Stantec Consulting Ltd.
10220 103 Ave NW, Edmonton, AB T5J 0K4

October 28, 2020
File: 110170012

Attention: Resident
Summer Village of Ross Haven

Dear Sir or Madam,

Reference: Ross Haven Wastewater Collection and Transmission Main – Open House Invitation
November 16, 2020 from 7:00-8:30 pm

On behalf of the North 43 Lagoon Commission, we are pleased to invite you to attend the virtual open house for the Ross Haven Wastewater Collection and Transmission Main. In anticipation of upcoming construction, we would like to present you with an introduction to the project, a heads up on anticipated timing, and detailed information on future responsibilities. After the brief presentation we will close with a question and answer period for your comments. The following pages are intended to provide further information and will be referenced during the presentation.

The open house will be held via a Microsoft Teams Meeting with options to join by phone or video conference. To join the meeting, please call the number below and enter the conference ID. You may also email the contact below to request a Teams Meeting direct link to join online. Technical support for joining the meeting will be available to you at 6:30 pm and the meeting will begin at 7:00 pm.

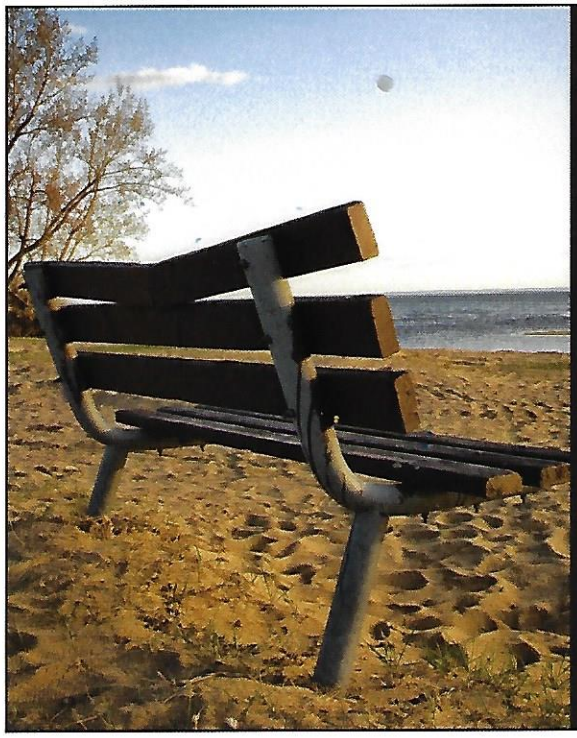
Microsoft Teams Meeting
+1 587-414-2460 Canada, Edmonton (Toll)
(833) 266-3861 Canada (Toll-free)
Conference ID: 177 595 377#

Sincerely,

Stantec Consulting Ltd.

Sam Fritz

Samuel Fritz, E.I.T.
Project Coordinator
Phone: 587-920-4407
Email: sam.fritz@stantec.com



Summer Village of Ross Haven
STEP Low-Pressure Force Main Servicing

Preliminary Design Presentation

November 16, 2020

Stantec

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Agenda

1. Introduction
2. Design Concept
3. Owner Responsibilities
4. Schedule
5. Project Costs
6. Questions and Answers

2

Introduction

The Summer Village of Ross Haven currently uses holding and septic tanks to manage private wastewater. As part of the North 43 Lagoon Commission regional wastewater collection initiative, the Summer Village of Ross Haven plans to install a Septic Tank Effluent Pumping (STEP) low-pressure force main system to ensure that the wastewater from the community does not enter the groundwater and ultimately, Lac Ste. Anne. Wastewater from each residence will be pumped by each homeowner to the North 43 Lagoon facility located north of the Summer Village of Ross Haven

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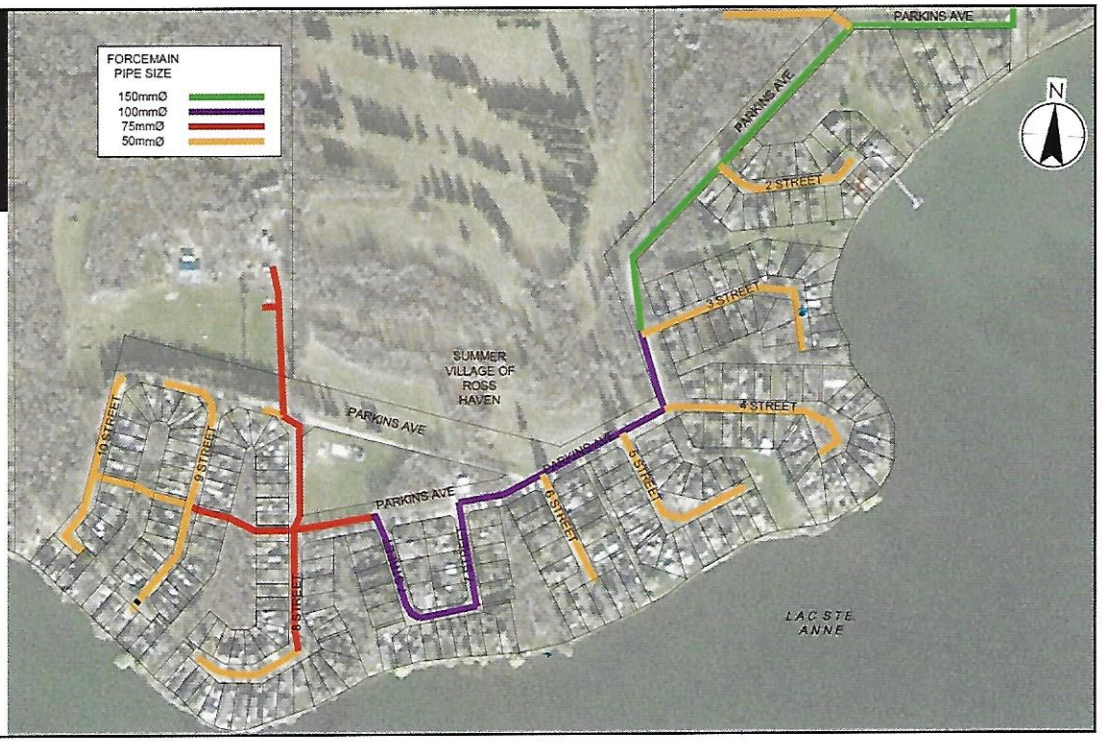
Overall Alignment



See pages 12-14

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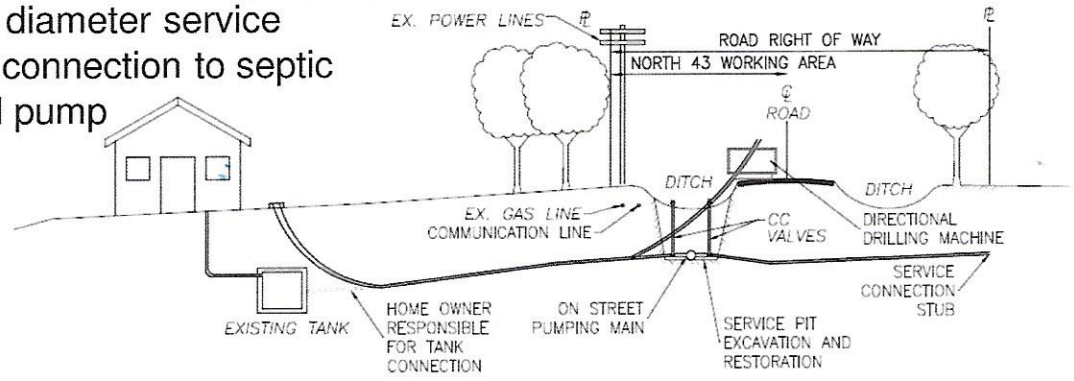
Design Concept

Lot Servicing

- Drill lines 5 meters into property
- 38.5mm diameter service
- Stub for connection to septic tank and pump



TYPICAL DIRECTIONALLY DRILLED SERVICE CONNECTIONS

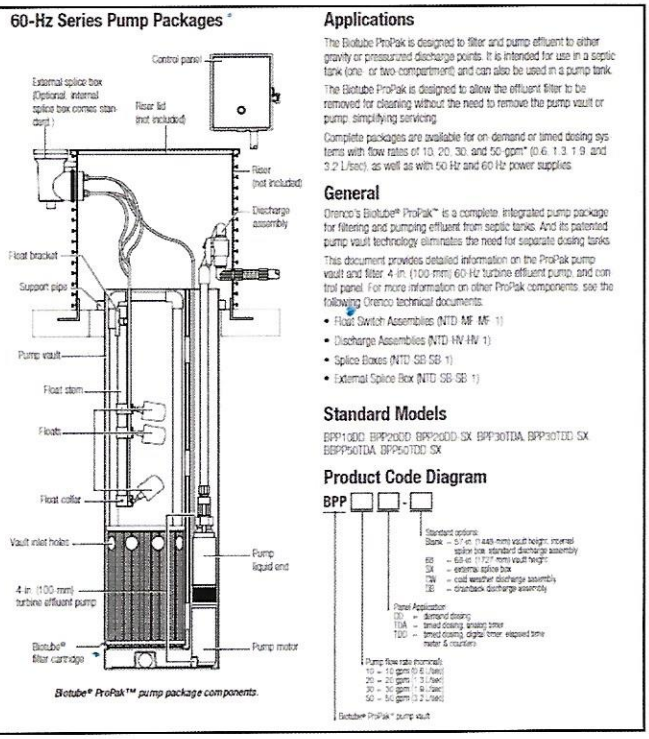
5

Design Concept

Pump Specification

- Orenco PF 10051x series, 100mm submersible effluent pumps
- Available Voltage Required

See pages 14-18



Biotube® ProPak™ pump package components.

