

## GENERAL NOTES

1. There shall be no deviation from these plans during construction without prior approval of a licensed design professional and Town of Caroga Code Enforcement Officer.
2. The materials and specifications noted on the plans must be utilized unless alternates are accepted and approved in writing by a licensed design professional and Town of Caroga Code Enforcement Officer.
3. Follow all manufacture's instructions for component installation unless otherwise directed by a licensed design professional and Town of Caroga Code Enforcement Officer.
4. Prior to excavating, consult the Underground Facilities Protective Organization.

## ALL SEPTIC PLANS

1. Contact the Town of Caroga Code Enforcement Officer regarding the procedures involved for any required permits.
  - a) Prior to site development;
  - b) Prior to backfilling pipes, tanks, pits, etc.;
  - c) After final grading and seeding.Coordinate the necessary inspections with the Town of Caroga Code Enforcement Officer.
3. No existing or proposed water supply or sewage treatment facilities are located within 100 feet of this project except as specifically noted on the plan.
4. No roof, floor, footing, cooling water, backwash drains, etc., shall be connected to the sewage treatment system and all discharges shall be directed away from the treatment area.
5. No vehicular parking or traffic shall be allowed on any portion of the sewage treatment system.
6. The septic tank should be pumped at least every 2 years

## SOIL DESCRIPTION

The soils in this area of the leach field are mapped as Metacomet fine sandy loam.

### Deep Hole #1

- 0 - 2" Humus (Dark Brown)
- 2" - 42" Loamy Fine Sand (Orange) with cobbles
- 42" - 72" Loamy Fine Sand (Tan) with large cobbles

No Groundwater at 72" (7/20/2020)

Should soils other as described be encountered during construction, contact John M. King @ 518-993-3121 immediately.

## PERCOLATION TESTS

Two percolation tests were performed where marked on the plans (7/20/2020).

### PH#1

The hole was 24" deep and 12" in diameter. The stabilized rate was 7 minutes per inch.

### PH#2

The hole was 24" deep and 12" in diameter. The stabilized rate was 8 minutes per inch.

## DESIGN CRITERIA

The New York State Department of Health Design Handbook for Residential Onsite Wastewater Treatment Systems 2012.

The leach field will be designed for 6 bed rooms. Each dwelling will have a different method to get the effluent into the leach field.

PERCOLATION RATE 8 - 10 minutes per inch

WATER USAGE 6 bedrooms = 660 gpd  
House =4; Garage=2; This will be new and remodeled construction with water efficient fixtures. No garbage disposal is anticipated.

SEPTIC TANKS 1250 gallon one piece Miller Ready Mix or equal for the house. 1,000 Gallon one piece Miller Ready Mix or equal for the garage.

PUMP TANK 1,000 Gallon one piece Miller Ready Mix or equal  
DISTRIBUTION BOX Miller Ready Mix 12 hole or equal.

LATERALS 660 gpd = 367 LF of laterals required. Use 7 laterals of 55 feet each for a total of 385 LF.

PUMP Gould WE07H or equal.

CONTROL PANEL & ALARM CentriPro SES Series S10015WF or equal. Comes with a 3 floats.

## MATERIALS

### PIPE MATERIAL

House to Septic Tank shall be 4 inch ID PVC Schedule 40 with glued joints sloped 1/4 inch per foot minimum.

Septic Tank to Pump Tank and Distribution Box to Leach Field shall be solid 4 inch ID PVC tight joint in accordance with ASTM standard for septic systems sloped at 1/8 inch per foot minimum.

Pump Tank to Distribution Box shall be 1 1/2 inch ID HDPE or Schedule 40 PVC with glued joints.

### LEACH FIELD will be a CONVENTIONAL SYSTEM

The leach field will be 7 - 55 foot laterals placed as a conventional perforated pipe and stone in 2 foot wide trench. The bottom of the trench shall be level and the pipe at a pitch of 1/16 to 1/32 inch per foot.

### DISTRIBUTION BOX

The distribution box shall be a Miller Ready Mix 12 hole or equal. Speed levelers shall be used. The distribution box shall be placed on a 12 inch bed of pea gravel or sand. The cover shall be sealed with an asphalt sealant or equal. The pipes shall be caulked or sealed where they enter the distribution box.

Roof, footing, garage, cellar, surface and cooling water must be excluded from the septic tank. Materials not readily degraded (e.g. paper towels, newspaper, wrapping paper, rags, sanitary napkins, disposable diapers, coffee grounds, cooking fats/oils, bones, facial tissues and cigarette butts) should not be flushed into the septic tank. These products do not degrade in the tank and clog inlets, outlets and absorption system. Examples of other products which should not be discharged into the septic tank include antifreeze, pesticides, herbicides, oil, gasoline, paint, turpentine and concentrated acids or alkalies.

