

## Sand Filter Module, Water Transfer System

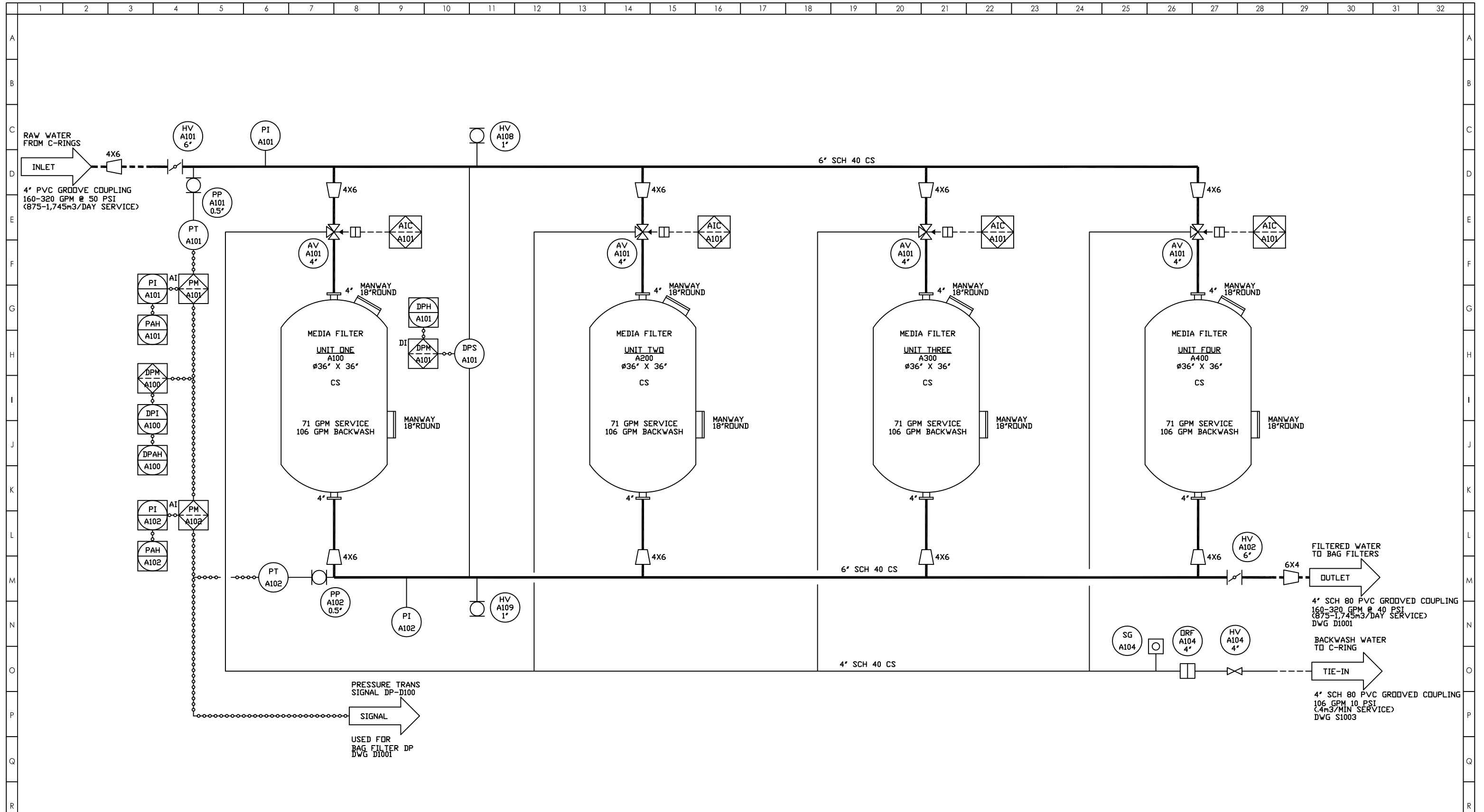
AQUEN USA offers a system designed to draw water from a pond or storage tank and provide the flow and pressure to filter the stream through four 36" media filters. The container house two self-priming trash pumps that can be operated independent or in parallel. These pumps are VFD controlled based upon flow, pressure or VFD frequency.

