

PRE-BID CLARIFICATION FORM (For Contractor's Use)

PROJECT NAME:	Newport Harbor High School Pool Equipment Replacement		
PROJECT NUMBER:	103-21		
TO:	Jonathan Geiszler, Director of Purchasing & Warehouse	EMAIL:	jgeiszler@nmusd.us

DATE:	11/25/2020		
FROM:	Brett Crews, Estimator California Waters	EMAIL:	bcrews@californiawaters.com
DOCUMENT/DIVISION NUMBER:	131105 2.01 Filtration equipment	DRAWING NUMBER:	

REQUESTED CLARIFICATION:

Would like to submit the attached documentation for Stark filter system by Pentair Aquatic System as an acceptable alternate to the sole source Eko3 noted in the specification.

RESPONSE TO CLARIFICATION:

Stark filtration system by Pentair is not an acceptable alternate. Contractor shall base bid on the equipment as specified in the construction documents.

Bernie Rogers, Terracon
12/2/20

Attach additional numbered sheets as necessary; however, only one (1) request shall be contained on each submitted form.

Project Name: Newport Harbor
High School

City and State: Newport Beach, CA



Filter System Specification

A. Filtration System / Flow Rate:

1. The filter system(s) shall be a STARK Filtration System as manufactured by PENTAIR AQUATIC SYSTEMS, and one containing vessels approved by the National Sanitation Foundation.
2. FILTRATION SYSTEM: The filter system shall be a model SS7-72X-12. The system shall contain seven (7) high rate type filter tanks, with each tank containing 20 square feet of filter area totaling 140 square feet of effective filtration area. The system shall have the capacity of filtering 1,850 gpm when filtered at 13.2 gpm per square foot. Each tank shall be of the horizontal type, 42 inch inside diameter and 72 inches long.

- B. Filter Vessel: The vessels shall be constructed using a dual-containment construction method consisting of a multiple-layer fiberglass liner filament wound with continuous fiber strand, and shall have a rated working pressure of **100 psig**. Winding shall include both helical and circumferential winds and shall be applied to the entire vessel, including domes. The entire dome shall be covered except where the vessel connects to the winder. The winding shall be performed on a computer controlled multi-axis machine. Alternate construction methods shall not be accepted.



1. Each tank shall have one influent header fitted with sufficient distributors to properly distribute incoming flow evenly across the sand bed surface and one effluent header with sufficient laterals equally distributed not less than 16 inches below the filtering sand bed with a total effective slot area such that the average velocity through the slots will not exceed 6 feet per second at the design flow rate. Both headers shall be fabricated of schedule 80 PVC and all distributors and laterals shall be threaded and replaceable. The laterals shall be 2-3/8 inch diameter by 10 inches long with 2" NPT connections and constructed of ABS plastic with molded 'V'-groove slots. Laterals with machined or cut slots shall not be accepted. Laterals shall be threaded at right angles into the header pipe.
2. Each tank shall be equipped with a 12 inch by 16 inch access manway. Manway cover shall have an **integral clear acrylic viewing port** for internal observation of the filter vessel(s) while they are in filter and backwash operation. Assembly shall consist of removeable cover, two yokes, o-ring, and T316 stainless steel hardware. Removeable cover shall be an injection-molded design of ABS and shall be self-positioning within the manway opening.



3. The filter vessels shall carry a fifteen-year limited warranty covering defects in material and workmanship, the first three years of which shall not be pro-rated.
4. The system shall be designed for installation against a back or side wall with all servicing accessible without moving tanks. When the system is off, the tanks must remain full of water and not allow water to gravity drain back to the source in order to prevent disturbance of the sand bed. Each tank shall have an automatic internal air relief, manual external air release, and tank drain system all of which shall be of non-corrosive materials.
5. Filter vessels shall be designed for Seismic Zone 4 loading without utilizing additional supports or braces.
6. Filter system shall be supplied with wedge anchor bolts, media dump ports, and anchor setting templates.

C. Backwash Valves and Piping (Diaphragm Valves):

1. Valves to initiate the backwash cycle shall be diaphragm type valves actuated hydraulically using water. Valves shall be constructed of non-corrosive materials such as ABS plastic. All metal components (shaft and fasteners) shall be Type 316 Stainless Steel. Diaphragm shall be scrim reinforced EPDM with polyurethane sideport seals.
2. The system, including external piping, shall be fully solvent-welded and assembled on templates at the factory and shipped for ease of installation at the job site.
3. For multiple-tank systems, each tank in system shall be capable of being backwashed individually using filtered water from the remaining tank(s). The common method of backwashing by using raw source water in a reverse flow through the filter or filters will not be acceptable.
4. The influent, effluent and waste manifolds shall be constructed of schedule 80 PVC piping and fittings. Each tank in the system will consist of one three-way hydraulically-operated diaphragm valve per tank to direct the flow of water during the backwash cycle. One (1) sight glass will be installed in the waste line.

