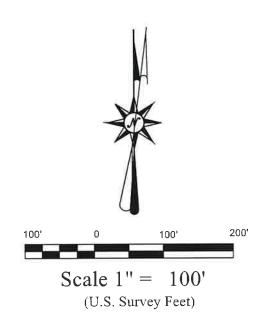


Plot Plan

FOR DAVID AND DEANA HEGGEN LOT 8, BLOCK 1, PINION HILLS ESTATES, UNIT No. 1 COUNTY OF HUERFANO, STATE OF COLORADO







PROJECT INFORMATION

AUTHORITY:

Las Animas / Huerfano Counties District Health Department 412 Benedicta Avenue Trinidad, CO 81082

719-846-2213

This on-site wastewater treatment system was designed for: David Heggen Address TBD

Walsenburg, CO 81089

Lot 8, Block 1, Pinon Hills Estates #1

DESIGN DATA:

Design Required to be based on 2 people per bedroom or 6 people Average Daily Flow = (6) * 75 GPD / Person = 450gpd

SOILS SPECIFIC SITE INFORMATION:

Soils based off soil evaluation by Aaron Chavez of the Las Animas and Huefano County Health Department on 8/1/2023

- 0 2'-0" Sandy Loam Type 1 Soil
- 2'-0" 4'-0" Decomposed Sandstone Type R-0
- Limiting layer @ 2'-0"

SUMMARY OF SYSTEM DESIGN:

Due to a limiting layer at 2' and decomposed sandstone less than 2', a pressure distributed, mound system with a min; 3' layer of sand to be used.

INDEX OF DRAWINGS	INDF)	(OF	DRA	AXZIN	VIGS
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SHEET NO.	TITLE
1. 2. 3. 4. 5. 6. 7.	Project Info / Cover Sheet / Site OWTS Site Plan Design Section A-A Soil Treatment Area Section B-B OWTS Tank Detail Equalization Tank Detail Pump Curve
8.	General Notes & Do's N' Dont's

GENERAL NOTES

This design is in accordance with Las Animas / Huerfano Counties District Health Department and State of Colorado requirements. Installation, inspection and maintenance shall also be in accordance with these requirements and are the responsibility of others.

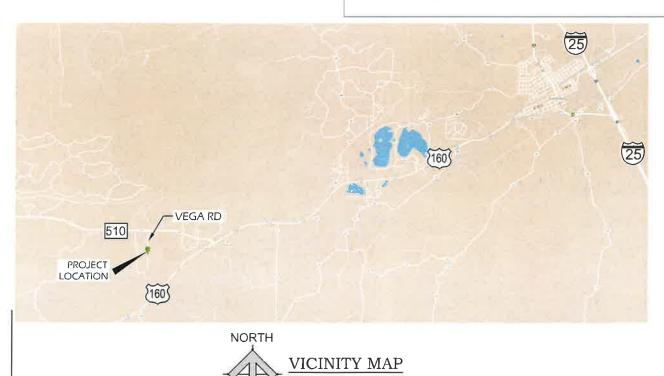
The guidelines, rules and regulations Las Animas / Huerfano Counties District Health Department and the Colorado Department of Health and Environment are hereby specified and made part of this design where applicable.

The Contractor is responsible for ensuring that the minimum distances below are maintained

soil treatment area or septic tank and the physical features listed.

	Soil Treatment	Septic Tank
Springs, wells or suction lines	100'	50'
Potable water supply	25'	10.
Cistern	25'	25'
Dwelling or occupied building	20'	5'
Property Line	10'	10'
Subsoil drain	25'	10'
Lake, water course or stream	50'	50'
Dry gulches	25	10'

- Sewage pipe crossings or encroachments with water conveyance pipe is acceptable provided that the water conveyance pipe is encased for a minimum distance of ten (10) feet on each side of the crossing. Such length of pipe shall be used with a minimum Schedule 40 rating with sufficient diameter to easily slide over and completely encase the water conveyance. Ridged end caps of at least Schedule 40 rating shall be glued or secured in a watertight fashion to the ends of the encasement pipe. A hole of sufficient size to accommodate the pipe shall be drilled in the lower most section of the ridged end cap so that the conveyance pipe rests on the bottom of the encasement pipe. The area in which the pipe passes through the end caps shall be sealed with an underground sealant
- Sewer line from building to septic tank shall be laid on a grade of two (2) percent... Bends in the sewer line shall be limited to 22 degrees, 45 degrees or long sweep quarter bends,
- This sewage disposal system is not designed to carry any loads applied by vehicles or equipment. Schedule 40 PVC pipe shall be installed where vehicles will cross any portion of the system. If necessary, provide a physical barrier around the absorption bed to protect it from vehicle or equipment traffic
- Schedule 40 pipe shall extend in to and out of the septic tank a minimum of 5's
- Design, fabrication and structural integrity of the septic tank is the responsibility of the tank manufacturer. Fiberglass, fiberglass-reinforced polyester, or plastic tank shall meet the minimum design and structural criteria of IAPMO/ANSI Z2000-2007 (American Standards for Fabricated Septic Tanks) and certified by a
 - professional engineer as meeting these standards. The tank shall also meet requirements set forth in El Paso County Health Department Environmental Health Division On-site Waste Water Treatment Systems Regulations,
- Final location of soil treatment area shall be confirmed in the field by the contractor and coordinated with the owner, El Paso County Health Department Environmental Health Division and Engineer prior to construction



