



APPLICATION - PERMIT
ON-SITE WASTEWATER SYSTEM



(Please Type or Print Legibly)
OWNER'S NAME: St. Ann's Roman Catholic Church PHONE: (303) 539-6449
ADDRESS: 961 Garfield Parkway Bethany Beach, DE 19930
PROJECT LOCATION: 35318 Church Road (off Roxana Road DE RT 17) Frankford
TAX/MAP #: 1-34-18-19.00
APPLICATION PREPARER: Byron H. Jefferson, P.E. DNREC LICENSE #: 2160
PREPARER'S ADDRESS: PO Box 161 Lincoln, DE 19960
PHONE: (302) 422-9568

I hereby affirm that the information provided on this document is accurate and complete.

Preparer's Signature:  Date: 8/17/2025

SEPTIC DESIGN CRITERIA-

(Please check all boxes that apply)

Type of Construction:

- ☐ Replacement
☒ New Construction
☐ Component Replacement
☐ Repair to Existing System
☐ Authorization to Use Existing System

System Type:

- ☐ Low Pressure Pipe(FD)
☒ Elevated Sand Mound
☐ Pressure Dose (FD)
☐ Holding Tank
☐ Gravity (FD)
☐ Std. Pressure Dose (FD)
☐ Std. Pressure Dose (CF)

CF = Cap & Fill / FD = Full Depth

- ☐ Low Pressure Pipe (CF)
☐ Wisconsin At-Grade
☐ Pressure Dose (CF)
☐ Subsurface Micro Irrigation
☐ Gravity (CF)
☐ Other _____

- ☒ Bed or ☐ Trench
☐ Gravelless Chamber or ☒ Stone/Gravel

Sand-lined ☐ Yes ☒ No
Existing System Malfunctioning ☐ Yes ☒ No ☐ N/A

Pre-Treatment Units

- ☐ Bio-Clear ☐ Klargester
☒ Septic Tank ☐ Recirculating Sand Filter
☐ Other _____

of Bedrooms: n/a
Avg. Percolation Rate: 25 MPI Assigned
Gallons Per Day Flow: 3,000 equalized to 1.350
Minimum Sq. Ft. Rcq'd: 2,835
Sq. Ft. Proposed: 3,816

Central Water Available ☐ Yes ☒ No
(If yes, please state Utility Name: _____)

RECEIVED

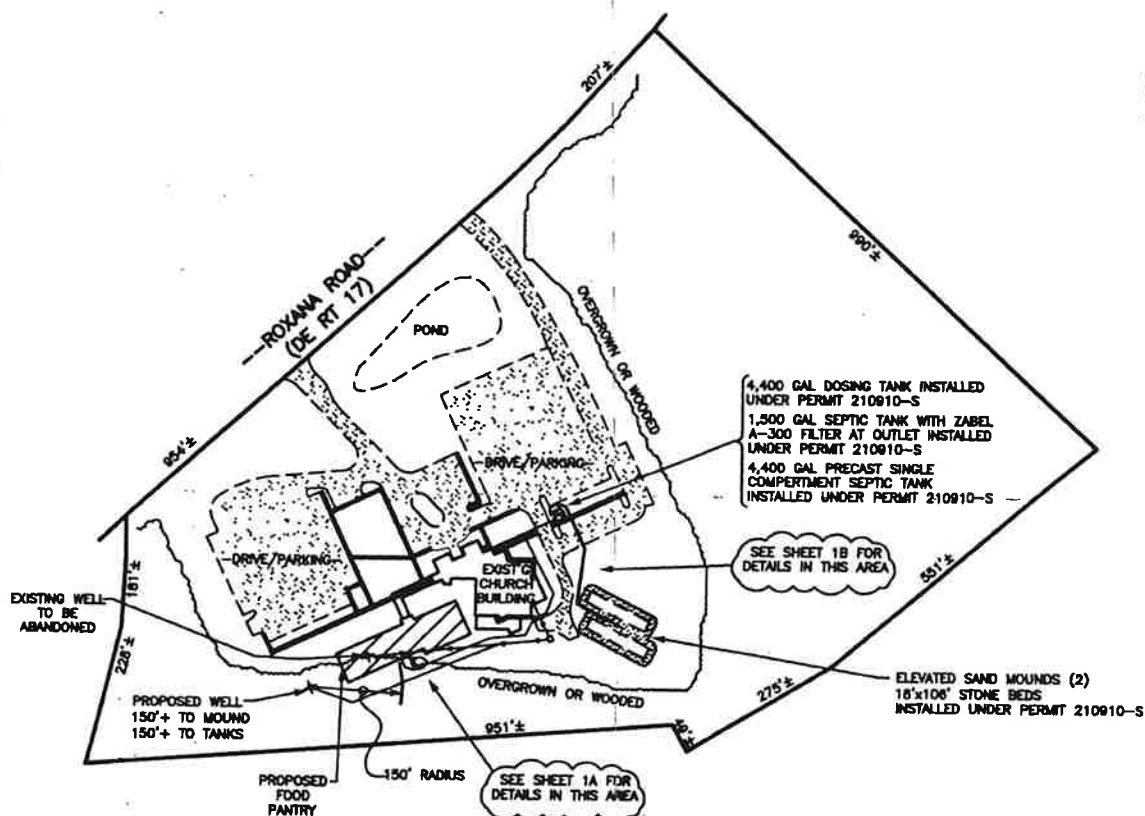
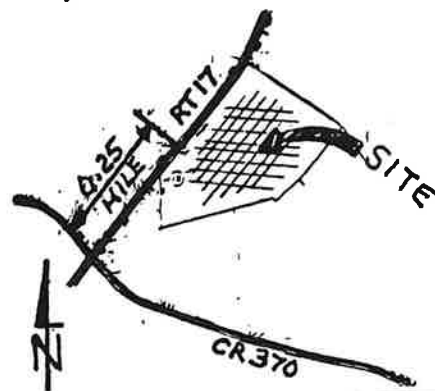
SEP 08 2025

DNREC
Division of Water

- SITE PLAN & CROSS SECTION -
(INDICATE DIRECTION OF NORTH & SCALE OF SITE PLAN)

— SEE SHEET 1 ATTACHED —
— FOR PLOT PLAN DETAILS —

Draw a general location map of project location
and give distance to nearest road junction.