D. Priority Valve:

A Motorized Priority valve shall be provided on the effluent manifold for the purpose of ensuring ample clean filtered water during the backwash process. Valves shall be butterfly type actuated electrically. Valve body and disc shall be constructed of non-corrosive PVC plastic. Shaft shall be Type 316 Stainless Steel. Seals shall be EPDM. Valve size shall exactly match the return pipe size for the common header that services all tanks in the system as shown on the plans. Actuators feature light weight enclosure with powder coating for durability and chemical resistance. Actuators shall

run on 120 vac, 60 htz., and include two (2) internally mounted limit switches for precise locations for filter and backwash settings.

E. Backwash Control: By Others

F. Para-pump Booster System:

1. A Para-pump Booster System (PBS) shall be provided by the filter system manufacturer for the purpose of maintaining consistent water pressure of 34-40 psi. The PBS will be used for hydraulic actuation of the backwash valves where this is not available through the city water supply. PBS shall contain a centrifugal pump, pressure sustaining tank, adjustable pressure switch, and required tubing / connectors. Booster System shall be Paragon Aquatics Model Number PBS01.



G. Gauge Panel:

1. The filter system will include a gauge panel with influent and effluent gauges mounted on a non-corrosive PVC panel. Gauges will range from 0-60 PSI, include quick connectors, tubing and mounting kit.

H. Filter Media (Provided by Others):

1. Sand:
 - a) A sufficient quantity of #20 US sieve grade clean crystal silica sand to cover filter elements (laterals) with a minimum 16 inch sand bed shall be furnished and installed into each tank and shall be free of limestone or clay. The following is an acceptable gradation for this media:

Effective size: 0.45 mm (0.018 in.)	Sieve no. (US series)	mm opening	Percent retained on sieve (by weight)
Uniformity coefficient: 1.5 or less	20	0.833 (0.033 in.)	2
Mean diameter: 0.616 mm (0.0243 in.)	30	0.589 (0.023 in.)	58
Standard deviation: 0.110 mm (0.00432 in.)	40	0.417 (0.016 in.)	36
Grain Sphericity: GRTR 0.7	50	0.295 (0.012 in.)	4
Grain Shape: Angular to sub angular			

