

APPLICATION - PERMIT
ON-SITE WASTEWATER SYSTEM



(Please Type or Print Legibly)

OWNER'S NAME: Marydel Volunteer Fire Company PHONE: (302)242-3439

ADDRESS: 110 Firehouse Lane, Marydel DE 19964

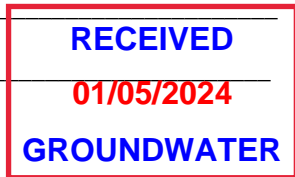
PROJECT LOCATION: 110 Firehouse Lane, Marydel DE 19964

TAX/MAP #: WD-00-089.12-01-05.00-000

APPLICATION PREPARER: Kevin R. Minnich DNREC LICENSE #: 2446

PREPARER'S ADDRESS: 868 Greenwood Road, Greenwood DE 19950

PHONE: (302)697-2239



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

Preparer's Signature: [Signature] Date: 01/03/2024



SEPTIC DESIGN CRITERIA-

(Please check all boxes that apply)

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

- Low Pressure Pipe (FD)
Elevated Sand Mound
Pressure Dose (FD)
Holding Tank
Gravity (FD)
Std. Pressure Dose (FD)
Std. Pressure Dose (CF)
Low Pressure Pipe (CF)
Wisconsin At-Grade
Pressure Dose (CF)
Subsurface Micro Irrigation
Gravity (CF)
Other

Type of Construction:

- Replacement
New Construction
Component Replacement
Repair to Existing System
Reason:

- Bed or Trench
Gravelless Chamber or Stone/Gravel EZflow
Sand-lined Yes No

- Authorization to Use Existing System
Permit #:
Present Condition:
Structure to be connected:

Existing System Malfunctioning Yes No N/A

of Bedrooms: See Attached
Avg. Percolation Rate: 30
Gallons Per Day Flow: 1,140
Minimum Sq. Ft. Rcq'd: 2,061
Sq. Ft. Proposed: 2,079

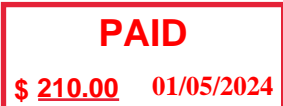
Pre-Treatment Units

- Septic Tank
Recirculating Sand Filter
Other

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

Project No. 22-042

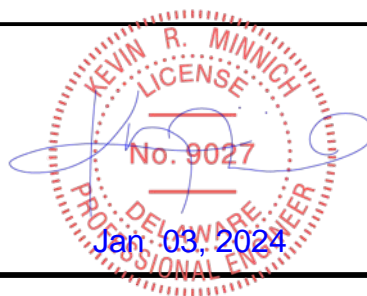
Revised 08/05/15



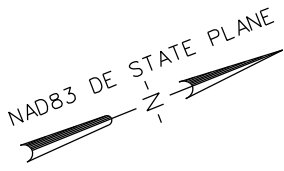
INSTALLATION NOTES

1. IF THERE ARE ANY CHANGES OR DEVIATIONS FROM THESE PLANS BY THE OWNER, CONTRACTOR, OR BUILDER THAN KEVIN MINNICH SHALL APPROVE OF SUCH CHANGES BEFORE INSTALLATION AND AS-BUILT DRAWINGS SUBMITTED TO DNREC.
2. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR ESTABLISHING EXACT PROPERTY CORNERS. THIS PLOT A FORMAL PROPERTY BOUNDARY SURVEY AND SHOULD NOT BE CONSTRUED AS SUCH.
3. BOUNDARY INFORMATION SHOWN ON THE SEPTIC PLOT PLAN IS BASED ON A RECENT FIELD SURVEY PERFORMED BY CLIFTON L. BAKSH, JR. INC.
4. SEPTIC SYSTEM INSTALLATION SHALL BE IN ACCORDANCE WITH THE STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL REGULATIONS GOVERNING THE DESIGN, INSTALLATION AND OPERATION OF ON-SITE WASTEWATER TREATMENT AND DISPOSAL SYSTEMS.
5. THE SEPTIC SYSTEM SHALL NOT BE INSTALLED DURING INCLEMENT CONDITIONS. (SATURATED, FROZEN, AND/OR DESICCATED SOIL CONDITIONS, ETC.) THAT WOULD CREATE COMPACTION, SMEARING OR DESTRUCTION OF THE SOIL STRUCTURE IN THE DISPOSAL AREA.
6. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE LOCATION OF ALL EXISTING ADJACENT WELLS (WHETHER SHOWN OR NOT SHOWN) PRIOR TO SEPTIC INSTALLATION. THE CONTRACTOR SHALL NOTIFY THE SEPTIC DESIGNER, IN WRITING, IF INSTALLATION OF THE SEPTIC SYSTEM, AS DESIGNED, WILL RESULT IN ANY VIOLATIONS OF THE MINIMUM REQUIRED ISOLATION DISTANCES.
7. IF FOR ANY REASON IT IS NECESSARY FOR THE DESIGNER TO COMPLETE "AS BUILT" DRAWINGS, A FEE WILL BE BILLED TO THE CONTRACTOR AT THE PREVAILING RATE FOR THE TIME INVOLVED.
8. THE CONTRACTOR SHALL NOTIFY MISS UTILITY PRIOR TO ANY EXCAVATION AT 1-800-282-8555.
9. THE CONTRACTOR SHALL NOTIFY DESIGNER MINIMUM 24 HOURS PRIOR TO TIME OF INSPECTION. ADEQUATE WATER AND GASOLINE TO RUN THE PUMP FOR AT LEAST ONE FULL DOSING CYCLE SHALL BE PROVIDED AT THE PRE-COVER INSPECTION. IF WATER IS NOT PRESENT, INSPECTION WILL BE POSTPONED.
10. THE CONTRACTOR SHALL ADVISE THE OWNER OF PROPER CARE AND OPERATION/MAINTENANCE OF THE ON-SITE SEPTIC SYSTEM.
11. THE CONTRACTOR SHALL BE RESPONSIBLE TO FILL AND GRADE OVER SEPTIC TANK, TRANSMISSION LINE AND LATERAL TRENCHES AND ANY OTHER BELOW GRADE FIXTURES INSTALLED AS PART OF THIS PROJECT.
12. EXISTING TREES ENCOUNTERED ON SITE SHALL BE REMOVED OR MAINTAIN A TEN (10) FOOT SEPARATION DISTANCE FROM THE PROPOSED SEPTIC DRAIN FIELD AND SEPTIC TANKS.
13. THE SEPTIC TANK SHALL BE TOP SEAM AND IS RECOMMENDED TO BE FROM GILLESPIE PRECAST IN GREENWOOD, DE (302) 349-5528.
14. ALLOW 2 FEET OF EXCAVATION CLEARANCE AROUND TANKS FOR SETTLING AND BACK FILLING.
15. THE BUILDING SEWER LINE TO THE SEPTIC TANK SHALL BE 4" SCH 40 PVC PIPE.
16. ALL PIPE CUTOUTS SHALL BE SEALED WITH A WATERTIGHT CONCRETE OR STANDARD RUBBER GASKETS.
17. ALL PIPING SHALL BE LEFT OPEN FOR THE PRE-COVER INSPECTION TO VERIFY DEPTH AND EVIDENCE OF LEAKS.
18. ALL PRESSURIZED PIPE MUST BE BURIED 24" BELOW GRADE TO MEET THE FROST LINE IN KENT COUNTY.
19. BOTTOM OF TRENCHES SHALL BE ??" BELOW EXISTING GRADE, COVERED WITH 12" NATIVE FILL AND 4" OF TOPSOIL ABOVE THE STONE.
20. ALL ELECTRICAL WORK SHALL BE COMPLETED BY A LICENSED ELECTRICIAN IN COMPLIANCE WITH THE 2020 NATIONAL ELECTRICAL CODE.
21. IF THE ALARM PANEL OR ANY OF THE ELECTRICAL WIRING IS NOT INSTALLED, ANOTHER INSPECTION SHALL BE SCHEDULED.
22. THE ALARM AND PUMP MUST BE ON SEPARATE ELECTRICAL CIRCUITS.

