

THOMAS HUNT CIVIL ENGINEERING

- A. **SITE PLAN** – See sheet C1.0 of the project plans which shows the configuration of the existing well, building footprint, treatment and leach field.
 - B. **PROJECT LOCATION:** AP#008-032-51, Lake County, South half of Section 7 T.13N., R.9W. MDB&M. The Leach field is on AP#008-032-63, via an easement documented in 1991.
 - C. **WATER SUPPLY:** The water supply for the subject property is an existing well of approximately 200 feet in depth, and static water level of approximately 50 feet BGS.
 - D. **SERVICE AREA Description:** The project area is mainly agriculture with the except of the County Airport in the vicinity of the subject parcel. There are no public water distribution systems or sewer collection systems within approximately 2 miles of the project site. In the past history of the Site development a cost analysis was performed for connecting to the nearest sewer collection system, however it was deemed unfeasible, economically.
- 2. WASTE WATER CHARACTERIZATION AND TREATMENT**
- A. The sanitary sewer domestic waste stream is exclusively from employee restroom facilities.
 - a) The sanitary waste volume is based on 15gpd/person for the estimated number of employees for facility.
 - b) The estimated BOD for sanitary waste is 200mg/L because of a low dilution rate for restrooms only, and COD 250 mg/L.
 - B. The process wastewater is generated from the cleaning of industrial size stainless steel mixing bowls using hot water after each batch of product is feed into the thin film processing conveyor belt equipment.
 - c) The process wastewater volume is estimated based on the number batches per day for each mixing bowl.
 - d) Based on preliminary sample data of the process wastewater:
 - BOD for the process wastewater is 470 mg/L - 530 mg/L;
 - Total Suspended Solids is 220 mg/L - 45 mg/L;
 - Total Dissolved Solids 490 mg/L - 480 mg/L;
 - Conductance 230 umhos/cm - 250 umhos/cm;
 - TKN 2.4 mg/L - 3.6 mg/L ;
 - Chloride / - 7.1 mg/L;
 - Sodium 34 mg/L - 23 mg/L
 - Chemical Oxygen Demand 1300 mg/L - 950 mg/L;
 - pH 4.25 - pH 7.06.
- 3. WASTEWATER TREATMENT SYSTEM**
- A. See Sheet C2.0 of the project plans.
 - B. Wastewater Pretreatment components:
 - a.) Sanitary Waste pretreatment consists of a 4,800-gallon septic tank for primary treatment.
 - b.) The Process Waste pretreatment consists of two 1,500-gallon tanks in series with an aeration system to assist with the BOD oxygen depletion, and Heritage Chemical feed system to adjust the pH of certain batches of wastewater. The series of three total tanks

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for the process wastewater allows for solids settlement, together with retention time for biological treatment of the wastewater. The series of tanks create a baffle system for settlement, and a screen influent filter install upstream of the pre-anoxic tank.

