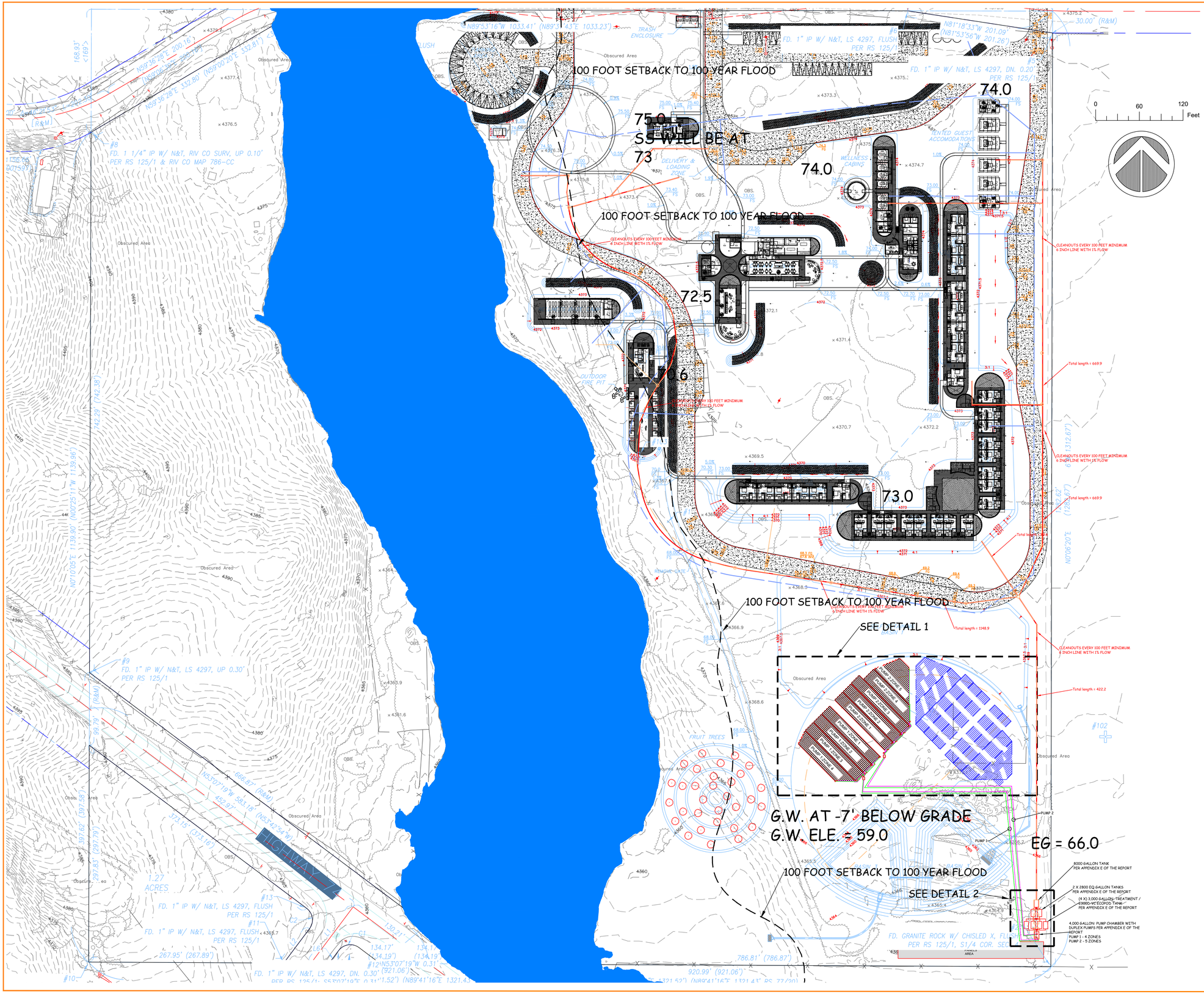


LEGEND

Locations are Approximate

Symbols

- Limits of Report
- P-12 - Percolation Test Location

NOTES:

ADVANCED TREATMENT SYSTEM
DELTA 4X ECOPOD E300D

- TOTAL EFFLUENT 9800 GPD:
- DISPERSAL SYSTEM WILL CONSIST OF 2 PUMPS TO ALLOW FOR ALL VOLUME DISCHARGE, FUNCTIONS AND REDUNDANCIES.
- PRIMARY PUMP 1: LOADING FACTOR = 0.7 GAL/SQ FT/DAY
  EFFLUENT 4900 GPD
  TOTAL AREA REQUIRED IS 7000 SQUARE FEET
  4 - ZONES, 1750 SQ FT / ZONE.
  0.6 INCHES IN DIAMETER AND 2 FEET APART
- PRIMARY PUMP 2: LOADING FACTOR = 0.7 GAL/SQ FT/DAY
  EFFLUENT 4900 GPD
  TOTAL AREA REQUIRED IS 7000 SQUARE FEET
  5 - ZONES, 1400 SQ FT / ZONE.
  0.6 INCHES IN DIAMETER AND 2 FEET APART
- 100% EXPANSION PUMP 1: LOADING FACTOR = 0.7 GAL/SQ FT/DAY
  EFFLUENT 4900 GPD
  TOTAL AREA REQUIRED IS 7000 SQUARE FEET
  4 - ZONES, 1750 SQ FT / ZONE.
  0.6 INCHES IN DIAMETER AND 2 FEET APART
- 100% EXPANSION PUMP 2: LOADING FACTOR = 0.7 GAL/SQ FT/DAY
  EFFLUENT 4900 GPD
  TOTAL AREA REQUIRED IS 7000 SQUARE FEET
  5 - ZONES, 1400 SQ FT / ZONE.
  0.6 INCHES IN DIAMETER AND 2 FEET APART

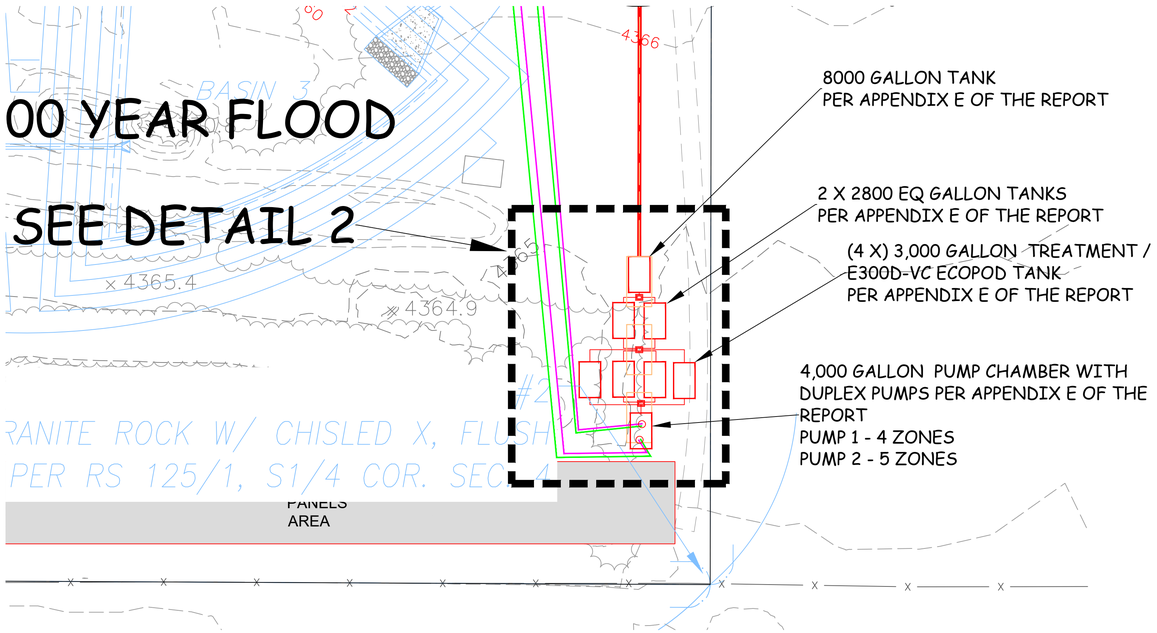
ATU SYSTEM MAP

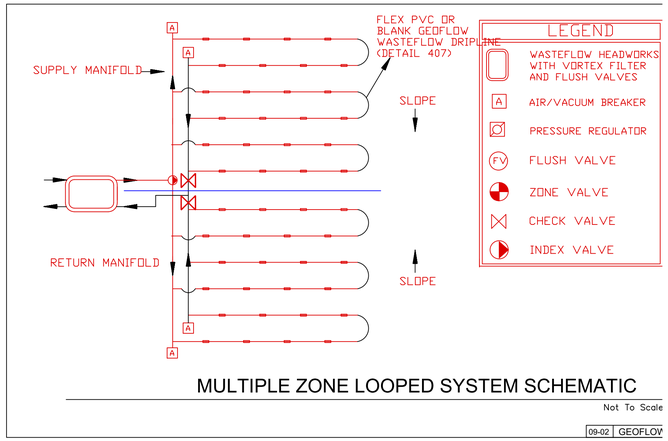
LOCATED AT 56475 APPLE CANYON ROAD
MOUNTAIN CENTER AREA, RIVERSIDE COUNTY, CALIFORNIA
APN 568-070-021

PROJECT	***THE RIDGE WELLNESS INC.***		
CLIENT	***MS. CAROLINE LEGRAND***		
PROJECT NO.	***213906-14A***		
DATE	***DECEMBER 2021***		
SCALE	***1:60***		
DWG XREFS			
REVISION			
DRAWN BY	***JDG***	***PLATE***	***2 OF 2***