SEPTIC SYSTEM INSTALLATION NOTES



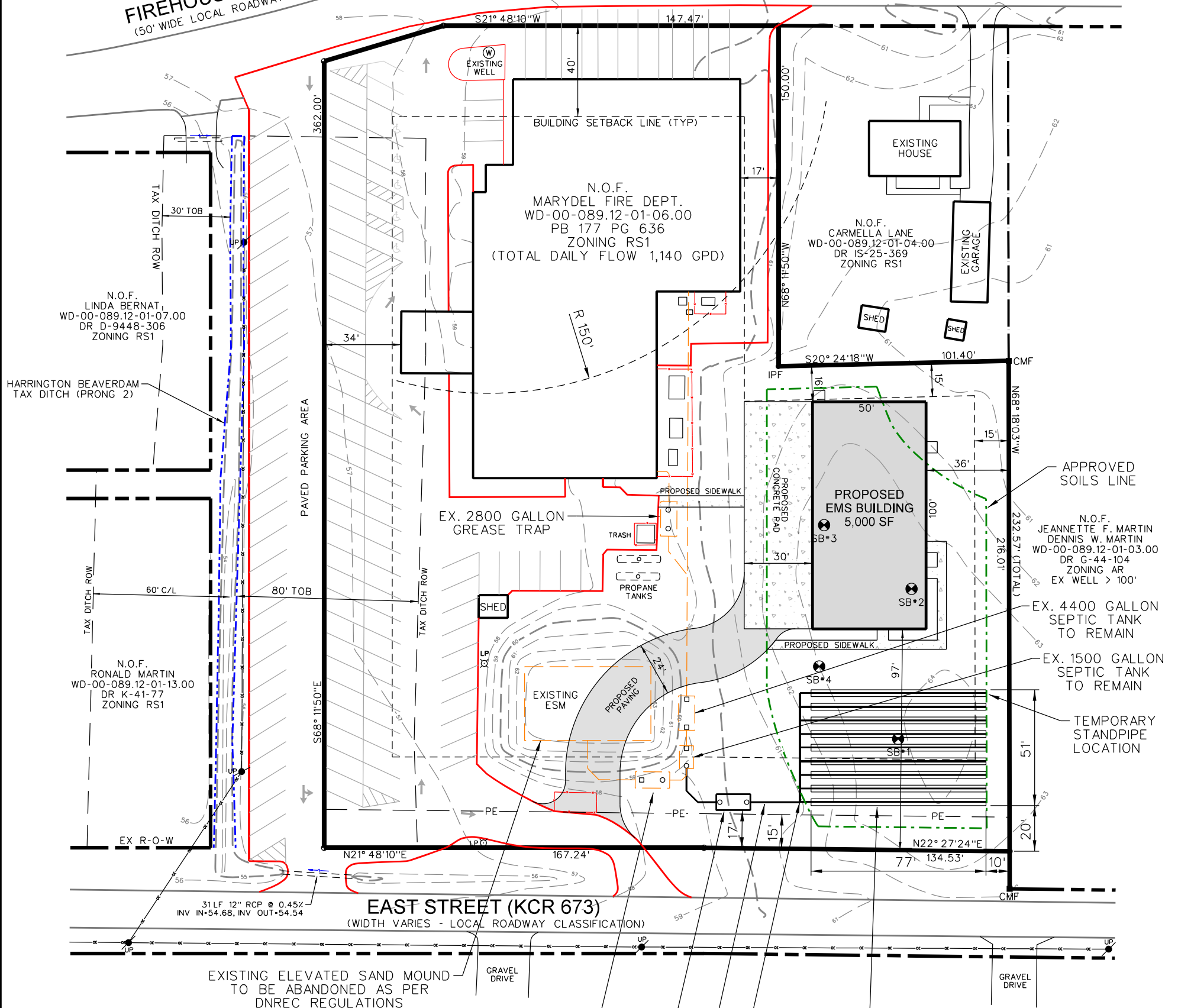
868 Greenwood Road - Greenwood, DE 19950
(302) 697-2239 - (302) 349-5381



SPARE AREA TO BE SAND LINED UPGRADE IN AREA OF INITIAL SYSTEM

N.O.F.
STATE OF MARYLAND
DEPT OF TRANSPORTATION & RR
WD-00-081.00-01-46.00
DR Q-37-001
ZONING AR

FIREHOUSE LANE (KCR 671)
(50' WIDE LOCAL ROADWAY CLASSIFICATION)



