

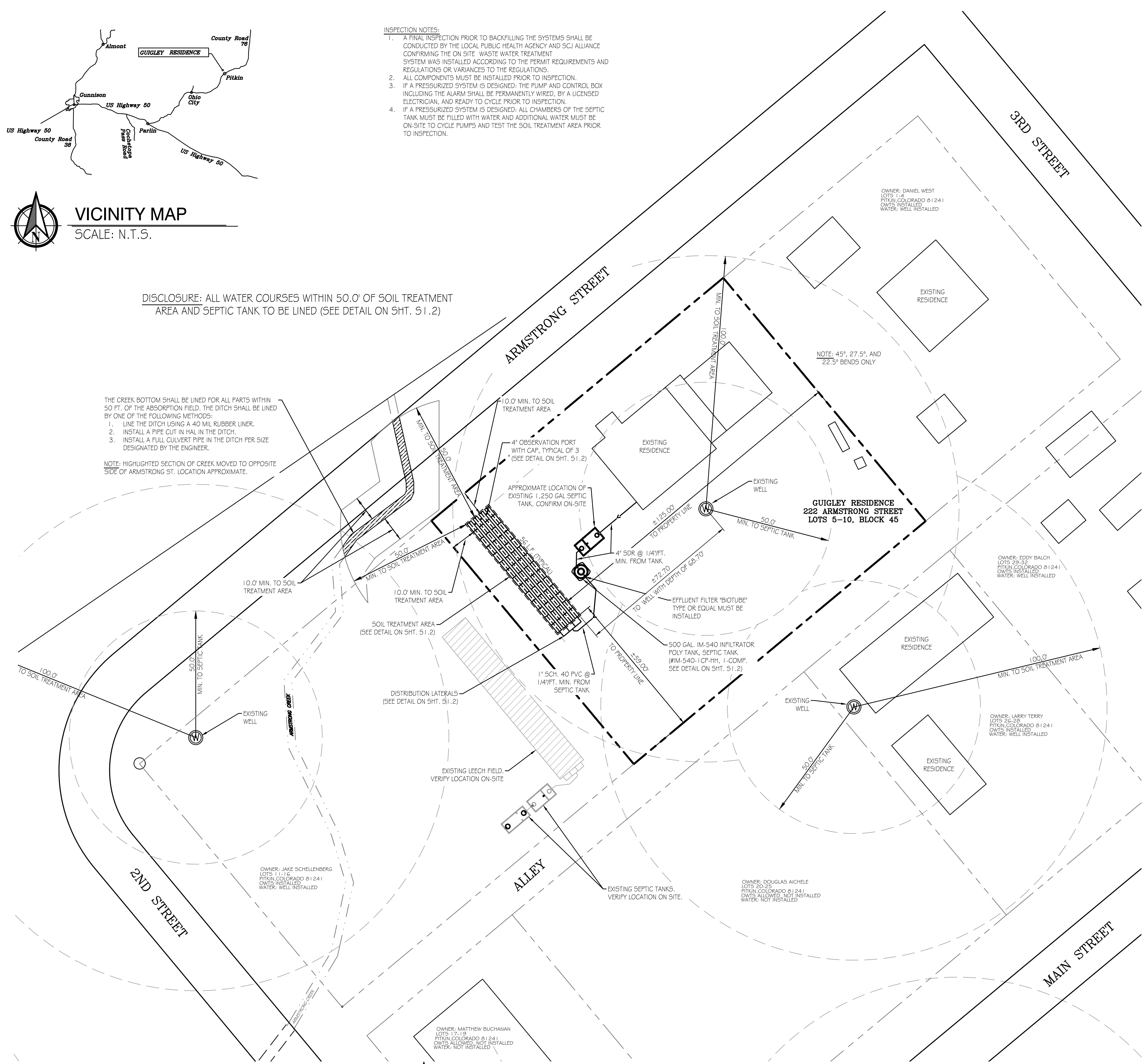
VICINITY MAP
SCALE: N.T.S.

DISCLOSURE: ALL WATER COURSES WITHIN 50.0' OF SOIL TREATMENT AREA AND SEPTIC TANK TO BE LINED (SEE DETAIL ON SHT. 51.2)

THE CREEK BOTTOM SHALL BE LINED FOR ALL PARTS WITHIN 50 FT. OF THE ABSORPTION FIELD. THE DITCH SHALL BE LINED BY ONE OF THE FOLLOWING METHODS:
 1. LINE THE DITCH USING A 40 MIL RUBBER LINER.
 2. INSTALL A PIPE CUT IN HAL IN THE DITCH.
 3. INSTALL A FULL CULVERT PIPE IN THE DITCH PER SIZE DESIGNATED BY THE ENGINEER.

NOTE: HIGHLIGHTED SECTION OF CREEK MOVED TO OPPOSITE SIDE OF ARMSTRONG ST. LOCATION APPROXIMATE.