The sand filters have an air-operated controller that can automatically backwash the sand filters based upon time or differential pressure. This controller will also receive a backwash signal from the Automation Direct PLC. Transfer pumps are operated with VFDs and can be controlled based on either flow or pressure. The system includes two chemical feed systems with room for two 300gal chemical totes.

The system is enclosed in a 45' shipping container. The container has been insulated and modified to include two 36" man doors, utility outlets, lights, sand filter controller compressor, 5hp utility compressor, electric heat and a transformer to convert 480V 3ph to 208V 1ph.

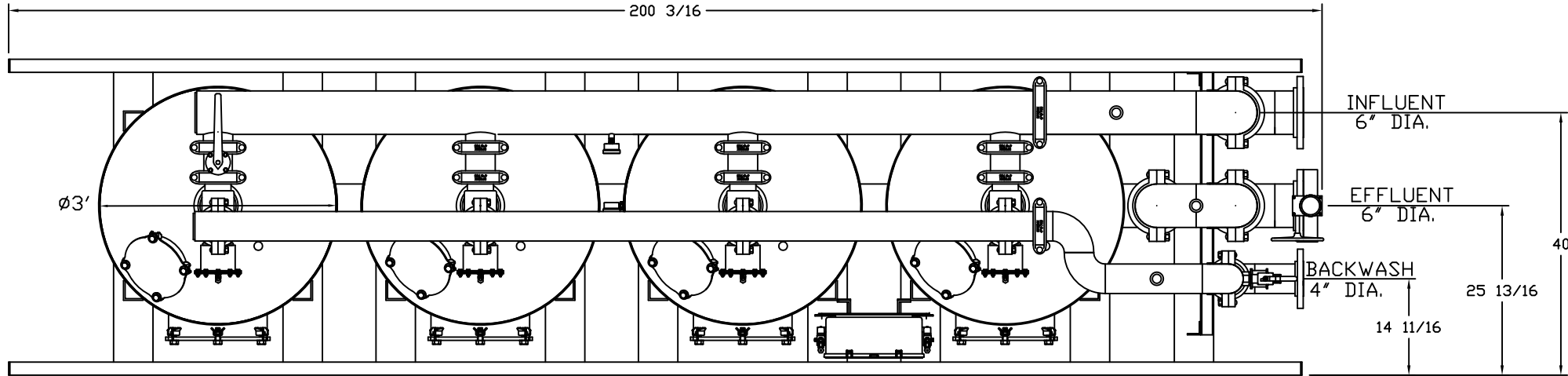


- Yardney 3636-4AS Sand Filter
- 2ea Pioneer Pump PP43 Self Priming Pumps
- Automation Direct PLC
- Automation Direct VFDs
- Ingersoll Rand CBV504864 Compressor