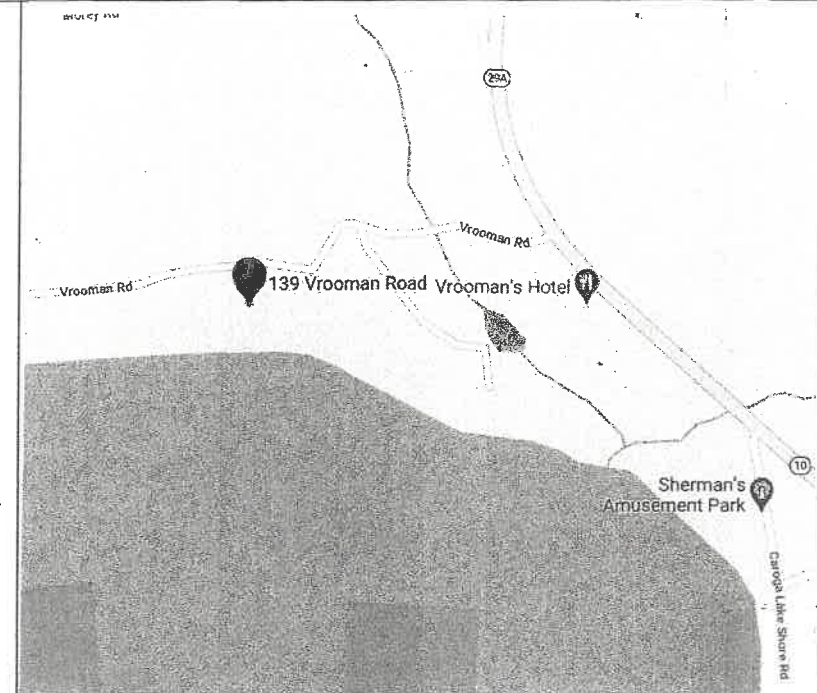
**Call Dig Safe Prior to any excavation.**

This design is for the Septic System only and does not include any other work done to the property including structural or drainage/surface water issues.

All work must comply with NYSDOH, State & local codes.

**WARNING: UNAUTHORIZED ALTERATIONS OR ADDITION TO A PLAN BEARING A LICENSED ENGINEER'S SEAL IS A VIOLATION OF NEW YORK STATE EDUCATION LAW.**

ONLY COPIES FROM THE ORIGINAL OF THIS PLAN MARKED WITH AN ORIGINAL STAMP SHALL BE CONSIDERED TO BE VALID TRUE COPIES.



## WASTE WATER TREATMENT SYSTEM

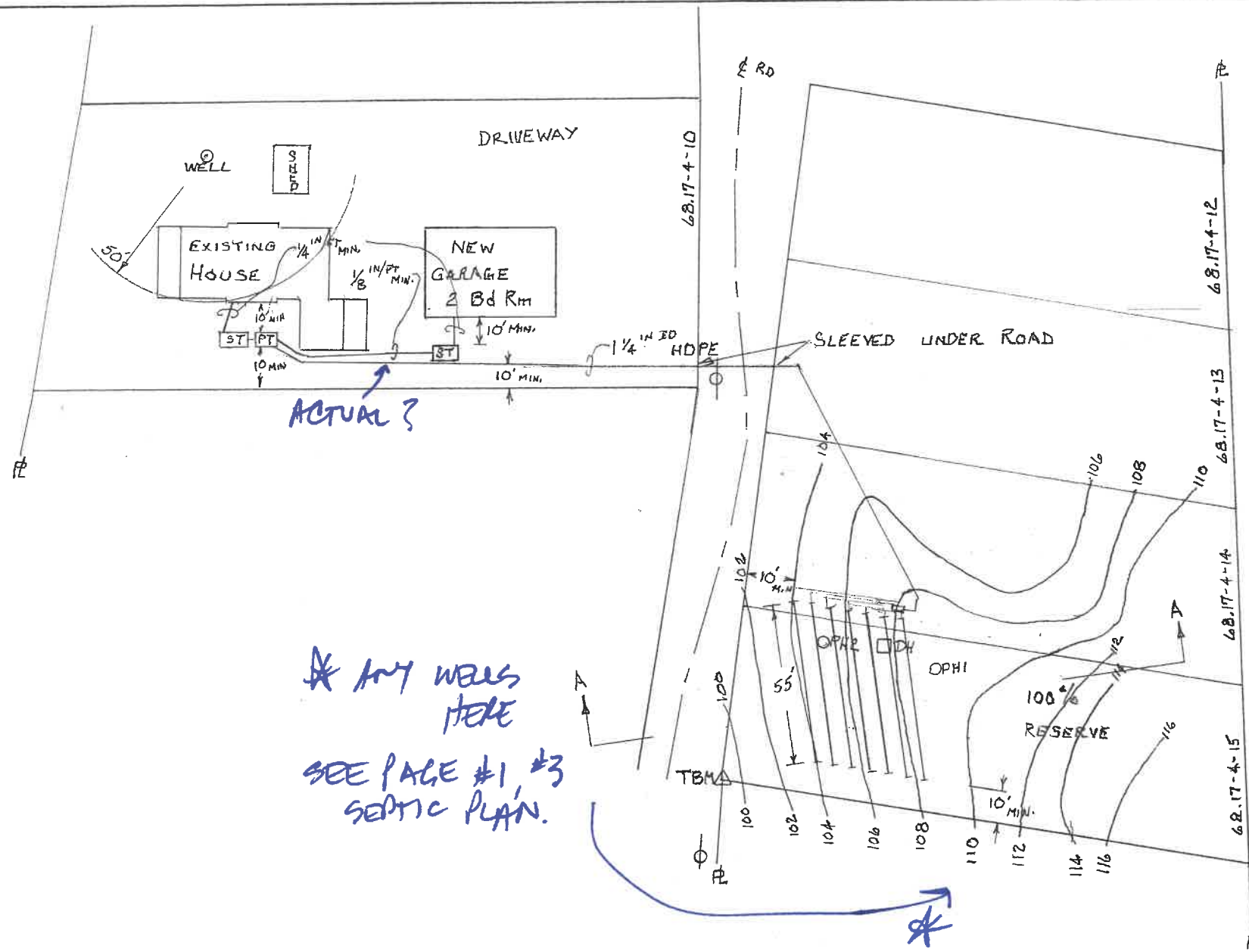
PENNY MACEK  
139 Vrooman Road  
CAROGA, FULTON COUNTY  
Tax Map# 68.17-5-10; -12,-13,-14,-15

