COMAL COUNTY

ENGINEER'S OFFICE

Permit of Authorization to Construct an On-Site Sewage Facility
Permit Valid For One Year From Date Issued

Permit Number:	118451
Issued This Date:	04/02/2025
This permit is hereby given to:	CHASE N. & JESSICA V. BRUNNEMANN

To start construction of a private, on-site sewage facility located at:

1736 TRAIL RIDGE DR
CANYON LAKE, TX 78133

Subdivision:	CANYON LAKE FOREST
Unit:	1
Lot:	515
Block:	0
Acreage:	0.1800

APPROVED MINIMUM SIZES AS PER ATTACHED DESIGN

Type of System:	Aerobic
	Drip Irrigation

This permit gives permission for the construction of the above referenced on-site facility to commence. Installation must be completed by an installer holding a valid registration card from the Texas Commission on Environmental Quality (TCEQ). Installation and inspection must comply with current TCEQ and Comal County requirements.

Call (830) 608-2090 to schedule inspections.

Preliminary Field Check For Drip Systems

DATE: 4/2/25

INSPECTOR: Hendry

COMMENTS: Probing in the area of the proposed drip field showed an average of 8” of soil above a restrictive horizon.

RECEIVED
By Kathy Griffin at 2:47 pm, Mar 06, 2025

COMAL COUNTY
ENGINEER'S OFFICE

ON-SITE SEWAGE FACILITY APPLICATION

195 DAVID JONAS DR
NEW BRAUNFELS, TX 78132
(830) 608-2090
WWW.CCEO.ORG

Date February 21, 2025 Permit Number 118451

1. APPLICANT / AGENT INFORMATION

Owner Name	CHASE NELSON BRUNNEMANN & JESSICA VIKTORIA BRUNNEMANN	Agent Name	GREG JOHNSON, P.E.
Mailing Address	191 ARCHES DRIVE	Agent Address	170 HOLLOW OAK
City, State, Zip	KYLE, TEXAS 78640	City, State, Zip	NEW BRAUNFELS TEXAS 78132
Phone #	512-743-0929	Phone #	830-905-2778
Email	chase_brunnemann@yahoo.com	Email	gregjohnsonpe@yahoo.com

2. LOCATION

Subdivision Name CANYON LAKE FOREST Unit 1 Lot 515 Block

Survey Name / Abstract Number Acreage

Address 1736 TRAIL RIDGE DRIVE City CANYON LAKE State TX Zip 78133

3. TYPE OF DEVELOPMENT

☒ Single Family Residential

Type of Construction (House, Mobile, RV, Etc.) HOUSE

Number of Bedrooms 2

Indicate Sq Ft of Living Area 995

☐ Non-Single Family Residential

(Planning materials must show adequate land area for doubling the required land needed for treatment units and disposal area)

Type of Facility

Offices, Factories, Churches, Schools, Parks, Etc. - Indicate Number Of Occupants

Restaurants, Lounges, Theaters - Indicate Number of Seats

Hotel, Motel, Hospital, Nursing Home - Indicate Number of Beds

Travel Trailer/RV Parks - Indicate Number of Spaces

Miscellaneous

Estimated Cost of Construction: $ 200,000 (Structure Only)

Is any portion of the proposed OSSF located in the United States Army Corps of Engineers (USACE) flowage easement?

☐ Yes ☒ No (If yes, owner must provide approval from USACE for proposed OSSF improvements within the USACE flowage easement)

Source of Water ☒ Public ☐ Private Well ☐ Rainwater Collection

4. SIGNATURE OF OWNER

By signing this application, I certify that:

- The completed application and all additional information submitted does not contain any false information and does not conceal any material facts. I certify that I am the property owner or I possess the appropriate land rights necessary to make the permitted improvements on said property.
- Authorization is hereby given to the permitting authority and designated agents to enter upon the above described property for the purpose of site/soil evaluation and inspection of private sewage facilities..
- I understand that a permit of authorization to construct will not be issued until the Floodplain Administrator has performed the reviews required by the Comal County Flood Damage Prevention Order.
- I affirmatively consent to the online posting/public release of my e-mail address associated with this permit application, as applicable.

X _____ 2/26/25
Signature of Owner Date

X _____ 2/27/25

CANYON LAKE FOREST, UNIT 1, LOT 515

COMALCOUNTY
ENGINEER'S OFFICE

ON-SITE SEWAGE FACILITY APPLICATION

195 DAVID JONAS DR
NEW BRAUNFELS, TX 78132
(830) 608-2090
WWW CCEO ORG

Planning Materials & Site Evaluation as Required Completed By GREG W. JOHNSON, P.E.

System Description PROPRIETARY; AEROBIC TREATMENT AND DRIP TUBING

Size of Septic System Required Based on Planning Materials & Soil Evaluation

Tank Size(s) (Gallons) SOLAR AIR SA600LP Absorption/Application Area (Sq Ft) 1500

Gallons Per Day (As Per TCEQ Table 111) 180

(Sites generating more than 5000 gallons per day are required to obtain a permit through TCEQ.)

Is the property located over the Edwards Recharge Zone? ☐ Yes ☒ No

(if yes, the planning materials must be completed by a Registered Sanitarian (R.S.) or Professional Engineer (P.E.))

Is there an existing TCEQ approved WPAP for the property? ☐ Yes ☒ No

(if yes, the R.S. or P.E. shall certify that the OSSF design complies with all provisions of the existing WPAP.)

Is there at least one acre per single family dwelling as per 285.40(c)(1)? ☐ Yes ☒ No

If there is no existing WPAP, does the proposed development activity require a TCEQ approved WPAP? ☐ Yes ☒ No

(if yes, the R.S or P.E. shall certify that the OSSF design will comply with all-provisions of the proposed WPAP. A Permit to Construct will not be issued for the proposed OSSF until the proposed WPAP has been approved by the appropriate regional office.)

Is the property located over the Edwards Contributing Zone? ☒ Yes ☐ No

Is there an existing TCEQ approval CZP for the property? ☐ Yes ☒ No

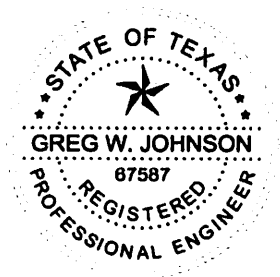
(if yes, the P.E. or R.S. shall certify that the OSSF design complies with all provisions of the existing CZP.)

If there is no existing CZP, does the proposed development activity require a TCEQ approved CZP? ☐ Yes ☒ No

(if yes, the R.S. or P.E. shall certify that the OSSF design will comply with all provisions of the proposed CZP. A Permit to Construct will not be issued for the proposed OSSF until the UP has been approved by the appropriate reg

Is this property within an incorporated city? ☐ Yes ☒ No

If yes, indicate the city: _____



FIRM #2585

By signing this application, I certify that:

- The information provided above is true and correct to the best of my knowledge.
- I affirmatively consent to the online posting/public release of my e-mail address associated with this permit application, as applicable.

Signature of Designer

February 24, 2025
Date

AFFIDAVIT

THE COUNTY OF COMAL
STATE OF TEXAS

CERTIFICATION OF OSSF REQUIRING MAINTENANCE

According to Texas Commission on Environmental Quality Rules for On-Site Sewage Facilities (OSSF's), this document is filed in the Deed Records of Comal County, Texas.

I

The Texas Health and Safety Code, Chapter 366 authorizes the Texas Commission on Environmental Quality (TCEQ) to regulate on-site sewage facilities (OSSFs). Additionally, the Texas Water Code (TWC), § 5.012 and § 5.013, gives the commission primary responsibility for implementing the laws of the State of Texas relating to water and adopting rules necessary to carry out its powers and duties under the TWC. The commission, under the authority of the TWC and the Texas Health and Safety code, requires owner's to provide notice to the public that certain types of OSSFs are located on specific pieces of property. To achieve this notice, the commission requires a recorded affidavit. Additionally, the owner must provide proof of the recording to the OSSF permitting authority. This recorded affidavit is not a representation or warranty by the commission of the suitability of this OSSF, nor does it constitute any guarantee by the commission that the appropriate OSSF was installed.