OWNER'S / AUTHORIZED AGENT SIGNATURE

Bruce J. K. Lawrence
Property Owner/Agent

DATE: 8-25-2025

* A copy of this page must be submitted with both the septic and well completion reports.

GENERAL NOTES:

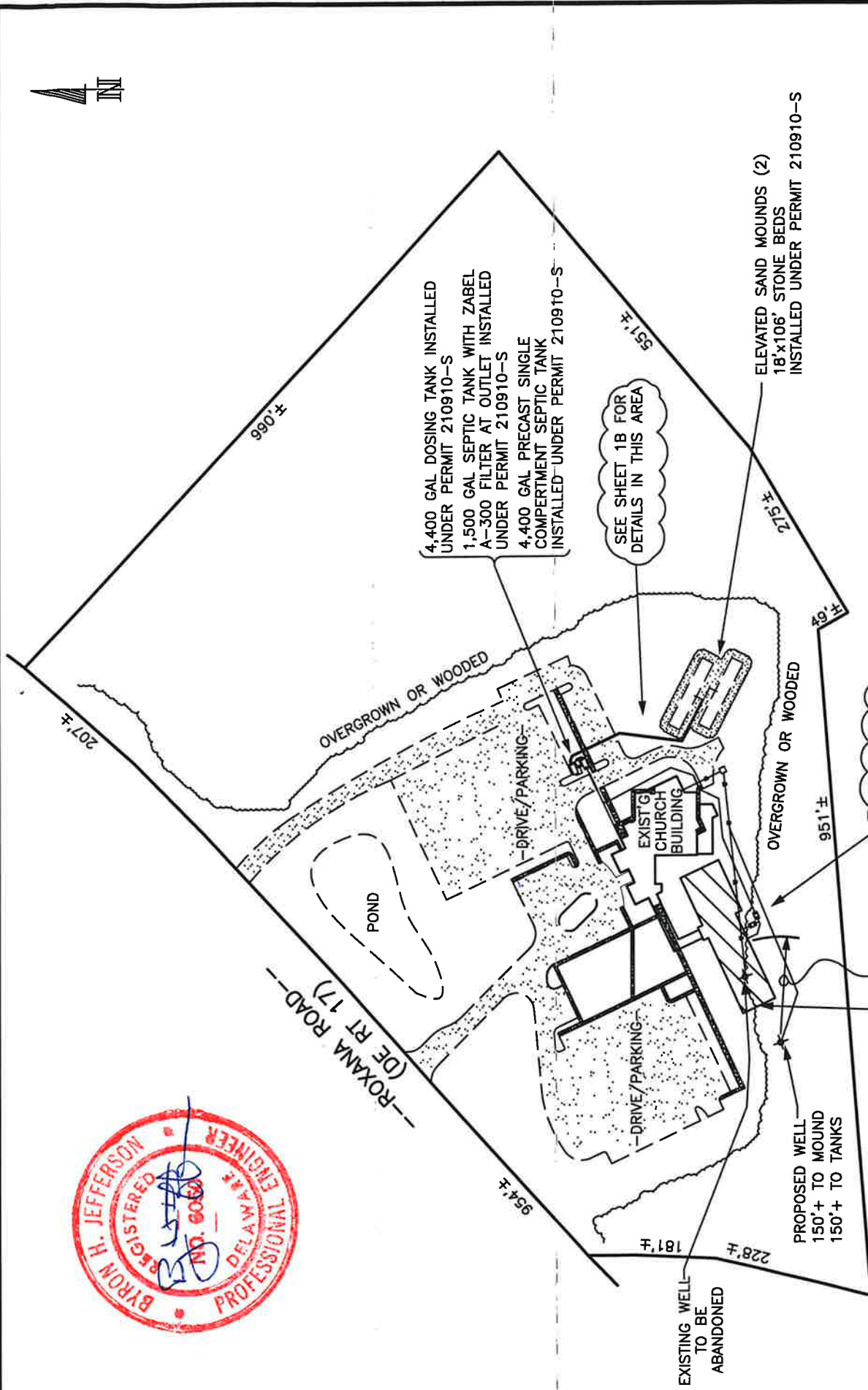
1. DESIGN DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.
2. THE CONTRACTOR SHALL LOCATE ALL BURIED UTILITIES PRIOR TO EXCAVATION. NOTIFY "MISS UTILITY" THREE (3) WORKING DAYS PRIOR TO EXCAVATION @ 1-800-282-8555. RELOCATE UTILITIES AS NECESSARY TO CLEAR ALL SEPTIC COMPONENTS. REPAIR ANY UTILITIES DAMAGED DURING CONSTRUCTION.
3. THIS PERMIT DOES NOT CONSTITUTE A PERMIT FOR CONSTRUCTION IN WETLANDS. IF SUCH CONSTRUCTION IS ANTICIPATED, OWNER SHOULD OBTAIN NECESSARY PERMITS FROM THE APPROPRIATE AGENCIES PRIOR TO CONSTRUCTION.
4. IT IS VERY IMPORTANT TO AVOID SOILS COMPACTION IN DISPOSAL AREAS. OWNER AND CONTRACTOR SHALL USE ALL MEANS NECESSARY TO PREVENT SOIL COMPACTION IN DISPOSAL AREAS, INCLUDING BUT NOT NECESSARILY LIMITED TO: ROPING OFF DISPOSAL AREAS TO PREVENT CONSTRUCTION OR VEHICULAR TRAFFIC, CONDUCTING ALL LAND CLEARING SO AS TO MINIMIZE SOILS DISTURBANCE, USE OF SUCH SEPTIC CONSTRUCTION METHODS AND EQUIPMENT AS NECESSARY TO AVOID DISPOSAL AREA SOILS COMPACTION, AVOID WORKING THE SOILS DURING PERIODS OF EXCESSIVE MOISTURE.
5. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL LAY-OUT ENTIRE SYSTEM ON SITE TO ENSURE THAT ALL COMPONENTS CAN BE INSTALLED IN ACCORDANCE WITH PERMIT CONDITIONS. SHOULD ANY SITE CHANGES OR PROBLEMS AFFECTING PERMIT CONDITIONS BE NOTED, INCLUDING BUT NOT LIMITED TO SOILS COMPACTION IN DISPOSAL AREAS, THE CONTRACTOR SHALL NOTIFY DNREC (302-739-9947 OR 856-4561) AND THE ENGINEER (BYRON JEFFERSON 302-422-9568) BEFORE PROCEEDING WITH CONSTRUCTION.
6. IF HIGH WATER CONDITIONS ARE ENCOUNTERED ON SITE DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR ADDITIONAL INSTRUCTIONS REGARDING TANK INSTALLATION TO PREVENT TANK LEAKAGE OR FLOTATION. PLACEMENT OF TANKS INTO WATER DEPTHS OF 30" OR MORE IS CAUSE FOR THIS NOTIFICATION. THIS APPLIES TO ALL TANKS.
7. ALL TANKS ARE TO BE RATED BY THE MANUFACTURER FOR ADEQUATE STRUCTURAL STRENGTH AT THE ACTUAL DEPTH OF INSTALLATION.
8. ALL TREES WITHIN 10' MIN OF DISPOSAL AREAS ARE TO BE REMOVED.
9. A DNREC LICENSED SITE EVALUATOR SHALL BE ON-SITE TO VERIFY SUITABILITY OF SOILS IN DISPOSAL AREA AFTER TREES HAVE BEEN REMOVED IN A WOODED SITE PRIOR TO CONSTRUCTION.
10. ALL ELECTRICAL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICIAN IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE - LATEST EDITION. BURIED ELECTRICAL CABLES SHALL BE RUN IN PVC CONDUIT.
11. THIS DESIGN LAYOUT IS BASED ON INFORMATION REPORTED IN THE SITE EVALUATION, STATEMENTS BY OWNER AND OTHER INTERESTED PARTIES, AND OUR OWN PRE-DESIGN SITE OBSERVATIONS AND MEASUREMENTS. ALL INFORMATION IS BELIEVED TO BE CORRECT AND ACCURATE, HOWEVER NO PROPERTY SURVEY, TITLE SEARCH, OR PROPERTY LINE STAKEOUT HAS BEEN PERFORMED AS PART OF THIS DESIGN WORK. THIS DESIGN MAY NO LONGER BE VALID IF SITE CONDITIONS OR LAYOUTS CHANGE.

