

## EAST SEPTIC SYSTEM

FIELD EVALUATION SHEET

PRELIMINARY EVALUATION DATE 10-10-22, FIELD EVALUATION DATE 4-2-23  
 PROPERTY OWNER: LYNWOOD + MICHELLE ELLIOTT PHONE   
 ADDRESS: 22100 320TH AVE CITY, STATE, ZIP: AITKIN MN 56431  
 LEGAL DESCRIPTION: (SW SW) LOT 3 LESS .5 AC + LESS .91 AC HY  
 PIN# 71-5-053400 SEC 33 T 45 R 75 TWP NAME MALND  
 FIRE#  LAKE/RIVER DEER LAKE LAKE CLASS NATURAL OHWL FT

## DESCRIPTION OF SOIL TREATMENT AREAS

	AREA #1	AREA #2
DISTURBED AREAS	YES <u>NO</u>	YES <u>NO</u>
COMPACTED AREAS	YES <u>NO</u>	YES <u>NO</u>
FLOODING	YES <u>NO</u>	YES <u>NO</u>
RUN ON POTENTIAL	YES <u>NO</u>	YES <u>NO</u>
SLOPE %	<u>3</u>	<u></u>
DIRECTION OF SLOPE	<u>SOUTH</u>	<u></u>
LANDSCAPE POSITION	<u></u>	<u></u>
VEGETATION TYPES	<u>GRASS - FIELD</u>	<u></u>

REFERENCE BM ELEV. 100 FT  
 REFERENCE BM DESCRIPTION \_\_\_\_\_  
 GROUND ELEVATION \_\_\_\_\_  
 BETWEEN QUONSET HUT  
 AND SITE 1 + 2 BOUNDARY  
LIVE

DEPTH TO STANDING WATER OR MOTTLED SOIL: BORING# 1 60", 1A 60", 2 , 2A

BOTTOM ELEVATION--FIRST TRENCH OR BOTTOM OF ROCK BED: #1  FT., #2  FT.

SOIL SIZING FACTOR: SITE #1 1.27, SITE #2

CONSTRUCTION RELATED ISSUES: 10 SITES. DRAINFIELD SIZING = 100 G.P.D.  
 TANK SIZING x3. 3000 GALLONS. MIN. FOR TANKS

LIC# 127 SITE EVALUATOR SIGNATURE: Larry Lynquist  
 SITE EVALUATOR NAME: LARRY LILJENQVIST TELEPHONE# 71B 820 8886

LUG REVIEW \_\_\_\_\_

DATE \_\_\_\_\_

Comments: \_\_\_\_\_

SOIL BORING LOGS ON REVERSE SIDE

# TRENCH AND BED WORKSHEET

## 1. AVERAGE DESIGN FLOW

- A. Estimated 1000 gpd (see figure A-1)  
 or measured x 1.5 (safety factor) = gpd  
 B. Septic tank capacity 3000 gal (see figure C-1)

A-1: Estimated Sewage Flows in Gallons per Day				
number of bedrooms	Class I	Class II	Class III	Class IV 60% of the values in the Class I, II, or III columns.
2	300	225	180	
3	450	300	218	
4	600	375	256	
5	750	450	294	
6	900	525	332	
7	1050	600	370	
8	1200	675	408	

## 2. SOILS (Site evaluation data)

- C. Depth to restricting layer = 4.5 ft  
 D. Max depth of system Item 2C - 3 ft = 4.5 ft - 3 ft = 1.5 ft  
 E. Texture Sand Percolation rate 6-15 MPI  
 F. Soil Sizing Factor (SSF) 1.77 sqft/gpd (see figure D-15)  
 G. % Land Slope 3 %

C-1: Septic Tank Capacities (in gallons)			
Number of Bedrooms	Minimum Liquid Capacity	Liquid capacity with garbage disposal	Liquid capacity with disposal & lift inside
2 or less	750	1125	1500
3 or 4	1000	1500	2000
5 or 6	1500	2250	3000
7, 8 or 9	2000	3000	4000

## 3. TRENCH or BED BOTTOM AREA

- H. For trenches with 6 inches of rock below the pipe:  
 $A \times F = \text{gpd} \times \text{sqft/gpd} = \text{sqft}$
- I. For trenches with 12 inches of rock below the pipe:  
 $A \times F \times 0.8 = \text{gpd} \times \text{sqft/gpd} \times 0.8 = \text{sqft}$
- J. For trenches with 18 inches of rock below the pipe:  
 $A \times F \times 0.66 = \text{gpd} \times \text{sqft/gpd} \times 0.66 = \text{sqft}$
- K. For trenches with 24 inches of rock below the pipe:  
 $A \times F \times 0.6 = \text{gpd} \times \text{sqft/gpd} \times 0.6 = \text{sqft}$
- L. For gravity beds with 6 or 12 inches of rock below the pipe;  
 $1.5 \times A \times F = 1.5 \times \text{gpd} \times \text{sqft/gpd} = \text{sqft}$   
 For pressure beds with 6 or 12 inches of rock below the pipe;  
 $A \times F = \text{gpd} \times \text{sqft/gpd} = \text{sqft}$

