

Permit Number:

281073

**APPLICATION - PERMIT
ON-SITE WASTEWATER SYSTEM**

RECEIVED

06/20/2025

GROUNDWATER



(Please Type or Print Legibly)

OWNER'S NAME: Restoration Worship Center, Inc.

PHONE: 302-344-6849

ADDRESS: 201 North Railroad Road, Georgetown, DE 19947

PROJECT LOCATION: South Side of Route 9, 1 mile west of Route 113

TAX/MAP #: 1-35-19, 44.01

APPLICATION

DNREC

PREPARER: KENNETH R. CHRISTENBURY, P.E.

LICENSE #: 4137

PREPARER'S ADDRESS: AXIOM ENGINEERING, 18 CHESTNUT STREET, GEORGETOWN, DE 19947

PHONE: 302-855-0810

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

Preparer's Signature: [Signature]

Date: 6/20/25

By signing this permit application, the preparer further certifies they were physically present at the site.

-SEPTIC DESIGN CRITERIA-

(Please check all boxes that apply)

System Type: (CF = Cap & Fill / FD = Full Depth)

- | | |
|---|---|
| <input type="checkbox"/> Gravity (FD) | <input type="checkbox"/> Permanent Holding Tank |
| <input type="checkbox"/> Gravity (CF) | <input checked="" type="checkbox"/> Elevated Sand Mound |
| <input type="checkbox"/> Pressure Dose (FD) | <input type="checkbox"/> Wisconsin At-Grade |
| <input type="checkbox"/> Pressure Dose (CF) | <input type="checkbox"/> Subsurface Micro Irrigation |
| <input type="checkbox"/> Low Pressure Pipe (FD) | <input type="checkbox"/> Peat Bio- Filter |
| <input type="checkbox"/> Low Pressure Pipe (CF) | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> Temporary Holding Tank | |

☒ Bed or ☐ Trench

☐ Gravelless Chamber ☐ Stone/Gravel ☐ Tire Chips
Sand-lined ☐ Yes ☒ No

Existing System Malfunctioning ☐ Yes ☐ No ☒ N/A

Pre-Treatment Units

- ☒ Septic Tank
☒ Other Effluent Filter

Type of Construction:

- ☐ Replacement
☒ New Construction
☐ Component Replacement
Component: _____
☐ Repair to Existing System
Reason: _____

☐ Authorization to Use Existing System

Permit #: _____
Present Condition: _____
Structure to be connected: _____

of Bedrooms: _____

Avg. Percolation Rate: 75 mpi

Gallons Per Day Flow: 686 Equalized

Minimum Sq. Ft. Rcq'd: 2495

Sq. Ft. Proposed: 2500

Central Water Available ☐ Yes ☒ No

(If yes, please state Utility Name: _____)

PAID

\$ 325.00 06/20/2025

ALL KNOWN WELLS WITHIN 150' ARE SHOWN, WELL ARCS ARE 100' UNLESS NOTED

SCALE: 1" = 100'

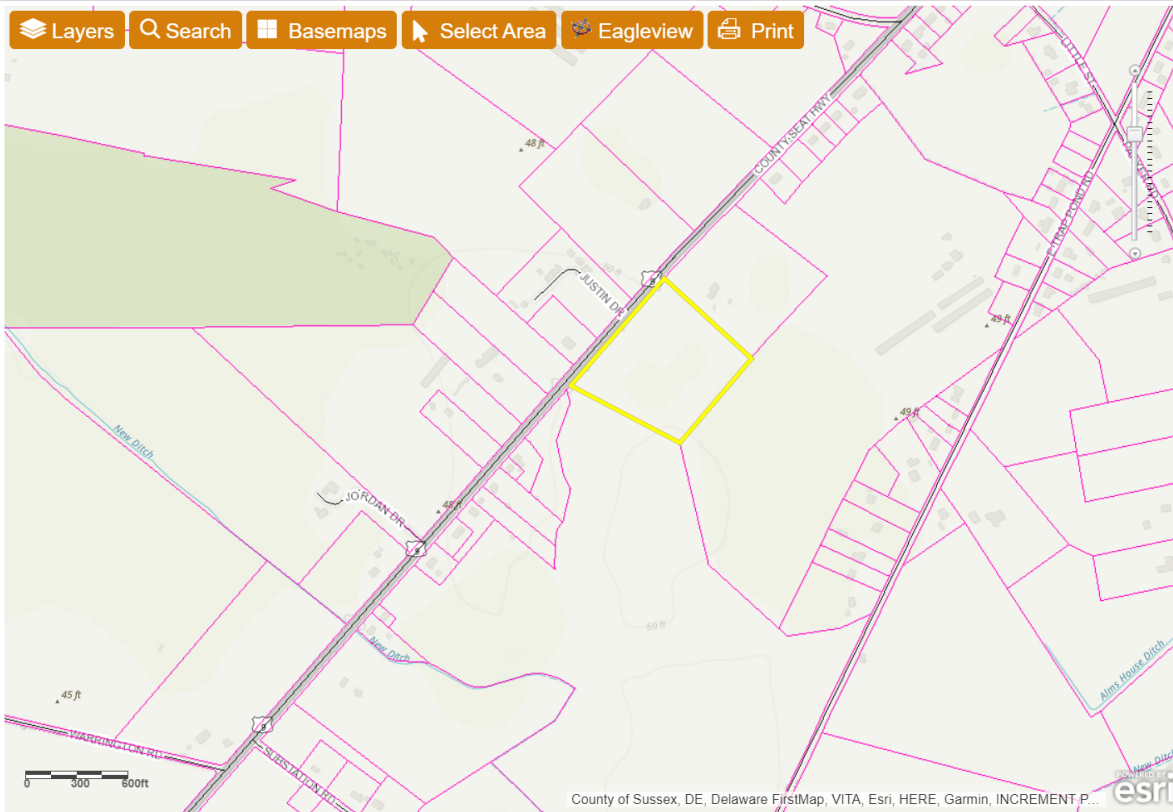
THIS IS NOT A SURVEY, NOR IS IT TO BE CONSTRUED AS A SURVEY. DESIGNER WILL VERIFY ALL FEATURES SHOWN ON THIS PLAT.