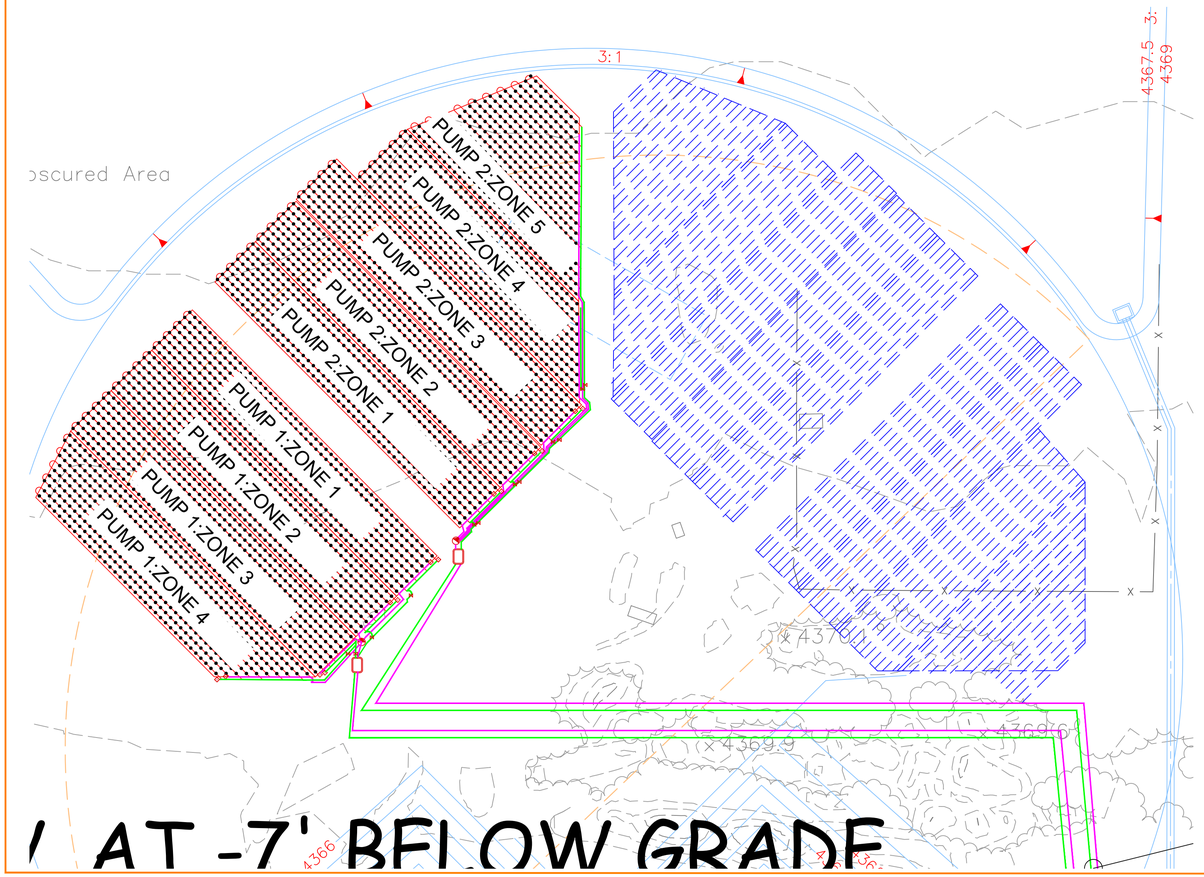
Earth Strata Geotechnical Services, Inc.
Geotechnical, Environmental and Materials Testing Consultants
www.ESGSINC.com (951) 397-8315

DETAIL 1





DETAIL 2

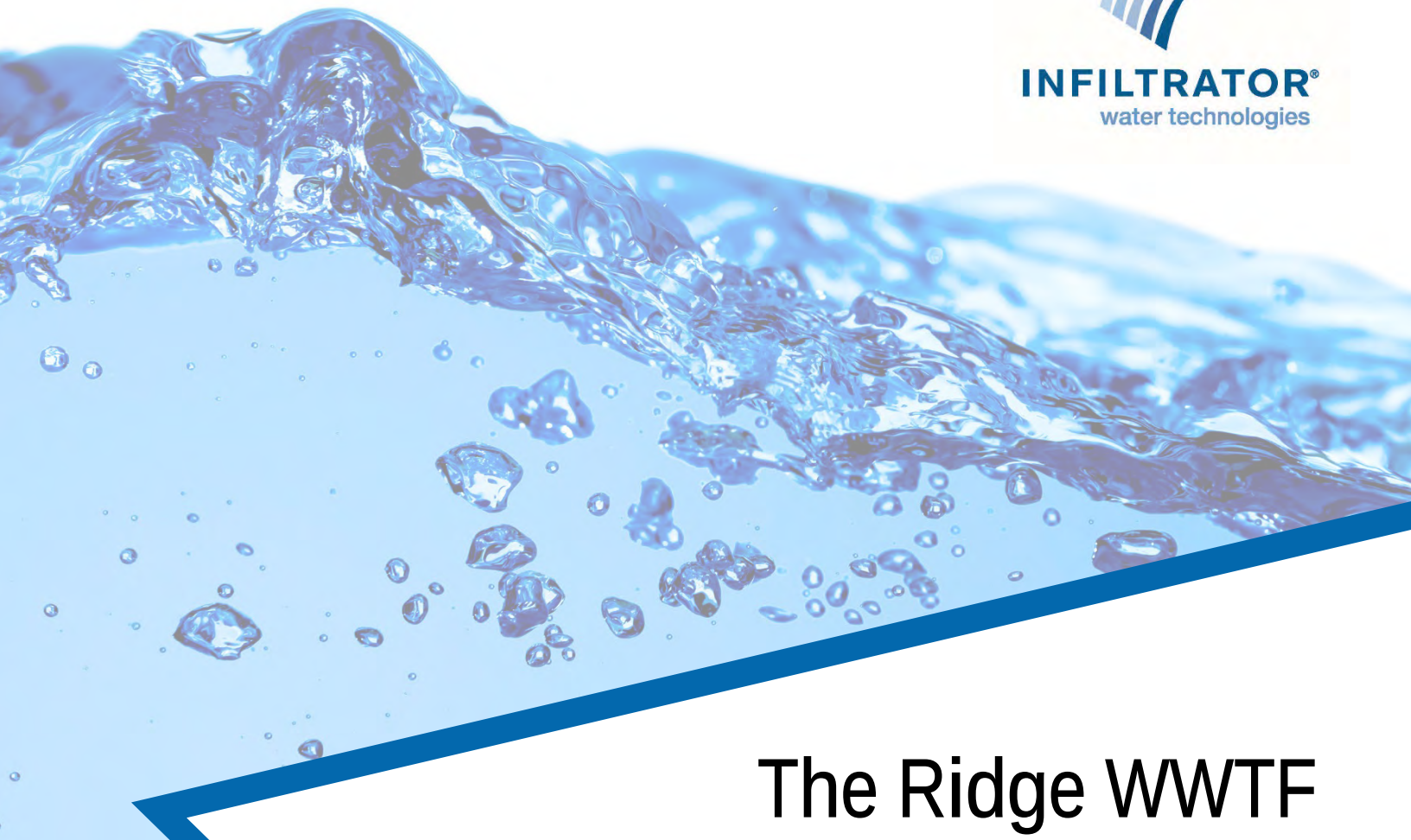


ATU SYSTEM DETAILS

LOCATED AT 56475 APPLE CANYON ROAD
MOUNTAIN CENTER AREA, RIVERSIDE COUNTY, CALIFORNIA
APN 568-070-021

PROJECT	THE RIDGE WELLNESS INC.		
CLIENT	MS. CAROLINE LEGRAND		
PROJECT NO.	213906-14A		
DATE	DECEMBER 2021		
SCALE	1:20		
DWG XREFS			
REVISION			
DRAWN BY	JDG	PLATE	2 OF 2

Earth Strata Geotechnical Services, Inc.
Geotechnical, Environmental and Materials Testing Consultants
www.ESGSINC.com (951) 397-8315



The Ridge WWTF

Palms to Pines Highway, Idyllwild, CA

Preliminary Proposal Package

Prepared For:

Gadalla Gadalla
42184 Remington Avenue
Temecula, CA 92590

April 29, 2022

Infiltrator Water Technologies, Inc.
4 Business Park Road
Old Saybrook, CT 06475
www.infiltratorwater.com

Table of Contents

The Ridge WWTF

Decentralized Wastewater Treatment Solutions

Preliminary Proposal to Include:

Section 1

Process Flow Diagram

PROCESS DIAGRAM NOTES

1. THE DRAWINGS DEPICTED HEREIN REPRESENT PRELIMINARY LAYOUT(S) OF A WASTEWATER TREATMENT SYSTEM CAPABLE OF TREATING THE DESIGN INFLUENT FLOW AND LOAD TO THE EFFLUENT WATER QUALITY DENOTED IN THE EFFLUENT WASTELOAD SUMMARY.
2. THE PROCESS SCHEMATIC SHOWS THE GENERAL FLOW LAYOUT. SPECIFIC REACTOR COMPONENTS, SIZES, AND CONFIGURATIONS MAY DIFFER.
3. PRELIMINARY BASIN SIZING IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. FINAL DESIGN VALUES SHALL BE ESTABLISHED BY THE ENGINEER OF RECORD.
4. SEE THE PROJECT SPECIFIC QUOTE FOR MORE INFORMATION REGARDING SCOPE OF SUPPLY AND CORRESPONDING TERMS AND CONDITIONS.
5. ENTIRE SYSTEM TO BE PROVIDED WITH CONTROL PANEL(S) FOR ALL EQUIPMENT.

TANK SIZES

TANK	QTY	DIAMETER (FT)	HEIGHT (FT)	SWD (FT)	EACH VOLUME (GAL)	TOTAL VOLUME (GAL)	TANK ID
GREASE TRAP (BY OTHERS)	TBD	TBD	TBD	TBD	TBD	TBD	TBD
PRIMARY (BY OTHERS)	TBD	TBD	TBD	TBD	TBD	8,000 MIN.	TBD
FLOW EQ	2	8	8.5	1.5 MIN. 7.42 MAX.	2,800 TOTAL 2,200 OPERATIONAL	5,600 TOTAL 4,400 OPERATIONAL	DELTA FRP 8'Ø
ECOPOD TREATMENT SYSTEM	4	8	8.5	7.42	2,800	11,200	DELTA FRP 8'Ø
DOSING (BY OTHERS)	TBD	TBD	TBD	TBD	TBD	TBD	TBD

ALL DIMENSIONS ARE INSIDE OF TANK UNLESS NOTED OTHERWISE.

