El Paso County, CO Public Health
Prevent • Promote • Protect

Environmental Health
1675 W. Garden of the Gods Rd.,
Suite 2044
Colorado Springs, CO 80907
(719) 578-3199 *phone*
(719) 575-3188 *fax*
www.elpasocountyhealth.org

Onsite Wastewater Treatment System
Installation Permit

PERMIT DETAILS			
Permit No.: 137172	**Record ID:** ON0051463	**Issued:** October 9, 2022	**Expires:** October 9, 2023
SYSTEM INFORMATION			
OWTS Location: 16315 Rickenbacker Ave, Monument CO 80132			
Owner: Chris Jeub	**Schedule #:** 7127001011	**Permit Type:** New	
Proposed Use: Commercial	**No. of Bedrooms:** NA	**Design Flow (gpd):** 1200	
System Type: Gravity	**Treatment Level:** TL1	**Water Source:** Well	
PERMIT REQUIREMENTS			
Tank: 2500 **Pump Tank**: 500	**STA:** 2016 sq ft (168 Q4/ 134 Arc 36)	**Media:** Chamber/bed	
STA Depth: Maximum 48”	**Sand Filter:** No **Depth:** NA	**O&M Req:** No	
Design Document: GeoQuest	**Document ID#:** 22-0086	**Date:** 11.1.2022	

ADDITIONAL COMMENTS

- *Permit amended 11.27.2022*: based on change of location for premium sites – remove barn bathhouse and install individual bathrooms with a shared bathhouse near driveway. Does not change system sizing but may require a pump for N premium sites to additional OWTS tanks.
- An Engineered OWTS system to be installed on site due to installation OWTS supporting commercial campsites 4 plumbed (2 occupants per site @75 gpd) /4 non-plumbed (2 occupants per site @ 75 gpd), requiring a Tier II licensed installer.
- TIER II LICENSED INSTALLER MUST BE NAMED AND VERIFIED PRIOR TO FINAL APPROVAL OF SYSTEM.
- **FLOODWAY on property – FW crosses the N property line ~294’ from the NW property corner, crosses the S property line ~412’ from the SW property corner. STA appears to be outside the FP**
- Changes to approved design document must be submitted to EPCPH and design engineer prior to installation of changes
- All horizontal setbacks must be maintained through system installation. In addition, system must remain completely uncovered, including the tank size, for final inspection.
- The well must be installed at time of final inspection, or final approval will not be given until well installation is verified. Must maintain 100' set back to all wells on property or neighboring property.
- Engineered systems require the as built drawing and certification letter from the engineer be submitted to Public Health prior to final approval and Regional Building sign off
- Ensure that all work is completed prior to contacting and requesting final line for inspection, otherwise additional fees may be incurred.
- During excavation, if bedrock, groundwater, changes in soil type from that previously identified, or other notable soil changes are encountered, all excavation must cease and EPCPH is to be contacted for an evaluation to determine if additional tests are required
- Issuance of this permit allows construction of the system as proposed. It does not imply or guarantee final system installation approval. System design or construction changes may be required based upon changed or newly discovered site conditions.

This permit is issued in accordance with 25-10-106 Colorado Revised Statutes. The PERMIT EXPIRES upon completion/installation of the Onsite Wastewater Treatment System, or at the end of twelve (12) months from date of issue, whichever occurs first. If both a Building Permit and an Onsite Wastewater Treatment System Permit are issued for the same property and construction has not commenced prior to the expiration date of the Building Permit, the Onsite Wastewater Permit shall expire at the same time as the Building Permit. This permit is revocable if all stated requirements are not met. The Onsite Wastewater Treatment System must be installed by an El Paso County Licensed System Contractor, or the property owner.

The Health Officer shall assume no responsibility in case of failure or inadequacy of an Onsite Wastewater Treatment System, beyond consulting in good faith with the property owner or representative. Access to the property shall be authorized at reasonable time for the purpose of making such inspections as are necessary to determine compliance with the requirements of this law (permit).