## 4. DISTRIBUTION (Check all that apply)

- Bed (< 6% slope)  Drop boxes (any slope)  
 Trenches  Distribution box (< 3%)  
 Pressure  Gravity  Rock  
 Chamber  Gravelless

D-15: Soil Characteristics and Soil Sizing Factor (SSF) (> 3' separation)		
Percolation Rate minutes per inch (infil)	Soil Texture	Soil Sizing Factor square feet/gallon per day (sqft/gpd)
faster than 0.1*	Coarse sand Medium sand Loamy sand Fine sand	0.83 0.83
0.1 to 5**	Sandy loam Loam Silt loam Silt	1.67 1.27 1.67 2.00
6 to 15	Clay loam Sandy clay Silty clay	2.20
16 to 30	Clay	4.20
31 to 45	Sandy clay Silty clay	
46 to 60		
over 61 to 120***		
slower than 120***		

\*Use systems for rapidly permeable soils; pressure distribution or social distribution with no trench > 25% of the total system.  
 \*\*Soil having 50% or more fine sand plus very fine sand.  
 \*\*\*A mound must be used.

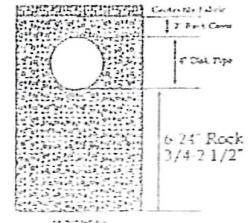
\*\*\*\*An other or performance system must be used

## 5. SYSTEM WIDTH, LENGTH and VOLUME

- M. Select trench width = 70 ft
- N. If using rock, divide bottom area by width:  $(H, I, J, K \text{ or } L) \div M = 1770 \text{ sqft} \div 70 \text{ ft} = 63.5 \text{ lineal feet}$   
 Rock depth below distribution pipe plus 0.5 foot times bottom area:  
 Rock depth in feet + 0.5 feet  $\times$  Area (H,I,J,K, or L)  
 $(\text{ft} + 0.5 \text{ ft}) \times \text{sqft} = 1770 \text{ cuft}$   
 Volume in cubic yards = cuft  $\div 27$   
 $1770 \text{ cuft} \div 27 = 67 \text{ cuyds}$   
 Weight of rock in tons = cubic yds  $\times 1.4$   
 $67 \text{ cuyds} \times 1.4 = 94 \text{ tons}$
- O. If using 10" Gravelless Pipe, Flow (A)  $\times$  Gravelless SSF (see figure D-9)  
 $\text{gpd} \times \text{lineal feet/gpd} = \text{lineal feet}$
- P. If using Chambers, H,I,J, or K(based on height of chamber slats)  $\div$  width of chamber in feet(M)  
 $\text{sqft} \div \text{ft} = \text{lineal ft}$

D-9: Soil Characteristics and Soil Sizing factors (SSF) for Gravelless Pipe		
percolation rate (minutes/inch)	soil texture	lineal feet/ gallon/day
faster than 0.1*	Coarse Sand Medium Sand Loamy Sand Fine Sand**	0.28
0.1 to 5	Sandy Loam Loam Silt Loam Silt	0.42
6 to 15	Clay Loam (CL) Sandy CL Silty CL Clay	0.56
16 to 30	Sandy CL Silty CL Sandy Clay Silty Clay	0.67
31 to 45		
46 to 60		
over 61 to 120***		
slower than 120***		

\*Soil too coarse for sewage treatment.  
 Use systems for rapidly permeable soils.  
 \*\*Soil having 50% or more fine sand plus very fine sand.  
 \*\*\*Soil with too high a percentage of clay for installation of a standard inground system



## 6. LAWN AREA

- Q. Select trench spacing, center to center = feet  
 R. Multiply trench spacing by lineal feet R  $\times$  Q = sqft of lawn area  
 $20 \text{ ft} \times 63.5 \text{ ft} = 1270 \text{ sqft}$
7. Include a drawing with scale (one inch = ft). Show pertinent boundaries, right of way, easements, location of house, garage, driveway, all other improvements, existing or proposed soil treatment system, well and dimensions of all elevations, setbacks and separation distances.

I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.

*Terry Lymusik*

(signature)

127

(license #)

4-2-73

(date)

# 2 PUMPS / ALT. SWITCHES - THIS FEEDS ONE-HALF

## PRESSURE DISTRIBUTION SYSTEM OF DRAINFIELD

1. Select number of perforated laterals 5

2. Select perforation spacing = 7.5 ft

3. Since perforations should not be placed closer than 1 foot to the edge of the rock layer (see diagram), subtract 2 feet from the rock layer length.

$$\frac{31.75}{\text{Rock layer length}} - 2 \text{ ft} = 29.75 \text{ ft}$$

4. Determine the number of spaces between perforations. Divide the length (3) by perforation spacing (2) and round down to nearest whole number.

$$\text{Perforation spacing} = 29.75 \text{ ft} \div 7.5 \text{ ft} = 11.9 \text{ spaces}$$

5. Number of perforations is equal to one plus the number of perforation spaces (4). Check figure E-4 to assure the number of perforations per lateral guarantees <10% discharge variation.

$$11 \text{ spaces} + 1 = 12 \text{ perforations/lateral}$$

6. A. Total number of perforations = perforations per lateral (5) times number of laterals (1)

$$12 \text{ perfs/lat} \times 5 \text{ lat} = 60 \text{ perforations}$$

B. Calculate the square footage per perforation.

Should be 6-10 sqft/perf. Does not apply to at-grades.