► DENOTES A REVISED ITEM

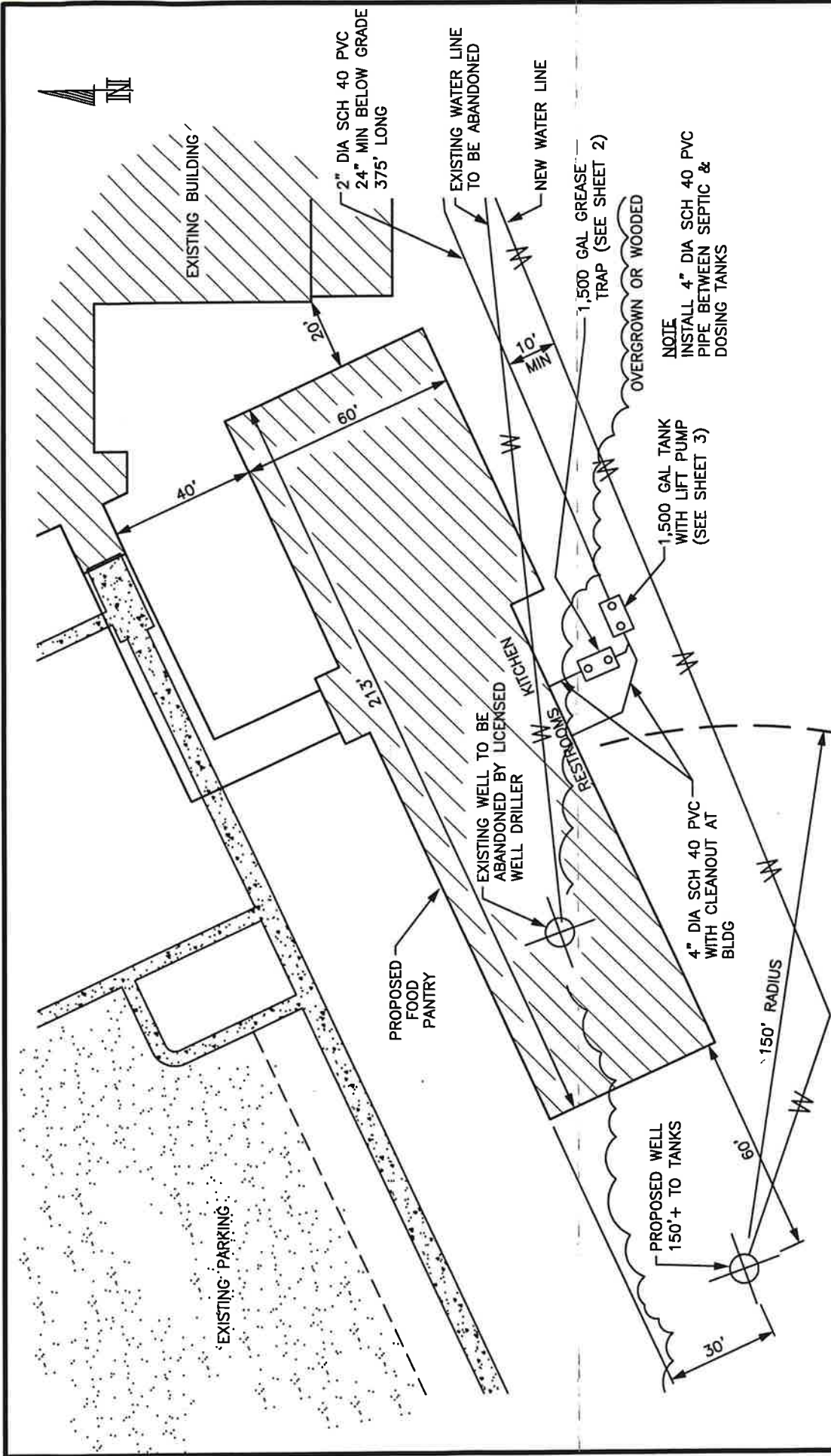


DRAWING INDEX		
SHEET NO.	REV. NO.	TITLE
1	0	SEPTIC PLOT PLAN
1A	0	PARTIAL PLOT PLAN
1B	0	PARTIAL PLOT PLAN
2	0	GREASE TRAP DETAIL
3	0	LIFT TANK DETAIL

