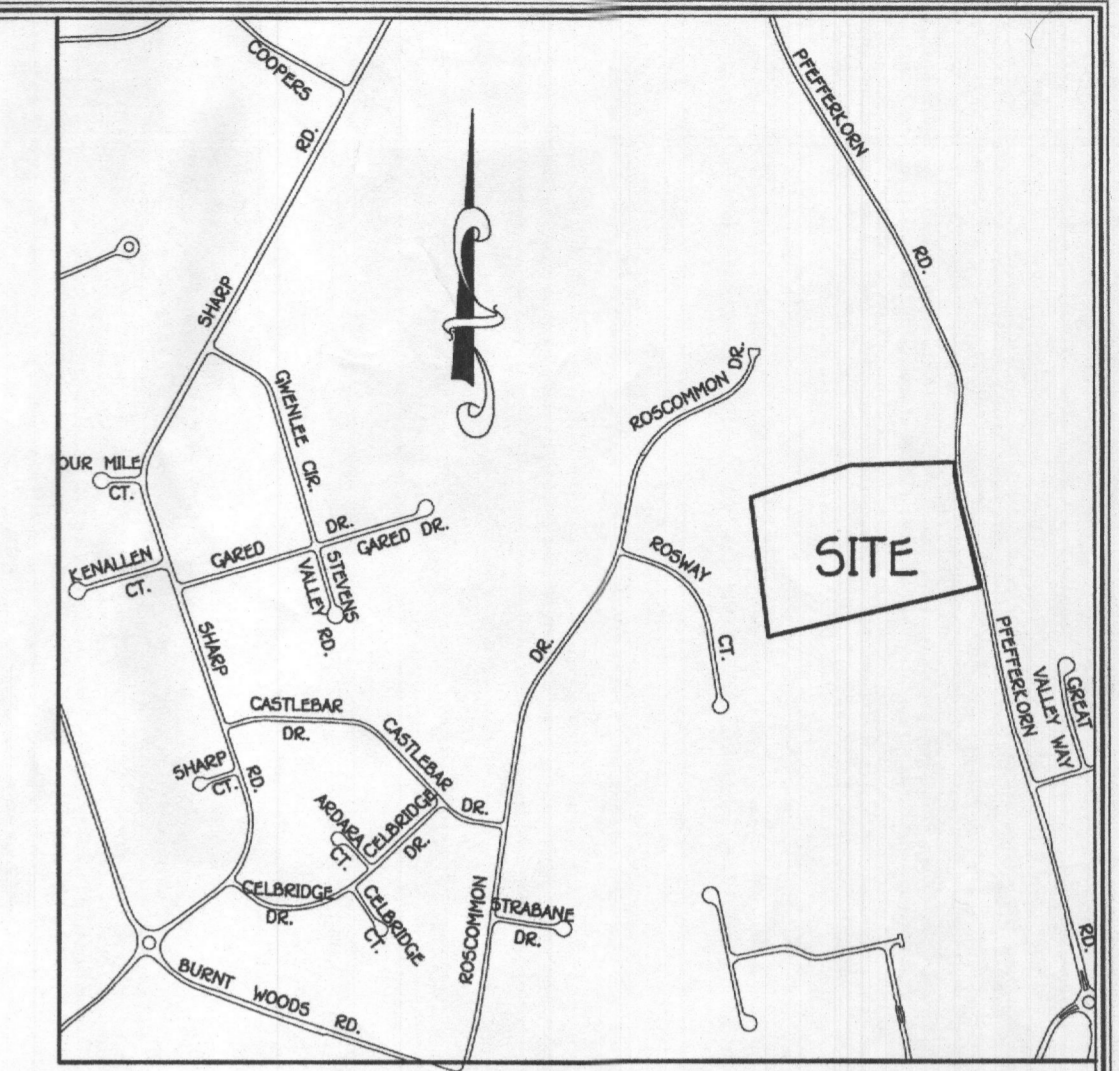
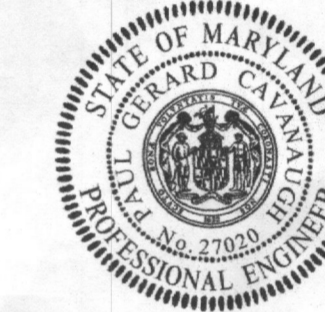


1. ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
2. THE MAXIMUM EARTH COVER OVER THE TANK IS 3 FEET. GREATER EARTH COVER WILL REQUIRE A HEAVY LOAD BEARING TANK.
3. THE WELL HO-73-0978 HAS BEEN FIELD LOCATED AND IS ACCURATELY SHOWN.
4. ALL WELLS AND SEPTIC SYSTEMS LOCATED WITHIN 100' OF THE PROPERTY BOUNDARIES AND 200' DOWN GRADIENT OF ANY WELLS AND/OR SEPTIC SYSTEMS HAVE BEEN SHOWN.
5. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH COUNTY AND STATE AGENCIES REGARDING THE ENVIRONMENTAL CROSSINGS.



VICINITY MAP  
SCALE: 1" = 1200'



**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/2024.

*James Asher* 9/11/23  
Signature Of Professional Engineer DATE

Approved Septic System Plan  
Howard County Health Department  
*g/b* 9/11/23  
Signature Date

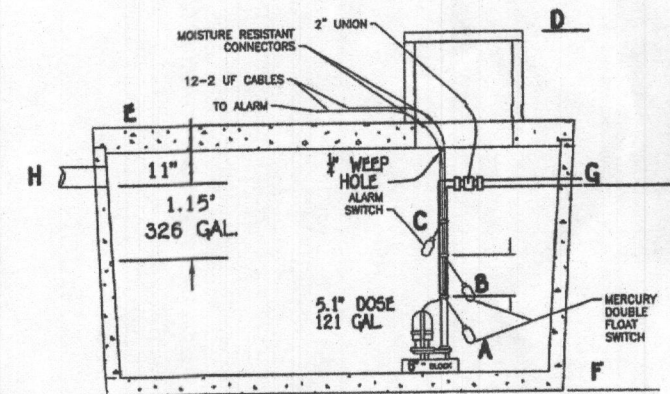
FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10277 BALDWIN NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-1899

PLAN  
SCALE: 1" = 50'

OWNER/DEVELOPER  
JAMES ASHER  
3217 ROSCOMMON DRIVE  
GLENELE, MD 21737  
443-677-6186

SEPTIC SYSTEM  
INSTALLATION SITE PLAN  
ASHER PROPERTY - APARTMENT  
3200 PFEFFERKORN ROAD  
L16699 F.0170  
TAX MAP NO.: 22 GRID NO.: 01 PARCEL NO.:177  
ZONED R-20  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: SEPTEMBER, 2023  
SHEET 1 OF 5

**PUMP ALARMS / INFORMATION**  
 A PUMP OFF : 537.26  
 B PUMP ON : 537.69  
 C HIGH WATER ALARM : 538.19  
 D TOP OF ACCESS COVER : 542  
 E TOP OF TANK : 540.5  
 F BOTTOM OF TANK : 535.09  
 G DISCHARGE OUT OF TANK : 538.75  
 H INVERT INTO TANK : 539.34