SYSTEM INFORMATION (TIMED & PRESSURE DOSED SYSTEM)

CALCULATIONS:

House - 3 Bedrooms

= 75 GPD/person x 6 people = 450 GPD -Design Flow (Q)

Tank shall have capacity to hold 48 hours of effluent or $450 \times 2 = 900$ gallons. The minimum tank size for 3 bedroom residence is 1000 gallons, so therefore a plastic 1000 gallon infiltrator septic tank is required.

-Pump Tank

Tank shall be 60% of septic tank, so therefore 600 gallon min. flow equalization or pump tank is required, However due to local availability, a plastic 540 Gallon Infiltrator Pump Tank by is to be used.

-Soil Treatment Area (STA) Size

A = 450 GPD = 563 SF Secondary Sands = 0.8GPD/SF

> No. of panels (12 SF each): 563 SF = 47 Panels, use 48 panels (2 Laterals of 24) 12 SF/panel

Lateral Volume: ft of Pipe x Volume / Ft

(? LATERALS) X DIST' = (2)(88') x.078 Gallons per foot (1 1/4" sch 40) = 13.7 Gallons

Drainback: ft of Pipe x Volume / Ft

82' x .174 Gallons per foot (2" sch 40) = 14.3 Gallons

Maximum Dose Volume: 25% of Q + Drainback

(.25*Q)=.25(450) + 14.3 = 126.8 Gallons

Minimum Dose Volume

4 * Lateral Volume + Drainback = 4(13.7)+14.3= 69.1 Gallons

Recommended Dose Volume = 100 Gallons

PUMP INFORMATION:

ORENCO HH PF3005 Orenco High Head 1/2 hp 30gpm 120v Single Phase pump. Pump included in Orenco ProPakTM