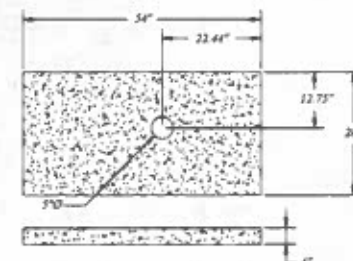
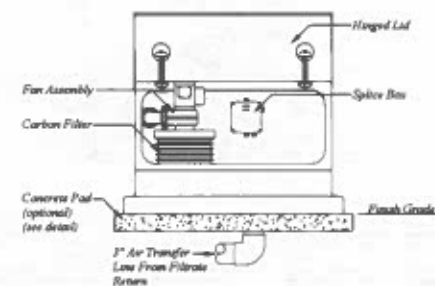
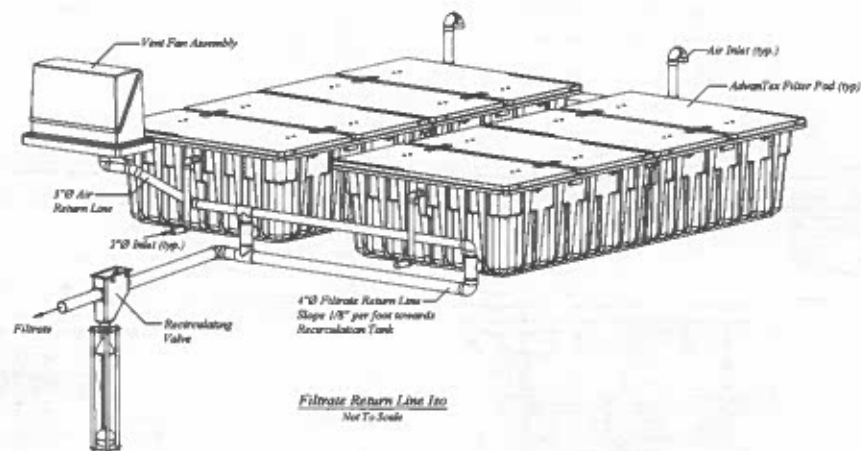
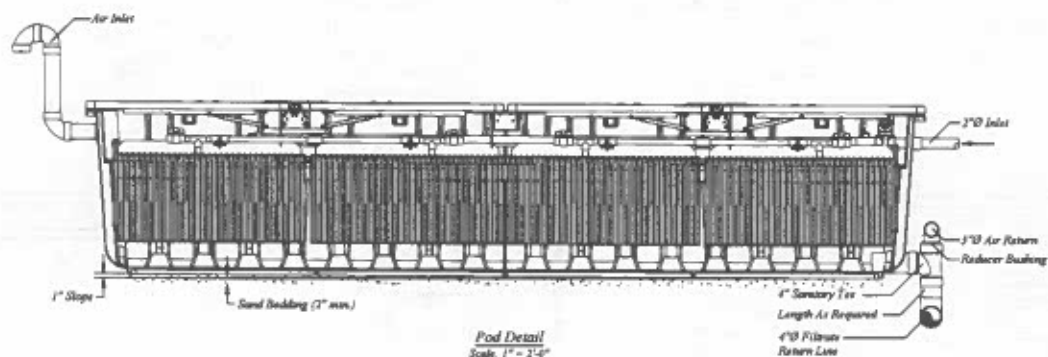
- c.) The two wastewater streams flow into the 3,000-gallon pre-anoxic blend tank for pumping to the recirculation tank.
- d.) In the 1,500-gallon recirculation tank is a bio tube duplex pump vault to pump effluent into a Orenco AX-100 treatment module. The treatment module uses an air ventilation system blower to assure adequate oxygen is provided to the filter media biological process.
- e.) The recirculation tank will divert a portion of the treatment effluent from to the AX-100 biological filtration system to a 3,500-gallon dosing tank.
- f.) The Dosing tank has a bio tube duplex pump vault to pump treated effluent to a pressurized multi-zone GeoFlow drip leach field. The GeoFlow system will use 0.5-gallon//sf/day with emitters spaced at 1' o.c. and each GeoFlow tube spaced at 2' o.c. for a total of 3,700 sf of soil area. This is a standard flowrate for conservative design of pressurized discharge after pretreatment. The GeoFlow piping will be buried approximately one foot deep to allow for maximum soil absorption by the native silty clay soils. The GeoFlow system will be controlled by electric valves that will alternate the zones and allow flows to loop back to the recirculation tank for flushing.
- g.) There is area for a 100% replacement drip field. The surrounding land use is primarily agriculture or unimproved, except to the north where the end of local airstrip is at least 300 feet away. The depth ground water in area of the leach field is assumed to be greater than 5 feet below the nature grade. The site terrain is relatively flat in the area of the leach field, with a gently drainage swale, between to drain field and the subject project facility, that traverses in a northeasterly direction from the northwest corner of the subject project parcel toward a drainage swale along the south side of the airstrip. The swale depression is about 2 to 3 below the existing grade of the leach field area, with the surrounding terrain sloping 2 to 5% toward the swale. The swale is approximately 300 feet from the existing leach field area. The existing leach field area is to be abandon upon installation of the new piping, and area could be used for future replacement area if needed, together additional area to the east of the proposed drain field.
- h.) It is estimated the treated effluent going to the leach field will have a BOD of 10 to 15 mg/L.
- i.) General maintenance cleaning of all filters and pump vault screens will be performed on regular interval and the upstream tanks will be pumped as needed to remove solids and grit.
- j.) A Control Panel will control all of the electrical circuits for the pumps and valves, including low level shut off and high-level alarms. The Control panel will allow for remote monitoring, data collection, programing, and alarm information.