II

An OSSF requiring a maintenance contract, according to 30 Texas Administrative Code §285.91(12) will be installed on the property described as (insert legal description):

1 (UNIT) PHASE/SECTION _____ BLOCK 515 LOT CANYON LAKE FOREST SUBDIVISION

IF NOT IN SUBDIVISION: _____ ACREAGE _____ SURVEY

The property is owned by (insert owner's full name): CHASE NELSON BRUNNEMANN & JESSICA VIKTORIA BRUNNEMANN

This OSSF must be covered by a continuous maintenance contract for the first two years. After the initial two-year service policy, the owner of an aerobic treatment system for a single family residence shall either obtain a maintenance contract within 30 days or maintain the system personally.

Upon sale or transfer of the above-described property, the permit for the OSSF shall be transferred to the buyer or new owner. A copy of the planning materials for the OSSF can be obtained from the Comal County Engineer's Office.

WITNESS BY HAND(S) ON THIS 27 DAY OF February ,20 25

X _____ CHASE NELSON BRUNNEMANN

X _____ JESSICA VIKTORIA BRUNNEMANN

Owner(s) signature(s) Owner (s) Printed name (s)

CHASE NELSON BRUNNEMANN & JESSICA VIKTORIA BRUNNEMANN

SWORN TO AND SUBSCRIBED BEFORE ME ON THIS 27 DAY OF February 27 ,20 25

Guadalupe Contreras
Notary Public Signature

GUADALUPE CONTRERAS
Notary Public, State of Texas
Comm. Expires 04-17-2028
Notary ID 134856903

THIS AREA FOR COMAL COUNTY CLERK RECORDING PURPOSES ONLY

Filed and Recorded
Official Public Records
Bobbie Koepp, County Clerk
Comal County, Texas
03/03/2025 08:16:00 AM
TERRI 1 Pages(s)
202506005765

Bobbie Koepp

Maintenance Service Provider
15188 FM 306
Canyon Lake, TX 78133
Office (830)964-2365

AEROBIC SERVICES

CANYON LAKE FOREST, UNIT 1, LOT 515

SERVICE ADDRESS	*INSTALLER*	*TERM*
1736 TRAIL RIDGE DR, CANYON LAKE, TX 78133	MIKE RYBARSKI #	2 year

Routine Maintenance and Inspection Agreement

This Work for Hire Agreement (hereinafter referred to as this "Agreement") is entered into by and between ; (referred to as "Client") and Aerobic Services of South Texas (Thomas W. Hampton MP349) (hereinafter referred to as "Contractor") located at 15188 FM 306 Canyon Lake, Texas 78133 (830) 964-2365. By this Agreement the Contractor agrees to render professional service, as described herein, and the Client agrees to fulfill the terms of this Agreement as described herein. This contract will provide for all required inspections, testing and service for your Aerobic Treatment System. The policy will include the following:

1. 3 inspections a year/services calls (at least one every 4 months), for a total of 6 over the two year period including inspection, adjustment and servicing of the mechanical, electrical and other applicable component parts to ensure proper function. This includes inspecting the control panel, air pumps, air filters, diffuser operation. Any alarm situation affecting the proper function of the Aerobic process will be addressed within a 48-hour time frame. Repair work on non-warranty parts will include price for parts & labor. The prices will be quoted before work is performed.

2. An effluent quality inspection consisting of a visual check for color, turbidity, scum overflow and examination for odors. A test for chlorine residual and pH will be taken and reported as necessary.

3. If any improper operation is observed, which cannot be corrected at the time of the service visit, you will be notified immediately in writing of the conditions and estimated date of correction.

4. The Property Owner is responsible for the chlorine; it must be filled before or during the service visit.

5. Any additional visits, inspections or sample collection required by specific Municipalities, Water/River Authorities, and County Agencies the TCEQ or any other authorized regulatory agency in your jurisdiction will be covered by this policy. BOD and TSS testing is covered by this contract.

The Property Owner Manual must be strictly followed or warranties are subject to invalidation. Pumping of sludge build-up is not covered by this policy and will result in additional charges.

ACCESS BY CONTRACTOR

The Contractor or anyone authorized by the Contractor may enter the property at reasonable times without prior notice for the purpose of the above described Services. The contractor may access the System components including the tanks by means of excavation for the purpose of evaluations if necessary. Soil Is to be replaced with the excavated material as best as possible.

Termination of Agreement

Either party may terminate this agreement within ten days with a written notice in the event of substantial failure to perform in accordance with its terms by the other party without fault of the terminating party. If this Agreement is so terminated, the Contractor will immediately notify the appropriate health authority of the termination.

Limit of Liability
In no event shall the Contractor be liable for indirect, consequential, incidental or punitive damages, whether in contract tort or any other theory. In no event shall the Contractor's liability for direct damages exceed the price for the services described in this Agreement.

Dispute Resolution
If a dispute between the Client and the Contractor arises that cannot be settled in good faith negotiations then the parties shall choose a mutually acceptable arbitrator and shall share the cost of the arbitration services equally.

Entire Agreement
This Agreement contains the entire agreement of the parties, and there are no other promises or conditions in any other agreement either oral or written.

Severability
If any provision of this Agreement shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court finds that any provision of this agreement is invalid or unenforceable, but that by limiting such provision it would become valid and enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.

Property Owner

Name

CHASE N. & JESSICA V. BRUNNEMANN

Email

chase_brunnemann@yahoo.com

Service Address

1736 TRAIL RIDGE DR
CANYON LAKE, TX 78133

Phone

512-743-0929

SIGNATURE

X

EFFECTIVE DATE _____

EXPIRED DATE_____

SERVICE PROVIDER

Aerobic Services of South Texas LLC.

15188 FM 306 Canyon Lake, TX 786133

(830) 964-2365

Signature of Service Provider and License #
[Thomas Hampton, OS0024597 / MP0000349]

AEROBIC SERVICES

The effective date of this initial maintenance contract shall be the date license to operate is issued.

ON-SITE SEWERAGE FACILITY
SOIL EVALUATION REPORT INFORMATION

Date Soil Survey Performed: **February 21, 2025**

Site Location: **CANYON LAKE FOREST, UNIT 1, LOT 515**

Proposed Excavation Depth: **N/A**

Requirements:

At least two soil excavations must be performed on the site, at opposite ends of the proposed disposal area.
Locations of soil boring or dug pits must be shown on the site drawing.
For subsurface disposal, soil evaluations must be performed to a depth of at least two feet below the proposed excavation depth. For surface disposal, the surface horizon must be evaluated.
Describe each soil horizon and identify any restrictive features on the form. Indicate depths where features appear.

SOIL BORING NUMBER **SURFACE EVALUATION**

Depth (Feet)	Texture Class	Soil Texture	Gravel Analysis	Drainage (Mottles/ Water Table)	Restrictive Horizon	Observations
0 – 8"	III	CLAY LOAM	N/A	NONE OBSERVED	LIMESTONE @ 8"	BROWN
1						
2						
3						
4						
5						

SOIL BORING NUMBER **SURFACE EVALUATION**

Depth (Feet)	Texture Class	Soil Texture	Gravel Analysis	Drainage (Mottles/ Water Table)	Restrictive Horizon	Observations
0	SAME		AS		ABOVE	
1						
2						
3						
4						
5						

I certify that the findings of this report are based on my field observations and are accurate to the best of my ability.