MOTOR LOADS

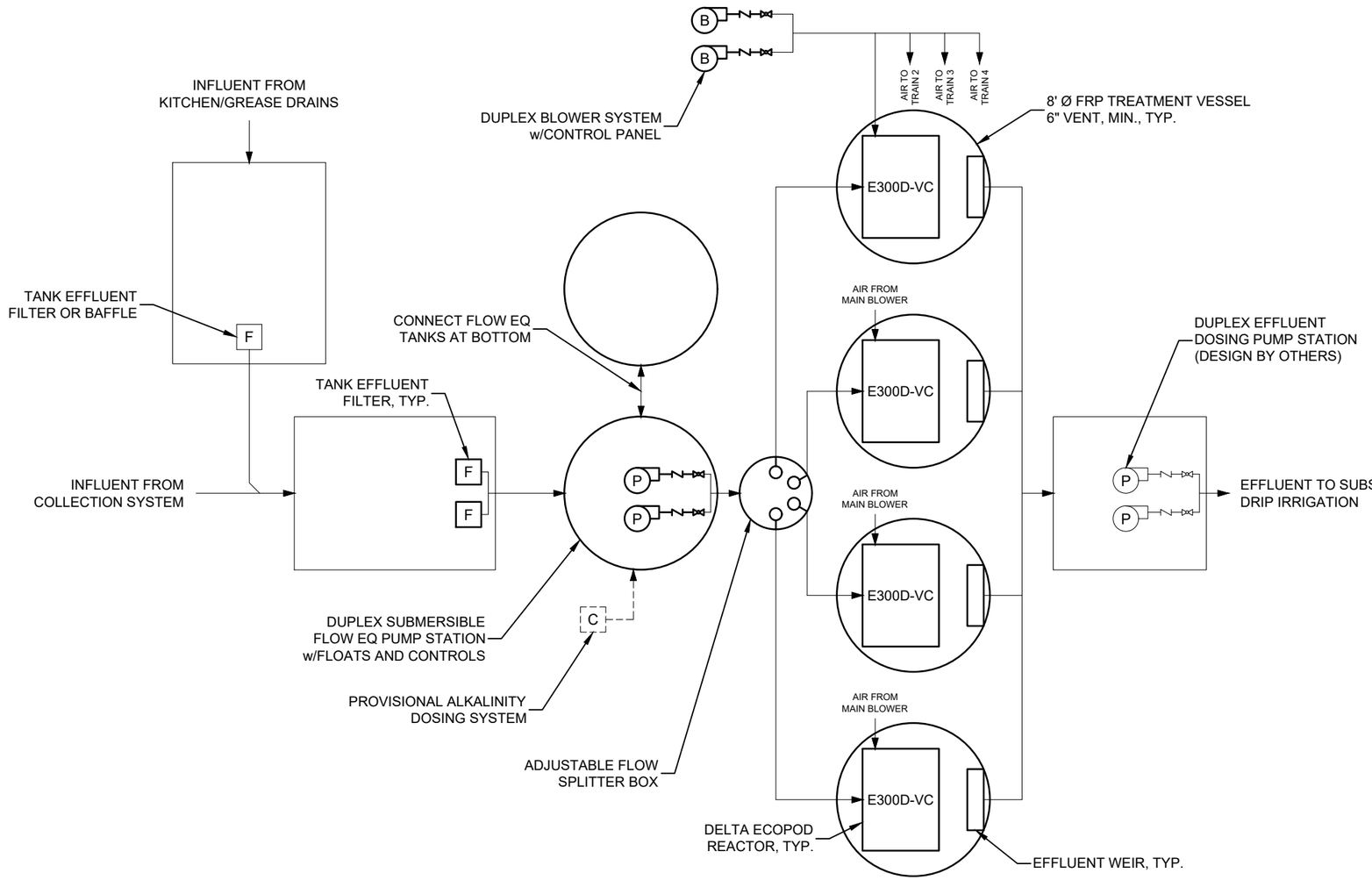
DEVICE	QTY	CONCURRENTLY OPERATING	POWER (HP)	VOLTAGE (V)	STARTING CURRENT (A)	FULL LOAD CURRENT (A)
FLOW EQ PUMP	2	1	0.5	230 V - 1 PH	23	5.75
MAIN AIR BLOWER	2	1	3	230 V - 1 PH	PER MANUFACTURER	16.8
ALKALINITY DOSING PUMP (PROVISIONAL)	1	1	TBD	TBD	TBD	TBD
DOSING PUMP (BY OTHERS)	TBD	TBD	TBD	TBD	TBD	TBD

FLOW SUMMARY

FLOW PARAMETER	GPD	GPM	M^3/D
AVERAGE DAILY FLOW (ADF)	8,000	5.6	30

PROVIDED BY DELTA
PROVIDED BY OTHERS
PROVISIONAL

- DIAPHRAGM VALVE
- GLOBE/NEEDLE VALVE
- BALL VALVE
- CHARACTERIZED BALL VALVE
- BALL CHECK VALVE
- PLUG VALVE
- BUTTERFLY VALVE
- GATE VALVE
- 3-WAY VALVE
- CHECK VALVE
- (B) BLOWER
- (P) MECHANICAL PUMP
- (AL) AIR LIFT PUMP
- (M) MIXER
- (M) FLOW METER
- (C) CHEMICAL DOSING PUMP
- (F) FILTER
- (UV) ULTRAVIOLET DISINFECTION UNIT
- BAR SCREEN
- MECHANICAL BAR SCREEN
- (CL) TABLET FEEDER
- DISC FILTER



WASTELOAD SUMMARY:

INFLUENT WASTELOAD AS PROVIDED BY ENGINEER OF RECORD
300 mg/L (20 LB/D) BOD_5
150 mg/L (10 LB/D) TSS
7.0-8.0 pH (ASSUMED)
68 F (20 C) WATER TEMPERATURE (ASSUMED)

EFFLUENT TARGETS
30 mg/L BOD_5 30-D AVERAGE
30 mg/L TSS 30-D AVERAGE
50% TN REMOVAL

ORGANIC LOADING
0.0013 LB $BOD_5/D/FT^2$ (6.4 g BOD/D/M^2) TO BOD REACTOR
0.052 LB $BOD_5/D/FT^3$ (260 g $BOD_5/D/M^3$) TO BOD REACTOR

AERATION SYSTEM DESIGN
AOR: 24 LB O_2/D
SOTR: 45 LB O_2/D
PROCESS AIR DEMAND: 127 SCFM
SITE ELEVATION: 4,500 FT AMSL
MAXIMUM AIR TEMPERATURE: 115 F (ASSUMED)
PROCESS AIR INLET FLOW: 160 ICFM
BLOWER AIRFLOW: 1 DUTY/1 STANDBY, 160 ICFM @ 2.7 PSIG
SELECTED BLOWER: GARDNER DENVER MODEL 3L @ 2,020 RPM
SELECTED MOTOR: 3 HP

PRELIMINARY

REV.	DATE	INITIALS	DESCRIPTION
A	04/28/22	JLS	REVISED PER QA/QC COMMENTS.

Delta Treatment Systems, LLC

THE RIDGE WWTF
56475 APPLE CANYON RD, MOUNTAIN CENTER, CA

PROCESS DIAGRAM

HORIZ. SCALE	PROJECT NO.
N/A	22-0099
VERT. SCALE	DATE
N/A	04/15/2022
DRAWN BY	DESIGNED BY
JLS	JLS
DRAWING NO.	SHEET NO.
P1.0	01 of 01

GENERAL NOTES
1. THE DRAWINGS DEPICTED HEREIN REPRESENT PRELIMINARY LAYOUTS OF A WASTEWATER TREATMENT SYSTEM CAPABLE OF TREATING THE DOMESTIC WASTE CONSTITUENTS NOTED IN TABLE 1.
2. ECOPOD REACTOR BOX SHALL BE CONSTRUCTED OF AISI 304/304L STAINLESS STEEL.
3. TANK MATERIAL OPTIONS:
   3.1. CARBON STEEL PER ASTM A36 w/COATING PER DELTA STANDARDS,
   3.2. FIBERGLASS REINFORCED PLASTIC (FRP) (NOT ALL MODELS),
   3.3. PRECAST CONCRETE PER ENGINEER OF RECORD REQUIREMENTS, BY OTHERS,
   3.4. CAST-IN-PLACE CONCRETE PER ENGINEER OF RECORD REQUIREMENTS, BY OTHERS.
4. BLOWERS, WEIRS, CONTROL PANELS, AND VARIOUS SMALL PARTS WILL BE SHIPPED UNASSEMBLED AND SECURELY PACKAGED, TO BE INSTALLED BY CONTRACTOR.
5. SEE INSTALLATION GUIDE FOR INSTALLATION DETAILS.
6. CONTACT AN IWT/DELTA REPRESENTATIVE REGARDING DEVIATIONS FROM THESE STANDARDS.

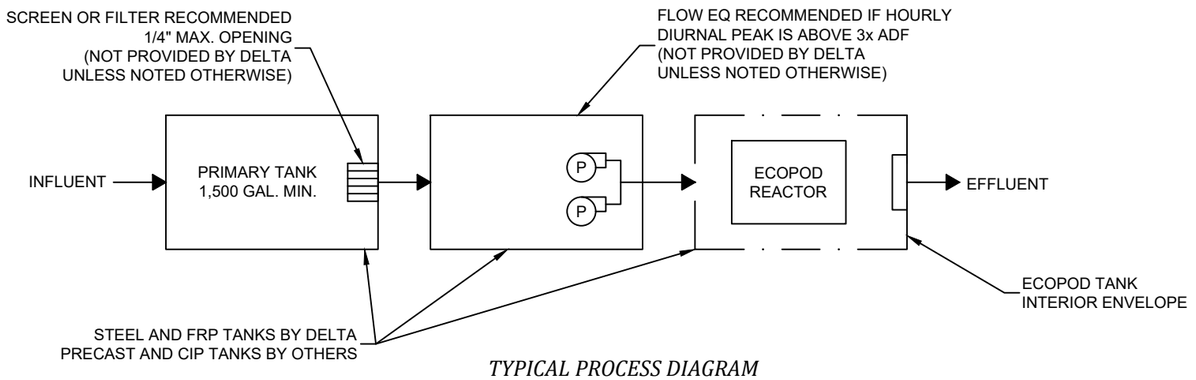
TABLE 1
PROCESS PARAMETERS
DELTA E300D BOD ONLY

PARAMETER	MINIMUM	MAXIMUM
AVERAGE DAILY FLOW	-	3,000 GPD
PEAK DAILY FLOW	-	4,500 GPD
INFLUENT BOD_5	-	7.5 LB/DAY
AIR TEMPERATURE	-	115 °F
WATER TEMPERATURE	68 °F	68 °F
RELATIVE HUMIDITY	10%	90%
SITE ELEVATION	0 FT AMSL	3,000 FT AMSL

TABLE 2
AIR DEMAND

PARAMETER	UP TO 1,000 FT AMSL	1,000 TO 3,000 FT AMSL
STANDARD AIRFLOW	36 SCFM	42 SCFM
SITE AIR REQUIREMENT	41 ICFM	51 ICFM
BLOWER INLET AIR	51 ICFM	51 ICFM
AIR HEADER SIZE	3 IN	3 IN
MIN. TANK VENT X-SECT. AREA	21 IN^2 2 EA 4" OR 1 EA 6"	21 IN^2 2 EA 4" OR 1 EA 6"
BLOWER SELECTION	FPZ SCL R30-MD	FPZ SCL R30-MD
NOISE LEVEL	72.2 dB(A)	72.2 dB(A)
AIR TEMPERATURE RISE[1]	29 F (16.1 C)	29 F (16.1 C)
BLOWER INLET DIAMETER	1.25 IN NPT	1.25 IN NPT
BLOWER OUTLET DIAMETER	1.25 IN NPT	1.25 IN NPT
MOTOR POWER RATING[2]	2 HP	2 HP
OPERATING POWER	0.92 KW	0.92 KW

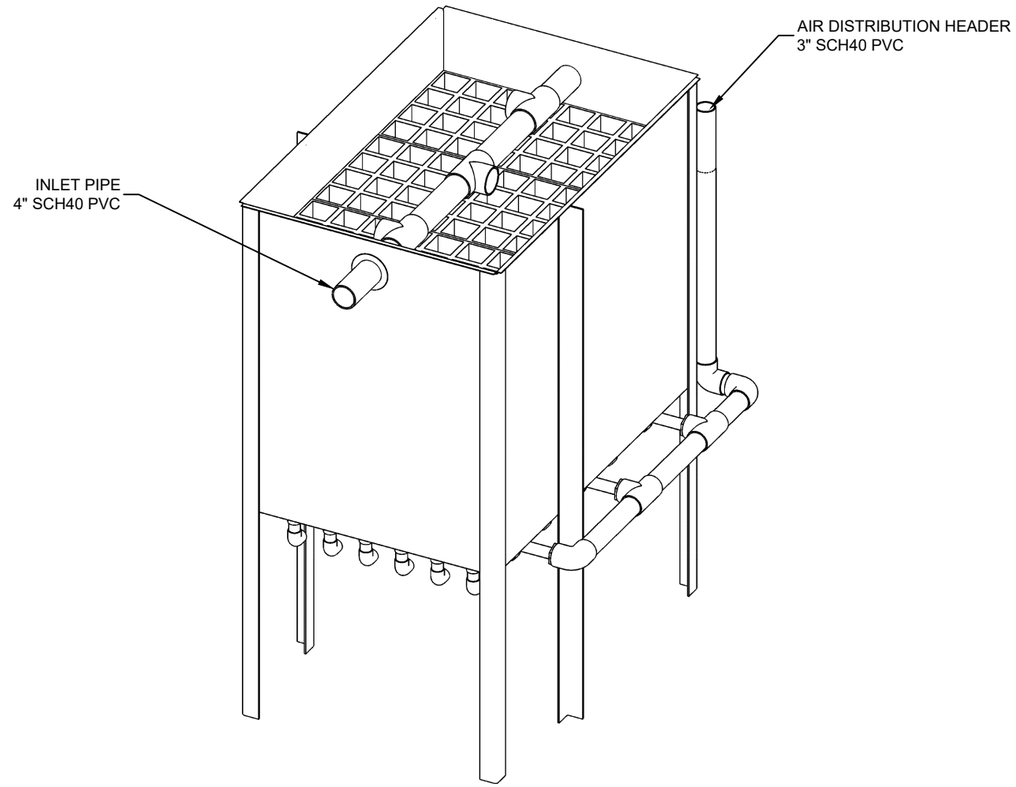
1. REVIEW BLOWER DISCHARGE AIR TEMPERATURE WHEN SPECIFYING AIR MAIN PIPING MATERIAL.
2. REVIEW BLOWER MANUFACTURER CUTSHEETS FOR ADDITIONAL ELECTRICAL INFORMATION.