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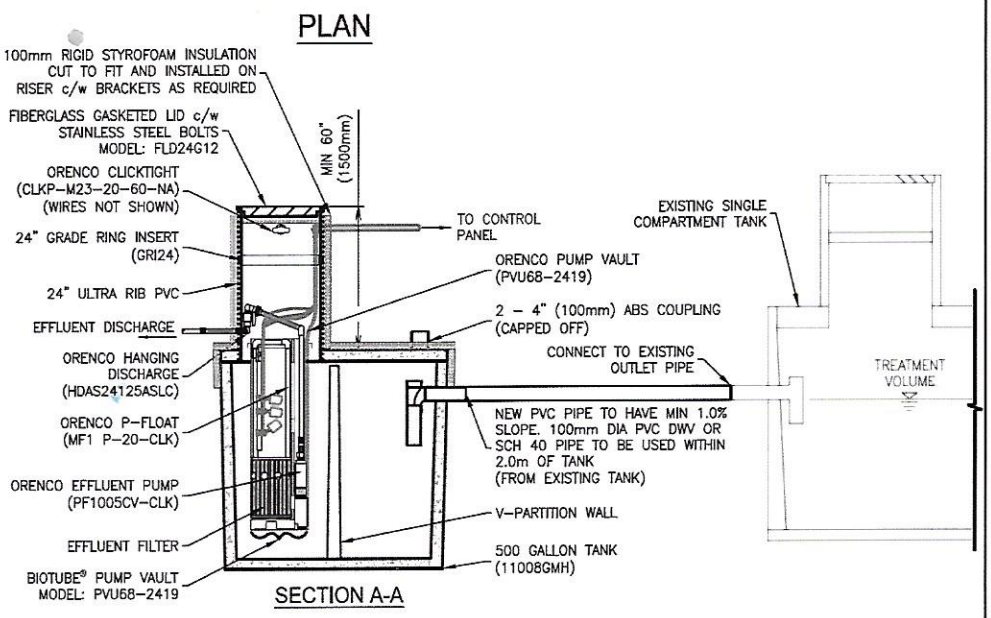
Design Concept

Single Chamber Septic Tank Installation

See pages 19-20



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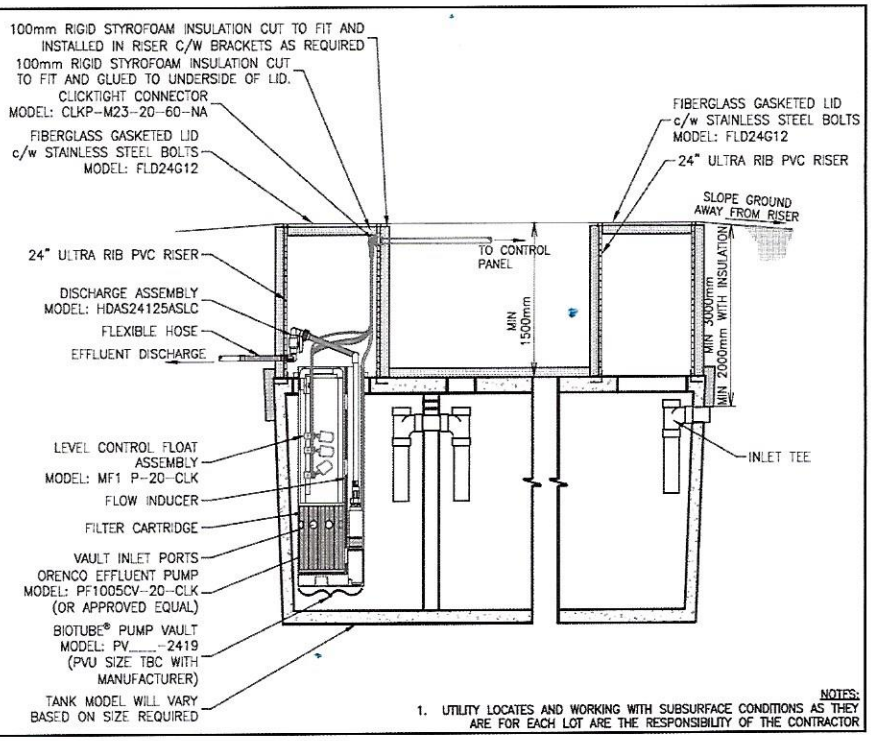
Design Concept

Dual Chamber Septic Tank Installation

See page 21



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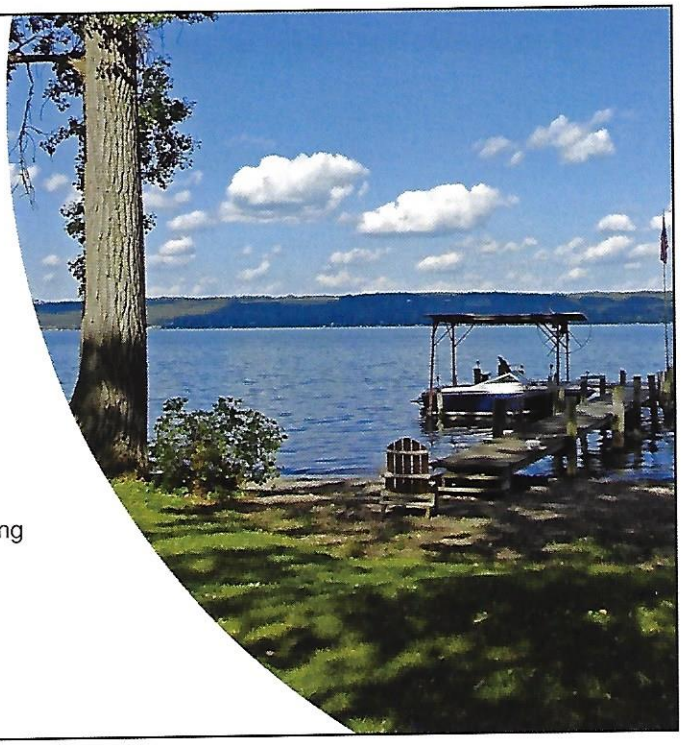
Owner Responsibilities

- Summer Village of Ross Haven Service Application
- Coordinate Pump Purchase
- Engage Contractor to complete onsite work
- Plumbing Inspection
- Electrical Inspection
- North 43 Connection inspection prior to pumping



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Schedule

- Anticipated Project Schedule
  - Construction Start: February 2021
  - Construction End: June 2021
  - Final Clean Up: July 2021

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NORTH 43 LAGOON COMMISSION

SUMMER VILLAGE of ROSS HAVEN EXTENSION

FINANCIAL SUMMARY

ITEM		COST
PROJECT CAPITAL COST		$ 2,910,688
WATER for LIFE GRANT	69.22%	$ 2,014,778
SUMMER VILLAGE of ROSS HAVEN RESPONSIBILITY		$ 895,910
SUMMER VILLAGE of ROSS HAVEN CASH CONTRIBUION		$ 595,910
SUMMER VILLAGE of ROSS HAVEN BORROWING at 1.88% OVER 20 YEARS		$ 300,000

ANNUAL SUMMER VILLAGE OPERATION & MAINTENANCE (per lot per month)		$ 23.92
ANNUAL BORROWING REPAYMENT (per lot per month)		$ 6.57

TOTAL ANNUAL COST PER LOT PER MONTH		$ 30.50

COSTS DO NOT INCLUDE INSPECTION FEES OR ON-SITE INSTALLATION COSTS

Questions and Answers

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NORTH 43 LAGOON COMMISSION APPLICATION for MUNICIPAL WASTEWATER SERVICE

Application must be made by the Landowner(s)

Date of Application: _____

Landowner(s) (Print Clearly): _____

Mailing Address: _____

Town: _____ Postal Code: _____

Telephone (Home): _____ (Cell): _____

Municipal Service Area (Check One):

Lac Ste. Anne County: ☐
Summer Village of Yellowstone: ☐
Summer Village of Castle Island: ☐
Summer Village of Ross Haven: ☐

Service Location (Legal Land Location - Lot, Block, Plan): _____

Service Location (Street Address if available): _____

- The landowner is responsible for payment of all applicable permit fees, supply and installation of the necessary materials and equipment for the service connection, as specified in Attachment A.
- The landowner(s) must install a pump assembly system that meets the minimum requirements, as specified in Attachment A.
- The landowner(s) must engage the services of a licensed installer for the installation of the pump assembly.
- Copies of all permits from the Municipality and accredited inspector will be provided to the Commission and accepted by the Commission prior to the turning on of the service connection.

LANDOWNER SIGNATURE(S): _____

_____

OFFICE USE ONLY

Date Wastewater Services Turned On: _____

Additional Notes: _____

The personal information that is being collected will be used for the purpose of all provisions in providing the wastewater service to the applicant. The personal information is protected by the privacy provisions of the Freedom of Information and Protection of Privacy Act. If you have any questions about the collection, contact the FOIP Coordinator at 4928 Langston Street, Sangudo, AB T0E 2A0, 780-785-3411.