Rock bed area = rock width (ft) x rock length (ft)

$$7.0 \text{ ft} \times 31.75 \text{ ft} = 635 \text{ sqft}$$

Square foot per perforation = Rock bed area ÷ number of perfs (6)

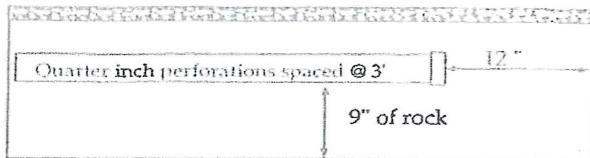
$$635 \text{ sqft} \div 60 \text{ perfs} = 10.5 \text{ sqft/perf}$$

7. Determine required flow rate by multiplying the total number of perforations (6A) by flow per perforation (see figure E-6).

$$60 \text{ perfs} \times .80 \text{ gpm/perf} = 48 \text{ gpm}$$

8. If laterals are connected to header pipe as shown on upper example, to select minimum required lateral diameter; enter figure E-4 with perforation spacing (2) and number of perforations per lateral (5). Select minimum diameter for perforated lateral = 1.25 inches.

9. If perforated lateral system is attached to manifold pipe near the center, lower diagram, perforated lateral length (3) and number of perforations per lateral (5) will be approximately one half of that in step 8. Using these values, select minimum diameter for perforated lateral = \_\_\_\_\_ inches.



Perf Sizing 3/16" - 1/4"  
Perf Spacing 1.5'-5'

E-4: Maximum allowable number of 1/4-inch perforations per lateral to guarantee <10% discharge variation

perforation spacing (feet)	1 inch	1.25 inch	1.5 inch	2.0 inch
2.5	8	14	18	28
3.0	8	13	17	26
3.3	7	12	16	25
4.0	7	11	15	23
5.0	6	10	14	22

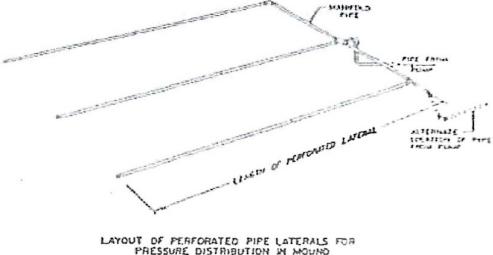
E-6: Perforation Discharge in gpm

head (feet)	perforation diameter (inches)			
	1/8	3/16	7/32	1/4
1.0 <sup>a</sup>	0.18	0.42	0.56	0.74
2.0 <sup>b</sup>	0.26	0.59	0.80	1.04
5.0	0.41	0.94	1.26	1.65

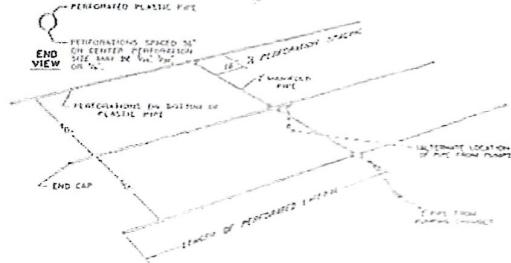
<sup>a</sup> Use 1.0 foot for single-family homes.

<sup>b</sup> Use 2.0 feet for anything else.

MANIFOLD LOCATED AT END OF PRESSURE DISTRIBUTION SYSTEM



LAYOUT OF PERFORATED PIPE LATERALS FOR PRESSURE DISTRIBUTION IN MOUND



I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.

*Darryl J. Mungo*

(signature)

177

(license #)

4-2-23

(date)

# PUMP SELECTION PROCEDURE

## 1. Determine pump capacity:

### A. Gravity distribution

1. Minimum required discharge is 10 gpm
2. Maximum suggested discharge is 45 gpm. For other establishments at least 10% greater than the water supply rate, but no faster than the rate at which effluent will flow out of the distribution device.

### B. Pressure distribution

*See pressure distribution work sheet*

From A or B Selected pump capacity: 48 gpm

## 2. Determine pump head requirements:

### A. Elevation difference between pump and point of discharge?

17 feet

### B. Special head requirement? (See Figure at right - Special Head Requirements)

5 feet

### C. Calculate Friction loss

1. Select pipe diameter 2 in

2. Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1).