INSPECTION NOTES:
 1. A FINAL INSPECTION PRIOR TO BACKFILLING THE SYSTEMS SHALL BE CONDUCTED BY THE LOCAL PUBLIC HEALTH AGENCY AND SCJ ALLIANCE CONFIRMING THE ON-SITE WASTE WATER TREATMENT SYSTEM WAS INSTALLED ACCORDING TO THE PERMIT REQUIREMENTS AND REGULATIONS OR VARIANCES TO THE REGULATIONS.
 2. ALL COMPONENTS MUST BE INSTALLED PRIOR TO INSPECTION.
 3. IF A PRESSURIZED SYSTEM IS DESIGNED: THE PUMP AND CONTROL BOX INCLUDING THE ALARM SHALL BE PERMANENTLY WIRED, BY A LICENSED ELECTRICIAN, AND READY TO CYCLE PRIOR TO INSPECTION.
 4. IF A PRESSURIZED SYSTEM IS DESIGNED: ALL CHAMBERS OF THE SEPTIC TANK MUST BE FILLED WITH WATER AND ADDITIONAL WATER MUST BE ON-SITE TO CYCLE PUMPS AND TEST THE SOIL TREATMENT AREA PRIOR TO INSPECTION.



SANITATION PLAN
SCALE: N.T.S.

COLORADO STATE MINIMUM SETBACK REQUIREMENTS:
 Table 7-1: Minimum Horizontal Distances in Feet Between Components of an OWTS and Water, Physical and Health Impact Features

	Spring, Well, Suction Line, Potable Water Supply Cistern*	Potable Water Supply Line*	Structure with basement, crawl space or footing drains	Structure without basement, crawl space or footing drains	Property Lined or Lined Irrigation Ditch, upslope curtain drain	Subsurface Drain, Intermittent Irrigation Lateral, Drywell, Stormwater Structure	Lake, Water Course, Irrigation Ditch, Stream, Wetland	Dry Gulch, Cut Bank, Fill Area (from Crest)	Septic Tank, Higher Level Treatment Unit, Dosing Tank, Vault Privy
Septic Tank, Higher Level Treatment Unit, Dosing Tank, Vault Privy	50'	10'	5	5	10	10	100'(state is 50')	10	--
Building Sewer or Effluent Lines	50'	5'	0	0	10'	10'	50'	10'	--
STA Trench or Bed, Un-lined Sand Filter, Sub-surface Disposal System, Lined Sand Filter	100'	25'	20	10	10	25	100'(state is 50')	25	5
Lined Evapotranspiration Field	60	10'	15	15	10	10	100'(state is 25')	10	5
Un-lined Sand Filter in Soil with a Percolation Rate < 60 MP, Un-lined or Partially Lined Evapotranspiration System, System not relying on STA for Treatment other than Anosol	100	25'	15	15	10	25	100'(state is 25')	15	10
PI Privy	100	50'	25	25	25	25	100	25	N/A
System not relying on STA for disposal	100'	10'	125	125'	10	0	100'(state is 25')	10	10

NOTE: The minimum distances shown above shall be maintained between the OWTS components and the features described. Where soil, geological or other conditions warrant, greater distances may be required by the local board of health or by the Water Quality Control Commission pursuant to C.R.S. §25-8-206 and applicable regulations. For repair or upgrading of existing OWTS where the size of lot precludes adherence to these distances, a repaired OWTS shall not be closer to setback features than the existing OWTS, as reviewed and approved by the Department. Components that are not watertight should not extend into areas of the lot system or nearby trees.
 1. Includes potable wells, irrigation wells and monitoring wells set within a potable aquifer and infiltration galleries permitted as wells by the Division of Water Resources.
 2. Crossings or encroachments may be permitted at the points as noted above provided that the water or wastewater conveyance pipe is enclosed for the minimum setback distance on each side of the crossing. A rigid pipe with a minimum Schedule 40 rating of sufficient diameter to easily slide over and completely enclose the conveyance pipe shall be used. Rigid end-rates 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 lowest section of the rigid cap so that the conveyance pipe rests on the bottom of the encasement pipe. The encasement pipe in which the end caps shall be sealed with an approved underground sealant compatible with the piping used. Other methods of encasement that provide equal protection are allowed. These methods shall be reviewed and approved by the local public health agency.
 3. Add eight feet additional distance for each 100 gallons per day of design flow between 1,000 and 2,000 gallons per day, unless it can be demonstrated by a professional engineer or geologist that the use of a barrier, consisting of a minimum 30 mil PVC liner or equivalent, that contains the effluent, that contamination will be minimized. Flows greater than 2,000 gallons per day shall be hydrologically analyzed for flow, velocity, hydraulic head, and other pertinent characteristics as a means of estimating distances required to minimize contamination to the Division site application and permitting process.
 4. If horizontal setbacks to a potable water supply system shall be met unless a variance by the Board of Examiners of Water Well Contractors and Pump Installation Contractors is granted per section 16.2 of the Water Well Construction Rules, 2 CCR 402.2. Setback requirements which may necessitate a variance are found within section 10.2 or 11.4 of the Water Well Construction Rules, as applicable. The minimum horizontal setback that may be granted through a variance is 20 feet.
 5. If the structure is not used as a habitable unit, the setback may be reduced by the local board of health to no less than 50 feet.
 6. Building sewer installations shall meet the design requirements of the Colorado Plumbing Code.