326 + 259.8 = 586 GALLONS EMERGENCY STORAGE

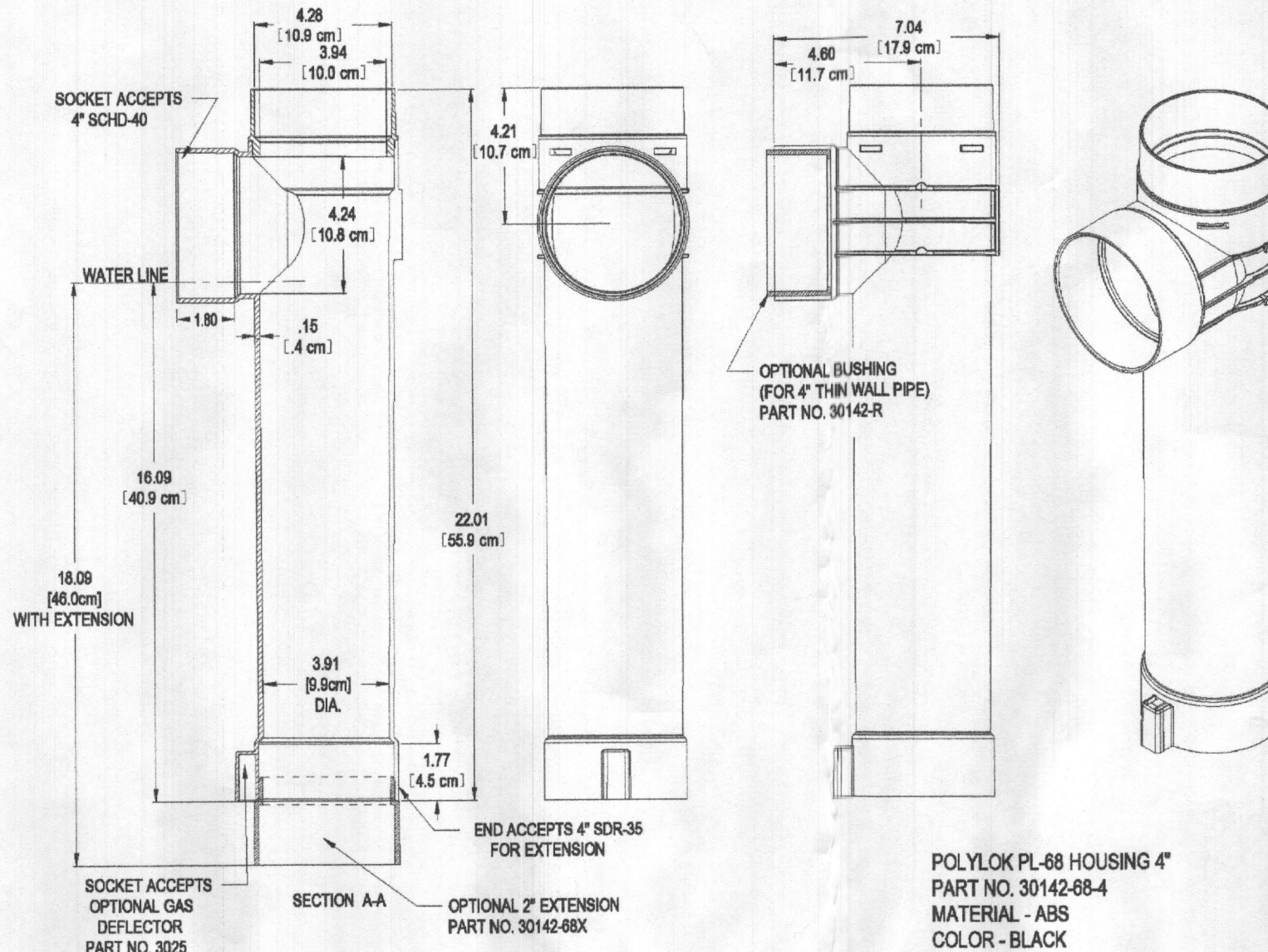
NOTE: THIS DETAIL IS TO BE USED FOR FLOAT CONFIGURATION ONLY - SEE DETAIL ABOVE FOR TANK DIMENSIONS AND ACTUAL LOCATION OF ACCESS COVER.

2" SCH. 40 PVC = 899 LF  
 1 UNION @ 2 EQUIVALENT FEET = 2 LF  
 12 1/8 HB @ 5 EQUIVALENT FEET = 60 LF  
 TOTAL LINEAR FEET OF 2" SCH. 40 PVC = 961 LF

**DYNAMIC HEAD**  
 961 LF X 3.98 FT PER 100 LF OF 2" PIPE = 38.24 FT OF FRICTION HEAD  
 VERTICAL FROM PUMP OFF TO HIGH POINT IN PUMP CHAMBER = 2.3 FT OF FRICTION HEAD  
 HIGH POINT IN PUMP CHAMBER TO HIGHEST ELEV. OF SYSTEM = 30 FT (PUMP OUT IS THE HIGHEST POINT)  
 HEIGHT FROM LOW POINT AT STREAM CROSSING TO DISTRIBUTION BOX = 27 FT  
 TOTAL DYNAMIC HEAD = 71 FT

1/8 DESIGN FLOW (300/6=50)  
 USE 121 GALLON DOSE (50 GALLON MINIMUM)  
 (RUN TIME = 3.78 MIN (32 GPM X 3.78 = 121 GALLON DOSE))

PUMP NEEDS TO HANDLE 32 GPM AT 71 FT OF HEAD  
 USE 1.5 HP (GOULDS MODEL WE15H PUMP)



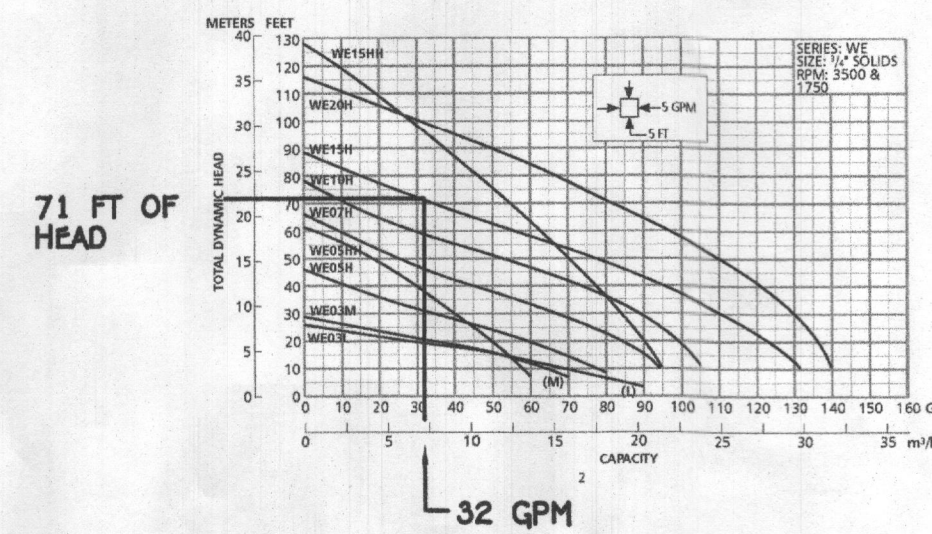
**GOULDS PUMPS**  
Wastewater

**APPLICATIONS**  
 Specifically designed for the following uses:  
 • Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Efficient Systems

**SPECIFICATIONS**  
 Pump  
 • Solid handling capabilities: 1" 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 HE voltage, phase and RPM available.

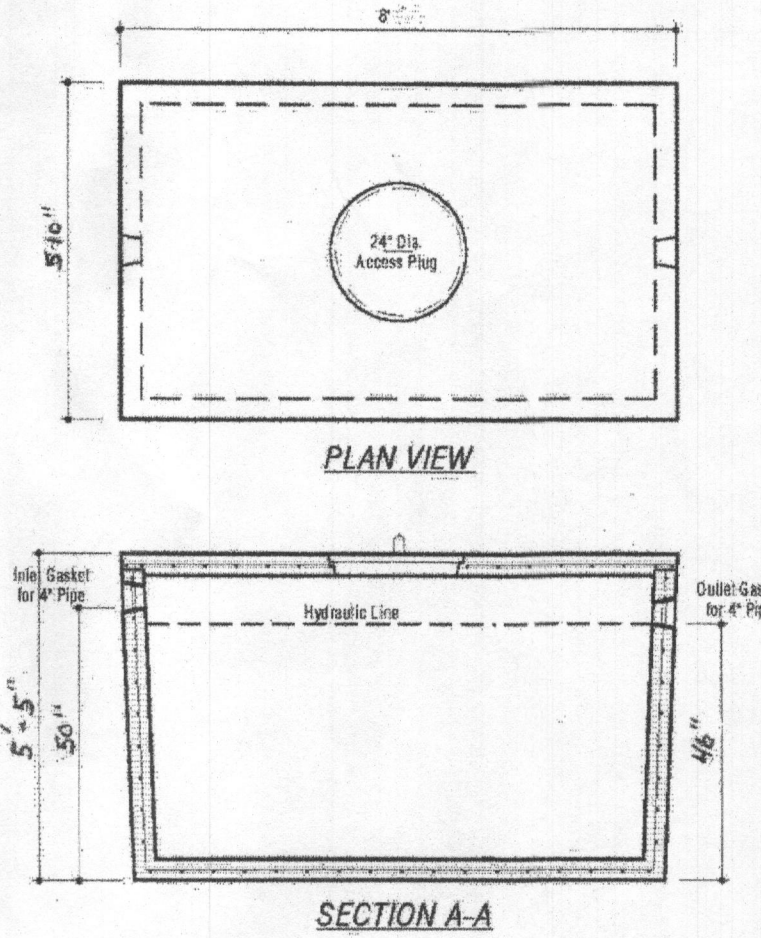
**MOTORS**  
 • Fully submersed in high-grade turbine oil for lubrication and efficient heat transfer.  
 • Class B insulation on 1/2 - 1.0 HP models.  
 • Class F insulation on 2 HP models.  
 • Single phase (60 Hz):  
 • Capacitor start motors for maximum starting torque.  
 • Built-in overload with automatic reset.  
 • STON or STONL severe duty oil and water resistant power coils.