SCALE AS SHOWN

August 26, 2020

JOHN M. KING, P.E.





**EXISTING** The existing wastewater treatment system, WWTS, is for the existing 4 bed room house and needs to be replaced.

**PROPOSED** The project will be installed over connected parcels with the same owner (see SHEET 2). The existing leach field is too close to the lake and well. The house has 4 bed rooms. There will be two bed rooms over a new garage.

The existing House (4 BR) will be flow to a 1,250 gallon septic tank, then to the 1000 gallon pump tank.

The new Garage (2 BR) will have its own 1000 gallon septic tank then flow to the same pump tank as the house.

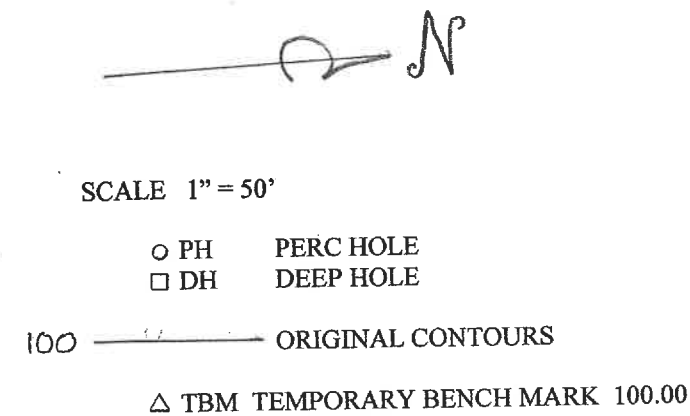
The control panel and alarm will be located by the owner and contractor on the house, in the house or next to the pump tank. All electrical work will comply with the NYS Codes.

The effluent line passing under the road will be sleeved in a minimum 4 inch ID culvert used for this roadway.

Trees will need to be cleared and remove the stumps that interfere with placement of the laterals.

SEPARATION DISTANCES	MINIMUM
Well to Septic Tank	50'
Well to Absorption Field	100' with 50' minimum casing 150' with less than 50' casing
Absorption Field to Ditch	20'
Absorption Field to Property Line	10'
Absorption Field to House	20'
Absorption Field to Wetland/Lake	100'
Septic Tank to House	10'
Distribution Box to House	20'

The closest part of the wastewater treatment system shall be located at least 10 feet from any water service line.