ELIEN GSF A42 INSTALLATION GUIDELINES (COLORADO AS OF JAN. 2017):

- INSURE ALL COMPONENTS LEADING TO GSF SYSTEM ARE INSTALLED PROPERLY. SEPTIC TANK EFFLUENT FILTERS (OR SCREENED EFFLUENT PUMPS) ARE REQUIRED WITH THE GSF SYSTEM.
- DETERMINE THE NUMBER OF GSF MODULES REQUIRED PER DESIGN.
- PREPARE SITE. DO NOT INSTALL A SYSTEM IN SATURATED GROUND OR WET SOILS THAT ARE SMEARED DURING INSTALLATION. KEEP MACHINERY OFF INFILTRATIVE AREAS.
- PLAN ALL DRAINAGE REQUIREMENTS ABOVE (UP-SLOPE) OF THE SYSTEM. SET SOIL GRADES TO ENSURE THAT STORM WATER DRAINAGE AND GROUND WATER IS DIVERTED AWAY FROM THE ABSORPTION AREA ONCE THE SYSTEM IS COMPLETE.
- EXCAVATE THE BED ABSORPTION AREA. SCARIFY THE RECEIVING LAYER TO MAXIMIZE THE INTERFACE BETWEEN THE NATIVE SOIL AND SPECIFIED SAND.
- MINIMIZE WALKING IN THE ABSORPTION AREA PRIOR TO PLACEMENT OF THE SPECIFIED SAND TO AVOID SOIL COMPACTION.
- PLACE SPECIFIED SAND IN SIX (6) INCH LIFTS, STABILIZE BY FOOT, A HAND HELD TAMPING TOOL OR A PORTABLE VIBRATING COMPACTOR. THE STABILIZED HEIGHT BELOW THE GSF MODULE MUST BE LEVEL.
- PLACE GSF MODULES WITH PAINTED STRIPE FACING UP, END TO END ON TOP OF THE SPECIFIED SAND ALONG THEIR 4 FOOT LENGTH.
- A STANDARD 4-INCH PERFORATED PIPE, SDR 35 OR EQUAL, IS CENTERED ALONG THE MODULES 4-FOOT LENGTH. ORIFICES ARE SET AT THE 4 & 8 O'CLOCK POSITION.
- ALL 4-INCH PIPES ARE SECURED WITH MANUFACTURERS SUPPLIED WIRE CLAMPS, ONE PER MODULE.
- (PRESSURE DISTRIBUTION SYSTEMS ONLY) INSERT A PRESSURE PIPE (SIZE AND ORIFICES PER DESIGN) INTO THE STANDARD 4-INCH PERFORATED PIPE. THE PRESSURE PIPE ORIFICES ARE SET AT THE 12 O'CLOCK POSITION AS SHOWN ON THE PLANS. EACH PRESSURE LATERAL WILL HAVE A DRAIN HOLE AT THE 6 O'CLOCK POSITION. EACH PRESSURE LATERAL SHALL HAVE A CLEAN OUT AT THE END OF EACH MODULE.
- COVER FABRIC SUBSTITUTIONS IS NOT ALLOWED. THE INSTALLER SHOULD LAY THE ELIEN PROVIDED GEOTEXTILE COVER FABRIC LENGTHWISE DOWN THE ROW, WITH THE FABRIC FITTED TO THE PERFORATED PIPE ON TOP OF THE GSF MODULES. FABRIC SHOULD BE NEITHER TOO LOOSE, NOR TOO TIGHT. THE CORRECT TENSION OF THE COVER FABRIC IS SET BY:
 - SPREADING THE COVER FABRIC OVER THE TOP OF THE MODULE AND DOWN BOTH SIDES OF THE MODULE WITH THE COVER FABRIC TENTED OVER THE TOP OF THE PERFORATED DISTRIBUTION PIPE.
 - PLACE OCCASIONAL SHOVELFULS OF SPECIFIED SAND DIRECTLY OVER THE PIPE AREA ALLOWING THE COVER FABRIC TO FORM A MOSTLY VERTICAL ORIENTATION ALONG THE SIDE OF THE PIPE. REPEAT THIS STEP MOVING DOWN THE PIPE.
 - PLACE 12-INCHES OF SPECIFIED SAND ALONG THE SIDES OF THE MODULE EDGE. A MINIMUM OF 12-INCHES OF SPECIFIED SAND IS PLACED AT THE BEGINNING AND END OF EACH ROW. A MINIMUM OF 24-INCHES OF SPECIFIED SAND IS PLACED BETWEEN MODULE ROWS.
 - CALL TO SCHEDULE THE REQUIRED INSPECTIONS.
 - COMPLETE BACKFILL WITH A MINIMUM OF 12-INCHES OF CLEAN POROUS FILL MEASURED FROM THE TOP OF THE MODULES. BACKFILL EXCEEDING 18-INCHES REQUIRES VENTING AT THE FAR END OF THE BED. USE WELL GRADED NATIVE SOIL FILL THAT IS CLEAN, POROUS AND DEVOID OF LARGE ROCKS. DO NOT USE WHEELED EQUIPMENT OVER THE SYSTEM.
 - DIVERT SURFACE RUNOFF FROM THE SYSTEM. FINISH GRADE TO PREVENT SURFACE PONDING. TOPSOIL AND SEED SYSTEM AREA TO PROTECT FROM EROSION.