(APPROXIMATELY 11.37 ACRES)

CERTIFIED PROFESSIONAL SOIL SCIENTIST

JOB #: 11040

Layers Search Basemaps Select Area Eagleview Print



Eagleview Search Results

Selected Features:

Parcels (1)

▼ 1) 135-19.00-44.01

Zoom

BOOK	2382
PAGE	59
FULLNAME	RESTORATION WORSHIP CENTER INC
MAILINGADDRESS	PO BOX 768
CITY	GEORGETOWN
STATE	DE
DESCRIPTION	SE/SD RT 9
LUC	999
MUNI	00
CAP	0
APRBLDG	0
APRLAND	1600
PINWASSEMENTUNIT	135-19.00-44.01
PIN	135-19.00-44.01
ZIPCODE	19947
FRONTFOOT	0
DEPTH	0
FIRE	77

⏮ ⏪ ⏴ ⏵ ⏭ ⏮

Selected Features (1)

Clear Selected

NOTES:

1. THE PROPOSED ENTRANCE IS LOCATED ON THE SOUTH SIDE OF RT. 9 (COUNTY SEAT HIGHWAY) APPROXIMATELY 2,362' WEST OF SUSSEX COUNTY ROAD 446 (ASBURY ROAD), AND APPROXIMATELY 3,187' EAST OF SUBSTATION ROAD.
2. INTERNAL DRIVEWAYS ARE TO REMAIN PRIVATE AND ARE TO BE CONSTRUCTED IN ACCORDANCE WITH SUSSEX COUNTY REGULATIONS.
3. MAINTENANCE OF THE PAVED AREAS WITHIN THIS PROJECT WILL BE THE RESPONSIBILITY OF THE OWNER. THE STATE AND SUSSEX COUNTY ASSUMES NO RESPONSIBILITY FOR FUTURE MAINTENANCE OF THE DRIVEWAYS.
4. MAINTENANCE OF THE STORM WATER MANAGEMENT AREA WILL BE THE RESPONSIBILITY OF THE OWNER/DEVELOPER.
5. WASTEWATER DISPOSAL SHALL BE PROVIDED BY A DNREC APPROVED ON-SITE WASTEWATER DISPOSAL SYSTEM.
6. SITE TO BE SERVED BY AN ON-SITE WELL.
7. ALL FIRE LANES, FIRE HYDRANTS AND FIRE DEPARTMENT CONNECTIONS SHALL BE MARKED IN ACCORDANCE WITH THE DELAWARE STATE FIRE PREVENTION REGULATIONS.
8. THE BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN ON THIS PLAT WAS TAKEN FROM A FIELD SURVEY PREPARED BY AXIOM ENGINEERING, LLC. HORIZONTAL CONTROL IS REFERENCED TO NAD '83 STATE PLANE GRID COORDINATES, AND ELEVATIONS ARE REFERENCED TO NGVD 1929, TO FACILITATE THE POSSIBILITY OF A FUTURE CONNECTION TO THE TOWN OF GEORGETOWN SANITARY SEWER SYSTEM.
9. THERE ARE NO WETLANDS LOCATED ON SITE.
10. THIS SITE IS LOCATED IN A ZONE X (UNSHADED) BASED ON THE FEMA FLOOD INSURANCE RATE MAP NUMBER 10005C0300L, MAP REVISED JUNE 20, 2018, AND IS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.

N/F THOMAS P. BATY, JR.
TM 135-19-46.01
DB 3467 PG 131

N/F MASSEY FARMS INC.
TM 135-19-43

BENCHMARK
IRON PIPE FOUND
NAD'83 STATE PLANE GRID
NORTHING = 244812.30 N
EASTING = 659691.79 W
NAVD'88 ELEV = 48.93

BENCHMARK
IRON PIPE FOUND
NAD'83 STATE PLANE GRID
NORTHING = 244664.76 N
EASTING = 658627.56 W
NAVD'88 ELEV = 46.92

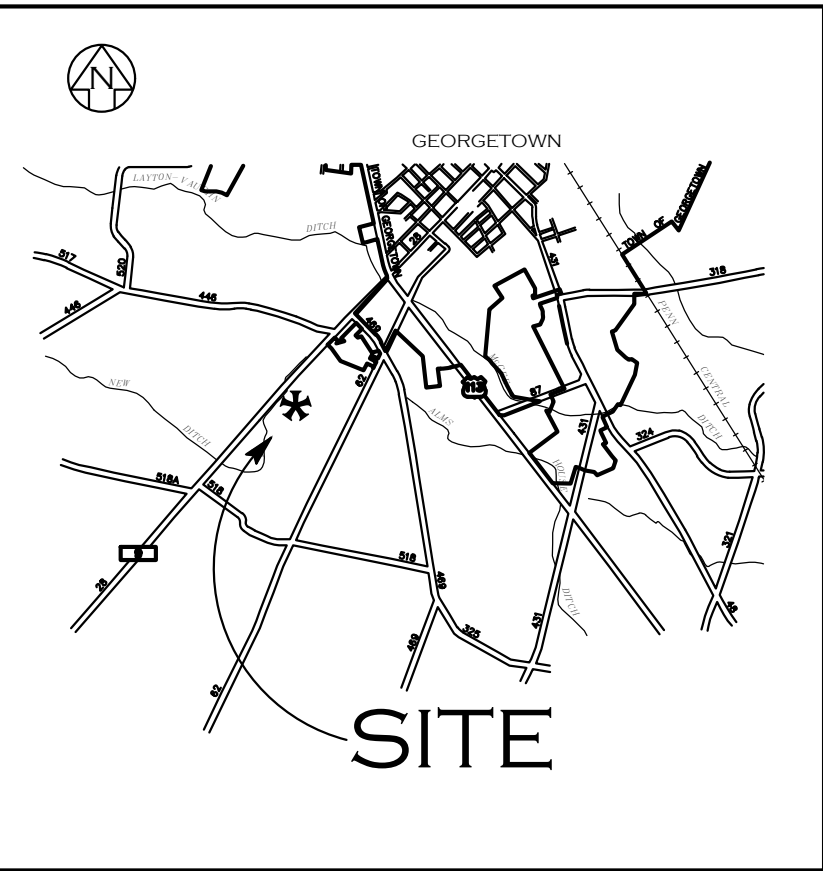
PROPOSED STORMWATER
MANAGEMENT AREA

PROPOSED
WELL

N/F BOOKER STREET
CHURCH OF GOD, INC.
TM 135-19-44
DB 3352/PAGE 345

SITE DATA:

TOTAL SITE AREA	11.46± ACRES
DELDOT DEDICATION (PB 64, PG 20)	0.09± ACRES
RESIDUAL AREA	11.37± ACRES
DEED REFERENCE	DB 2382, PG 59
CURRENT ZONING	AR-1
PROPOSED ZONING	AR-1
PROPOSED USE	300 SEAT CHURCH DAYCARE (61 CHILDREN CAPACITY) 13 STAFF
PROPOSED CONSTRUCTION TYPE	IBC 2003 - TYPE V B
PROPOSED BUILDING HEIGHT	42' MAX.
PROPOSED BUILDING AREA	7,936± SQ. FT.
PROPOSED PAVED AREA	39,745± SQ. FT.
OPEN SPACE (INCLUDES: LAND-SCAPED, UNDISTURBED, SEPTIC AND SWM AREAS)	451,757± SQ. FT.
PARKING SPACES REQUIRED	90
PARKING SPACES PROVIDED	90
BUILDING SETBACKS	FRONT 40' SIDE 15' REAR 20'

