



CC + 12's



Edgewater Beach

I have had a chance to review the plan(s) and have the following comment(s): **Written responses to the following comments are required.**

General Comments:

- 1. All improvements need to be either installed or escrowed for prior to recording of the subdivision.
- 2. A Storm Water Construction Activity Permit is required for any construction that:
 - A. disturbs more than 5000 square feet of land surface area,
 - B. consists of the excavation and/or fill of more than 200 cubic yards of material, or
 - C. requires a building permit for which excavation or fill is a part of the construction.
- 3. A Storm Water Pollution Prevention Plan (SWPPP) is required to be submitted for all new development where construction is required. The State now requires that a Utah Discharge Pollution Elimination Systems (UPDES) permit be acquired for all new development. A copy of the permit needs to be submitted to the County before final approval. Permits can now be obtained online thru the Utah State Department of Environmental Quality at the following web site: <https://secure.utah.gov/swp/client>. (Submitted by Contractor)

Plan specific comments:

- 1. An easement is required for the existing ditches in the subdivision. (Completed) *need plat*
- 2. Easements are required for all improvements outside of Phase 1 boundary (grading, water, sewer, irrigation). (Completed) *- where are they?*
- 3. Since they're not dedicated on plat, provide easements for water, sewer, and irrigation lines within phase 1 boundary. (Included on plat dedication) *need plat*
- 4. General layout - address setback of buildings to private roads - site distance issue backing out of garages directly onto roadway. (Low traffic, private roads & no options)
- 5. Sheet 2
 - A. Show existing path along west side of property - stay or demo? (No path on Westside) *yes there is*
 - B. Need plan of how to maintain access to existing condo during construction; must meet fire marshal requirements. (Included in note on demo plans) *must meet*
 - ✓ C. Where does asphalt demo stop? Show sawcut line. (Shown on plans) *applicable fire codes*
 - ✓ D. Do the existing fences stay or go? (Existing fences will be removed unless shown to be replaced)
 - ✓ E. What to do with existing entrance monument/statue? (Statue to be removed)

↓
submit plan of closure to Fire Marshal

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6. Sheet 3

- Dam Safety approval* APWA - ref: 33 47 00
- A. Specify material and compaction of berm for detention pond. (Show note to require all construction to meet 2012 AWWA specs)
 - ✓ B. Sanitary sewer installation below detention pond/berm not recommended. Consider re-aligning around berm. (Follow revised plans)

7. Sheet 4

- Ref: detail Type D*
Recommend Plan 209
- A. Please provide callout and detail for "concrete curb." (As shown)
 - ✓ B. May want to double-check number of HC spaces required by law (whole site). (Leave as shown)
 - ✓ C. Grades for handicapped spaces – cannot exceed 2% in any direction (check diagonal). Dimensions would be helpful. (Revise as shown 1.7% slope)
 - D. Curb and gutter cannot count as width of HC space or aisle. OK *check first HC spot, east side*

8. Sheet 5

- A. Label concrete curb. OK - *see 7.a.*
- ✓ B. May want to double-check number of HC spaces required by law (whole site). (Same as sheet 4)
- ✓ C. Grades for handicapped spaces – cannot exceed 2% in any direction (check diagonal). Dimensions would be helpful. (Same as sheet 4)
- ✓ D. Curb and gutter cannot count as width of HC space or aisle. (Same as sheet 4)

9. Sheet 6

- ✓ A. Label existing and proposed contours. OK
- ✓ B. Callout HC ramps (typical). OK
- ✓ C. Recommend adding note addressing maximum allowable cross slope of sidewalks since there are numerous occasions where cross slopes are excessive. (As per note on revised plans)
- ✓ D. Mailboxes or gang box location? (As shown on revised plans)
- ✓ E. Dumpster pad was deleted from previous submittal. Where is new one? (as shown on revised plans)
- ✓ F. Recommend moving HC space from near unit 10 to in front of commercial bldg. B if space is intended to serve such. (No, leave as shown)
- ✓ G. Doesn't appear that c & g will handle flow – type "G" has only 3-5/8" (0.302') depth; calculation shows 0.33' depth. Also, calculation is for 8%; show also for 2.47%. (Revise c & g along north side of lower road section as shown)



Reeve & Associates, Inc.

- H. Retaining walls needed on driveways between units: 28/29, 13/14, 10/11. Provide detailed grading on driveways to prove they are feasible. (Added to revised plans) *show tops + toes of walls - will they be built now or with units?*
 - ✓I. Behind units 13/14 - swale shown in middle of sidewalk. (Revised) *which units? show on plat*
 - ✓J. South of unit 13 - depression shown - is this intended? will this hold water and cause a problem? (Revised)
 - ✓K. How did the FFE of the existing condos change from previous submittal to this one? (Revised to match county elevation datum)
 - ✓L. The existing contours don't reflect the presence of the existing buildings or (Remove contours through building)
 - ✓M. North of existing condos - north slope does not meet grading requirements around buildings (see plan note 3).⁴
 - ✓N. Between existing condos and condo garage - does not meet grading requirements around buildings (see plan note 3).⁴ (Revised)
 - ✓O. Southeast wall of unit 10 - does not meet grading requirements around buildings (see plan note 3). (Revised) *- still does*
 - P. East boundary line - all improvements shall be contained within boundary or an easement needs to be provided. (Add slope easement) *provide easement*
 - Q. Grading concerns along east boundary line - show contour tie ins (3:1 typ. not adequate; how will 4970 tie to existing?) (Show a slope easement to cover all changes needed to existing grades) *contours not clear - show tie-in*
 - R. Show grading along south boundary line - grading appears to stop at buildings. Trail FG = 72 (ex. 72 is in UDOT ROW) (Added additional ^{spot} grades to indicate changes made to grades) *contours just end in middle of trail - do not tie to existing*
 - ✓S. Show grading of trail at Edgewater Drive. (Added spot grades) Are ADA ramps needed? (No)
 - T. Condo garage and storage barns - how will grading be completed without retaining walls in place? (Retaining walls will be built during grading process)
 - ✓U. Why is there a swale between condo garage and storage barns? (Revised) *this conflicts with note on plans*
10. Sheet 7
- A. Edgewater Court at Edgewater Drive (north intersection) - why not use a cross instead of 2 tees on waterline? (Revised) *- no it's not*
 - ✓B. Please add water valve on east branch of tee on way to connection to existing water line. (Not needed)
 - C. Lift station: *Sheet 10*
 - 1. Need ~~site plan~~ and electrical details.
 - ✓2. Verify specified generator size will work with revised pump/motor.
 - 3. All weather access needed.

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- ✓4. What are the materials and dimensions of the wet well and valve box? Hatches? Vents? Traffic rated?
- ✓5. Need piping schematic for valve box.
- ✓6. Overflow tank: manways, foundation or backfill requirements, sensor to detect liquid in it??
- ✓7. Specify size, type, and inverts of connections between wet well and overflow tank.
- ✓8. Specify type and size of valve on connection between wet well and overflow tank.
- ✓9. Specified FG around wet well appears lower than grading plan shows. Recommend having structures above grade by 6-12".

(All revised. Show future roads and buildings around detention basin and a detailed site plan and specs as shown. Review in process by Sewer District)

11. Sheet 10

- A. Need structurally designed, seismic rated retaining wall detail. (see note 1 of boulder retaining walls) (rock walls are not retaining walls, they are cosmetic only)

After all items have been addressed, a wet stamped copy of the improvement drawings will be required.

I have tried to address all items of concern from the Engineering Department. However, this review does not forego other items of concern that may come to this department's attention during additional reviews or during construction of improvements. If you have any comments or questions concerning this review, feel free to contact me.

Sheet 9

- 1. need structural calcs for retaining

Sheet 10 / L.S. calcs

- 1. All weather access needed
- 2. why not high water alarm before holding tank is full?
- 3. FM velocity too slow - does not meet state regs.
- 4. site plan - 8" stubout to west from manhole - future sewer shall not cut through detention pond

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- 5. calcs need to be stamped.