TYPICAL PROCESS DIAGRAM

TABLE 3
STANDARD EQUIPMENT LIST

DESCRIPTION	QTY	MAKE	MODEL
ECOPOD REACTOR	1	DELTA	E300D
BLOWER	1	FPZ	PER TABLE 2
CONTROL PANEL	1	DELTA	PER DESIGN
24" S.S. EFFLUENT WEIR	1	DELTA	TROUGH-3.0



ECOPOD REACTOR
LAYOUT 1

NO.	DATE	INITIALS	DESCRIPTION
A	10/12/21	AOB	ADDED TRIMETRIC VIEW

Delta Treatment Systems, LLC

DELTA ECOPOD E300D
STANDARD DESIGN FOR BOD REDUCTION

GENERAL ARRANGEMENT
DESIGN OVERVIEW

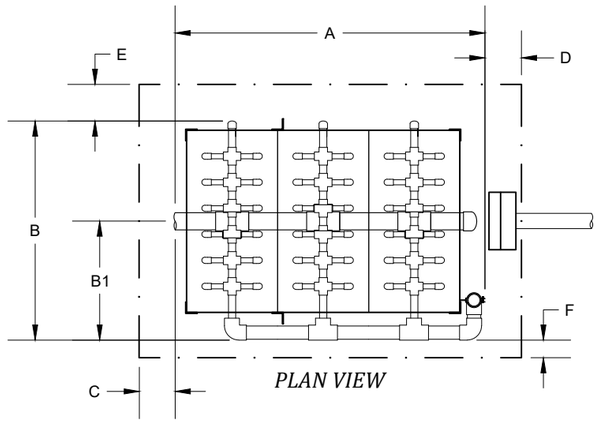
HORIZ. SCALE	PROJECT NO.
N/A	N/A
VERT. SCALE	DATE
N/A	02/11/2021
DRAWN BY	DESIGNED BY
CGK	AOB
DRAWING NO.	SHEET NO.
C1.0	01 of 02

GENERAL NOTES
1. ECOPOD REACTOR BOX SHALL BE CONSTRUCTED OF AISI 304/304L STAINLESS STEEL.
2. TANK MATERIAL OPTIONS:
   2.1. CARBON STEEL PER ASTM A36 w/COATING PER DELTA STANDARDS,
   2.2. FIBERGLASS REINFORCED PLASTIC (FRP) (NOT ALL MODELS),
   2.3. PRECAST CONCRETE PER ENGINEER OF RECORD REQUIREMENTS, BY OTHERS,
   2.4. CAST-IN-PLACE CONCRETE PER ENGINEER OF RECORD REQUIREMENTS, BY OTHERS.
3. SEE INSTALLATION GUIDE FOR INSTALLATION DETAILS.
4. CONTACT AN IWT/DELTA REPRESENTATIVE REGARDING DEVIATIONS FROM THESE STANDARDS.

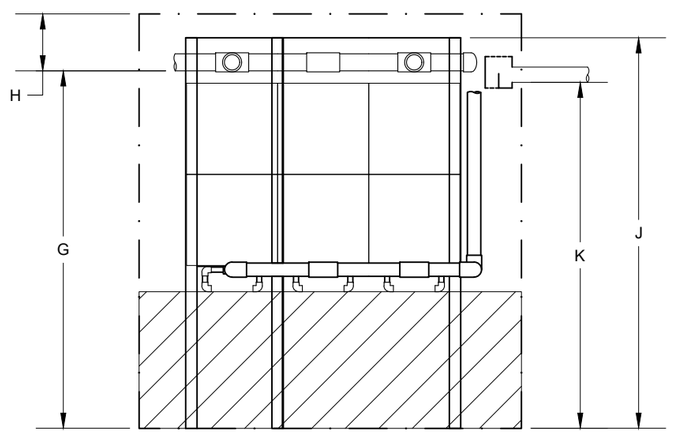
TABLE 4
MINIMUM ECOPOD REACTOR DIMENSIONS

SITE ELEVATION		LAYOUT ID	REACTOR WEIGHT		A OVERALL LENGTH		B OVERALL WIDTH		B1 AIR HEADER CL DIM	
FT	M		LB	KG	IN	CM	IN	CM	IN	CM
0-3,000	0-914	1	950	431	82	209	59	150	32	82
0-3,000	0-914	2	880	400	58	148	83	211	44	112

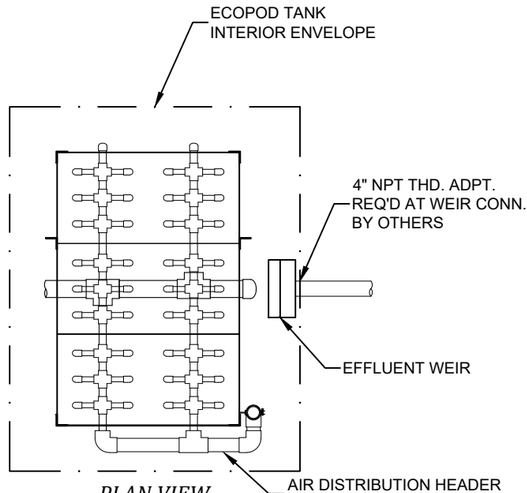
1. SOME REACTOR LAYOUTS NOT AVAILABLE IN FIBERGLASS TANKS. CONTACT AN IWT/DELTA REPRESENTATIVE FOR DETAILS.



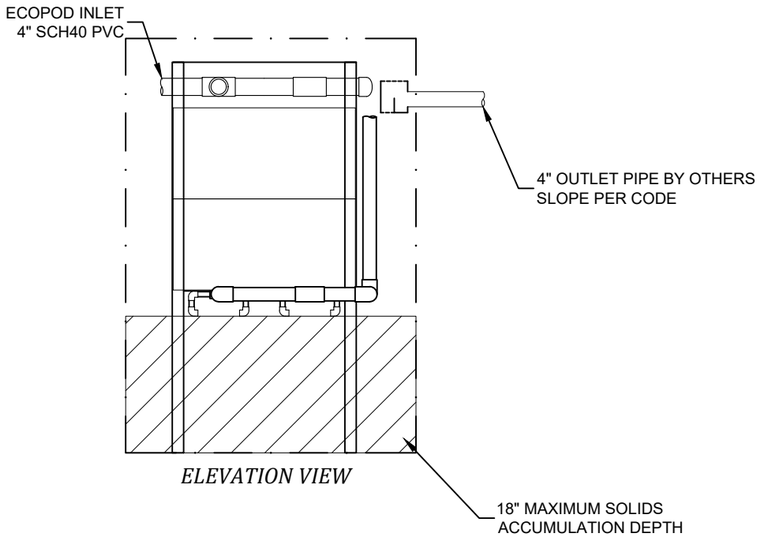
PLAN VIEW



ELEVATION VIEW



PLAN VIEW



ELEVATION VIEW

TABLE 5
RECOMMENDED ECOPOD TANK INTERIOR ENVELOPE DIMENSIONS

DIMENSION	IN	CM
C VESSEL FRONT SPACE	12	30
D VESSEL REAR SPACE	18	46
E AIR HEADER SIDE INSIDE SPACE	6	15
F NO HEADER SIDE INSIDE SPACE	6	15

TABLE 6
REQUIRED ECOPOD TANK INTERIOR ENVELOPE MINIMUM DIMENSIONS

DIMENSION	IN	CM
G INLET INVERT	92	234
H PLENUM SPACE ABOVE INLET INVERT	10	25
J MEDIA REACTOR HEIGHT	101	257
K OUTLET INVERT	89	226

1. ONE (1 EA.) INLET AND ONE (1 EA.) OUTLET ACCESS HATCH REQUIRED, 24" DIA MINIMUM.

NO.	DATE	INITIALS	DESCRIPTION
A	05/17/21	AOB	CREATED NEW LAYOUT

Delta Treatment Systems, LLC

DELTA ECOPOD E300D
STANDARD DESIGN FOR BOD REDUCTION

GENERAL ARRANGEMENT
LAYOUT DIMENSIONS

HORIZ. SCALE	PROJECT NO.
N/A	N/A
VERT. SCALE	DATE
N/A	05/17/2021
DRAWN BY	DESIGNED BY
CGK	AOB
DRAWING NO.	SHEET NO.
C1.1	02 of 02

Section 2

Calculations

This is a preliminary design based on information provided to Delta Treatment Systems, LLC and is for budgetary or preliminary use only. Changing the input parameters may change the results. Use and interpretation of this information and determining the applicability to a specific project is at the sole discretion of the user and/or the Engineer of Record.