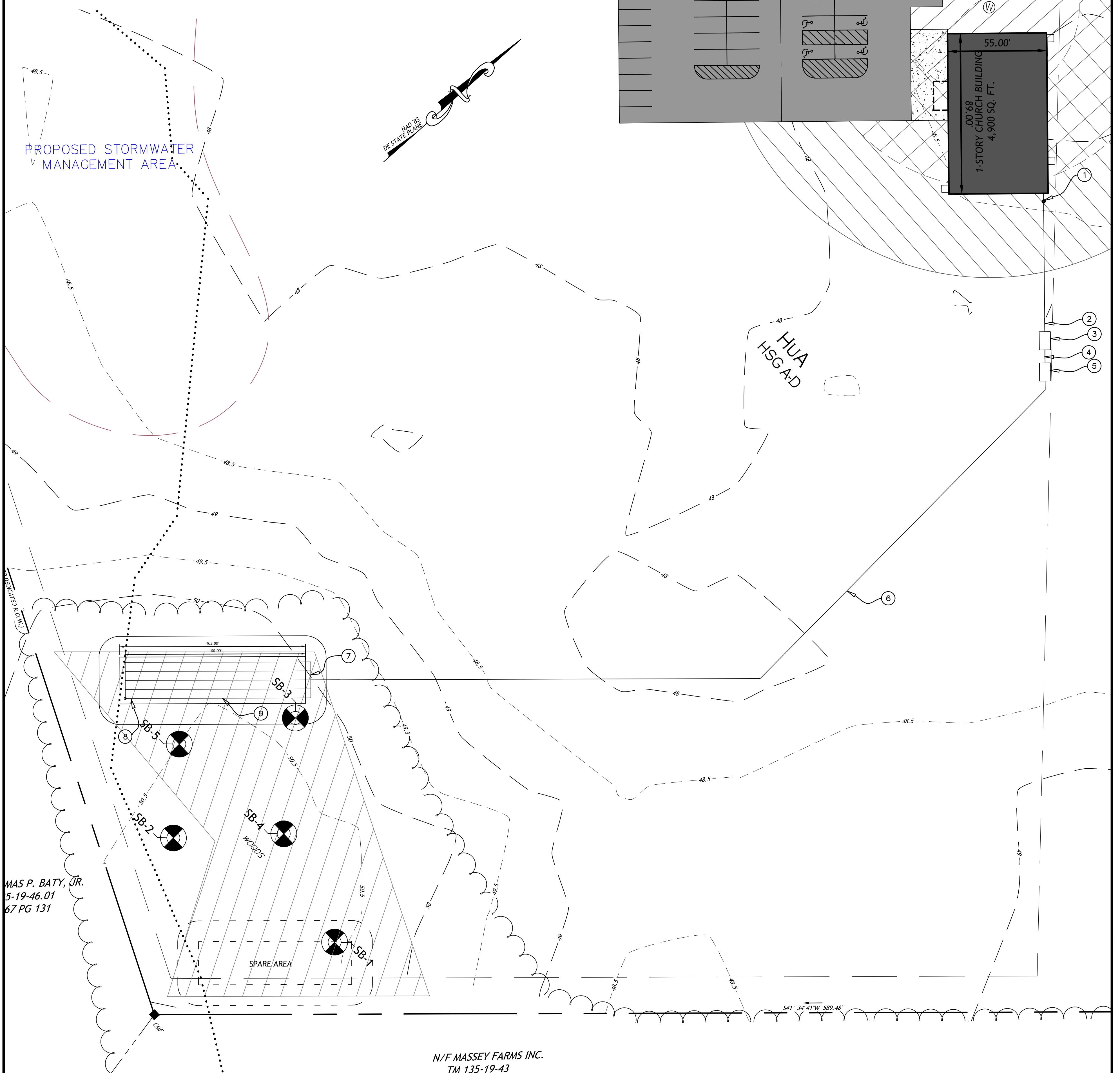
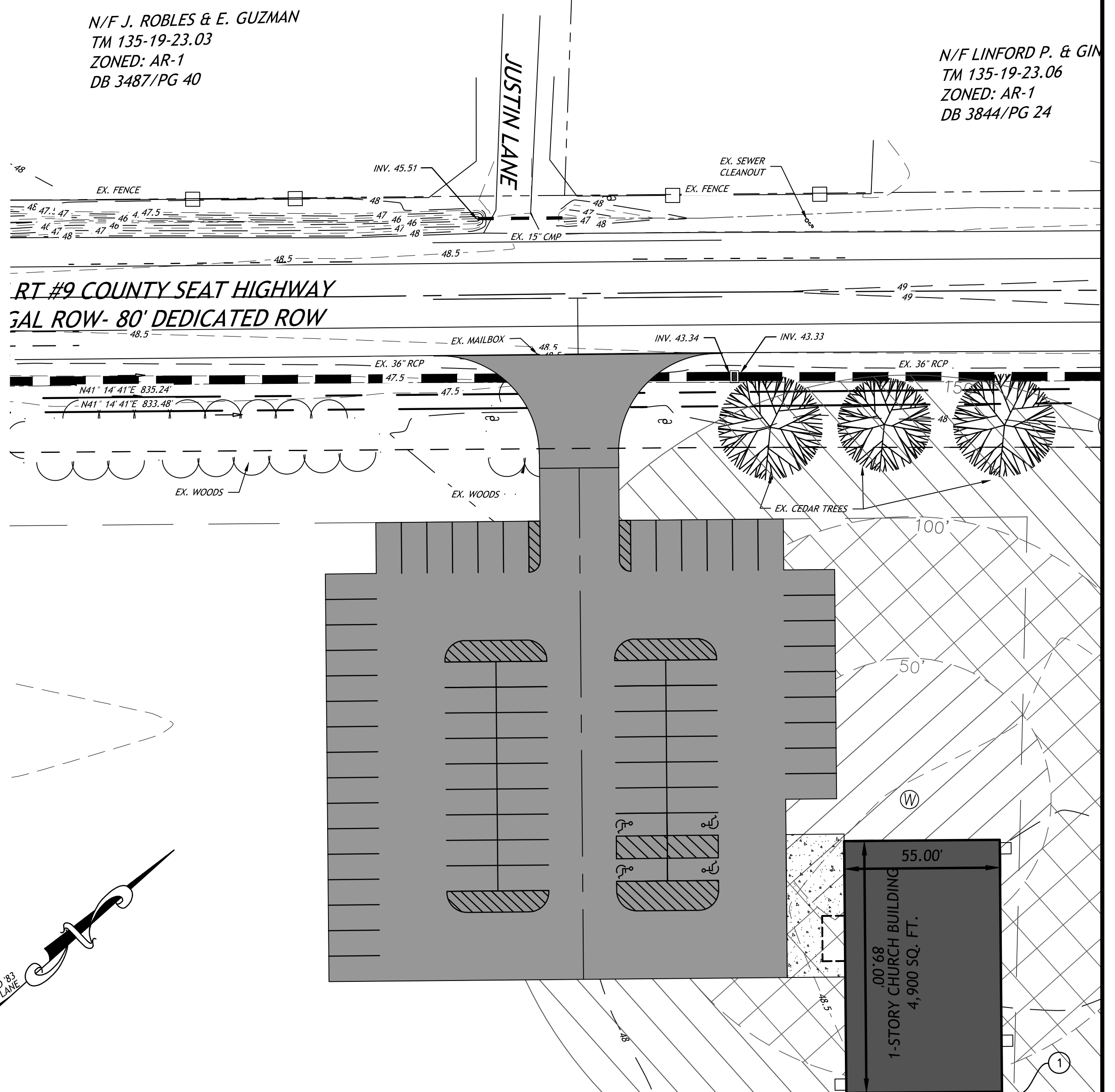