**AGENCY LISTINGS**  
 See the ITT website for a complete list of agency listings. By contacting the nearest agency, you can obtain the ITT website.



71 FT OF HEAD

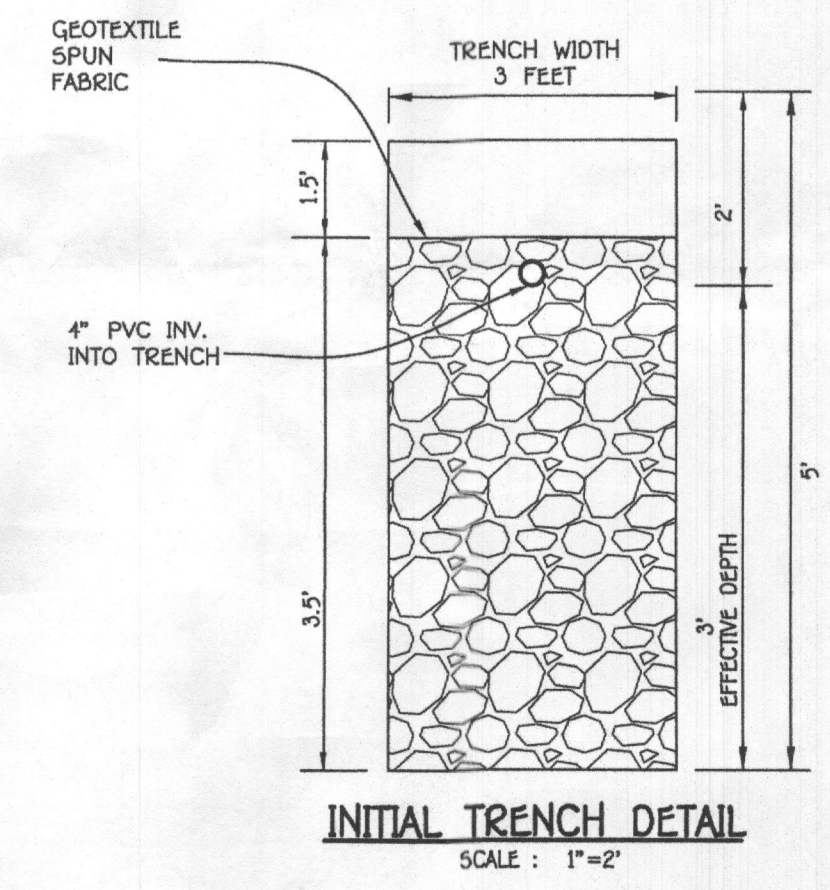
EXISTING PUMP SHALL BE VERIFIED AS A ONE HORSEPOWER PUMP. THE PUMP SHALL BE UPGRADED AND FLOATS ADJUSTED AS NECESSARY.



**DESIGN DATA & GENERAL NOTES**  
 (1) Concrete strength: 4,000 p.s.i. @ 28 days. Density - 150 pcf.  
 (2) Cement: Portland Type I or II per ASTM C 150-90.  
 (3) Admixtures & plasticizers per ASTM C 260-90 & C 494-02.  
 (4) Reinforcing per ASTM A 618, Grade 60, 1.125" cover.  
 (5) Top slab finished with light steel finish.  
 (6) \*Wall, base, & lip thickness.

<b>ADT</b> 6844 River Road Farmingdale, Maryland 21075	<b>1,000 GALLON PUMP TANK</b> 1-Compartment Stock Item Reg. No. 1998-P No Scale Jan 1, 2000
--------------------------------------------------------------	------------------------------------------------------------------------------------------------------

**PUMP TANK DETAIL**  
NOT TO SCALE

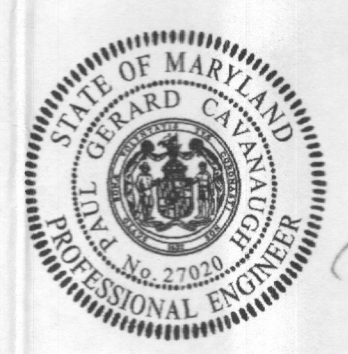


**TRENCH DATA:**  
 TRENCH 1:  
 EX. GROUND ABOVE = 570.2  
 INV. IN = 568.2  
 BOTTOM TRENCH = 565.2  
 TRENCH 2:  
 EX. GROUND ABOVE = 568.6  
 INV. IN = 566.6  
 BOTTOM TRENCH = 563.6

**INITIAL SYSTEM**  
 SEWAGE DISPOSAL SYSTEM DATA DESIGN FOR 1 BEDROOMS  
 LOADING RATE = 2 BEDROOMS X 150 GPD/BEDROOM = 300 GPD  
 APPLICATION RATE = 0.8  
 EFFECTIVE SIDEWALL BEGINS AT 2 FEET  
 TRENCH DEPTH = 5 FEET  
 TRENCH WIDTH (W) = 3 FEET  
 EFFECTIVE DEPTH (D) = 3 FEET  
 5F OF DRAINFIELD = 300 GPD / 0.8 = 375 5F  
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D)=(3+2)/(3+1+(2x3))=0.5  
 TRENCH LENGTH = 125.00 5F X 0.5 = 62.50 FEET  
 (2 TRENCHES AT 32')  
 TRENCH SPACING = 2D+W = ((2x3) + 3) = 9' USE 10'

**1ST REPLACEMENT SYSTEM**  
 SEWAGE DISPOSAL SYSTEM DATA DESIGN FOR 1 BEDROOMS  
 LOADING RATE = 2 BEDROOMS X 150 GPD/BEDROOM = 300 GPD  
 APPLICATION RATE = 0.8  
 EFFECTIVE SIDEWALL BEGINS AT 2 FEET  
 TRENCH DEPTH = 5 FEET  
 TRENCH WIDTH (W) = 3 FEET  
 EFFECTIVE DEPTH (D) = 3 FEET  
 5F OF DRAINFIELD = 300 GPD / 0.8 = 375 5F  
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D)=(3+2)/(3+1+(2x3))=0.5  
 TRENCH LENGTH = 125.00 5F X 0.5 = 62.50 FEET  
 (2 TRENCHES AT 32')  
 TRENCH SPACING = 2D+W = ((2x3) + 3) = 9' USE 10'

**2ND REPLACEMENT SYSTEM**  
 SEWAGE DISPOSAL SYSTEM DATA DESIGN FOR 1 BEDROOMS  
 LOADING RATE = 2 BEDROOMS X 150 GPD/BEDROOM = 300 GPD  
 APPLICATION RATE = 0.8  
 EFFECTIVE SIDEWALL BEGINS AT 2 FEET  
 TRENCH DEPTH = 5 FEET  
 TRENCH WIDTH (W) = 3 FEET  
 EFFECTIVE DEPTH (D) = 3 FEET  
 5F OF DRAINFIELD = 300 GPD / 0.8 = 375 5F  
 COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D)=(3+2)/(3+1+(2x3))=0.5  
 TRENCH LENGTH = 125.00 5F X 0.5 = 62.50 FEET  
 (2 TRENCHES AT 32')  
 TRENCH SPACING = 2D+W = ((2x3) + 3) = 9' USE 10'



**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27023, EXPIRATION DATE: 01/25/2024.  
 Paul G. Calamanna  
 Signature of Professional Engineer DATE: Sept. 5, 2023

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21142  
 (410) 461-2999

**OWNER/DEVELOPER**  
 JAMES ASHER  
 3217 BOSSCORNHORN DRIVE  
 GLENELG MD 21737  
 443-677-6186

**SEPTIC SYSTEM**  
**INSTALLATION SITE PLAN**  
**ASHER PROPERTY - APARTMENT**  
 3200 PFEFFERKORN ROAD  
 L16699 F.0170  
 TAX MAP NO.: 22 GRID NO.: 01 PARCEL NO.:177  
 ZONED R-20  
 THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: SEPTEMBER, 2023  
 SHEET 2 OF 5