Transmittal

Date:	November 25, 2013
Job No.:	5917-15
To Company:	Weber County Engineering
To Person:	Dana Shuter, P.E.
From:	John Reeve
Re:	Edgewater Beach Resort, Phase 1

We are sending the following items:

Shop drawings
 Prints
 Plans
 Specifications
 Letter
 Samples
 Change Order
 Other:

Copies	Date	No.	Description
1	11/25/13	5917-15	Response Comments
1			Basic Design Information
1			Set of Signed Improvement Plans
1			PDF of Improvement Plans

These are transmitted as checked below:

For approval
 Approval as submitted
 Resubmit copies for approval
 For your use
 Approved as noted
 Submit copies for distribution
 As requested
 Return for corrections
 Return corrected prints
 For bids due
 For review and comment
 Prints returned after loan to us

Remarks:	
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Copy to:	
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Signed:	
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**REEVE & ASSOCIATES, INC.**

3670 Quincy Ave., Suite #1
Ogden, Utah 84403
(801) 621-3100 • FAX (801) 621-2666

JOB EDGEWATER BEACH RESORTSHEET NO. 1 OF _____CALCULATED BY JPR DATE 11/12/13

CHECKED BY _____ DATE _____

PROJECT LIFT STATIONDESIGN FLOWS

5300 SF Commercial	2400 gpd
3- 3Plex Cottages	3600 "
8- Duplex Cottages	6400 "
28- Single Family Cottages	11,200 "
44- Lots @ chalets in Ski Lake	17,600 "
1- Existing 4 Plex	1,600 "
Total	<u>42,800 gpd.</u>

Average Flow $42,800 / 1440 = 29.7$ gpm

Peak Flow $4 \times 29.7 = 118.9$ use 120 gpm

WET WELL DESIGN

6' Dia. Manhole and 9' Below Alarm
 $3^2 \times 3.1416 \times 9 \times 7.48 = 1903$ Gallons

Cycling Rate of Pumps on Average 23 Times per Day. Pump time for 1903 Gallons is 16 min.

Duplex Pumping System is Capable of Pumping 240 gpm with Both Pumps Operating.

Wet Well Size to avoid heat build up in pumps (frequent starting) and septic condition due to excessive detention time.

Reserve Storage Tank is designed for 8,000 Gallons



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JOB EDGEWATER BEACH RESORT

SHEET NO. 2 OF _____

CALCULATED BY JPR DATE 11/12/13

CHECKED BY _____ DATE _____

DUPLEX LIFT STATION

Rated Capacity: 120 GPM
Rated Head: 124 Ft.
Electrical Service: 480 V 3 Phase
Wet Well Size: 6' Dia x 18' Deep Basin

GRP 79/3 10 HP Submersible Grinder Pump, HOMA
2" Flg. Auto Couplings
UGBB # 8732305, T-304
3/16" Lifting Chains, SST
1 1/2" Dia. x 18' Guide Rails, SST T-304, to fit the Flygt system
Duplex Control Panel, Complete w/ Red High Level Alarm Light
& Horn, Seal Fail Panel Lights, Alternator, NEMA 3R
Enclosure
GSE 30NO Float Controls, 30'
Float Control Bracket, SST-304
C2Q Aluminum Access Door, 300 lb. Load Rating
6' Dia x 18' Deep Conc. Basin
4" DI Sch 50 Pipe & Fittings
4" Flg. Check Valve
4" Flg. Gate Valve
4" Galvanized Steel J' Vent



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JOB EDGEWATER BEACH RESORT

SHEET NO. 3 OF _____

CALCULATED BY JPR DATE 11/12/13

CHECKED BY _____ DATE _____

PUMP SIZING

120 gpm Pump Capacity w/ 115 feet elevation head (5025 - 4910) and 9 feet friction lost (3 per 1000' of 6" pipe).

$$hp = \frac{120 \times 124}{3900} = 3.8$$

$$b.hp = 3.8 / .45 = 8.5$$

Use a HOMA Electric Submersible Wastewater Pumps: Barracuda GRP 79/3 10 hp

Pump set GRP 79/3 w/ Flygt brand slide rail System (with stainless steel rails)

Electrical requirements

480 Volt, 3 Phase power supply 100 to 150 amp service

3450 rpm, 60 Hz,

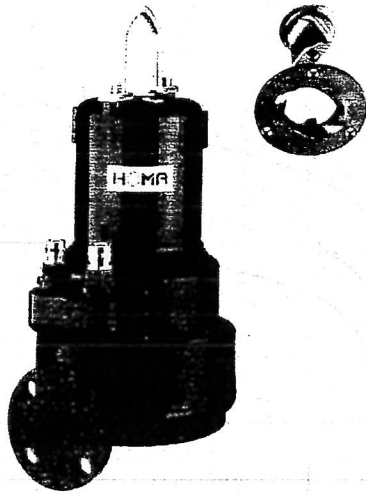
GENERATOR

Generac Quiet Source Series (or equal)
Min. 20 kW Standby Power
277/480V, 3 Phase

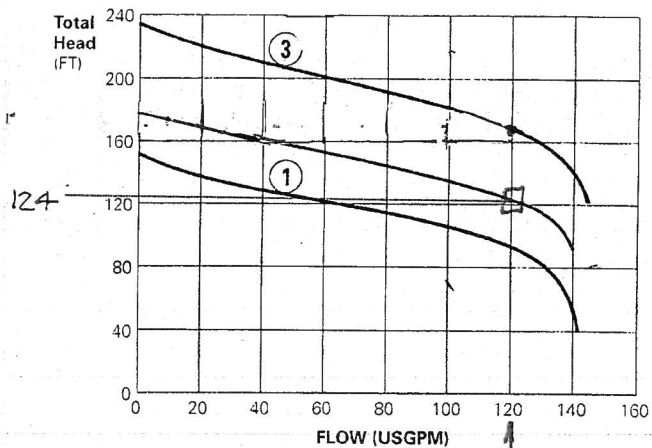
Fuel Type: LP/Natural Gas

Electric Submersible Wastewater Pumps with Cutter System 2" Discharge

Barracuda GRP 59-118



Performance



Application

HOMA Barracuda GRP Grinder Pumps are designed for high-head pumping applications of waste water and sewage. Their hard stainless steel cutter system grinds all soft solids to small pieces, enabling the pumps to provide high pressure pumping at low motor rating. It also allows the use of cost saving small diameter pipework.

The Barracuda GRP 59 - GRP 118 series pumps are typically used in:

- Commercial wastewater and sewage
- Small municipal collection systems
- Waste treatment plants
- Industrial wastewater
- Effluent distribution systems
- Agricultural wastewater
- Processing plants
- Optional Factory Mutual (FM) label for Class I, Div 1 EX construction.

Features

Cast iron construction with epoxy coating for maximum corrosion resistance. All models are available with jacket cooling for dry well installation or not fully submerged operation

Extra Long Replaceable power cable of 33' length is retained and sealed with a strain relief gland

Combination of two mechanical seals (Silicon Carbide / Silicon Carbide)

Seal leakage probe in motorhousing and oil chamber

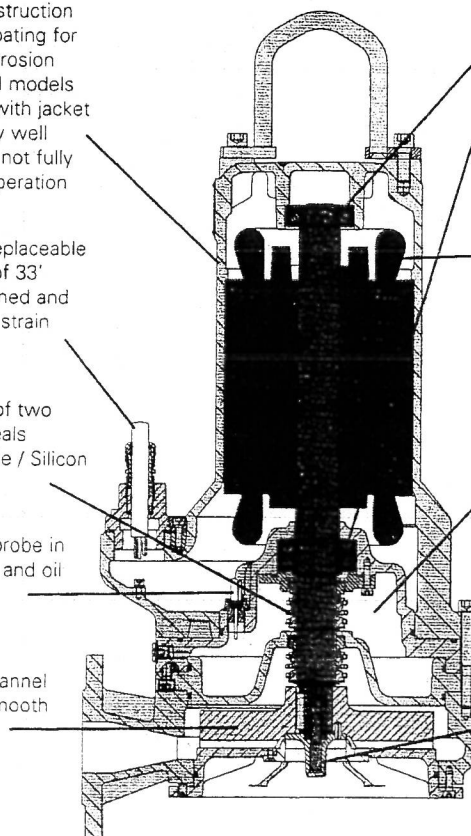
Open multi-channel impeller for smooth vibration free operation

Single grooved upper and double row angular lower ball bearings assure long life and reliability

Motor windings provided with class F insulation and fully protected by embedded auto reset thermal switches