VICINITY MAP SCALE: 1"=1 MILE

PROJECT NO: 0162-1901		DRAWING: WW-1		SHEET: 1 OF 3	
ENGINEER: DESIGNER: DRAFTER: CHECKED BY: DATE: TAX MAP:		KRC KRC KRC KRC 6/18/2025 135-19-44.01		10' 50' 100' 200' 24" X 36" 1 inch = 50 ft. 11" X 17" 1 inch = 100 ft.	
AUTHORIZED AGENT/ OWNER SIGNATURE		DATE		6/18/25	
SITING PLAN		ON-SITE WASTEWATER DISPOSAL SYSTEM RESTORATION WORSHIP CENTER U.S. RT 9 - SC R 028		GEORGETOWN HUNDRED, SUSSEX COUNTY, DELAWARE	
AXIOM ENGINEERING L.L.C.		18 CHESTNUT STREET GEORGETOWN, DE 19347 (302) 855-0812 FAX: 855-0812 WWW.AXIOM-ENG.COM		AXIOM ENGINEERING L.L.C.	
DESCRIPTION OF REVISION		REV		REV	
THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY, HEALTH ACT OF 1991 AND ALL RULES AND REGULATIONS THEREOF AND IMPERATIVES					

1. ALL TANKS SHALL HAVE WATERTIGHT RISERS AND SHALL EXTEND ABOVE GRADE.
2. THE BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN ON THIS PLAT WAS TAKEN FROM A FIELD SURVEY PREPARED BY AXIOM ENGINEERING, L.L.C...
3. THERE ARE NO EXISTING WELLS LOCATED WITHIN 150' OF THE PROPOSED DISPOSAL AREA

- ① CLEANOUT
- ② 4" BUILDING SEWER (77' LONG)
- ③ 2,800 GALLON SEPTIC TANK
W/ POLYLOCK PL250 EFFLUENT FILTER.
- ④ 4" SCH 40 PVC (10' LONG)
- ⑤ 2,800 GALLON DOSING CHAMBER
- ⑥ 2" SCH 40 PVC TRANSMISSION LINE (480' LONG)
- ⑦ 2" MANIFOLD (20' LONG)
- ⑧ TURN UP TYP., SET HEAD @ 2.5'
- ⑨ 5 SCH. 40 PVC LATERALS: 1 1/4" DIAMETER
103' LONG, (100' PERFORATED) 3/16" HOLES,
7' - 3" O.C., 14 HOLES/LAT.

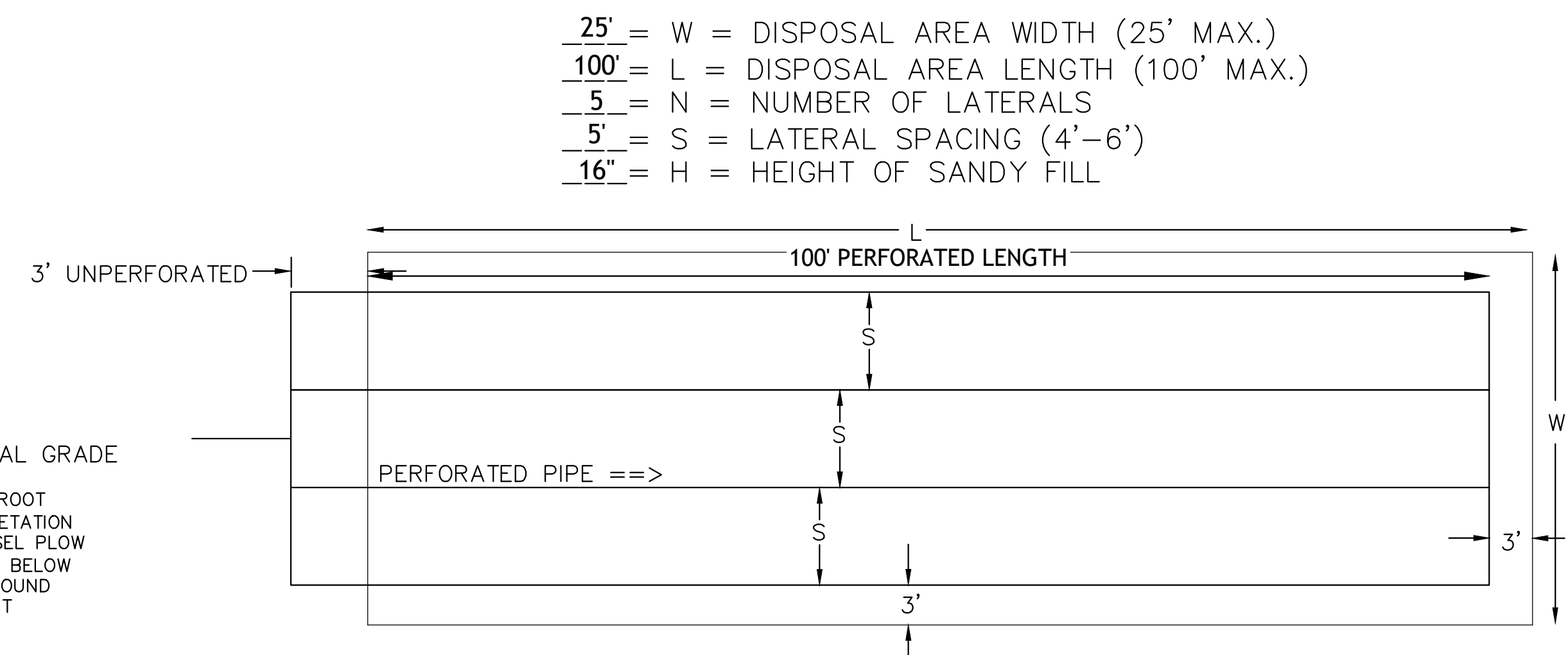
[illegible]

- * MAXIMUM DEPTH FROM GRADE TO INVERT OF DOSING CHAMBER TO BE 9'-0"
- * EXCAVATION LIMITS SHALL EXTEND AT LEAST 2 FEET BEYOND TANK PERIMETER
- * ALL PIPE TO BE PVC SCHEDULE 40 OR SDR 26
- * CHAMBER TO BE SIZED ACCORDING TO REQUIREMENTS OF DOSING VOLUME AND STORAGE.