LAC STE. ANNE COUNTY

NORTH 43 LAGOON COMMISSION
BOX 219
SANGUDO, AB T0E 2A0
(780) 785-3411 OR 1-866-880-5722

October 27, 2020

Dear Landowner(s):

With the installation of the North 43 Lagoon Commission Gunn Regional Sanitary System, there are important mandatory requirements that all landowners must be aware of prior to having your sewage pumping system connected to the North 43 Lagoon Force Main. Please note, it is the responsibility of each individual property owner to contract a qualified company to install the approved pumping system in the approved holding tanks.

Steps to connect your sewage pumping system to the North 43 Force Main:

1. All proper *Mechanical and Electrical* Permits must be secured from approved inspections groups in your municipality. All applicable fees are the responsibility of the landowner(s). An *Application for Municipal Wastewater Service* (which can be found on our website) is required to be submitted to your municipality at the same time.

2. Once the appropriate permits have been approved by your municipality, the installation of the North 43 Force Main approved pumping system can progress according to provincially approved practices. A credible contractor must be hired to install the pumping system, this is also the responsibility of the landowner.

3. Once the installation of your pumping system has been completed, and inspected by one of the approved inspection groups, please contact the North 43 Lagoon Commission to arrange a time for inspection.

4. The North 43 Lagoon Commission, or their representative, will schedule a time to inspect the installation and review all applicable copies of permits from the Municipality and accredited inspector. If accepted by the North 43 Lagoon Commission, the service connection will be turned on to your property. This is done by opening the curb cock which is owned by the North 43 Lagoon Commission.

If you have any further questions or concerns, please contact the North 43 Lagoon Commission,

Respectfully,

North 43 Lagoon Commission

LAC STE. ANNE COUNTY

SUMMER VILLAGE of Ross Haven

Summer Village of Yellowstone

SUMMER VILLAGE OF CASTLE ISLAND

NORTH 43 LAGOON COMMISSION
BOX 219
SANGUDO, AB T0E 2A0
(780) 785-3411 OR 1-866-880-5722

October 27, 2020

Dear Landowner(s):

Re: Installation & Connection Specifications for Forcemain Project

The North 43 Lagoon Commission does not have a preferred installer list for the work to be completed on private property and will not make any recommendations. We do recommend the "buyer beware" of any of the services that may be offered to you. For your information we have attached some information with regard to the on-lot services requirements that each landowner is responsible for.

For installation on private property, you must use a **licensed installer** (see www.aowma.com) and they must obtain a permit from the local safety codes officer:

- Lac Ste Anne County
  - Superior Safety Codes Inc. 1-866-999-4777
- Summer Village of Castle Island
  - The Inspection Group 1-866-554-5048
- Summer Village of Yellowstone
  - Superior Safety Codes Inc. 1-866-999-4777
- Summer Village of Ross Haven
  - Superior Safety Codes Inc. 1-866-999-4777

Should you have any questions or concerns regarding this matter please contact the undersigned.

Respectfully,

Joe Duplessie
Commission Manger
North 43 Lagoon Commission

LAC STE. ANNE COUNTY

North 43 Lagoon Commission
Ross Haven Sanitary System

On-lot Service Connection Requirements:

Mandatory requirements:

Septic Tank:

Only screened effluent from individual septic tank(s) will be allowed to be pumped into the sanitary collection system. Septic tank(s) must have solid-liquid separation mechanism(s) to ensure only effluent being pumped.

Pump:

Only CSA certified effluent pump with the following capacities will be approved for connecting to the sanitary system:

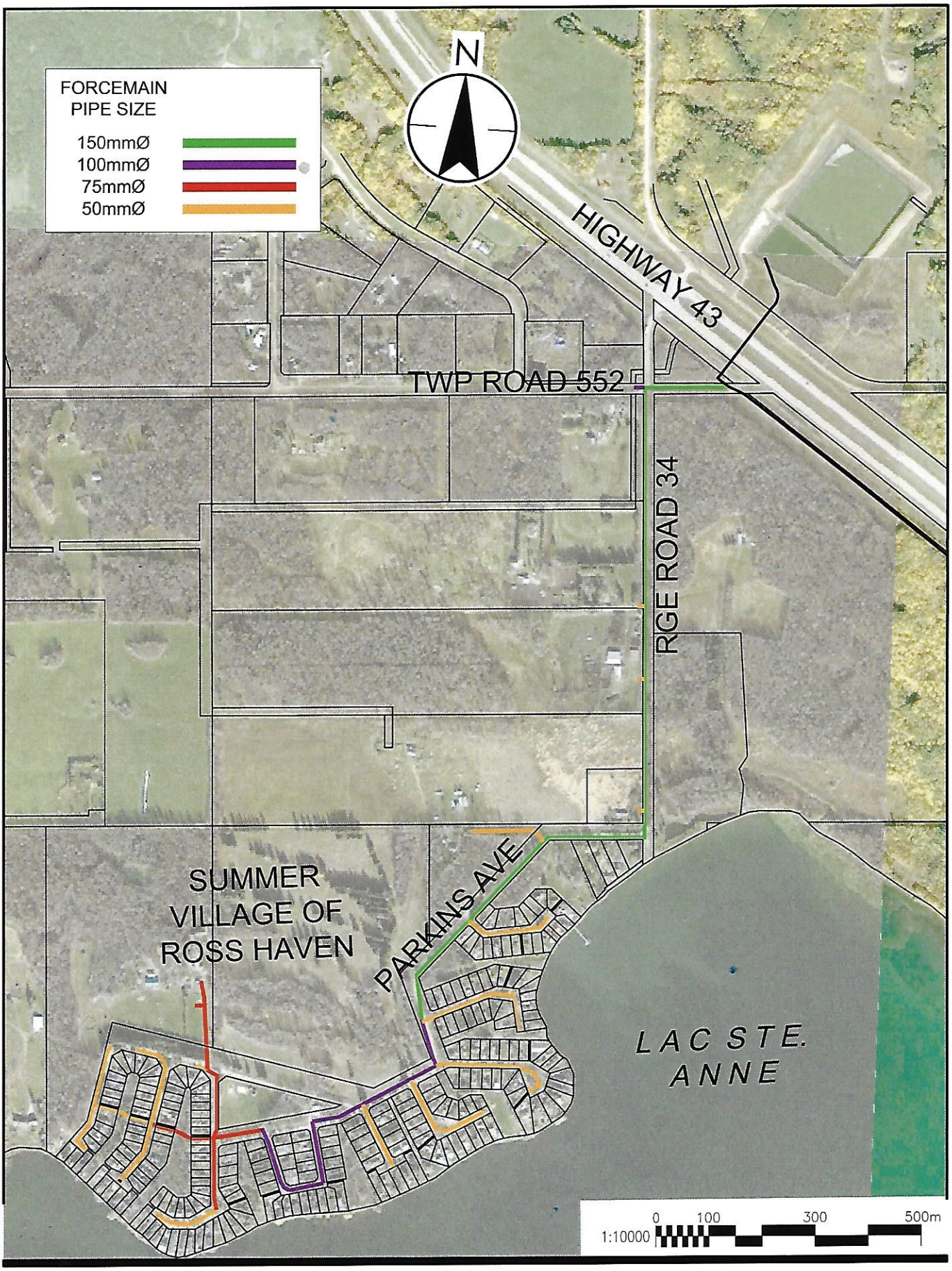
Pump's optimal performance range:

- Design Flow Rate: **0.6 liters per second (10 gallons per minute)**
- Total Dynamic Head: **54 m (175ft) at 0.6 l/s design flow rate.**
- Power and Voltage: **0.5 HP, 120v/240 v, Single Phase**
- Working Pressure: **Discharge pipe from the pump must be rated for a working pressure of minimum 100 psi.**
- Type of Pump: **Submersible Effluent Pump**

Other recommended installations:

Followings are mandatory for safe and convenient operation, monitoring and maintenance for the homeowner:

- A two compartment septic tank of minimum 750 gallons for residential lots. This will allow for solid-liquid separation. Tank will also provide some storage capacity in the event of pump failure (i.e. power failure).
- Additional screening mechanism as part of the pump assembly.
- Water depth monitoring mechanism (i.e. float assemblies, sonar system) inside the septic tank for automatic pump operation and warning. This system should be installed and programmed for automatic starting and stopping of the pump as well as providing warning at high water level.
- Control panel should be installed in an easy access location.