Prepared by: Thomas A. Hunt, P.E.

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AdvanTex®AX100 System Ventilation Details



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Disclaimer:

AdvanTex®AX100 Treatment
System Ventilation

Individual air inlet details

Drawn By:	BAS	Scale:	AS SHOWN
Reviewed By:	JL	Sheet:	1 OF 1
File:	INDIVIDUAL AIR INLET DETAILS.DWG	Rev:	8.0
Date:	11/08/2022		

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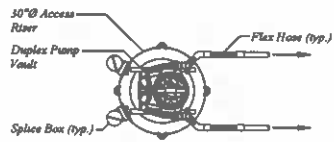
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ESTHER FORMULA USA, INC.
4815 WORK RIGHT CIRCLE
LAUREL, CA 94550
ADVANTEX TREATMENT MODULE VENTILATION SYSTEM

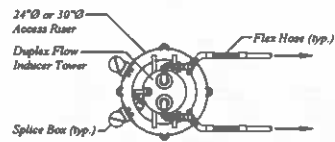


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CHKD	JL
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DATE	11/08/2022
FILE	INDIVIDUAL AIR INLET DETAILS.DWG
REV	8.0
DATE	11/08/2022

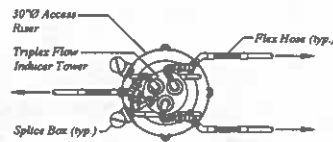
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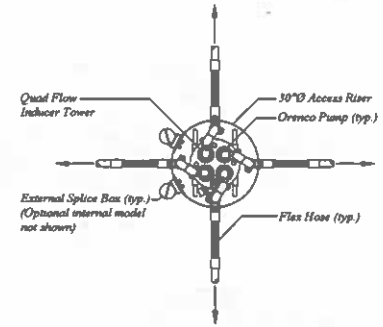
*Duplex Pump Vault
Plan View*