Oil filled seal chamber positively lubricates seals

55 HRC hardened stainless steel cutter steel cutter system consisting of stationary cutter ring and blade rotor



Performance Curve

GRP79/3

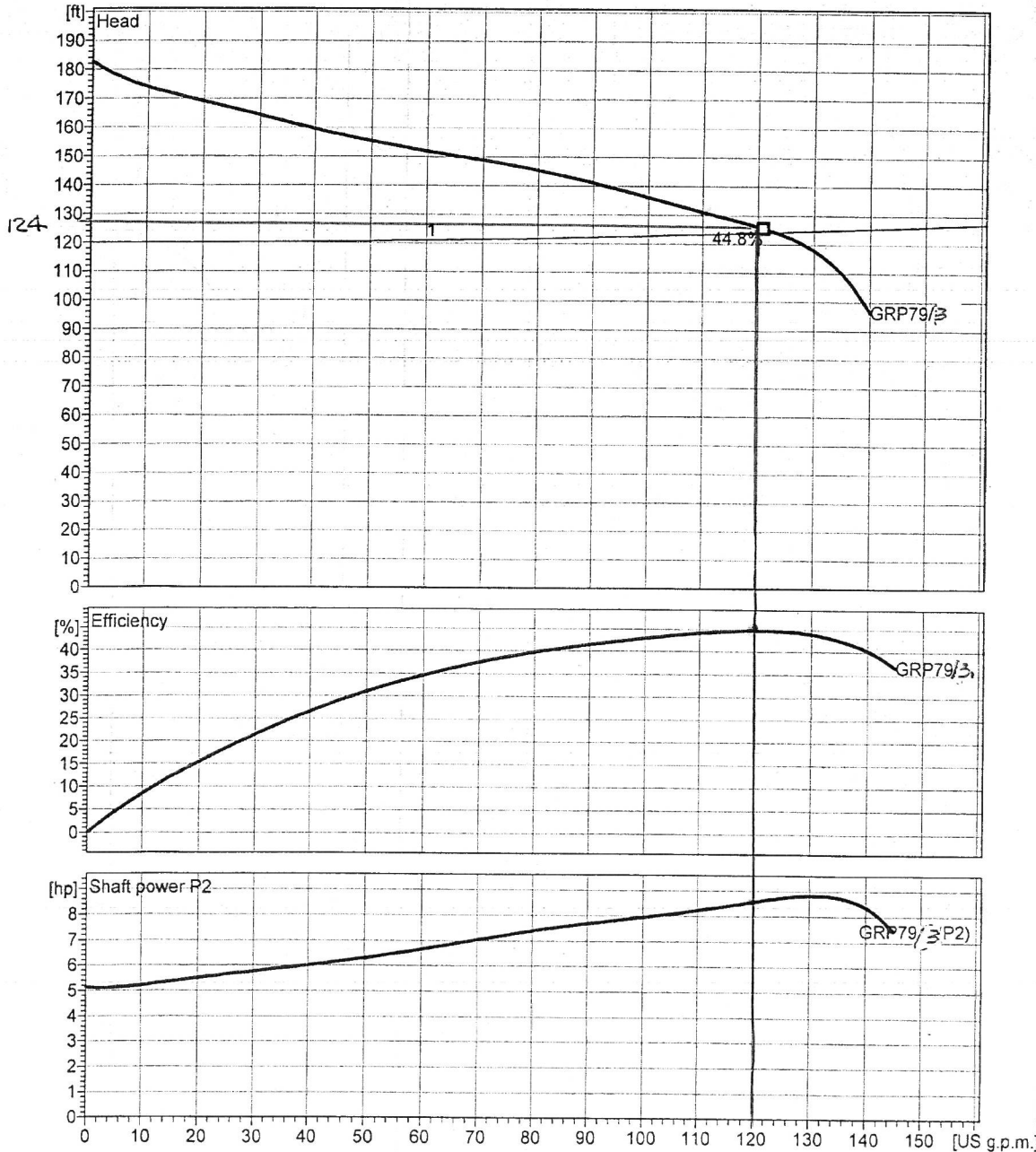


Impeller					
Impeller type: Vane impeller with cutter sys.	Solid size	Ø:	Max. Ø: 7 1/16"	Min. Ø: 6 1/8"	Sel. Ø: 6 1/16"

Operating data				
Speed: 3450 rpm	Frequency: 60 Hz	Duty point: Q = 120 US g.p.m. H = 124 ft	Shaft power P2: 8.69 hp	Discharge port: 2" ANSI

Power data referred to: Water [100%]; 68°F; 62.322lb/ft³; 1.0818E-5ft²/s

Testnorm: P2>10kW, ISO9906 Grade 2B
P2<10kW, ISO9906 Sect. 4.4.2



2.0.1 - 01.02.2013 (Build 59)

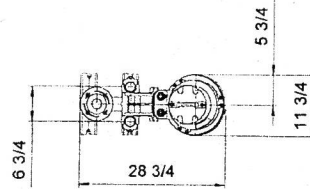
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Dimensions

GRP79/3



Nassaufstellung mit Kupplungssystem
 Dimensions see table



Upper slide rail bracket

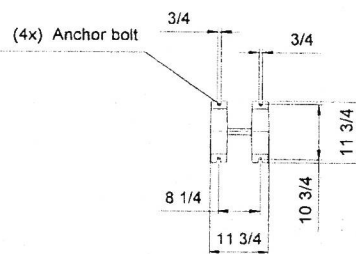
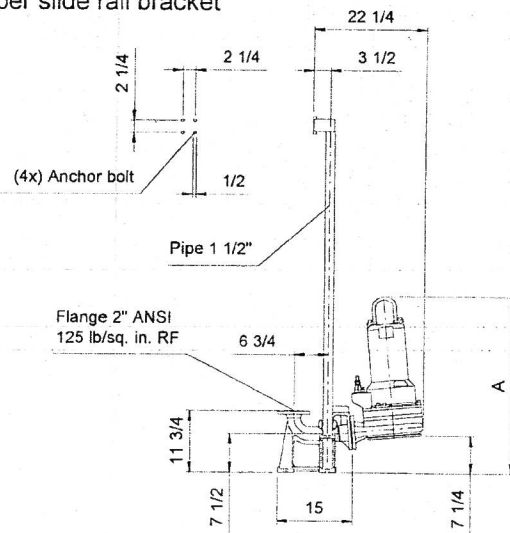


Table Dimensions (inch)

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2.0.1 - 01.02.2013 (Build 59)

Technical Data

GRP79/3



Operating data				
Flow	120	US g.p.m.	Head	124 ft
Shaft power P2	8.7	hp	Static head	120 ft
Pump efficiency	44.7	%	Required pump NPSH	ft
Pumpe type	Single pump		No. of pumps	2
Fluid	Water		Temperature	68 °F
Density	62.32	lb/ft ³	Kin. viscosity	1.082E-5 ft ² /s

Pump				
Pump Code	GRP79/1		Speed	3450 rpm
Suction port			Head	Max. 182.9 ft
Discharge port	2" ANSI			Min. 96.5 ft
Impeller type	Vane impeller with cutter sys.		Flow	Max. 140.0 US g.p.m.
Solid size			Pump efficiency max.	44.8 %
Impeller Ø	6.69	inch	Required rated power max. P2	8.8 hp

Motor					
Motor design	Submersible motor		Insulation class	H	
Motor name	AM173.14,3T/2/1		Degree of protection	IP 68	
Frequency	60	Hz	Temperature class	T3C	
Rated power P1	14.3	hp	Ex		
Rated power P2	12.6	hp	Explosion protection		
Rated speed	3450	rpm	Efficiency at % rated power	100% 88 %	
Rated voltage	230	V 1~		75%	%
Rated current	44.8	A		50%	%
Starting current, direct starting	0.0	A	cos phi at % rated power	100% 0.99	
Starting current, star-delta		A		75%	
Starting mode	Directly			50%	
Power cable	4G10		Control cable	5G1,5	
Type of power cable	H07RN-F PLUS		Type of control cable	H07RN-F	
Cable length	32.809 ft		Service factor	1.15	
Shaft seal	Mechanical seal on motor side		SiC / SiC		
	Mechanical seal on medium side		SiC / SiC		
Bearing	Lower Bearing		Double row angular ball bearing		
	Upper Bearing		Deep Groove Ball Bearing		
Remarks	Start-/ Runcapacitor: 350µF / 120µF				

Materials / Weight			
Motor housing	Cast Iron ASTM A48,CI.40B	Bolts	AISI 304 Stainless Steel
Pump housing	Cast Iron ASTM A48,CI.40B	Elastomeres	Nitrile Rubber
Impeller	Cast Iron ASTM A48,CI.40B		
Cutting system	Hardened Stainless Stell HRC55		
Motor shaft	AISI 430 F Stainless Steel		
Weight aggregat	On demand lb		

20.1 - 01.02.2013 (Build 89)

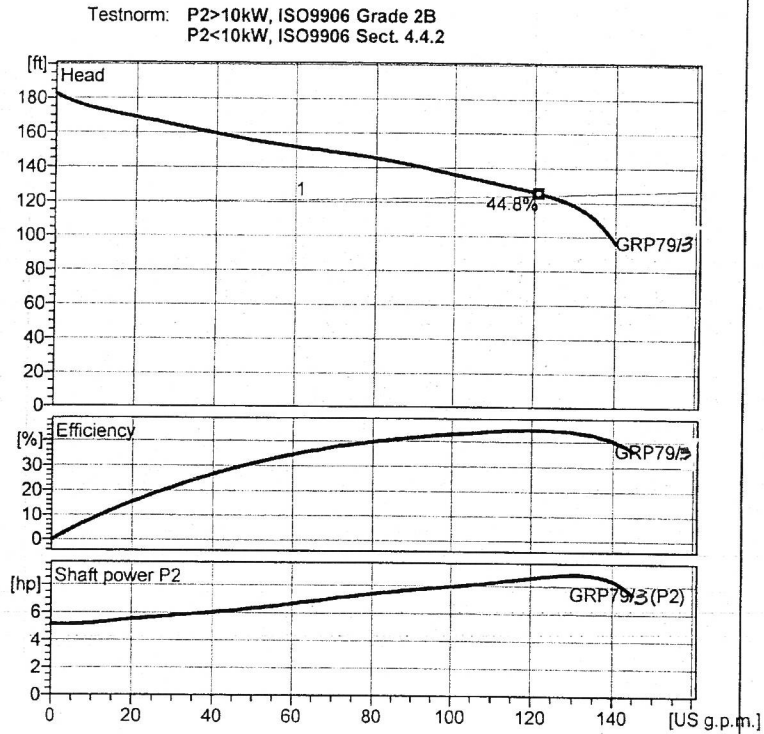
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Technical Information