2. Gravel:

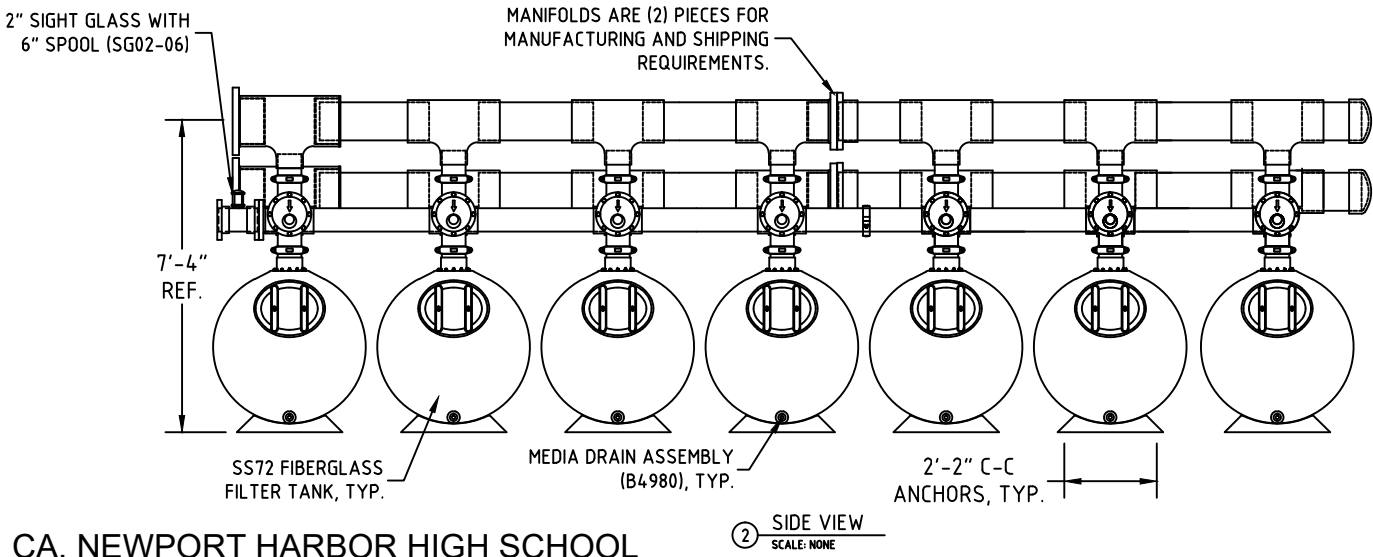
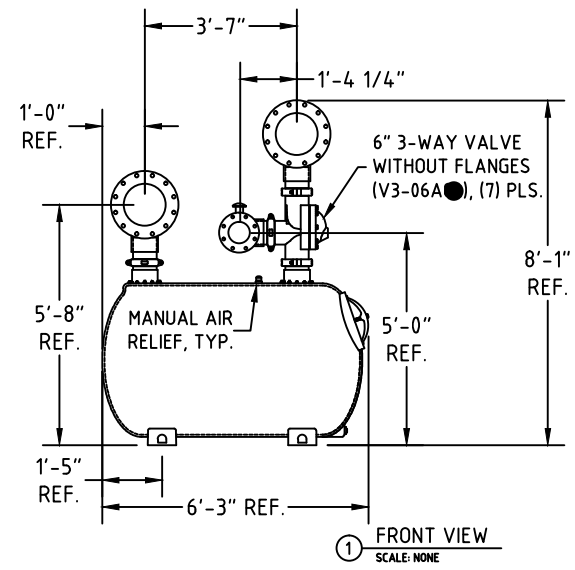
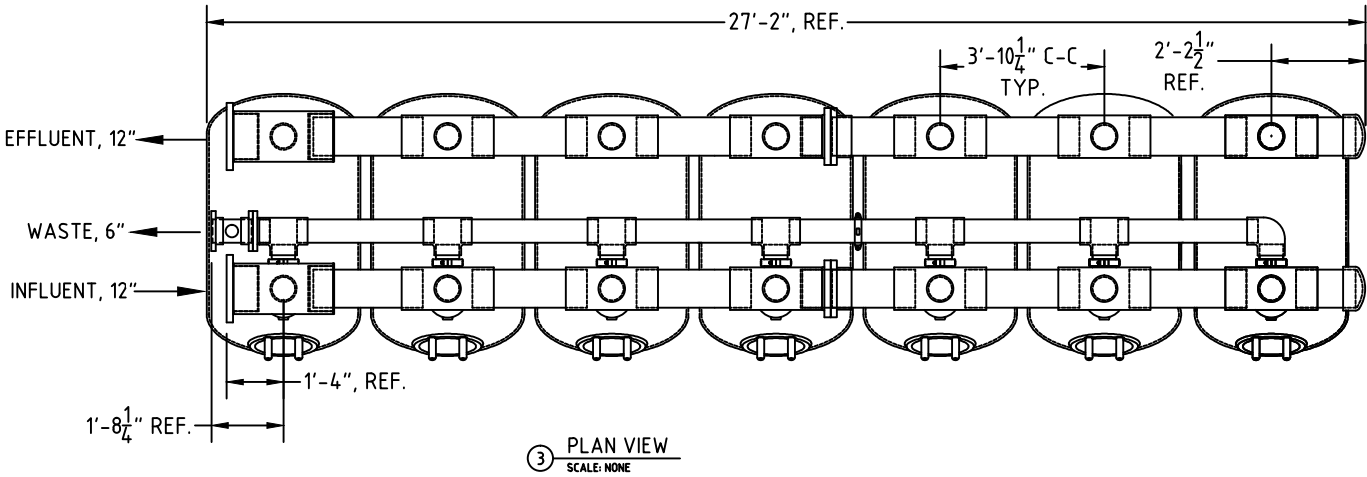
- a) A sufficient quantity of pea gravel media shall be installed as a support layer in the bottom of each tank to the top of the laterals. Gravel shall be free of limestone or clay. The following is the acceptable physical characteristics of this media:

Effective size: 1/8" to 1/4" (3.2mm to 6.4 mm) diameter

Specific Gravity: > 2.65

Gravel Shape: Rounded particles

- NOTES:
- 1. TOTAL FILTRATION AREA: 140 SQ. FT.
 - 2. STANDARD SYSTEM INCLUDES
~~SEMI-AUTOMATIC CONTROLLER (CM200, NOT SHOWN) AND FACE-PIPING KIT NUMBER FP-SS7-1206 (SHOWN, INCLUDES FLANGE GASKETS AND ISOPLAST & S/S HARDWARE).~~
 - ~~3. AUTOMATIC CONTROLLER (CA100) IS AVAILABLE AS AN UPGRADE~~
 - 4. DIMENSIONS ARE APPROXIMATE. DO NOT PRESET ANCHORS.
 - 5. ALL PIPING SHOULD BE FULLY SUPPORTED WITH BRACING AND HANGERS (BY OTHERS) TO PREVENT DAMAGE FROM WEIGHT AND VIBRATION.
- NOTE: FACEPIPE KITS CAN BE REVERSED IN THE FIELD FOR LEFT OR RIGHT CONNECTIONS.



CA, NEWPORT HARBOR HIGH SCHOOL



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Drawn by:
PAM

Date:
10/14/03

Title:

STARK
7-TANK, SS72 FILTER SYSTEM - 12" CONNECTIONS

Approved by:

Date:

Drawing Number:

SS7-72-12

Rev Ltr:

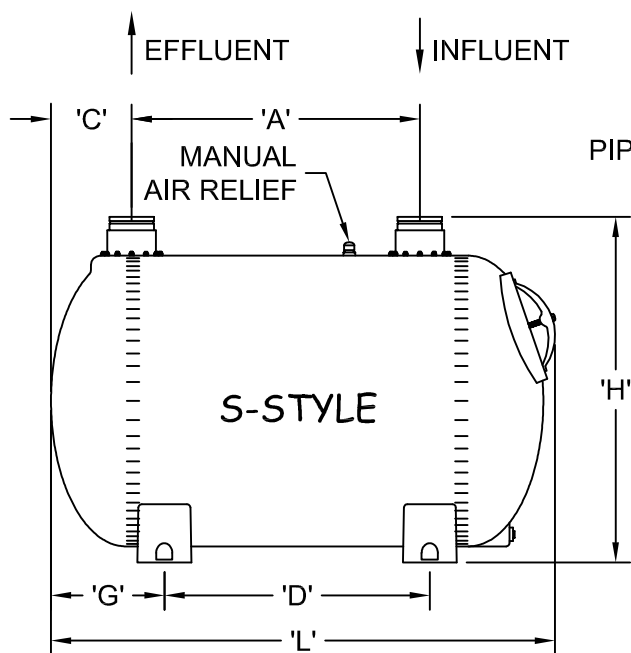
A

Sheet:

1 of 1

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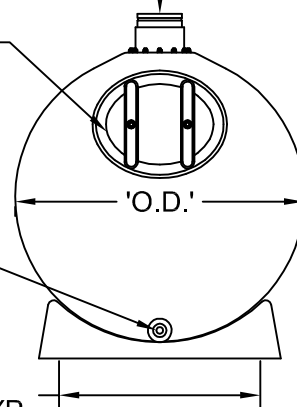
② SIDE VIEW
SCALE: NONE

GROOVED SCHEDULE 80
PIPE CONNECTION, NOMINAL
DIAMETER 'M', TYP.

12" X 16"
MANWAY
WITH
VIEWPORT

MEDIA DUMP/
DRAIN PORT

'K' C-C
ANCHORS, TYP.



① FRONT VIEW
SCALE: NONE

TANK NUMBERING SYSTEM

SS72

NOMINAL DIAMETER

'R' = 36" 'S' = 42"

TANK STYLE 'S'
(END MANWAY)

NOMINAL LENGTH
(INCHES)

