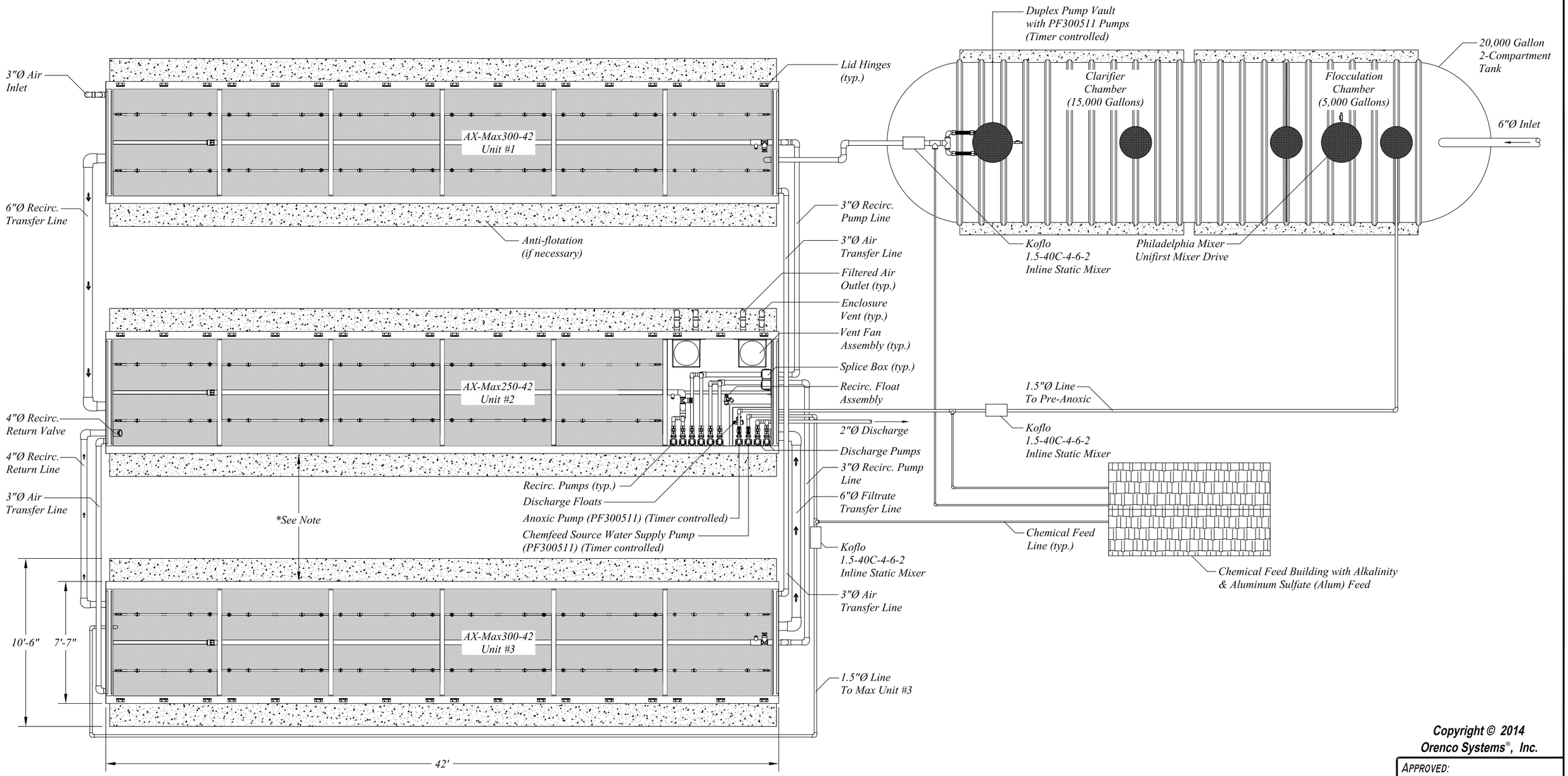
Note: Spacing between AX-Max units is dependent on desired bury depth. Consult Orenco Engineering for details.