ECOPOD Process Design Calculations

Project **Q22-0268 Whit's Inn**
Dripping Springs, TX

Design Influent Loadings

Average Daily Flow =	**3,000**	gpd	11.4 m^3/d	
	2.1	gpm	0.0079 m^3/min	
Influent BOD5 =	**1200**	mg/l =	30.02 lb/d	13.62 kg/d
Influent TKN =	**0**	mg/l =	0.00 lb/d	0.00 kg/d

Baseline Ecopod Equivalent = E1200D

Media Quantity

Estimated Quantity of Media Blocks Required = 24 Blocks (rounded to nearest whole number)

Reactor Block Quantity Multiplication Factor = **1.0** Based on effluent targets

Selected Base Quantity of Media Blocks = 24 Blocks (rounded to nearest whole number)

Water Temperature Adjustments

MIN. Wastewater Temperature ($t_{WW,min}$) =	**20**	°C	68 °F	527.7 °R
BOD Temp. Adjustment Factor =	1.00			
Estimated BOD Blocks =	24			
Selected BOD Blocks =	**24**			
Nitrification Temp. Adjustment Factor =	1.00	[ ]	<-- 'x' if req'd	
Estimated Nitrification Blocks =	0			
Selected Nitrification Blocks =	**0**			
Total Blocks Under Aeration =	**24**	OK		
Denitrification Temp. Adjustment Factor =	1.00	[ ]	<-- 'x' if req'd	
Estimated Denitrification Blocks =	0			
Selected Denitrification Blocks =	**0**	OK		
Estimated Polishing Blocks =	0			
Selected Polishing Blocks =	**0**	OK		

Adjusted ECOPOD Equivalent = E1200D

ECOPOD Process Design Calculations

Project **Q22-0268 Whit's Inn**
Dripping Springs, TX

Reactor Organic Loading

BOD Reactor =	0.0020	lb BOD/d/ft^2	9.54	g BOD/d/m^2
	0.078	lb BOD/d/ft^3	382	g BOD/d/m^3
Nitrification Reactor =	0.00000	lb TKN/d/ft^2	0	g TKN/d/m^2
	0.0000	lb TKN/d/ft^3	0	g TKN/d/m^3
Denitrification Reactor =	0	lb NO_3/d/ft^2	0	g NO_3/d/m^2
	0	lb NO_3/d/ft^3	0	g NO_3/d/m^3

Tank Volume

Ecopod Media Block Stack =	**2**	blocks		
Stack Designator =	D			
Minimum Sidewater Depth =	6.50	ft		
Number of Reactors =	**2**			
Selected Basin Width =	**6.2**	ft		
Selected Basin Length =	**15.0**	ft		
Selected Sidewater Depth =	**8.38**	ft		
Actual Volume per Reactor =	776	cf =	5,801	gal
Selected Total Reactor Volume =	1551	cf =	11,603	gal

Operating Conditions

Site Elevation (z) =	**1200**	ft		
Ambient Air Temperature ($T_{atm,max}$) =	**46**	°C	114.8 °F	574.5 °R
Max. Wastewater Temperature ($t_{WW,max}$) =	**20**	°C	68 °F	527.7 °R
Residual Dissolved Oxygen Conc (C_L) =	**2.0**	mg/L		
Equivalent MLSS (X) =	**2,500**	mg/L		

ECOPOD Process Design Calculations

Project **Q22-0268 Whit's Inn**
Dripping Springs, TX

Diffused Aeration Criteria

Diffuser (Bubble) Type =	**Coarse**		**Coarse or Fine**
Diffuser Submergence (z_{sub}) =	4.50	ft	
Pressure at Diffuser Release ($P_{z,sub}$) =	1.9	psig	$=z_{sub}/2.31$
Ambient Percent Oxygen by Weight (O_{atm}) =	23		
Mid-depth Correction Factor (d_e) =	**0.40**		Typical; Range 0.25-0.40.

Diffused Aeration Correction Data

Gravitational Acceleration (g) =	32.2	ft/s^2	
Mole of Air (M) =	28.97	lb/lb-mol	
Universal Gas Constant (R) =	53.3	ft·lb/lb-air·ºR	
Ambient Elev/Temp Correction Factor (P_b/P_a) =	0.96		$=EXP[-z/RT]$
Ambient Pressure at Elev ($P_{atm,z}$) =	14.13	psi	$=14.69*P_b/P_a$
Specific Weight of Air at $T_{atm,max}$ ($\gamma_{a,T}$) =	0.066	lb/ft^3	$=P_{atm,z}/RT$
Clean Water (CW) DO Sat Conc at 20°C ($C_{s,20}$) =	9.092	mg/L	At STP
CW DO Sat Conc at $t_{WW,max}$ ($C_{s,t}$) =	9.092	mg/L	VLOOKUP Tables
Bulk Liquid Temperature Correction Factor (τ) =	1.00		$=C_{s,t}/C_{s,20}$
CW DO Sat Conc for Diff. Aer. at STP ($C_{s',20}$) =	9.574	mg/L	$=C_{s,20}*[1+d_e(P_{z,sub}/P_{atm,0)}]$
WW Oxygen Transfer Correction Factor (α) =	0.87		
Salinity Surface Tension Correction Factor (β) =	0.95		Typical; Range 0.95-0.98
Temperature Correction Factor (θ) =	1.024		Typical
Standard Oxygen Transfer Eff. (SOTE) =	1.8%		0.400% OTE per ft submergence
Diffuser Fouling Factor (F) =	1.0		Typical; Range 0.65-0.9.
AOR/SOR =	0.61		$=[(\tau\beta\{P_b/P_a\}C_{s',20}-C_L)/C_{s',20}][\theta^{t-20}](\alpha)(F)$

This is a preliminary design based on information provided to Delta Treatment Systems, LLC and is for budgetary or preliminary use only. Changing the input parameters may change the results. Use and interpretation of this information and determining the applicability to a specific project is at the sole discretion of the user and/or the Engineer of Record.

ECOPOD Process Design Calculations

Project Q22-0268 Whit's Inn
Dripping Springs, TX

Air Flow Requirements

BOD Removal Actual Oxygen Requirement =	1.2	lbs O_2 per lb Influent BOD5 oxidized	
Nitrification Actual Oxygen Requirement =	4.6	lbs O_2 per lb Influent TKN nitrified	
Actual Oxygen Requirement (AOR) =	36.03	lb O_2/day	
Standard Oxygen Requirement (SOR) =	59.03	lb O_2/day	
Oxygen Uptake Rate =	16	mg/L/I	Should be less than 100 mg/L/Hr
Standard Airflow Requirement =	148	scfm	=AOR/((AOR/SOR)*SOTE*O_{atm}*$\gamma_{a,T}$)
Add for Polishing Reactor =	0	scfm	
Design Standard Airflow Requirement =	148	scfm	

Blower Design Requirements

Number of Duty Blowers =	1			
Blower Inlet Airflow Required =	167	icfm	=SCFM/(P_b/P_a)*($T_{atm,max}$/T_{std})	
Air Distribution Pipe Losses =	0.2	psig	Assumed losses.	
Blower Inlet Losses =	0.6	psig	Assumed losses.	
Blower Discharge Head Required =	2.7	psig	76.1 in. H2O	6.34 ft

Blower Selections

Selected Blower Manufacturer	Gardner Denver	
Estimated Blower Model =	3L	
Selected Blower Model =	3L	
Blower Inlet Airflow @ Full Speed (Each) =	167	icfm
Blower Inlet Airlow @ Full Speed (Total) =	167	icfm
Blower Speed =	1,985	rpm
Selected Motor Power =	3.00	hp

Media Air Distribution and Scour

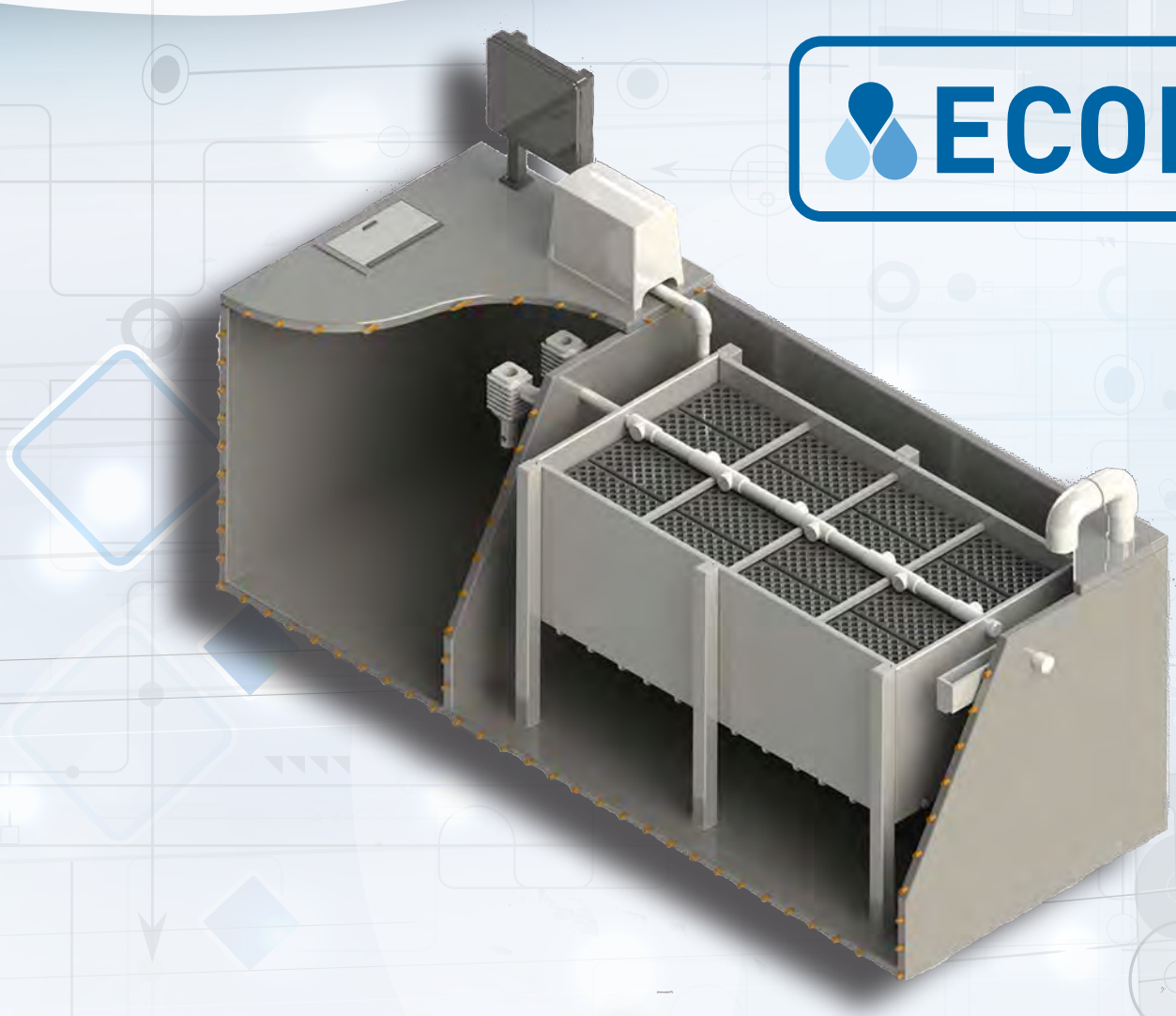
Diffuser Orifice Quantity =	12	per media block footprint
Total No. Orifices =	144	ea
Air Flux Rate =	1.7	icfm/ft^2
	14.0	icfm/block
Water Scouring Velocity in VF Media =	0.15	ft/s
Airflow per Diffuser Orifice =	1.2	icfm/orifice
Check =	OK	

Section 3

Equipment Cutsheets

delta™
treatment systems

ECOPOD



DELTA TREATMENT SYSTEMS

ECOPOD®

FBBR WASTEWATER TREATMENT SYSTEM

www.deltatreatment.com

DELTA TREATMENT SYSTEMS

COMMERCIAL FBBR Wastewater Treatment System

ECOPOD® COMMERCIAL FBBR

The ECOPOD submerged fixed film system is a continuation of Delta Treatment Systems' tradition of combining simplicity and technological excellence to create innovation. The ECOPOD is a fixed bed bio-reactor (FBBR), designed to significantly reduce nitrogen, BOD, and TSS utilizing microbiology present in the wastewater.