TANK PART NUMBER	FILTER AREA (SQ.FT)	FLOW RATE @10GPM PER SQ.FT.(GPM)	FLOW RATE @15GPM PER SQ.FT.(GPM)	FLOW RATE @20GPM PER SQ.FT.(GPM)	MEDIA REQUIRED (FT³)	SAND (FT³)	GRAVEL (FT³)	FREEBOARD HEIGHT(in)	SAND BED DEPTH (in)	GRAVEL DEPTH (in)	OPERATING WEIGHT (lbs.)	SHIPPING WEIGHT (lbs.)	'A' (in)	'C' (in)	'D' (in)	'G' (in)	'H' (in)	'K' (in)	'L' (in)	'O.D.' (in)	'M' NOM. DIA.	
RS36	13.5	135	203	273	12 (1200 lbs.)	9 (900 lbs.)	3 (300 lbs.)	12	12-1/2	6	1100	500	36	12	36	15	42	26	75	37-1/2	4"	
RS72	17.0	170	255	340	19 (1900 lbs.)	15.5 (1550 lbs.)	3.5 (350 lbs.)				4000	650	48		45							
RS48	18.0	180	270	353	14.5 (1450 lbs.)	12 (1200 lbs.)	2.5 (250 lbs.)	12-1/2	16		4200	580	10	12	21	14	48	26	54			
SS72	20	200	300	400	26 (2600 lbs.)	22 (2200 lbs.)	4 (400 lbs.)				6600	740	42-7/8	12	39-1/2	17	51	32	75	43-1/2	6"	
RS96	27	270	405	540	36 (3600 lbs.)	31 (3100 lbs.)	5 (500 lbs.)				8000	800	37-1/4	12	36	10		32	99			

NOTE: DIMENSIONS ARE APPROXIMATE - NOT FOR CONSTRUCTION.