Read friction loss in feet per 100 feet from Figure E-9

Friction Loss = 3.99 ft/100ft of pipe

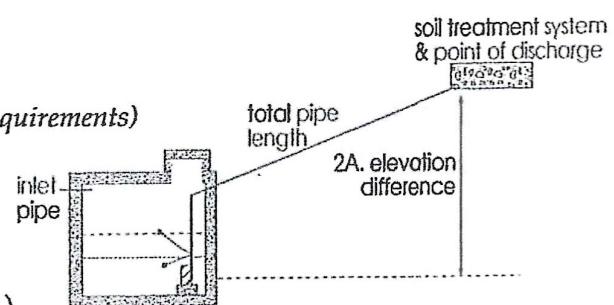
3. Determine total pipe length from pump discharge to soil treatment discharge point. Estimate by adding 25 percent to pipe length for fitting loss. Total pipe length times 1.25 = equivalent pipe length  
640 feet x 1.25 = 800 feet

4. Calculate total friction loss by multiplying friction loss (C2) in ft/100 ft by the equivalent pipe length (C3) and divide by 100.  
 $= \frac{3.99 \text{ ft}/100\text{ft} \times 800}{100} = 31.92 \text{ ft}$

D. Total head required is the sum of elevation difference (A), special head requirements (B), and total friction loss (C4)

17 ft + 5 ft + 37 ft =

Total head: 49 feet



Special Head Requirements		
Gravity Distribution		0 ft
Pressure Distribution		5 ft

flow rate gpm	E-9: Friction Loss in Plastic Pipe Per 100 feet		
	nominal pipe diameter 1.5"	2"	3"
20	2.47	0.73	0.11
25	3.73	1.11	0.16
30	5.23	1.55	0.23
35	6.96	2.06	0.30
40	8.91	2.64	0.39
45	11.07	3.28	0.48
50	13.46	3.99	0.58
55		4.76	0.70
60		5.60	0.82
65		6.48	0.95
70		7.44	1.09

## 3. Pump selection

A pump must be selected to deliver at least 48 gpm (1A or B) with at least 49 feet of total head (2D)

I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.

*Jerry Flyngquist*

(signature)

127

(license #)

4-2-23

(date)

TRENCH CROSS-SECTION

FINISHED GRADE

17 INCHES OF BACKFILL OVER ROCK (MOUND SLIGHTLY)

ORIGINAL GRADE



MAXIMUM TRENCH

DEPTH OF

18 INCHES



GEOTEXTILE CLOTH

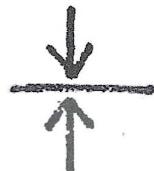
2 INCHES ROCK OVER PIPE



3/4 INCH TO 2-1/2 INCH  
WASHED SEWER ROCK

ORIGINAL GRADE

FILL SOIL TO A  
MINIMUM OF SIX  
INCHES OVER ROCK



2" ROCK OVER PIPE



2" DISTRIBUTION PIPE

9 INCHES ROCK  
BELOW DISTRIBUTION  
PIPE



740 INCHES  
TRENCH WIDTH

# SOILS CHARTS FOR BOTH PROPOSED AND ALTERNATE SITES

**1 (PROPOSED) SOILS DATA**

**SOIL PIT**

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
0-4	TOPSOIL	7.5YR 5/4
4-24	SANDY LOAM	7.5YR 5/3
24-40	SANDY LOAM	7.5YR 5/6
40-55	SANDY LOAM	7.5YR 5/6

NO REDOX FEATURES

SAME PITS AS WEST

DUG IN CENTER OF PRESSURE BED. PITS

BEDS 55"-60" DEEP.

**2 (PROPOSED) SOILS DATA**

**SOIL PIT**

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
0-4	TOPSOIL	7.5YR 5/4
4-28	SANDY LOAM	7.5YR 5/3
28-44	SANDY LOAM	7.5YR 5/6
44-55	SANDY LOAM	7.5YR 5/6

NO REDOX FEATURES

PRESSURE BED. PITS  
(IN BETWEEN) PRESSURE

**1 (ALTERNATE) SOILS DATA**

**SOIL**

**PIT**

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
0-4	TOPSOIL	7.5YR 5/3
4-22	SANDY LOAM	7.5YR 4/4
22-34	SANDY LOAM	7.5YR 4/6
34-54	SANDY LOAM	7.5YR 4/6

SANDY LOAM WITH SLIGHT  
COLOR CHANGES. NO REDOX.  
LOOSE

**2 (ALTERNATE) SOILS DATA**

**SOIL**

**PIT**

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
0-4	TOPSOIL	7.5YR 5/3
4-22	SANDY LOAM	7.5YR 4/4
22-34	SANDY LOAM	7.5YR 4/6
34-54	SANDY LOAM	7.5YR 4/6

ADDITIONAL SOIL BORINGS MAY BE REQUIRED

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A A A

Area of Interest (AOI)

[Soil Map](#)[Soil Data Explorer](#)[Download Soils Data](#)[Shopping Cart \(Free\)](#)[Printable Version](#)[Add to Shopping Cart](#)