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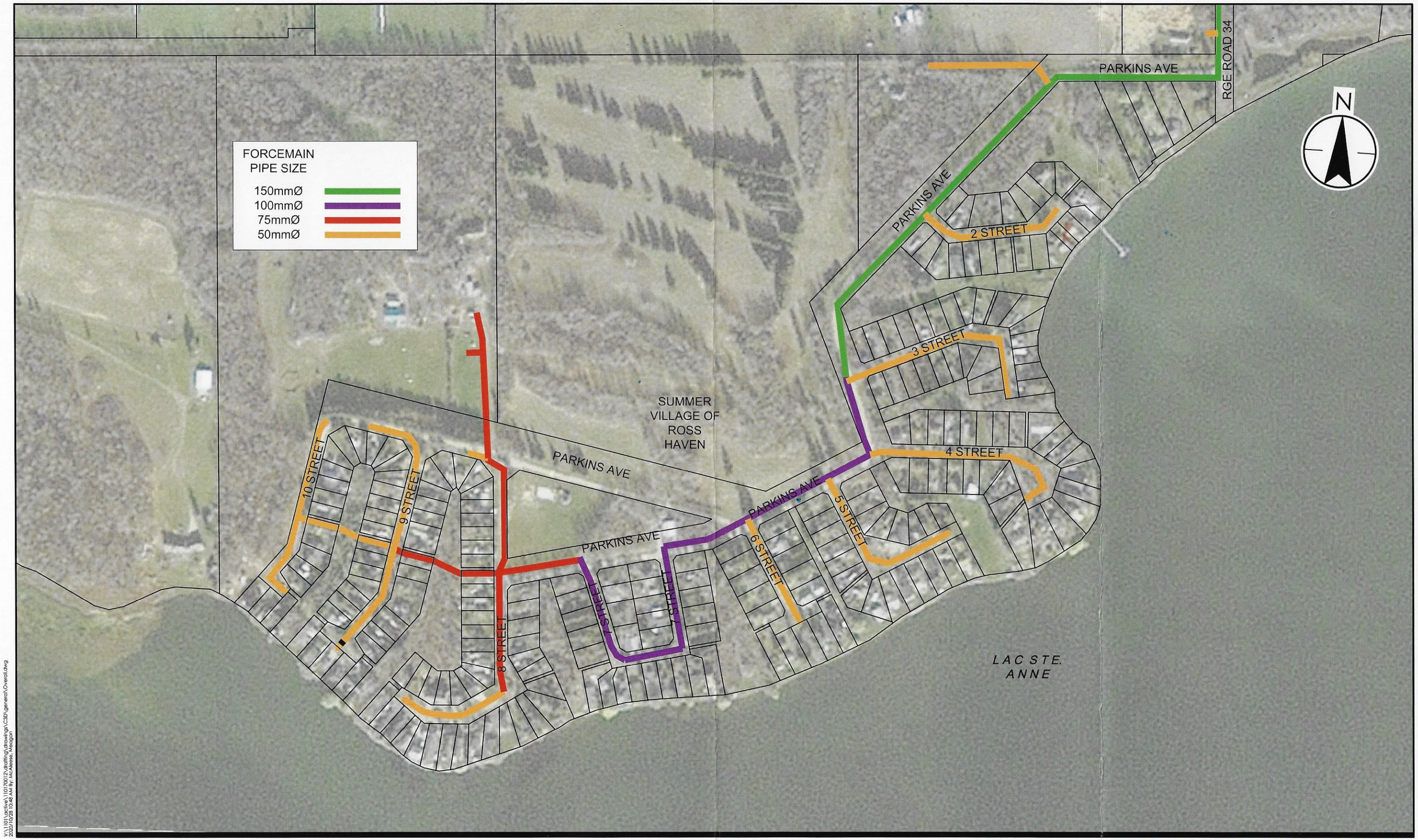
ROSS HAVEN WASTEWATER OVERALL ALIGNMENT

COUNTY OF LAC STE ANNE



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1:4000 0 40 120 200m

FIGURE 2 - ROSS HAVEN WASTEWATER PARTIAL ALIGNMENT

COUNTY OF LAC STE ANNE

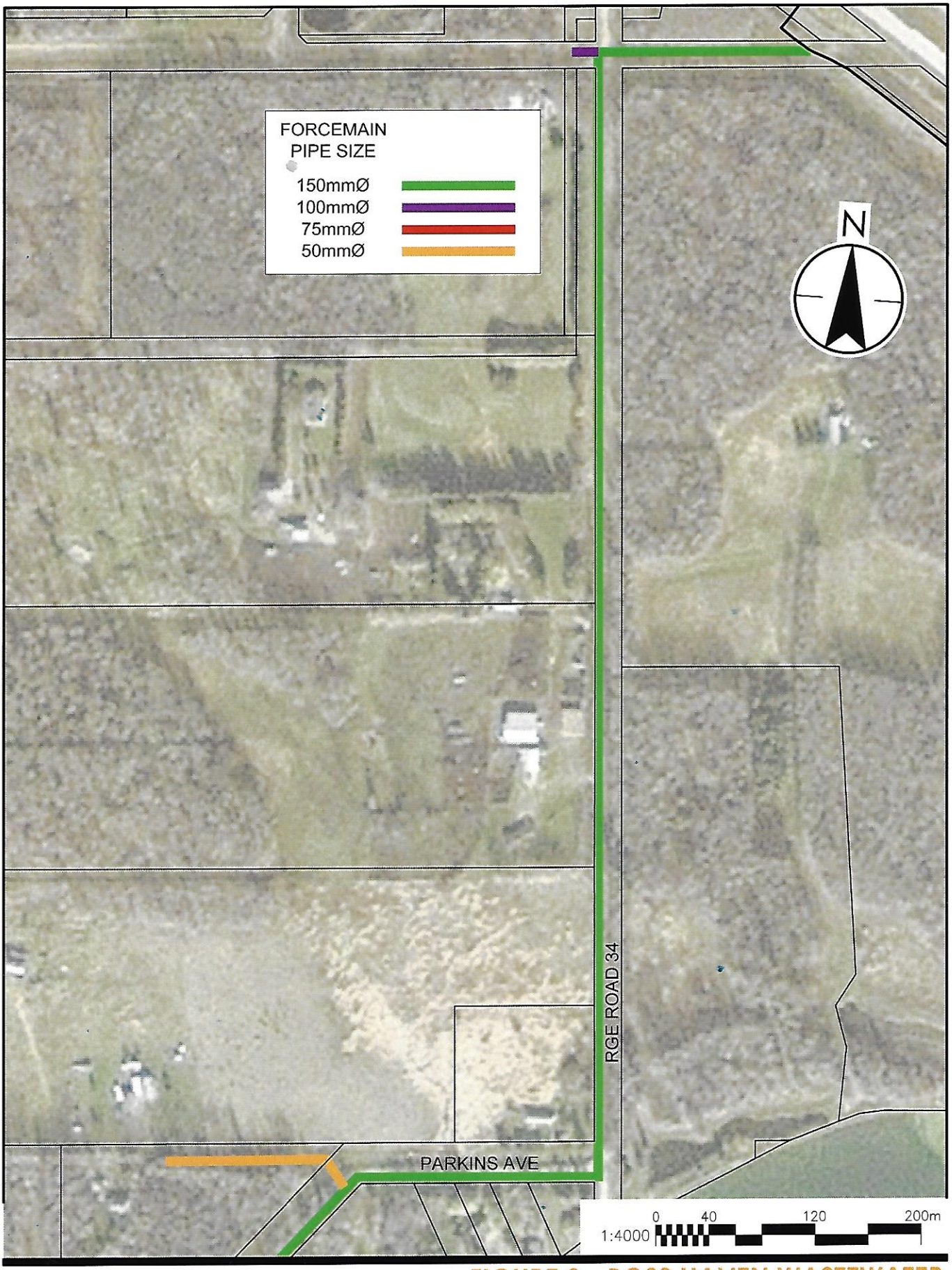

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FIGURE 3 - ROSS HAVEN WASTEWATER PARTIAL ALIGNMENT

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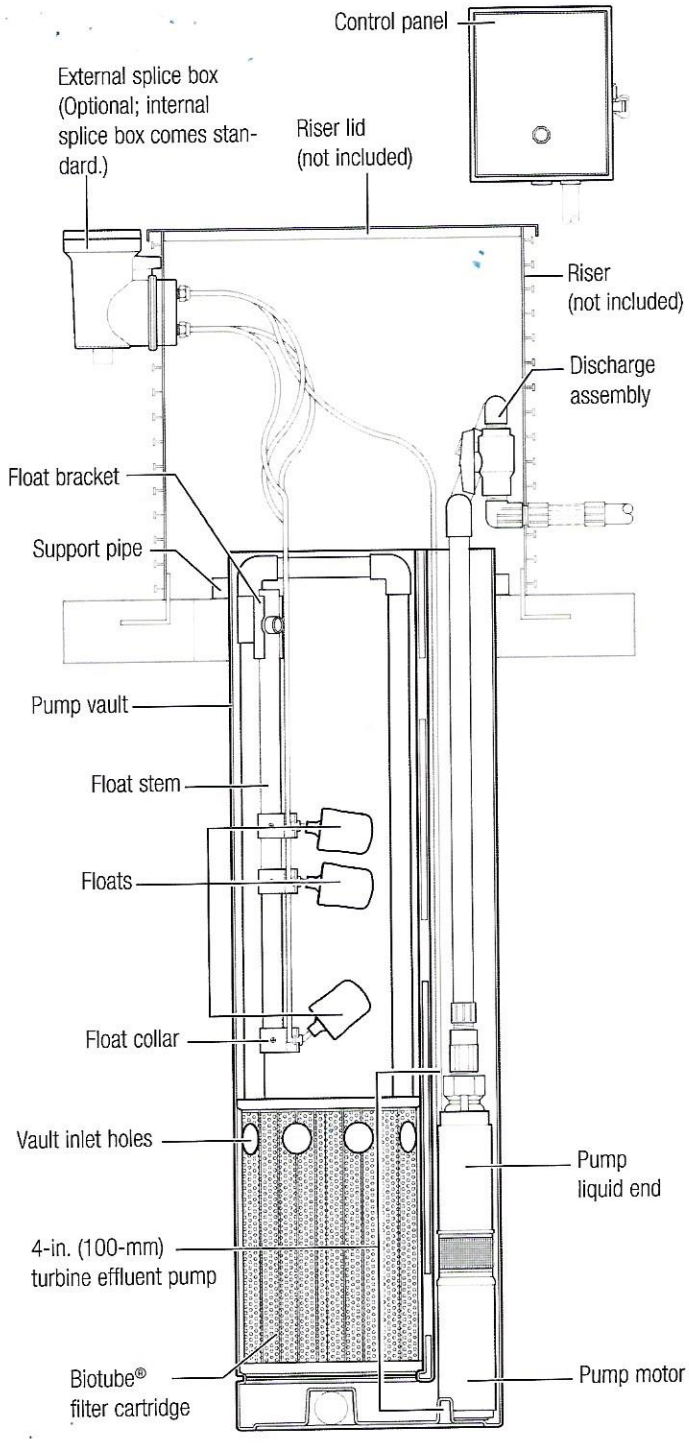
COUNTY OF LAC STE ANNE

Orenco SYSTEMS **Technical Data Sheet**

Biotube® ProPak™ Pump Package

60-Hz Series Pump Packages



Biotube® ProPak™ pump package components.

