (15.1 to 22.7 L per min).
         2. Deactivates bacteria; meets NSF/EPA standards at 258 mJ per sq in (40 mJ per sq cm).
         3. Connections: 3/4 in (19 mm) MNPT, 1 in (25 mm) FNPT combination.

\*\* NOTE TO SPECIFIER \*\* This Viqua Pro series is ideal for commercial uses and high-flow residential uses.

* + - 1. Viqua Pro 10 UV System:
         1. Flowrate: Up to 10 gal per min (37.8 L per min).
         2. Deactivates bacteria; meets NSF/EPA standards at 258 mJ per sq in (40 mJ per sq cm).

Provided with stringent monitoring of UVT ensuring water quality.

Meets NSF Class A standards.

* + - * 1. Connections: 1-1/4 in (32 mm) MNPT/FNPT combination.
      1. Viqua Pro 20 UV System:
         1. Flowrates: Up to 20 gal per min (75.7 L per min).
         2. Deactivates bacteria; meets NSF/EPA standards at 258 mJ per sq in (40 mJ per sq cm).

Provided with stringent monitoring of UVT ensuring water quality.

Meets NSF Class A standards.

* + - * 1. Connections: 1-1/4 in (32 mm) MNPT/FNPT combination.
      1. Viqua Pro 30 UV System:
         1. Flowrate: Up to 30 gal per min (113.6 L per min).
         2. Deactivates bacteria; meets NSF/EPA standards at 258 mJ per sq in (40 mJ per sq cm).

Provided with stringent monitoring of UVT ensuring water quality.

Meets NSF Class A standards.

* + - * 1. Connections: 1-1/4 in (32 mm) MNPT/FNPT combination.
      1. Viqua Pro 50 UV System:
         1. Flowrate: Up to 50 gal per min (189 L per min).
         2. Deactivates bacteria; meets NSF/EPA standards at 258 mJ per sq in (40 mJ per sq cm).

Provided with stringent monitoring of UVT ensuring water quality.

* + - * 1. Connections: 2 in (51 mm) MPT.
      1. Viqua H Series UV System:
         1. Flowrate: Up to 39 gal per min (147.6 L per min).
         2. Deactivates bacteria; meets NSF/EPA standards at 258 mJ per sq in (40 mJ per sq cm).
         3. Connections are 1-1/4 in (32 mm) MNPT, 1 in (25 mm) FNPT combination.
      2. Ultraviolet Light Systems - Viqua K Series UV System (80 GPM):
         1. Flowrate: Up to 80 gal per min (303 L per min).
         2. Deactivates bacteria; meets NSF/EPA standards at 258 mJ per sq in (40 mJ per sq cm).
         3. Connections: 2 in (51 mm) MPT.
    1. Filtration and Purification Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

* + - 1. Wrench for Big Blue Filter: This wrench is used to loosen the filter housing on the 20 in (508 mm) Big Blue Filter. Does not work with a 10 in (254 mm) housing.
      2. Bracket for Big Blue Filter: Heavy duty metal mounting bracket used for 20 and 10 in (508 and 254 mm) Big Blue Filter. Includes mounting screws.
      3. Sediment Filter: VIQUA 4.5 High-Performance. 1 micron filter for sediment, dirt, and rust filtration. Pleated polypropylene filter media.
      4. Sediment Filter: VIQUA 4.5. Removes particles up to 5 microns Viqua IHS22-D4 and IHS22-E4 integrated filtration systems.
         1. For use with IHS22-E4 system. Polypropylene.
      5. String Wound Filter: One-Micron for Big Blue Housing. 4.5 in (114 mm) diameter x 20 in (508 mm) long. 1 micron string wound Polypropylene filter cartridge for use with 20 in (508 mm) Big Blue Housing filtration systems designed to reduce sediment and fine particles during water filtration.
      6. String Wound Filter: Twenty-Micron String for Big Blue Housing. 4.5 in (114 mm) diameter x 20 in (508 mm) long. 20 micron string wound Polypropylene filter cartridge for use with 20 in (508 mm) Big Blue Housing filtration systems designed to reduce sediment and fine particles during water filtration.
      7. String Wound Filter: Ten in for Slim Housing (12-pack). 2.5 in (64 mm) diameter x 9.78 in (248 mm) long. Micron string wound Polypropylene filter cartridge for use with 10 in (254 mm) slimline filtration housing designed to reduce sediment and fine particles during water filtration.
      8. Carbon Filter: VIQUA 4.5. Carbon block filter for use with Viqua IHS22-D4 and IHS22-E4 integrated filtration systems. Reduces taste, odor, chlorine and particles up to 10 microns.
      9. Carbon Filter: Twenty Inch Carbon Filter for Big Blue Housing. Used with the 20 in (208 mm) Big Blue Housing filtration system. Reduces taste, odor, chlorine and particles up to 10 microns. Used with either 1 or 1.5 in (25 or 38 mm) housings.
      10. Carbon Filter: 10 in (254 mm) Carbon Filter for Slim Housing. 12-pack. Used with 10 in (254 mm) slimline filtration housing. Reduces taste, odor, chlorine and particles up to 10 microns. 2.5 in (64 mm) diameter x 9.5 in (241 mm) long.