Greg W. Johnson, P.E. 67587-F2585, S.E. 11561

02/21/25
Date

OSSF SOIL EVALUATION REPORT INFORMATION

Date: February 24, 2025

Applicant Information:

CHASE NELSON & JESSICA VIKTORIA
Name: BRUNNENMANN
Address: 191 ACHES DRIVE
City: KYLE State: TEXAS
Zip Code: 78640 Phone: (512) 743-0929

Site Evaluator Information:

Name: Greg W. Johnson, P.E., R.S, S.E. 11561
Address: 170 Hollow Oak
City: New Braunfels State: Texas
Zip Code: 78132 Phone & Fax (830)905-2778

Property Location:

Lot 515 Unit 1 Blk ___ Subd. CANYON LAKE FOREST
Street Address: 1736 TRAIL RIDGE DRIVE
City: CANYON LAKE Zip Code: 78133
Additional Info.: _____

Installer Information:

Name: _____
Company: _____
Address: _____
City: _____ State: _____
Zip Code: _____ Phone _____

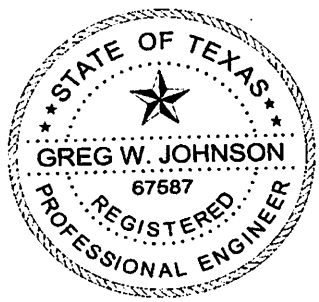
Topography: Slope within proposed disposal area: 20 %

Presence of 100 yr. Flood Zone:	YES___ NO X
Existing or proposed water well in nearby area.	YES___ NO X
Presence of adjacent ponds, streams, water impoundments	YES___ NO X
Presence of upper water shed	YES___ NO X
Organized sewage service available to lot	YES___ NO X

I HAVE PERFORMED A THOROUGH INVESTIGATION BEING A REGISTERED PROFESSIONAL ENGINEER AND SITE EVALUATOR IN ACCORDANCE WITH CHAPTER 285, SUBCHAPTER D, §285.30, & §285.40 (REGARDING RECHARGE FEATURES), TEXAS COMMISSION OF ENVIRONMENTAL QUALITY (EFFECTIVE DECEMBER 29, 2016).

GREG W. JOHNSON, P.E. 67587 - S.E. 11561

02/24/25
DATE



FIRM #2585

DRIP TUBING SYSTEM
DESIGNED FOR:
CHASE N. & JESSICA V. BRUNNEMANN
191 ARCHES DRIVE
KYLE, TX 78640

SITE DESCRIPTION:
Located in Canyon Lake Forest, Unit 1, Lot 515, at 1736 Trail Ridge Drive, the proposed system will serve a two bedroom residence (995 sf.) situated in an area with shallow Type-III soil as described in the Soil Evaluation Report. An aerobic treatment plant utilizing drip irrigation was chosen as the most appropriate system to serve the conditions on this lot.

PROPOSED SYSTEM:
A 3-inch SCH-40 pipe discharges from the residence into a Solar Air SA-600LP 600gpd aerobic plant containing a 376-gallon pretreatment tank, an aerobic treatment plant, and a 778-gallon pump chamber containing a submersible well pump. The well pump is activated by a time controller allowing the distribution ten times per day with an 8 minute run time with float setting at 180 gallons. A high level audible and visual alarm will activate should the pump fail. Distribution is through a self flushing 100 micron disc filter (Arkal) then through a 1" SCH-40 manifold to a 1500sf. drip tubing field, with ***Netifim Bioline*** drip lines set approximately two feet apart with ***0.61 gph*** emitters set every two feet, as per the attached schematic. A pressure regulator PMR-MF 30psi installed in the pump tank on the manifold to the field will maintain pressure at 30 psi. A 1" SCH-40 return line is installed to continously flush the system to the pump tank by throttling a 1" ball valve. Solids caught in the disc filter are flushed each cycle back to the trash tank. Vacuum breakers installed at the highest point on each manifold will prevent siphoning of effluent from higher to lower parts of the field. Field area will be scarified, and rocks removed, then built up with 4" of Type II or Type III soil, (a minimum of twelve inches soil required between drip tubing and rock),then the drip tubing will be laid and capped with 6" of Type II or Type III soil ***(NOT SAND)***. The field area will be sodded with grass prior to system startup. **Risers are required on tank inspection ports as per 30 TAC 285.38 (9/1/2023). This includes access limitation (<65lbs lid or hardware secured lid), inspection and cleanout ports shall have risers over the port openings which extend to a minimum of two inches above grade. A secondary plug, cap, or other suitable restraint system shall be provided below the riser cap to prevent tank entry if the cap is unknowingly damaged or removed.**

DESIGN SPECIFICATIONS:
Daily waste flow: 180 GPD Table III
Pretreatment tank size: 376 Gal
Plant Size: Solar Air SA-600LP 600 gpd (TCEQ Approved)

Plant Size: Solar Air SA-600LP 600 gpd (TCEQ Approved)
Pump tank size: 778Gal
Reserve capacity after High Level: 80 Gal (>1/3 day Req'd)
Application Rate: Ra = 0.2 gal/sf
Total absorption area: Q/Ra = 180 GPD/0.20 = 900 sf. (Actual 1500 sf.)
Total linear feet drip tubing: 750' ***Netifim Bioline*** drip tubing .61 GPH
Pump requirement: 375 emitters @ .61 gph @ 30 psi = 3.84 gpm
Pump Requirement (cont.): FPS E-Series 20FE05pP4-W115 submersible well pump Dosing volume: 50-70 gal.
Pump Tank Calculations: 771 Gal (18.75 gal/in.)

Volume below working level = 15"= 281 gal
Working level = 180 gal = 10"
Reserve Requirement = >1/3 day = 60 gal. = 3.5"

MINIMUM SCOUR VELOCITY (**MSV**) > 2 FPS
IN DRIP TUBING W/ NOM. DIA. 0.55" ID

MSV = 2 FPS (Πd↑2)/4*7.48 gal/cf*60 sec/min
MSV = 2(3.14159((.55/12)↑2)/4)*7.48*60
MSV = 1.5 gpm MIN FLOW RATE x 2 = 3.gpm

IN RETURN MANIFOLD W/ NOM. DIA 1.049" ID

MSV = 2 FPS (Πd↑2)/4*7.48 gal/cf*60 sec/min
MSV = 2(3.14159((1.049/12)↑2)/4)*7.48*60
MSV = 5.4 GPM

PIPE AND FITTINGS:

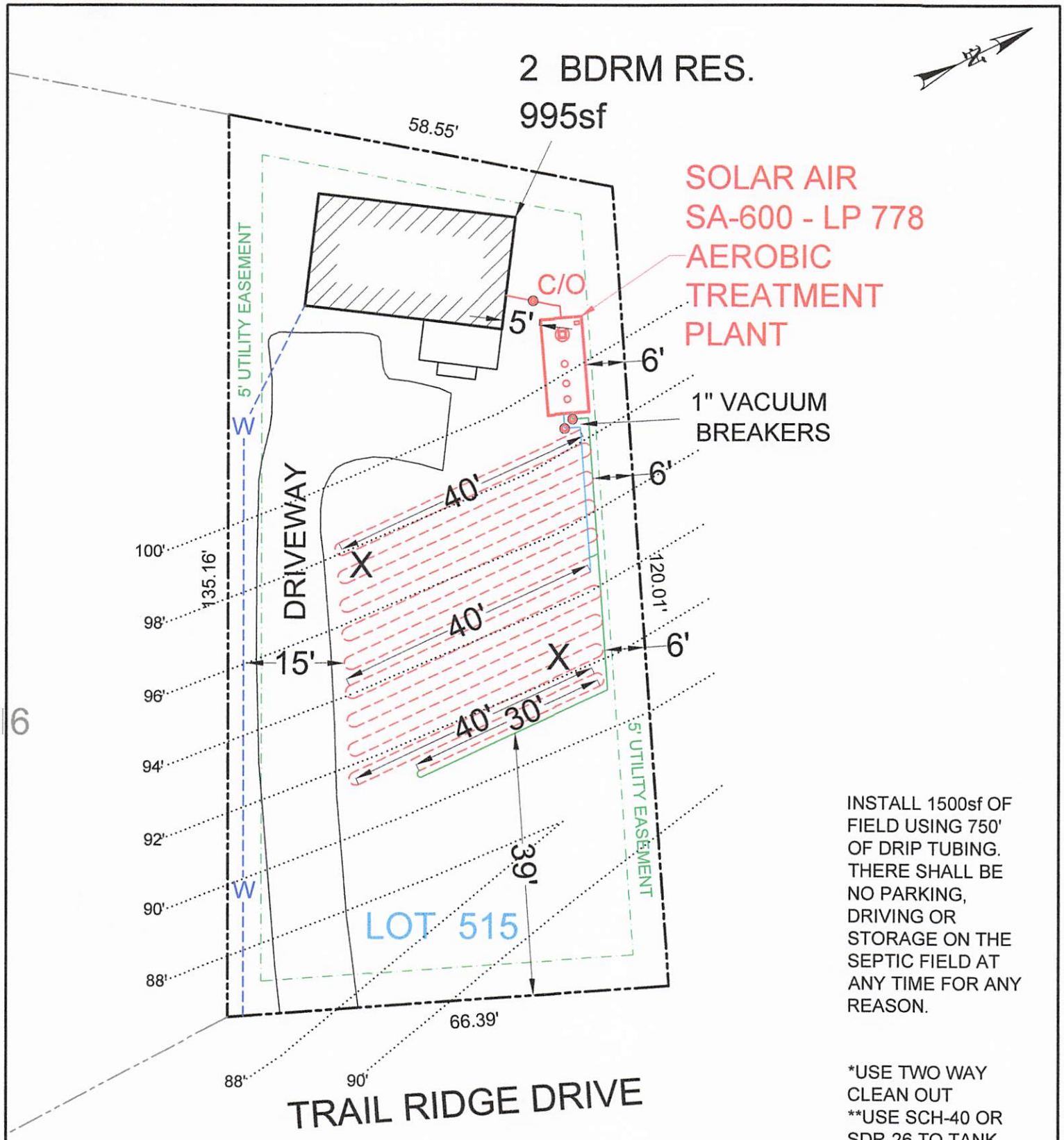
All pipes and fittings in this drip tubing system shall be 1" schedule 40 PVC. All joints shall be sealed with approved solvent-type PVC cement. Clipper type cutters are recommended to prevent PVC burrs during cutting of pipes causing possible plugging. Drip tubing 0.61 gph drip tubing to be used in field.

Designed in accordance with Chapter 285, Subchapter D, §285.30 and §285.40 Texas Commission on Environmental Quality (Effective December 29, 2016)

02/24/25

Greg W. Johnson, P.E. No. 67587 - F-2585
170 Hollow Oak
New Braunfels, Texas 78132830/905-2778

STATE OF TEXAS
GREG W. JOHNSON
67587
REGISTERED
PROFESSIONAL ENGINEER



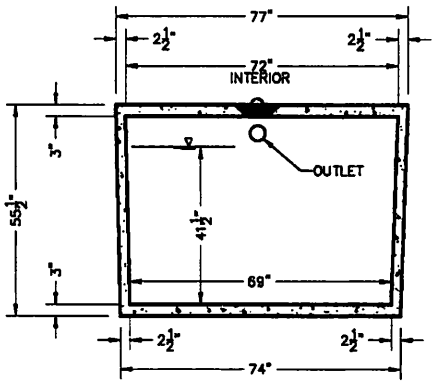
INSTALL 1500sf OF FIELD USING 750' OF DRIP TUBING. THERE SHALL BE NO PARKING, DRIVING OR STORAGE ON THE SEPTIC FIELD AT ANY TIME FOR ANY REASON.

*USE TWO WAY CLEAN OUT
**USE SCH-40 OR SDR-26 TO TANK

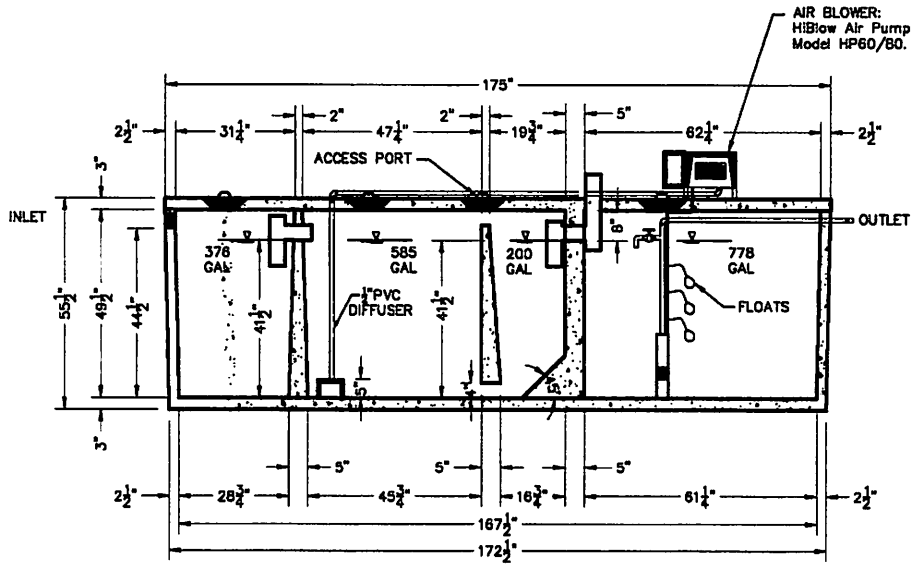
X= TEST HOLE

STATE OF TEXAS
GREG W. JOHNSON
67587
REGISTERED PROFESSIONAL ENGINEER

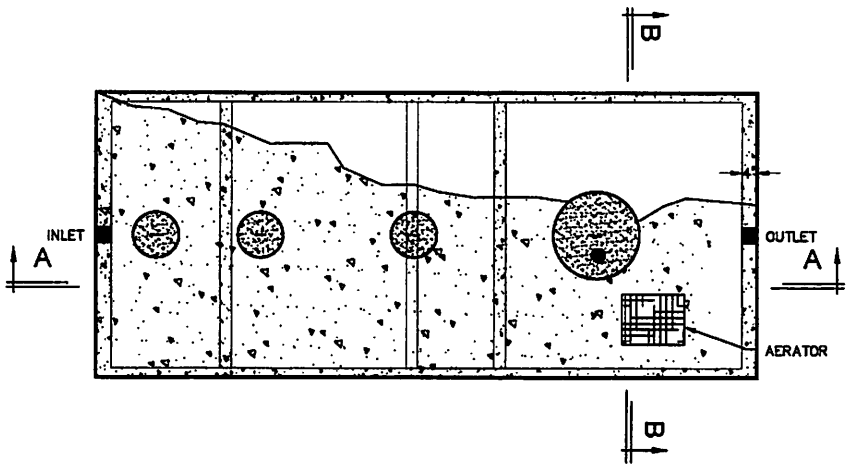
OWNER: CHASE NELSON & JESSICA VIKTORIA BRUNNENMANN				DRAWN BY: EJS III	
STREET ADDRESS: 1736 TRAIL RIDGE DRIVE					
LEGAL DESC: CANYON LAKE FOREST		UNIT/SECTION/PHASE: 1	BLOCK:	LOT: 515	
PREPARED BY: GREG W. JOHNSON, P.E. F#002585	SCALE: 1"=20'	DATE: 2/24/2025	REVISED:		



SECTION B-B



SECTION A-A



PLAN VIEW

STATE OF TEXAS
GREG W. JOHNSON
67587
REGISTERED
PROFESSIONAL ENGINEER

F2585
02/24/25

SOLAR AEROBIC
6754 HWY 90 EAST
LAKE CHARLES, LA 70615
PHONE: (337) 439-0880

MODEL SA 600LP
RESIDENTIAL WASTEWATER
TREATMENT SYSTEM

DESIGNER: ESG
DRAWN: ESG
CHECKED: ESG

PROJECT NO
SCALE: 3/8" = 1'-0"
DATE: DEC 2016
SHEET: SA-3

REVISIONS | BY | DATE

TANK NOTES:

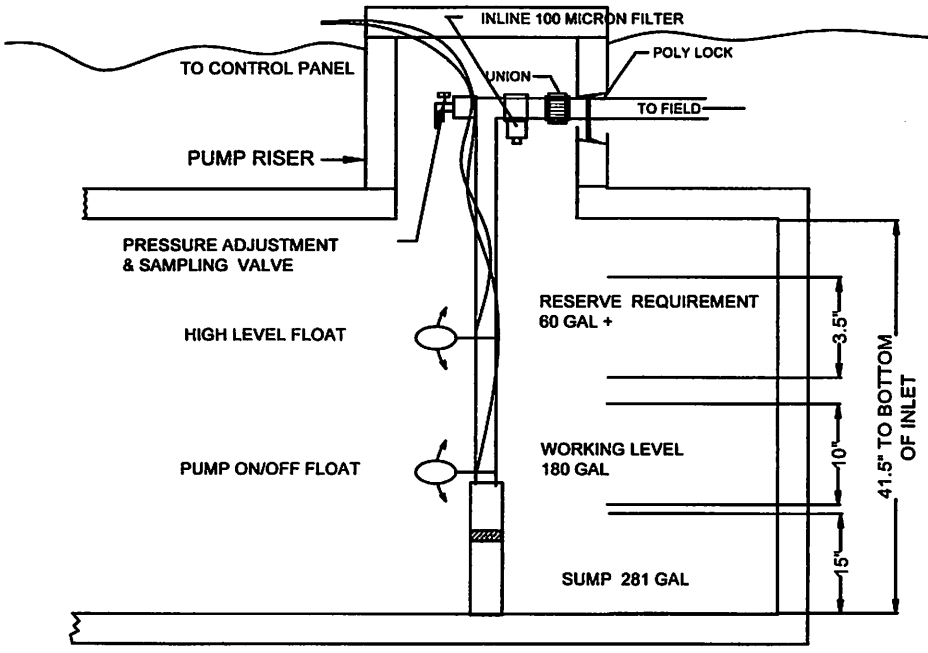
Tanks must be set to allow a minimum of 1/8" per foot fall from the residence.

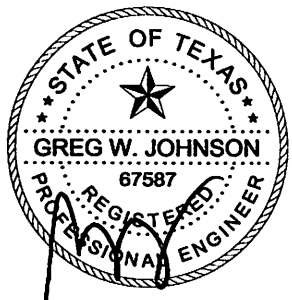
Tightlines to the tank shall be SCH-40 PVC.

A two way sanitary tee is required between residence and tank.

A minimum of 4" of sand, sandy loam, clay loam free of rock shall be placed under and around tanks

ALL WIRING MUST BE IN COMPLIANCE WITH
THE MOST RECENT NATIONAL ELECTRIC CODE



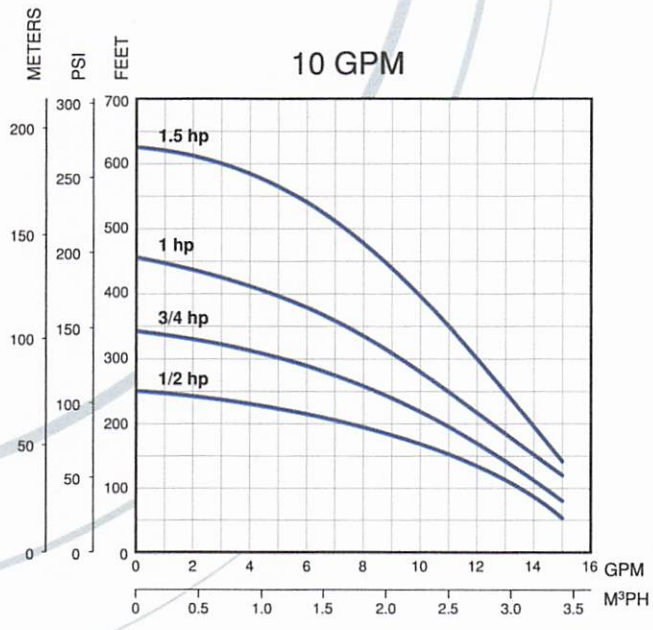


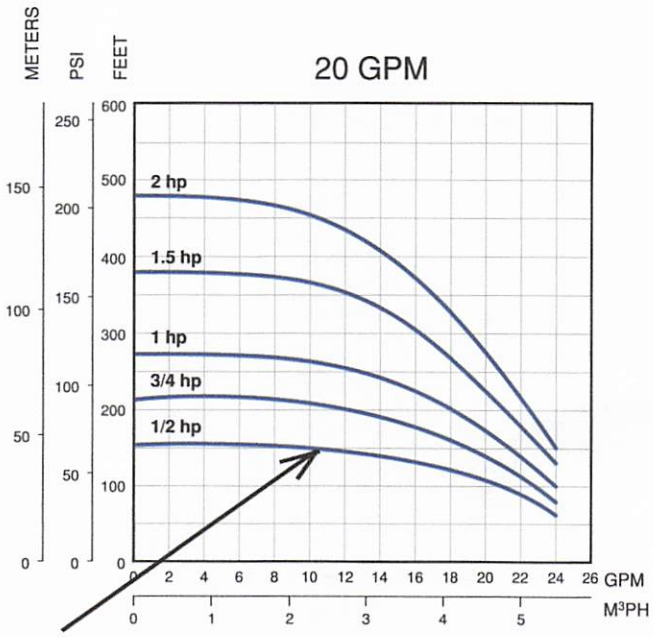
F#2585

02/24/25

TYPICAL PUMP TANK CONFIGURATION
SOLAR-AIR SA-600 LP 778 GAL PUMP TANK

Thermoplastic Performance





Thermoplastic Units Ordering Information

1/2 - 1.5 HP Single-Phase Units						
Order No.	Model	GPM	HP	Volt	Wire	Wt.
94741005	10FE05P4-2W115	10	1/2	115	2	24
94741010	10FE05P4-2W230	10	1/2	230	2	24
94741015	10FE07P4-2W230	10	3/4	230	2	28
94741020	10FE1P4-2W230	10	1	230	2	31
94741025	10FE15P4-2W230	10	1.5	230	2	46
94742005	20FE05P4-2W115	20	1/2	115	2	25
94742010	20FE05P4-2W230	20	1/2	230	2	25
94742015	20FE07P4-2W230	20	3/4	230	2	28
94742020	20FE1P4-2W230	20	1	230	2	31
94742025	20FE15P4-2W230	20	1.5	230	2	40

Thermoplastic 1/2 - 2 HP Pump Ends						
Order No.	Model	GPM	HP	Volt	Wire	Wt.
94751005	10FE05P4-PE	10	1/2	N/A	N/A	6
94751010	10FE07P4-PE	10	3/4	N/A	N/A	7
94751015	10FE1P4-PE	10	1	N/A	N/A	8
94751020	10FE15P4-PE	10	1.5	N/A	N/A	12
94752005	20FE05P4-PE	20	1/2	N/A	N/A	6
94752010	20FE07P4-PE	20	3/4	N/A	N/A	7
94752015	20FE1P4-PE	20	1	N/A	N/A	8
94752020	20FE15P4-PE	20	1.5	N/A	N/A	10
94752025	20FE2P4-PE	20	2	N/A	N/A	11

Arkal 1" Super Filter

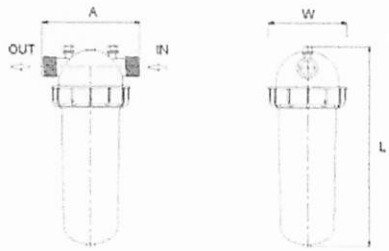
Catalog No. 1102 0_ _ _

Features

- A "T" shaped filter with two 1" male threads.
- A "T" volume filter for in-line installation on 1" pipelines.
- The filter prevents clogging due to its enlarged filtering area that collects sediments and particles.
- Manufactured entirely from fiber reinforced plastic.
- A cylindrical column of grooved discs constitutes the filter element.
- Spring keeps the discs compressed.
- Screw-on filter cover.
- Filter discs are available in various filtration grades.