Applications

The Biotube ProPak is designed to filter and pump effluent to either gravity or pressurized discharge points. It is intended for use in a septic tank (one- or two-compartment) and can also be used in a pump tank.

The Biotube ProPak is designed to allow the effluent filter to be removed for cleaning without the need to remove the pump vault or pump, simplifying servicing.

Complete packages are available for on-demand or timed dosing systems with flow rates of 10, 20, 30, and 50-gpm* (0.6, 1.3, 1.9, and 3.2 L/sec), as well as with 50 Hz and 60 Hz power supplies.

General

Orenco's Biotube® ProPak™ is a complete, integrated pump package for filtering and pumping effluent from septic tanks. And its patented pump vault technology eliminates the need for separate dosing tanks.

This document provides detailed information on the ProPak pump vault and filter, 4-in. (100-mm) 60-Hz turbine effluent pump, and control panel. For more information on other ProPak components, see the following Orenco technical documents:

- Float Switch Assemblies (NTD-MF-MF-1)
- Discharge Assemblies (NTD-HV-HV-1)
- Splice Boxes (NTD-SB-SB-1)
- External Splice Box (NTD-SB-SB-1)

Standard Models

BPP10DD, BPP20DD, BPP20DD-SX, BPP30TDA, BPP30TDD-SX, BBPP50TDA, BPP50TDD-SX

Product Code Diagram

BPP □ □ □ - □

Biotube® ProPak™ pump vault

Pump flow rate (nominal):
10 = 10 gpm (0.6 L/sec)
20 = 20 gpm (1.3 L/sec)
30 = 30 gpm (1.9 L/sec)
50 = 50 gpm (3.2 L/sec)

Panel Application:
DD = demand dosing
TDA = timed dosing, analog timer
TDD = timed dosing, digital timer, elapsed time meter & counters

Standard options:
Blank = 57-in. (1448-mm) vault height, internal splice box, standard discharge assembly
68 = 68-in. (1727-mm) vault height
SX = external splice box
CW = cold weather discharge assembly
DB = drainback discharge assembly

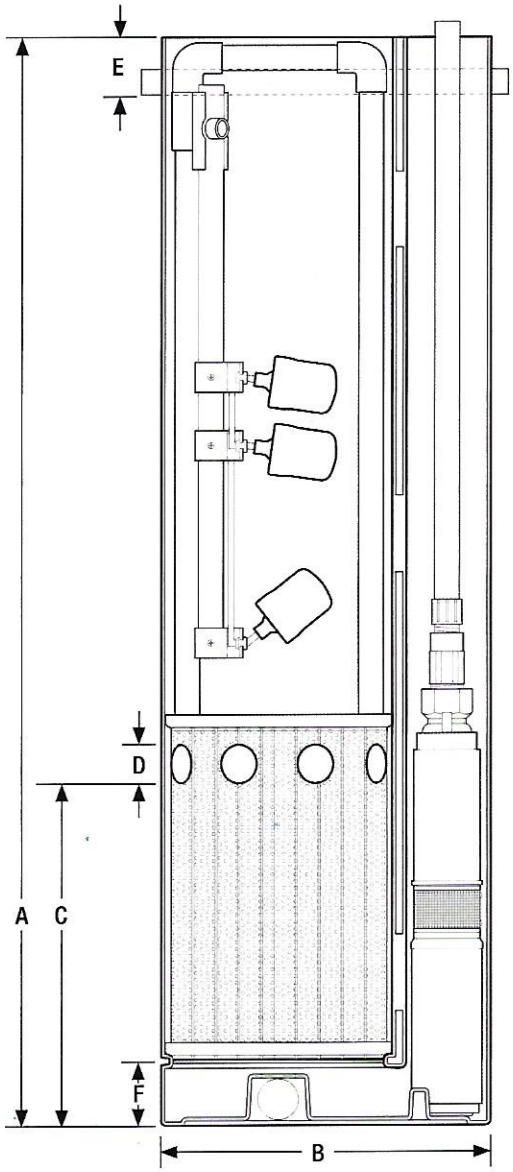
ProPak™ Pump Vault

Materials of Construction	
Vault body	Polyethylene
Support pipes	PVC
Dimensions, in. (mm)	
A - Overall vault height	57 (1448) or 68 (1727)
B - Vault diameter	17.3 (439)
C - Inlet hole height	19 (475)
D - Inlet hole diameter (eight holes total)	2 (50)
E - Vault top to support pipe bracket base	3 (76)
F - Vault bottom to filter cartridge base	4 (102)

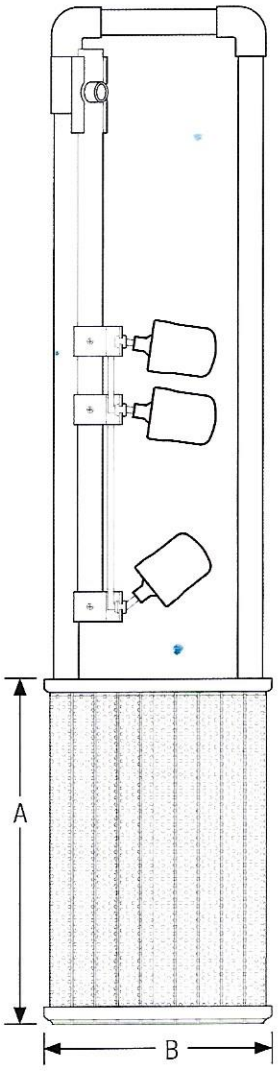
Biotube® Filter Cartridge

Materials of Construction	
Filter tubes	Polyethylene
Cartridge end plates	Polyurethane
Handle assembly	PVC
Dimensions, in. (mm)	
A - Cartridge height	18 (457)
B - Cartridge width	12 (305)
Performance	
Biotube® mesh opening	0.125 in. (3 mm)*
Total filter flow area	4.4 ft² (0.4 m²)
Total filter surface area	14.5 ft² (1.35 m²)
Maximum flow rate	140 gpm (8.8 L/sec)

**0.062-in. (1.6-mm) filter mesh available*



ProPak™ pump vault (shown with Biotube filter and effluent pump)



Biotube® filter cartridge (shown with float switch assembly)

Orenco Systems® Inc., 814 Airway Ave., Sutherlin, OR 97479 USA • 800-348-9843 • 541-459-4449 • www.orenco.com

4-in. (100-mm) Turbine Effluent Pumps*

Orenco's 4-in. (100 mm) Turbine Effluent Pumps are constructed of lightweight, corrosion-resistant stainless steel and engineered plastics; all are field-serviceable and repairable with common tools. All 60-Hz PF Series models are CSA certified to the U.S. and Canadian safety standards for effluent pumps, and meet UL requirements.

Power cords for Orenco's 4-in. (100-mm) turbine effluent pumps are Type SOOW 600-V motor cable (suitable for Class 1, Division 1 and 2 applications).

Materials of Construction

Discharge:	Stainless steel or glass-filled polypropylene
Discharge bearing:	Engineered thermoplastic (PEEK)
Diffusers:	Glass-filled PPO
Impellers:	Acetal (20-, 30-gmp), Noryl (50-gpm)
Intake screens:	Polypropylene
Suction connection:	Stainless steel
Drive shaft:	300 series stainless steel
Coupling:	Sintered 300 series stainless steel
Shell:	300 series stainless steel
Lubricant:	Deionized water and propylene glycol

Specifications

Nom. flow, gpm (L/sec)	Length in. (mm)	Weight lb (kg)	Discharge in., nominal[1]	Impellers
10 (0.6)	23.0 (660)	26 (11)	1.25	6
20 (1.3)	22.5 (572)	26 (11)	1.25	4
30 (1.9)	21.3 (541)	25 (11)	1.25	3
50 (3.2)	20.3 (516)	27 (12)	2.00	2