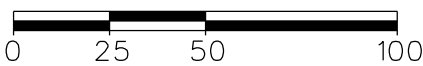
Owners Signature

JAMES L. STATES
JAMES L. STATES (Jan 3, 2024 15:30 EST)

Date Jan 3, 2024

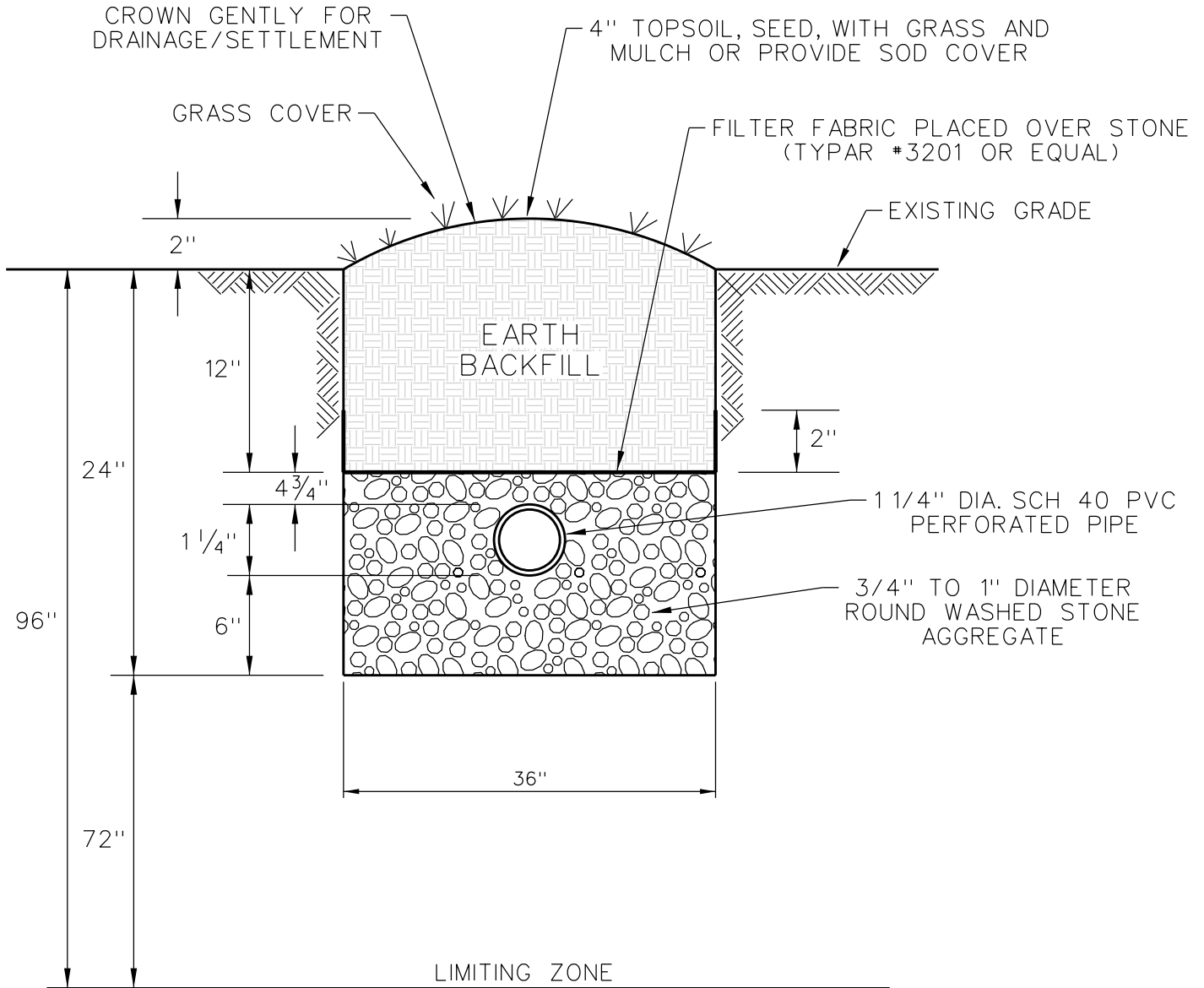
CONSTRUCTION PLAN

SCALE: 1" = 50'



868 Greenwood Road - Greenwood, DE 19950
(302) 697-2239 - (302) 495-7244

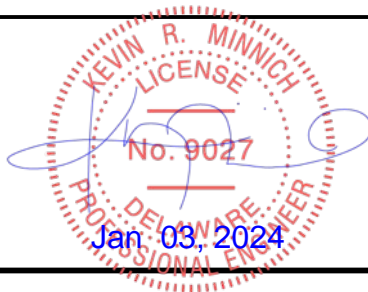
SUBSTITUTION OF AGGREGATE WITH BLUE CHIPPED STONE AND/OR ANGULAR STONE IS NOT APPROVED BY THE DESIGNER AND WILL RESULT IN A FAILED INSPECTION