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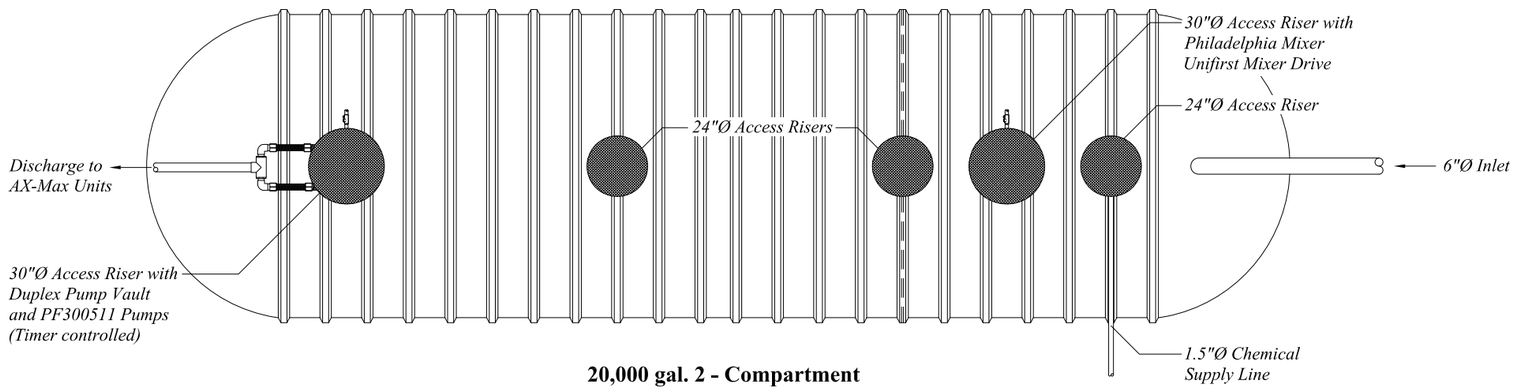
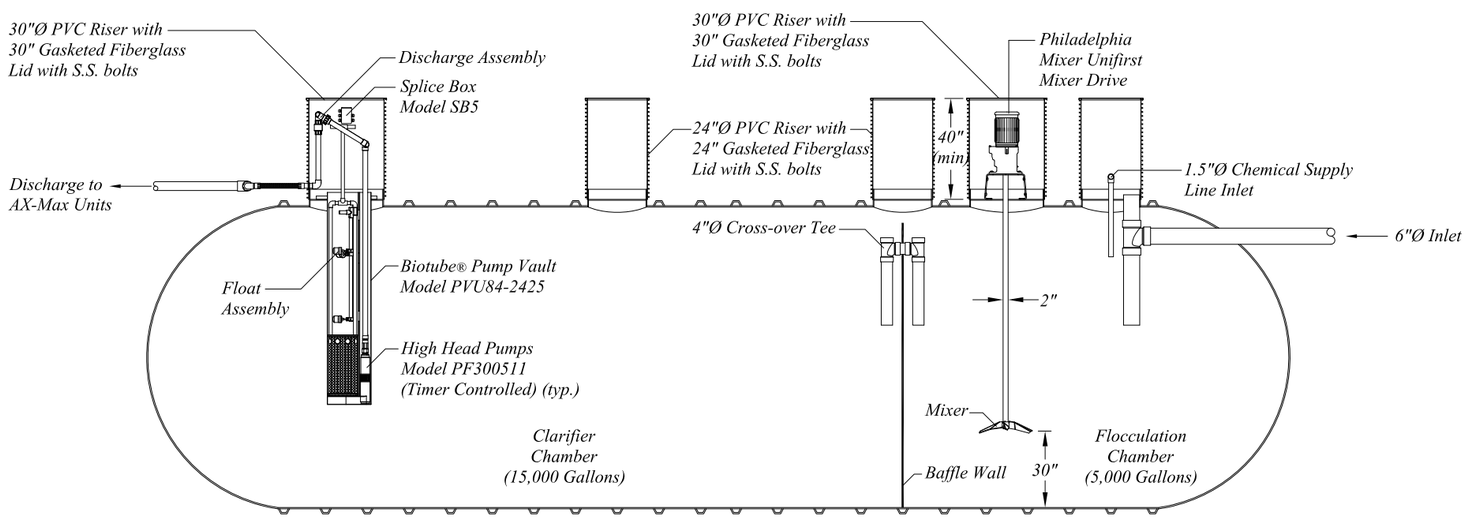
PRODUCT CONFIGURATION DRAWINGS