SEE EXHIBIT I


- * ALL DOSING CHAMBER COMPONENTS SHALL BE FIELD TESTED TO INSURE ACCURACY , WATERTIGHTNESS AND PROPER OPERATION OF ALL PUMPS AND ALARM CONTROLS
- * ALL ELECTRICAL CONNECTIONS SHALL BE WATERPROOF, CORROSION RESISTANT AND EXPLOSION PROOF

686 GALLONS DESIGN FLOW/DAY
4 DOSES PER DAY
172 GALLONS PER DOSE
 SH = 17.4 INCHES STORAGE AND EQUALIZATION
 DH = 2.7 INCHES HEIGHT FOR DOSE IN CHAMBER
 TH = 7' FT. TANK HEIGHT FROM GRADE TO INSIDE FLOOR OF TANK (9' MAX.)



25' = W = DISPOSAL AREA WIDTH (25' MAX.)
100' = L = DISPOSAL AREA LENGTH (100' MAX.)
5 = N = NUMBER OF LATERALS
5' = S = LATERAL SPACING (4'-6')
16" = H = HEIGHT OF SANDY FILL

ON-SITE WASTEWATER DISPOSAL SYSTEM
RESTORATION WORSHIP CENTER
US. RT 9 - SCR 028
GEORGETOWN HUNDRED, SUSSEX COUNTY, DELAWARE



AXIOM
ENGINEERING L.L.C.

18 CHESTNUT STREET
GEORGETOWN, DE 19947
PHONE: 410.386.8100
FAX: 855.081.192
EMAIL: AXION@AXENG.COM
WEB: WWW.AXENG.COM

KRC	6/18/2020
KRC	1-35-19, 44
KRC	
KRC	

ENGINEER:
DESIGNER:
DRAFTER:
CHECKED BY:
DATE:
TAX MAP:

SEAL

PROJECT NO:
0162-1901

DRAWING:
WW-3

SHEET:
3 OF 3



Submersible Effluent Pump

MODEL 3885

WE Series

PROSURANCE AVAILABLE FOR RESIDENTIAL APPLICATIONS.

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Farms
- Trailer courts
- Motels
- Schools
- Hospitals
- Industry
- Effluent systems

SPECIFICATIONS

Pump

- Solids handling capabilities: $\frac{3}{4}$ " maximum.
- Discharge size: 2" NPT.
- Capacities: up to 140 GPM.
- Total heads: up to 128 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, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.
- **Casing:** Cast iron volute type for maximum efficiency. 2" NPT discharge.
- **Mechanical Seal:** SILICON CARBIDE VS. SILICON CARBIDE sealing faces. Stainless steel metal parts, BUNA-N elastomers.

■ **Shaft:** Corrosion-resistant, stainless steel. Threaded design. Locknut on all 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.

■ Class B insulation on $\frac{1}{3}$ -1½ HP models.

■ Class F insulation on 2 HP models.

Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- $\frac{1}{3}$ – 1 HP models have NEMA three prong grounding plugs.
- 1½ HP and larger units have bare lead cord ends.

Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.

Designed for Continuous

Operation: Pump ratings are within the motor manufacturer's recommended working limits,

can be operated continuously without damage when fully submerged.

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

■ **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. Standard cord is 20'. Optional lengths are available.

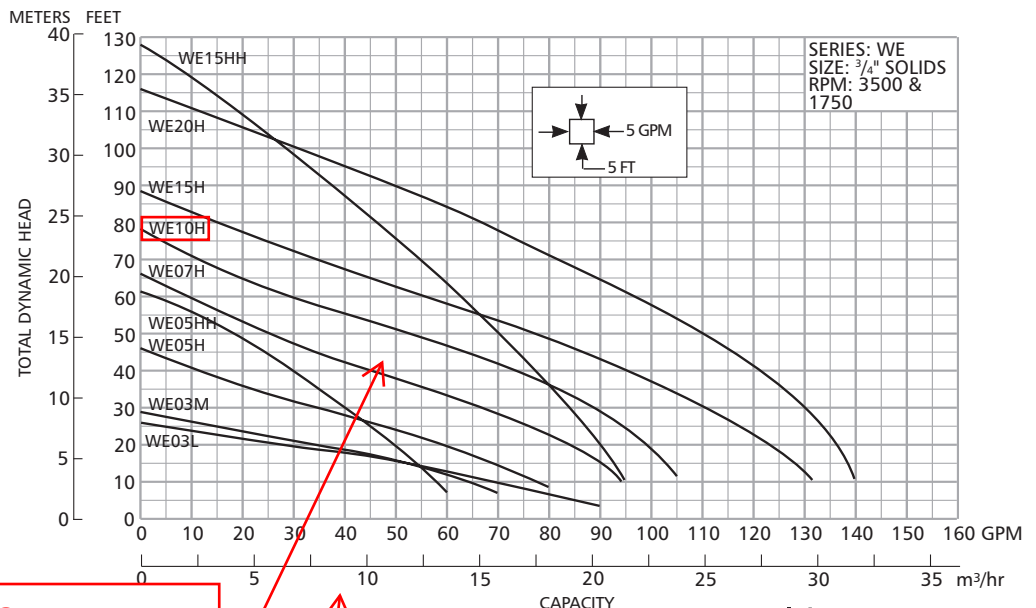
■ **O-ring:** Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards By Canadian Standards Association File #LR38549

Goulds Pumps is ISO 9001 Registered.



CONTACT ENGINEER TO RE-SIZE PUMP IF TRANSMISSION LINE LENGTH EXCEEDS 600'

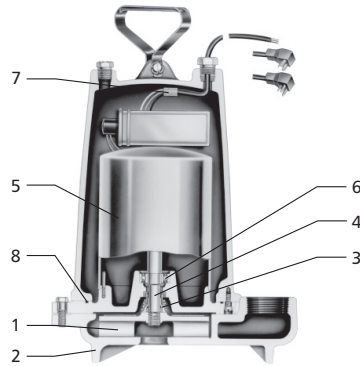
Goulds Pumps



ITT Industries

COMPONENTS

Item No.	Description
1	Impeller
2	Casing
3	Mechanical Seal
4	Motor Shaft
5	Motor
6	Ball Bearings
7	Power Cable
8	Casing O-Ring