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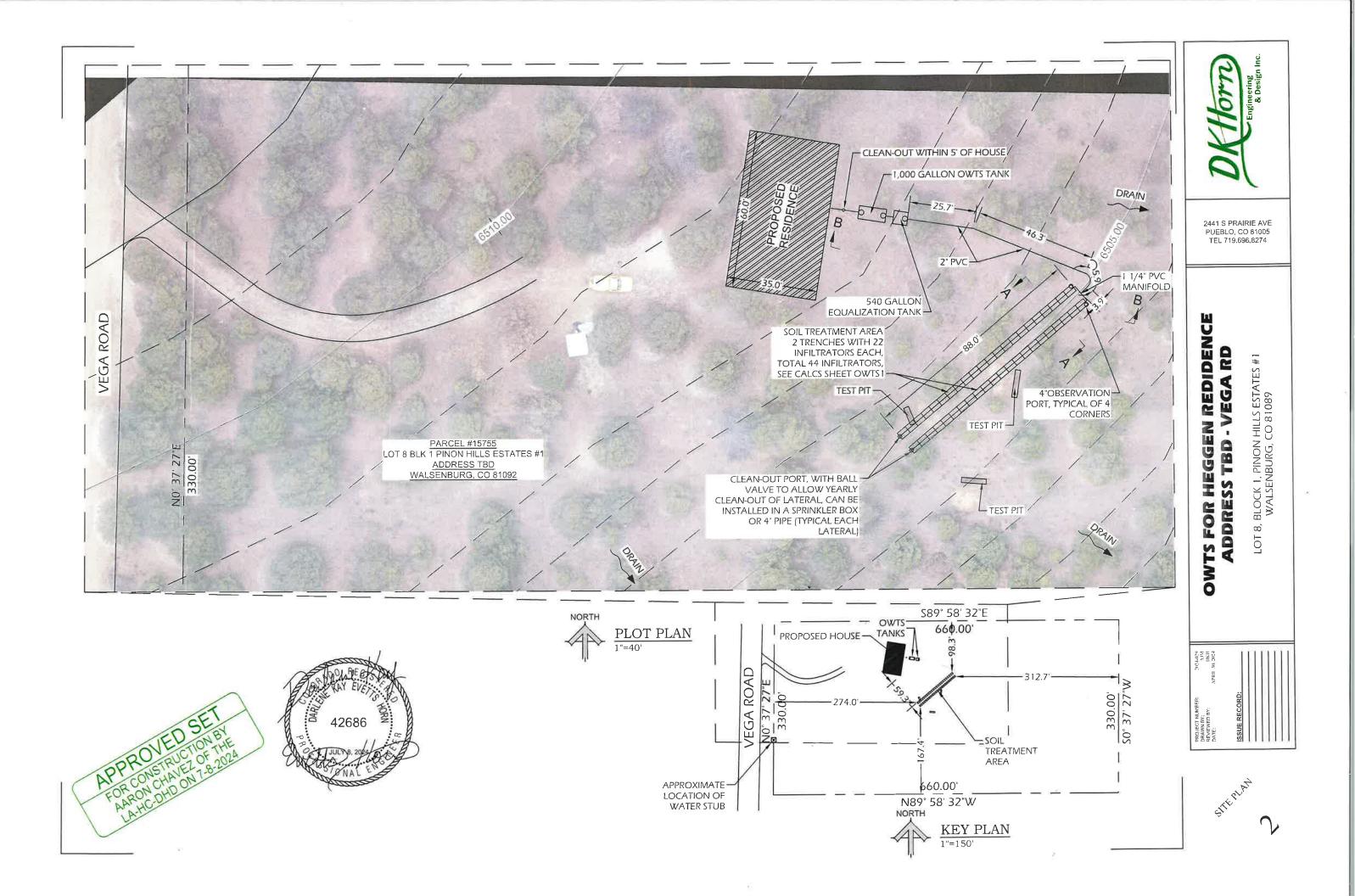
REDIDENCE - VEGA RD HEGGEN **ADDRESS TBD** FOR