Performance

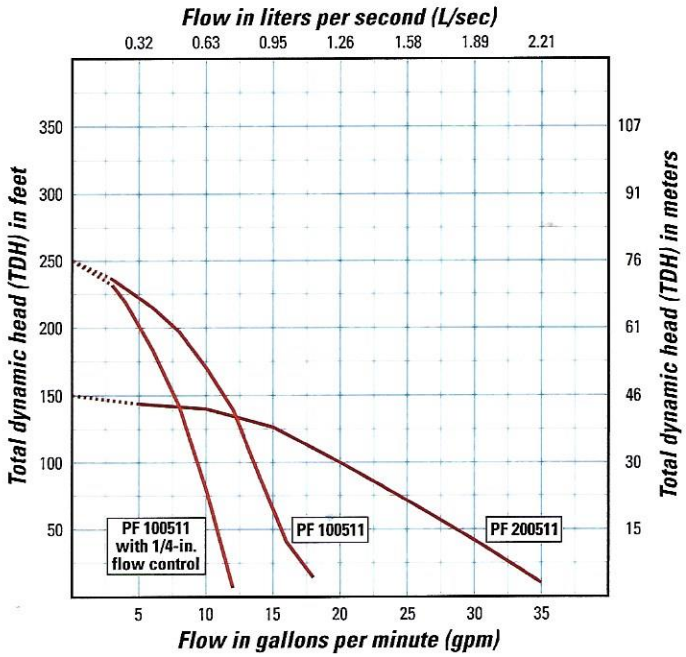
Nom. flow, gpm (L/sec)	hp (kW)	Design flow amps	Rated cycles/day	Min liquid level, in. (mm) [2]
10 (0.6)	0.5 (0.37)	12.7	300	16 (406)
20 (1.3)	0.5 (0.37)	12.3	300	18 (457)
30 (1.9)	0.5 (0.37)	11.8	300	20 (508)
50 (3.2)	0.5 (0.37)	12.1	300	24 (610)

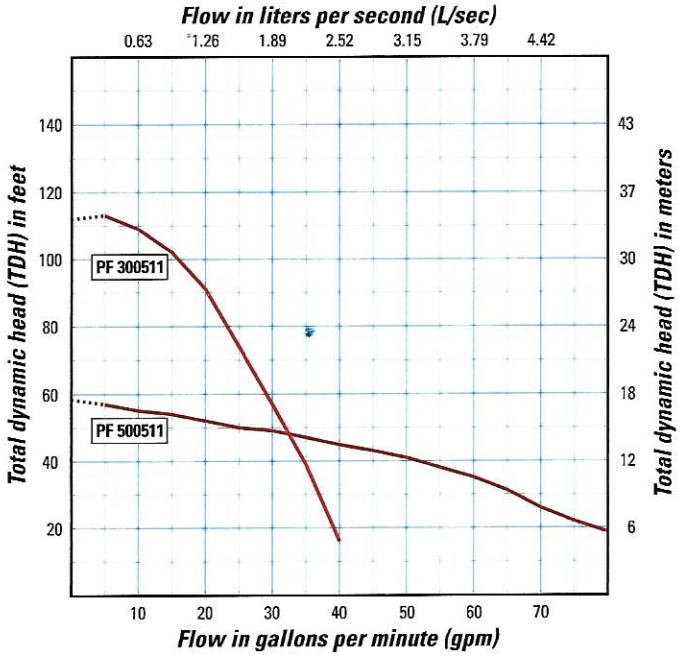
[1] Discharge is female NPT threaded, U.S. nominal size, to accommodate Orenco® discharge hose and valve assemblies. Consult your Orenco Distributor about fittings to connect discharge assemblies to metric-sized piping.

[2] Minimum liquid level is for single pumps when installed in an Orenco Biotube® ProPak™ Pump Vault.

Pump Curves

Pump curves, such as those shown here, can help you determine the best pump for your system. Pump curves show the relationship between flow (gpm or L/sec) and pressure (TDH), providing a graphical representation of a pump's performance range. Pumps perform best at their nominal flow rate, measured in gpm or L/sec.





Control Panel (Demand Dose)

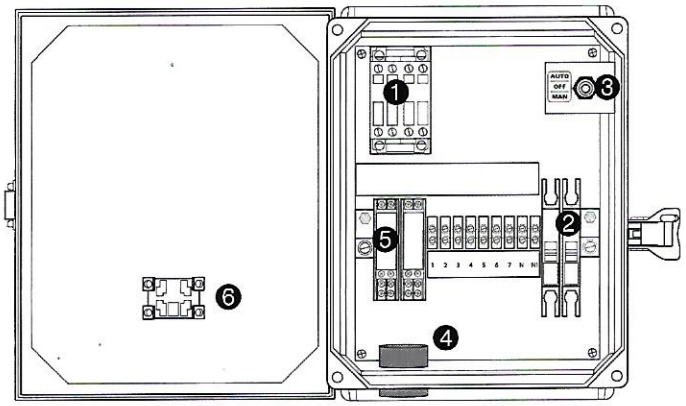
Orenco's ProPak™ demand dose control panels are specifically engineered for the ProPak pump package and are ideal for applications such as demand dosing from a septic tank into a conventional gravity drainfield.

Materials of Construction	
Enclosure	UV-resistant fiberglass, UL Type 4X
Hinges	Stainless steel
Dimensions, in. (mm)	
A - Height	11.5 (290)
B - Width	9.5 (240)
C - Depth	5.4 (135)
Specifications	
Panel ratings	120 V, 3/4 hp (0.56 kW), 14 A, single phase, 60 Hz
1. Motor-start contactor	16 FLA, 1 hp (0.75 kW), 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA)
2. Circuit breakers	120 V, 10 A, OFF/ON switch, Single pole
3. Toggle switch	Single-pole, double-throw HOA switch, 20 A
4. Audio alarm	95 dB at 24 in. (600 mm), warble-tone sound, UL Type 4X
5. Audio alarm silence relay	120 V, automatic reset, DIN rail mount
6. Visual alarm	7/8-in. (22-mm) diameter red lens, "Push-to-silence," 120 V LED, UL Type 4X

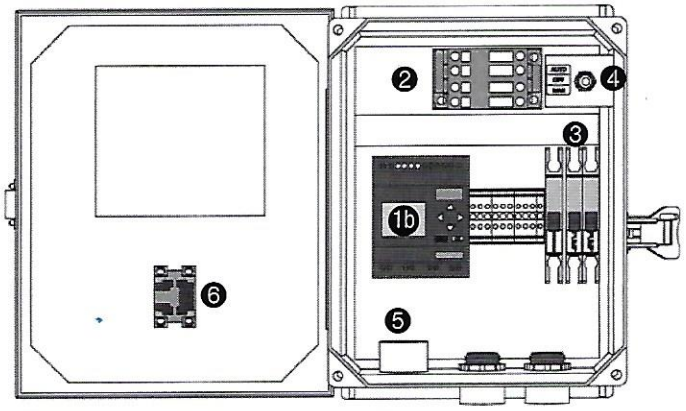
Control Panel (Timed Dose)

Orenco's ProPak timed dose control panels are specifically engineered for the ProPak pump package and are ideal for applications such as timed dosing from a septic tank into a pressurized drainfield or mound. Analog or digital timers are available.

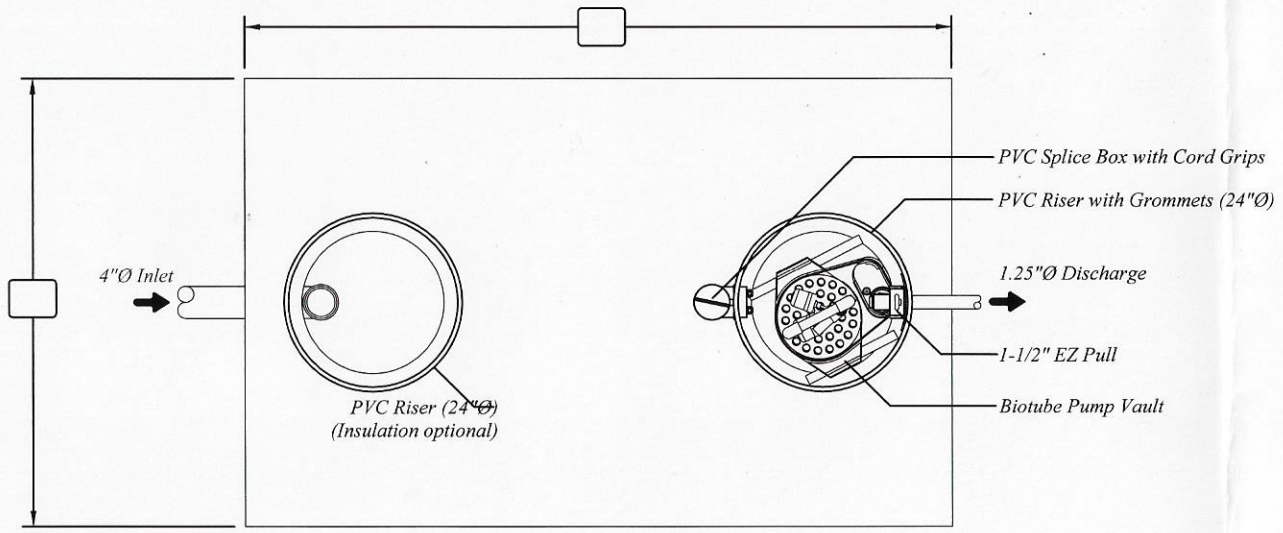
Materials of Construction	
Enclosure	UV-resistant fiberglass, UL Type 4X
Hinges	Stainless steel
Dimensions, in. (mm)	
A - Height	11.5 (290)
B - Width	9.5 (240)
C - Depth	5.4 (135)
Specifications	
Panel ratings	120 V, 3/4 hp (0.56 kW), 14 A, single phase, 60 Hz
Dual-mode	Programmable for timed- or demand-dosing (digital timed-dosing panels only)
1a. Analog timer	120 V, repeat cycle from 0.05 seconds to 30 hours. Separate variable controls for OFF and ON time periods
1b. Digital timer	120-V programmable logic unit with built-in LCD screen and programming keys. Provides control functions and timing for panel operation
2. Motor-start contactor	16 FLA, 1 hp (0.75 kW), 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA)
3. Circuit breakers	120 V, 10 A, OFF/ON switch. Single pole 120 V
4. Toggle Switch	Single-pole, double-throw HOA switch, 20 A
5. Audio alarm	95 dB at 24 in. (600 mm), warble-tone sound, UL Type 4X
6. Visual alarm	7/8-in. (22-mm) diameter red lens, "Push-to-silence", 120 V LED, UL Type 4X