\*\* NOTE TO SPECIFIER \*\* Lamps for UV systems should be replaced every 12 months in order to maintain proper system functionality and the healthiest water.

* + - 1. VIQUA Replacement UV Lamp and Quartz Sleeve Kit for E, E Plus, E4, E4 Plus, E4-V, PRO7, and IHS22-E4.
      2. Viqua Replacement UV Lamp for PRO10 and G Plus: Part No. 602854.
      3. Viqua Replacement UV Lamp for PRO 20, H, H Plus Lights: Part No. 602855.
      4. Viqua Replacement UV Lamp for PRO 20, PRO 30, PRO 50, K, and K Plus: Part No. 602856.
      5. VIQUA Replacement UV Lamp and Sleeve Kit for S5Q Lights: Part No. S463-QL.
      6. VIQUA Replacement UV Lamp and Quartz Sleeve Kit for C, C4, C4-V, D, D4-V, D4/Plus, IHS22-D4. Part No. 602810-102.

\*\* NOTE TO SPECIFIER \*\* Pumps delivering rain water from the storage tank. Delete article if not required.

* 1. DELIVERY PUMPS AND ACCESSORIES

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. Submersible Pumps - Grundfos SBA:
       1. All-in-one 1 HP (0.75 kW) submersible pump, comes with a low-water float switch as well as a suction hose and float.
       2. Noiseless operation.
       3. High reliability.
       4. Integrated protection.
       5. Floating suction strainer. Draws water from just below water surface where water is clean and free from solid particles.
       6. No external control unit.
       7. Integrated dry-running protection.
       8. Automatic restart after dry-running.
       9. Lifting eye.
       10. Outlet: 1 in (25 mm).
       11. Power Cable: 3-pronged, 45 ft (13716 mm) long.
    2. Submersible Pumps - Goulds 1/2 HP (0.373 kW) Three-Stage Pump Package:
       1. Pumps from storage tank to end use.
       2. Stainless steel base plate and suction inlet nozzle.
       3. Coarse floating filter with 7 ft (2134 mm) of suction hose.
       4. Casing: AISI 304 SS. Corrosion resistant, non-toxic, non-leaching.
       5. Impeller: FDA compliant, glass filled Noryl. Corrosion and abrasion resistant.
       6. Mechanical Seal: Silicon/carbide sealing faces; metal components of AISI type 300 stainless steel running in protected oil chamber.
       7. Elastomers: BUNA-N.
       8. Motor Shell and Lifting Handle: Constructed of AISI type 304 series stainless steel.
       9. Shaft: AISI type 304 stainless steel, high strength, keyed pump shaft with impeller locking cap screw.
       10. Discharge: 1-1/4 in NPT (32 mm) vertical discharge connection.
       11. Suction Strainer: Detachable for easy clean out.
       12. Power cord: 30 ft (9144 mm) cable.
       13. Recommended items:
           1. Normally Open Float Switch for pump protection.
           2. Bulkhead fittings for tank outlet.

\*\* NOTE TO SPECIFIER \*\* Delete voltage options not required.