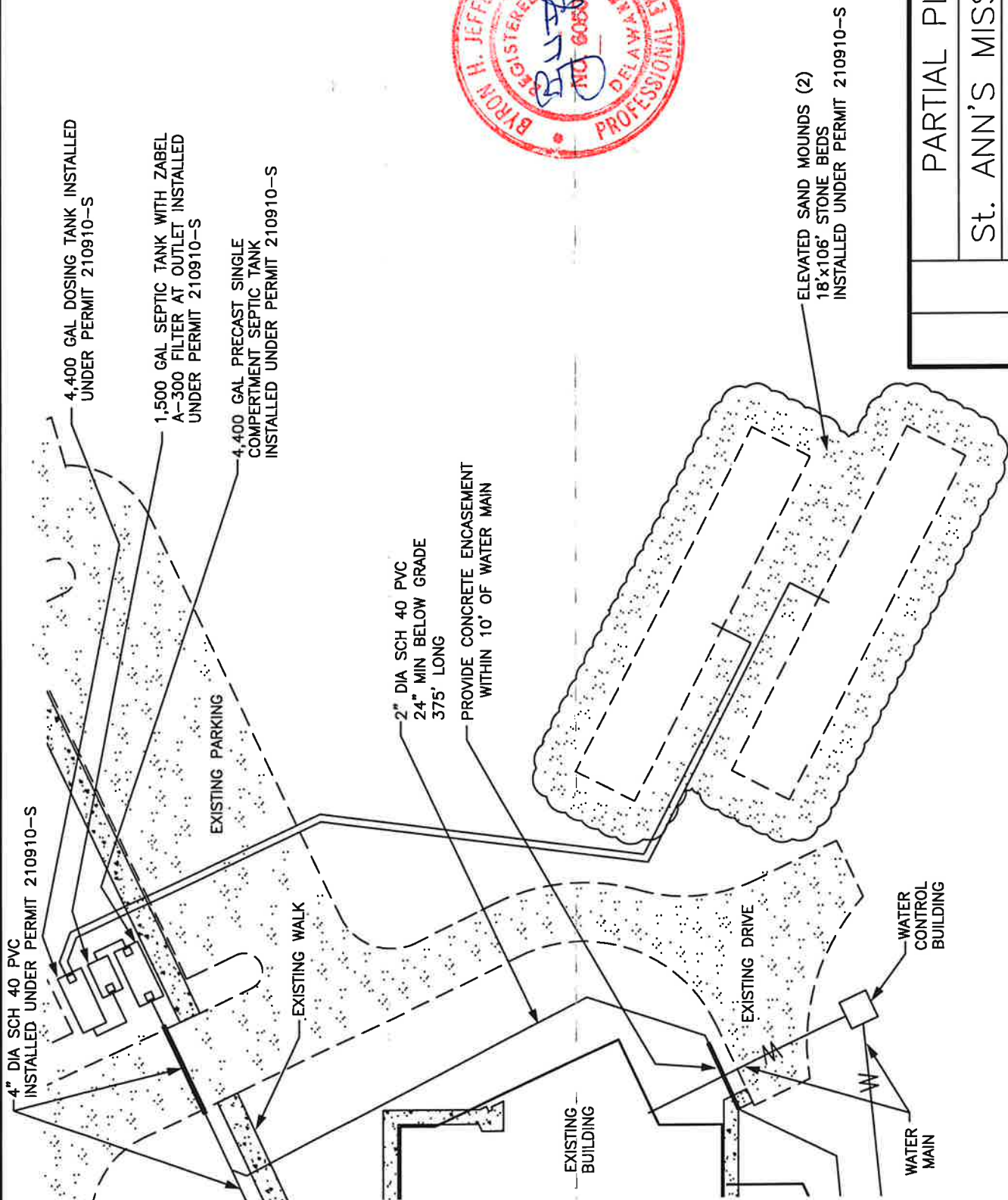
DRAWING INDEX & GENERAL NOTES		
St. ANN'S MISSION CHURCH		
	BYRON H. JEFFERSON P.O. BOX. 161 LINCOLN, DE 19960	
	DATE: 8/27/25	
	SCALE: NTS	
	(302) 422-9568	SHEET: 0