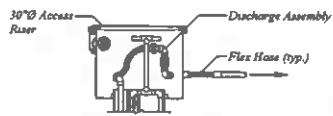
*Duplex Flow Inducer Tower
Plan View*



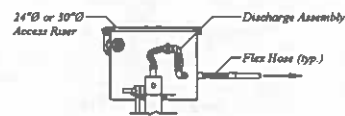
*Triplex Flow Inducer Tower
Plan View*



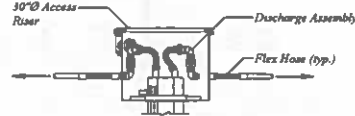
*Quad Flow Inducer Tower
Plan View*



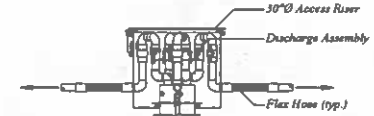
*Duplex Pump Vault
Profile View*



*Duplex Flow Inducer Tower
Profile View*



*Triplex Flow Inducer Tower
Profile View*



*Quad Flow Inducer Tower
Profile View*

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NO.	DATE	DESCRIPTION
1	11/10/03	ISSUED FOR BIDDING
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3	11/10/03	ISSUED FOR BIDDING
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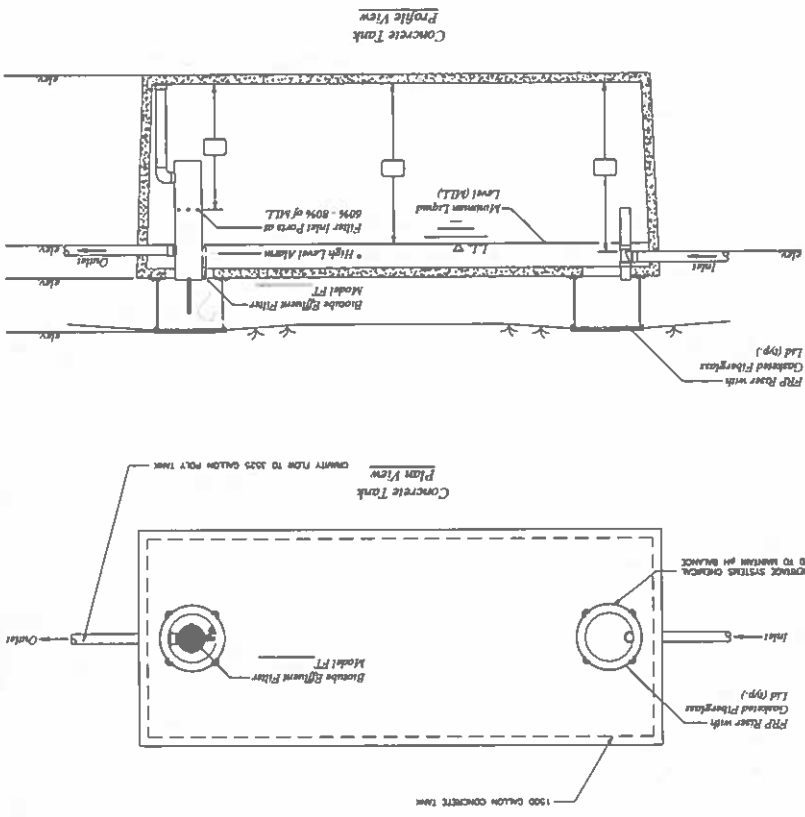
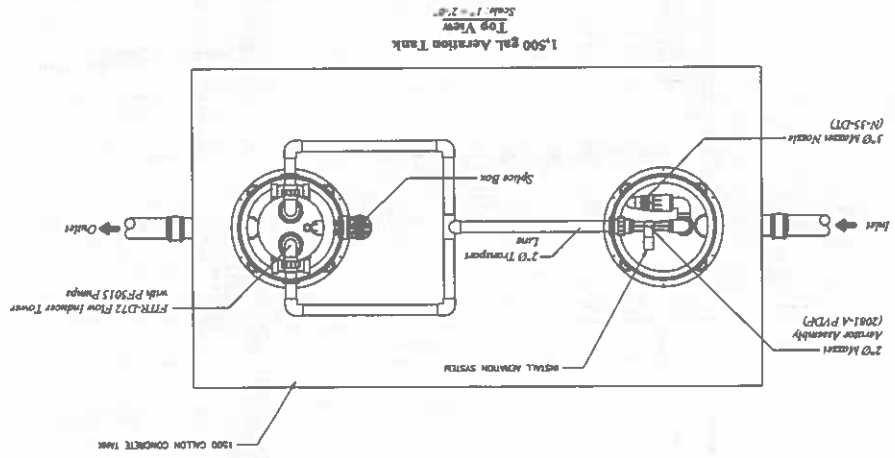
ESTHER FORNIA, L.P.A., INC.
4815 WORK ROAD, SUITE 100
LAUREL, CA 94543

TANK ACCESS RISER PLUMBING DETAILS



DESIGNED	1/2/04
CHECKED	1/2/04
APPROVED	1/2/04
DATE	10-2-2003
ASSEMBLER	1/1/04
CHECKED	

C.S.O.