* + - 1. Voltage, Phase, Max Amps: 115 V, 1, 10.6 A.
      2. Voltage, Phase, Max Amps: 230 V, 1, 4.5 A.
      3. Voltage, Phase, Max Amps: 230 V, 3, 3.0 A.
    1. Submersible Pumps - Goulds 3/4 HP (0.56 kW) 4-Stage Pump Package:
       1. Pumps from storage tank to end use.
       2. Stainless steel base plate and suction inlet nozzle.
       3. Coarse Floating Filter: WISY 2 in (51 mm) with 7 ft (2134 mm) of suction hose.
       4. Casing: AISI 304 SS. Corrosion resistant, non-toxic, non-leaching.
       5. Impeller: FDA compliant, glass filled Noryl. Corrosion and abrasion resistant.
       6. Mechanical Seal: Silicon/carbide sealing faces; all metal components of AISI type 300 stainless steel running in protected oil chamber.
       7. Elastomers: BUNA-N.
       8. Motor Shell and Lifting Handle: Constructed of AISI type 304 series stainless steel.
       9. Shaft: AISI type 304 stainless steel, high strength, keyed pump shaft with impeller locking cap screw.
       10. Discharge: 1-1/4 in (32 mm) NPT vertical discharge connection.
       11. Suction Strainer: Detachable for easy clean out.
       12. Power Cord: 30 ft (9144 mm) cable.
       13. Recommended Items:
           1. Normally open float Switch for pump protection.
           2. Bulkhead fittings for tank outlet.

\*\* NOTE TO SPECIFIER \*\* Delete voltage option not required.

* + - 1. Voltage, Phase, Max Amps: 230 V, 1, 5.4 A.
      2. Voltage, Phase, Max Amps: 230 V, 3, 3.5 A.
    1. Submersible Pumps - Goulds 1 HP (0.75 kW), 5 Stage Pump Package:
       1. Pumps from a storage tank to end use.
       2. Stainless steel base plate and suction inlet nozzle.
       3. Coarse Floating Filter: WISY 2 in (51 mm) with 7 ft (2134 mm) of suction hose.
       4. Casing: AISI 304 SS. Corrosion resistant, non-toxic, non-leaching.
       5. Impeller: FDA compliant, glass filled Noryl. Corrosion and abrasion resistant.
       6. Mechanical Seal: Silicon/carbide sealing faces; all metal components of AISI type 300 stainless steel running in protected oil chamber.
       7. Elastomers: BUNA-N.
       8. Motor Shell and Lifting Handle: Constructed of AISI type 304 series stainless steel.
       9. Shaft: AISI type 304 stainless steel, high strength, keyed pump shaft with impeller locking cap screw.
       10. Discharge: 1-1/4 in (32 mm) NPT vertical discharge connection.
       11. Suction Strainer: Detachable for easy clean out.
       12. Power cord: 30 ft (9144 mm) cable.
       13. Recommended items:
           1. Normally Open Float Switch for pump protection.
           2. Bulkhead fittings for tank outlet.

\*\* NOTE TO SPECIFIER \*\* Delete voltage options not required.

* + - 1. Voltage, Phase, Max Amps: 230 V, 1, 6.4 A.
      2. Voltage, Phase, Max Amps: 230 V, 3, 4.1 A.
      3. Voltage, Phase, Max Amps: 230 V, 1, 6.8 A.
      4. Voltage, Phase, Max Amps: 230 V, 3, 4.3 A.
      5. Voltage, Phase, Max Amps: 460 V, 3, 2.2 A.
    1. Booster Pump - Grundfos MQ:
       1. Small, easy-to-install all-in-one pressure booster pump unit.
       2. Indoor or outdoor installation. A cover is needed if moisture will be present.
       3. Features and benefits:
          1. Easy operation.
          2. Self-priming.
          3. Dry-running protection.
          4. Low-noise.
          5. Minimal maintenance required.

\*\* NOTE TO SPECIFIER \*\* Delete horse power and voltage options not required.

* + - 1. Horsepower and Voltage: 3/5 HP (0.45 kW), 115 V.
      2. Horsepower and Voltage: 1 HP (0.75 kW), 115 V.
      3. Horsepower and Voltage: 3/4 HP (0.56 kW), 230 V.
      4. Horsepower and Voltage: 1 HP (0.75 kW), 230 V.
    1. Booster Pump - Goulds IRRI-GATOR Self-Priming:
       1. High flow and pressure capabilities.
       2. Suction should not exceed 25 ft (7620 mm). Use of check valves is recommended.
          1. Features:

Self-priming design.

Fully serviceable.

FDA compliant impeller.

Corrosion resistant.

Powered for continuous operation.

* + - * 1. Recommended Components:

Floating filter.

Normally open float switch for pump protection.