GRP79/3



Operating data	
Flow	120 US g.p.m.
Head	124 ft
Shaft power P2	8.69 hp
Pump efficiency	44.7 %
Required pump NPSH	
Pumpe type	Single pump
No. of pumps	2
Fluid	Water
Pump	
Pump Code	GRP79/3
Impeller	Vane impeller with cutter sys.
Impeller size	6 1/16"
Solid size	
Discharge port	2" ANSI
Suction port	
Motor	
Rated voltage	208 230 V
Frequency	60 Hz
Rated power P2	12.6 hp
Rated speed	3450 rpm
Number of poles	2
Efficiency	88 %
Rated current	GA 44.8 A
Degree of protection	IP 68
Materials	
Motor housing	Cast Iron ASTM A48;Cl.40B
Impeller	Cast Iron ASTM A48;Cl.40B
Pump housing	Cast Iron ASTM A48;Cl.40B
Cutting system	Hardened Stainless Steel HRC55
Motor shaft	AISI 430 F Stainless Steel
Bolts	AISI 304 Stainless Steel
Elastomeres	
	Nitrile Rubber
Mechanical seal on motor side	SiC / SiC
Mechanical seal on medium side	SiC / SiC
Lower Bearing	Double row angular ball bearing
Upper Bearing	Deep Groove Ball Bearing



Nassaufstellung mit Kupplungssystem
Dimensions in inch, letters see table

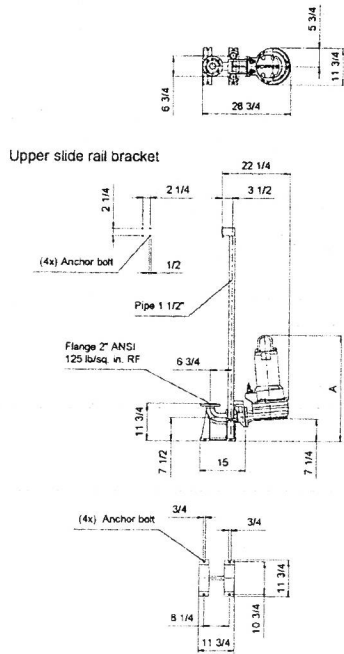


Table Dimensions (inch)

2.0.1 - 01.02.2013 (Build 59)

Project	Project no.:	Created by:	Page	Date:
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Guide Specifications – Underground Onsite Wastewater Tanks

Short form

The contractor shall provide a single-wall or double-wall, fiberglass reinforced plastic (FRP) water storage tank as shown on the drawings. The onsite wastewater tank shall be manufactured according to applicable American National Standards Institute (ANSI) and American Water Works Association (AWWA) standards. The tank size, fittings and accessories shall be as shown on the drawings. The fiberglass water tank shall be manufactured by Xerxes Corporation.

The tank shall be designed for underground installation, and shall be tested and installed according to the Xerxes Installation Manual and Operating Guidelines for Fiberglass Underground Storage Tanks in effect at the time of installation.

Long form

Part I: General

1.01 Quality Assurance

A. Acceptable Manufacturer: Xerxes Corporation

B. Governing Standards, as applicable:

1. ANSI/AWWA D120-09: Thermosetting Fiberglass-Reinforced Plastic Tanks.
2. Tank manufacturer shall be recognized by Underwriters Laboratories (UL) as a manufacturer of tanks listed to the UL-1316 standard.
3. American Concrete Institute (ACI) standard ACI 318-11, Building Code Requirements for Structural Concrete.

C. Submittals

1. The manufacturer shall supply scaled drawings, product brochures and manufacturers Installation Manual and Operating Guidelines.

Part II: Products

2.01 Single-Wall and Double-Wall Fiberglass Reinforced Plastic (FRP) Underground Onsite Wastewater Tanks

A. Loading Conditions – Tank shall meet the following design criteria:

1. **Internal Load** — Tank shall be designed to withstand a 5-psig air-pressure test with a 5:1 safety factor.
2. **Surface Loads** — Tank shall be designed to withstand surface H-20 and HS-20 axle loads when properly installed according to manufacturer's current Installation Manual and Operating Guidelines.
3. **External Hydrostatic Pressure for Underground Water Tank** — Tank shall be designed for 7 feet of overburden over the top of the tank, the hole fully flooded, and a safety factor of 5:1 against general buckling.

B. Product Storage

1. Tank shall be vented to atmospheric pressure.
2. Tank shall be capable of handling liquids with specific gravity up to 1.1.
3. Tank shall be compatible with liquids identified in the manufacturer's standard limited warranty.

C. Materials

1. Tank shall be manufactured with a laminate consisting of resin and glass fiber reinforcement. No sand/silica fillers or resin extenders shall be used.
2. All internal mounting hardware shall be manufactured of rustproof materials.

D. Design

1. The tank shall be designed as a single-wall or double-wall vessel as specified and shown in the drawings.
2. Tank shall be manufactured with structural ribs which are fabricated as in integral part of the tank wall.

E. Capacity and Dimensions

1. Tank shall have nominal capacity of _____.
2. Tank shall have nominal outside diameter of _____.

F. Interstitial Space (Double-Wall Tanks only)

1. The interstitial space between the primary and secondary walls shall be constructed with a glass reinforcement material such as Parabeam®, which provides a structural bond between the two tank walls, while creating a defined interstice that allows for free flow of liquid.
2. A tank top fitting shall be provided to allow for a monitoring sensor to be installed at the bottom of the interstice.
3. The double-wall tank design shall use Parabeam® glass fabric to create the interstitial space between the primary and secondary walls.
4. The interstice of the tank shall be designed to withstand 20 psig pressure.

2.02 Accessories

A. Access Openings

1. All access openings shall have a diameter of 24 inches or 30 inches, complete with riser, lid and necessary hardware.
2. Size and location(s) as shown on tank drawing.

B. Piping and Fittings

1. Tank shall be equipped with factory-installed threaded fittings, or pipe stubs.
2. PVC piping shall at a minimum meet the requirements of ANSI Schedule 40.
3. All flanged nozzles shall be flanged and flat-faced, and conform to Class 150 bolting patterns as specified in ANSI/ASME/ B16.5-2009.
4. Steel NPT fittings shall withstand a minimum of 150 foot-pounds of torque and 1,000 foot-pounds of bending, both with a 2:1 safety factor.
5. Location of fittings and piping shall be as shown on tank drawings.

C. Attached Access Risers

1. Attached access risers shall be PVC or FRP as supplied by tank manufacturer.
2. Attached access risers shall be a 24-inch or 30-inch-diameter
3. Access risers shall be attached to access openings during installation utilizing adhesive or FRP bonding kits as supplied by the tank manufacturer.

D. Manway Openings (optional)

1. Manway openings shall be flanged, 22" I.D. and complete with gaskets, bolts and steel cover as shown on tank drawings.
2. Manway openings shall be designed to withstand 5 psig test pressure with a 5:1 safety factor.

E. Ladders (optional)

1. Ladders shall be the standard FRP ladder as supplied by tank manufacturer.

F. Anchoring (optional)

1. Anchor straps shall be FRP anchor straps as supplied by tank manufacturer.
2. Number and location of straps shall be as shown on drawings.
3. Prefabricated concrete deadmen, which are designed to ACI Standard 318-11, shall be supplied by tank manufacturer.

Part III: Testing and Installation

3.01 Testing

A. Testing — Tank shall be tested according to Xerxes Installation Manual and Operating Guidelines for Fiberglass Underground Storage Tanks in effect at time of installation.

3.02 Installation

A. Installation — Tank shall be installed according to Xerxes Installation Manual and Operating Guidelines in effect at time of installation.