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Small Systems Design Sheet

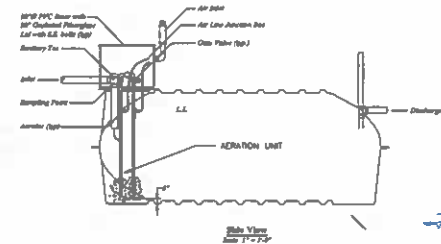
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02022 Conditions

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1" SCHED 40 PVC BACK FLUSH DRAIN LINE FROM DRAIN FIELD TEE INTO INLET OF DOSING TANK

NEW 3525 GALLON (HORNESCO) DOSING TANK

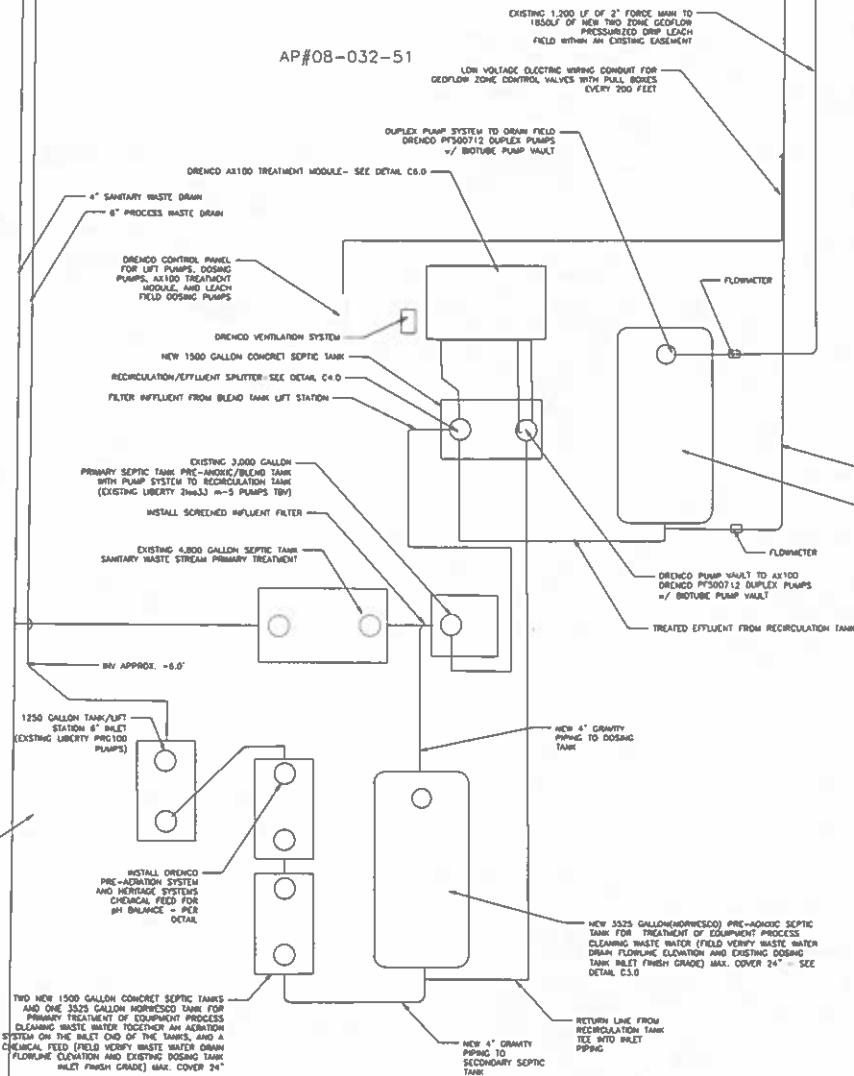


AERATION SYSTEM SECTION VIEW

AP#08-032-51

EXISTING 200 FT x 300 FT MANUFACTURING BUILDING

SEPTIC TANK A MINIMUM OF 30 FT FROM BUILDING



SITE PLAN: SEPTIC SYSTEM LAYOUT

SCALE 1" = 5'

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SEPTIC TREATMENT SYSTEM LAYOUT

ESTHER FORMULA USA INC.
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LAKEPORT, CA 94553



DATE: 10-3-2023
JOB NUMBER: 181.0
DRAWING: C2.0