- GENERAL NOTES:**
- THE HOMEOWNER OR CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER PRIOR TO MAKING ANY CHANGES TO PLANS.
 - SEWAGE TREATMENT SYSTEM TO BE INSTALLED IN ACCORDANCE WITH GUNNISON COUNTY REGULATIONS.
 - COUNTY SHALL BE NOTIFIED FOR INSPECTION PRIOR TO COVERING LATERALS AND WITH ALL SYSTEM COMPONENTS IN PLACE.
 - CONTRACTOR SHALL PRECLUDE ALL VEHICULAR TRAFFIC AND MATERIALS STORAGE ON THE SOIL TREATMENT AREA.
 - PVC SEWER PIPE IS TO BE SDR 35 MEETING ASTM SPECIFICATION D3034.
 - PREPARE TRENCHES BOTTOM AND SIDES BY CAREFULLY LEVELING, RAKING, AND SCARIFYING INFILTRATIVE SURFACES. AVOID COMPACTING TRENCH BOTTOM BY OPERATING HEAVY EQUIPMENT IN THE TRENCHES.
 - INSTALL ALL SEWER LINES AT A MINIMUM SLOPE OF 1/4" DROP PER FOOT.
 - GEGRID SHALL BE TRIAX TX140 GEGRID OR EQUAL.
 - NOTIFY ENGINEER IF SOILS TYPES AND CHARACTERISTICS CHANGE IN SOIL TREATMENT AREA.
 - FILTER FABRIC SHALL BE ELIEN COVER FABRIC.
 - PROVIDE ADEQUATE DRAINAGE IN ALL DIRECTIONS OVER SOIL TREATMENT AREA AND PLANT WITH NATIVE PRODUCTS.
 - ALL SUBSTITUTIONS SHALL BE APPROVED BY THE ENGINEER.
 - DO NOT PROVIDE MORE THAN 2 TO 3 FEET OF FILL OVER SEPTIC TANK.
 - IT IS THE SOLE RESPONSIBILITY OF THE SYSTEM INSTALLER TO VERIFY AND CONFIRM THE REQUIRED HORIZONTAL SETBACK DISTANCES ARE MET PRIOR TO EXCAVATION. IF THE DESIGNED PLANS DO NOT REFLECT THE FIELD CONDITIONS THE ENGINEER MUST BE NOTIFIED PRIOR TO PLACEMENT OF ANY ON-SITE WASTE WATER TREATMENT SYSTEM COMPONENTS.
 - SEPTIC TANK & PUMP SUPPLIER IS VALLEY PRECAST, INC., 25105 COUNTY ROAD, BUENA VISTA, CO 81211 | PHONE # (719) 395-6764, OR GRAND JUNCTION PIPE & SUPPLY.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL BURIED PIPING IS PROPERLY FROST PROTECTED. MINIMUM COVER FOR UNINSULATED GRAVITY PIPE IS 4 FT. MINIMUM COVER FOR ALL UNINSULATED PRESSURE PIPE IS 7 FT.

DATE									
REVISIONS									
SCJ ALLIANCE CONSULTING SERVICES 400 NORTH MAIN STREET, GUNNISON, CO 81230 P: 970.641.2499 SCJALLIANCE.COM									
ON-SITE WASTEWATER TREATMENT SYSTEM PROJECT NAME: GUGLEY RESIDENCE 222 ARMSTRONG STREET, PITKIN GUNNISON COUNTY, COLORADO									
DESIGNER:	MWM								
DRAWN BY:	MWM								
APPROVED BY:	MM								
DATE:	JANUARY 08, 2024								
JOB NO.:	23-000357								
DRAWING NO.:	S1.1								

Jan 08, 2024 3:14:50pm - User: cameron.leggett
 C:\USERS\CAMERON\LOCAL APPDATA\TEMP\APUBUILD_26568\2-1-0912_23-000357_OWTS_SITE_AND_SYSTEM_DETAILS-GUGLEY-RADWICH.DWG



OWTS Design Report

For: Guigley, Chris
222 Armstrong St.
Pitkin, CO 81241

Ref: SCJ Alliance Job No. 23-000357

Prepared By: SCJ Alliance
400 North Main Street
Gunnison, CO 81230
970-641-2499

Date: January 08, 2024

I. Design Conditions:

This design is submitted in accordance with the applicable regulations of Gunnison County and the Colorado Department of Public Health & Environment (CDPHE) Regulation #43 for On-Site Wastewater Treatment System Regulations. The system was designed as a repair for an existing single-family construction using a loading rate for a 6-bedroom home (per CDPHE Design criteria). A variance from the existing well on the property is to be requested in accordance with the specifications in CDPHE Regulation #43 and Water Well Construction Rules (2 CR 402-2).