Submersible Effluent Pump

MODEL 3885

WE Series

MODELS

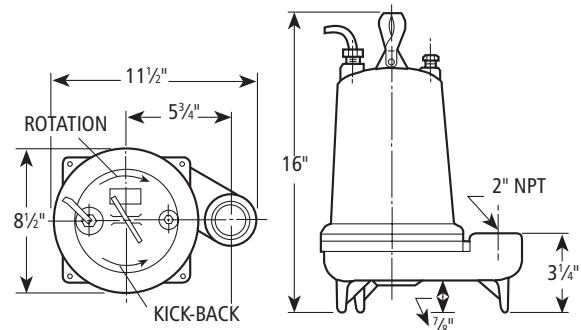
Order No.	HP	Volts	Phase	Max. Amp.	RPM	Solids	Wt. (lbs.)
WE0311L	1/3	115	1	10.7	1750	3/4"	56
WE0318L		208		6.8			
WE0312L		230		4.9			
WE0311M		115		10.7			
WE0318M		208		6.8			
WE0312M		230		4.9			
WE0511H	1/2	115	3	14.5	3500	3/4"	60
WE0518H		208		8.1			
WE0512H		230		7.3			
WE0538H		200		4.9			
WE0532H		230		3.3			
WE0534H	1/2	460	1	1.7	3500	3/4"	60
WE0537H		575		1.4			
WE0511HH		115		14.5			
WE0518HH		208		8.1			
WE0512HH		230		7.3			
WE0538HH	1/2	200	3	4.9	3500	3/4"	70
WE0532HH		230		3.6			
WE0534HH		460		1.8			
WE0537HH		575		1.5			
WE0718H		208		11.0			
WE0712H	3/4	230	3	10.0	3500	3/4"	70
WE0738H		200		6.2			
WE0732H		230		5.4			
WE0734H		460		2.7			
WE0737H		575		2.2			
WE1018H	1	208	1	14.0	3500	3/4"	70
WE1012H		230		12.5			
WE1038H		200		8.1			
WE1032H		230		7.0			
WE1034H		460		3.5			
WE1037H	1	575	3	2.8	3500	3/4"	70
WE1518H		208		17.5			
WE1512H		230		15.7			
WE1538H		200		10.6			
WE1532H		230		9.2			
WE1534H	1 1/2	460	1	4.6	3500	3/4"	80
WE1537H		575		3.7			
WE1518HH		208		17.5			
WE1512HH		230		15.7			
WE1538HH		200		10.6			
WE1532HH	1 1/2	230	3	9.2	3500	3/4"	80
WE1534HH		460		4.6			
WE1537HH		575		3.7			
WE2012H		230		18.0			
WE2038H		200		12.0			
WE2032H	2	230	3	11.6	3500	3/4"	83
WE2034H		460		5.8			
WE2037H		575		4.7			

PERFORMANCE RATINGS (gallons per minute)

Order No.	WE03L	WE03M	WE05H	WE07H	WE10H	WE15H	WE05HH	WE15HH	WE20H
HP	1/3	1/3	1/2	3/4	1	1 1/2	1/2	1 1/2	2
RPM	1750	1750	3500	3500	3500	3500	3500	3500	3500
5	86	—	—	—	—	—	—	—	—
10	70	63	78	94	—	—	58	95	—
15	52	52	70	90	103	128	53	93	138
20	27	35	60	83	98	123	49	90	136
25	—	—	48	76	94	117	45	87	133
30	—	—	35	67	88	110	40	83	130
35	—	—	22	57	82	103	35	80	126
40	—	—	—	45	74	95	30	77	121
45	—	—	—	35	64	86	25	74	116
50	—	—	—	25	53	77	—	70	110
55	—	—	—	—	40	67	—	66	103
60	—	—	—	—	30	56	—	63	96
65	—	—	—	—	20	45	—	58	89
70	—	—	—	—	—	35	—	55	81
75	—	—	—	—	—	25	—	51	74
80	—	—	—	—	—	—	—	47	66
90	—	—	—	—	—	—	—	37	49
100	—	—	—	—	—	—	—	28	30

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



Goulds Pumps is a brand of ITT Water Technology, Inc. — a subsidiary of ITT Industries, Inc.

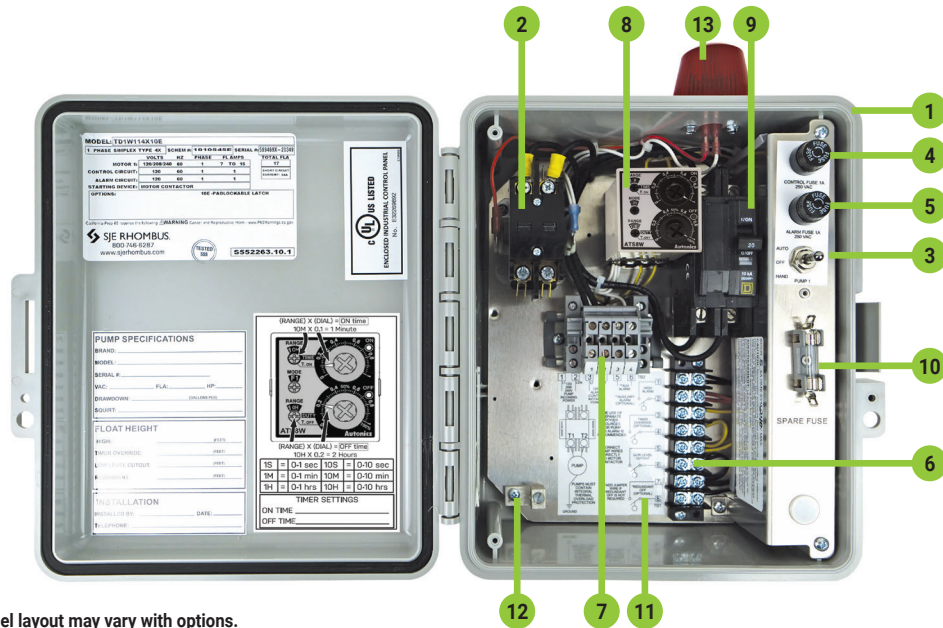
Goulds Pumps and the ITT Engineered Blocks Symbol are registered trademarks and tradenames of ITT Industries.

Goulds Pumps



MODEL TD CONTROL PANEL

Single Phase, Simplex Timed Dosing Pump Control



Panel layout may vary with options.

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. This panel is available with optional EZconnex® float connection system.

OPTIONAL FEATURE

- 34" (86.36cm) Panel Mounting Post (Factory Installed). Includes Duplex Installation Kit (Enclosure upsized to 10" x 8" x 6" (25.4 x 20.32 x 15.24 cm). Max. Enclosure size 14" x 12" x 6" (35.56 x 30.48 x 15.24 cm)

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 mounting feet 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 .1 seconds to 10 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
13. Red LED beacon provides 360° visual check of alarm condition
14. Alarm horn provides audio warning of alarm condition (83 to 85 decibel rating) (Not shown)
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 (Not shown)
16. Horn silence relay (No shown - mounted under bracket)

Note: Other options available.

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



MODEL TD - Single phase, simplex timed dosing pump control.