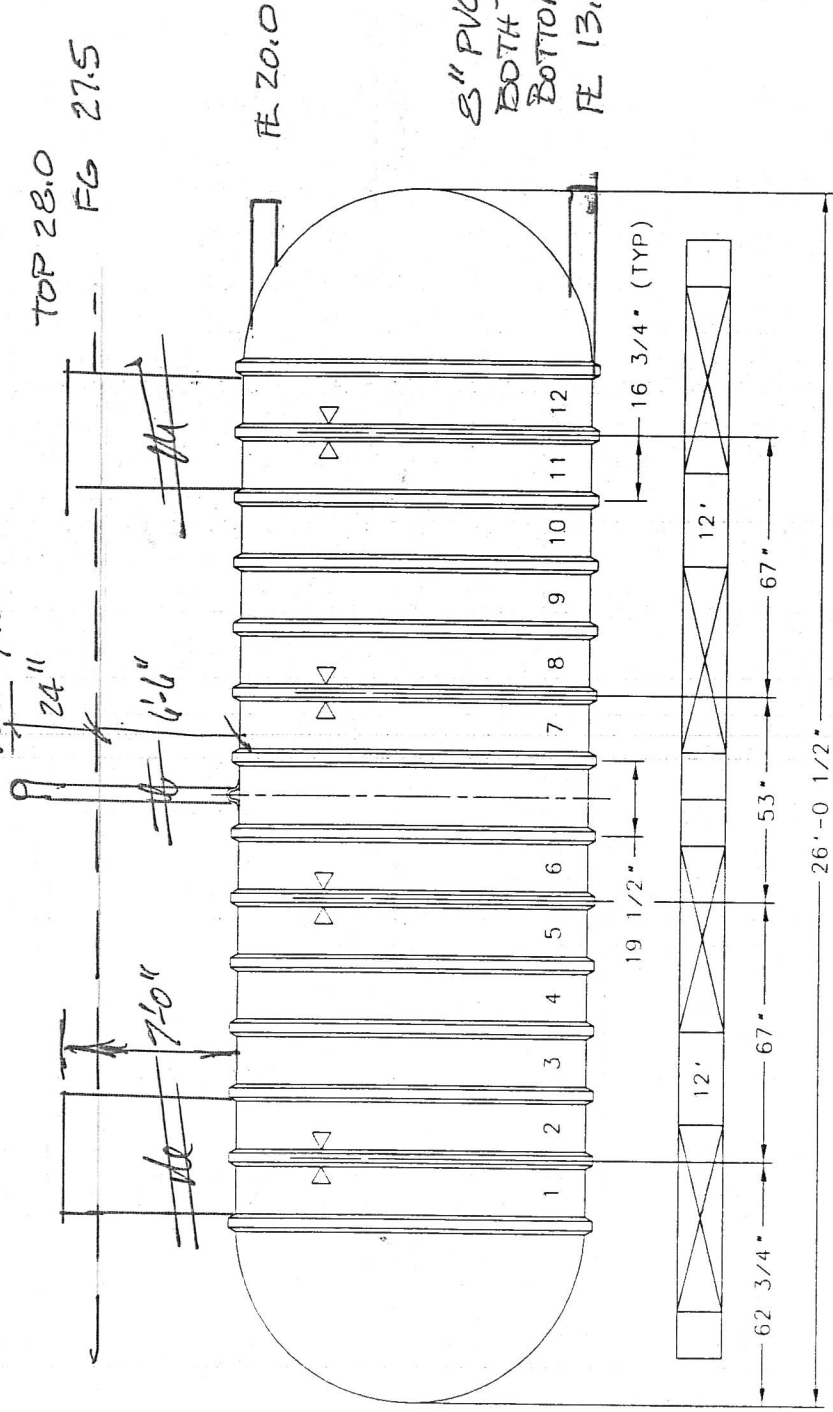
Part IV: Limited Warranty

4.01 Warranty

A. Limited Warranty — Warranty shall be the manufacturer's limited warranty in effect at the time of purchase.

SAVE

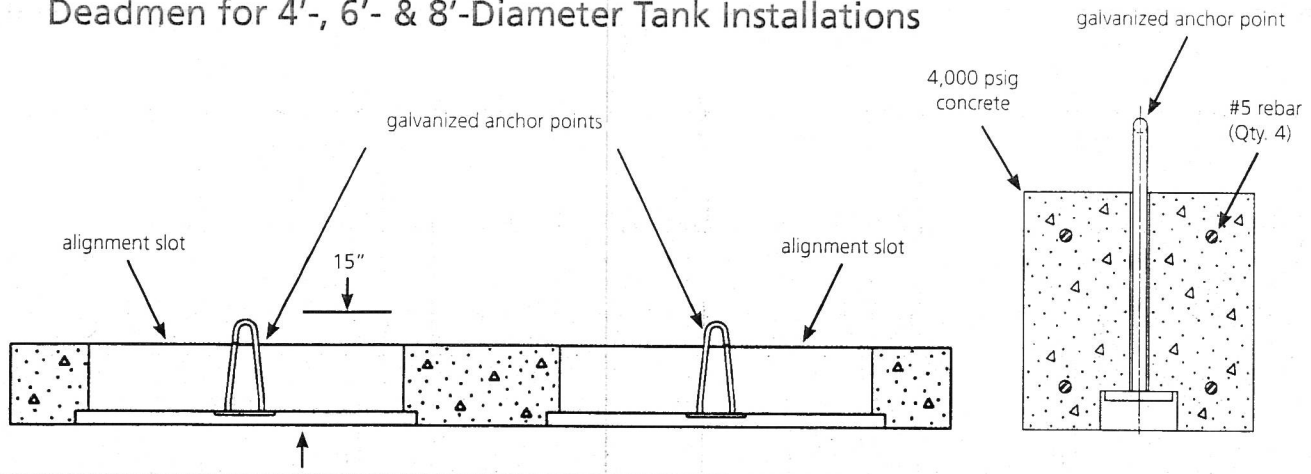
30" Access
4" Gooseneck Vent w/ 1/2" mesh
30" Access



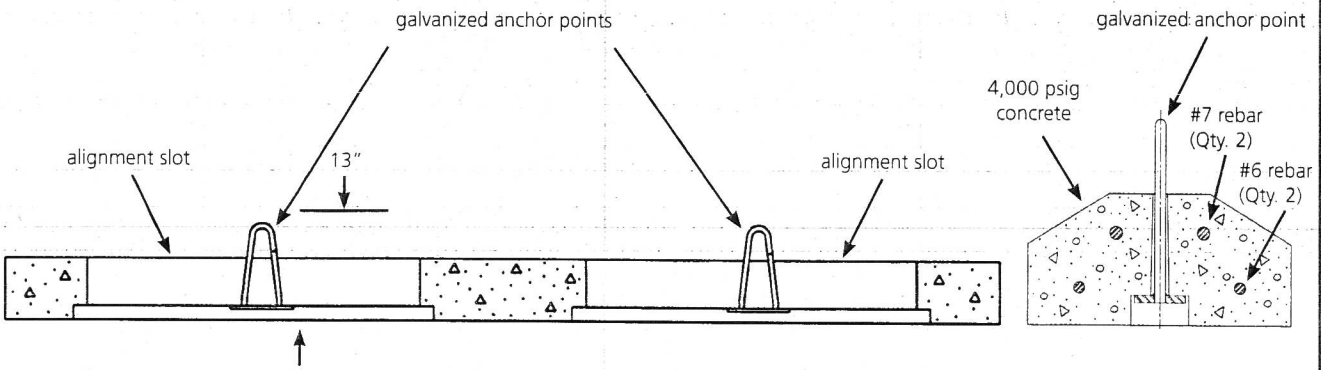
Optional prefabricated engineered concrete deadmen shown

XERXES a zcl company	
TITLE 8' DIA. SINGLE-WALL CAP. 8,000 GALLONS	
DATE 1-12	DR. NO. S10-875.03

Deadmen for 4'-, 6'- & 8'-Diameter Tank Installations



Deadmen for 10'- and limited 12'- Diameter Tank Installations



Product Specifications

Deadmen for 4'-, 6'- and 8'-Diameter Tanks		
Nominal length	Nominal width x depth	Approximate weight (lbs.)
12'	12" x 12"	1,800
16'	12" x 12"	2,400
18'	12" x 12"	2,700

Deadmen for 10'- and 12'-Diameter Tanks		
Nominal length	Nominal width x depth	Approximate weight (lbs.)
14'	18" x 8 3/4"	1,900
18'	18" x 8 3/4"	2,400
22'	18" x 8 3/4"	3,000
30'	18" x 8 3/4"	5,000

Turnbuckles Jaw-to-Jaw Style
6'-Diameter Tanks 3/4" x 9" (17" closed, expanding to 26")
8'-Diameter Tanks 3/4" x 12" (20" closed, expanding to 32")
10'- and 12'-Diameter Tanks 3/4" x 18" (26" closed, expanding to 44")

General Notes:

1. Deadmen requirements may vary with tanks 25,000 gallons or larger, and/or based on the number of containment sumps, access risers and burial depth.
2. Consult the Xerxes Installation Manual and Operating Guidelines or your Xerxes sales representative for more information.