**WASTEWATER TREATMENT SYSTEM**

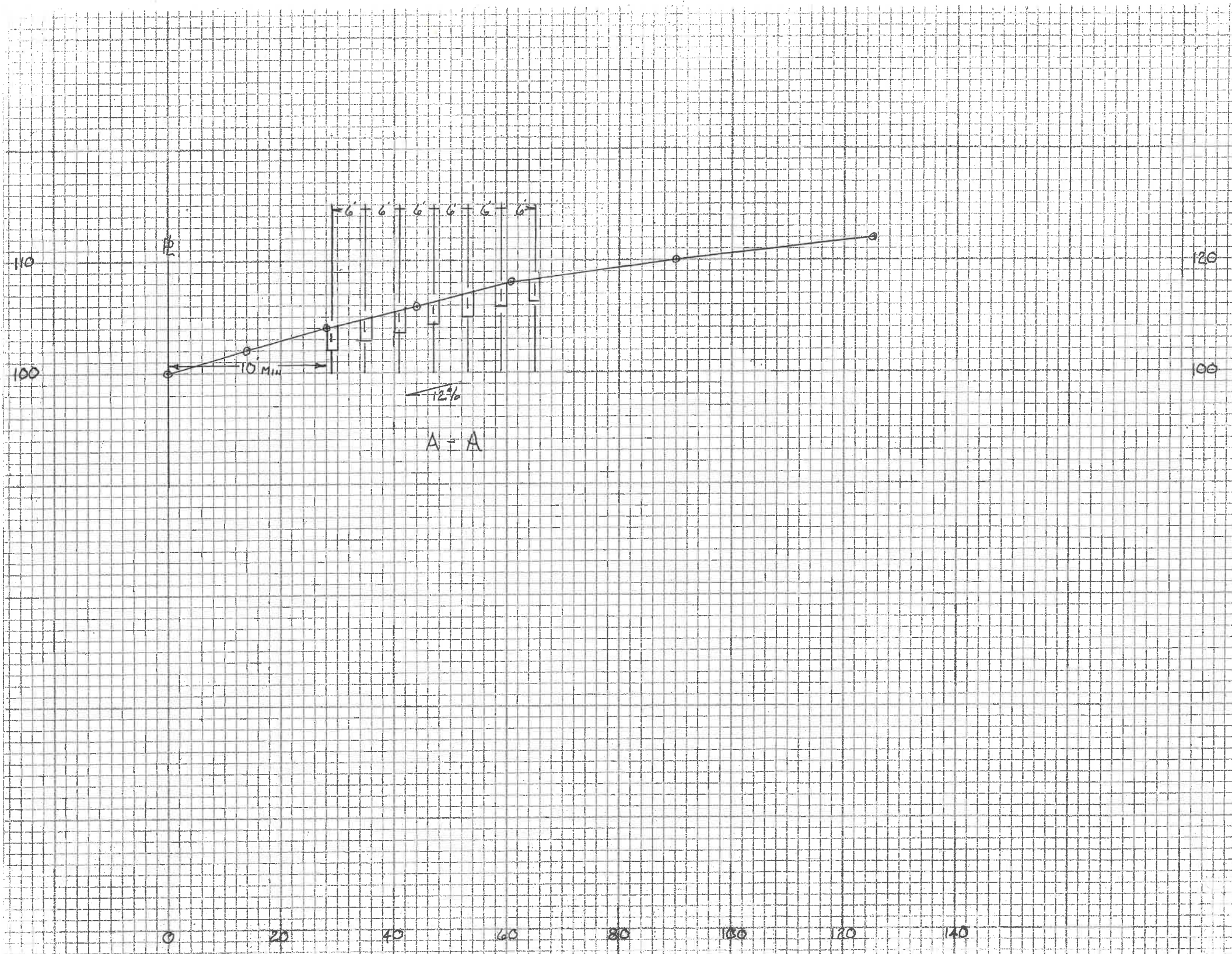
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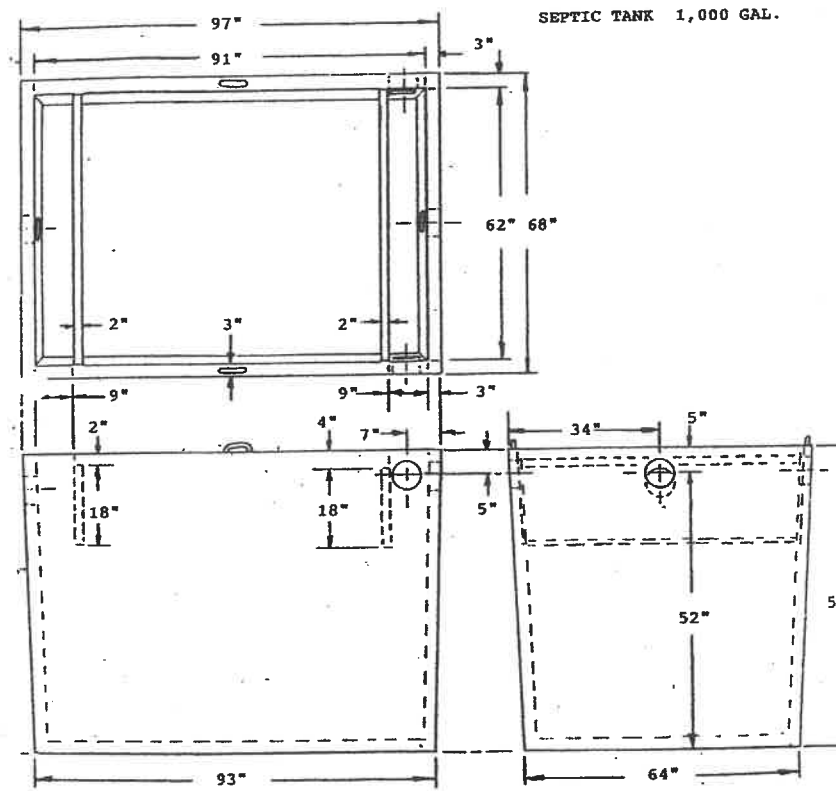
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**MILLER'S READY MIX**

17

P.O. BOX 291 OLD ROUTE 30 MAYFIELD, N.Y. 12117  
TEL (518) 661-6601



SEPTIC TANK 1,000 GAL.