SEPTIC PROFILE  
SCALE: 1"=30'

0+00	INV. OUT OF HOUSE = 542.46
0+03	CLEARANCE #1 INV. IN = 540.31
0+03	INV. OUT = 540.31
0+28	INV. INTO SEPTIC TANK = 539.81
0+41	INV. OUT SEPTIC TANK = 539.56
0+44	INV. INTO PUMP TANK = 539.34
0+55	INV. OUT PUMP TANK = 539.01

3+03.80 END OF EXISTING 2" PRESSURE LINE

9+53.87 INV. INTO DISTRIBUTION BOX = 549.40



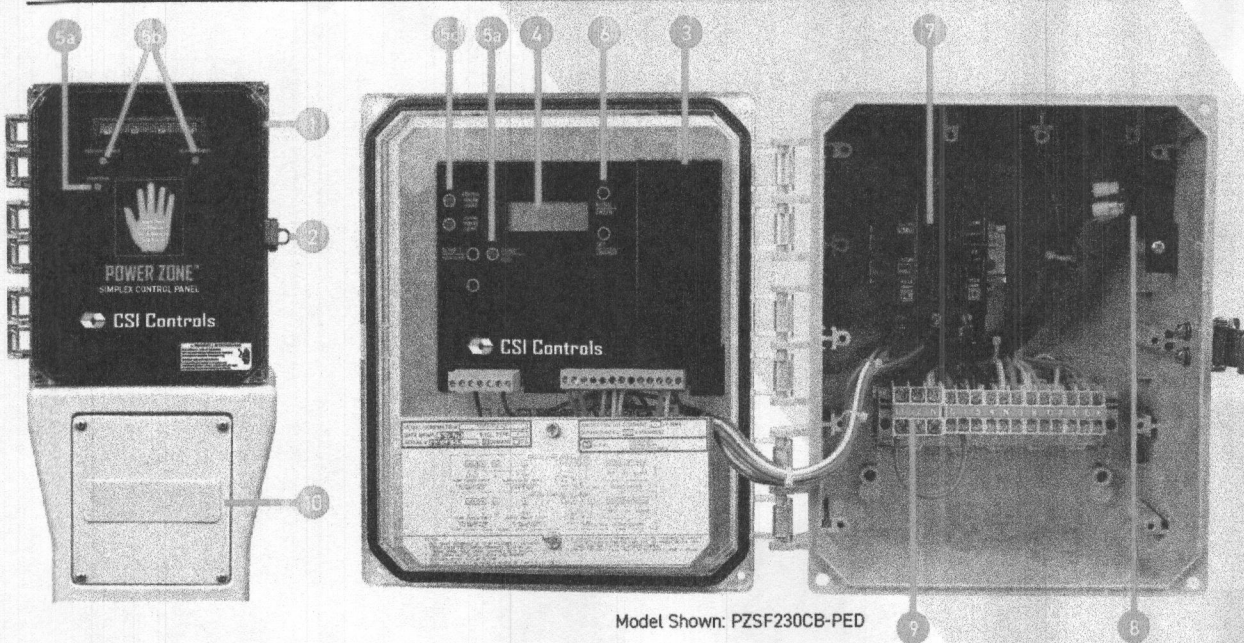
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*Paul G. Conaway*  
Signature of Professional Engineer  
DATE: Sept. 5, 2023

**OWNER/DEVELOPER**  
JAMES ASHER  
3217 ROSCOMMON DRIVE  
GLENELG, MD 21737  
443-877-6186

**SEPTIC SYSTEM  
INSTALLATION SITE PLAN  
ASHER PROPERTY - APARTMENT**  
3200 PFEFFERKORN ROAD  
L16699 F.0170  
TAX MAP NO.: 22 GRID NO.: 01 PARCEL NO.:177  
ZONED R-20  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: SEPTEMBER, 2023  
SHEET 3 OF 5

# Power Zone™ Single Phase Simplex

Single Phase Simplex Demand or Timed Dose Controlled System for Pump Control and System Monitoring



Model Shown: PZSF230CB-FED

The Power Zone™ Single Phase Simplex panel is designed to control one 115/230V single phase pump in water and sewage installations. The easy to read LCD display provides for simple menu navigation, site setup, and access to critical alarm events, pump run times, and pump cycle counts.

### FEATURES

- Float or 4-20mA continuous level sensing models
- 4-20mA model provides inputs for two float backup
- Digital backlit LCD for easy setup and system monitoring
- Field configurable for Demand or Timed Dose control
- Zero cross over sensing for extended motor relay life
- Exterior touch sensor for alarm silence and test
- Five-year limited warranty on panel
- Two-year limited warranty on 4-20mA transmitters

### OPTIONS

- Auxiliary alarm and redundant off circuitry
- Heavy duty option increases circuit breaker and wire gauge to allow 16-20 amps
- Poly pedestal with access cover
- Float configurations

### COMPONENTS

1. NEMA 4X enclosure rated for indoor or outdoor use
2. Locking latch for added safety
3. Controller touch safe housing
4. Digital backlit LCD display, 2 lines, 16 characters per line
5. (a) Pump Run LEDs, (b) Control Power and Alarm Power LEDs, and (c) Control and Alarm Power Short LEDs
6. Menu/Enter & Set/Change buttons for programming and viewing control panel
7. Two circuit breakers: one for pump power; another for control and alarm power
8. Pump run relay controls pump by switching electrical lines
9. Terminal strip for field wiring of incoming power, floats and pump
10. Pedestal (optional) with easy access cover



Toll Free: 888-342-5753  
customer.service@csieinc.com  
www.csicontrols.com

A.37

Model	Max F.L.A.	Description	Enclosure Type	Input Power Voltage Phase	Circuit Breakers
PZSF115CB	16	Power Zone Simplex Floats	NEMA 4x	115-1	Motor & Control
PZSF115ACB	16	Power Zone Simplex Floats	NEMA 4x	115-1	Motor, Control & Alarm
PZSF230CB	16	Power Zone Simplex Floats	NEMA 4x	230-1	Motor & Control
PZSF230ACB	16	Power Zone Simplex Floats	NEMA 4x	230-1	Motor, Control & Alarm
Power Zone™ Simplex Transmitter 4-20mA					
PZST115CB	16	Power Zone Simplex Transmitter	NEMA 4x	115-1	Motor & Control
PZST115ACB	16	Power Zone Simplex Transmitter	NEMA 4x	115-1	Motor, Control & Alarm
PZST230CB	16	Power Zone Simplex Transmitter	NEMA 4x	230-1	Motor & Control
PZST230ACB	16	Power Zone Simplex Transmitter	NEMA 4x	230-1	Motor, Control & Alarm
Options		Description			
FC20	(3) PZSF or (2) PZST 20 foot (6.1m) mechanical control switches / pipe clamp				
FC20CW	(3) PZSF or (2) PZST 20 foot (6.1m) mechanical control switches / cable weight				
FR20	(3) PZSF or (2) PZST 20 foot (6.1m) mercury control switches / pipe clamp				
FR20CW	(3) PZSF or (2) PZST 20 foot (6.1m) mercury control switches / cable weight				
FC30	(3) PZSF or (2) PZST 30 foot (9.1m) mechanical control switches / pipe clamp				
FC30CW	(3) PZSF or (2) PZST 30 foot (9.1m) mechanical control switches / cable weight				
FR30	(3) PZSF or (2) PZST 30 foot (9.1m) mercury control switches / pipe clamp				
FR30CW	(3) PZSF or (2) PZST 30 foot (9.1m) mercury control switches / cable weight				
FC50	(3) PZSF or (2) PZST 50 foot (15.2m) mechanical control switches / pipe clamp				
FC50CW	(3) PZSF or (2) PZST 50 foot (15.2m) mechanical control switches / cable weight				
FR50	(3) PZSF or (2) PZST 50 foot (15.2m) mercury control switches / pipe clamp				
FR50CW	(3) PZSF or (2) PZST 50 foot (15.2m) mercury control switches / cable weight				
HD	Heavy Duty - Increases breakers and wire gauge to allow 16-20 Amps				
PEd	Poly Pedestal with access door				
TC25	(1) CS4-20 transmitter 100 IHW with 25 foot cable (backup floats recommended, add float code option)*				
TC50	(1) CS4-20 transmitter 100 IHW with 50 foot cable (backup floats recommended, add float code option)*				
TS25	(1) SLX transmitter 16.7 RWC with 25 foot cable (backup floats recommended, add float code option)*				
TS50	(1) SLX transmitter 16.7 RWC with 50 foot cable (backup floats recommended, add float code option)*				
X	Auxiliary Alarm & Redundant Off Circuitry (control float not included)				

\*Only available for PZST panel models.