Soils:

1. A soils profile hole was conducted on September 10, 2023. Visually, the soil profile exhibited 0-6" organic layer underlain to 5.0' with a sandy loam/silty loam and blocky rock. Seasonal high ground water was not encountered at the site reconnaissance visit. The soil is classified as type R-1 soil with the soil component of Type 2. Dispersal of the effluent to the surface of the Sand Filter must be by a pressurized system to provide equal distribution.

Design Factors:

See table below:

Table 6-1 Single-Family Residential Design Flows

# Bedrooms	Occupancy (# of persons)	Wastewater flow per person (gal/day)	Design flow (gal/day)
2	4	75	300
3	6	75	450
4	7	75	525
5	8	75	600
6	9	75	675

Design Flow (Regulation 43, Table 6-1, pg.37):

- A. 6-bedroom residence
 - **Total Design Flows (Q): = 675 GPD (Per Table 6-1)**
- B. Septic Tank Sizing: Table 9-1 (Regulation 43, pg. 50)

Table 9-1

Minimum Septic Tank Size Based on Number of Bedrooms

Number of Bedrooms	Tank Capacity (gallons)
2 or 3	1,000
4	1,250
Each Additional	250

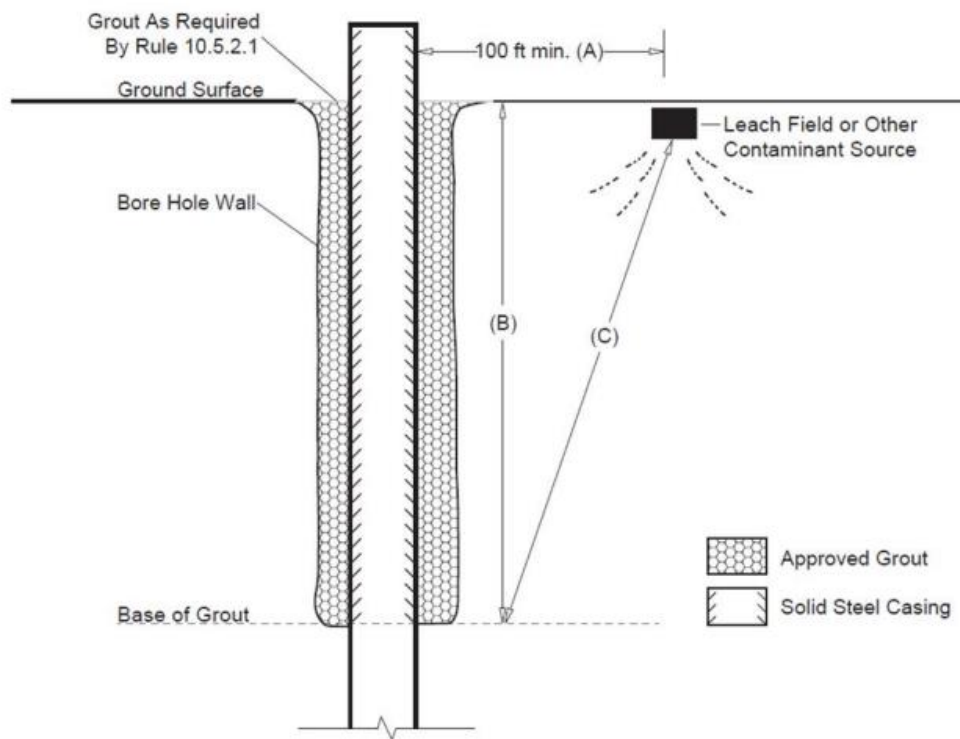
- For 6-bedroom: Use the existing 1250-gallon, 2 compartment tank, as well as an additional 500-gallon, 1 compartment tank, Valley Precast Item No. IM-540-1CP-HH
- Minimum tank size based upon detention time:
 $D_t \geq 48$ Hours
 $D_t = \frac{1750 \text{ gal} \times 24 \text{ hrs}}{675 \text{ GPD}} = 62.2 \text{ hours}$

- C. Variance Requirements
 - a. As this design is a repair of an existing system, the following text from Regulation #43 (Section 43.4, N.6.b.) is applicable:

For the repair of or upgrade to an existing system where the existing system does not meet the required separation distances and where conditions other than lot size precludes adherence to the required distances, a variance to the separation distances may be requested. The repairs or upgrade must be no closer to features requiring setbacks than the existing facilities. Variances requesting setbacks no closer than existing setbacks do not have to provide technical justification from a professional engineer or professional geologist.