**PRESSURE DOSED
STONE TRENCH
CROSS SECTION #1
(FULL DEPTH)**

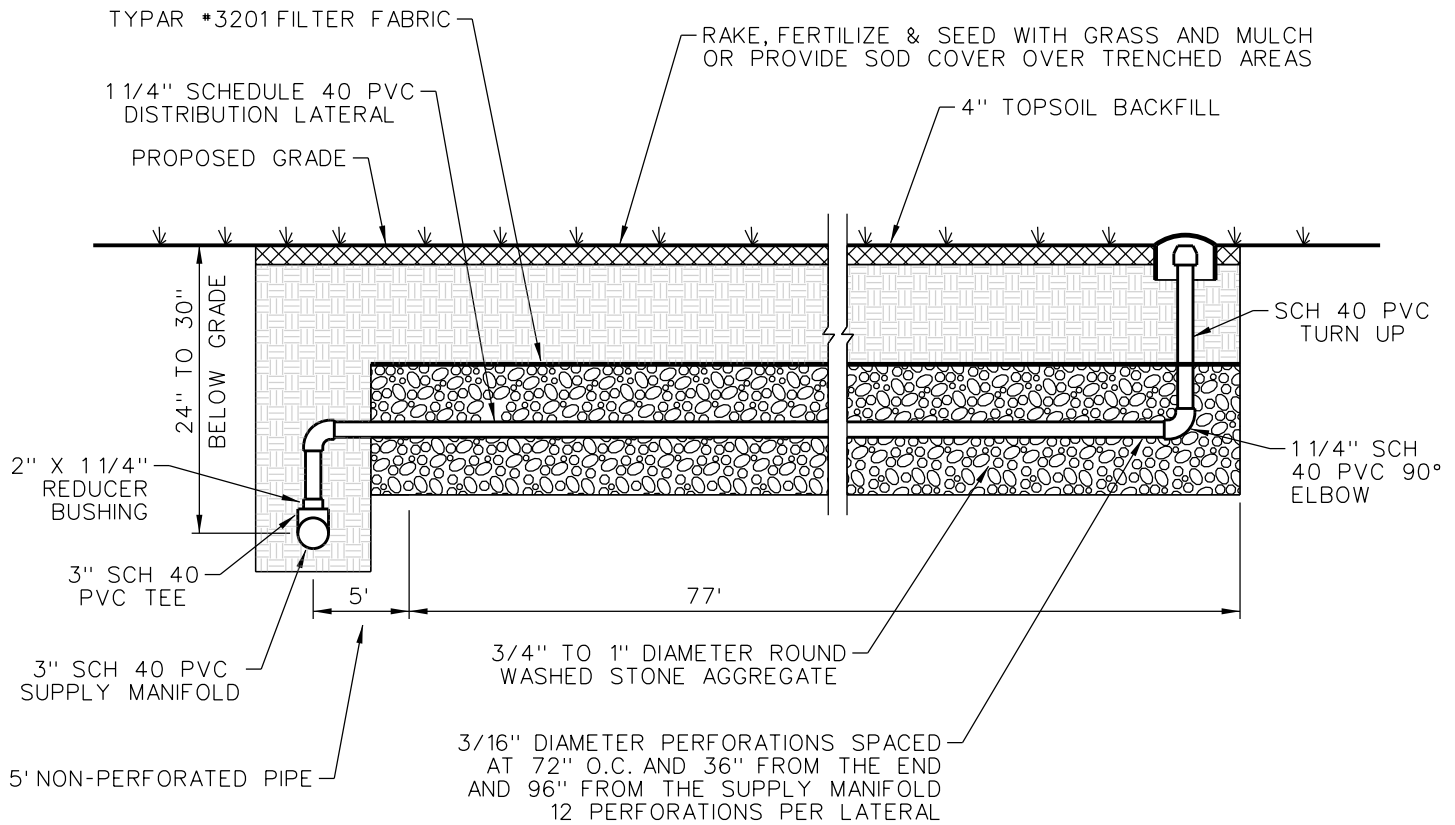
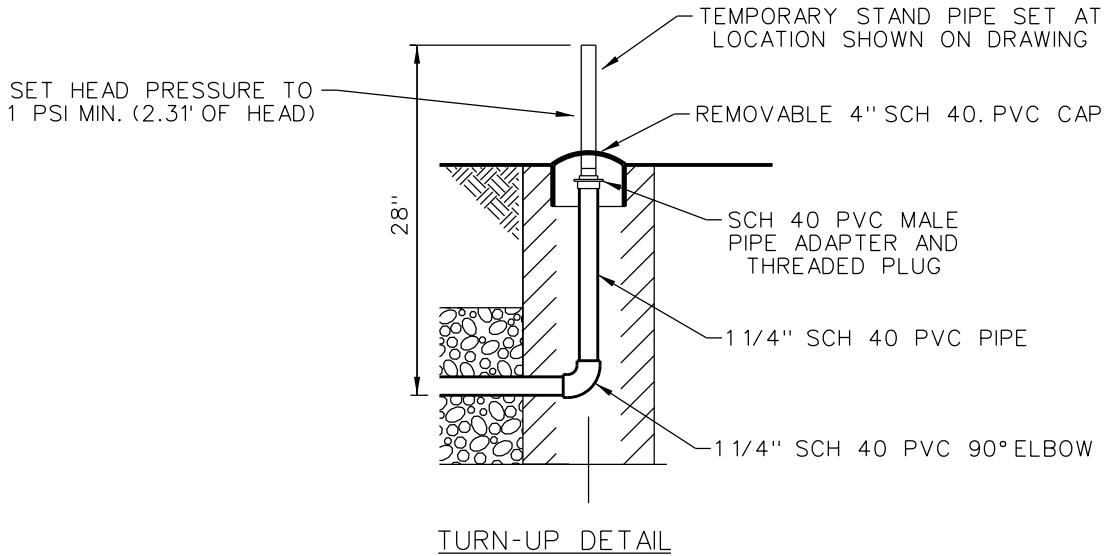
NOT TO SCALE

PROJECT NO. 22-042



868 Greenwood Road - Greenwood, DE 19950
(302) 697-2239 - (302) 495-7244

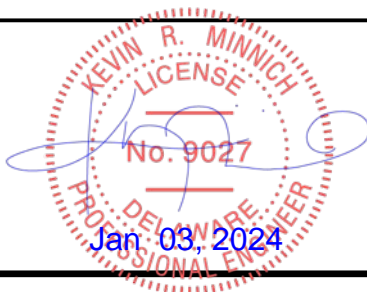
TAX PARCEL NO. WD-00-089.12-01-06.00-000