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Drawn by:
JMM

Date:
3/14/13

Approved by:
JP

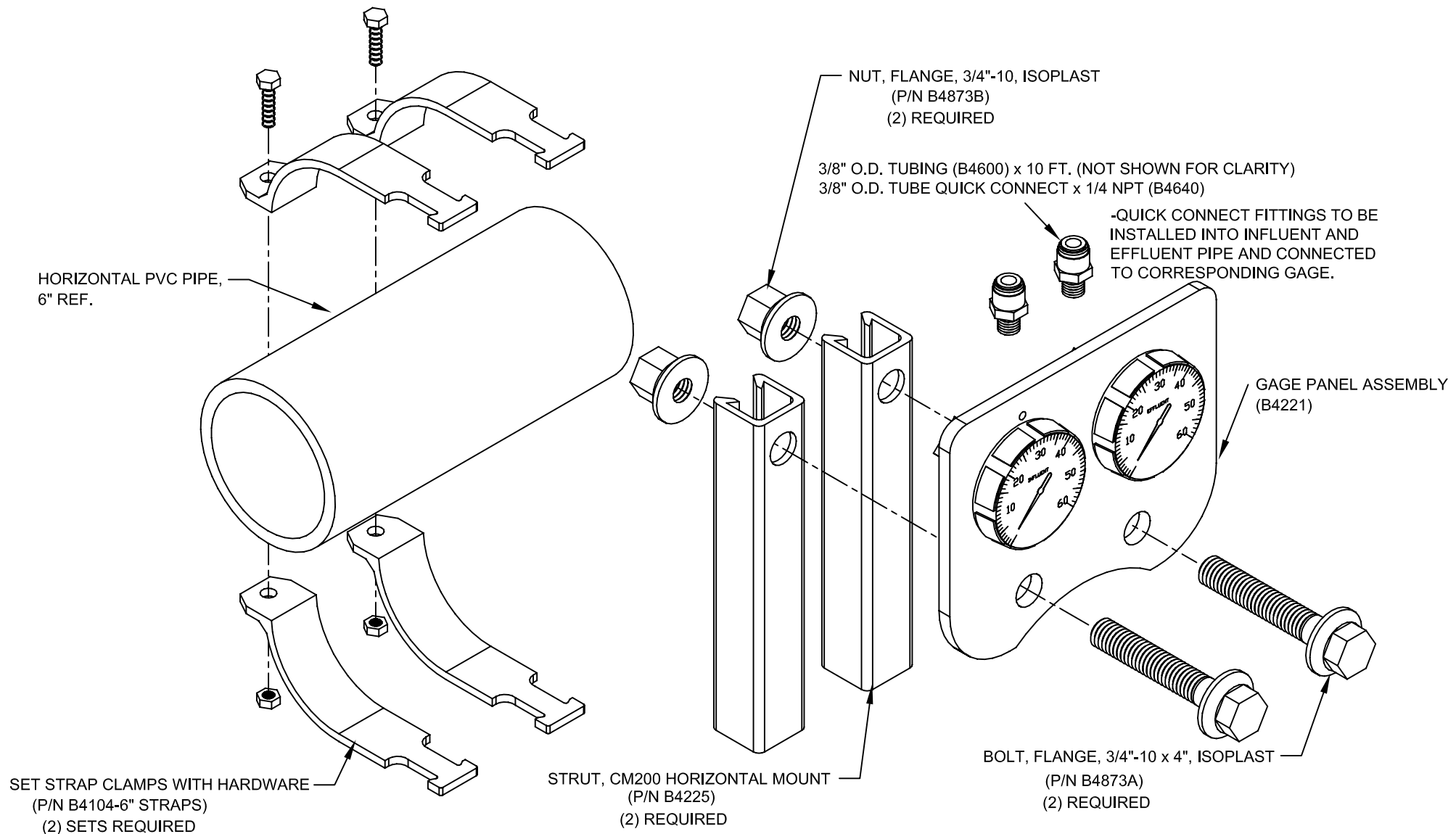
Date:
3/14/13

Title:
STARK
TANK SPECIFICATIONS - 42" & 36" DIA. 'S'-STYLE

Drawing Number:
SS/RS - SPECS

Rev Ltr:
E

Sheet:
1 of 1



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Drawn by: JP
Date: 8/7/01

Approved by: SW
Date: 8/7/01

Title: INSTALLATION INSTRUCTIONS FOR
GAGE PANEL ASSEMBLY

Drawing Number:
II-B4221KIT

Rev Ltr:
B

Sheet:
1 of 1

ASSEMBLY DRAWING FOR 2" SIGHT GLASS WITH 6" SPOOL

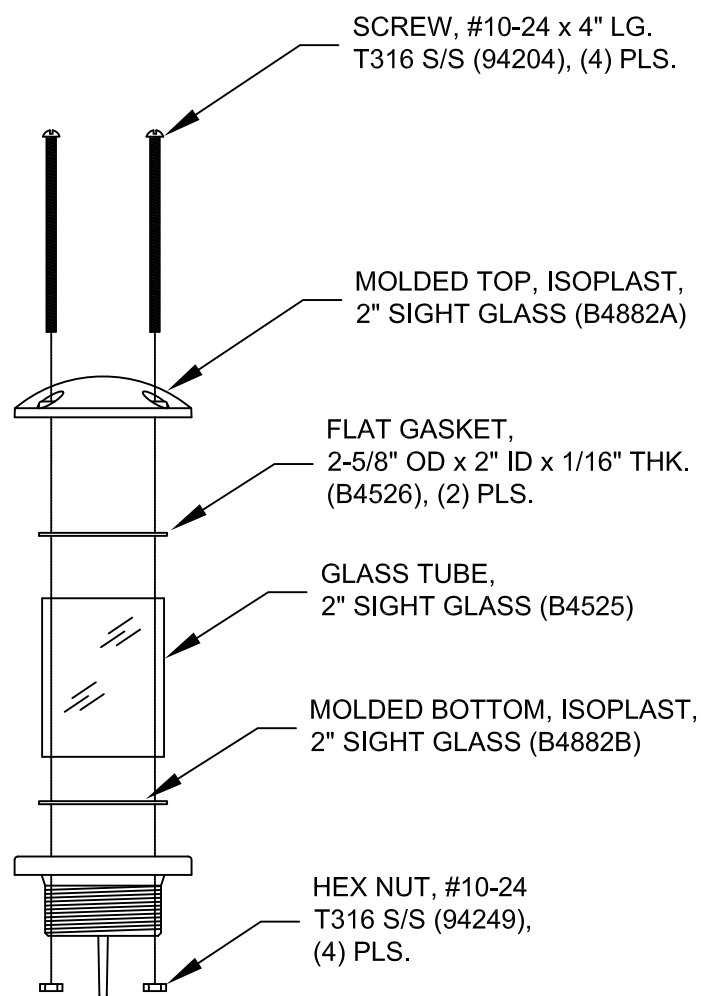
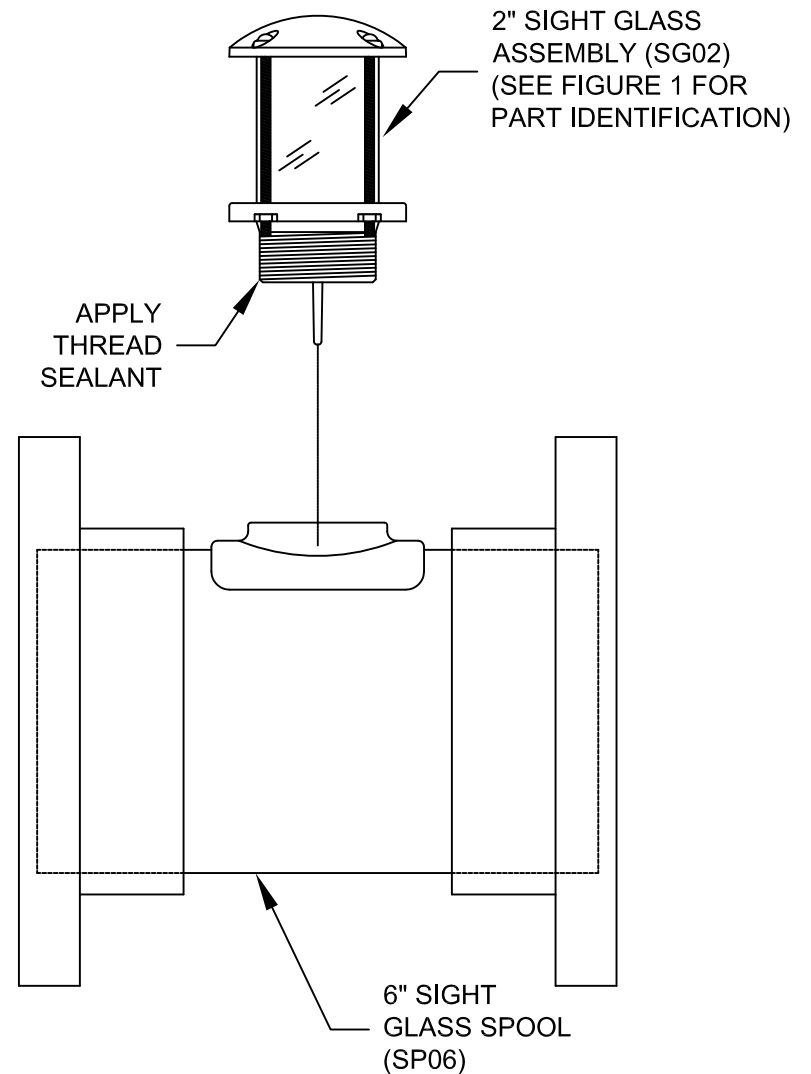