\*\* NOTE TO SPECIFIER \*\* Delete horse power options not required.

* + - 1. Horse Power: 3/4 (0.56 kW)
      2. Horse Power: 1 (0.75 kW).
      3. Horse Power: 1-1/2 (1.12 kW).
      4. Horse Power: 2 (1.49 kW).
      5. Power Requirements: 120 or 240 V, 1 Ph, 60 Hz.
    1. Booster Pump - Davey Pump BT14-30:
       1. Fitted with intelligent Davey Torrium 2, water pressure controller delivering boosted water pressure and constant flow to end application.
          1. Optimal for 14 gal per min (53 L per min) at 30 lbs per sq ft (206.8 kPa).
       2. Features and Benefits:
          1. Power Cord: 6 ft (1829 mm)
          2. TEFC motor. 110 V, 1 Ph, 60 Hz.
          3. Pressure gauge.
          4. Status lights for easy monitoring.
          5. Stainless Steel impellers.
          6. Inlet Size: 1-1/4 in (32 mm) FNPT.
          7. Outlet Size: 1 in (25 mm) MNPT.
    2. Booster Pump Skids - eMVPjr: Available with a range of flow rates to handle residential and commercial applications from 20 to 100 gal per min (75.7 to 378.5 L per min) at 20 to 80 lbs per sq in (137.9 to 551.6 kPa).
    3. Booster Pump Skids - MVP: Energy efficient and lightweight with a small footprint, the MVP is available from 3 to 15 HP (2.24 to 11.18 kW).
    4. Pumps Accessories:

\*\* NOTE TO SPECIFIER \*\* Delete accessories not required.

* + - 1. Grundfos MQ Key Pad Protection Cover: For Grundfos MQ pump. Protects keypad from splashing water or high-humidity applications.
      2. Normally Open Float Switch: Preset on installation to disconnect power from the pump before tank completely empties. After the next rain event, the float activates and the pump automatically starts when there is a demand.
      3. Normally Closed Float Switch: Used to activate a normally closed solenoid valve or various other applications.
      4. Brass Female to Barb Fitting: 2 in (51 mm).

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. DOMESTIC BACK-UP COMPONENTS

\*\* NOTE TO SPECIFIER \*\* Ideal for health hazard cross-connections or for containment at the service line entrance. Delete paragraphs not required.

* + 1. Series LF909 Backflow Prevention; Lead-Free Reduced Pressure Zone Assemblies:
       1. Prevents reverse flow of polluted water from entering into potable water supply due to backsiphonage and or backpressure.
       2. Construction: Lead free cast copper silicon alloy body, bronze ball valve shutoffs, and bronze test cocks.
       3. Design Principle: "Air-in, water-out" for protection during emergency combined backsiphonage and backpressure conditions.
       4. Installation requirements: Check with local water authorities.
       5. Maximum Working Pressure: 175 lbs per sq in (12.06 bar).

\*\* NOTE TO SPECIFIER \*\* Delete size options not required.

* + - 1. Size: 3/4 in (19 mm).
      2. Size: 1 in (25 mm).
      3. Size: 1-1/2 in (38 mm).
      4. Size: 2 in (51 mm).
    1. Air Gap; WISY Stainless Steel: Installed on domestic backup in some localities to provide an air separation between the two water sources.

\*\* NOTE TO SPECIFIER \*\* Delete size options not required.

* + - 1. Size: 3/4 in (19 mm).
      2. Size: 1-1/2 in (38 mm).
      3. Size: 2 in (51 mm).
    1. Lead Free Pressure Reducing Valve; LFU5B: Reduce incoming water pressure to protect plumbing system components and reduce water consumption.
       1. Construction: Lead Free complying with Lead Free installation requirements.
       2. Water Supply Pressure: Up to 300 lbs per sq in (20.7 bar).
          1. Adjustable: From 25 75 lbs per sq ft (172 517 kPa).
          2. Standard Setting: 50 lbs per sq ft (345 kPa).
       3. Parts are easily serviceable without removing valve from line.

\*\* NOTE TO SPECIFIER \*\* Delete size options not required.