**PRESSURE DOSED
STONE TRENCH
CROSS SECTION #2
(FULL DEPTH)**

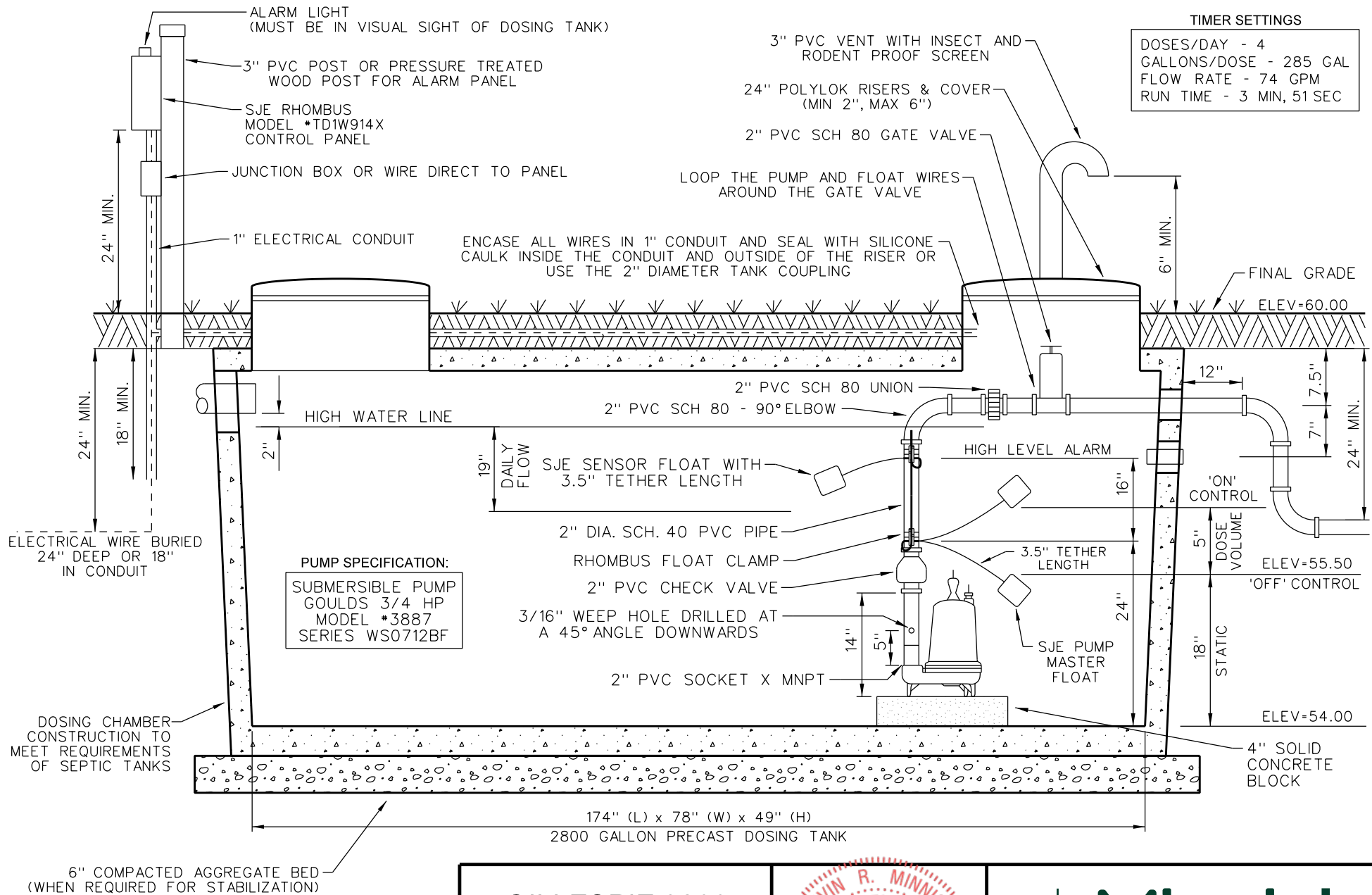
NOT TO SCALE

PROJECT NO. 22-042



868 Greenwood Road - Greenwood, DE 19950
(302) 697-2239 - (302) 495-7244

TAX PARCEL NO. WD-00-089.12-01-06.00-000



TIMER SETTINGS

DOSES/DAY	- 4
GALLONS/DOSE	- 285 GAL
FLOW RATE	- 74 GPM
RUN TIME	- 3 MIN, 51 SEC

GILLESPIE 2800 GALLON DOSING TANK DETAIL

NOT TO SCALE

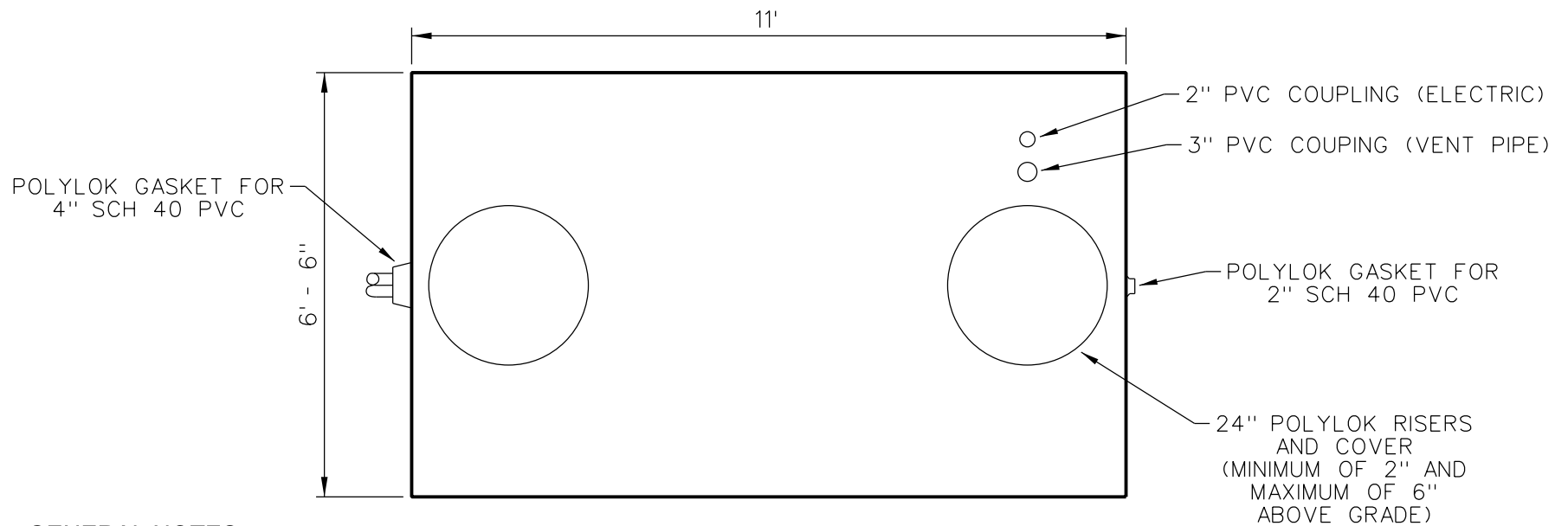
PROJECT NO. 22-042



Minnich
Engineering & Land Planning
Designing Quality Not Quantity

868 Greenwood Road - Greenwood, DE 19950
(302) 697-2239 - (302) 495-7244

TAX PARCEL NO. WD-00-089.12-01-06.00-000

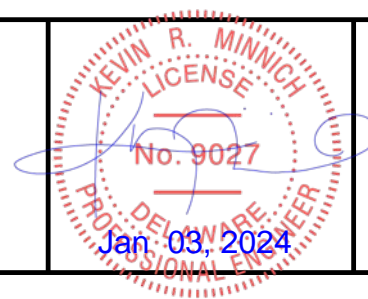


GENERAL NOTES

1. MAXIMUM DEPTH FROM GRADE TO INVERT OF DOSING CHAMBER TO BE 9'-0".
2. EXCAVATION LIMITS SHALL EXTEND AT LEAST 2 FEET BEYOND VAULT PERIMETER FOR SETTLING AND BACK FILLING.
3. ALL CUTOUTS TO BE SEALED WITH WATERTIGHT GROUT OR APPROVED RUBBER GASKET.
4. RAIN TIGHT (3R) BOXES ARE REQUIRED OUTSIDE OF THE VAULT: NOT EXPLOSION PROOF.
5. ALL PIPE TO BE PVC SCHEDULE 40.
6. IF REDUCER IS REQUIRED, INSTALL 12" OUTSIDE OF TANK.
7. THE PUMP MUST HAVE A CORROSION PROOF LIFTING DEVICE ATTACHED. (1000 LB NYLON ROPE)
8. FLOATS ARE NOT TO BE LOCATED DIRECTLY BELOW THE INLET.
9. FLOATS ARE TO BE ATTACHED WITH MANUFACTURER'S FLOAT CLAMPS.
10. RHOMBUS FLOAT CLAMPS SHOULD BE MOUNTED 1" ABOVE THE DESIRED MEASUREMENT ON THE PLAN.
11. FLOATS CLAMPS ARE TO BE ATTACHED IN A MANNER THAT FLOATS DO NOT INTERFERE WITH EACH OTHER WHEN OPERATING.
12. ENSURE THAT THE 3" VENT PIPE IS INSTALLED STRAIGHT TO PREVENT ASTHETIC ISSUES IN THE FIELD.

**GILLESPIE 1500
GALLON DOSING
TANK DETAIL**

NOT TO SCALE
PROJECT NO. 22-042



868 Greenwood Road - Greenwood, DE 19950
(302) 697-2239 - (302) 495-7244

TAX PARCEL NO. WD-00-089.12-01-06.00-000

Perc Rate:

30

Number of Bedrooms:

NA

Gallons/Day:

Pretreatment Red:

0%

Required S.F.	No. Lines	Length (FT)	Length (FT)	Design S.F.
2061	2	343.42	343	2058
	3	228.95	229	2061
	4	171.71	172	2064
	5	137.37	137	2055
	6	114.47	114	2052
	7	98.12	98	2058
	8	85.86	86	2064
	9	76.32	76	2052
	10	68.68	69	2070

Proposed Size:	9	77	2079
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INFILTRATOR QUICK 4

UNITS/TRENCH	NO LINES	LENGTH (FT)	DESIGN SF
13	4	52	624

EZFLOW

UNITS/TRENCH	NO LINES	LENGTH (FT)	DESIGN SF
11	4	55	660

GALLON PER DAY FLOW CALCULATIONS

1 DAY @ 300 PERSONS x 15 GPD =	4,500	
1 DAY @ 100 PERSONS x 15 GPD =	1,500	
5 DAY @ 10 PERSONS x 25 GPD =	1250	
	<hr/>	
	7,250	
10% GROWTH FACTOR:	7,975	GALLONS/WEEK
GALLONS PER DAY FLOW:	1,139	GALLONS/DAY
	(Use 1,140 GPD)	



SEPTIC DESIGN CALCULATIONS

Applicants Name:	Marydel Volunteer Fire Company	Date:	12/29/23
Tax Parcel No:	WD-00-089.12-01-06.00-000	Project:	22-042
Daily Flow (GPD):	1140	Average Perc Rate (MPI):	30
Min. Disposal Area (SF):	2,061	Prop. Disposal Area (SF):	2,079

DOSING CALCULATIONS

Transmission Pipe Dia (In):	3	Transmission Length (FT):	22
Manifold Pipe Dia (In):	3	Manifold Line Length (Ft):	48
Lateral Pipe Dia. (In):	1.25	Lateral Line Length (FT):	82
Number of Laterals:	9	Lateral Volume (Gallons):	47.04

Minimum Dose Required (Gallons): 235.22

DOSING TANK SPECS

Tank Dimensions:	174	L (In)	78	W (In)	49	H (In)
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Unit Tank Volume (Gal/In):	705
Storage to High Water (Gal)	2487
10" Dead Water Volume (Gal):	1057
Dosing Volume (Gallon):	290
On/Off Float Setting (In):	5

Doses/Day 4

Pump Run Time 03:55

DRAINFIELD SPECS

Perforation Diameter (In):	3/16
Spacing from Manifold (In):	96
On Center Spacing (In):	72
Spacing from End (In):	36
Perforations/Lateral:	12
Total Perforations:	108
Lateral Spacing (Ft):	6