Orenco Systems® Incorporated
Changing the Way the World Does Wastewater®

Drawn By: BEN SMITH	UAR Calion AdvanTex AX-MAX 850	Scale: 1" = 6'-0"	
Drawn For:		Sheet: 1 OF 2	
	Plan View	Rev: 1.1	Date: 4/07/2014



20,000 gal. 2 - Compartment
Tank Top View
Scale: 1" = 5'-0"



20,000 gal. 2 - Compartment
Tank Side View
Scale: 1" = 5'-0"

Calion, Arkansas

Design Parameters

Flowrates					
Design Average	12720 gpd				
Maximum Day	21250 gpd				
Peak Hourly	59 gpm				
Wastewater Characteristics	**Septic Tank Effluent (mg/L)**	**Septic Tank Effluent (lb/d)**	**Effluent (Average)**		
BOD	200 mg/L	21.22 lb/d	10 mg/L		
TSS	40 mg/L	4.24 lb/d	10 mg/L		
pH	7.5 mg/L	-	7.5 mg/L		
Alkalinity as $CaCO_3$	400 mg/L	42.43 lb/d	100 mg/L		
FOG	20 mg/L	-	0 mg/L		
Phosphate	5 mg/L	0.53 lb/d	0.1 mg/L		
NH_3	45 mg/L	4.77 lb/d	1 mg/L		
TKN	65 mg/L	6.90 lb/d	3 mg/L		
NO_3	0 mg/L	0 lb/d	25 mg/L		

Chemical Precipitation

Phosphorus Removal

Chemical	**Molecular Weight**	**Form**	**Percent**	**Specific Gravity**	**Cost**
Aluminum Sulfate	666.5	Liquid	8.5%	1.335	
		Lump	17%		$0.10
Aluminum Sulfate	594.4	Liquid	8.5%		
		Lump	17%		
Alkalinity Consumed	2.3 mg/L				
Al:P dose	3				
	Maximum Day	**Design Average**			
Al_{dose}	12.8 mg/L	12.8 mg/L			
Al_{dose}	2.27 lb/d	1.36 lb/d			
$Al_2(SO_4)_3*18H_2O$ Solution	27 lb/d	16 lb/d			
$Al_2(SO_4)_3*18H_2O$ Solution $/day	$2.67	$1.60			
$Al_2(SO_4)_3*18H_2O$ Solution $/yr	-	$583.37			
$Al_2(SO_4)_3*18H_2O$ Flow Rate (gpd)	4.9 gpd	2.9 gpd			
$Al_2(SO_4)_3*18H_2O$ Flow Rate (gph)	0.20 gph	0.12 gph			
15-d Storage Requirement	74 gallons	44 gallons			
7-d Storage Requirement	34 gallons	21 gallons			
Al_{dose}	0.00047 mole/L	0.00047 mole/L			
P Removed	0.00016 mole/L	0.00016 mole/L			
$Al_{1.0}H_3PO_4(OH)_{3.8}$ Sludge	32.4 mg/L	32.4 mg/L			
Excess Al Added	0.00022 mole/L	0.00022 mole/L			
$2Al(OH)_3$ Sludge	17.28 mg/L	17.28 mg/L			
Total Sludge (mg/L)	49.67 mg/L	49.67 mg/L			
Total Sludge (lb/d)	8.8 lb/d	5.3 lb/d			

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PRODUCT CONFIGURATION DRAWINGS

Orenco Systems® Incorporated
Changing the Way the World Does Wastewater®

Drawn By: BEN SMITH

Drawn For:

UAR Calion
AdvanTex AX-Max850
Mixing / Dose Tank Details

Scale: 1" = 5'-0"

Sheet: 2 OF 2

Rev: 1.1

Date: 4/07/2014