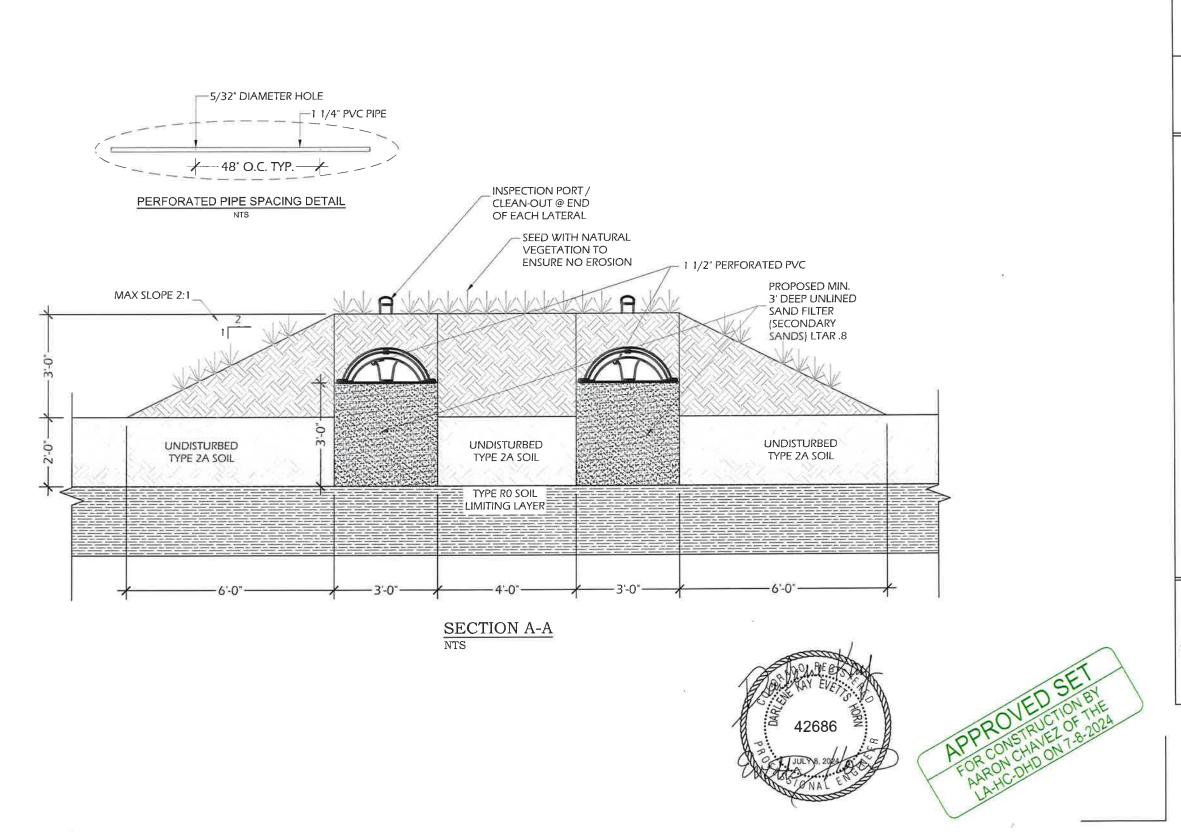
OWTS

BLOCK 1, PINON HILLS ESTATES #1 WALSENBURG, CO 81089

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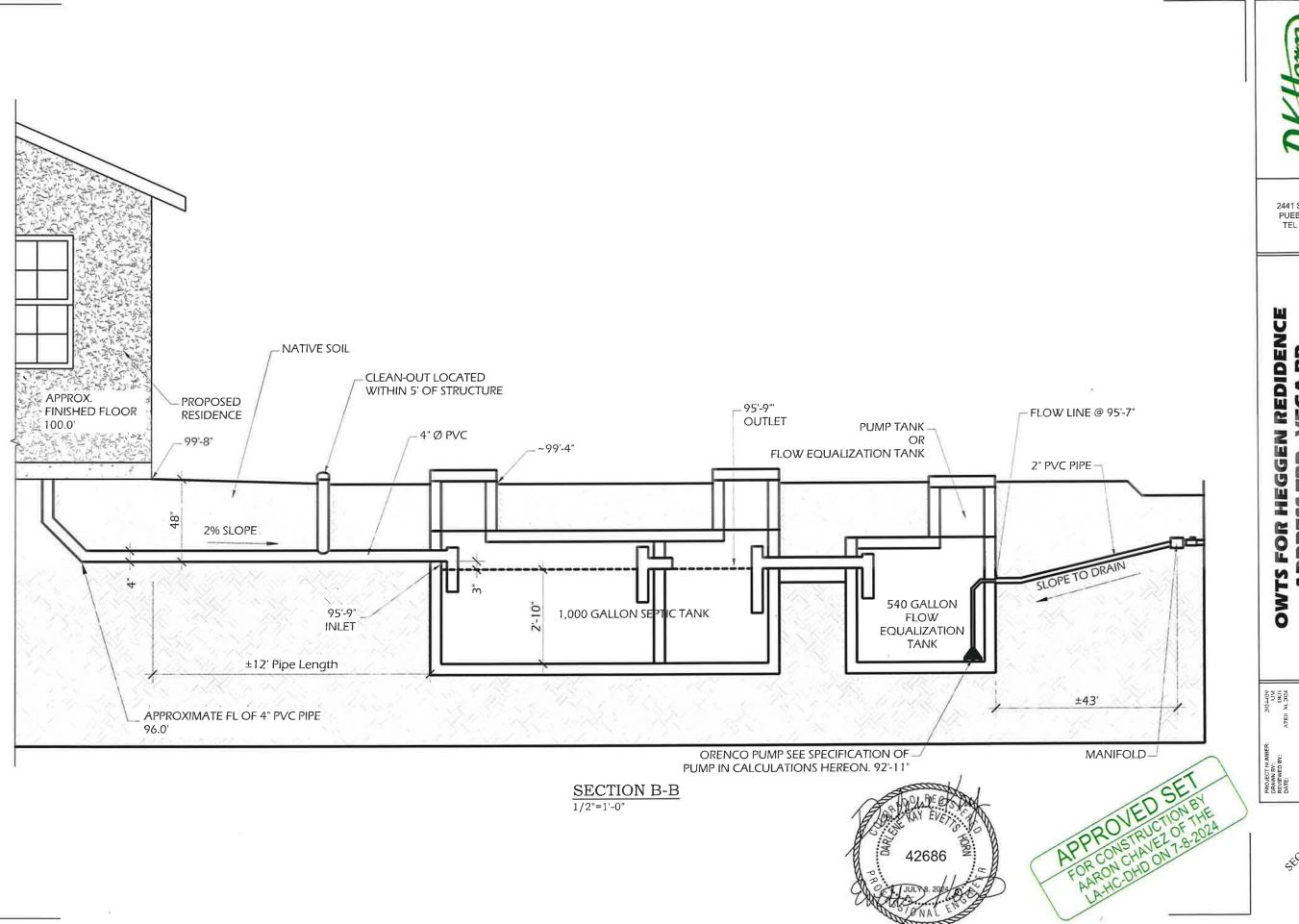
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LOT 8, BLOCK 1, PINON HILLS ESTATES #1 WALSENBURG, CO 81089