SEPTIC DESIGN CALCULATIONS

HEAD CALCULATIONS

Pump On Elev: **55.50**

Lateral Elev: **60.50**

Total Static Head (Ft): **6.00**

Orifice Head (Ft): **2.31**

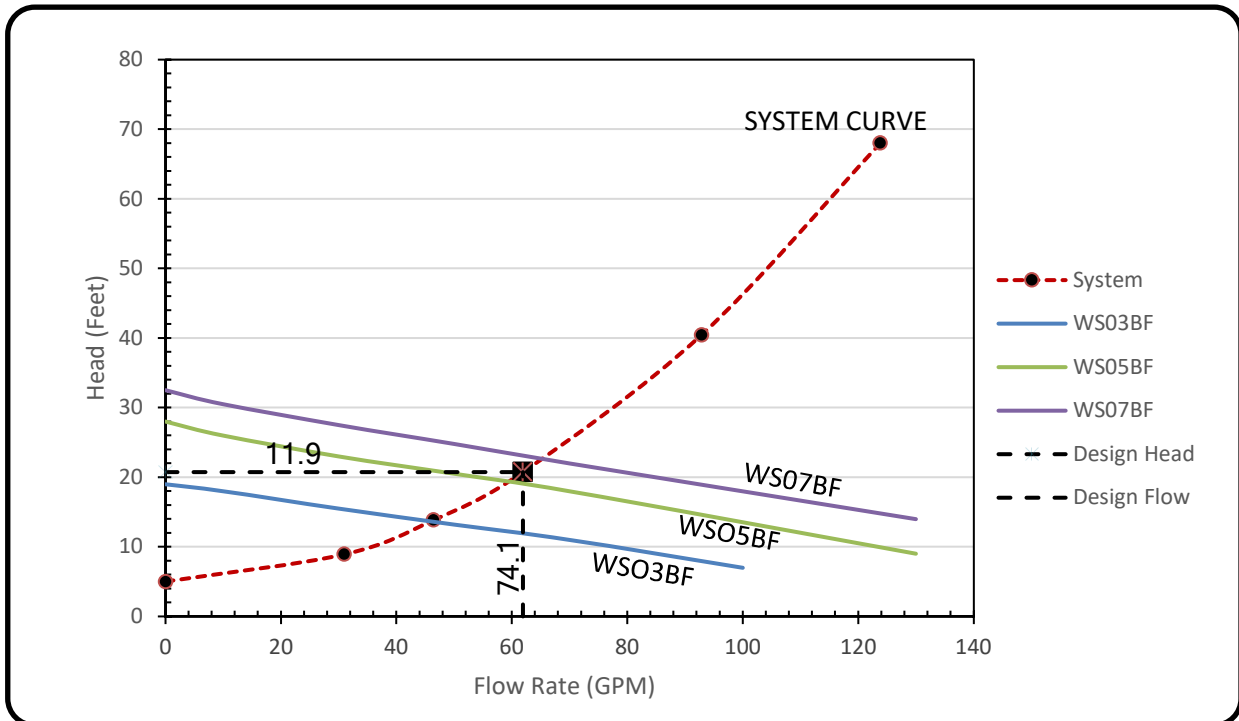
Ave Flow/Lateral (GPM): **7.86**

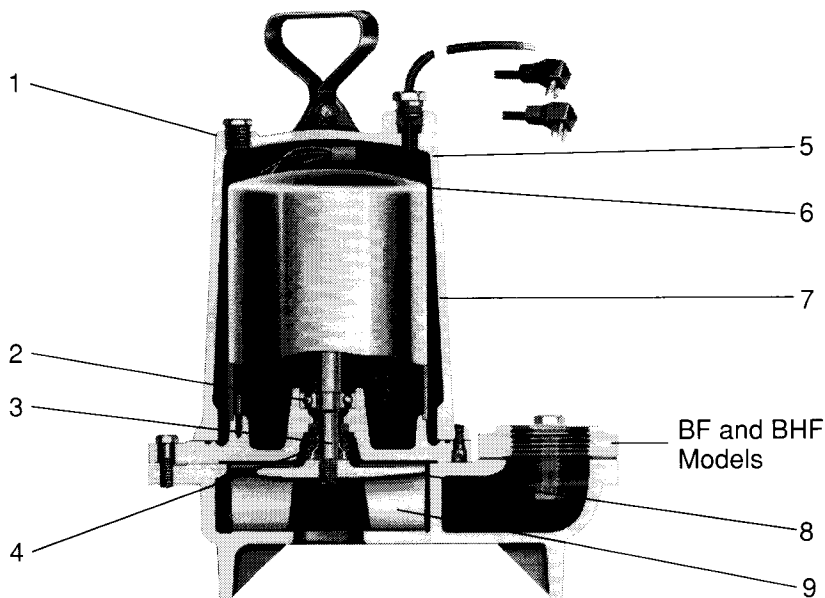
Ave Flow (GPM): **70.76**

PIPE FRICTION LOSSES	
Transmission Pipe (Ft):	0.30
Manifold Pipe (Ft):	0.72
Lateral Pipe (Ft):	1.34
Minor Losses (Ft):	1.08

DESIGN POINT	
Total Flow (GPM):	74.05
Total Head (Ft):	11.94

SYSTEM CURVE	
GPM	TDH
0	5
37.03	6.74
55.54	8.90
74.05	11.94
111.08	20.62
148.10	32.76





MODEL 3887

BF and BHF
Models

FEATURES

- 1 All iron construction
- 2 All ball bearing heavy duty design
- 3 Stainless steel shaft
- 4 Mechanical seal
- 5 Epoxy sealed cable
- 6 High grade turbine oil
- 7 Electrocoat paint outside and inside
- 8 Ejector vanes
- 9 Multi-vane non-clog cast iron impeller

MODELS

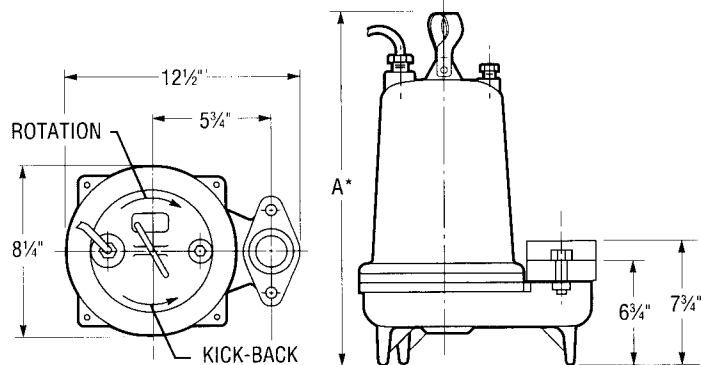
Order No.	HP	Volts	Phase	Max. Amps.	RPM	Solids	Wt. (lbs.)
WS0311BF	1/8	115	1	9.8	1750	2"	63
WS0312BF		230		4.9			
WS0511BF	1/2	115	1	13.0			
WS0512BF		230		6.5			
WS0532BF	3	208-230	3	3.3			
WS0534BF		460		1.65			
WS0712BF	3/4	230	3	9.4			
WS0732BF		208-230		3.6			
WS0734BF		460		1.8			
WS1012BF	1	230	1	12.3			
WS1032BF		208-230		5.8			
WS1034BF		460		2.9			
WS1012BHF		230		12.5			
WS1032BHF		208-230		7.0			
WS1034BHF		460		3.5			