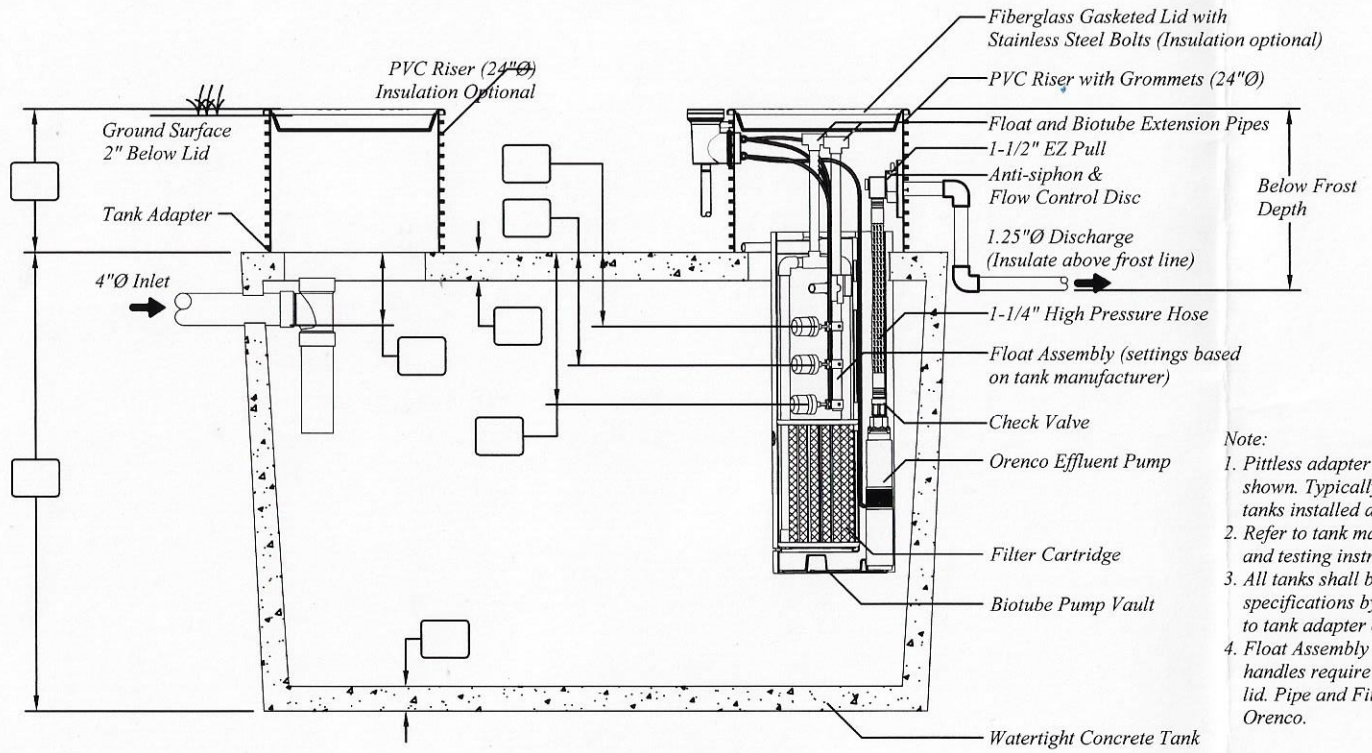
Control panel, demand-dose



Control panel, timed-dose (digital timer model shown)



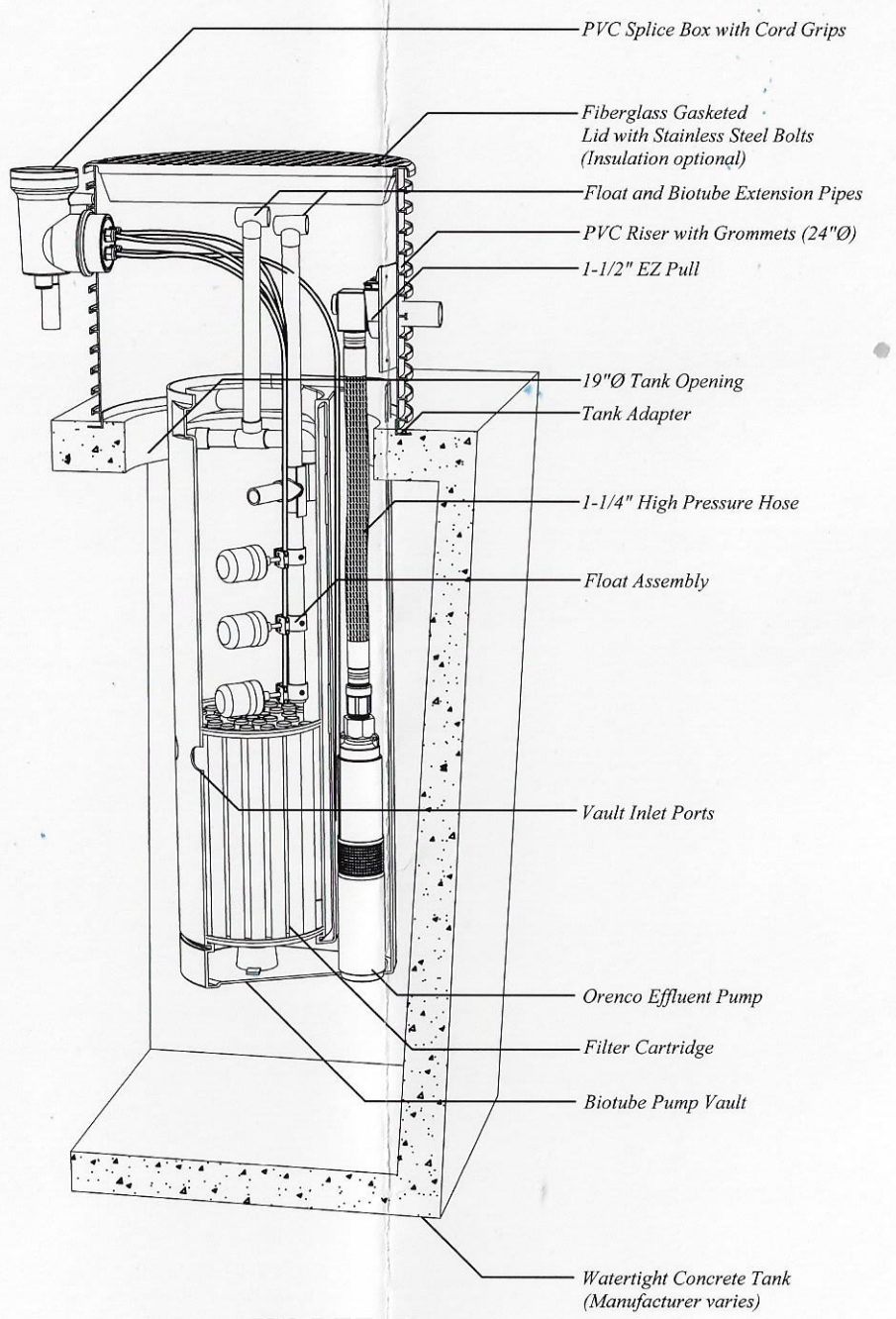
TOP VIEW



SECTION VIEW

Note:

1. *Pittless adapter style hose and valve shown. Typically used for cold weather or tanks installed deeper than 24".*
2. *Refer to tank manufacturer for installation and testing instructions.*
3. *All tanks shall be watertight tested per specifications by filling water 2" past riser to tank adapter connection.*
4. *Float Assembly and Biotube Cartridge handles require extension to underside of lid. Pipe and Fittings not supplied by Orenco.*