SEE PRICE BOOK FOR LIST PRICE.

### SPECIFICATIONS

VOLTAGE SUPPLY: Pump: 115 VAC or 230 VAC 50/60 Hz 1Ø  
Control/Alarm: 115 VAC 60 Hz 1Ø

ENCLOSURE: 10 x 8 x 6 inch (25.4 x 20.3 x 15.2 cm)  
NEMA 4X ultraviolet stabilized thermoplastic rated for indoor/outdoor use

INNER DOOR: molded thermoplastic

LOCKING LATCH: stainless steel, padlockable

FLOAT CONTROL VOLTAGE: 115 VAC

MOTOR STARTER: solid state power relay

PUMP AMPS: 0-16 Amps, 16-20 Amps

ALARM HORN: 83-85 decibel rating

FLASHING RED LED ALARM LIGHT



Toll Free: 888-342-5753  
customer.service@csieinc.com  
www.csicontrols.com

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California Prop 65 requires the following: **WARNING: Cancer and Reproductive Harm - www.P65Warnings.com**

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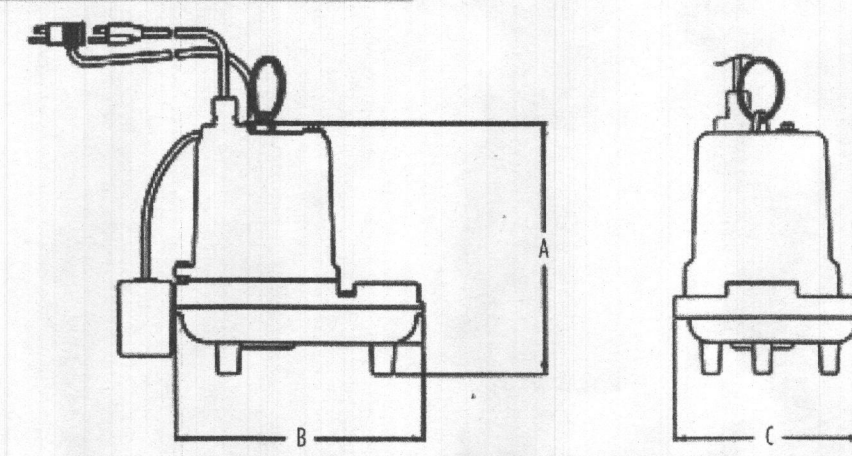
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ELLSWORTH CITY, MARYLAND 21114  
(410) 461-2299

OWNER/DEVELOPER  
JAMES ASHER  
3217 ROSCOMMON DRIVE  
GLENELG MD 21737  
443-677-6186

## EFFLUENT PUMPS

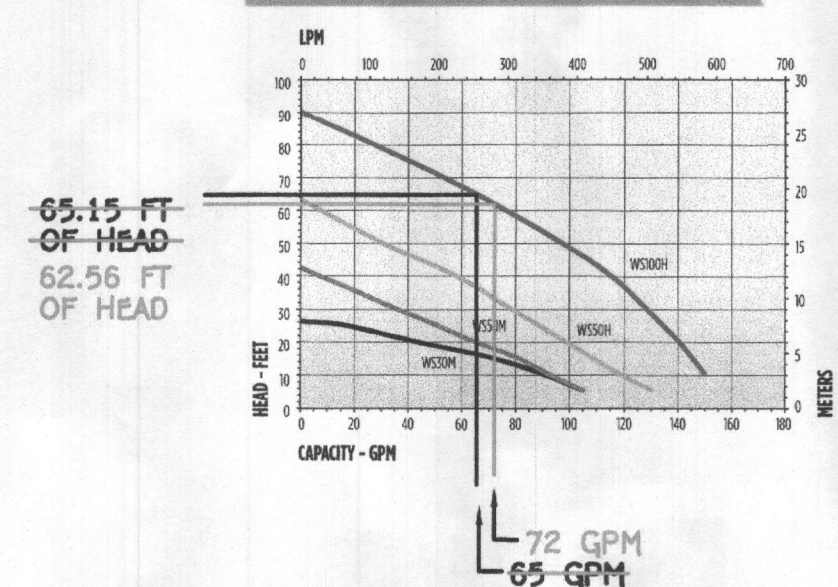
WS EFFLUENT SERIES - 1/3 HP, 1/2 HP, 1 HP

### ENGINEERING DATA



Model	115V	120V	230V
WS10	11.5"	12.2"	8.5"
WS20	14.5"	15.2"	10.5"
WS30	18.5"	19.2"	13.5"
WS40	22.5"	23.2"	16.5"

### PERFORMANCE DATA



### CONSTRUCTION

Motor Housing	Cast Iron
Impeller Material	Cast Iron
Impeller Type	Non-Clog
Volts	Cast Iron
Motor Shaft	Stainless Steel
Shaft Seal	Carbon/Vermic
Fasteners	Stainless Steel
Bearings	Upper and lower ball bearings
Power Cord	SAW

Franklin Electric  
Model: WS100H, WS20H, WS30H, WS40H

## EFFLUENT PUMPS

## Little GIANT

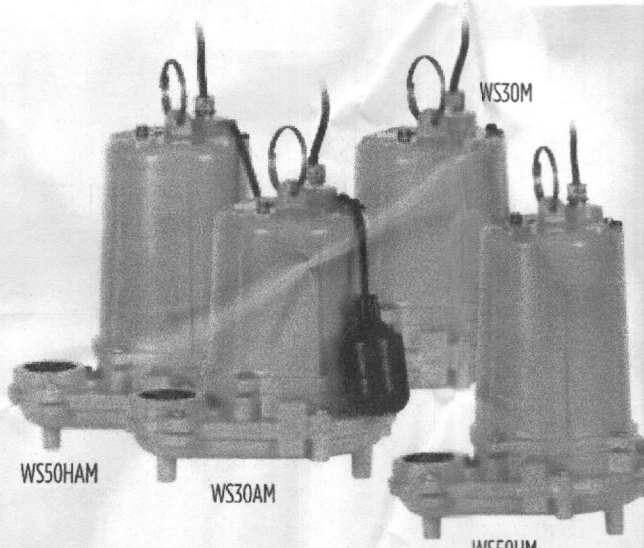
WS EFFLUENT SERIES - 1/3 HP, 1/2 HP, 1 HP

### APPLICATIONS

Effluent wastewater removal, dewatering, water transfer

### FEATURES

- Split-phase, oil-filled motor
- Designed for high torque
- Piggyback mechanical float option available for automatic operation
- 2" NPT (51 mm) discharge
- Handles solids up to 3/4" (19 mm) diameter
- 100°F (40°C) liquid temperature rating
- cULus listed



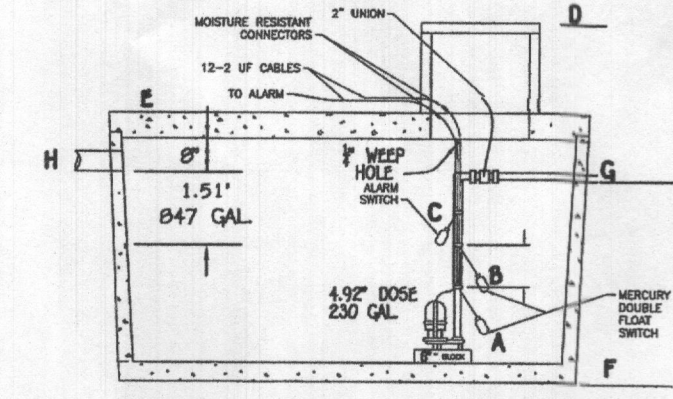
### SERIES SPECIFICATIONS

Model	115V	120V	230V
WS10	11.5"	12.2"	8.5"
WS20	14.5"	15.2"	10.5"
WS30	18.5"	19.2"	13.5"
WS40	22.5"	23.2"	16.5"

Model	115V	120V	230V
WS10	11.5"	12.2"	8.5"
WS20	14.5"	15.2"	10.5"
WS30	18.5"	19.2"	13.5"
WS40	22.5"	23.2"	16.5"

### PUMP ALARMS / INFORMATION

- A PUMP OFF : 559.50
- B PUMP ON : 555.99
- C HIGH WATER ALARM : 556.49
- D TOP OF ACCESS COVER : 563.1
- E TOP OF TANK : 559.00
- F BOTTOM OF TANK : 553.50
- G DISCHARGE OUT OF TANK : 557.83
- H INVERT INTO TANK : 558.00



847 + 374 = 1,221 GALLONS EMERGENCY STORAGE  
NOTE: THIS DETAIL IS TO BE USED FOR FLOAT CONFIGURATION ONLY - SEE DETAIL ABOVE FOR TANK DIMENSIONS AND ACTUAL LOCATION OF ACCESS COVER.