Wastewater enters a primary, pretreatment tank where trash, scum, and settleable solids are separated. The clarified wastewater enters the ECOPOD from the primary tank, through an effluent filter, where it is introduced into a robust aerobic environment. An external air blower provides oxygen to promote the development of a biofilm capable of digesting biodegradable waste into carbon dioxide and water.

The ECOPOD houses an engineered plastic media specifically designed to act as a structural support that facilitates biofilm growth. The media is completely contained and submerged in the reactor, which works as a treatment and mixing zone. There are no moving mechanical parts in the ECOPOD. In this system, conditions are very favorable to attached growth bacteria, meaning common process disruptions such as sludge bulking or washouts are eliminated. The ECOPOD offers a complete aerobic treatment solution utilizing the developed biofilm on the media support by simultaneously reducing cBOD, TSS, and ammonia concentrations typical of commercial wastewaters. This sets the stage for up to 50% total nitrogen removal when carbon is present since denitrification can proceed in the anoxic zones surrounding the ECOPOD reactor system within the larger housing tank.

Fiberglass tank options are available in a variety of horizontal and vertical configurations/sizes.

Easily installed into precast or cast-in-place concrete tanks

30,000 gallon decentralized treatment system

Electric control console provides complete and simple operation

Why Use ECOPOD FBBR?

- Exceptional cBOD and TSS treatment
- Simple design and self-contained
- Easy to operate and maintain
- No diffusers or moving parts to service inside the tank
- Lower sludge production – reduces sludge removal costs
- No mixed liquor suspended solids; eliminates possible washouts
- Suitable for seasonal or intermittent use
- No external clarifier required or return activated sludge pump
- Low operation and maintenance cost
- Design and engineering assistance available

ECOPOD Versatility

ECOPOD advanced wastewater treatment system is a submerged fixed film system designed to treat 1,500 GPD to 250,000 GPD of domestic wastewater.

The system is designed to meet your individual project treatment goals. It can be built to serve as the complete treatment system or in conjunction with another technology to provide secondary or tertiary treatment. Additionally, the system can be configured to work with virtually any dispersal method or direct discharge. Ask your Engineered System Consultant about a complete package using our standard designs or customized solutions tailored to the project needs.

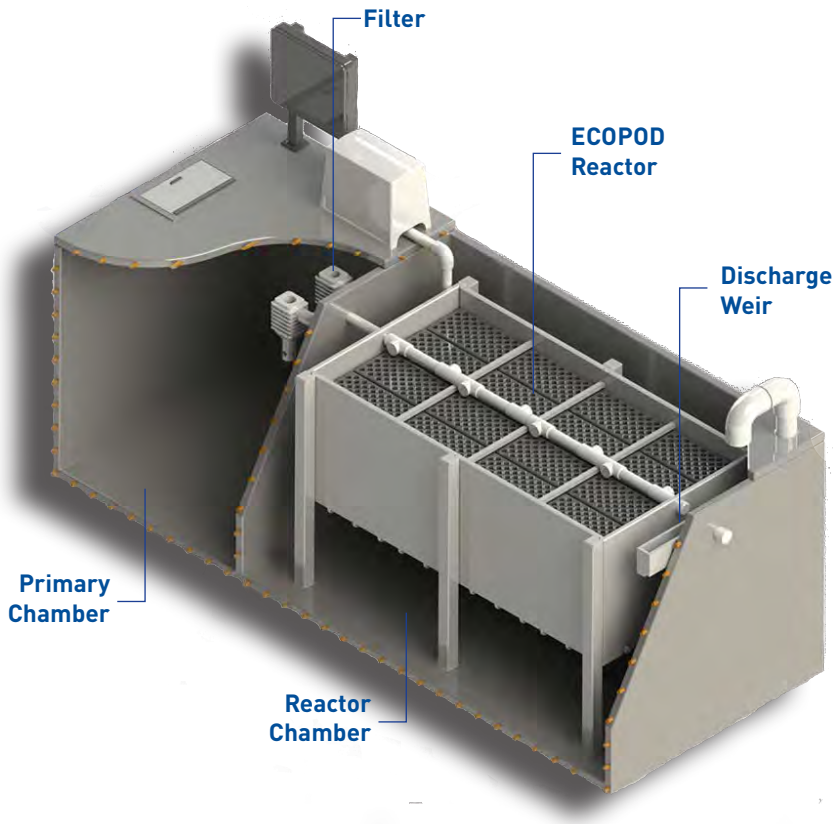
Tank Fabrication Options

- Steel
- Stainless steel
- Fiberglass
- Concrete utilizing pre-cast tanks sourced locally to project site, if available, or cast-in-place tanks

ECOPOD for Specific Uses

ECOPOD units are engineered to treat a wide range of wastewater flows and characteristics. The Delta Treatment Systems team have designed ECOPOD systems for variety of applications, including:

- Schools
- Campgrounds, RV and trailer parks
- High strength waste commercial applications (i.e. fast food restaurants, taverns, hatcheries, etc.)
- Apartment complexes and subdivisions
- Retail stores
- Office buildings
- Small towns and rural communities
- Lagoon replacement/enhancement



Delta Solutions – Serving a Multitude of Applications

Retail

High Strength Waste

Subdivisions

RV Parks/Campgrounds

Schools

SCAN ME

For more information and access to ECOPOD Standard Commercial Designs visit www.deltatreatment.com or scan the QR code for quick access.