FIGURE 1



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Drawn by:
SF

Date:
5/26/11

Title: 2" SIGHT GLASS
WITH 6" SPOOL

Material:
SEE ABOVE

Approved by:
JP

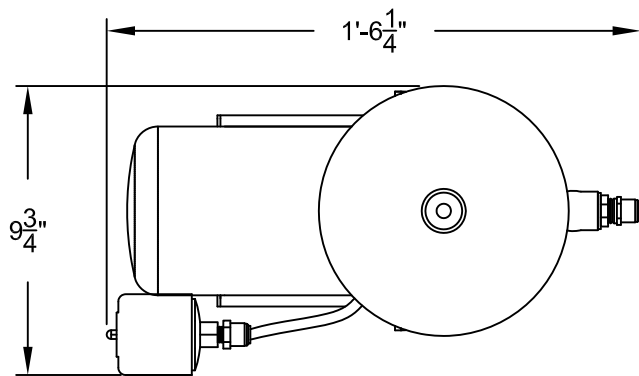
Date:
5/26/11

Drawing Number:
AI-SG02-06

Rev Ltr:
B

Sheet:
1 of 1

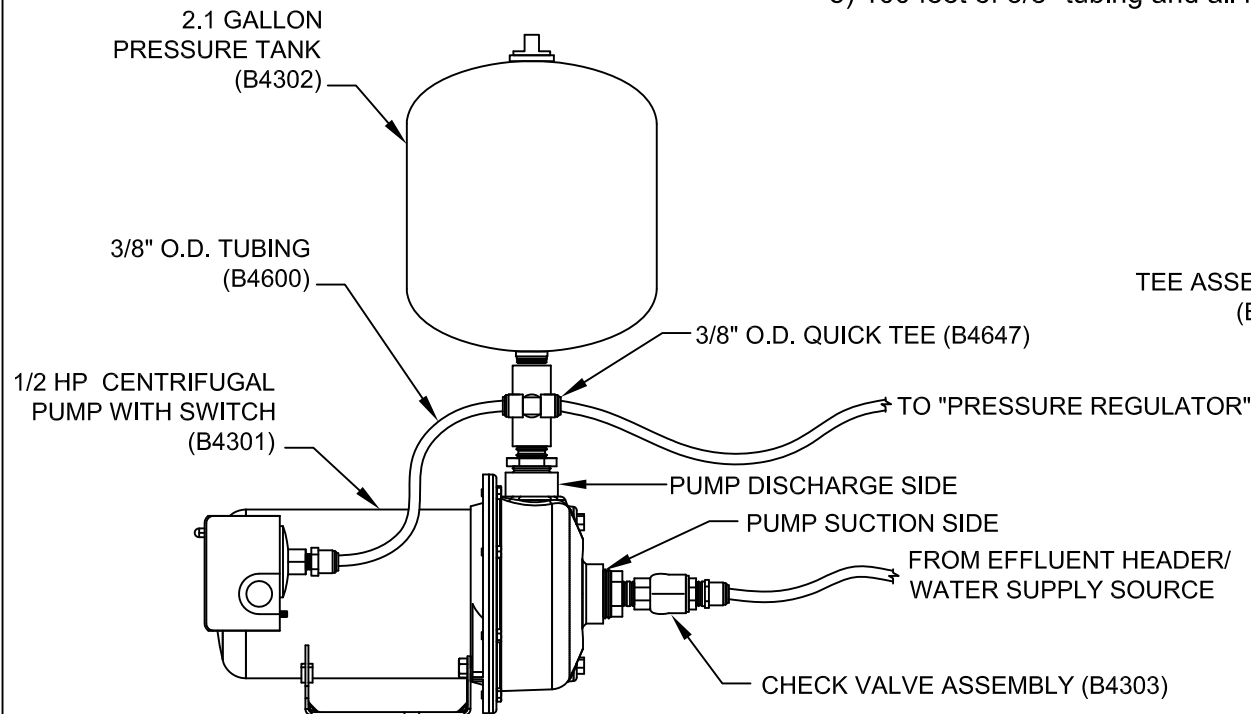
'Para-Pump' Booster System (PBS01)