Technical Data

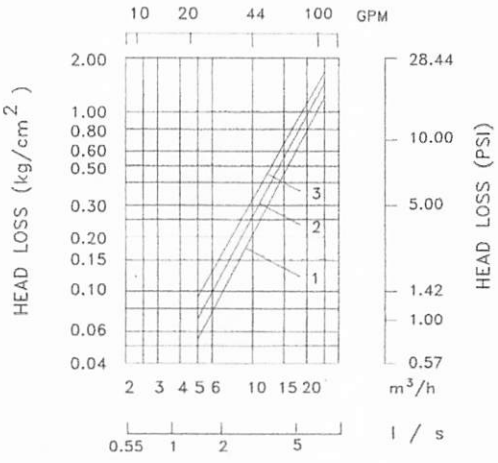
Inlet/outlet diameter	1" BSPT (male) 25.0 mm – nominal diameter 33.6 mm – pipe diameter (O. D.)	1" NPT (male)
Maximum pressure	10 atm	145 psi
Maximum flow rate	8 m^3/h (1.7 l/sec)	35 gpm
General filtration area	500 cm^2	77.5 in^2
Filtration volume	600 cm^3	37 in^3
Filter length L	340 mm	13 13/32"
Filter width W	130 mm	5 3/32"
Distance between end connections A	158 mm	6 7/32"
Weight	1.420 kg	3.13 lbs.
Maximum temperature	70° C	158 °F
pH	5-11	5-11



Filtration Grades

Blue	(400 micron / 40 mesh)
Yellow	(200 micron / 80 mesh)
Red	(130 micron / 120 mesh)
Black	(100 micron /140 mesh)
Green	(55 micron)

Head Loss Chart



PMR-MF

PRESSURE-MASTER REGULATOR - MEDIUM FLOW

Specifications

The pressure regulator shall be capable of operating at a constant, factory preset, non-adjustable outlet pressure of 6, 10, 12, 15, 20, 25, 30, 35, 40, 50, or 60 PSI (0.41, 0.69, 0.83, 1.03, 1.38, 1.72, 2.07, 2.41, 2.76, 3.45, or 4.14 bar) with a flow range between:

4 - 16 GPM (909 - 3634 L/hr) for 6 - 10 PSI models or
2 - 20 GPM (454 - 4542 L/hr) for 12 - 60 PSI models.

The pressure regulator shall maintain the nominal pressure at a minimum of 5 PSI (0.34 bar) above model inlet pressure and a maximum of 80 PSI (5.52 bar) above nominal model pressure*. Refer to the PRU performance curve to establish specific outlet pressures based on relative inlet pressure and flow rate. Always install downstream from all shut off valves. Recommended for outdoor use only. Not NSF certified.

All pressure regulator models shall be equipped with one of these inlet-x-outlet configurations:

Inlet	Outlet
¾-inch Female National Pipe Thread (FNPT)	¾-inch Female National Pipe Thread (FNPT)
1-inch Female National Pipe Thread (FNPT)	1-inch Female National Pipe Thread (FNPT)
1-inch Female British Standard Pipe Thread (FBSPT)	1-inch Female British Standard Pipe Thread (FBSPT)

The upper housing, lower housing, and internal molded parts shall be of engineering-grade thermoplastics with internal elastomeric seals and a reinforced elastomeric diaphragm. Regulation shall be accomplished by a fixed stainless steel compression spring, which shall be enclosed in a chamber isolated from the normal water passage.

Outlet pressure and flow shall be clearly marked on each regulator.

The pressure regulator shall carry a two-year manufacturer's warranty on materials, workmanship, and performance. Each pressure regulator shall be water tested for accuracy before departing the manufacturing facility.

The pressure regulator shall be manufactured by Senninger Irrigation in Clermont, Florida. Senninger is a Hunter Industries Company.

Physical

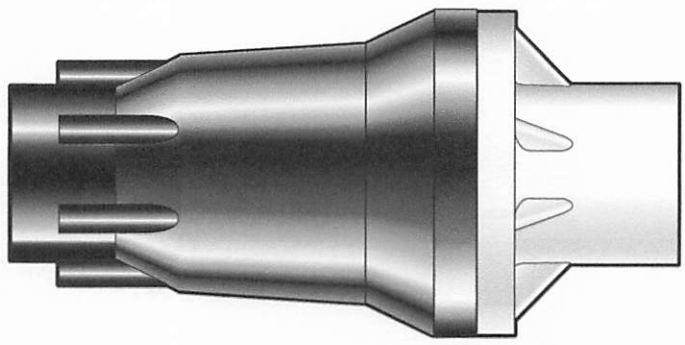
3/4" FNPT x 3/4" FNPT model *(shown on right)*

Overall Length	5.2 inches (13.1 cm)
Overall Width	2.5 inches (6.4 cm)

1" FNPT x 1" FNPT model

1" FBSPT x 1" FBSPT model

Overall Length	5.8 inches (14.6 cm)
Overall Width	2.5 inches (6.4 cm)



* Please consult factory for applications outside of recommended guidelines.

PMR-MF

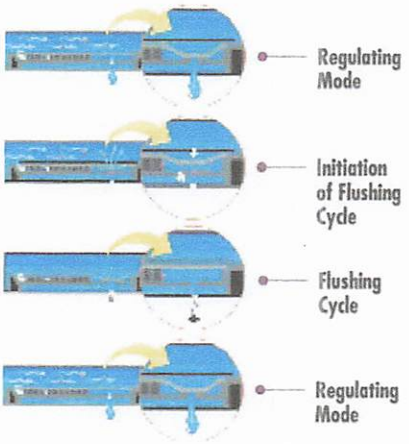
PRESSURE-MASTER REGULATOR - MEDIUM FLOW

Model Numbers

Model #	Flow Range	Preset Operating Pressure	Maximum Inlet Pressure
PMR-6 MF	4 - 16 GPM (909 - 3634 L/hr)	6 PSI (0.41 bar)	80 psi (5.51 bar)
PMR-10 MF	4 - 16 GPM (909 - 3634 L/hr)	10 PSI (0.69 bar)	90 psi (6.20 bar)
PMR-12 MF	2 - 20 GPM (454 - 4542 L/hr)	12 PSI (0.83 bar)	90 psi (6.20 bar)
PMR-15 MF	2 - 20 GPM (454 - 4542 L/hr)	15 PSI (1.03 bar)	95 psi (6.55 bar)
PMR-20 MF	2 - 20 GPM (454 - 4542 L/hr)	20 PSI (1.38 bar)	100 psi (6.89 bar)
PMR-25 MF	2 - 20 GPM (454 - 4542 L/hr)	25 PSI (1.72 bar)	105 psi (7.24 bar)
PMR-30 MF	2 - 20 GPM (454 - 4542 L/hr)	30 PSI (2.07 bar)	110 psi (7.58 bar)
PMR-35 MF	2 - 20 GPM (454 - 4542 L/hr)	35 PSI (2.41 bar)	115 psi (7.93 bar)
PMR-40 MF	2 - 20 GPM (454 - 4542 L/hr)	40 PSI (2.76 bar)	120 psi (8.27 bar)
PMR-50 MF	2 - 20 GPM (454 - 4542 L/hr)	50 PSI (3.45 bar)	130 psi (8.96 bar)
PMR-60 MF	2 - 20 GPM (454 - 4542 L/hr)	60 PSI (4.14 bar)	140 psi (9.65 bar)

NETAFIM™
Bioline® Dripperline

Pressure Compensating Dripperline for Wastewater



BioLine's Self-Cleaning, Pressure Compensating Dripper is a fully self-contained unit molded to the interior wall of the dripper tubing.

As shown at left, BioLine is continuously self-cleaning during operation, not just at the beginning and end of a cycle. The result is dependable, clog free operation, year after year.