1 UNION @ 2 EQUIVALENT FEET = 2 LF  
9 1/8\"/>

DYNAMIC HEAD @ 65 GPM  
750 LF X 3.98 FT PER 100 LF OF 2\"/>

1/8 DESIGN FLOW (900/6=150)  
USE 230 GALLON DOSE (150 GALLON MINIMUM)  
(RUN TIME = 3.5 MIN @ 65 GPM X 3.5 = 230 GALLON DOSE)

FFE 576.00  
BSE 566.00  
INV. OUT OF HOUSE = 563.04  
PROP. GROUND AT CLEANOUT #1 = 574.0  
INV. INTO CLEANOUT = 563.40  
INV. OUT OF CLEANOUT = 563.30  
PROP. GROUND AT CLEANOUT #2 = 562.00  
INV. INTO CLEANOUT = 558.49  
INV. OUT OF CLEANOUT = 558.39  
EX. GROUND AT SEPTIC TANK = 562  
PROP. GRADE ABOVE SEPTIC TANK = 562  
TOP OF SEPTIC TANK = 559.43  
INV. INTO SEPTIC TANK = 558.43  
INV. OUT OF SEPTIC TANK = 558.1  
EX. GROUND AT PUMP TANK = 562  
PROP. GRADE ABOVE PUMP TANK = 562  
TOP OF PUMP TANK = 559.00  
INV. INTO PUMP TANK = 558.00  
INV. OUT OF PUMP TANK = 557.83  
EX. GROUND AT DISTRIBUTION BOX = 574.0  
INV. INTO DISTRIBUTION BOX = 572.0  
INV. OUT OF DISTRIBUTION BOX = 571.9

### BAT NOTES

1. ANY CHANGE TO THE LOCATIONS OR DEPTHS TO ANY COMPONENTS MUST BE APPROVED BY THE ENGINEER AND THE HOWARD COUNTY HEALTH DEPARTMENT PRIOR TO INSTALLATION. A REVISED SITE PLAN MAY BE REQUIRED.
2. THE MAXIMUM DEPTH OF THE BAT PER THE MANUFACTURER'S SPECIFICATION IS 3 FEET.
3. THE BLOWER MAY NOT BE LOCATED MORE THAN 25' FEET FROM THE TANK BASED ON THE MANUFACTURER'S SPECIFICATIONS.
4. THE BAT SYSTEM SHALL BE MAINTAINED AND OPERATED FOR THE LIFE OF THE SYSTEM.
5. THE BAT SHALL BE OPERATED BY AND MAINTAINED BY A CERTIFIED SERVICE PROVIDER.
6. WITHIN ONE MONTH OF INSTALLATION, A PERSON INSTALLING THE BAT SYSTEM SHALL REPORT TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) IN A MANNER ACCEPTABLE TO MDE, THE ADDRESS AND DATE OF COMPLETION OF THE BAT INSTALLATION AND THE TYPE OF BAT INSTALLED.
7. ELECTRICAL WORK FOR THE BAT INSTALLATION MUST BE PERFORMED BY A LICENSED ELECTRICIAN.
8. AN AGREEMENT AND EASEMENT MUST BE COMPLETED AND SIGNED BY ALL APPLICABLE PARTIES, AND RECORDED IN LAND RECORDS OF HOWARD COUNTY.
9. THE HEALTH DEPARTMENT REQUIRES DOCUMENTATION FOR THE START-UP CERTIFICATION FROM THE MANUFACTURER PRIOR TO FINAL APPROVAL OF THE INSTALLATION.

### INITIAL SYSTEM

SEWAGE DISPOSAL SYSTEM DATA, DESIGN FOR 6 BEDROOMS  
LOADING RATE = 6 BEDROOMS X 150 GPD/BEDROOM = 900 GPD  
APPLICATION RATE = 0.8  
EFFECTIVE SIDEWALL BEGINS AT 2 FEET  
TRENCH DEPTH (W) = 6 FEET  
TRENCH WIDTH (W) = 3 FEET  
EFFECTIVE DEPTH (D) = 2 FEET  
5' OF DRAINFIELD = 900 GPD / 0.8 = 1125 5F  
COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D)=(3+2)/(3+1+(2x2))=0.625  
TRENCH LENGTH = 375 5F x 0.625 = 234.30 FEET  
(USE 4 TRENCHES AT 59 LF.)  
TRENCH SPACING = 20+W = ((2x2) + 3) = 7' USE 10'

### 1ST REPLACEMENT SYSTEM

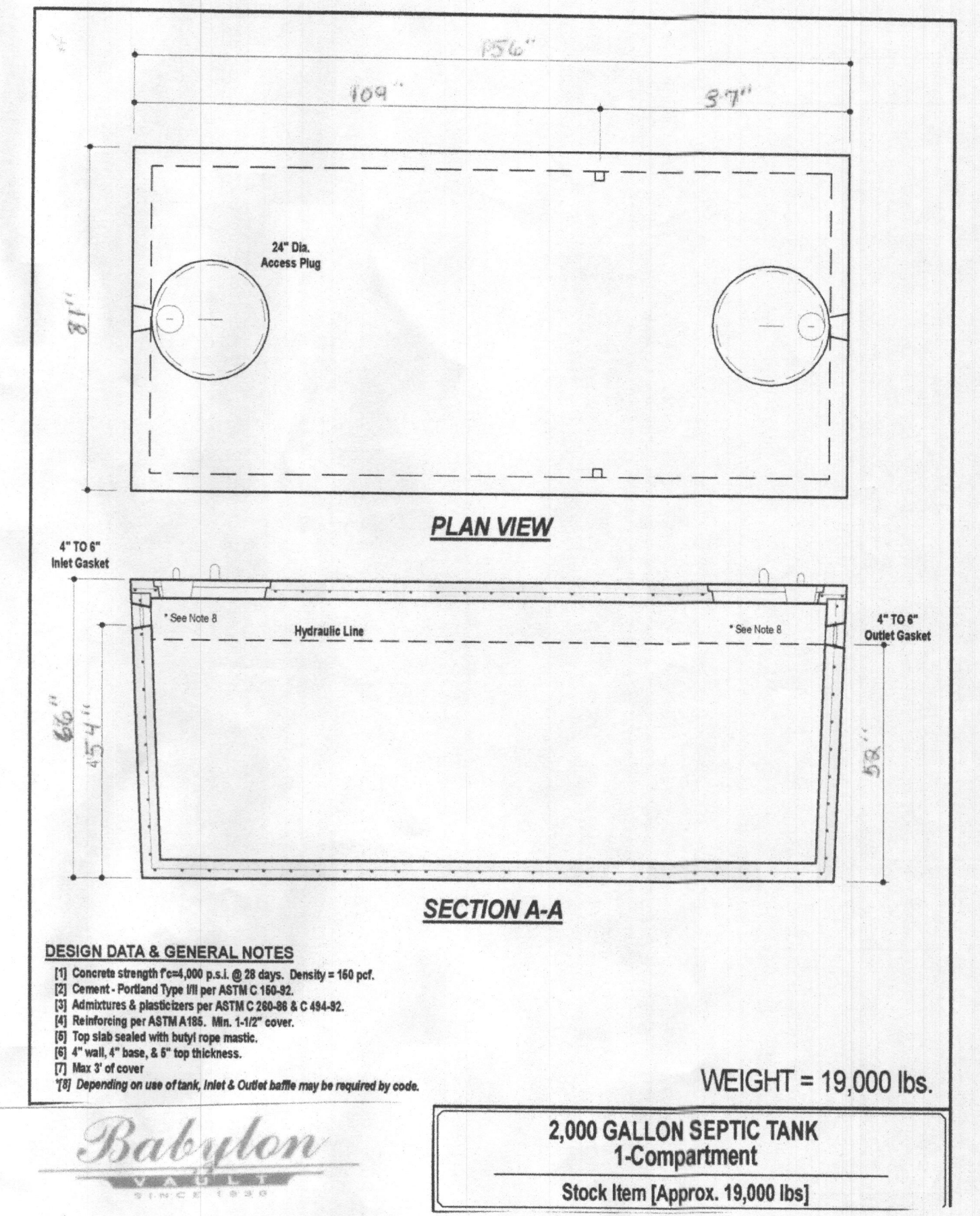
SEWAGE DISPOSAL SYSTEM DATA, DESIGN FOR 6 BEDROOMS  
LOADING RATE = 6 BEDROOMS X 150 GPD/BEDROOM = 900 GPD  
APPLICATION RATE = 0.8  
EFFECTIVE SIDEWALL BEGINS AT 2 FEET  
TRENCH DEPTH (W) = 6 FEET  
TRENCH WIDTH (W) = 3 FEET  
EFFECTIVE DEPTH (D) = 2 FEET  
5' OF DRAINFIELD = 900 GPD / 0.8 = 1125 5F  
COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D)=(3+2)/(3+1+(2x2))=0.625  
TRENCH LENGTH = 375 5F x 0.625 = 234.30 FEET  
(USE 3 TRENCHES AT 79 LF.)  
TRENCH SPACING = 20+W = ((2x2) + 3) = 7' USE 10'