TD CONTROL PANEL	ALARM PACKAGE	W ENCLOSURE RATING	STARTING DEVICE	PUMP FULL LOAD AMPS	4 PUMP DISCONNECTS	FLOAT SWITCH APPLICATION	OPTIONS (LISTED BELOW)
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CONTROL PANEL	✓	TD	Single Phase Simplex Timed Dosing	\$1,041.00
ALARM PACKAGE		0	Select Options (select Option 1F below)	- \$21.00
		1	Alarm Package (includes test/normal/silence switch, red light, & horn)	Base
ENCLOSURE RATING	✓	W	Weatherproof, NEMA 4X (engineered thermoplastic)	Base
STARTING DEVICE		1	Magnetic Motor Contactor 120/208/240V	\$66.00
		9	Magnetic Motor Contactor 120V only	Base
PUMP FULL LOAD AMPS		0	0 - 7 FLA	Base
		1	7 - 15 FLA	Base
		2	15 - 20 FLA	Base
PUMP DISCONNECTS	✓	4	Circuit Breaker	Base
FLOAT SWITCH APPLICATION		H	Pump Down - 20' Low Level Cutout (select Option 17 or 21 below)	Base
		E	EZconnex® Float Switch System (select Option 33, 35 or 36 below)	- \$64.00
		X	No Floats	- \$64.00

PRICING WORKSHEET

Model TD Base Price	\$1,041.00
Alarm Package	_____
Enclosure Rating	_____
Starting Device	_____
Pump Full Load Amps	_____
Float Switch Application	_____
Total Options	_____
TOTAL LIST PRICE	_____

OPTIONS	DESCRIPTION	LIST PRICE
1F	Door Mounted Alarm Indicator with Horn and Test/Normal/Silence Switch (must select "0" for ALARM PACKAGE)	\$33.00
4B	Red Redundant Off Indicator & Alarm (must also select Option 4D if floats are required)	\$60.00
4D	Redundant Off Float	\$28.00
4E	Redundant Off Float, Alarm Activation (20' SJE PumpMaster® SPDT)	\$43.00
6A	Auxiliary Alarm Contact, Form A	\$43.00
8A	Elapsed Time Meter	\$60.00
8C	Event (Cycle) Counter	\$60.00
10E	Lockable Latch	\$22.00
10K	Anti-condensation Heater	\$109.00
10P	Panel Mounting Post - Factory Installed, Includes Duplex Installation Kit (Enclosure Upsized to 10x8x6, Max 14x12x6)	\$155.00

OPTIONS	DESCRIPTION	LIST PRICE
16A	10' Cord in Lieu of 20' Cord (per float)	- \$3.00
16B	15' Cord in Lieu of 20' Cord (per float)	- \$2.00
16C	30' Cord in Lieu of 20' Cord (per float)	\$5.00
16D	40' Cord in Lieu of 20' Cord (per float)	\$15.00
17E	Sensor Float® Mini - Redundant Off, High Level Alarm (per Float) - Mercury	\$4.00
18A	Timer Override Float (20' SJE PumpMaster®) - Mechanical	\$43.00
19X	Door Mounted Pump Run Indicator	\$33.00
21E	SJE PumpMaster® - Redundant Off, High Level Alarm (per float) - Mechanical	\$4.00
33U	EZconnex® 3-Port, 50', with 10' Floats (3) / Pipe Clamp	\$313.00
35U	EZconnex® 4-Port, 50', with 10' Floats (4) / Pipe Clamp	\$437.00
36U	EZconnex® 3-Port, 50', with 10' Floats (2) / Pipe Clamp, Sealing Plug	\$276.00

GENERAL NOTES

1. The contractor during inspection of the system shall perform pressure settings of lateral operating pressures. The contractor shall make available enough pressure measuring devices so that numerous simultaneous pressure determinations may be made as requested by the engineer.

TIMERS

1. Timer to operate in such a manner as to allow a minimum of six hours off time between doses and to equalize doses throughout the day. Run time will be set at: 219 seconds.
Off time at 6 hours, 4 doses per day.
2. Static head will be field measured. Orifice head will be measured with a standpipe on the furthest lateral.
3. Timer to SJ Rhombus TD-1 or a timer of equal performance as approved by the engineer.
4. Timer is to have a battery back up power source.
5. The timer shall be installed in such a manner to override the float switches.

Axiom Engineering, LLC

SEPTIC CALCULATIONS

Rich-Field Acres Lot 4

Application

Site Plan (CAD sheet 2)

Cross Section Detail (CAD sheet 3)

Pump Detail (CAD sheet 4) & Pump curve .pdf

Job #: 0162-1901

Calc'd by: K. CHRISTENBURY

Date: 05/05/25

Septic Timer Note

Bedrooms 1

Daily Flow 686 gpd

Design flow: 686 gpd w/ 25% reduction for low flow devices

LZ=Depth to Limiting Zone: 20 in.

Perc. rate: 75 mpi

Minimum Sq. Ft. Required: 2495 sq. ft. for ESM system

Septic width: 25 ft. (Use increments of 5' based on lateral spacing of 5'

Septic length: 100 ft. (4x width or longer recommended)

Lateral Spacing: 5 ft (4' to 6')

Sq. Ft. Proposed: 2500 ft.^2

Type of System: Elevated Sand Mound

Outer Boundary: 3 ft.(use 3' for all ESM systems)

Orifice Head: 2.5 ft. (2.31 min.)

Laterals:

No. of laterals: 5

Length of laterals: 100 ft. (100' max.)

Length O.C./hole: 7.25 ft.(page 59 in regs.)

No. of holes/lateral: 13.7931

No. holes/lat. used: 14

Size of flow hole 3/16"

Flow/hole: 0.66 gpm/hole

Lateral flow: 9.24 gpm/lateral

Total flow in field: 46.2 gpm

Total flow used: 47 gpm

Height of lateral above ground 22 in.

Height of Mound: 46 in.

Height of Sandy Fill below sto 16 in.

Side Slope 3 :1

Lateral offset to disposal area: 3 ft.

Offset to toe of mound: -11.5 ft. from disposal area to toe (if ex. grade is flat)

Static Head:

6.07 ft.

Friction Head:

Lateral Diameter:	1.25 in.
Lateral Flow:	9.24 gpm/lateral
Head loss/100 ft.:	2.65 ft./100 ft.
Length of Lateral:	100 ft.
Multiplier for fittings:	1.2
Lateral head loss:	3.18 ft.

Manifold Diameter:	2 in.
Manifold Flow:	23.5 gpm / half manifold
Head loss/100 ft.:	1.51 ft./100 ft.
Manifold Length	19.00 ft.
1/2 Length of manifold:	9.5 ft.
Multiplier for fittings:	1.2
Manifold head loss:	0.17 ft.

Trans. line diameter:	2 in.
Trans. Line flow	47 gpm
Head loss/100 ft.:	5.45 ft./100 ft.
Length of trans. line:	480 ft.
Multiplier for fittings:	1.2
Trans. line head loss:	31.41 ft.