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ATE: APRII 40, 2024
SSUE RECORD:

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OWTS FOR HEGGEN REDIDENCE ADDRESS TBD - VEGA RD

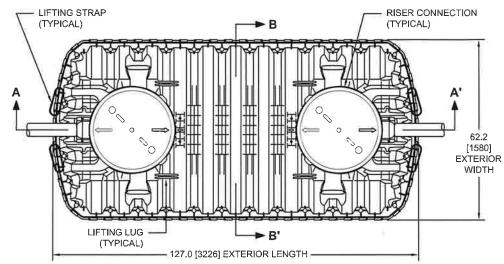
LOT 8, BLOCK 1, PINON HILLS ESTATES #1 WALSENBURG, CO 81089

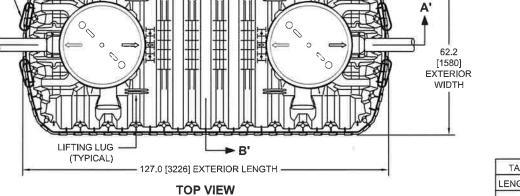


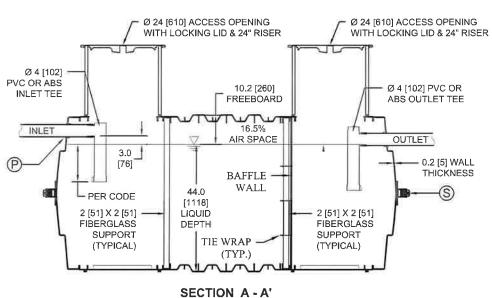
OWTS SEPTIC TANK NOTES

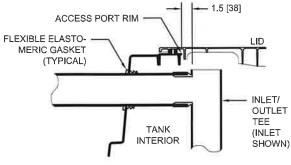
- Access risers shall be sealed to prevent the intrusion of ground water and surface water into
- Install all access risers to grade
- Install 2 foot of cover and 2 inches of direct burial insulation on the septic tank.
 The septic tank shall be constructed to
- withstand earth and hydrostatic pressures at the installed depth, both when full and empty.
- Drill 1" diameter hole in the pump line within the septic tank to facilitate drainback (Pressure Distribution Systems Only).
- The Discharge Assembly for the pumping system is to have a disconnect union accessible accessible from grade to allow for pump replacement. (Pressure Distribution Systems
- All electrical connections must be housed in a UL approved waterproof splice box.
- The pump control panel is to be mounted in a manner allowing alarms to be seen and heard, and must be readily accessible.

Infiltrator Plastic Septic Tanks - 1287 Gallons





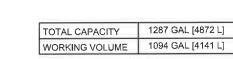




PIPE PENETRATION **SECTION DETAIL**

TANK EXTERIOR		
LENGTH	127.0 [3226]	
WIDTH	62.2 [1580]	
HEIGHT	54.7 [1389]	

LIQUID DEPTH	44.0 [1118]
INVERT DROP	3.0 [76]
FREEBOARD	10.2 [260]



FIBER-

GLASS

SECTION B-B'

SUPPORT

MID-HEIGHT SEAM

SECTION DETAIL

TANK TOP

HALF

TANK

INTERIOR

ALIGNMENT

DOWEL (34)

CONTINUOUS

ELASTOMERIC

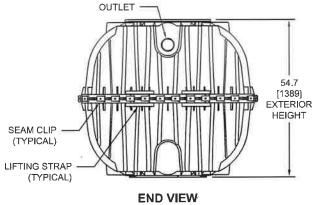
TANK BOTTOM

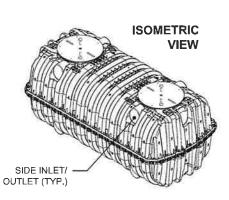
HALF

SEAM CLIP

(64)

GASKET







TS FOR HEGGEN REDIDENCE ADDRESS TBD - VEGA RD

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BLOCK 1, PINON HILLS ESTATES #1 WALSENBURG, CO 81089

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NOTES:

- 1. ALL DRAWING DIMENSIONS IN INCHES [MILLIMETERS] OR AS NOTED.
- EXTERIOR OF ACCESS OPENING LID INCLUDES THE FOLLOWING WARNING IN ENGLISH, FRENCH & SPANISH: "DANGER DO NOT ENTER: POISON GASES."
- TANK MARKINGS WILL INCLUDE: MANUFACTURER NAME, MODEL NUMBER, LIQUID CAPACITY, DATE OF MANUFACTURE, MAXIMUM BURIAL DEPTH, INLET, AND OUTLET.
- MAXIMUM BURIAL DEPTH IS 48 in [1219 mm].
- MINIMUM BURIAL DEPTH IS 6 in [152 mm].
- TANK IS FOR NON-TRAFFIC APPLICATIONS.
- OUTLET TEE IS COMPATIBLE WITH AN EFFLUENT FILTER.
- INTERIOR LENGTH TO WIDTH RATIO IS 2.3:1 (118.8-INCH LENGTH / 51.7-INCH WIDTH = 2.3).

OWTS SEPTIC TANK NOTES

- Access risers shall be sealed to prevent the intrusion of ground water and surface water into the system.
 Install all access risers to grade.
- Install 2 fool of cover and 2 inches of direct
- burial insulation on the septic tank.

 The septic tank shall be constructed to withstand earth and hydrostatic pressures at the installed depth, both when full and empty.
- Drill ¹/₈" diameter hole in the pump line within the septic tank to facilitate drainback (Pressure Distribution Systems Only).
- The Discharge Assembly for the pumping system is to have a disconnect union accessible accessible from grade to allow for pump replacement. (Pressure Distribution Systems
- All electrical connections must be housed in a UL approved waterproof splice box.

 The pump control panel is to be mounted in a
- manner allowing alarms to be seen and heard, and must be readlly accessible.

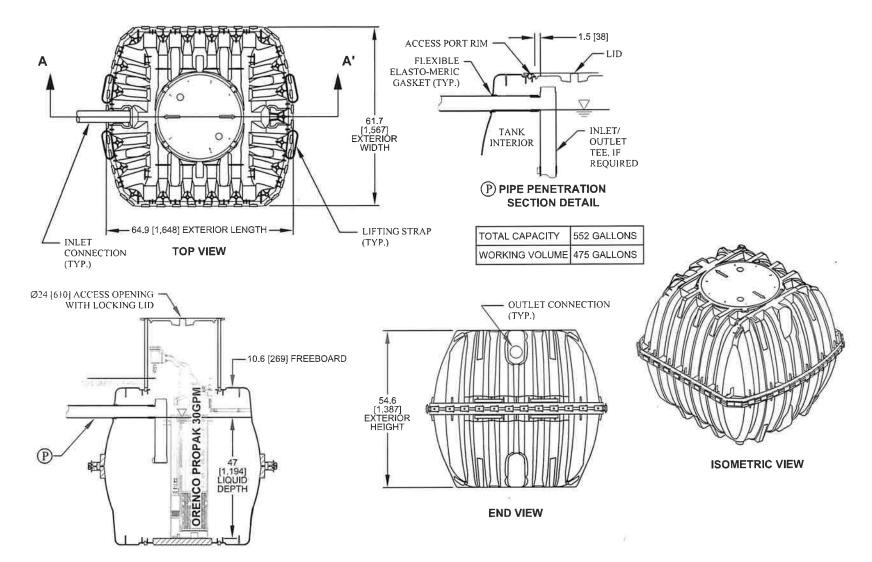
DOSING INFORMATION

540 GALLON PUMP TANK 475 USABLE GALLONS = 10 GALLONS PER INCH

100 Gallon Dose = 10"

* PUMP & FILTER INFORMATION * ORENCO PROPAK SIMPLEX EFFLUENT PUMP PACKAGE TO BE USED (WHICH INCLUDES BUT NOT LIMITED TO, PUMP, VAULT, SPLICE BOX, DISCHARGE ASSEMBLY, CONTROL PANEL, AND POLYETHYLENE AND PVC FILTER) RATED FOR 50GPM IS RECOMMENDED FOR THIS SITE

Infiltrator Plastic Septic Tanks - 552 Gallons



SECTION A- A'

- NOTES:

 1. ALL DRAWING DIMENSIONS IN INCHES [MILLIMETERS] OR AS NOTED.

 2. EXTERIOR OR ACCESS OPENING LID INCLUDES THE FOLLOWING WARNING IN
 ENGLISH, FRENCH & SPANISH: "DANGER DO NOT ENTER: POISON GASES."