* + - 1. Size: 3/4 in (19 mm).
      2. Size: 1 in (25 mm).
      3. Size: 1-1/2 in (38 mm).
      4. Size: 2 in (51 mm).
    1. Normally Closed Float Switch: Used to activate a normally closed solenoid valve or various other applications.
    2. Check Valve: Allows fluid to flow through in only one direction and are used to prevent the backflow of rainwater into the potable water supply.
    3. Solenoid Valves: ASCO Solenoid Valves.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. RAIN WATER CONTROLLERS

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. Series 200 Mini: Preprogrammed to operate RMS-designed rainwater harvesting systems.
       1. Alarms: Audible and visual.
       2. Display: LED; intuitive touch screen display. 5.7 in (145 mm) screen.
    2. Series 200 Mini: Preprogrammed to operate RMS-designed rainwater harvesting systems.
       1. Alarms: Audible and visual.
       2. Display: LED; intuitive touch screen display. 10.4 in (264 mm) screen.
    3. Custom Control Panels: Run Lights for corresponding components and control outputs based on input statuses.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. STORAGE TANKS

\*\* NOTE TO SPECIFIER \*\* Delete paragraphs not required.

* + 1. Polyethylene Above-Ground Tanks:

\*\* NOTE TO SPECIFIER \*\* Delete color option not required.

* + - 1. Color: Green.
      2. Color: Black.

\*\* NOTE TO SPECIFIER \*\* Delete capacities not required.

* + - 1. Capacity: 200 gal (757 L).
         1. Intake Diameter: 40 in (1016 mm).
         2. Height: 42 in (1067 mm).
      2. Capacity: 400 gal (1514 L).
         1. Intake Diameter: 40 in (1016 mm).
         2. Height: 80 in (2032 mm).
      3. Capacity: 500 gal (1892.7 L).
         1. Intake Diameter: 48 in (1219 mm).
         2. Height: 73 in (1854 mm).
      4. Capacity: 550 gal (2082 L).
         1. Intake Diameter: 67 in (1702 mm).
         2. Height: 44 in (1118 mm).
      5. Capacity: 750 gal (2839 L).
         1. Intake Diameter: 48 in (1219 mm).
         2. Height: 106 in (2692 mm).
      6. Capacity: 1000 gal (3785.4 L).
         1. Intake Diameter: 60 in (1524 mm).
         2. Height: 89 in (2261 mm).
      7. Capacity: 1100 gal (4164 L).
         1. Intake Diameter: 87 in (2210 mm).
         2. Height: 53 in (1346 mm).
      8. Capacity: 1200 gal (4542.5 L).
         1. Intake Diameter: 86 in (2184 mm).
         2. Height: 57 in (1448 mm).
      9. Capacity: 1300 gal (4921 L)
         1. Intake Diameter: 60 in (1524 mm).
         2. Height: 114 in (2896 mm).
      10. Capacity: 1550 gal (5867.4 L)
          1. Intake Diameter: 87 in (2210 mm).
          2. Height: 67 in (1702 mm).
      11. Capacity: 1600 gal (6056.7).
          1. Intake Diameter: 86 in (2184 mm).
          2. Height: 71 in (1803 mm).
      12. Capacity: 2000 gal (7570.8 L).
          1. Intake Diameter: 96 in (2438 mm).
          2. Height: 73 in (1854 mm).
      13. Capacity: 2500 gal (9463.5 L).
          1. Intake Diameter: 95 in (2413 mm).
          2. Height: 91 in (2311 mm).
      14. Capacity: 3000 gal (11356.2 L).
          1. Intake Diameter: 95 in (2413 mm).
          2. Height: 109in (2769 mm).
      15. Capacity: 3500 gal (13248.9 L)
          1. Intake Diameter: 96 in (2438 mm).
          2. Height: 125in (3175 mm).
      16. Capacity: 4100 gal (15520.2 L).
          1. Intake Diameter: 102 in (2591 mm).
          2. Height: 130 in (3302 mm).
      17. Capacity: 5000 gal (18927 L).
          1. Intake Diameter: 102 in (2591 mm).
          2. Height: 152 in (3861 mm).
      18. Capacity: 5100 gal (19305.6 L).
          1. Intake Diameter: 102 in (2591 mm).
          2. Height: 159 in (4039 mm).
      19. Capacity: 5100 gal (19305.6 L).
          1. Intake Diameter: 142 in (3607 mm).
          2. Height: 93 in (2362 mm).
      20. Capacity: 6500 gal (24605 L).
          1. Intake Diameter: 120 in (3048 mm).
          2. Height: 146 in (3708 mm).
      21. Capacity: 8000 gal (30289.3 L).
          1. Intake Diameter: 120 in (3048 mm).
          2. Height: 183 in (4648 mm).
      22. Capacity: 10000 gal (37854.1 L).
          1. Intake Diameter: 141 in (3581 mm).
          2. Height: 160 in (4064 mm).
      23. Capacity: 12000 gal (45424.9 L).
          1. Intake Diameter: 142 in (3607 mm).
          2. Height: 197 in (5004 mm).
    1. Corrugated Metal Above-Ground Tanks:

\*\* NOTE TO SPECIFIER \*\* Available in an assortment of sizes from 600 gallons (2271 liters) to more than 400,000 gallons (1514165 liters).

* + - 1. Capacity (in/mm): \_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Available in an assortment of diameters from 6 to 60 ft (1829 to 18288 mm).

* + - 1. Diameter (in/mm): \_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Available in an assortment of eave heights and peak heights to fit your needs.

* + - 1. Height (in/mm): \_\_\_\_\_\_.
      2. Peak Height (in/mm): \_\_\_\_\_\_.
    1. Storage Tank: TinyTimber.
       1. Material: Premium eastern red cedar run through a proprietary milling process.
          1. Secured with easily adjusted galvanized flat bands.
          2. Stained: Preserve the natural red tones.
          3. Non-stained: Ages to silver-gray for rustic appearance.
       2. Standing Seam Roof: 25 degree.
       3. Mosquito resistant screen: At peak.
       4. Downspout: Directed to mosquito screen or separate opening cut into the roof for rainwater harvesting.
       5. Overflow flange and a hose spigot.
       6. NSF-61 certified flexible membrane liner.

\*\* NOTE TO SPECIFIER \*\* Delete size option not required.

* + - 1. Sizes and Capacities: 4 ft (1219 mm) dia. x 4 ft (1219 mm) tall; 375 gallons (1419.5 liters).
      2. Sizes and Capacities: 4 ft (1219 mm) dia. x 5 ft (1524 mm) tall; 470 gallons (1779.1 liters).
    1. Polyethylene Below-Ground Tanks: Gaskets, risers, and tops included.

\*\* NOTE TO SPECIFIER \*\* Delete option not required.

* + - 1. Potable .
      2. Non-potable.

\*\* NOTE TO SPECIFIER \*\* Delete capacity options not required.

* + - 1. Capacity: 550 gallons (2082 liters).
         1. Dimensions (LxWxH): 65 x 62 x 55 in (1651 x 1575 x 1397 mm)
      2. Capacity: 750 gallons (2839 liters).
         1. Dimensions (LxWxH): 103 x 62 x 51 in (2616 x 1575 x 1295 mm).
      3. Capacity: 1,060 gallons (4012.5 liters).
         1. Dimensions (LxWxH): 133 x 62 x 51 in (3378 x 1575 x 1295 mm).
      4. Capacity: 1,200 gallons (4542 5 liters).
         1. Dimensions (LxWxH): 102 x 60 x 63 in (2591 x 1524 x 1600 mm).
      5. Capacity: 1,400 gallons (5299.6 liters).
         1. Dimensions (LxWxH): 116 x 55 x 70 in (2946 x 1397 x 1778 mm).
      6. Capacity: 1,500 gallons (5678.1 liters).
         1. Dimensions (LxWxH): 177 x 62 x 51 in (4496 x 1575 x 1295 mm).
      7. Capacity: 1,760 gallons (6662.3 liters).
         1. Dimensions (LxWxH): 176 x 62 x 55 in (4470 x 1575 x 1397 mm).
      8. Capacity: 2,500 gallons (9463.5 liters).
         1. Dimensions (LxWxH): 158 x 98 x 53 in (4013 x 2489 x 1346 mm), includes riser.
    1. Fiberglass Below-Ground Tanks:

\*\* NOTE TO SPECIFIER \*\* Delete capacity options not required.