Total friction head:	34.76 ft.
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TDH:	43.33 ft.
Total flow used:	47 gpm

Check dosing volume:

Lateral diameter: 1.25 *in.*
Volume/ft. of lateral: 0.06 *gal/ft.*
Linear feet of lateral: 538 *ft.*
Lateral volume: 34.30 *gal.*

Manifold diameter: 2 *in.*
Volume/ft. of lateral: 0.16 *gal/ft.*
Linear feet of manifold: 19 *ft.*
Manifold volume: 3.1005774 *gal.*

Trans. line diameter: 2 *in.*
Volume/ft. of trans. line: 0.16 *gal/ft.*
Linear feet of trans. line: 480 *ft.*
Trans. line volume: 78.330377 *gal.*

Min. dosing volume: 171.47519 *gal.*
Dosing vol. used: 171.5 *gal.*

Doses per day (min. 2): 4.00

Dosing Tank Minimum Size (1 day + 1 dose) = 857.5 *gal.*

Size of dosing chamber: 2800 *gal.*

Volume/in. of chamber: 57.66 *gal/in.*

Height of storage above dose: 11.90 *in.*

Set dosing float at: 2.97 *in.*

Set timer run time at: 3.65 *min.*

219 *seconds*

Set hours off at: 6 *hours*

Tank Height 36 *inch* bury

Storage 686 *gallons* 11.90 *inch* height above dose

Dose 172 *gallons* 2.97 *inch* dose

10.00 *inch* wet volume

60.87 *inch* tank depth

5.1 *ft.* tank depth

GENERAL AND CONSTRUCTION NOTES TO INSTALLER

1. The Contractor shall field verify all existing conditions and features prior to construction. All Piping and Fittings shall be *Pressure rated schedule 40 PVC*. No substitutes will be permitted unless noted on the approved plans or approved by the designer prior to construction.
2. The Contractor shall field verify all isolation distances prior to initiating construction of system. If discrepancies are found in the field, the Contractor shall immediately contact the designer at the above number.
3. Any changes in the specified/approved equipment, i.e. pumps, alarms, timers, etc., shall be approved by the designer prior to construction.
4. No System shall be installed during inclement conditions, i.e. rain, snow, saturated conditions, frozen conditions, or any other condition that would create compaction, smearing or destruction of the soil structure in the disposal area.
5. The designer is not responsible for the placement of the dwelling or the actual location of the property lines shown on the approved site plan as no perimeter survey was provided or performed by the designer (unless specified on the design drawings).

6. All Low Pressure Pipe (LPP) disposal systems must be installed with a trencher. ***NO LPP SYSTEM WILL BE INSPECTED OR APPROVED BY THE DESIGNER IF INSTALLED WITH A BACKHOE.***
7. Any changes made to the location of the approved system must have a pre-construction as-built done and approved by The Division of Water Resources at the expense of the contractor. No change shall be made unless approved by the designer and The Division of Water Resources. Any change made to the approved permit without the prior approval of the designer or the Division of Water Resources shall be the responsibility of the Contractor.
8. All systems requiring a pump shall be pressure tested by the designer and the Contractor during the final inspection. Any equipment necessary for providing this service, i.e. generator, hoses, water, pressure gauges shall be provided by the Contractor.
9. The Contractor or his/her representative shall be present during the final inspection. The Contractor shall notify the designer 48 hours in advance to schedule the final inspection.
10. The designer will complete only one site visit for final inspection. Any additional site visits required for designer approval will be billed as an extra to the Contractor and shall be paid prior to initiating the inspection report.
11. The system shall be installed based on the approved permit and the regulations and memorandums set forth by the Department of Natural Resources and Environmental Control, Division of Water Resources.

GENERAL NOTES TO PROPERTY OWNERS

1. Unless otherwise stated in the Department of Natural Resources and Environmental Control (DNREC), Division of Water Resources regulations, all septic tanks shall be pumped every three (3) years. At the time of pumping, the tank shall be inspected for any deficiencies such as: concrete deterioration, cracks, holes, leaking, etc. The baffles should be inspected for cracks, concrete deterioration, etc.
2. If a filtering devise has been installed, i.e. Zabel, Webby Bucket, etc., at the time of cleanout and/or per the manufacturers specifications, the device should be rinsed thoroughly into the septic tank with a garden hose and reinstalled. This should be done so that accumulated debris can be pumped out while the waste hauler is there.
3. Be absolutely sure that your septic tank stays in good operating condition. Never allow sludge or scum to escape from the septic tank. It will clog your drain tiles and cause the drain field to fail.
4. Keep automobiles and all heavy vehicles and equipment off the field and tanks.
5. Do not allow stormwater ponding to collect over the field.
6. Do not allow downspouts to drain onto or into your drain field or tanks.
7. Do not stockpile snow or soil on the drain field and tanks.

8. Dense grass cover and other shallow rooted plants are beneficial over a drain field. Think ahead when planting trees and shrubs. Although they promote moisture removal from the drain field, their roots may clog the drain tiles. Check with The DNREC for vegetation that will be helpful to the system.
9. Mark the boundaries of your system as a reminder.
10. Do not use chemicals to clean or sweeten your system except on the advice of the DNREC.
11. Do not use a kitchen garbage disposal.
12. Do not place harmful materials in the tanks. Avoid fats, solvents, oils, disinfectants, paints, chemicals, poisons, coffee grounds, paper towels, disposable diapers, sanitary napkins, tampons and condoms.
13. Inspect for scum and sludge depth once each year.
14. Limit water entering your tanks.
15. Use water-saving fixtures, i.e. faucets, showers, toilets, etc. as required by the local building code.
16. Do not connect basement sump pump to the tanks.
17. Always drain appliances one at a time.
18. Spread clothes washing over the entire week and avoid half-loads.
19. Always fix faucet and toilet valve leaks.

FAILURE TO FOLLOW THESE REQUIREMENTS AND THE REQUIREMENTS SET FORTH BY THE DNREC, DIVISION OF WATER RESOURCES, WILL RESULT IN A REDUCED LIFE SPAN OF THE SEPTIC SYSTEM, AND INCREASE THE LIKELYHOOD OF FAILURE.

Phase 1 wastewater flow

	Unit Rate	Units	Daily	Days/week	Weekly flow	START DAY			
		Phase 1				LOAD	DOSE	END DAY	
GPD per seat in the church	5 GPD/seat	200	1000	1	1000 Sunday		1000	-682	318 SUNDAY
	5 GPD/seat	40	200	1	200 Wednesday	318	615	-682	251 MONDAY
	5 GPD/seat	100	500	1	500 Saturday Wedding	251	615	-682	184 TUESDAY
Daycare Kids	10 GPD/per	45	450	5	2250 Mon-Fri	184	815	-682	316 WEDNESDAY
Daycare Staff	15 GPD/per	11	165	5	825 Mon-Fri	316	615	-682	249 THURSDAY
					4775 Gallons per week	249	615	-682	182 FRIDAY
						182	500	-682	0 SATURDAY
					7 Days per week equalization		4775	-4775	
						316 Gallons additional storage for equalization			
					682 GPD equalized flow				

57.66 Gallons per inch of 2,800 gallon tank

5.49 inches additional storage required