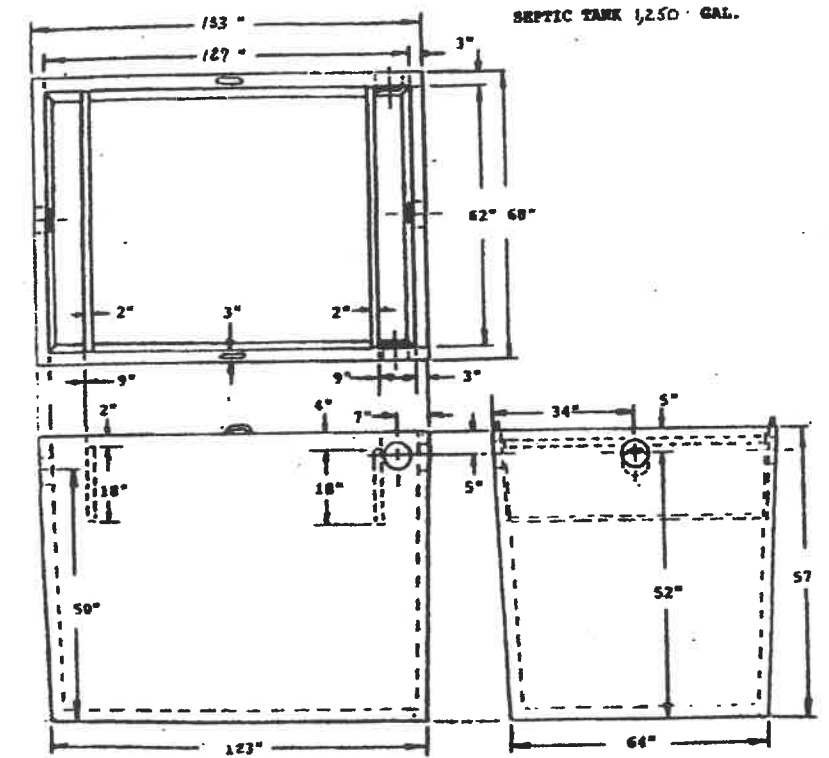
INLETS/OUTLETS HAVE 4" DIA.

(3) INLETS

**MILLER'S READY MIX**

19

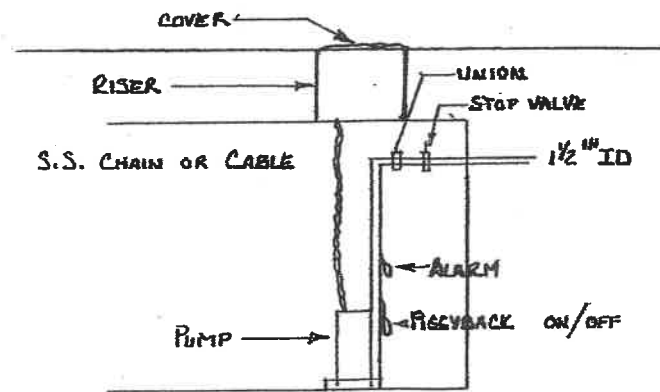
P.O. BOX 291 OLD ROUTE 30 MAYFIELD, N.Y. 12117  
TEL (518) 661-6601



SEPTIC TANK 1,250 GAL.

INLETS/OUTLETS HAVE 4" DIA.