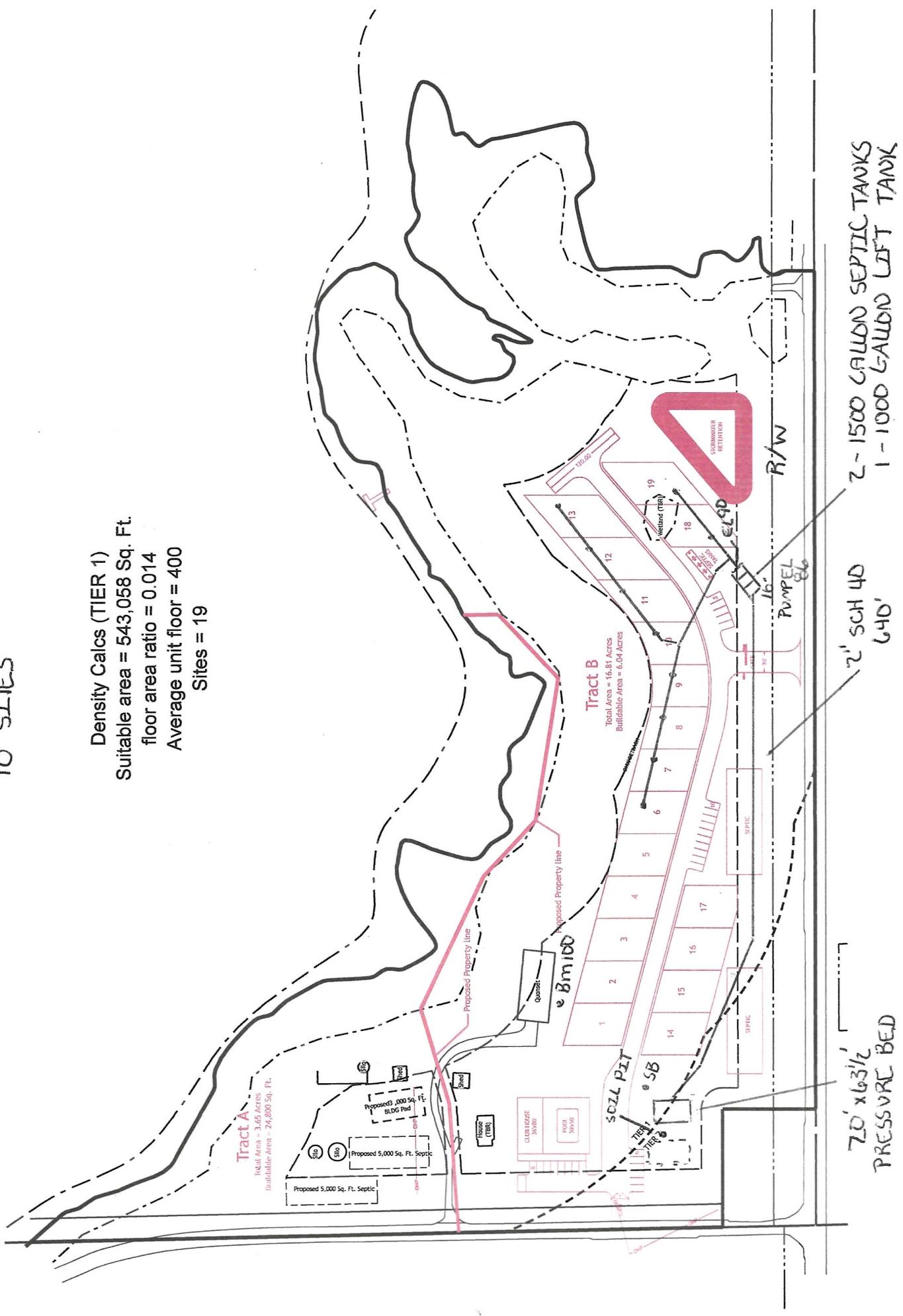
Search												
Map Unit Legend												
Aitkin County, Minnesota (MN001)												
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<table><thead><tr><th>Map Unit Symbol</th><th>Map Unit Name</th><th>Acres in AOI</th><th>Percent of AOI</th></tr></thead><tbody><tr><td>188B</td><td>Omega loamy fine sand, 2 to 6 percent slopes</td><td>0.6</td><td>100.0%</td></tr><tr><td colspan="2"><b>Totals for Area of Interest</b></td><td><b>0.6</b></td><td><b>100.0%</b></td></tr></tbody></table>	Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	188B	Omega loamy fine sand, 2 to 6 percent slopes	0.6	100.0%	<b>Totals for Area of Interest</b>		<b>0.6</b>	<b>100.0%</b>
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<b>Totals for Area of Interest</b>		<b>0.6</b>	<b>100.0%</b>									

Soil Map

*Warning: Soil Map may not be valid at this scale.*[FOIA](#) | [Accessibility Statement](#) | [Privacy Policy](#) | [Non-Discrimination Statement](#) | [Information Quality](#) | [USA.gov](#) | [White House](#)

# EAST SEPTIC SYSTEM 10 SITES

**Density Calcs (TIER 1)**  
 Suitable area = 543,058 Sq. Ft.  
 floor area ratio = 0.014  
 Average unit floor = 400  
 Sites = 19



SKETCH SHEET

CLIENT: EAST SEPTIC SYSTEM

DATE: 4-2-23

MAP DRAWN TO SCALE WITH A NORTH ARROW

SEE

DRAWING

ELEVATIONS

CHECK OFF LIST--HAVE ALL OF THE FOLLOWING BEEN DRAWN ON THE MAP??