- b. The following figure (BOE Construction Rules: 2 CCR 402-2 Figure 2a) is also something to consider if the depth of the existing well is known.

MINIMUM DISTANCE FROM A SOURCE OF CONTAMINATION



Minimum distance (A) of well to leach field (per current design constraints): 72.7 ft

Well depth: $B \geq \sqrt{100^2 - A^2} = \sqrt{100^2 - 72.7^2} = 68.7 \text{ ft}$

D. System Sizing: Soil Type R-1 Option 1, Soil Type 2, Treatment Level 1, Pressure Dosed Bed, using 2' X 4' Eljen A42 Modules

$$Q = 675 \text{ gpd}$$

Rocky classification: Type R-1, Treatment Level 1, hydraulic loading rate =

$$0.8 \frac{\text{gal}}{\text{ft}^2 \text{ day}} \text{ (LTAR applied for secondary sand media)}$$

$$\frac{675 \text{ gpd}}{0.8 \frac{\text{gal}}{\text{ft}^2 \text{ day}}} = 843.75 \text{ ft}^2$$

Table 10-2 and 10-3 (Regulation 43, pg. 60): This size adjustment factor cannot be applied for rock classified soils (Regulation 43, Table 10-1A, general note #2, pg. 59).

Number of Eljen A42 Modules: $\frac{843.75 \text{ ft}^2}{16 \text{ ft}^2 \text{ per chamber}} = 52.73$ (use 56 Eljen A 42 modules, in a 4-lateral bed)

E. Pump Station & Distribution Laterals, Orenco PF3005 Effluent pump:

- Draw down per inch) = 11.5 gallons
- Pump rate = 26.0 gpm
- Total Dynamic Head = 36.2 feet
- 9" draw down = 103.5 gallon
- Pump time = 3.98 minutes
- Average pump cycles per day = $\frac{675 \text{ gpd}}{103.5 \text{ gal}} = 6.52 \frac{\text{cycles}}{\text{day}}$
- See attached orifice calculation and pump curve
 - Orifice size = 1/8"
 - Orifice Spacing = 4.0'
- Distal (Residual) head pressure = 5.0'

Design: 56 Eljen Module A42 modules (2' wide X 4' long) installed in a single bed.

A minimum of 2' of sand, in addition to 1' of sand required for the Eljen distribution system, shall be installed for the unlined sand filter for treatment level 1 (Table 10.-1A).

Table 10-1A Design Criteria for Soils with High Rock Content (Type "R" Soils) 1,2,3,4

Soil Type, Percentage of Rock, LTAR, Distribution				Required Sand or Media Depth Relative to the Quality of Effluent Applied to the Distribution System				
Soil Type	Percentage and Size of Rock ⁵	Maximum LTAR (Gal./sq.ft./ day)	Type of Distribution Required	Treatment Level 1 ⁶	Treatment Level 2	Treatment Level 2N	Treatment Level 3	Treatment Level 3N
R-0	Soil Type ⁷ 1 with more than 35% Rock (>2mm)	Unlined Sand Filter: 1.0 for "Preferred Sand Media"; 0.8 for "Secondary Sand Media"	Pressure Distribution ⁸	Minimum 3-foot deep Unlined Sand Filter	Minimum 3-foot deep Unlined Sand Filter	Minimum 2.5-foot deep Unlined Sand Filter	Minimum 2.5-foot deep Unlined Sand Filter	Minimum 2-foot deep Unlined Sand Filter
R-1; Option 1	Soil Type ⁷ 2 - 5, >35 - 65% Rock (>2mm); with ≥50% of the Rock <20 mm (3/4 inch)	Use TL1 LTAR from Table 10-1 for the soil type corresponding to the soil matrix, with a maximum LTAR of 0.8	Pressure Distribution ⁸	Minimum 2-foot deep Unlined Sand Filter	Minimum 1-foot deep Unlined Sand Filter	Minimum 1-foot deep Unlined Sand Filter	Sand media not required	Sand media not required
R-1; Option 2	Soil Type ⁷ 2 and 2A, >35 - 65% Rock (>2mm); with ≥50% of the Rock <20 mm (3/4 inch)	The allowable LTAR's are defined in each individual treatment level column in this Table	Pressure Distribution ⁸	Remove, mix, replace 4 feet of existing material; with a maximum LTAR of 0.6	Remove, mix, replace 2 feet of existing material; with a maximum LTAR of 0.7	Remove, mix, replace 2 feet of existing material; with a maximum LTAR of 0.7	Remove, mix, replace 2 feet of existing material; with a maximum LTAR of 0.8	Remove, mix, replace 2 feet of existing material; with a maximum LTAR of 0.8
R-2	Soil Type ⁷ 2 - 5, >65 Rock (>2mm), OR ≥50% of Rock >20 mm (3/4 inch)	Use TL1 LTAR from Table 10-1 for the soil type corresponding to the soil matrix, with a maximum LTAR of 0.8	Timed, Pressure Distribution ⁸	Minimum 3-foot deep Unlined sand filter	Minimum 3-foot deep Unlined Sand Filter	Minimum 2.5-foot deep Unlined Sand Filter	Minimum 2.5-foot deep Unlined Sand Filter	Minimum 2-foot deep Unlined Sand Filter