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952-887-1890 www.xerxes.com

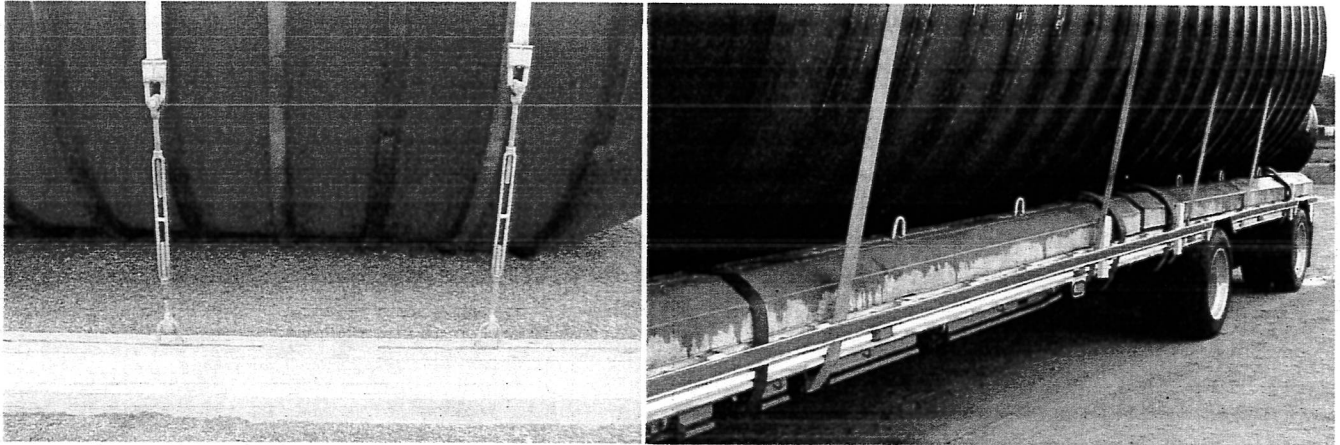
making a lasting difference™

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Tank Anchoring System

An engineered solution



Xerxes recognizes that the components of a tank anchoring system can be critical to a reliable, long-term tank installation. A large percentage of today's underground tank installations are anchored, whether site conditions mandate it or not. Use of inferior components, such as improperly designed or undersized concrete deadmen, can lead to disastrous results. As a solution, we designed and began supplying each of the components essential to proper tank anchoring, prefabricated deadmen, galvanized turnbuckles and extruded fiberglass hold-down straps. Providing a safe, dependable anchoring solution is not our only objective. The Xerxes anchoring package is also designed to provide installers with a quick, easy to install package of components that expedites the overall installation. The Xerxes tank anchoring system is yet another example of product innovations that Xerxes has been offering customers for more than three decades.

Consider the following features and benefits:

Flexible Design – Xerxes prefabricated deadmen were engineered with ease of shipping and installation in mind. With their unique and patented design, which incorporates adjustable galvanized steel anchor points, installers can properly align each anchor point and hold-down strap after the tank and deadmen have been set in place.

An Engineered Product – Tank installers and owners can have the confidence that prefabricated deadmen, an often overlooked yet critical component of an anchored tank installation, have been properly engineered and sized for each tank. Xerxes precast deadmen are fabricated to meet American Concrete Institute (ACI) design standards, which establishes such things as proper steel reinforcement, concrete psi specifications and adequate cure time.

Transportation – An additional feature of Xerxes deadmen is that their geometry and dimensions allow them, in most cases, to be placed on the same shipping trailer as the tank. For installers, this means that the components of the anchoring system arrive with the tank, avoiding the potential for jobsite delays.

A Complete System – Combined, Xerxes supplied fiberglass hold-down straps, galvanized turnbuckles and prefabricated deadmen provide a complete anchoring package. With each component specifically designed and supplied by Xerxes, facility owners have the added peace-of-mind that in addition to having installed the industries' finest storage tank, they have also installed a reliable anchoring system.

making a **lasting** difference™



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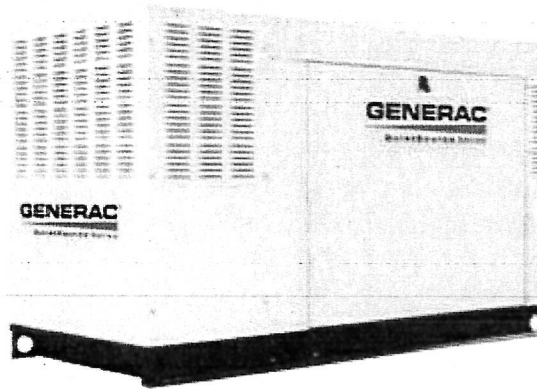
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GENERAC
QuietSource Series



Model:
 QT03624KNAX

What's This?

Write a Review

Features	Specs	Q&A ¹	Reviews	Articles
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	Model
Model Number:	QT03624KNAX
UPC:	696471600261
Manufacturer:	Generac QuietSource
Made in USA:	Yes

Engine

Brand: Generac 2.4L 4-Cylinder
 HP/CC: 62 HP
 Consumer Engine Warranty: 2 Years
 Commercial Engine Warranty: 2 Years
 Engine RPM: 1800 RPM
 Low Oil Alert/Shutdown: Yes

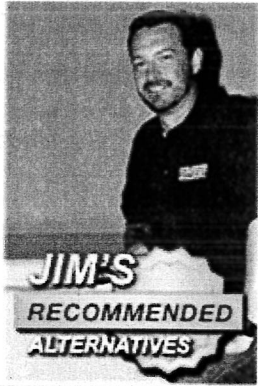


Product Specs

Voltage 277/480 Three-Phase
 Frequency: 60 Hertz
 Cooling System Liquid Cooled
 Fuel Type LP/Natural Gas
 NG Power Capacity 35,000 Watts
 LP Power Capacity 36,000 Watts
 NG Consumption (50% Load) 282 ft³/hr (BTU: 282,000 BTU/HR)
 LP Consumption (50% Load) 3.0 gallons/hr (BTU: 274,506 BTU/HR @ 6C
 Rated Amps: 54 Amps @ 480 Volts (Three Phase)
 Decibel Rating @ 7m: 58 Test (64 Run) db(A)
 A/C Ton Rating 5-Tons

Enclosure Aluminum
 Mounting Pad Concrete (Not Included)
 Transfer Switch: Automatic (Not Included)
 Battery: Not Included (525 CCA - Battery Group 2
 UL Listed Yes

Overview

Weight: 1271 Lbs. (576.53 kilograms)
 Dimensions: 77L x 34W x 45H
 (195.58 x 86.36 x 114.30 cm)
 Consumer Warranty: 2 Years
 Commercial Warranty: 2 Years

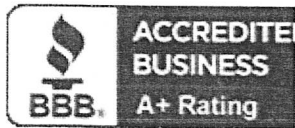
		<p>Good</p> <p>\$12,131.00</p> <p>★★★★★ (2 Reviews)</p>		<p>Better</p> <p>\$</p> <p>★★★★★ (1 Review)</p>
	<p>Generac Guardian Series 45 kW Emergency Standby Power Generator</p>		<p>Generac QuietSource Series Standby Power Generator</p>	
	<input type="checkbox"/> Why Jim Recommends It?		<input type="checkbox"/> Why Jim Recommends It?	
	<input checked="" type="checkbox"/> Compare		<input checked="" type="checkbox"/> Compare	

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John Reeve

From: Pump Guy [utahpump@gmail.com]
Sent: Tuesday, November 12, 2013 1:06 PM
To: John Reeve
Subject: Lift station Mt. Sewer Co.
Attachments: ABS.pdf; Flygt.pdf; Homa.pdf

Hello John,

Good talking with you earlier. Attached, you will find performance curves for 1. Flygt, 2. Homa and 3. ABS pumps. The Flygt pumps are rated at 20 H.P., the ABS at 16 and the Homa at 10. The sewer company owns 2 of the Flygt pumps and 1 each of the Homa and the ABS. In addition, 2 new Homa pumps were purchased recently and are currently in service at the lift station. I don't have performance curves but they are very similar to the older Homa pump listed above with the exception they are smaller (6-7 HP I believe) and only deliver about 55 GPM. (I believe they were supplied by Mike Bachman Plumbing of Ogden.)

All these pumps run on 480 Volt, Three Phase Power. They have all been adapted to utilize the "Flygt Brand Slide Rail System" (with Stainless steel rails) currently being utilized at the lift station.