## SHOW EXISTING OR PROPOSED

- WATER WELLS WITHIN 100 FT OF TREATMENT AREAS
- PRESSURE WATER LINES WITHIN 10 FT OF TREATMENT AREAS
- STRUCTURES       LOT IMPROVEMENTS
- ALL SOIL TREATMENT AREAS       ALL ISTS COMPONENTS
- HORIZONTAL AND VERTICALREFERENCE
- POINT OF SOIL BORINGS       DIRECTION OF SLOPE
- LOT EASEMENTS       ALL LOT DIMENSIONS
- DISTURBED/ COMPACTED AREAS
- SITE PROTECTION-LATHE AND RIBBON EVERY 15 FT
- ACCESS ROUTE FOR TANK MAINTENANCE

## REQUIRED SETBACKS

- STRUCTURES       PROPERTY LINES
- OHWL

COMMENTS:

DESIGNER SIGNATURE

Larry Lymond

LICENSE# 127

## INDICATE ELEVATIONS

- BENCHMARK 100 BY QUONSET HUT
- ELEVATION OF SEWER LINE @ HOUSE
- ELEVATION @ TANK INLET 90
- ELEVATION @ BOTTOM OF ROCK LAYER 97
- ELEVATION @ BOTTOM OF BORING OR RESTRICTIVE LAYER 94
- ELEVATION OF PUMP 86
- ELEVATION OF DISTRIBUTION DEVICE 98

DATE 4-2-23

# Subsurface Sewage Treatment System Management Plan

Property Owner: LYNWOOD ELLIOTT

Phone: \_\_\_\_\_

Date: 4-2-23

Mailing Address: \_\_\_\_\_

City: \_\_\_\_\_

Zip: \_\_\_\_\_

Site Address: 22100 320TH AVE

City: AITKIN

Zip: 56431

This management plan will identify the operation and maintenance activities necessary to ensure long-term performance of your septic system. Some of these activities must be performed by you, the homeowner. Other tasks must be performed by a licensed septic service provider or maintenance provider.

System Designer: Recommends SSTS check every 36 months.

Local Government: Recommends SSTS check every \_\_\_\_\_ months.

State Requirement: Requires SSTS check every 36 months.

(State requirements are based on MN Rules Chapter 7080.2450, Subp. 2 & 3)

**My System needs to be checked  
every 36 months.**

## **Homeowner Management Tasks:**

*Leaks* – Check (look, listen) for leaks in toilets and dripping faucets. Repair leaks promptly.

*Surfacing sewage* – Regularly check for wet or spongy soil around your soil treatment area.

*Effluent filter* – Inspect and clean twice a year or more.

*Alarms* – Alarm signals when there is a problem. Contact a service or maintenance provider any time an alarm signals.

*Event counter or water meter* – Record your water use.

-recommend meter readings be conducted (circle one: DAILY WEEKLY MONTHLY N/A)  
Summer months

## **Licensed septic service provider or maintenance provider (Check all that apply):**

- Check to make sure tank is not leaking
- Check and clean the in-tank effluent filter (if exists)
- Check the sludge/scum layer levels in all septic tanks
- Recommend if tank should be pumped
- Check inlet and outlet baffles
- Check the drainfield effluent levels in the rock layer
- Check the pump and alarm system functions
- Check wiring for corrosion and function
- Check dissolved oxygen and effluent temperature in tank
- Provide homeowner with list of results and any action to be taken
- Flush and clean laterals if cleanouts exist

"I understand it is my responsibility to properly operate and maintain the sewage treatment system on this property, utilizing the Management Plan. If requirements in the Management Plan are not met, I will promptly notify the permitting authority and take necessary corrective actions. If I have a new system, I agree to adequately protect the reserve area for future use as a soil treatment system."