A minimum of 1' of sand must be installed between the edge of each A42 module and the sidewall of excavation. A minimum of 2' of sand shall be installed between the edges of parallel A42 modules. A minimum of 6" of sand must be installed at the beginning and end of each A42 module. Pumped system with 4 laterals at a total length of 56' long (see construction drawings).

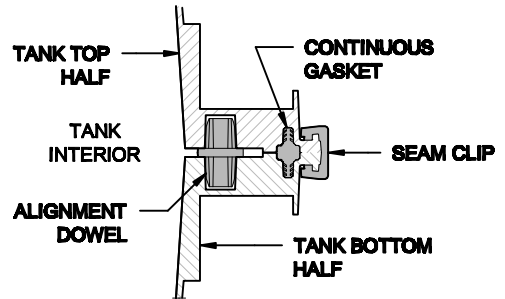
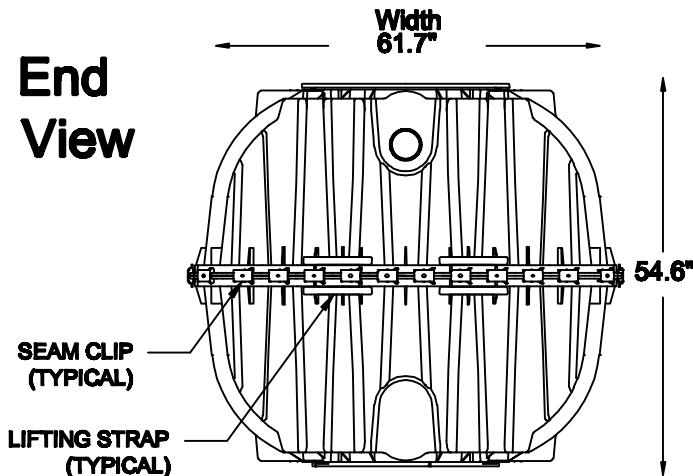
II. Construction Drawing:

Enclosed herewith is a drawing titled Onsite Wastewater Treatment System for the Guigley residence, dated January 08, 2024, which sets forth the details for construction of the system.

IM-540 Infiltrator® Poly Tank - 1CP with High Head Pump

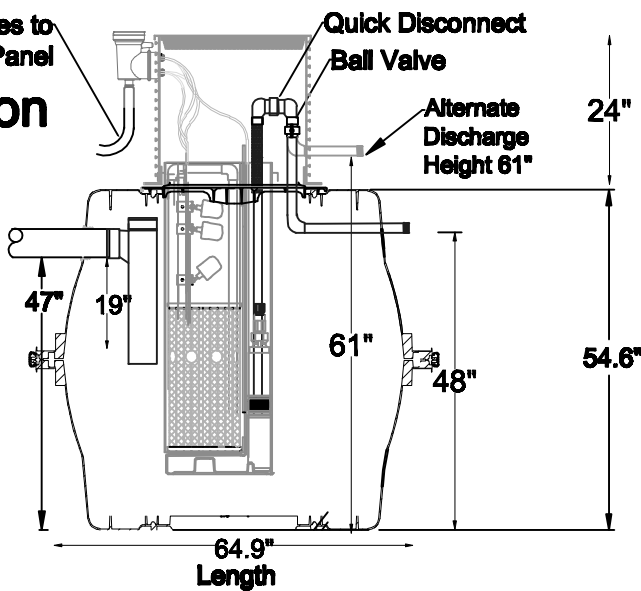
Item #
IM-540-1CP-HH

End View



Mid-Height Seam Section

Section View



NOTE: TANK EXTERIOR WIDTH IS 61.7"

DESIGN NOTES

- Compliant with CSA and IAPMO Standards
- Delivered complete with internal piping
- Control Panel to be mounted in sight line of tank
- Maximum burial depth is 48"
- Minimum burial depth is 6"
- Tank is not rated for vehicular traffic loading
- Exterior of manhole cover includes the following warning: "DANGER DO NOT ENTER: POISON GASES"

Service contracts available for maintenance.