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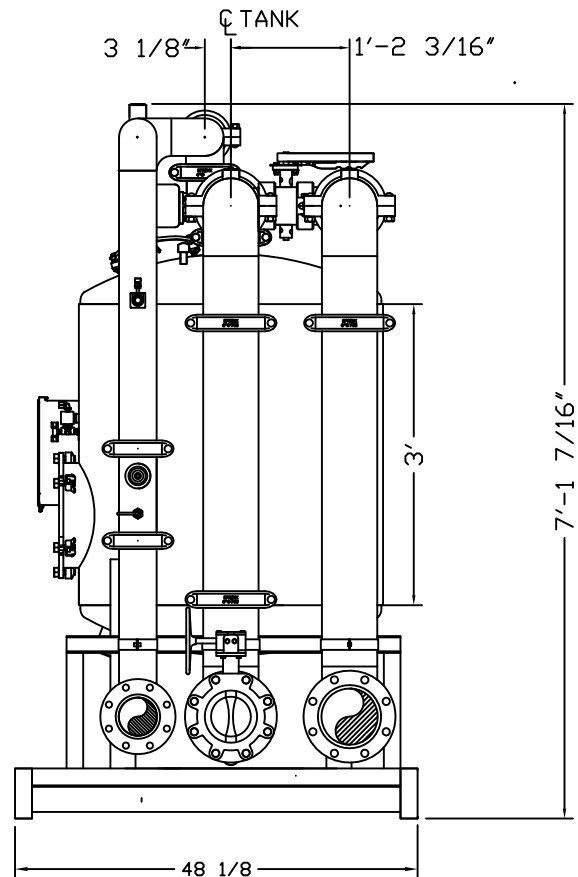
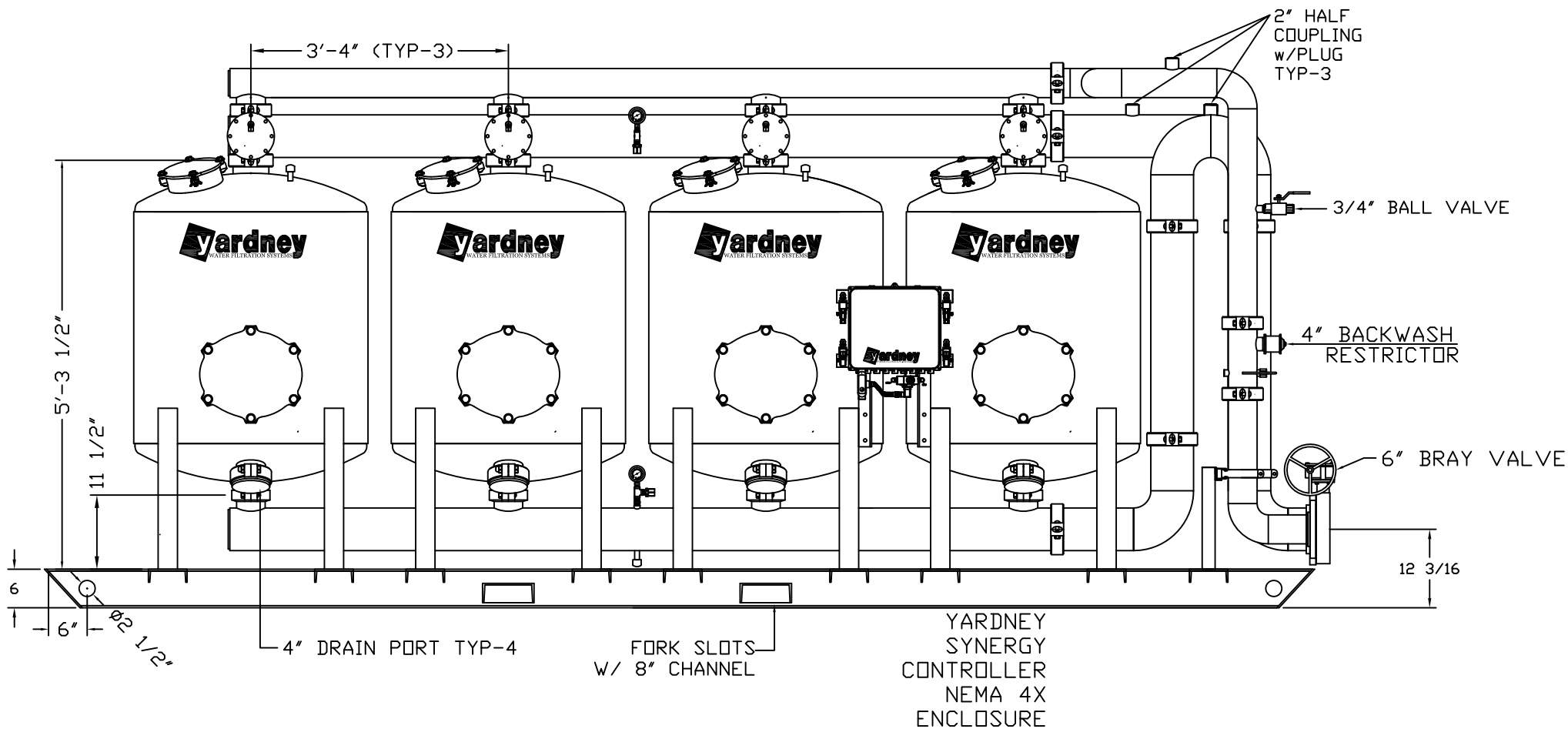



IL 3636-4AS  
w/6" PIPING



NOTES:

1. FLOW RATE DESIGN: 284-426 GPM  
BACKWASH RATE: 15 GPM/FT<sup>2</sup>.
2. MAXIMUM WORKING PRESSURE: 100 PSI.
3. ELECTRICAL REQUIREMENTS:  
CONTROLLER 120V;  
SOLENOIDS 24VAC; FACTORY WIRED
4. AIR SUPPLY REQUIRED: 2 CFM @ 70 PSIG (MIN.).
5. MEDIA REQUIREMENT PER TANK:  
A. 1/2"x3/4" CRUSHED ROCK: 4.0 CU. FT. .  
B. 0.47mm CRUSHED SILICA SAND: 17.0 CU. FT. .
6. WEIGHTS: (APPROX.)  
EQUIPMENT: TBA LBS (LESS MEDIA)  
MEDIA: TBA LBS  
OPERATION: TBA LBS
7. EXTERIOR PAINT COLOR: STANDARD BLUE, RAL 5010.



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					<div> WATER FILTRATION SYSTEMS RIVERSIDE, CALIFORNIA</div>				
					IL 3636-4AS FILTER SYSTEM				
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<b>TO:</b>	Craig Mills	<b>DATE:</b>	January 23, 2017
<b>COMPANY:</b>	K'nowbe Engineering	<b>EMAIL:</b>	craig.mills@aquen.net
<b>FROM:</b>	Rob Hoggan	<b>PHONE:</b>	(801) 803-8032
<b>QUOTE #:</b>	YRH-0117-0041	<b>CELL:</b>	
<b>PROJECT:</b>	Shipping container mine	<b>FAX:</b>	

**PAGE 1 OF 2** **QUOTE VALID FOR 30 DAYS**

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Dear Craig,

Thank you for the opportunity to provide you with the following PROPOSAL for your project.

Based on the information you were able to provide, we are pleased to offer the following equipment package:

**IL 3636-4AS DEEP BED SAND MEDIA FILTER PACKAGE**

One [1] each Yardney model IL 3636-4A automatic deep-bed sand media filtration system including:

- Four [4] each 36 in. diameter x 36 in. side-shell carbon steel filter vessels providing a cross-sectional surface filtration area of 7.1 sf per vessel (total of 28.4 sf for the system). Tanks are rated for 100 psi MAWP.
- 3M ScotchKote 134 Fusion Bonded Epoxy coating on interior surfaces of tanks and valves.
- Removable stainless steel (type 304) wedgewire lateral underdrain assembly with Sched 80 PVC hub.
- Yardney easy-entry manways on top and side, and oversized media dump port on bottom of vessel.
- Yardney 3-way 454D pneumatically actuated valves.
- Carbon steel manifolds with 6 inch piping flanged mainline connections.
- Backwash manifold with manual throttle valve to control backwash flow (Backwash pipe size is 4 in.).
- Exterior paint is catalyzed two-part polyurethane (RAL #5010 industrial blue).
- The system is fully assembled, plumbed and wired on a structural steel skid.
- Yardney Synergy controller in NEMA 4 enclosure for system automation.
- All influent and effluent connections with gooseneck at end of filter skid, providing ease of access.
- Gravel and sand media pack is included (media loading by others) and consists of:
  - Twenty-four [24] 80 lb bags of #3 5/8 in. crushed gravel.
  - Seventy-Six [76] 100 lb bags of .47mm Crushed Silica Sand.
- Inlet/outlet pipe size is 4 in.
- Recommended backwash flow rate is 107 gpm (24 m3/h) at 20 degrees C (68 degrees F).
- Installation and Operation & Maintenance manuals are included.





Pioneer Prime

# PP43C75L71



Typical Pump Configuration

## Performance

### Pioneer Prime series - vacuum assisted, end suction centrifugal pump

Bare shaft, frame mounted, fully automatic dry priming, vacuum assisted, run dry, heavy duty pump

Size	4" x 3" 100 x 76 mm
Flow, Max	400 USgpm 90 m <sup>3</sup> /h 30 l/s
Head, Max	95 feet 30 meters
Flow at BEP	330 USgpm 80 m <sup>3</sup> /h 20 l/s
Efficiency at BEP	75%
Solids Handling, Max	0.5" 13 mm
Operating Speed, Max	2200 rpm
Suction Connection	4" (100 mm) 150 ANSI Flanges
Delivery Connection	3" (76 mm) 150 ANSI Flanges
Bearing Lubrication	Oil STD Grease optional
Fasteners	Imperial

## Applications

Oil & Gas	Construction
Industrial	Mining
Petrochemical	Rental
Agriculture	Irrigation

### High flow, heavy duty pump

The PP43C75 is a high flow, ruggedized pump designed to run over a broad range of performance and deliver outstanding suction lift. The rugged construction and modular design provide proven reliability and flexibility in the most demanding applications.