 3. TANK MARKINGS WILL INCLUDE: MANUFACTURING NAME, MODEL NUMBER, LIQUID
 CAPACITY, DATE OF MANUFACTURE CODE, MAXIMUM BURIAL DEPTH, INLET, AND OUTLET.

 4. THE TANK MAY BE BACKFILLED WITH SUITABLE NATIVE SOIL. SEE INSTALLATION INSTRUCTIONS FOR GUIDANCE. IF THE NATIVE SOIL DOES NOT
 MEET THE INSTALLATION INSTRUCTIONS GUIDANCE THEN BACKFILLING WITH SELECT MATERIAL WILL BE REQUIRED.
- 5. MAXIMUM BURIAL DEPTH IS 48 in [1,219 mm].
 6. MINIMUM BURIAL DEPTH IS 6 in [152 mm].
 7. TANK IS FOR NON-TRAFFIC APPLICATIONS.

- 8. AIRSPACE IS 13.9% 9. INLET TEE MAY NOT BE REQUIRED BY DESIGN.





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OWTS FOR HEGGEN REDIDENCE

- VEGA RD

ADDRESS TBD

BLOCK 1, PINON HILLS ESTATES #1 WALSENBURG, CO 81089



Pump Selection for a Pressurized System - Single Family Residence Project

Heggen Residence / Lot 8, Block 1, Pinon Hills Estates #1

P			

Discharge Assembly Size	2.00	Inches
Transport Length	82	feet
Transport Pipe Class	40	
Transport Line Size	2.00	inches
Distributing Valve Model	None	
Max Elevation Lift	10	feet
Manifold Length	10	feet
Manifold Pipe Class	40	
Manifold Pipe Size	1.25	inches
Number of Laterals per Cell	2	
Lateral Length	88	feet
Lateral Pipe Ciasa	40	
Lateral Pipe Size	1.25	inches
Orifice Size	5/32	inches
Orifice Spacing	4	feet
Residual Head	5	feet
Flow Meter	None	inches
'Add-on' Friction Losses	0	feet

Calculations

Minimum Flow Rate per Orifice	0.68	gpm
Number of Orifices per Zone	46	
Total Flow Rate per Zone	31.9	gpm
Number of Laterals per Zone	2	
% Flow Differential 1st/Lest Ortfice	9.7	%
Transport Velocity	3.1	fps

Frictional Head Losses

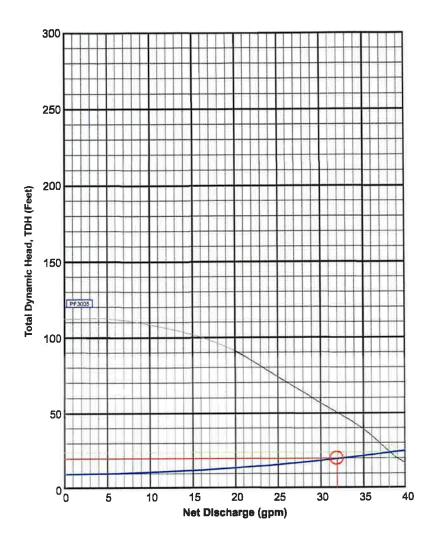
Loss through Discharge	2.0	feet
Loss in Transport	1.4	feet
Loss through Valve	0.0	feet
Loss in Manifold	0.3	feet
Loss in Laterals	1.2	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	0.0	feet

Pipe Volumes

Vol of Transport Line	14.3	alag
Vol of Manifold	0.8	gals
Vol of Laterals per Zone	13.7	alsg
Total Volume	28.7	gels

Minimum Pump Requirements

Design Flow Rate	31.9	gpm
Total Dynamic Head	19.9	feet



PumpData

PF3005 High Head Effluent Pump 30 GPM, 1/2HP 115/230V 1Ø 60Hz, 200V 3Ø 60Hz

System Curve: -Pump Curve: — Pump Optimal Range: Operating Point: Design Point:

Legend





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OWTS FOR HEGGEN REDIDENCE ADDRESS TBD - VEGA RD

LOT 8, BLOCK 1, PINON HILLS ESTATES #1 WALSENBURG, CO 81089



OWTS Maintenance

- 1. Control the amount of water discharged into the system. Your system is designed to handle a specific amount of water. Larger volumes of water will overload the absorption field.