delta™ treatment systems

9125 Comar Drive, Walker, LA 70785, 1 (800) 219-9183 | WWW.DELTATREATMENT.COM

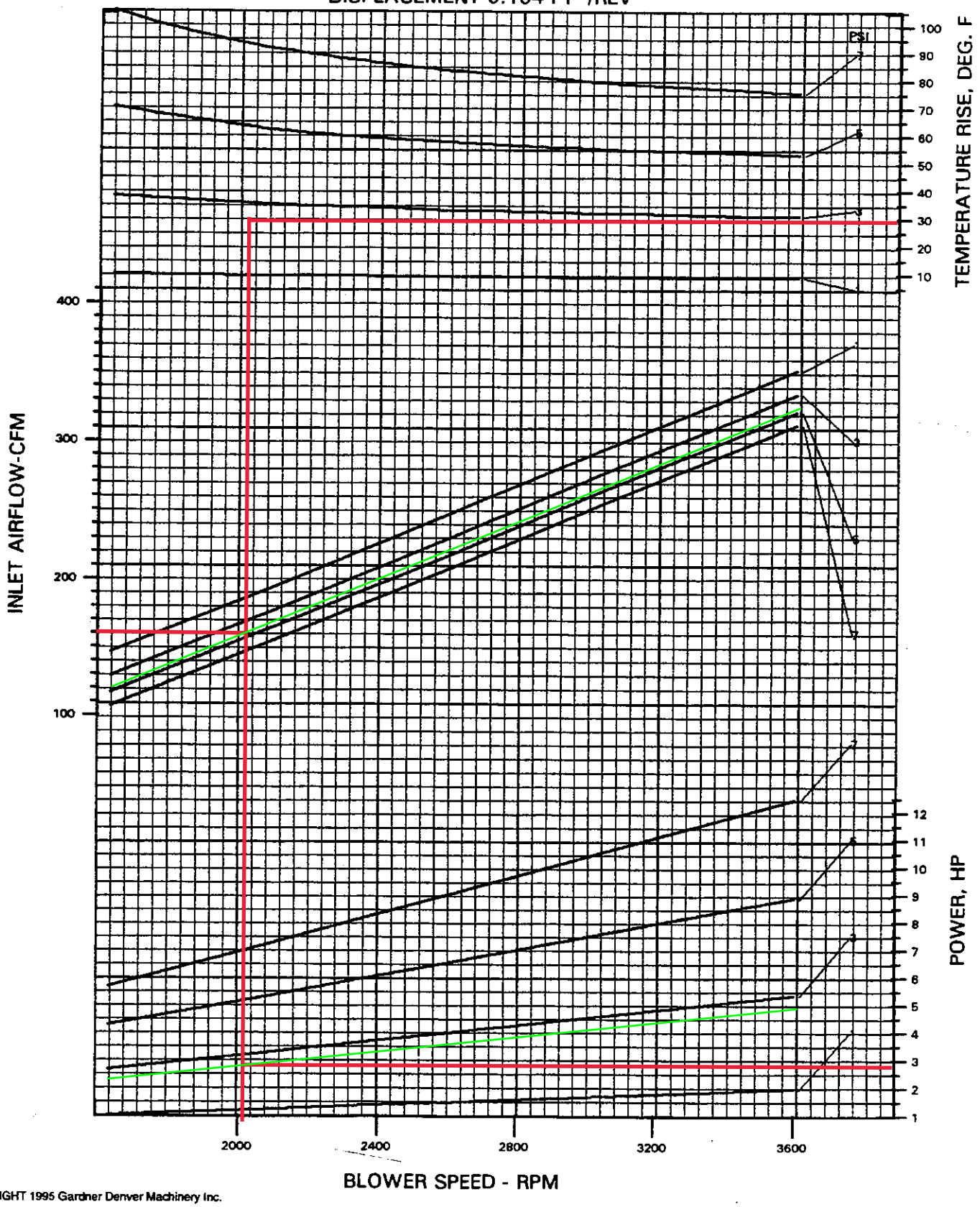
Gardner Denver

SUTORBILT LEGEND™
MODEL 3L
P-VERSION

DATA SHEET: SB-2-304P
DATED: 4-3-95

Q22-0099 The Ridge WWTF
Main Air Blower
1 Duty/1 Standby
3 HP Motor

PRESSURE PERFORMANCE CURVE
INLET AIR AT 68 DEG F, 14.7 PSIA, SPECIFIC GRAVITY = 1.0
DISPLACEMENT 0.104 FT³/REV



PRODUCT INFORMATION PACKET

Q22-0099 The Ridge WWTF
Main Air Blower Motor
1 Duty/1 Standby
3 HP, 230 V, 1 PH

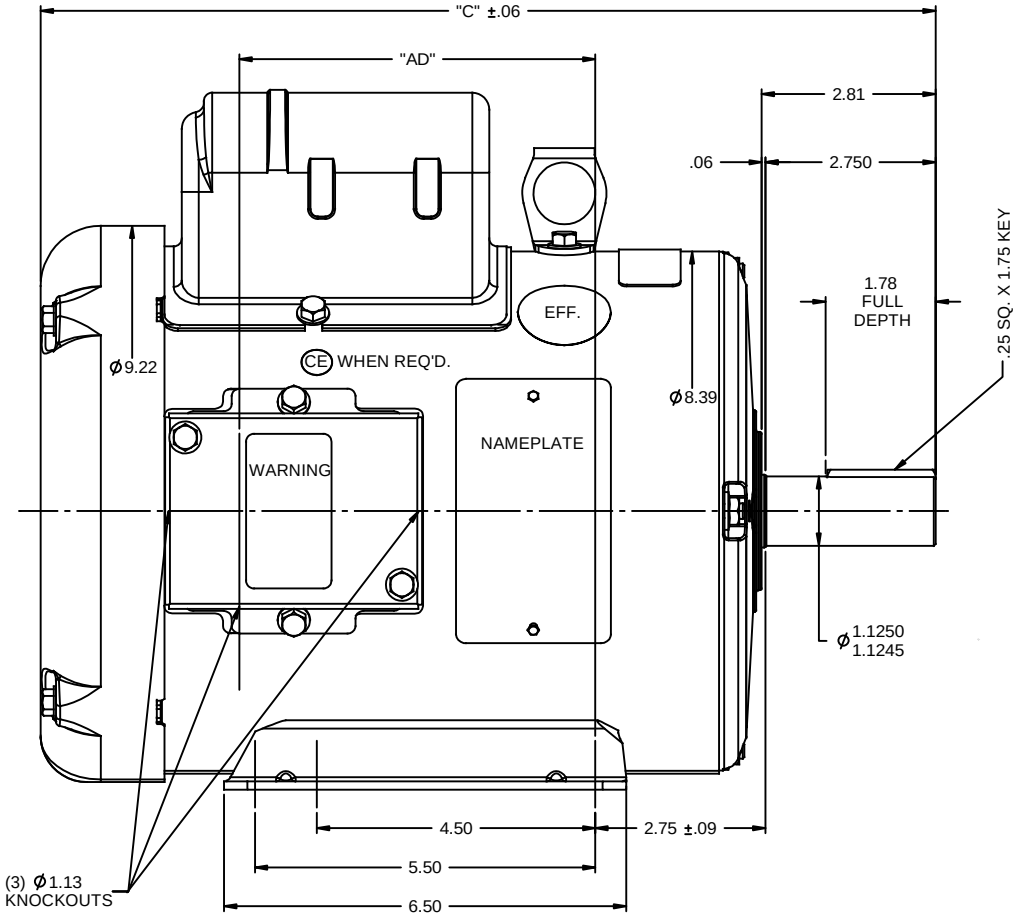
Model No: 131533.00
Catalog No: 131533.00
3 HP General Purpose Motor, 1 phase, 1800 RPM, 115/208-230 V, 184T Frame, TEFC
Single Phase TEFC Motors

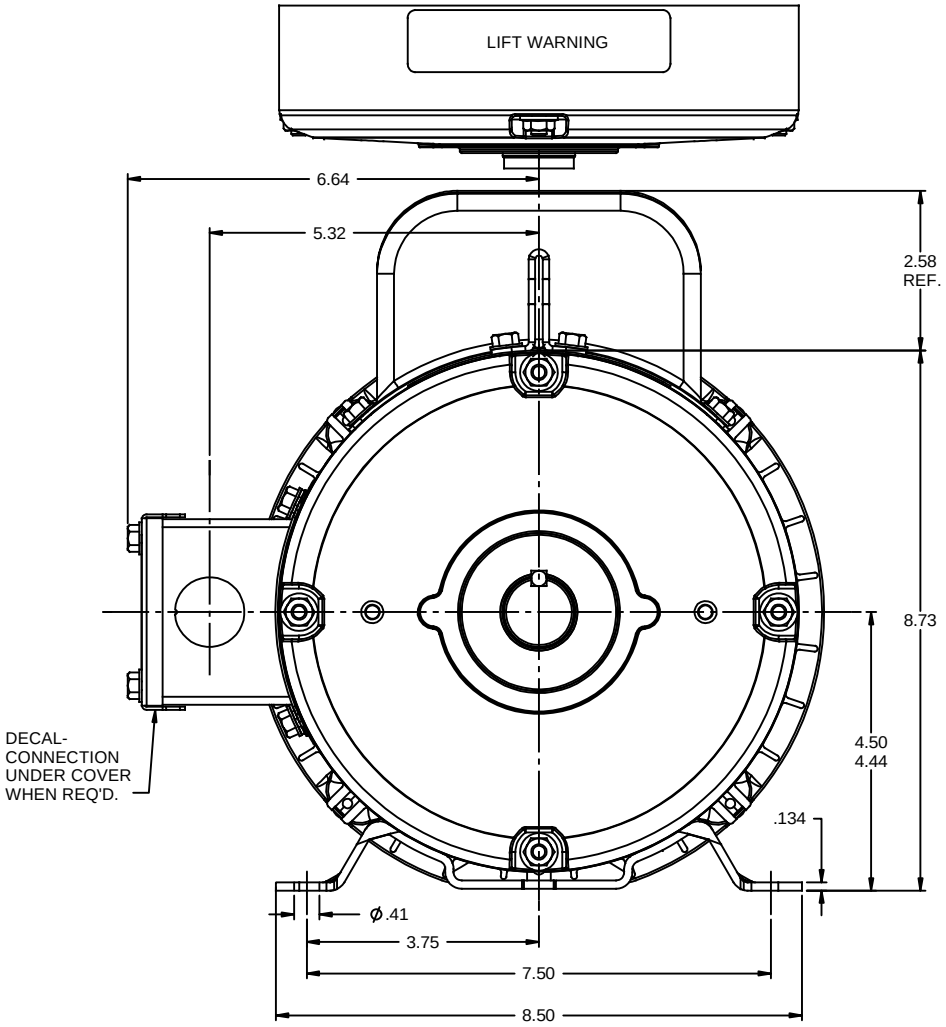
Nameplate Specifications

Output HP	3 Hp	Output KW	2.2 kW
Frequency	60 Hz	Voltage	115/208-230 V
Current	33.6/18.0-16.8 A	Speed	1740 rpm
Service Factor	1	Phase	1
Efficiency	77 %	Power Factor	75
Duty	Continuous	Insulation Class	F
Design Code	L	KVA Code	J
Frame	184T	Enclosure	Totally Enclosed Fan Cooled
Thermal Protection	No	Ambient Temperature	40 °C
Drive End Bearing Size	6206	Opp Drive End Bearing Size	6205
UL	Recognized	CSA	Y
CE	N	IP Code	43

Technical Specifications

Electrical Type	Capacitor Start Induction Run	Starting Method	Across The Line
Poles	4	Rotation	Selective Counterclockwise
Resistance Main	.642 Ohms	Mounting	Rigid Base
Motor Orientation	Horizontal	Drive End Bearing	Ball
Opp Drive End Bearing	Ball	Frame Material	Rolled Steel
Shaft Type	T	Overall Length	16.46 in
Frame Length	11.00 in	Shaft Diameter	1.125 in
Shaft Extension	2.75 in	Assembly/Box Mounting	F1 ONLY
Outline Drawing	035352-1100	Connection Drawing	005062.01





DASH NO.	"C"	"AD"
800	13.46	4.75
850	13.96	5.25
900	14.46	5.75
950	14.96	6.25
1000	15.46	6.75
1050	15.96	7.25
1100	16.46	7.75
1150	16.96	8.25
1200	17.46	8.75

GASKETS THROUGHOUT

NO	REVISION	BY & DATE	CHK
-	UPDATED & REDRAWN TO SOLIDWORKS	LST 12/15/2009	XX

TOLERANCES UNLESS SPECIFIED
DEC INCHES
.X ±.1
.XX ±.03
.XXX ±.005
.XXXX ±.0005
ANG ±1/2°

THIRD ANGLE PROJECTION

REGAL-BELOIT CORPORATION

DRAWN PG 6/20/97
CHK RK 6/20/97
APPR
SCALE 1:2
REF
FMF
PAGE OF

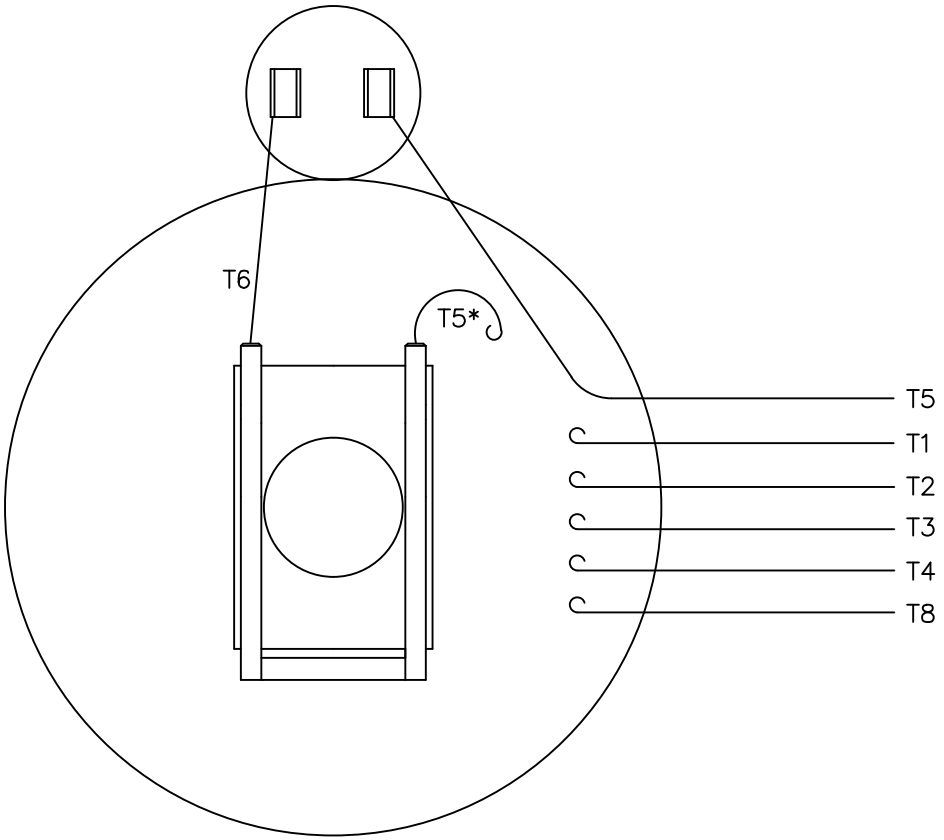
TITLE OUTLINE - 180T FRAME
TEFC - RIGID MOUNT
MAT'L
FINISH
RFP
PREV
NETWORK FILE NAME

SIZE B
DRAWING NO 035352
REV -

2/19/2010 3:27:18 PM

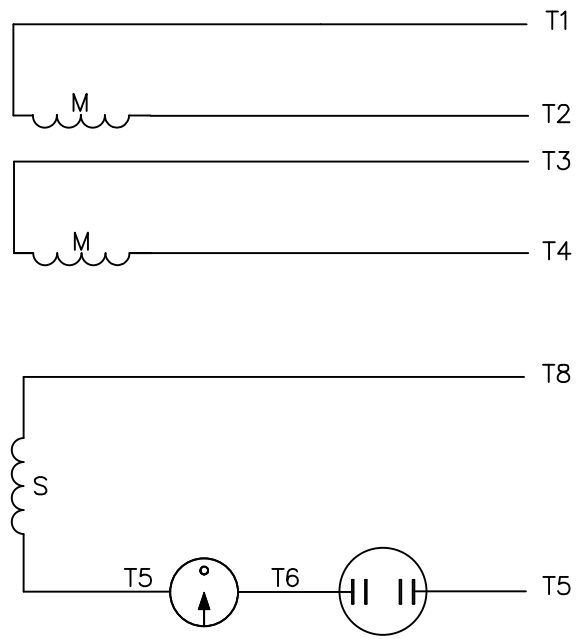
005062–01

VIEW FROM OUTSIDE OF MOTOR AT SWITCH END.