* + - 1. Capacity: 4,000 gallons (15141.6 liters).
         1. Dimensions (W x Diameter): 167 x 95 in (4242 x 2413 mm).
      2. Capacity: 5,000 gallons (18927 liters).
         1. Dimensions (W x Diameter): 200 x 95 in (5080 x 2413 mm).
      3. Capacity: 6,000 gallons (22712.5 liters).
         1. Dimensions (W x Diameter): 233 x 95 in (5918 x 2413 mm).
      4. Capacity: 8,000 gallons (30283.3 liters).
         1. Dimensions (W x Diameter): 299 x 95 in (7595 x 2413 mm).
      5. Capacity: 10,000 gallons (37854.1 liters).
         1. Dimensions (W x Diameter): 365 x 95 in (9271 x 2413 mm).
      6. Capacity: 12,000 gallons (45242.9 liters).
         1. Dimensions (W x Diameter): 431 x 95 in (10947 x 2413 mm).
      7. Capacity: 15,000 gallons (56781.2 liters).
         1. Dimensions (W x Diameter): 533.5 x 95 in (13551 x 2413 mm).
    1. Modular Below Ground Tank Systems:
       1. Capacity (gal/L): \_\_\_\_\_\_.
       2. Crates snap together on site.
       3. No cranes necessary for installation.
       4. Any configuration and gallon capacity available.

\*\* NOTE TO SPECIFIER \*\* Delete components specified elsewhere in this section.

* + 1. Tank Components:
       1. Smoothing Inlet Filter: Direct water upwards upon entrance to the tank preventing disturbance of healthy "bio-film" settled at the bottom of the tank.

\*\* NOTE TO SPECIFIER \*\* Delete inlet not required.

* + - * 1. Smoothing Inlet 4 in (102 mm) - WISY.
        2. Smoothing Inlet 8 in (204 mm) - WISY.

\*\* NOTE TO SPECIFIER \*\* Available separately or as part of a kit for both submersible and booster pumps. Delete not required or specified elsewhere in the section.

* + - 1. Floating Intake Filter: Takes water from just below the surface where water is at its highest quality. The floating filter acts as an uptake point for the pump and never require maintenance.

Polyethylene ball and stainless steel filter.

\*\* NOTE TO SPECIFIER \*\* Suction hose is optional. Delete if not required.

Suction Hose: 7 ft (2134 mm) food-grade.

Nozzle Connections: 1-1/4 in (32 mm).

Nozzle connections: 2 in (51 mm).

\*\* NOTE TO SPECIFIER \*\* First mesh is for coarse filtration. The second is for fine filtration. Delete mesh size not required.

Filter mesh size: 0.047 in (1.2 mm); 1,200 microns.

Filter mesh size: 0.012 in (0.3 mm); 300 microns.

* + - 1. Overflow: Prevents backup in tank during heavy rains. A flapper valve allows water to overflow but protects water quality in the tank with backflow prevention and vermin protection. Contains an angled opening to provide skimming of small buoyant debris, such as pollen, on the water surface.
         1. Multifunction Overflow Device - WISY: 4 in (102 mm).
         2. Multifunction Overflow Device - WISY: 8 in (204 mm).
  1. SOURCE QUALITY CONTROL
     1. Assemble and test purification system in factory prior to shipment to Project site.
     2. Hydrostatically test prefabricated pump assembly in factory prior to shipment to Project site.

1. EXECUTION
   1. EXAMINATION AND PREPARATION
      1. Inspect and prepare installation location using the methods recommended by the manufacturer for achieving best results under project conditions.
         1. Inspect assembly components prior to installation.
         2. Verify conditions are within recommended tolerances and parameters.
         3. Prepare assembly components for installation in accordance with manufacturer's recommendations.
      2. Do not proceed with installation until equipment location has been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected.
      3. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and parameters.
      4. Commencement of installation constitutes acceptance of conditions.
   2. INSTALLATION
      1. Install system components in accordance with manufacturer's instructions and approved Shop Drawings.
      2. Arrange equipment so that components requiring removal or maintenance are readily accessible without disturbing other components. Arrange for clear passage between components.
      3. Connect to utility supplies and equipment.
      4. Ground components in accordance with component manufacturer's instructions.
      5. Install pre-filters at time storage tanks are installed.
      6. Do not bury filters deeper than manufacturer's recommended depth unless a vault is installed.
   3. FIELD QUALITY CONTROL

\*\* NOTE TO SPECIFIER \*\* Include the following for on-site startup services by System Integrator.

* + 1. System Integrators:
       1. Installation oversight and technical support.
       2. Terminate and test control system wiring and operation of electrical components.
       3. Demonstrate proper pump and controls operation.
       4. Make adjustments to meet user-defined system performance.
       5. Review operation and maintenance procedures with Owner's representative.

END OF SECTION