Property Owner Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Designer Signature: lynwood Elliott

Date: 4-2-23

# Maintenance Log

Activity	Date Accomplished
<b><i>Check frequently:</i></b>	
Leaks: check for plumbing leaks	
Soil treatment area check for surfacing	
Lint filter: check, clean if needed	
Effluent screen: if owner-maintained	
Water usage rate (monitor frequency _____)	
<b><i>Check annually:</i></b>	
Caps: inspect, replace if needed	
Sludge & Scum/Pump	
Inlet & Outlet baffles	
Drainfield effluent leaks	
Pump, alarm, wiring	
Flush & clean laterals if cleanouts exists	
Other: _____	
Other: _____	

**Notes:** \_\_\_\_\_

# • Liberty Pumps®

**NEW!**

## FL50-Series

**1/2 hp**

## FL60-Series

**6/10 hp**

## FL70-Series

**3/4 hp**

### **Submersible Effluent Pumps**

**3/4" Solids Handling**

**1-1/2" or 2" Discharge**

#### **Features:**

- Semi-open impellers permit passage of solids without clogging
- Heavy cast iron construction
- Stainless steel fasteners
- 416 stainless steel rotor shaft
- Permanently lubricated upper and lower ball bearings
- Oil-filled hermetically sealed motors with thermal overload protection
- Unitized carbon and ceramic shaft seal
- Dual-sized discharge flange: 1-1/2" or 2"
- Quick-disconnect power cord in 10' standard length (25' and 35' optional lengths available on some models )

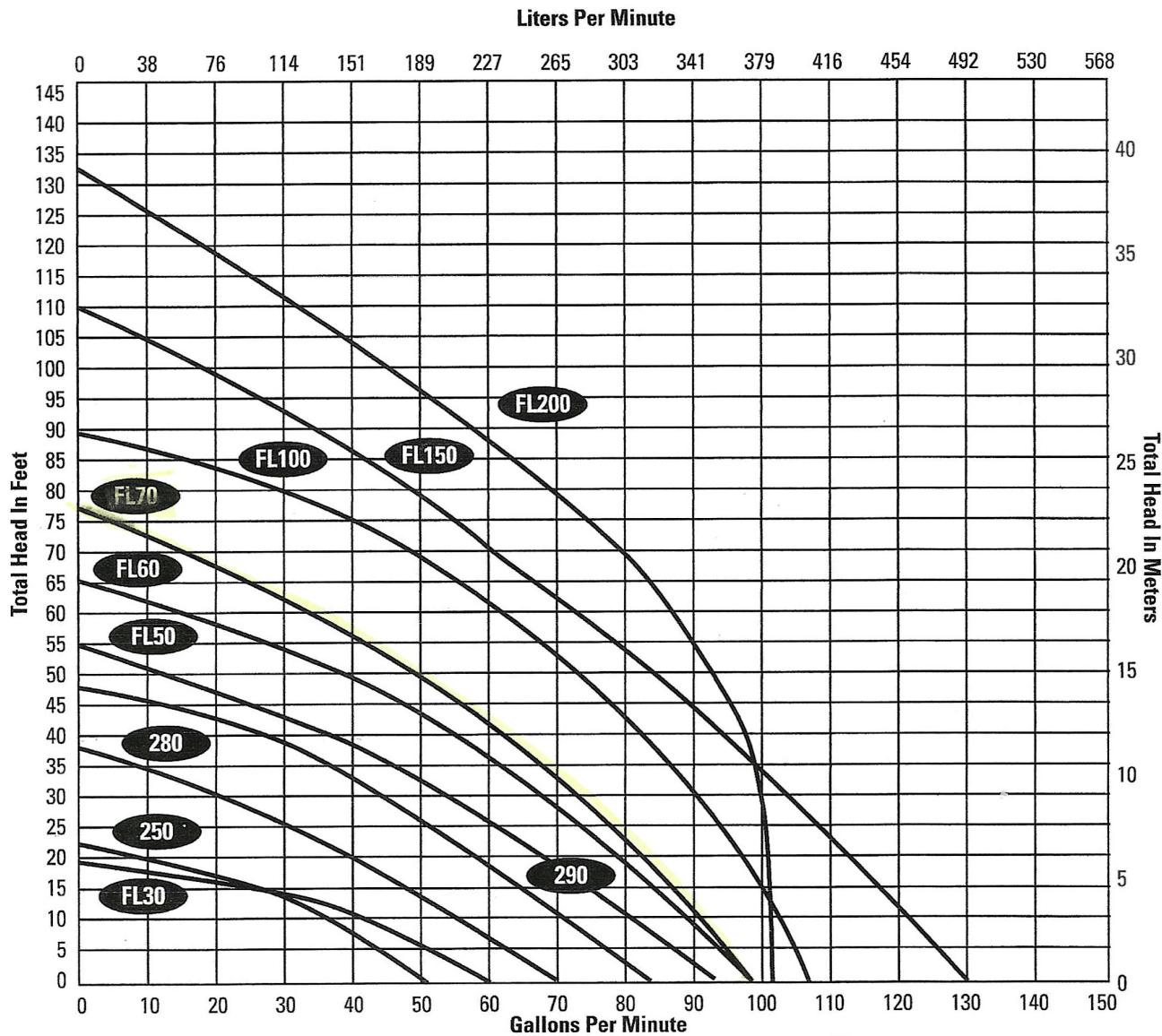


Innovate. Evolve.



# Effluent Pumps

**Performance Curve Data  
60 hz.**



innovate. evolve.

# FL50-, FL60- & FL70-SERIES

## TECHNICAL SPECIFICATIONS

### EXTERNAL CONSTRUCTION:

Pump Volute and legs – Gray iron casting class 25

Motor Cover – Gray iron casting class 25. All castings shall be powder coated for corrosion resistance prior to assembly.