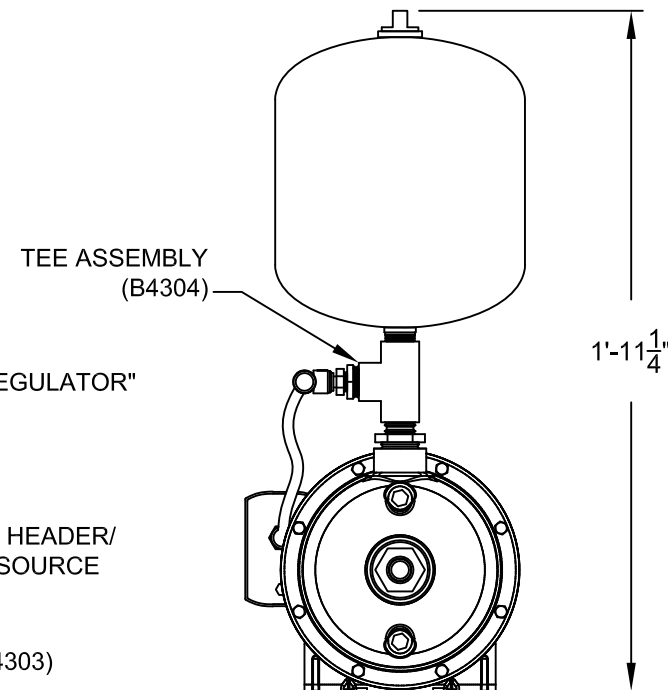
TOP VIEW

Para-pump Booster System (PBS): The PBS is a device used to increase the pressure of clean filtered water from a filter system or a supply source (non-filtered). For the purpose of supplying consistent usable pressure for the actuation of the filter systems backwash valves. The PBS is designed to operate during the filter systems backwash cycle only. A pre set pressure switch allows the PBS to operate on a "as needed" basis. Upon initiation of a backwash cycle the PBS is activated manually (by way of an on/off switch, supplied by others) or automatically with a Stark Automatic Controller (A 24 VAC N/O Relay is required, supplied by others). The PBS shall consist of the following components:

- 1) A 1/2 HP pump and motor, 115/230 VAC, 1 phase, 60 cycle. The pump is factory wired for 115 VAC operation with pressure switch factory calibrated for 35 psi shut-off for intermittent operation (B4301). (Power requirements - 115VAC, 60 HZ, 15 AMP)
- 2) Hydro pneumatic tank (B4302).
- 3) Check Valve Assembly (B4303).
- 4) Tee assembly (B4304)
- 5) 100 feet of 3/8" tubing and all necessary tubing fittings for connection to the filter system.



SIDE VIEW



FRONT VIEW

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Drawn by:
JP

Date:
7/16/04

Title: SPECIFICATION FOR A
'PARA-PUMP' BOOSTER SYSTEM (PBS01)

Material:
N/A

Approved by:
JP

Date:
7/16/04

Drawing Number:
SS-PBS01

Rev Ltr:	Sheet:
B	1 of 1