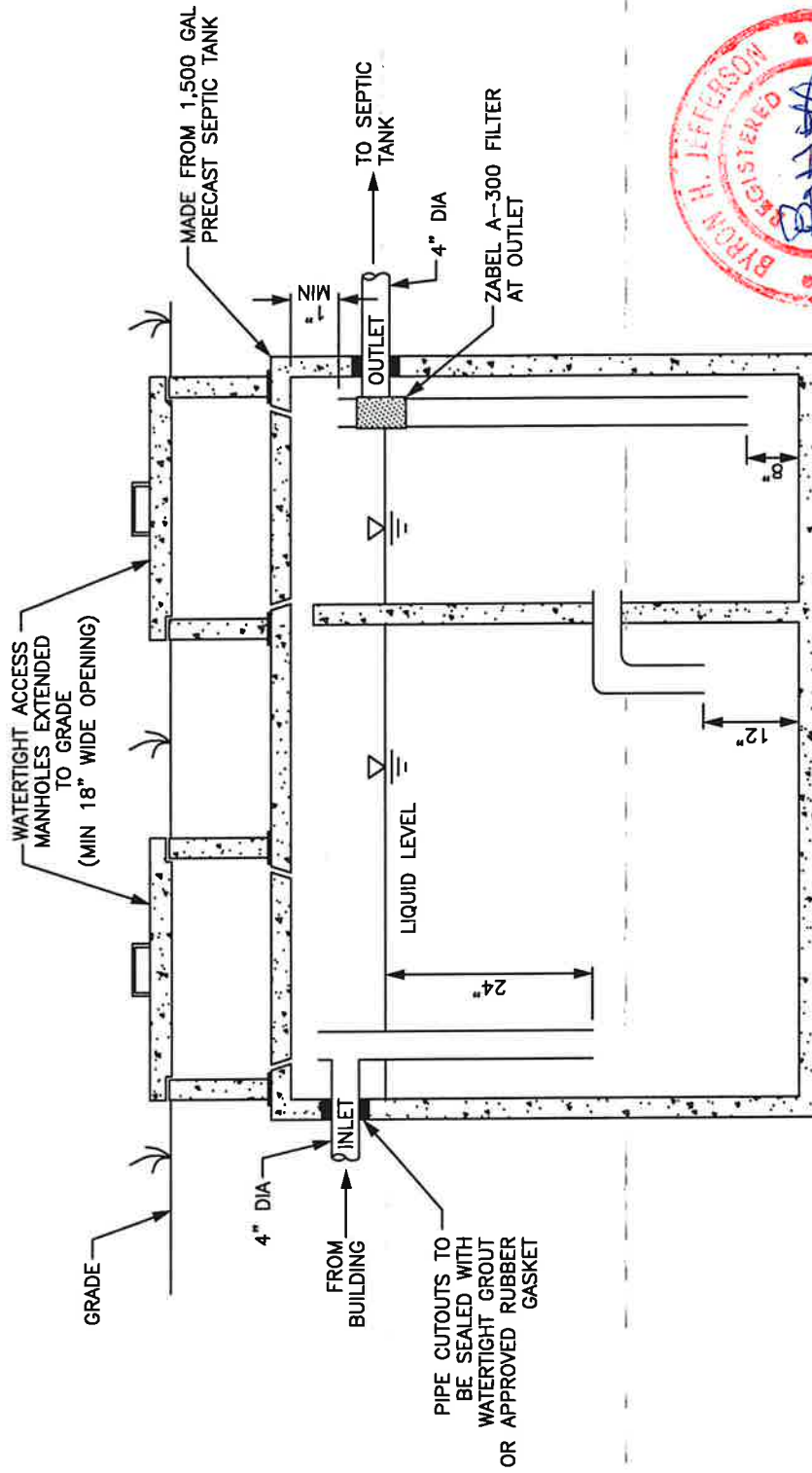
SEPTIC PLOT PLAN		
St. ANN'S MISSION CHURCH		
BYRON H. JEFFERSON P.O. BOX. 161 LINCOLN, DE 19960 (302) 422-9568	DATE: 8/27/25	SCALE: 1"=200'
		SHEET: 1



PARTIAL PLOT PLAN		St. ANN'S MISSION CHURCH	
BYRON H. JEFFERSON P.O. BOX. 161 LINCOLN, DE 19960 (302) 422-9568		DATE: 8/27/25 SCALE: 1"=40' SHEET: 1A	



PARTIAL PLOT PLAN	
St. ANN'S MISSION CHURCH	
BYRON H. JEFFERSON P.O. BOX. 161 LINCOLN, DE 19960 (302) 422-9568	DATE: 8/27/25 SCALE: 1"=40' SHEET: 1B



SECTION

NOTES

ALL PRECAST TANKS SHALL BE RATED BY MANUFACTURER FOR ADEQUATE STRUCTURAL STRENGTH AT THE ACTUAL DEPTH OF INSTALLATION. BURIED TANKS ARE NOT TO BE SUBJECTED TO VEHICLE LOADS.

MANWAY ACCESSES TO GRADE ARE TO BE PRECAST CONCRETE OR APPROVED PLASTIC RISERS BY SAME MANUFACTURER AS TANK AND RATED TO USE WITH THE TANK AT THE ACTUAL DEPTH OF INSTALLATION. RISERS SHALL HAVE MANHOLE STEPS (OR ATTACHED LADDER) AND PRECAST COVER. MINIMUM INSIDE DIMENSIONS TO BE 24" x 24" MINIMUM. STEPS OR LADDER NOT REQUIRED FOR RISERS LESS THAN 24" DEEP.