## UltraPrime™ Priming System

Priming System	Mechanically Driven Diaphragm Style Vacuum Pump
Air Removal Capability	50 CFM
Priming Chamber	Single chamber with positive sealing air separation PosiValve™ with stainless steel float ball & linkage.
Discharge Check Valve	Swing Style - ductile iron with Buna-n Disc

## Other Specifications

Mechanical Seal	Single seal w/ tungsten carbide vs. silicon carbide seal faces, Viton® elastomers, 300 series stainless steel hardware and spring, designed for indefinite dry running
Pump End Bearing	Single Row Ball
Drive End Bearing	Single Row Ball
Shaft	17-4 PH Stainless Steel

## Construction Materials

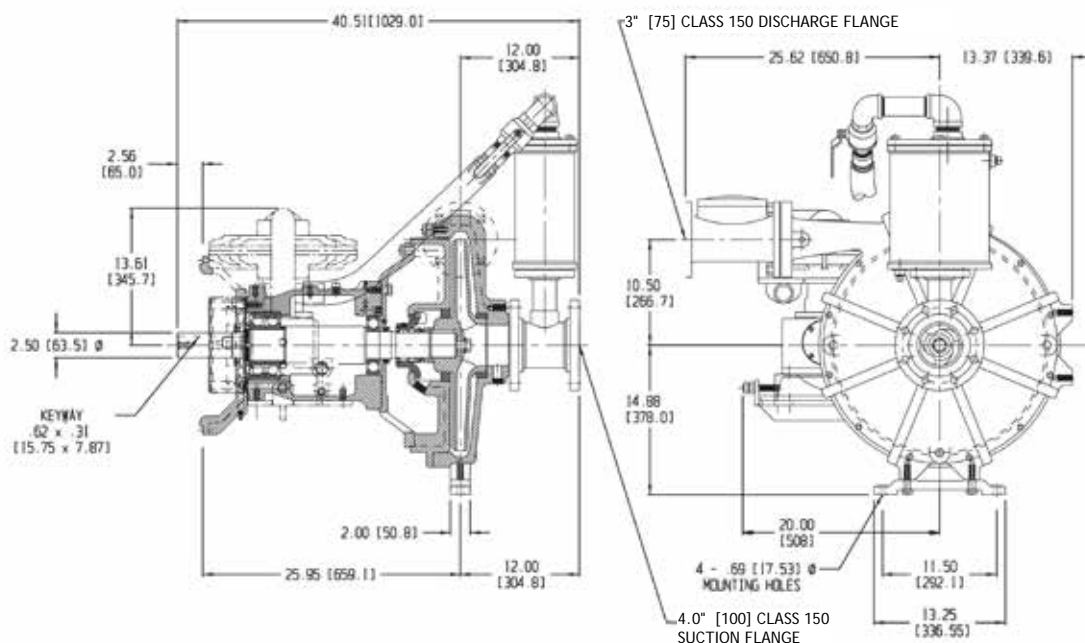
	Standard Construction	CD4MCu Stainless Steel
Impeller	CA6NM SS	CD4MCu
Volute	Ductile Iron ASTM A536 65-45-12	CD4MCu
Wear Ring	ASTM A48 Class 40 Gray Iron	316 SS
Suction Cover	Ductile Iron ASTM A536 65-45-12	CD4MCu
Brac-plate	Ductile Iron ASTM A536 65-45-12	CD4MCu

## Mechanical Dimensions



Typical Pump Configuration

**PP43C75**



## Performance Curve

Model: PP43C75	Impeller Dia: 7.5"	Speed: Variable	Solids Size: 0.5"	Curve #A2716HQ
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