Product Advantages

The Proven Performer

- Tens of millions of feet used in wastewater today.
- Bioline is permitted in every state allowing drip disposal.
- Backed by the largest, most quality-driven manufacturer of drip products in the U.S.
- Preferred choice of major wastewater designers and regulators.
- Proven track record of success for many years of hard use in wastewater applications.

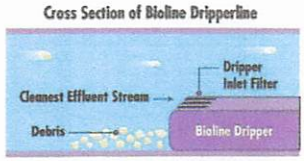
Quality Manufacturing with Specifications Designed to Meet Your Needs

- Pressure compensating drippers assure the highest application uniformity - even on sloped or rolling terrain.
- Excellent uniformity with runs of 400 feet or more - reducing installation costs.
- Highest quality-control standards in the industry: Cv of 0.25 (coefficient of manufacturer's variation).
- A selection of flows and spacings to satisfy the designer's demand for almost any application rate.

Long-Term Reliability

- Protection against plugging:
  - Dripper inlet raised 0.27" above wall of tubing to prevent sediment from entering dripper.
  - Drippers impregnated with Vinyzene to prevent buildup of microbial slime.
  - Unique self-flushing mechanism passes small particles before they can build up.

Cross Section of Bioline Dripperline



Root Safe

- A physical barrier on each BioLine dripper helps prevent root intrusion.
- Protection never wears out - never depletes - releases nothing to the environment.
- Working reliably for up to 15 years in subsurface wastewater installations.
- Additional security of chemical root inhibition with Techfilter - supplies Trifluralin to the entire system, effectively inhibiting root growth to the dripper outlets.

TECHFILTER LIFETIME EXTENDED WARRANTY

Applications

- For domestic strength wastewater disposal.
- Installed following a treatment process.
- Can be successfully used on straight septic effluent with proper design, filtration and operation.
- Suitable for reuse applications using municipally treated effluent designated for irrigation water.

Specifications

Wall thickness (mil): 45*

Nominal flow rates (GPH): .4, .6, .9*

Common spacings: 12", 18", 24"*

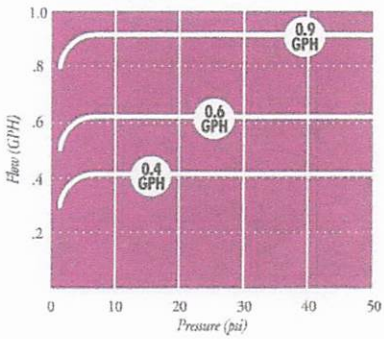
Recommended filtration: 120 mesh

Inside diameter: .570*

Color: Purple tubing indicates non-potable source

*Additional flows, spacings, and pipe sizes available by request. Please contact Netafim USA Customer Service for details.

BIOLINE Flow Rate vs. Pressure



NETAFIM™

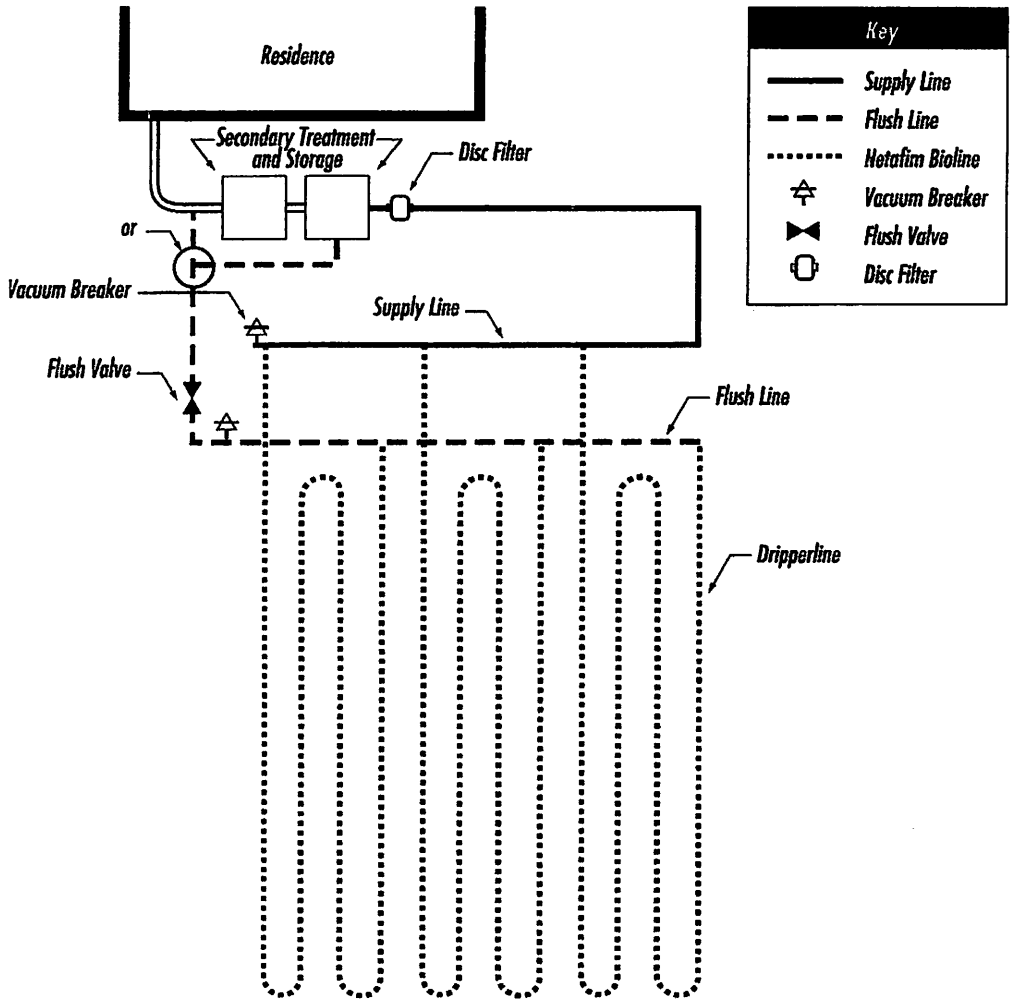
NETAFIM USA
5470 E. Home Ave. • Fresno, CA 93727
888.638.2346 • 559.453.6800
FAX 800.695.4753
www.netafimusa.com