GREASE TRAP

St. ANN'S MISSION CHURCH

BYRON H. JEFFERSON
P.O. BOX. 161
LINCOLN, DE 19960

DATE: 8/27/25

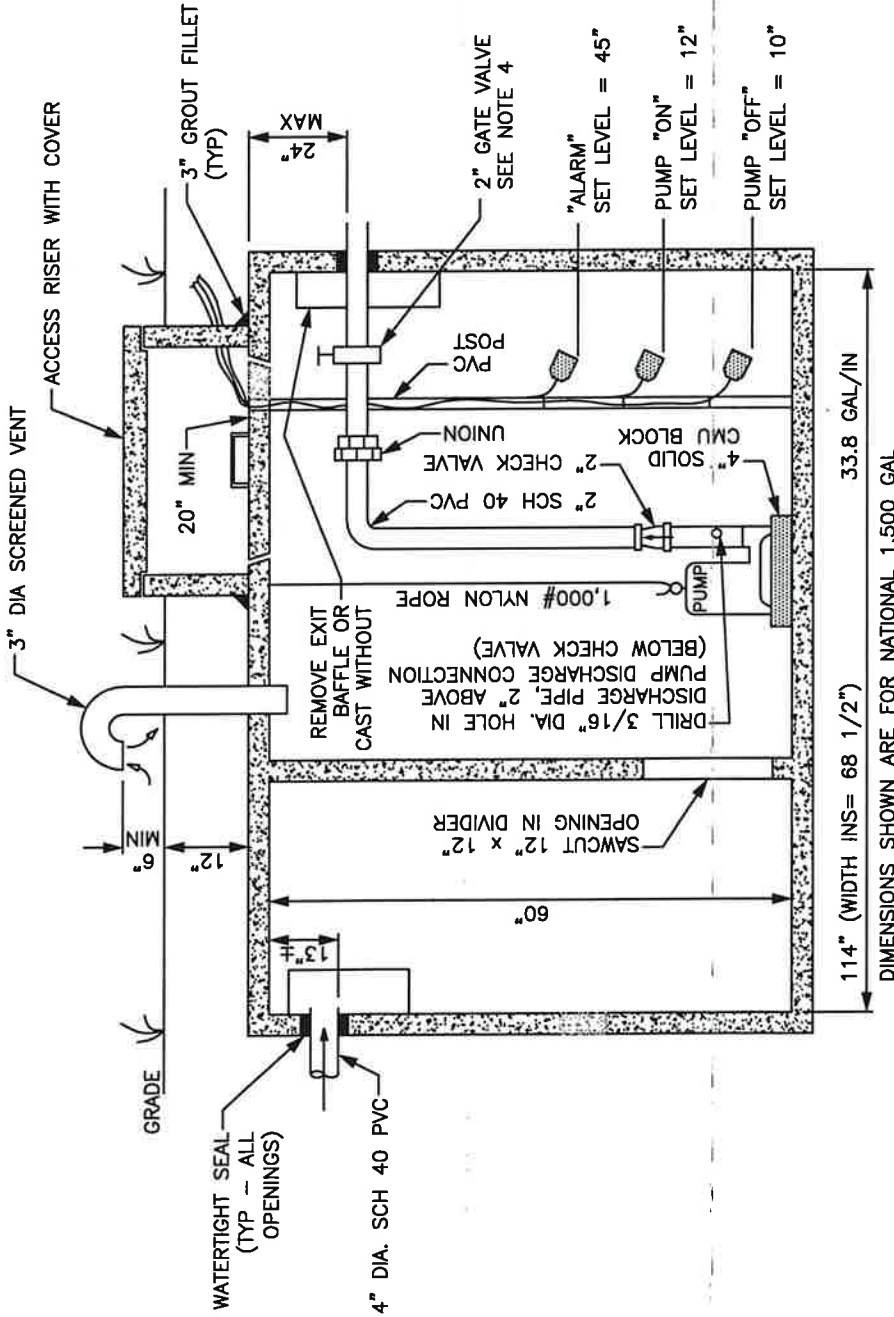
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SHEET: 2

(302) 422-9568

NOTES:

1. ALL ELECTRICAL CONNECTIONS INSIDE TANK TO BE EXPLOSION PROOF, CORROSION RESISTANT AND WATERPROOF
2. ELECTRICAL INSTALLATIONS SHALL MEET ALL REQUIREMENTS OF NEC, LATEST EDITION
3. CONTACT ENGINEER FOR CHECK-OUT OF SYSTEM INSTALLATION AND OPERATION PRIOR TO PLACING THE DOSING TANK IN OPERATION
4. ADJUST GATE VALVE FOR 25 GPM FLOW (1" DROP IN TANK OVER 2 MIN 49 SECONDS)
5. EQUIPMENT:
 FLOAT SWITCHES — MERCURY TUBE TYPE SEALED IN FLOAT BALL AND RATED FOR VOLTAGE AND AMPERAGE OF SERVICE;
 FLOATS ARE NOT TO BE LOCATED DIRECTLY BELOW TANK INLET ENCLOSURES — TO BE RATED FOR MOUNTING LOCATION;
 NEMA-1 FOR INSIDE USE OR NEMA-3R FOR OUTSIDE USE
 HIGH LEVEL ALARM — TO OPERATE ON SEPARATE 115 VOLT AC CIRCUIT FROM PUMP. ALARM TO ACTIVATE BOTH RED-LITE AND BELL OR BUZZER
 PUMP — GOULDS MODEL 3886 OR EQUAL, 1/2 HP, 115/230 VOLT AC, 1 PHASE, 25 GPM AT 23' SUBMERSIBLE SEWAGE
 SET TIME DELAY RELAY IN RHOMBUS PANEL FOR 2 MINUTES RUNTIME "ON" & 30 MINUTES "OFF" BETWEEN CYCLES



ELEVATION VIEW

PUMP VOL/ CYCLE = 68 GAL BY FLOATS
 50 GAL BY TIMER CONTROL



LIFT TANK DETAIL

St. ANN'S MISSION CHURCH

BYRON H. JEFFERSON
 P.O. BOX. 161
 LINCOLN, DE 19960

DATE: 8/27/25

SCALE: NTS

SHEET: 3

(302) 422-9568

<u>PIPE FLOW</u>			<u>St Ann's</u>
Discharge flow =	25	GPM =	
Hazen-Williams C =		120	
Equiv Length in Lift Tank (ft)=	35		
Dia (DT) =	2	inches	
Hf (DT) =	0.7		
Force Main - friction losses			
Dia =	2	inches	
Length =	390	feet	
Hf 1 =	8.38		
Total elevation head =		2	feet =
Pressure at outlet =		2	feet
		ft.	gpm
Total Head req'd at pump =		13.1	25.0