(3) INLETS  
(1) OUTLET



PUMP TANK DETAIL

NOT TO SCALE

**WASTEWATER TREATMENT SYSTEM**

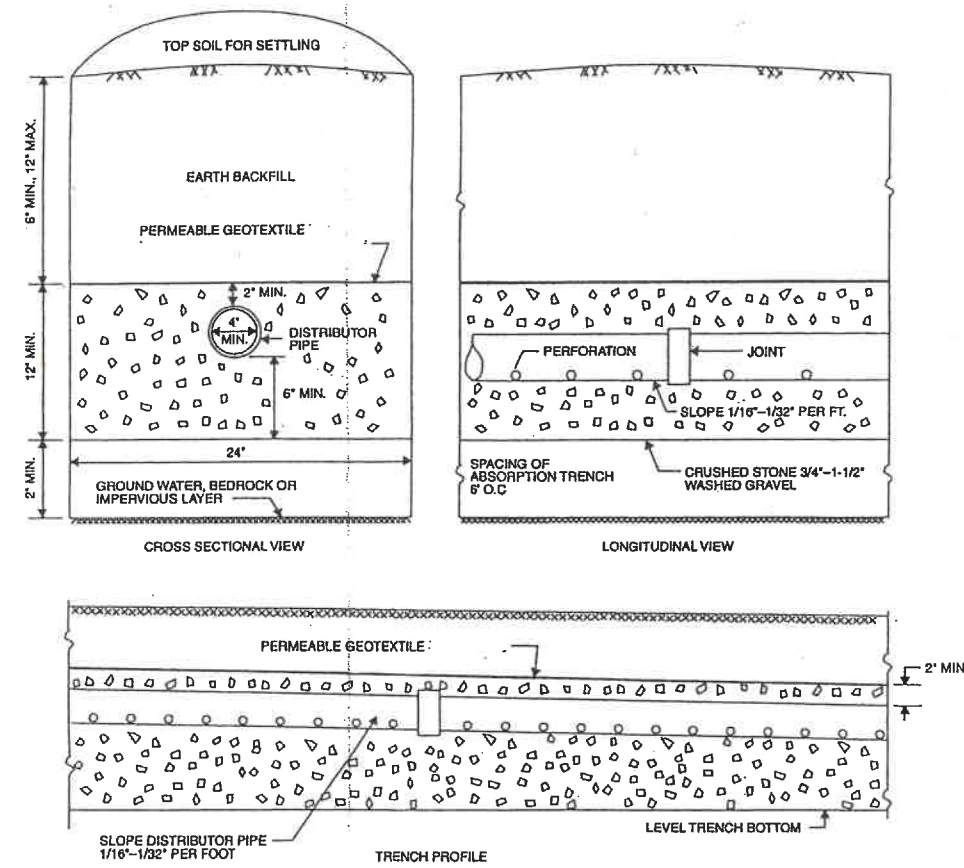
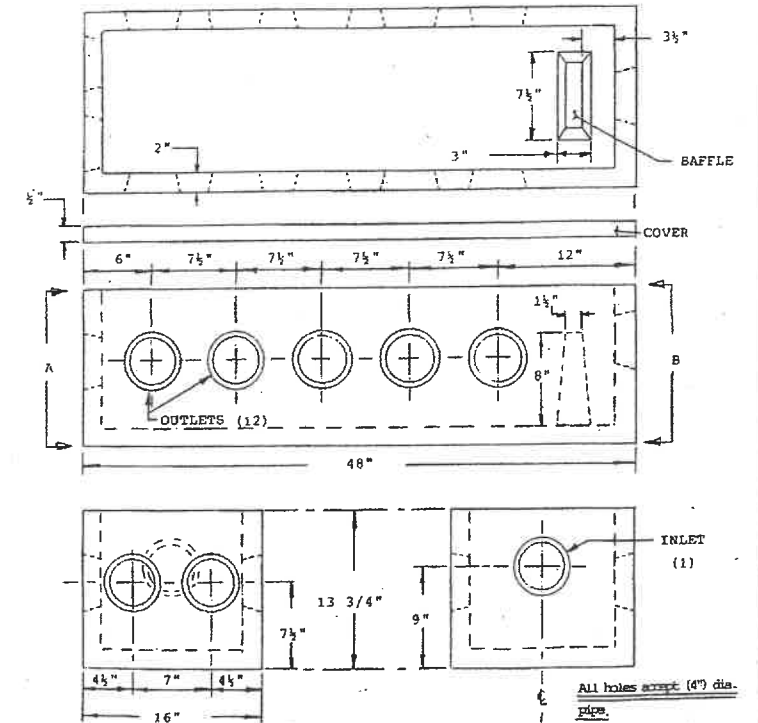
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NOTE: DO NOT INSTALL TRENCHES IN WET SOIL.  
INSTALL TRENCHES PARALLEL TO CONTOURS.  
INSTALL TRENCHES AS SHALLOW AS POSSIBLE WHICH MEET ABOVE NOTED MINIMUM DEPTHS.  
RAKE SIDES AND BOTTOM OF TRENCH PRIOR TO PLACING GRAVEL.  
ENDS OF ALL DISTRIBUTOR PIPES MUST BE CAPPED

Figure 17  
Absorption Trench Detail

DESIGN CALCULATIONS

NYSDOH Residential Onsite Wastewater Treatment Systems DESIGN HANDBOOK 2012

DISTRIBUTION NETWORK

6 Bedrooms = 660 gpd; Minimum LF required = 367; Use 7 laterals 55 LF each for 385 LF

LATERAL DISCHARGE RATE @ distribution box

1 1/2" orifices leading to the laterals.