### 2ND REPLACEMENT SYSTEM

SEWAGE DISPOSAL SYSTEM DATA, DESIGN FOR 6 BEDROOMS  
LOADING RATE = 6 BEDROOMS X 150 GPD/BEDROOM = 900 GPD  
APPLICATION RATE = 0.8  
EFFECTIVE SIDEWALL BEGINS AT 2 FEET  
TRENCH DEPTH (W) = 6 FEET  
TRENCH WIDTH (W) = 3 FEET  
EFFECTIVE DEPTH (D) = 2 FEET  
5' OF DRAINFIELD = 900 GPD / 0.8 = 1125 5F  
COEFFICIENT OF REDUCTION OF TRENCH LENGTH = (W+2)/(W+1+2D)=(3+2)/(3+1+(2x2))=0.625  
TRENCH LENGTH = 375 5F x 0.625 = 234.30 FEET  
(USE 3 TRENCHES AT 79 LF.)  
TRENCH SPACING = 20+W = ((2x2) + 3) = 7' USE 10'

### TRENCH DATA:

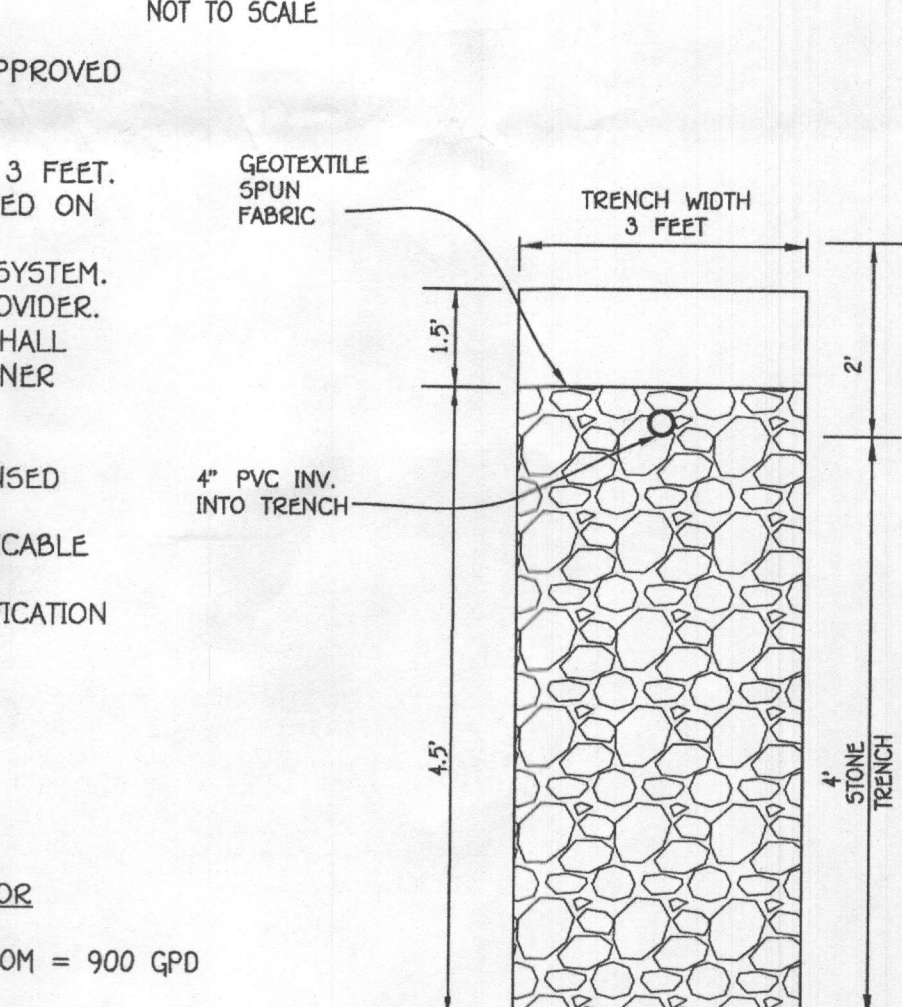
- TRENCH 1:  
EX. GROUND ABOVE = 573.2  
INV. IN = 571.2  
BOTTOM TRENCH = 567.2
- TRENCH 2:  
EX. GROUND ABOVE = 571.9  
INV. IN = 569.9  
BOTTOM TRENCH = 565.9
- TRENCH 3:  
EX. GROUND ABOVE = 570.8  
INV. IN = 568.8  
BOTTOM TRENCH = 564.8



DESIGN DATA & GENERAL NOTES  
[1] Concrete strength Fc=4,000 p.s.i. @ 28 days. Density = 150 pcf.  
[2] Cement - Portland Type III per ASTM C 150-82.  
[3] Admixtures & plasticizers per ASTM C 260-88 & C 484-82.  
[4] Reinforcing per ASTM A 618, Min. 5/8\"/>

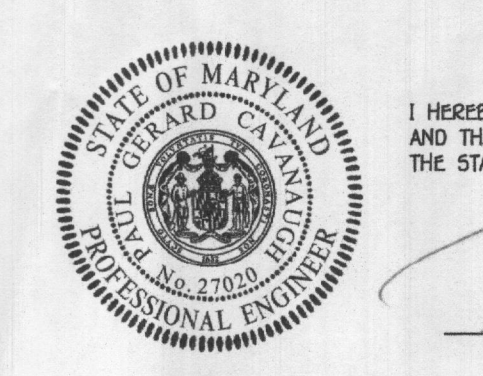
WEIGHT = 19,000 lbs.  
**2,000 GALLON SEPTIC TANK**  
1-Compartment  
Stock Item [Approx. 19,000 lbs]

### PUMP TANK DETAIL



INITIAL TRENCH DETAIL  
SCALE: 1\"/>

SEPTIC SYSTEM  
INSTALLATION SITE PLAN  
ASHER PROPERTY  
3200 PFEFFERKORN ROAD  
L16699 F.0170  
TAX MAP NO.: 22 GRID NO.: 01 PARCEL NO.:177  
ZONED R-20  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: SEPTEMBER, 2023  
SHEET 4 OF 5