I am aware Ray Bowden, the owner of the sewer company, wants to have all the pumps be interchangeable once the new lift station is constructed. This will require the new pumps fit the Flygt slide rail system and to have a 480 Volt, 3 Phase power supply. As I mentioned, I believe the 3 phase line runs to the corner of Old Snow Basin Highway and Highway 39 currently (only 700 feet prox away from the lift station). It also runs to the current lift station (500 to 600 feet away).

There are several drawbacks to using single phase pumps, the greatest of which is longevity. Historically, larger (over 7.5 H.P.) 3 phase electric motors outlast their single phase counterparts about 3 to 1. Other possibilities include Phase Conversion and Variable Frequency Drive options (which incorporate phase conversion). These options allow for the use of larger 3 phase motors where 3 phase power is unavailable but are costly both initially and in the long run. The use of such power conversion options would probably negate the possibility of using any of the existing pumps as backups for the new lift station, whereas a 480 volt 3 phase 100 to 150 amp service would facilitate the use of any and all of the pumps available to the sewer company. Of course, the matter would require thorough investigation in order to make accurate determinations.

Also, as we discussed, the Force Main (or pressure line) from the new lift station is crucial. The existing 2" line currently flows into the gravity line on Highway 39. Thus, the effluent is "double pumped" as it then flows to the old lift station in order to be pumped to the treatment ponds. The new force main will of necessity need to be run all the way to the treatment ponds as the existing lift station would be overwhelmed with the expected volume from the new development. Thus, the length and route of the new force main are crucial to pump performance. Poor sizing and placement coupled with unauthorized changes to the original force main have resulted in extremely costly and catastrophic problems for both the sewer company and it's customers over the years. Eliminating these problems from the outset is the goal we hope to achieve with this new lift station.

It is estimated the new force main run will be about 2,200 feet. At 200 GPM, friction losses in a 4" line will exert at least 50' of head in addition to the 110' of field head already anticipated. (A 6" force main will only induce an additional 7 feet of head.) Thus, in order for the new pumps to maintain the desired 200 GPM at a nominal efficiency rating of say 42% at the induced TDH of 150 to 160'... you'd probably need to be sizing the pumps somewhere in the vicinity of 20 HP, rather than

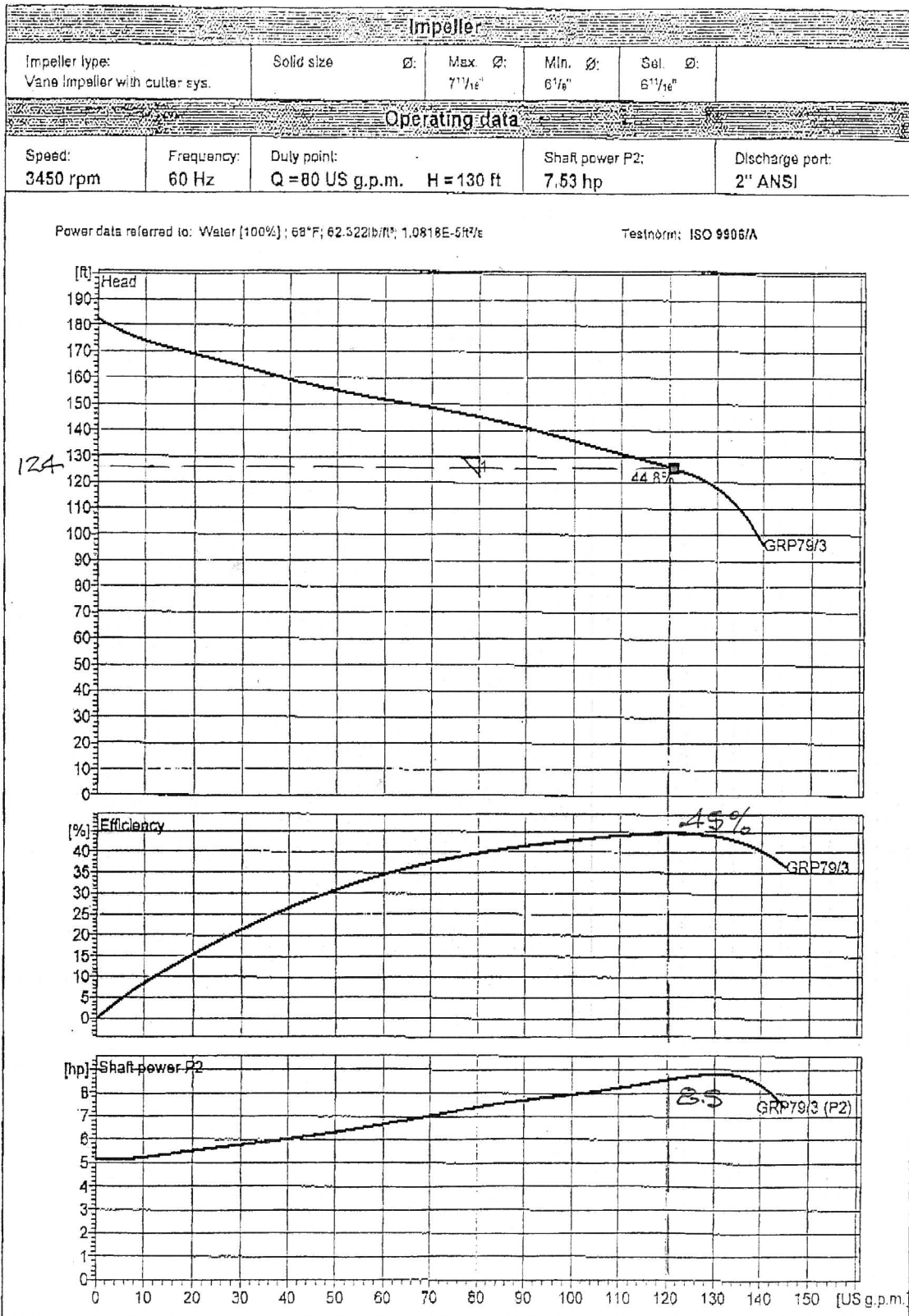
12. Not having seen any performance data on the proposed pumps, these figures are based solely on the math but, unless you've found a sewage pump capable of running at 75% efficient, something very rare in submersible sewage pumps, there doesn't seem to be a viable way to do it. Even with the reduced flow restriction in a 6" force main, we're still running closer to 16 horsepower (again, by my calculations).

I certainly hope this information is of value and would hope to make the system as cost efficient and dependable as possible for the sewer company and its valued customers.

Please call or email for further information or questions.

Sincerely,

Mitch Winegar



Generator
20km



PERFORMANCE CURVE

PRODUCT
CP3152.181

TYPE
HT

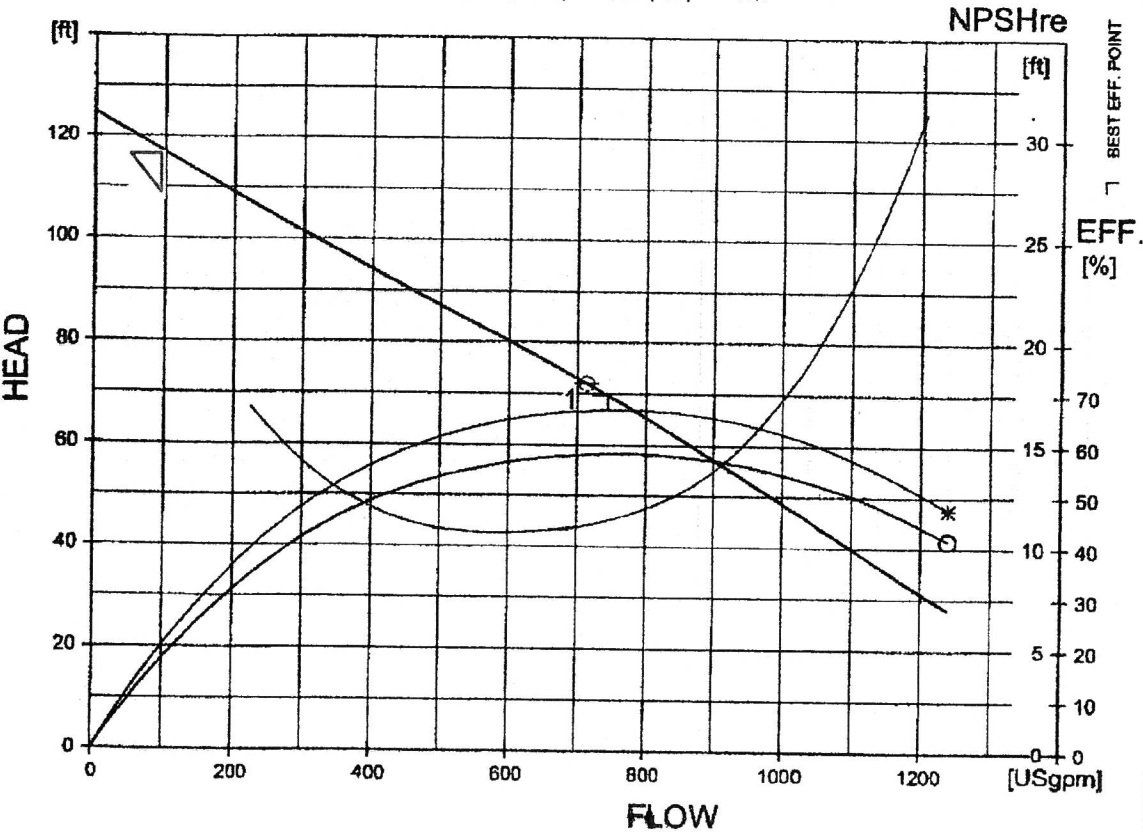
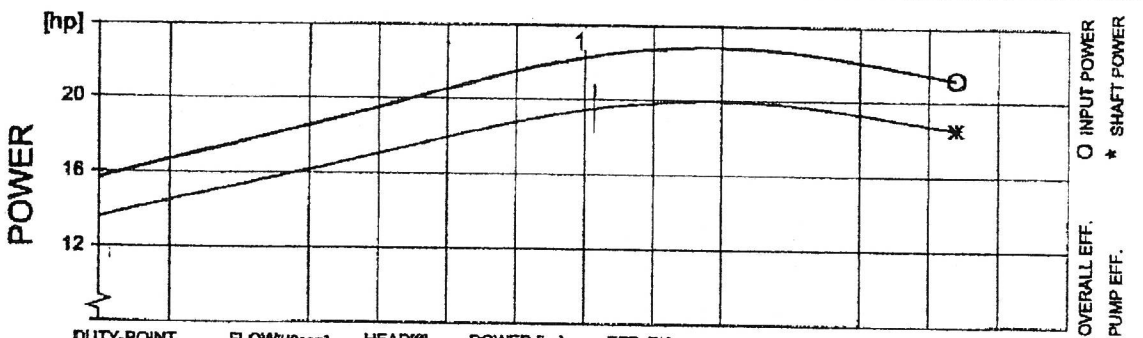
DATE
2004-10-20