MODELS

Order No.	HP	Phase	Volts	Max Amps.	RPM	Wt. (lbs.)	Heaters
WS0311B	1/2	1	115	9.8	1750	63	N/A
WS0318B			208	5.5			
WS0312B			230	4.9			
WS0511B	3/4	1	115	14.5		65	K34 K32 K23
WS0518B			208	8.0			
WS0512B			230	7.3			
WS0538B	1	3	200	3.8			
WS0532B			230	3.3			
WS0534B			460	1.7			
WS0718B	1 1/2	1	208	11.0		65	N/A K34 K33 K23
WS0712B			230	9.4			
WS0738B	2	3	200	4.1			
WS0732B			230	3.6			
WS0734B			460	1.8			
WS1018B	2	1	208	14.0			
WS1012B			230	12.3			
WS1038B	3	3	200	6.2			
WS1032B			230	5.8			
WS1034B			460	2.9			

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Sewage systems
- Dewatering/Effluent
- Water transfer

SPECIFICATIONS

Pump:

- Solids handling capabilities: 2" maximum.
- Discharge size: 2" NPT.
- Capacities: up to 185 GPM.
- Total heads: up to 38 feet TDH.
- Temperature: 104°F (40°C) continuous 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

FEATURES

- **Impeller:** Cast iron, semi-open, dynamically balanced, non-clog with pump out vanes for mechanical seal protection. Optional Silicon bronze impeller available.
- **Casing:** Cast iron volute type for maximum efficiency. Designed for easy installation on A10-20 slide rail.
- **Mechanical Seal: SILICON CARBIDE VS. SILICON CARBIDE** sealing faces for superior abrasive resistance, stainless steel metal parts, BUNA-N elastomers.
- **Shaft:** Corrosion-resistant stainless steel. Threaded design. Locknut on three phase models to guard against component damage on accidental reverse rotation.
- **Fasteners:** 300 series stainless steel.
- Capable of running dry without damage to components.
- Designed for continuous operation, when fully submerged.

MOTORS

- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer. All ratings are within the working limits of the motor.

Class B insulation. Single phase (60 Hz):

- All single phase models feature capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- 1/2 and 3/4 HP - 16/3 SJTOW with 115V or 230V three prong plug.
- 1 and 1 1/2 HP - 14/3 STOW with bare leads.

Three phase (60 Hz):

- Overload protection must be provided in starter unit.
- 1 1/2-1 HP - 14/4 STOW with bare leads.

- **Bearings:** Upper and lower heavy duty ball bearing construction.

- **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.

- **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.

- **Motor Cover O-ring:** Assures positive sealing against contaminants and oil leakage.

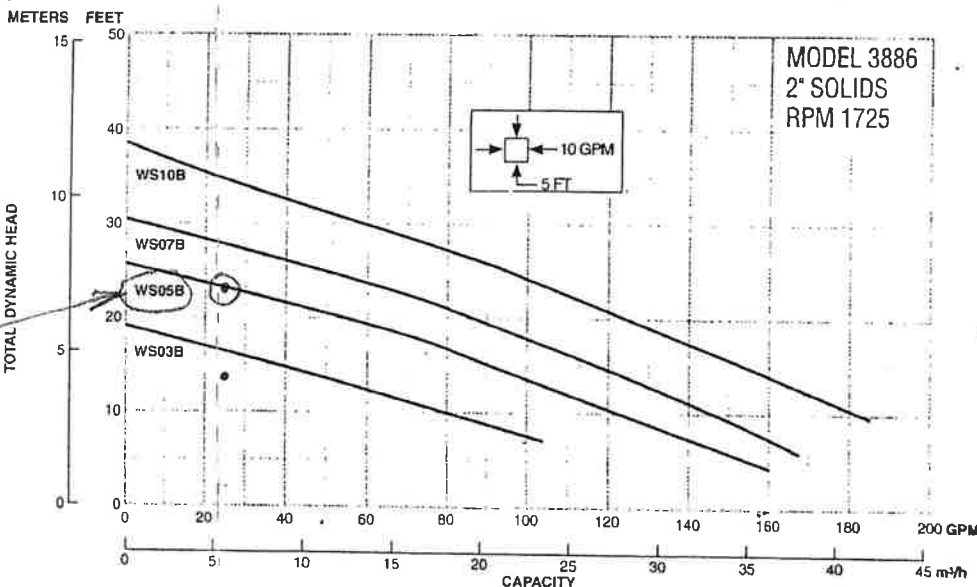
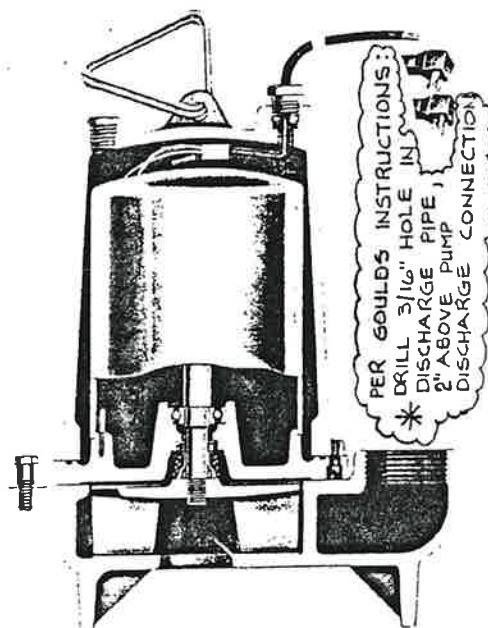
- Consult factory for information on 575 V models.