Fasteners – all fasteners shall be 300-series stainless steel.

### MOTOR

Submersible 3450 RPM, oil filled and hermetically sealed. Class B insulation rating. 17-4 PH stainless steel rotor shaft. Thermally protected on single phase models. Three phase models shall have overloads incorporated into the control panel, properly sized for the horsepower and amperage of pump.

### IMPELLER

Cast iron – class 25, semi-open design capable of passing a minimum 3/4" solids.

### SHAFT SEAL

Carbon/ceramic unitized design with BUNA N elastomers and stainless steel housing.

### POWER CORD

10' cord length – Standard. Quick-disconnect design allows for easy field replacement. Optional lengths available per chart.

### LEVEL CONTROL

Automatic models shall be controlled by an adjustable wide-angle style switch sealed in a polymeric float. A series piggy-back style plug shall be provided to allow for manual bypass operation.

### DISCHARGE

2" FNPT with a 1-1/2" FNPT threaded cast iron flange provided.

### DIMENSIONAL DATA:

**Height: 16.4"**    **Width: 11.2"**  
(manual models)

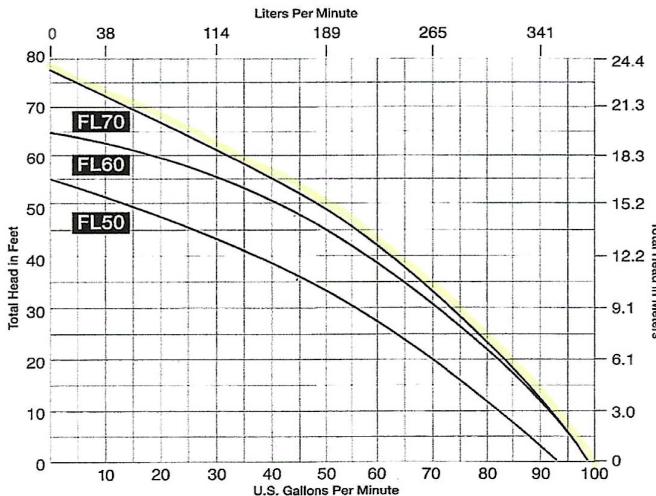
**Maximum Fluid Temperature: 140° F.**



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Specifications subject to change without notice.

### FL50/FL60/FL70 PERFORMANCE CURVE 60 Hz.



MODELS	HP	VOLTS	PHASE	AMPS	CORD LENGTH (ft)	AUTOMATIC/ MANUAL	WEIGHT (lbs.)
FL51A	1/2	115	1	12.0	10'	Automatic	53
FL51A-2	1/2	115	1	12.0	25'	Automatic	55
FL51A-3	1/2	115	1	12.0	35'	Automatic	58
FL51M	1/2	115	1	12.0	10'	Manual	52
FL51M-2	1/2	115	1	12.0	25'	Manual	53
FL51M-3	1/2	115	1	12.0	35'	Manual	55
FL52A	1/2	208-230	1	6.5	10'	Automatic	53
FL52A-2	1/2	208-230	1	6.5	25'	Automatic	55
FL52A-3	1/2	208-230	1	6.5	35'	Automatic	58
FL52M	1/2	208-230	1	6.5	10'	Manual	52
FL52M-2	1/2	208-230	1	6.5	25'	Manual	53
FL52M-3	1/2	208-230	1	6.5	35'	Manual	55
FL62A	6/10	208-230	1	8.2	10'	Automatic	53
FL62A-2	6/10	208-230	1	8.2	25'	Automatic	55
FL62A-3	6/10	208-230	1	8.2	35'	Automatic	58
FL62M	6/10	208-230	1	8.2	10'	Manual	52
FL62M-2	6/10	208-230	1	8.2	25'	Manual	53
FL62M-3	6/10	208-230	1	8.2	35'	Manual	58
FL63M-2	6/10	208-230	3	5.6	25'	Manual	55
FL63M-3	6/10	208-230	3	5.6	35'	Manual	57
FL64M-2	6/10	440-480	3	2.8	25'	Manual	55
FL64M-3	6/10	440-480	3	2.8	35'	Manual	57
FL72A	3/4	208-230	1	10.5	10'	Automatic	53
FL72A-2	3/4	208-230	1	10.5	25'	Automatic	55
FL72A-3	3/4	208-230	1	10.5	35'	Automatic	58
FL72M	3/4	208-230	1	10.5	10'	Manual	52
FL72M-2	3/4	208-230	1	10.5	25'	Manual	53
FL72M-3	3/4	208-230	1	10.5	35'	Manual	58
FL73M-2	3/4	208-230	3	7.5	25'	Manual	55
FL73M-3	3/4	208-230	3	7.5	35'	Manual	57
FL74M-2	3/4	440-480	3	3.5	25'	Manual	55
FL74M-3	3/4	440-480	3	3.5	35'	Manual	57