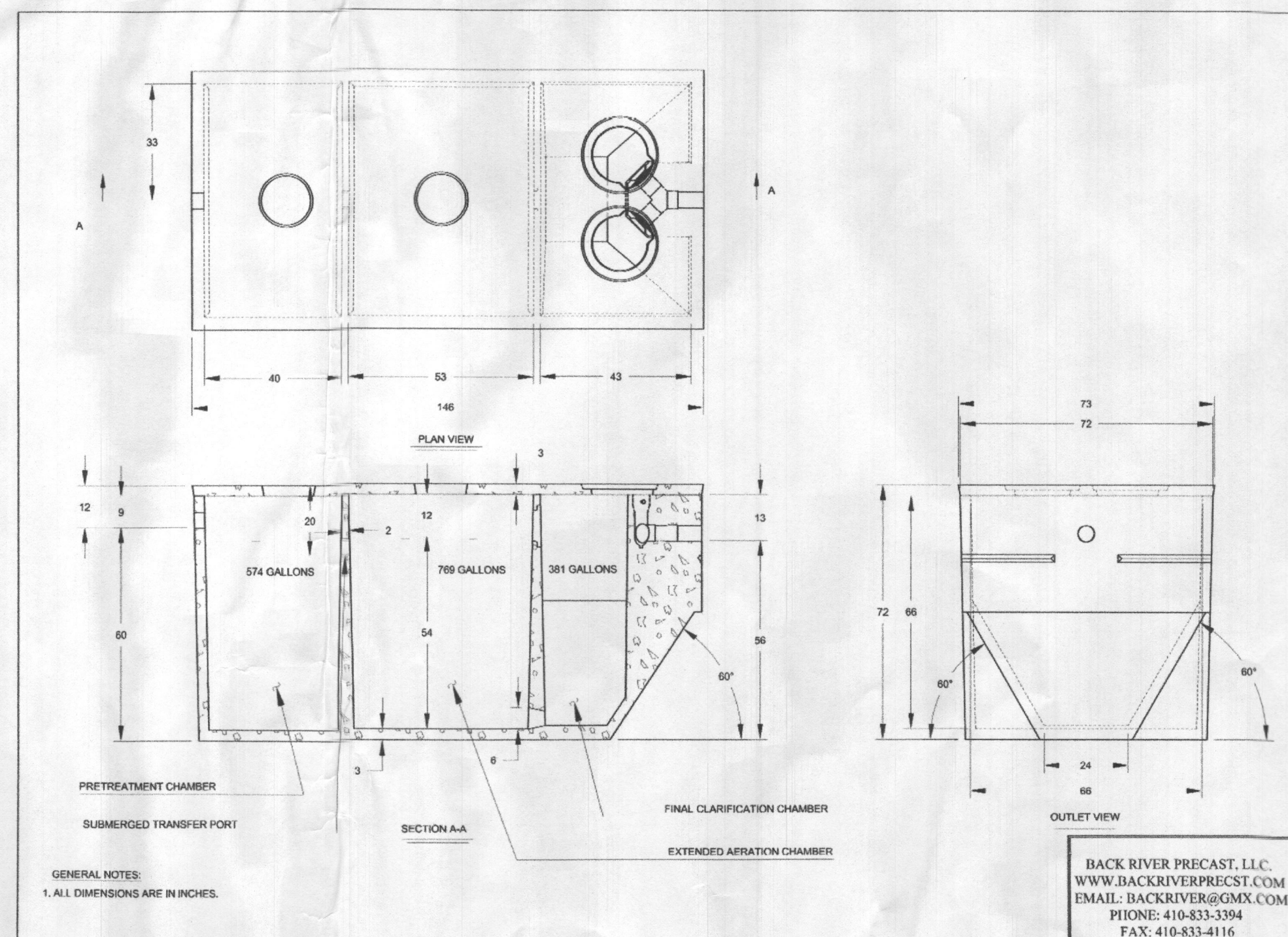
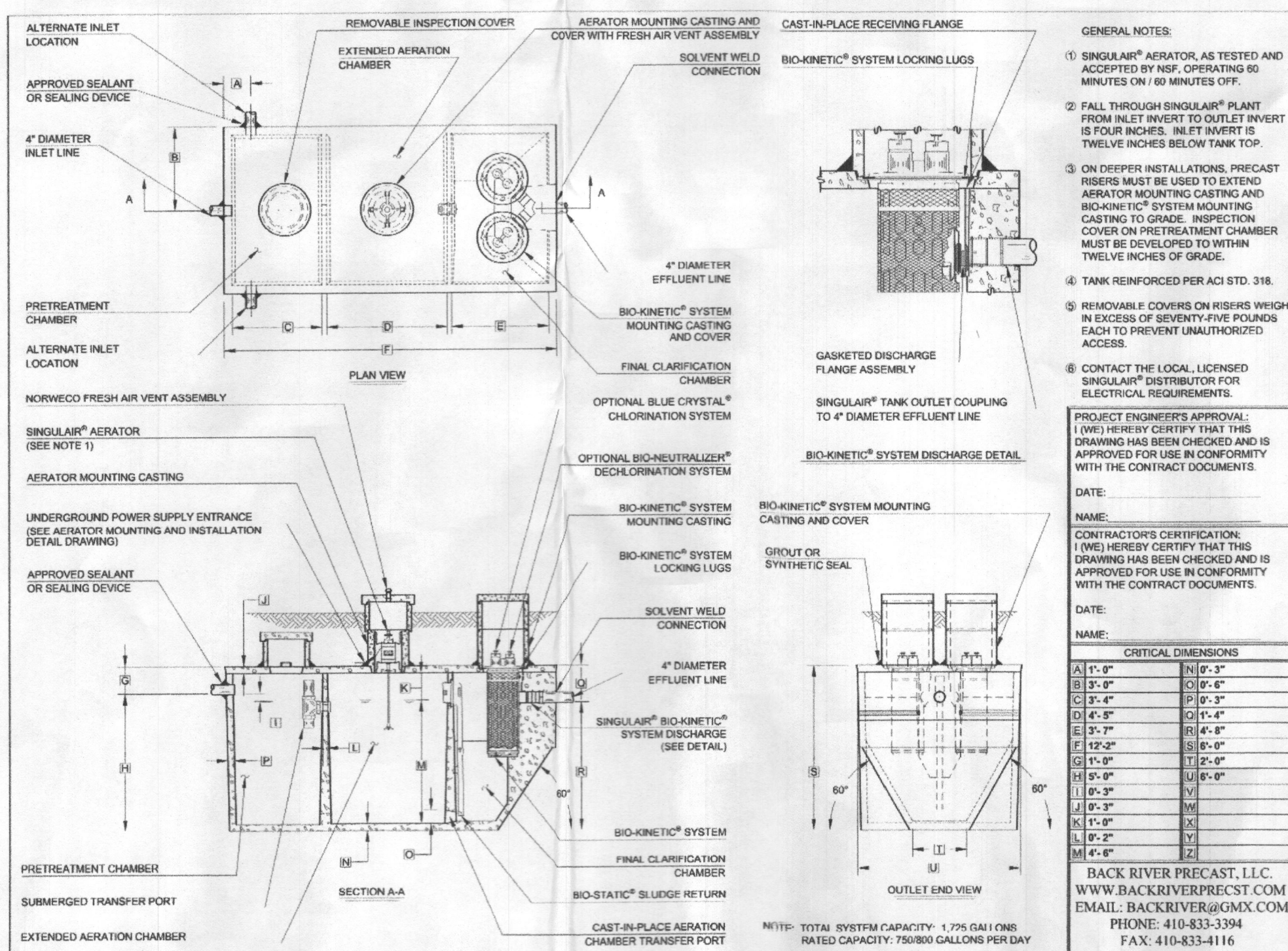


### PROFESSIONAL CERTIFICATION

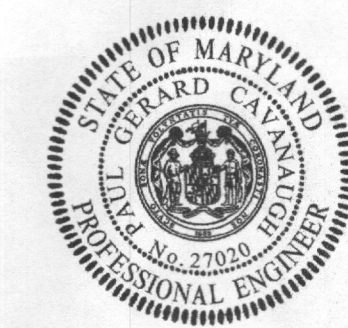
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/2024.  
Signature of Professional Engineer: Paul J. Asher  
DATE: Sep 5, 2023



SEPTIC PROFILE  
SCALE: 1"=30'



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21046  
(410) 461-1289



**PROFESSIONAL CERTIFICATION**  
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27020, EXPIRATION DATE: 01/25/2024.  
*James Asher*  
Signature Of Professional Engineer DATE: Sep 5 2023

**SEPTIC SYSTEM  
INSTALLATION SITE PLAN  
ASHER PROPERTY**

3200 PFEFFERKORN ROAD  
L16699 F.0170  
TAX MAP NO.: 22 GRID NO.: 01 PARCEL NO.:177  
ZONED R-20  
THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: SEPTEMBER, 2023  
SHEET 5 OF 5

**OWNER/DEVELOPER**  
JAMES ASHER  
3217 BUCKINGHAM DRIVE  
GLENELG, MD 21737  
443-677-6186

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