Submersible Sewage Pump

MODEL

3886

1/2 HP



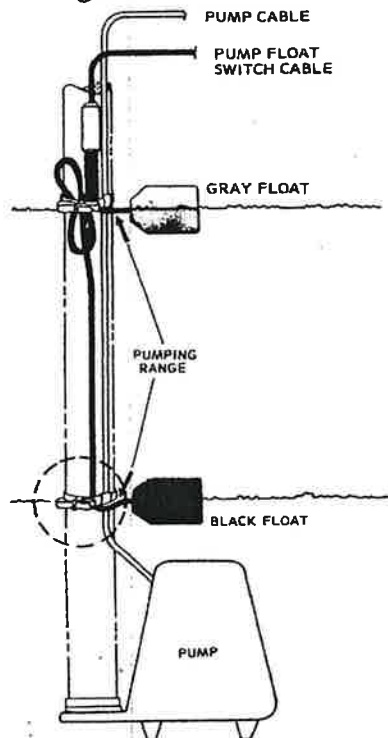
Goulds Pumps

TANK ALERT® II PLUS INSTALLATION OPTIONS

DOUBLE FLOAT PUMP SWITCH

- Very accurately measures liquids in a wide pump range: 1" (2.54 cm) - 48" (121.92 cm).
- May be used with large or small pump chambers.
- Not sensitive to turbulence.

Figure A



DESCRIPTION

The Double Float pump switch consists of two floats ("on" float and "off" float), two cables, and two releasable mounting straps. The sealed floats contain heavy-duty mercury tilt switches with a holding relay sealed inside one float.

ELECTRICAL: 120V MODEL: 120V 60 Hz 1 HP-single phase
230V MODEL: 230V 60 Hz 2 HP-single phase

WARNING:

Connect 120V Double Float controls to 120 Volts only.
Connect 230V Double Float controls to 230 Volts only.

When ordering Double Float pump switch, specify 120V or 230V Model.

INSTALLATION

1. Decide the pumping range for your installation. (See Figure A). The distance between the float straps is the pumping range. Securely strap the float cables to the discharge pipe for the pump range you desire. The gray float must be the top float.
2. Allow the pump to cycle once to check your installation. (Float straps are releasable which permits readjustment.)

U.S. Patent Numbers 4262216 and 4291261

FOR
ALARM

**Mercury
Float
Switch**



A2-3

- Mercury Fluid Contacts
- Normally Open Design
- 150°F (65°C) Max. Temp.
- Includes:
 - Polyurethane Foam Float
 - 15' SJO, Neoprene Cord
 - Lead Weight and Mounting Strap
- Suitable for Pilot Control, Duty up to 230V Max.

CHECK VALVES

PLASTIC CHECK VALVES

- Compression Seal Connection for Easy Installation
- Swing Design Flapper Prevents Clogging
- Available for Pipe Size 1 1/4", 2", 3"

Pipe Size

Order No.

1 1/4"

A9-12P

2"

A9-2P

3"

A9-3P



MODEL TD Control Panel

Single phase, simplex timed dosing pump control.

The Model TD control panel provides a reliable means of controlling one single phase pump in onsite septic installations. A programmable timer activates a magnetic motor contactor to turn the pump on and off. A low level cutout float overrides the timer to prevent the pump from running dry. An alarm float activates the audio/visual alarm system indicating a high liquid level. Common applications include sand filter systems, pressure distribution systems, mound systems, or any application requiring a timed dose.

PANEL COMPONENTS

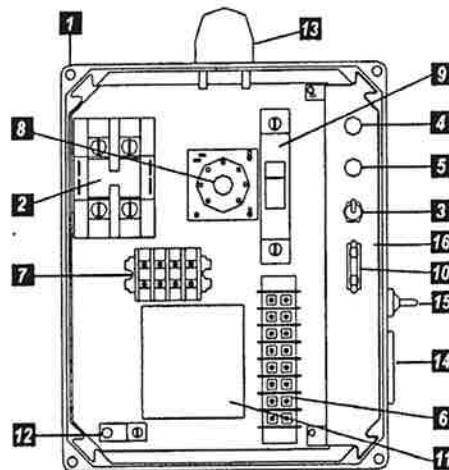
1. Enclosure measures 10 x 8 x 4 inches (25.40 x 20.32 x 10.16 cm) NEMA 4X (ultraviolet stabilized thermoplastic with removable flanges for outdoor or indoor use).
2. Magnetic Motor Contactor controls pump by switching electrical lines.
3. HOA Switch for manual pump control.
4. Control Fuse
5. Alarm Fuse
6. Float Switch Terminal Block
7. Incoming Power Terminal Block
8. Programmable Timer with separate variable controls allows for setting the on and off times from .05 seconds to 30 hours.
9. Circuit Breaker provides pump disconnect and branch circuit protection.
10. Spare Fuse
11. Backplate Label includes diagram of float, pump, and power connections.
12. Ground Lug

NOTE: Timer Installation Label and Pump/Float Switch Installation Specification Label are located inside the panel on enclosure cover.

STANDARD ALARM PACKAGE

13. Red Alarm Beacon provides 360° visual check of alarm condition.
14. Alarm Horn provides audio warning of alarm condition (83 to 85 decibel rating).
15. Exterior Alarm Test/Normal/Silence Switch allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition is cleared.
16. Horn Silence Relay (mounted under bracket).

NOTE: other options available.



Model Shown TD1W914X

FEATURES

- Entire control system (panel and switches) is UL Listed to meet and/or exceed industry safety standards
- Dual safety certification for the United States and Canada
- Standard package includes one 20' SJE PumpMaster® pump switch and one 20' Sensor Float® control switch
- Complete with step-by-step installation instructions
- Three-year limited warranty



Timer to be set for **2** minute run time ("ON")
at $\frac{1}{2}$ hour intervals ("OFF") daily.

SEE BACKSIDE FOR COMPLETE LISTING OF AVAILABLE OPTIONS.

SJE Rhombus
CONTROLS

PO Box 1708, Detroit Lakes, MN 56502
1-888-DIAL-SJE • 1-218-847-1317
1-218-847-4617 Fax
email: sje@sjerhombus.com
www.sjerhombus.com