$$Q = CA(2gh)^{1/2}$$

$$C = 0.6$$

$$A = 0.012 \text{ sf}$$

$$H = 0.4 \text{ feet (to minimize the pressure in the distribution box)}$$

$$Q = 0.0376 \text{ cfs} = 16.9 \text{ gpm per orifice}$$

$$7 \text{ orifices} = 100 \text{ gpm total.}$$

MAXIMUM PUMP RATE = 25 gpm to the distribution box

PUMP DOSE VOLUME

$$75\% \text{ of } 385 \text{ LF of laterals} = 385(0.75)(0.653 \text{ g/ft}) = 188 \text{ gallons per dose}$$

$$100\% \text{ of } 1 \frac{1}{2} \text{ \" PVC from pump tank to the distribution box } (320')(0.0918 \text{ gpf}) = 29 \text{ gallons per dose}$$

$$\text{Total Dose} = 188 + 29 = 217 \text{ gallons per dose.}$$

HEAD LOSS

$$\text{Elev. @ Distribution Box inlet} = 109 \text{ ft}$$

$$\text{Elev. @ Pump Tank} = 72$$

$$\text{Elevation Head} = 37 \text{ feet}$$

Using Hazen-Williams Formula, the head loss from friction is:

$$Q = 20 \text{ gpm}$$

$$L = 320'$$

$$D = 1.5''$$

$$C = 150$$

$$H_f = 3.5/100 \text{ lf} = 11 \text{ ft}/320 \text{ feet}$$

$$\text{Total HEAD LOSS} = 37' + 11' = 48'$$

PUMP SPECIFICATION

Goulds Effluent Pump WE07H or equal will pump 25 gpm against a 50 foot head.

CONTROL PANEL/TANK ALARM

CentriPro SES Series S10015WF or equal

This comes with 3 floats and alarm.

PUMP TANK

One days storage plus 1 dose 660 + 217 = 877 gallons minimum + high level alarm.

Pump tank will be minimum 1000 gallon.

The 1 1/2 inch diameter pipe supplying the effluent to the distribution box shall flow into a 4 inch diameter pipe 2 feet from the distribution box. The 4 inch pipe shall enter the distribution box.

The stop/ball valve in the pump tank may need to be partially closed to decrease the flow rate. Run the pump through a cycle with the lid off the distribution box to determine the adjustment of the stop/ball valve.

- All piping is to be 4 inch ID tight joint PVC meeting the required ASTM specifications for septic systems.
- The slope of the pipes is noted on the plans. The minimum slope is as follows:  
Building to Septic Tank is 1/4 inch per foot minimum.  
Septic Tank to Distribution Box is 1/8 inch per foot minimum.  
Speed Levelers/Flow Equalizers shall be installed in the D-Box.  
Laterals shall be a slope of between 1/32 to 1/16 inches per foot.
- The trench bottoms shall be level, 2 feet wide and placed on 6 foot centers minimum; leaving 4 foot of undisturbed soil between trenches.
- The trenches are to be between 18 and 30 inches deep.
- Place 6 inches of washed stone (3/4" to 1 1/2 inch) on the bottom of the trench.
- Place the distribution pipe (laterals) on the stone with the proper slope.
- Place washed stone until it is a minimum of 2 inches above the pipe.
- Place geotextile fabric over the stone and backfill with suitable material.
- The top 6 inches of material is to be top soil, then seeded and mulched. Mound the topsoil to allow for settlement of the soil in the trench.

WASTEWATER TREATMENT SYSTEM

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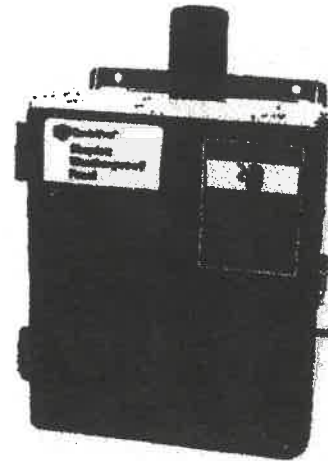
JOHN M. KING, P.E.



# CentriPro

## SES SERIES CONTROL PANELS

Simplex / Weatherproof Controller with Alarm



CentriPro is a brand of ITT Residential and Commercial Water.

www.centripro.com

Engineered for life

### APPLICATIONS

Simplex liquid level controller automatically maintains pump operation, includes high level alarm warning for a variety of sump, effluent, sewage and water transfer applications.

Order No.	Maximum Running Amps	Floot Switches (Model and Quantity)
S1001S	20	Nose - Order Separately (3 required)
S1001SWF	20	⊕ A1K23WH (3 Included)

⊕ Includes both weights and clamps.

### FEATURES

- Rugged NEMA 4X construction withstands even the most severe weather conditions and prevents corrosion.
- Hinged door with lockable stainless steel latch for safe operation indoors and out.
- High level alarm circuit with external, on/off, alarm horn silence switch.
- Alarm test switch insures proper operation of the alarm circuit without the need to actuate the alarm float.
- Inside mounted pump run light.
- Top mounted high intensity red light provides 360° visibility.
- Corrosion proof alarm horn.
- Color coded wiring, screw type terminals, ensure ease of field servicing.
- Field wiring diagram, panel schematic and installation instructions included.
- Entire unit is UL and CUL listed.
- Non-modifiable.