SAMPLE DESIGNS

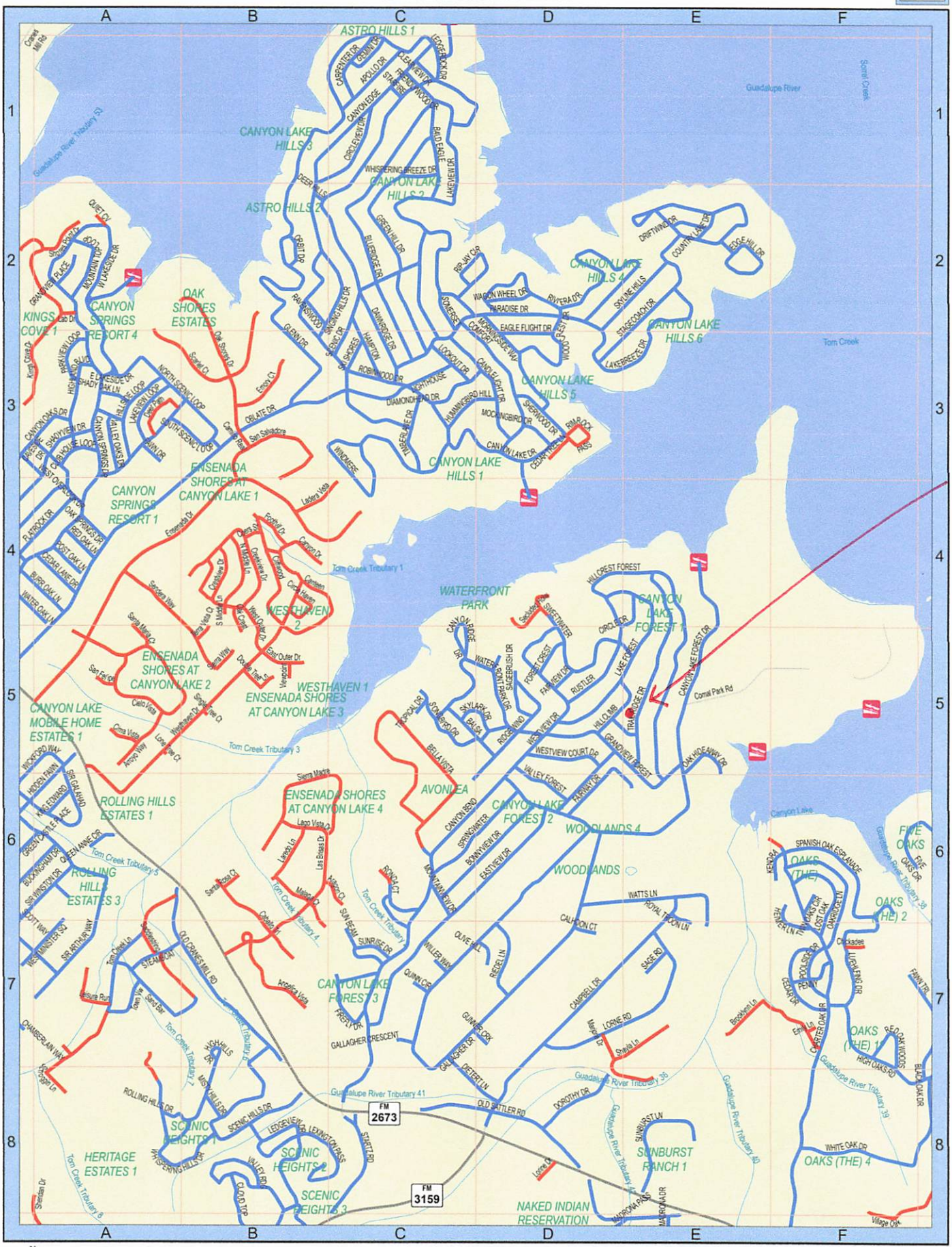
SINGLE TRENCH LAYOUT

Rectangular field with supply and flush manifold on same side and in same trench;

- Locate supply and flush manifold in same trench
- Dripperlines are looped at the end opposite the supply and flush manifolds
- The longest Bioline length should not exceed 400 ft. Drip fields 200 ft. in length might loop the Bioline once; drip dispersal fields under 100 ft. might be looped twice, as illustrated



SEE PAGE 28



N
W E
S

0 1,250 2,500
Feet

0 0.25 0.5
Miles

Produced by the Comal County Engineer's Office - 7/17/2023

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OR ALL OF THE FOLLOWING INFORMATION FROM ANY INSTRUMENT THAT TRANSFER AN INTEREST IN REAL PROPERTY BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR YOUR DRIVER'S LICENSE NUMBER.

WARRANTY DEED WITH THIRD PARTY VENDOR'S LIEN

DATE: August 29, **2023**

GRANTOR: **DEBORA DANIELS**

GRANTEE: **CHASE NELSON BRUNNEMANN and WIFE, JESSICA VIKTORIA BRUNNEMANN**
Address: 191 Arches Dr., Kyle Tx 78640

CONSIDERATION: TEN AND NO/100 DOLLARS ($10.00), and other good and valuable consideration, including a Note of the same date in the principal amount of **SIXTY FIVE THOUSAND SIX HUNDRED AND No/100 Dollars ($65,600.00)** (the "note") and is executed by Grantee, payable to the order of **OZONA BANK** (the "Lender"). The Note is secured by a first and superior Vendor's Lien and the Superior Title herein retained in favor of Grantor and assigned and conveyed without recourse to Lender in this Deed and by a Deed of Trust of even date from **Grantees to JOSEPH J. MALONE, as Trustee.**

PROPERTY (including any improvements):

Lot 515, CANYON LAKE FOREST, UNIT NO. 1, situated in Comal County, Texas, according to the map or plat thereof, recorded in Volume 1, Pages 53-54, Map and Plat Records, Comal County, Texas.

Together with all improvements thereon, if any, and all rights, privileges, tenements, hereditaments, rights of way, easements, appendages and appurtenances, in anyway appertaining thereto, and all right, title and interest of Grantor in and to any streets, ways, alleys, strips or gores of land adjoining the above described property or any part thereof (hereinafter referred to as the "Property").

RESERVATIONS FROM CONVEYANCE: The first and superior vendor's lien and superior title to secure payment of the Note.

EXCEPTIONS TO CONVEYANCE AND WARRANTY:
Liens described herein as part of the Consideration and any other liens described in this deed as being either assumed or to which title is taken subject to; validly existing easements, rights of way which are recorded and of record; and taxes for the current year and subsequent years, which Grantee assumes and agrees to pay and subsequent assessments for the current year and prior years due to change in land usage, ownership, or both, the payment of which Grantee assumes.

Grantor, for the consideration and subject to the Reservations from Conveyance and Exceptions to Conveyance and Warranty, grants, sells, and conveys to Grantee the property, together with all and singular the rights and appurtenances thereto in any wise belonging, to have and hold it to Grantee, Grantee's heirs, executors, administrators, successors, or assigns forever. Grantor hereby binds Grantor and Grantor's heirs, executors, administrators, and successors to warrant and forever defend all and singular the property to Grantee and Grantee's heirs, executors, administrators, successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, except as to the Reservations from Conveyance and Exceptions to Conveyance and Warranty.

The Lender, at Grantees request, has paid in cash to Grantor the portion of the purchase price of the Property that is evidenced by the Note. The First and Superior Vendor's Lien against and superior title to the Property are retained for the benefit of the Lender, and are transferred to the Lender without recourse against Grantor.

When this Deed is executed by one person, or when the Grantee is one person, the instrument shall read as though pertinent verbs and pronouns were changed to correspond, and when executed by or to a corporation the words "heirs, executors, administrators" or "heirs and assigns" shall be construed to mean "Successors and Assigns".

Dated as first written above.

DEBORA DANIELS

THE STATE OF TEXAS
COUNTY OF Hays

This instrument was acknowledged before me on Aug. 29, 2023 by **DEBORA DANIELS.**

Notary Public, State of TEXAS

TRACY D. BARRETT
My Notary ID # 4193802
Expires September 5, 2023

Filed and Recorded
Official Public Records
Bobbie Koepp, County Clerk
Comal County, Texas
08/29/2023 04:03:06 PM
LAURA 2 Pages(s)
202306027772

Bobbie Koepp

RECEIVED
By Kathy Griffin at 2:48 pm, Mar 06, 2025

COMAL COUNTY
ENGINEER'S OFFICE

OSSF DEVELOPMENT APPLICATION CHECKLIST

Staff will complete shaded items

		118451
Date Received	*Initials*	*Permit Number*

Instructions:

Place a check mark next to all items that apply. For items that do not apply, place "N/A". This OSSF Development Application Checklist **must** accompany the completed application.

OSSF Permit

☒ Completed Application for Permit for Authorization to Construct an On-Site Sewage Facility and License to Operate

☒ Site/Soil Evaluation Completed by a Certified Site Evaluator or a Professional Engineer

☒ Planning Materials of the OSSF as Required by the TCEQ Rules for OSSF Chapter 285. Planning Materials shall consist of a scaled design and all system specifications.

☒ Required Permit Fee - See Attached Fee Schedule

☒ Copy of Recorded Deed

☒ Surface Application/Aerobic Treatment System

- ☒ Recorded Certification of OSSF Requiring Maintenance/Affidavit to the Public
- ☒ Signed Maintenance Contract with Effective Date as Issuance of License to Operate

I affirm that I have provided all information required for my OSSF Development Application and that this application constitutes a completed OSSF Development Application.

Signature of Applicant

03/06/2025
Date

___ COMPLETE APPLICATION

Check No. _____ Receipt No._____

INCOMPLETE APPLICATION
—— (Missing Items Circled, Application Refeused)

Revised: September 2019