PROJECT

CURVE NO
63-454-00-5360

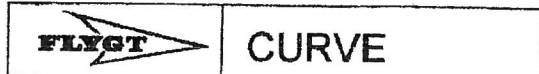
ISSUE
4

	1/4-LOAD	3/4-LOAD	1/2-LOAD	RATED POWER	20	hp	IMPELLER DIAMETER			
POWER FACTOR	0.84	0.79	0.69	STARTING CURRENT	142	A	275 mm			
EFFICIENCY	87.0 %	87.0 %	86.0 %	RATED CURRENT	26	A	MOTOR #	STATOR	REV	
MOTOR DATA	—	—	—	RATED SPEED	1750	rpm	25-15-4AA	12YSER	11	
COMMENTS	INLET/OUTLET			TOT.MOM.OF INERTIA	0.24	kgm2	FREQ.	PHASES	VOLTAGE	POLES
	- /100 mm			NO. OF BLADES	1		60 Hz	3	460 V	4
IMP. THROUGHLET			GEARTYPE		RATIO					
76 mm			---		---					



FLYPS2.19 (20021016)

NPSHr = NPSH3% + min. operational margin
Performance with clear water and ambient temp 40 °C

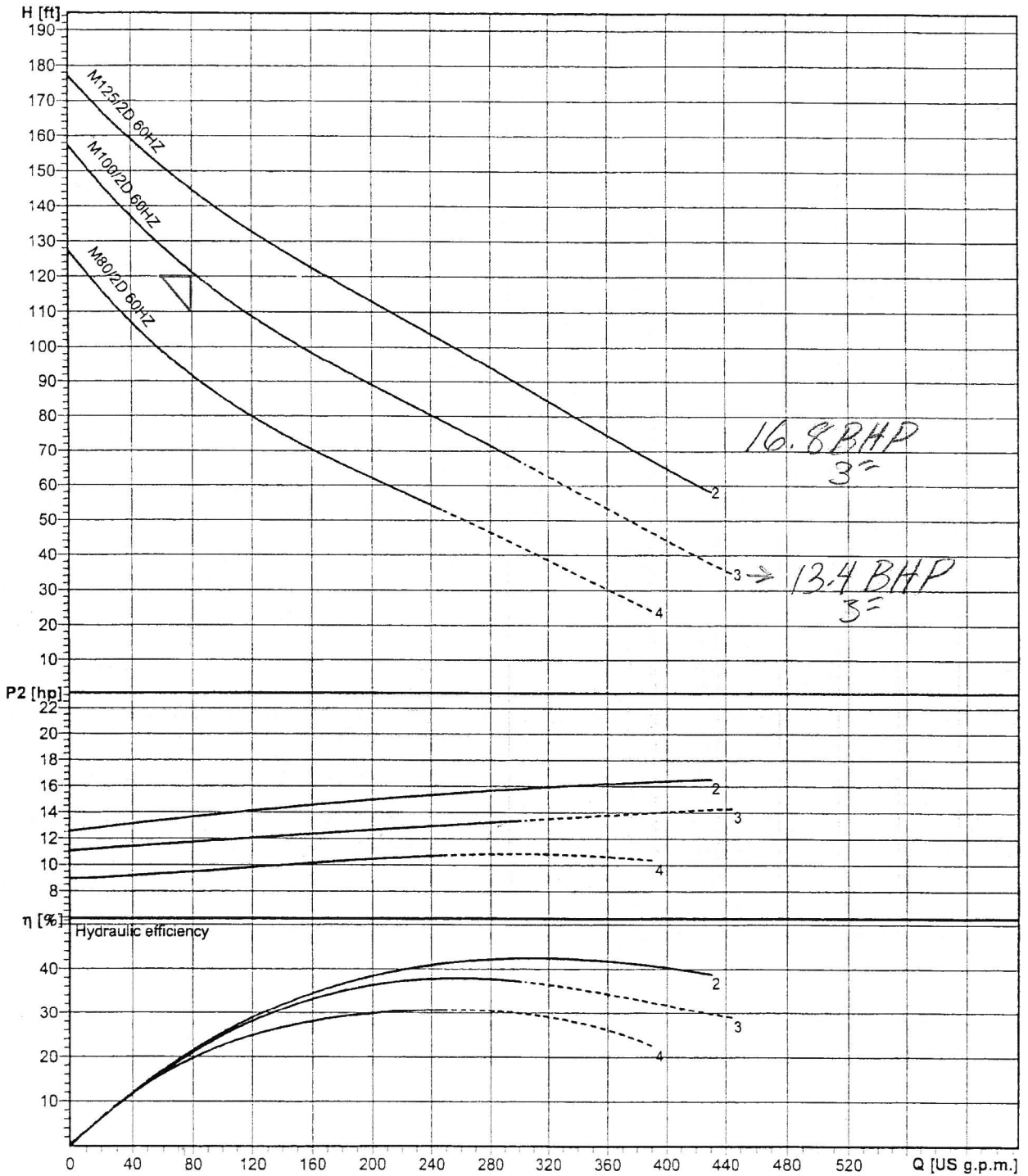


Pump performance curves
AFP 0844 60 HZ

Curve number

Reference curve
AFP 0844

Density 1 kg/dm ³	Viscosity 0.000016813 ft ² /s	Testnorm Hydraulic Institute	Discharge 3 inch	Frequency 60 Hz
Flow	Head	Rated power	Rated speed 3470 rpm	Date 2004-05-20
			Hydraulic efficiency	NPSH



impeller size 170..150 mm	N° of vanes 1	Impeller ContraBlock impeller, 1 vane	Solid size 1.75 inch	Revision 2002-12-10
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John Reeve

From: Pump Guy [utahpump@gmail.com]
Sent: Thursday, November 14, 2013 10:45 AM
To: John Reeve
Subject: Re: Lift station Mt. Sewer Co.

Hello John,

The (current version of the) Homa pump is available at a cost of 6321.00. This is for the pump only and will require adaptation for the slide rail system. Homa does not make a bolt-on adapter for the Flygt rail system so it will be a custom fit...which we have found is actually better as the slide flange needs to be custom faced to preclude leakage at the high discharge pressure. I would allow an extra 1,200 per pump for this adaptation.

This price is for the 480 Volt Three Phase pump. If the Single Phase is chosen, the price will be higher and the voltage will necessarily be 240. The 240 Volt Single Phase service will also have to be commensurately upsized as the inrush amperage will nearly triple. The backup generator will also have to be sized accordingly.

We will also lose the flexibility of interchangeability with the existing pumps, meaning, there will be no backup pump for these (single phase) pumps.

Also, typical availability is about 3 weeks depending on factory stock etc.

Please call if you have questions.

On Tue, Nov 12, 2013 at 1:05 PM, Pump Guy <utahpump@gmail.com> wrote:

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