ISO DETAIL

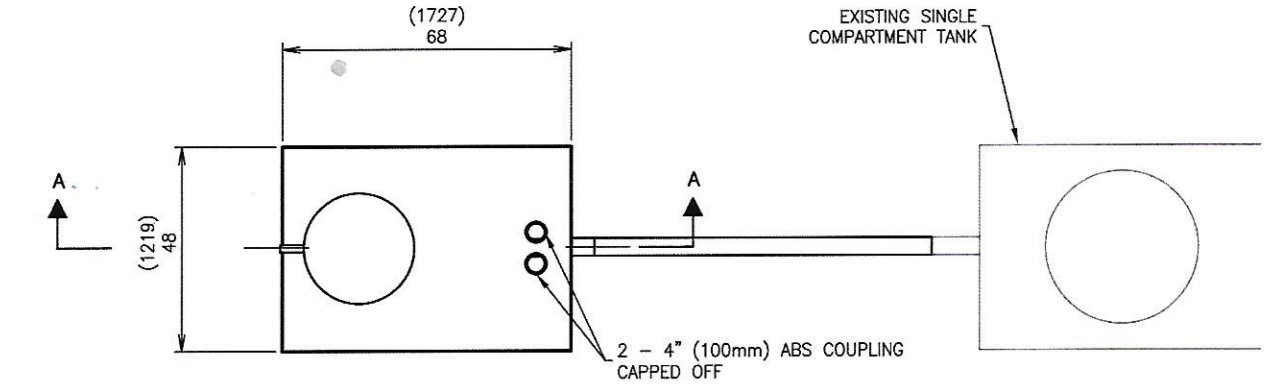
Orenco®
Orenco Systems®, Incorporated

System:	STEP Package Detail (Concrete Tank)	Drawn By:	DSM	Scale:	1" = 2'-0"
		Reviewed By:	GL	Sheet:	1 OF 1
Description:	Details	File Name:	STEP DTL 5.DWG	Rev: 1.2	Date: 09/23/15

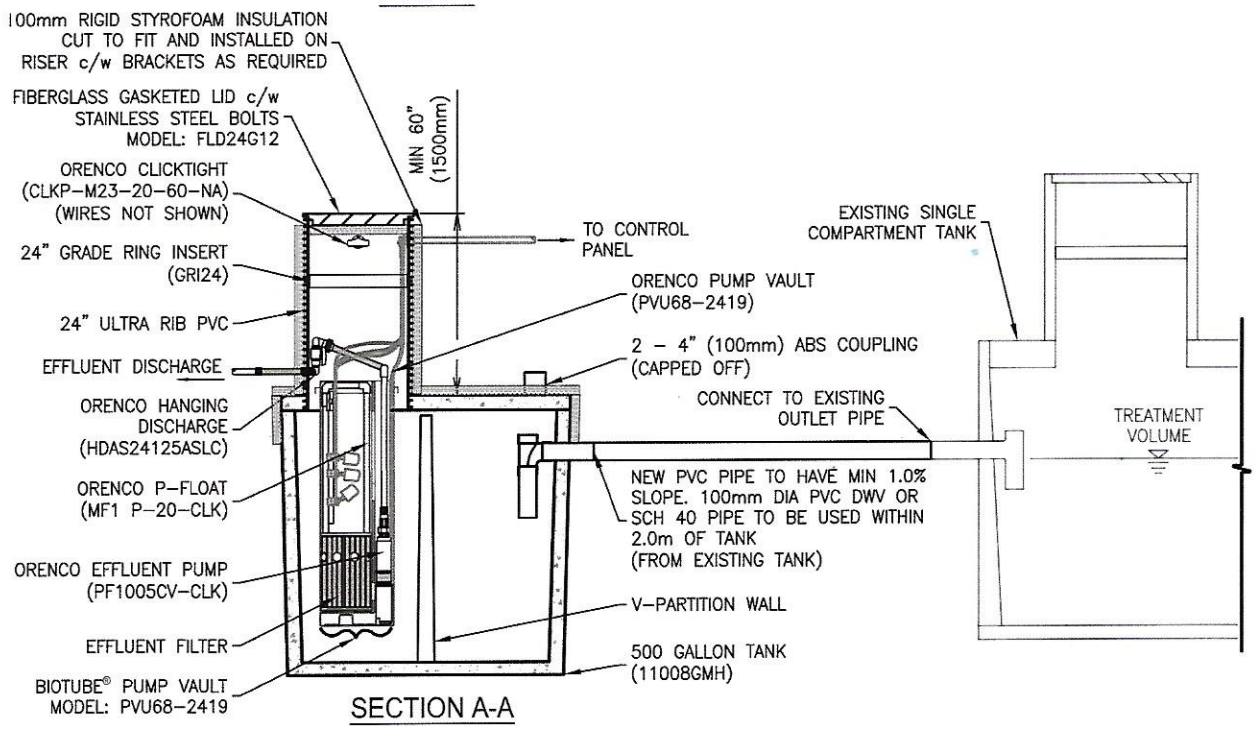
Stantec

1:4000 0 40 120 200m

DETAIL 5-1
STEP PACKAGE DETAIL FOR
1 CHAMBER SEPTIC TANK
ROSS HAVEN WASTEWATER
COUNTY OF LAC STE. ANNE



PLAN



SECTION A-A

NOTES:

1. PUMP PACKAGE: ORENCO PSA10–AWS–AB (OR APPROVED EQUAL)
2. UTILITY LOCATES AND WORKING WITH SUBSURFACE CONDITIONS AS THEY ARE FOR EACH LOT ARE THE RESPONSIBILITY OF THE CONTRACTOR

\\Cd1044-f06\work_group\1101\active\121070012\drafting\drawings\xrefs\(5) Concrete Tank HDA Details.dwg
2020/10/28 1:40 PM By: McAleese, Meagan

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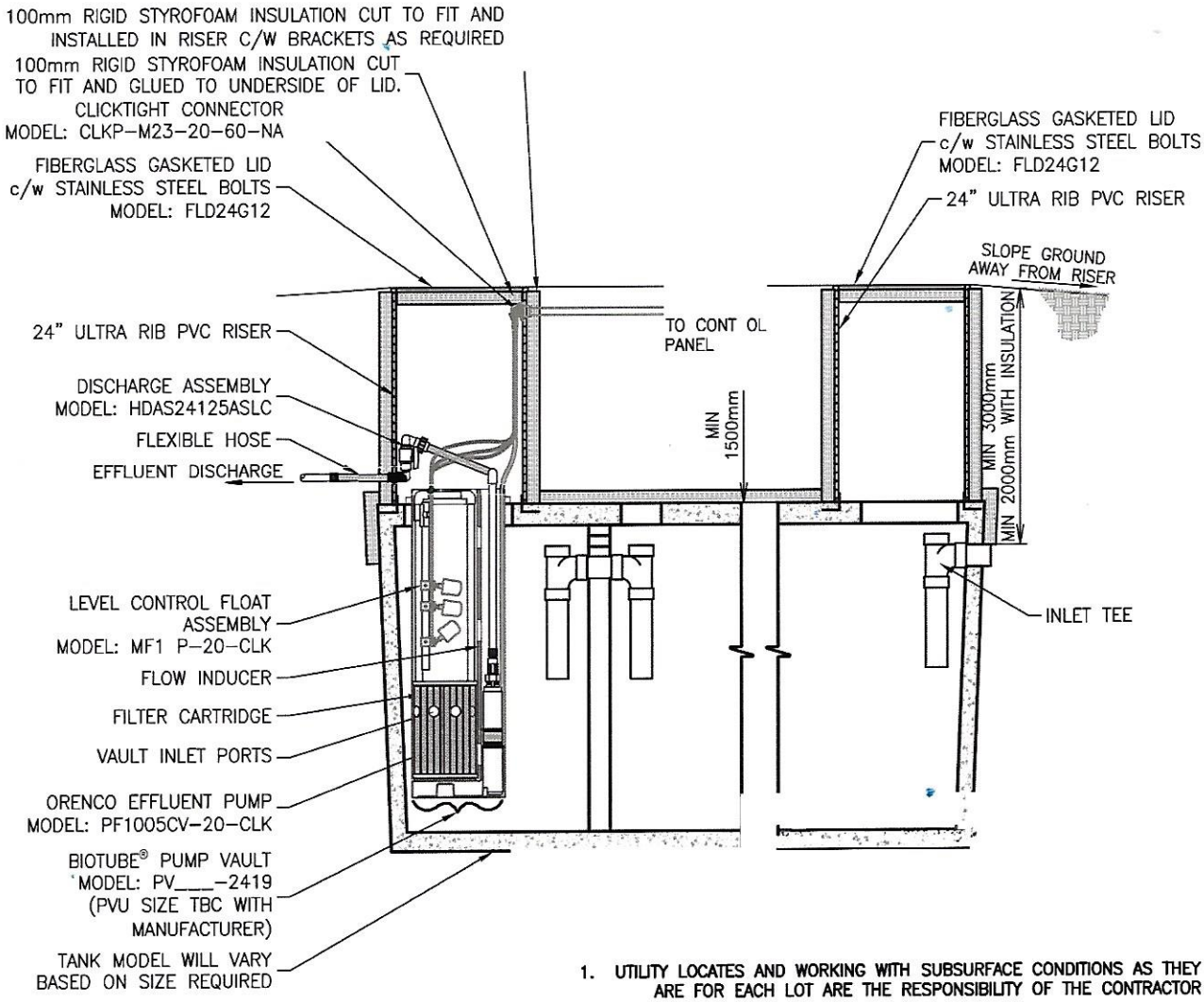
DETAIL 5-2
500 G STEP TANK DETAIL FOR 1 CHAMBER SEPTIC TANK

ROSS HAVEN WASTEWATER
COUNTY OF LAC STE. ANNE



1. UTILITY LOCATES AND WORKING WITH SUBSURFACE CONDITIONS AS THEY ARE FOR EACH LOT ARE THE RESPONSIBILITY OF THE CONTRACTOR

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2020/10/28 1:38 PM, by: McAleese, Meagan

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DETAIL 5-3
CHAMBER SEPTIC TANK INSTALLATION DETAIL

ROSS HAVEN WASTEWATER
COUNTY OF LAC STE. ANNE