* THIS LEAD MAY BE WHITE

LINE LEADS



	ROTATION FACING LEAD END	L1	L2	JOIN
HIGH VOLT	C.C.W.	T1	T4 T5	T2,T3 T8
	C.W.	T1	T4 T8	T2,T3 T5
LOW VOLT	C.C.W.	T1,T3 T8	T2,T4 T5	–––
	C.W.	T1,T3 T5	T2,T4 T8	–––

NO.	REVISION	BY & DATE	CHK
12	ALTERNATE T5 LEAD MARKING WAS RED	RLW 8/6/02	
11	ADDED ALTERNATE T5 LEAD MARKING	RLW 5/31/02	KH
10	UPDATED TO CURRENT STANDARDS	DBT 06/09/97	

TOLERANCES UNLESS SPECIFIED

DEC.	INCHES
.X	±.1
.XX	±.01
.XXX	±.005
.XXXX	±.0005
ANG	±1/2°

LEESON ELECTRIC MOTORS GEARMOTORS AND DRIVES

TITLE: EXT. WIRING DIAGRAM TYPE "C" W/O PROTECTOR

MAT'L. DECAL – 004012

FINISH

CAD FILE 00506201

RFP

DIST NLV

DRAWN	JRW 12/05/74
CHK	
APPD	T.E.M.
SCALE	1=1
REF	A–005061
FMF	
PREV	

SIZE A | DRAWING NO. 005062–01 | REV. 12

6/29/2007 11:01:37 AM -

Champion Pump

CPW

1/2HP
SEWAGE

Q22-0099 The Ridge WWTF
Flow EQ Pump
1 Duty/1 Standby
CPW5-22 0.5 HP, 230 V, 1 PH

Every pump tested in water to ensure pump meets peformance curve.

SSPMA CERTIFIED

FEATURES/BENEFITS

PERFORMANCE
Heads up to 34' TDH
Flows up to 109 GPM

MOTOR
High efficient, 115v or 230v, oil filled, permanent split capacitor motor with upper and lower ball bearings and thermal overload protection
- Constant bearing lubrication
- Maximum motor cooling
- Runs cooler and lasts longer
- Internal overload protection
- Quiet operation
- Fasteners and shaft made from rugged, corrosion resistant stainless steel

SEAL DESIGN
Type 21 inboard seal design with secondary exclusion seal
- Rotating components of seal are in the motor housing, being lubricated by the motor oil preventing foreign matter from wrapping around the seal components
- Seal will last longer if the pump runs dry
- Secondary exclusion seal keeps debris from entering the seal cavity

IMPELLER DESIGN
Non-clog style, cast-iron vortex impeller
- Designed to help reduce clogging by foreign material

POWER CORD
Sealed entry quick disconnect power cords
- Prevents water from entering the motor housing through a cut cord
- Easy to replace in the field
- Available in lengths up to 100'

SWITCH
Piggy-back switch design
- Defective switches can be diagnosed over the phone
- Pump can be operated manually or supplied with other piggy-back switches
- Switch can be replaced without having to replace the pump

APPLICATIONS

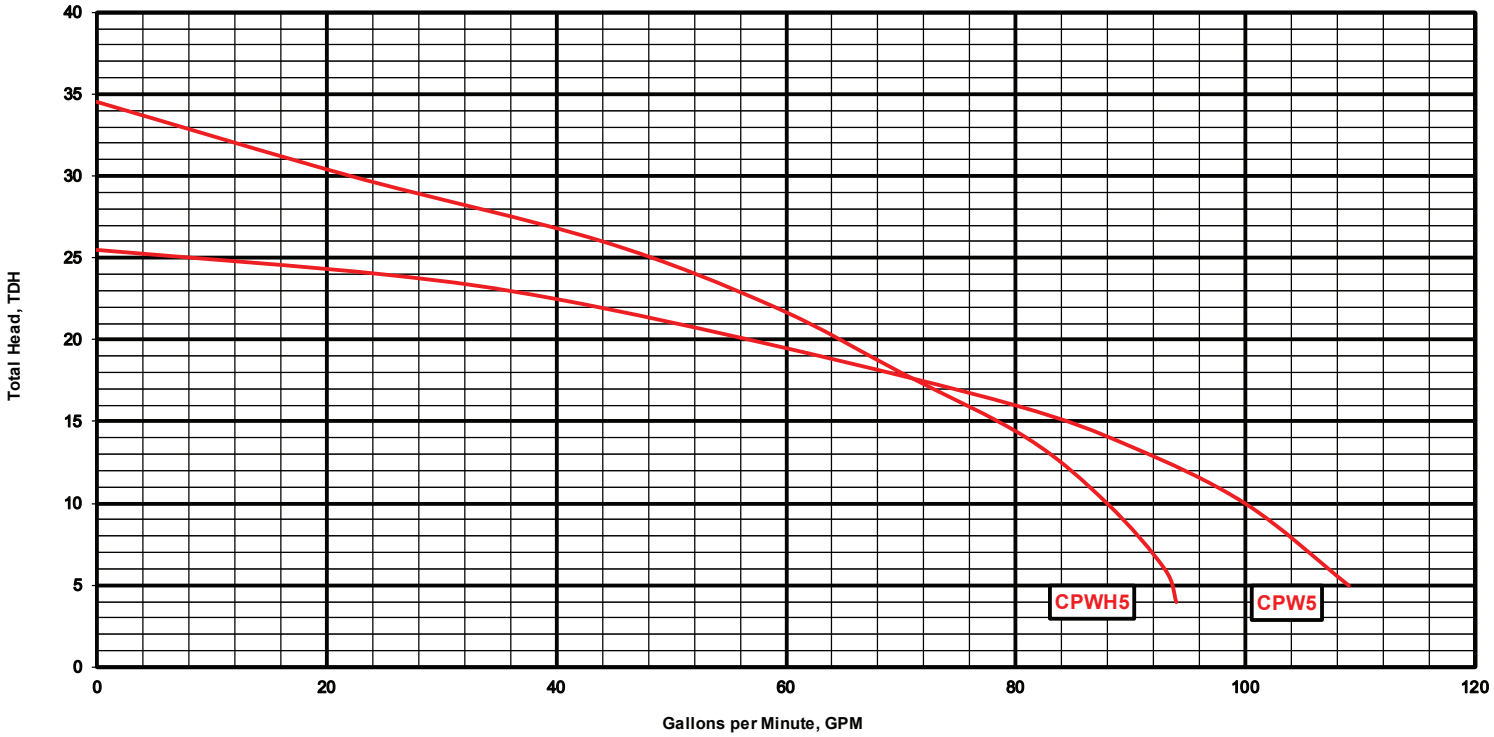
Basements, dewatering, septic systems, sewage lift stations, add-a-baths and truck docks

Wide-angle Float

Vertical Float

1/2 HP submersible pumps that handle up to 2" solids with 2" discharge

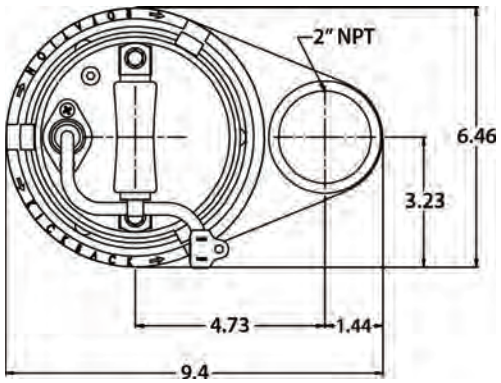
PERFORMANCE CURVE

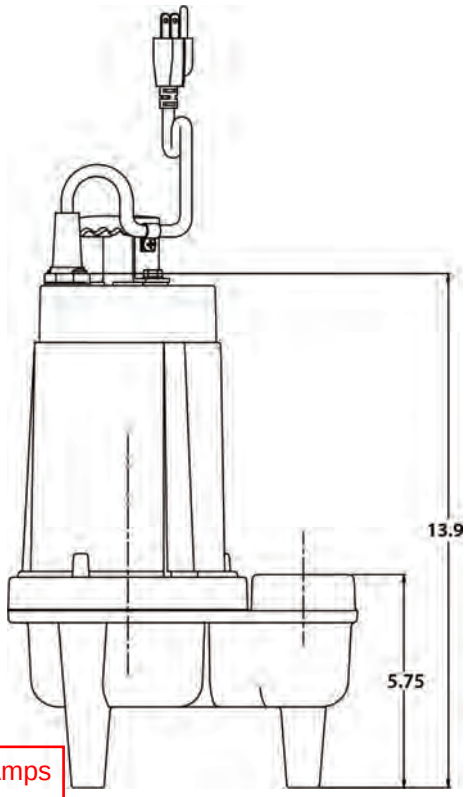


Champion Pump Company, Inc • P.O. Box 528 • Ashland, OH 44805
Phone 419-281-4500 • Fax 419-616-1100 • www.championpump.com

TECHNICAL DATA

DISCHARGE	2" NPT. vertical standard
SOLIDS HANDLING	2" CPW, 1-1/2" CPWH
LIQUID TEMPERATURE	140 Degrees F. (Intermittent)
MOTOR HOUSING	Cast Iron
VOLUTE	Cast Iron
SEAL PLATE	Cast Iron
IMPELLER	Cast Iron / Vortex
SHAFT	Stainless Steel
SHAFT SEAL (SINGLE SEAL)	Inboard mechanical with secondary exclusion V-Seal, carbon rotating face, ceramic stationary face, Buna-N elastomer, 300 series stainless steel hardware
BEARINGS (UPPER & LOWER)	Single row, ball, oil lubricated
HARDWARE	300 Series stainless steel
O-RINGS	Buna-N
CORD	10' Length standard. Up to 100' available. (UL/CUL) Listed 16 AWG, Type SJTW
MOTOR (SINGLE PHASE)	1/2 HP 3450 RPM, 60 Hz, NEMA L Includes overload protection in the motor, oil filled, class B permanent split capacitor
WEIGHT	37 lbs. (Manual)





Per phone call w/ Champion, LR Amps for CPW5 @ 230V 1PH = 23A

MODEL(S) INFORMATION

MODEL	HP	VOLTS	PHASE	AMPS	CORD LENGTH	SWITCH
CPW5-11 / CPWH5-11	1/2	115	1	11.5	10'	Manual
CPW5-12 / CPWH5-12	1/2	115	1	11.5	20'	Manual
CPW5-13 / CPWH5-13	1/2	115	1	11.5	30'	Manual
CPW5-15 / CPWH5-15	1/2	115	1	11.5	50'	Manual
CPW5A-11 / CPWH5A-11	1/2	115	1	11.5	10'	Wide-Angle Float
CPW5A-12 / CPWH5A-12	1/2	115	1	11.5	20'	Wide-Angle Float
CPW5A-13 / CPWH5A-13	1/2	115	1	11.5	30'	Wide-Angle Float
CPW5V-11 / CPWH5V-11	1/2	115	1	11.5	10'	Vertical Float
CPW5V-12 / CPWH5V-12	1/2	115	1	11.5	20'	Vertical Float
CPW5V-13 / CPWH5V-13	1/2	115	1	11.5	30'	Vertical Float
CPW5-22 / CPWH5-22	1/2	230	1	5.75	20'	Manual
CPW5A-22 / CPWH5A-22	1/2	230	1	5.75	20'	Wide-Angle Float
CPW5V-22 / CPWH5V-22	1/2	230	1	5.75	20'	Vertical Float

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