Digging Specs	Invert		Dimensions			Net Capacity	Weight
	Inlet	Outlet	Length	Width	Height		
6' Long x 6' Wide 47" below inlet invert	47"	48" or 61"	64.9"	61.7"	78.6"	552 gallons	369 lbs



VALLEY PRECAST, Inc.
Buena Vista, Colorado

Phone: 719-395-6764
Fax: 719-395-3727
Website: www.valleyprecast.com
Email: frontdesk@valleyprecast.com

Pump Selection for a Pressurized System - Single Family Residence Project

Parameters

Discharge Assembly Size	1.00	inches
Transport Length	10.62	feet
Transport Pipe Class	40	
Transport Line Size	1.00	inches
Distributing Valve Model	None	
Max Elevation Lift	5	feet
Manifold Length	9	feet
Manifold Pipe Class	40	
Manifold Pipe Size	1.25	inches
Number of Laterals per Cell	4	
Lateral Length	56	feet
Lateral Pipe Class	40	
Lateral Pipe Size	1.25	inches
Orifice Size	1/8	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	0.43	gpm
Number of Orifices per Zone	60	
Total Flow Rate per Zone	26.0	gpm
Number of Laterals per Zone	4	
% Flow Differential 1st/Last Orifice	1.2	%
Transport Velocity	9.7	fps

Frictional Head Losses

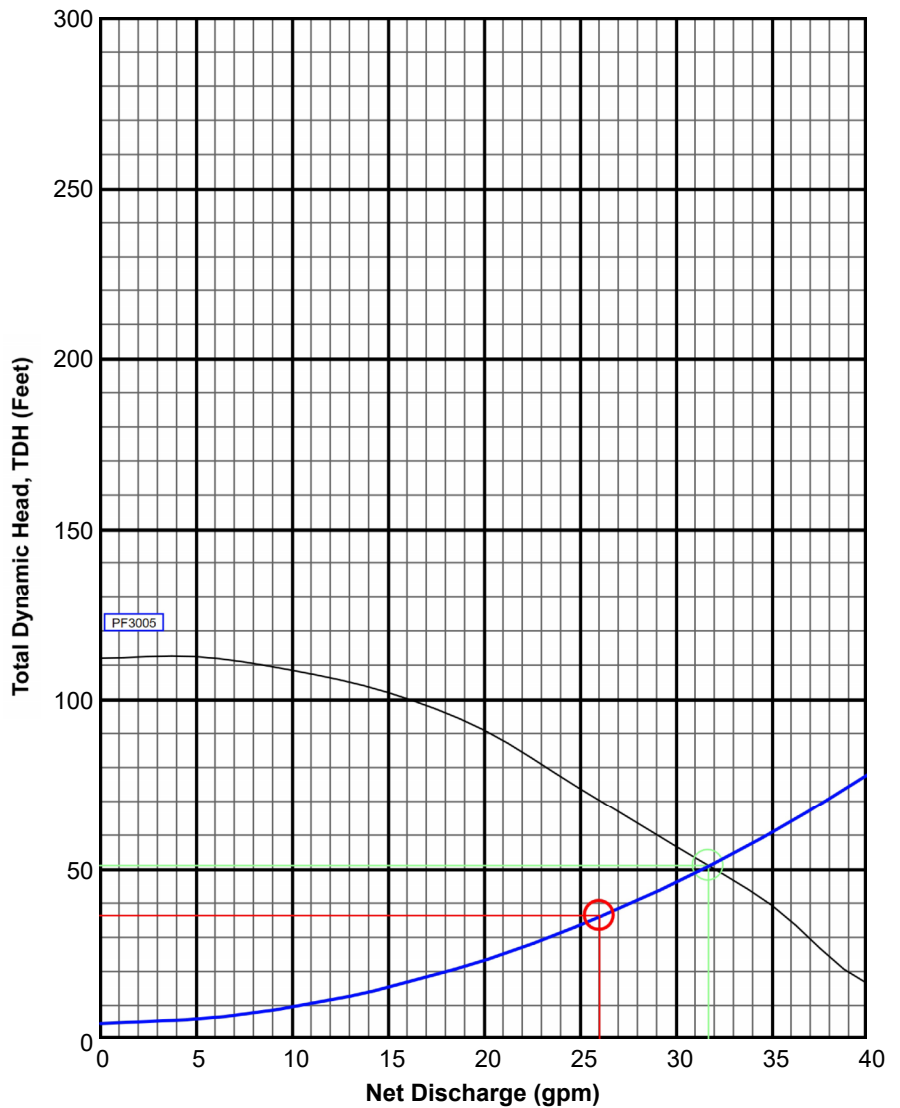
Loss through Discharge	22.4	feet
Loss in Transport	3.4	feet
Loss through Valve	0.0	feet
Loss in Manifold	0.2	feet
Loss in Laterals	0.2	feet
Loss through Flowmeter	0.0	feet
'Add-on' Friction Losses	0.0	feet

Pipe Volumes

Vol of Transport Line	0.5	gals
Vol of Manifold	0.7	gals
Vol of Laterals per Zone	17.4	gals
Total Volume	18.6	gals

Minimum Pump Requirements

Design Flow Rate	26.0	gpm
Total Dynamic Head	36.2	feet



PumpData

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

Legend

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