### SPECIFICATIONS

- Single power lead.
  - Hand-off-automatic (H-O-A) pump selection switch.
  - Magnetic contactor.
  - Numbered terminal strip-screw type.
  - NEMA 4X, 30 watt, red alarm light.
  - NEMA 4X, fiberglass enclosure with gasketed, hinged door and stainless steel hardware.
  - NEMA 4X, alarm horn -95db.
- Single Phase  
• 115 or 230 volt, 60 Hz.

# ITT

### APPLICATIONS

Specifically designed for the following uses:

- Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

### SPECIFICATIONS

- Pump**
- Solids handling capabilities: 1/2" 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.
- MOTORS**
- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
  - Class B insulation on 1/2-1 1/2 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.
  - SITOW or STOW severe duty oil and water resistant power cords.

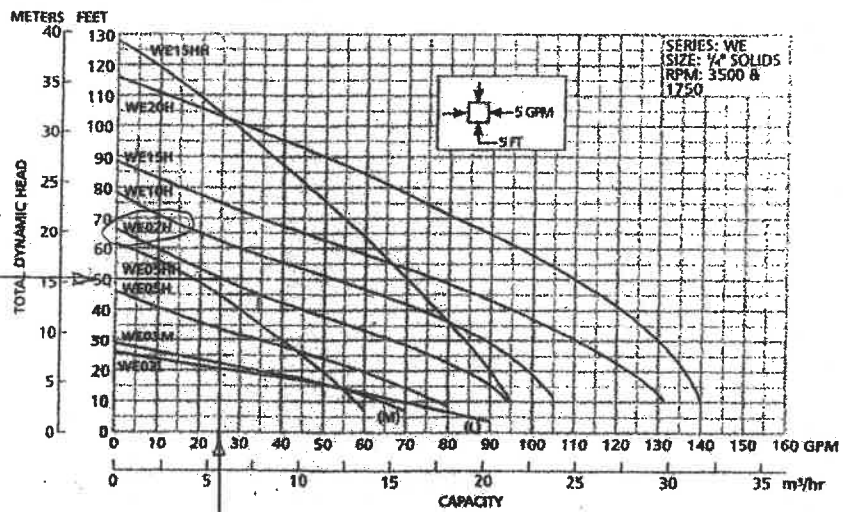
- 1/2 - 1 HP models have NEMA three prong grounding plugs.
- 1 1/2 HP and larger units have bare lead cord ends.

### 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

Registered to UL 778 and CSA 22.2 108 Standards by Canadian Standards Association File #LR38549  
Goolds Pumps is ISO 9001 Registered.



### MODELS

Order Number	HP	Phase	Volts	RPM	Impeller Diameter (in.)	Maximum Amps	Locked Rotor Amps	KVA Code	Full Load Efficiency %	Resistance Start Line-Line	Power Cable Size	Weight (lbs.)	
WE0311L	0.33	1	115	1750	5.38	10.7	30.0	M	54	11.9	1.7	16/3	56
WE0318L			208			6.8	19.5	K	51	9.1	4.2		
WE0312L			230			4.9	14.1	L	53	14.5	8.0		
WE0311M			115			10.7	30.0	M	54	11.9	1.7		
WE0318M			208			6.8	19.5	K	51	9.1	4.2		
WE0312M			230			4.9	14.1	L	53	14.5	8.0		
WE0511H	0.5	1	115	1750	3.56	14.5	46.0	M	54	7.5	1.0	14/3	60
WE0518H			208			8.1	31.0	K	68	9.7	2.4		
WE0512H			230			7.3	34.5	M	53	9.6	4.0		
WE0538H			200			4.9	22.6	R	68	NA	3.8		
WE0532H			230			3.7	18.8	R	70	NA	5.8		
WE0534H			460			1.7	9.4	R	70	NA	23.2		
WE0537H	575	1.4	7.5	R	62	NA	35.3						
WE0511HH	0.5	3	115	1750	3.88	14.5	46.0	M	54	7.5	1.0	14/3	60
WE0518HH			208			8.1	31.0	K	68	9.7	2.4		
WE0512HH			230			7.3	34.5	M	53	9.6	4.0		
WE0538HH			200			4.9	22.6	R	68	NA	3.8		
WE0532HH			230			3.6	18.8	R	70	NA	5.8		
WE0534HH			460			1.8	9.4	R	70	NA	23.2		
WE0537HH	575	1.5	7.5	R	62	NA	35.3						
WE0718H	0.75	1	208	1750	4.06	11.0	31.0	K	68	9.7	2.4	14/3	70
WE0712H			230			10.0	27.5	J	65	12.2	7.7		
WE0738H			200			6.2	20.6	L	64	NA	5.7		
WE0732H			230			5.4	15.7	K	68	NA	8.6		
WE0734H			460			2.7	7.9	K	68	NA	34.2		
WE0737H			575			2.2	9.9	L	78	NA	26.5		

## GOULDS PUMPS

Wastewater

# Goolds Pumps

## WE Series Model 3885

### Submersible Effluent Pump

PROSURANCE AVAILABLE FOR RESIDENTIAL APPLICATIONS.



### 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.

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