PERFORMANCE RATINGS (gallons per minute)

Order No. ▶	Performance Ratings (gpm)				
	WS0311BF	WS0312BF	WS0534BF	WS0734BF	WS1034BF
HP ▶	1/8	1/2	3/4	1	1
RPM ▶	1750				3500
Total Head Feet of Water	5	108	150	170	
	10	76	124	150	168
	15	30	90	122	150
	20		50	90	120
	25		14	46	76
	30			12	36
	35				8
	40				
	45				

DIMENSIONS

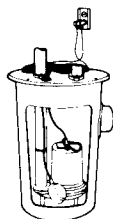
(All dimensions are in inches. Do not use for construction purposes.)



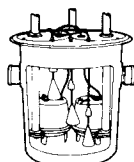
A* - All models are 17 3/4" except 3/4 HP single phase and 1 HP single phase = 20 3/4".

SIMPLEX AND DUPLEX SYSTEMS

Simplex Ejector Systems: are used where drain facilities are below existing sewer lines. Also can be used for septic tank applications where effluent must be pumped away from tank for disposal.



Duplex Ejector Systems: offer the necessary safety required by institutions which cannot afford an interruption in their sewage disposal systems.



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

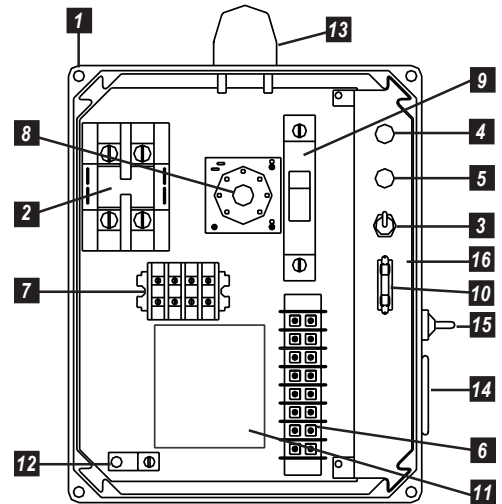
1. **Enclosure** measures 10 x 8 x 4 inches (25.40 x 20.32 x 10.16 cm) NEMA 4X (ultraviolet stabilized thermoplastic with removable flanges for outdoor or indoor use).
2. **Magnetic Motor Contactor** controls pump by switching electrical lines.
3. **HOA Switch** for manual pump control.
4. **Control 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



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

SEE BACKSIDE FOR COMPLETE LISTING OF AVAILABLE OPTIONS.



KENT COUNTY LEVY COURT

555 Bay Road, Dover, Delaware 19901-3615
(302) 744-2300 -- FAX (302) 736-2279

"Serving Kent County With Pride"

PROPERTY RECORD REPORT

Parcel Information:

Parcel ID: 9 00 08912 01 0600 000
User Account #: 59397
Tax Account ID: 116101
Property Code: X - Exempt
Property Type: Exempt
Improvement Status: Improved
Deed BVP: D12331-253
Plat Book: 0149 0049

GIS Cord: E-406852 N-0405821
Flood Plain:
Zoning: RS1
Lot #: Acres: 2.15
Total Living Area: 16664 SQFT
Total Beds/Baths/Half Baths: 0 / 0 / 0
Legal Description: 110 FIREHOUSE LANE

Owner Information:

Name(s): MARY-DEL VOLUNTEER FIRE
CO OF MARYDEL DELAWARE INC
Address: 110 FIREHOUSE LN, MARYDEL,
DE 19964

District Information:

Levy Court District: 6TH
Fire: 56_F-Marydel
Ambulance: 51_A-Hartly
School: 18_SCH-Capital
Sewer:
Sewer ID:
Trash:
Light:
Stormwater:
Tax Ditch:

Assessed Values:

Land: \$18,100
Buildings: \$121,000
Yard: \$0
Total: \$139,100

Location Information:

Location Address: 110 FIREHOUSE LN,
MARYDEL, DE 19964
Subdivision: HALLTOWN EAST

Transfers:

Recorded Date: 1/18/2023
Sale Date: 1/17/2023
Price: \$10
Legal Ref: D12331-253

County Billing:

Pending: \$0.00
Base Tax: \$0.00
Penalty / Interest: \$0.00
Other: \$0.00
Total Due: \$0.00

Permits:

Permit #: 2022-446-OTHE
Status: Pending (Submittal
Received)
Application: 3/1/2022
Issued:
C of O: 3/1/2022

Sewer Billing:

Account #:
Customer #:
Units: 0.0
Balance: \$0.00

Permit #: 2008-2620-FEN
Status: AP
Application: 7/23/2008
Issued: 7/23/2008
C of O:

Tax Billing Details:

Entity Code Tax
Description Amount
KCLC.Entities.TaxAccounts

Permit #: 1997-1551-OTHE
Status: CO
Application: 6/25/1997
Issued: 9/24/1997
C of O: 6/11/1998

Tax Billing History:



KENT COUNTY, DELAWARE

555 Bay Road, Dover, Delaware 19901-3615
(302) 744-2300 -- FAX (302) 736-2279

"Serving Kent County With Pride"

PROPERTY RECORD REPORT (cont)

Building Information 1:

Building ID: 141570
Building Sequence #: 1
Building Type: Retail Frame
Walls: Concrete Block
Floor: Concrete/Tile/Wood
Frame: Fire Resistant
Height:

Heat: Unit
Roof: Composition
Plumbing: Normal
Insulation: Wet
Year Built: 1958
Rooms / Bedrooms: /

Kent County Levy Court has made all attempts to ensure the correctness and suitability of information under our control and to correct any problems or errors which have been brought to our attention, no representation or guarantee can be made as to the correctness or suitability of that information or any other information presented, referenced, or implied. The information provided in this document is for reference only so anyone using this information should first consult original records and personally verify the accuracy of any information/data provided in the document. The use of this information is at your own risk.