 To control the amount of water discharged into the system you should:
- Repair any leaking faucet or toilet immediately
- Divert run-off water from roof eaves, drainpipes and foundation drains away from the absorption field
- 2. Normal amounts of these household products will not harm a septic system:
- Soaps, detergents, and bleaches.
- Wastewater from a home water softener may cause a slight shortening of the life of the absorption field because of the extra volume of water that's used. The salts from water softeners will not harm the septic system.
- 3. DO NOT dispose of these items in your system:

These materials do not decompose in the septic tank: Household items such as facial tissues, tampons, sanitary napkins, cigarette butts, coffee grounds, egg shells, oily waste or grease from cooking, bones, paper towels, newspaper, wrapping paper, rags and disposable diapers.

Materials such as strong acids, photographic chemicals, and above normal amounts of drain cleaners may upset the biological process in the septic lank.

Latex paint, wastewater from a pottery hobby and sheet rock mud remain in suspension in the septic tank, and then flow into the absorption field and clog the pores of the soil.

Note: There are many chemical products for sale that claim to improve the digestion process in the septic tank. DKHorn does not endorse any of these products, With proper care and maintenance, the system should work well without added chemicals.

4. Regularly inspect the level of sludge and scum in the septic tank.

DKHorn recommends that tanks be inspected once a year by a licensed OWTS installer.

The rate at which sludge and scum accumulate in the septic tank varies greatly from one household to the next, It is important to have your tank inspected regularly (once per year) or if you wish to do this inspection yourself, follow these instructions:

- Before the septic is pumped, measure scum depth
- a. Attach a 6-inch square board to the bottom of a stick about 6 feet long.
- b. At the outlet end of your tank, extend the stick through the scum layer to find the bottom of the baffle or effluent pipe.
- c. Mark your stick to indicate that point.
- d. Raise the stick unit you "feel" or see the bottom of the scum layer.
- e. Mark your stick again to indicate that point,
- f. If the two pencil marks are 3 inches apart or less, or if the scum surface is within 1-inch of the top of the outlet baffle, the tank requires cleaning.
- Measuring sludge depth
- a. Wrap 3-feet of white rag or toweling around a long stick.
- b. Place the stick into the sludge, behind the outlet baffle if possible.
- c. Hold the stick there for several minutes.
- d. Remove the stick noting the sludge line.
- e. If the sludge line is within 12-inches of the outlet baffle, or within 18 inches of the outlet fitting, the tank requires cleaning
- After the septic is pumped
- a. Inspect the Tank for any visible cracking, leaking or worn out parts. It is important that the tank is watertight so that no ground water is getting into the tank nor water from the tank is seeping into the ground.
- b. It is also important to inspect the inlet and outlet pipes for presence of water entering the tank.
- c. The effluent filter (if being used) should also be inspected. Pull out the filter and hose the contents back into the tank.
- 5. Regularly remove the sludge and scum from the septic tank.

Sludge and scum must be pumped out of the septic tank before they reach the outlet tee or baffle, or they will flow out into the absorption field and clog the pores of the soil so it can no longer absorb liquid,

At a minimum, DKHorn recommends that tanks be pumped every four years. Check with your local health department for special requirements.

Keep your absorption field in good condition.

Cut grass and weeds growing on the absorption field often.

Absorption fields usually are installed at very shallow depths. Because of this; (1) vehicles must be kept off absorption fields (2) buildings, corrals for livestock, fences and trenches should not be constructed on top of absorption fields and (3) trees and shrubbery should not be planted within or immediately adjacent to the field.

Some septic systems have two or more absorption fields. Valves connect these fields so the wastewater flow can be alternated between fields. If you have such a system, you should switch the diverter valve every summer,

OWTS Maintenance - Do's and Dont's for your OWTS

DO'S & DONT'S - MAINTENANCE AND CARE OF YOUR OWTS SYSTEM

- · DO inspect your septic system every year
- DO pump out septic tank every four years
- DO keep records of pumping, inspections and other maintenance
- · DO repair leaking faucets and toilets
- DO conserve water to reduce wastewater
- · DO divert roof drains and surface water away from the absorption field
- · DO call a professional when you have questions
- · DON'T drive or park over any part of your septic system
- DON'T use commercial septic tank additives
- · DON'T dig or build on top of your septic system
- DON'T plant anything over the absorption field (non-irrigated, native grasses are ok)
- DON'T flush non-biodegradable items into your system, such as diapers, tampons, etc.
- DON'T irrigate the soil treatment area.



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IN REDIDENCE

- VEGA RD

HILLS ESTATES #1

OT 8, BLOCK 1, PINON HILLS ESTATES #1 WALSENBURG, CO 81089

OWTS FOR HEGGEN ADDRESS TBD - V

DRAWN BY: ANY REVIEWED BY: APRIL 30, 2024

ISSUE RECORD:

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