Inspection request line: Call (719) 575-8699 before 3:00 p.m. the business day prior to the requested inspection date or 1:00 p.m. the business day prior to a holiday. There are NO final inspection on Wednesdays.

Kat McGarvy, M.S., R.E.H.S

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(719) 578-3188 *fax*
www.elpasocountyhealth.org

Commercial OWTS Application Review

System #: ON0051463 **Permit Type**: New

Property Address: 16315 Rickenbacker Ave, Monument CO 80132

Approvals Rcvd *(New permits only):* DSD: 8.31.2022

Floodplain: FP on property: YES Proposed system location outside FP: YES

Specialist: Kat McGarvy Date of Review: 10.9.2022

New/Major Repair/Modification: Site Evaluation date: 9.28.2022

Soil Report: Report date: 2.21.2022
Engineer: GeoQuest Job #: 22-0086
High Rock Content**:** N/A Soil Type: 2A LTAR: 0.5
Limiting Layer: Groundwater: NONE Bedrock: NONE

Design Document: Design signed: 22-0086
Engineer: GeoQuest Job # 3.7.2022
Commercial Facility Type: Campsite Design Flow: 1200

- *Design flows must be from table 6-2, submission of water data for active facilities or year of data from 3 similar facility types.*

Minimum Requirements:
Tank Capacity: Main: 2500 ☐ existing
Pump Specs: Tank Capacity: NA ☐ existing
Gal/dose: NA Flow(gpm): NA Total Dynamic Head: NA
STA Capacity:
Sq. Ft. (10-1): 2400 Sq. Ft. (10-2): 2880 Sq. Ft. (10-3): 2016 Sq. Ft. (with DV): NA
NDDS: Sq. Ft. (10-1): NA NDDS Factor: NA Sq. Ft. (NDDS adj): NA
Mound: LTAR (imp.): N/A Chamber adjt: NA Dist Area: NA Basal Area: NA
End slope: NA Up slope: NA Down slope: NA Greenbelt: NA

STA:
Distribution: Gravity Add. Components: NA
Media: Vault Configuration: NA Depth of Installation: NA NA

Comments: 2016 sq ft (168 Q4/ 134 Arc 36) Campsites: 4 plumbed (2 occupants/site) + 4 non-plumbed (2 occupants/site) 16 @ 75 gpd. FLOODWAY on property – FW crosses the N property line ~294’ from the NW property corner, crosses the S property line ~412’ from the SW property corner. STA appears to be outside the FP

EH Specialist: Kat McGarvy **Approved Date**: 10.9.2022

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ON-SITE WASTEWATER TREATMENT SYSTEM PERMIT APPLICATION

Submit application to HEASepticinfo@elpasoco.com

PROPERTY INFORMATION				
Applicant Name	Chris Jeub			
Property Address	16315 Rickenbacker Ave		City, State, Zip	Monument, CO 80132
Phone	719-660-5781	Email	chrisjeub@gmail.com	
Legal Description	LOT 2 BLK 1 VANS SUB			
Tax Schedule #	7127001011	Lot Size	6.44 acres	
Is the property gated?	☐ Yes ■ No Code:		Water Supply	■ Well ☐ Cistern ☐ Municipal
Proposed Use:	☐ Residential ☐ Multifamily ■ Commercial			Potential Number of Bedrooms: 8

OWNER INFORMATION			
Name	Chris Jeub	Phone	719-660-5781
Mailing Address	16315 Rickenbacker Ave	City, State, Zip	Monument, CO 80132
Email	chrisjeub@gmail.com		
General Contractor	Isaiah Jeub	Phone/Email	(719) 625-8268
System Installer	Maxus Escavating	Phone/Email	850-399-0620
All engineered-design systems *must* be installed by a Tier II licensed installer.			

PERMIT FEES AS ESTABLISHED BY EL PASO COUNTY BOARD OF HEALTH	
■ New Permit	$750.00 (EPCPH Charge) + $147.00 (EPC Planning Dept. Surcharge) + $23.00 (CDPHE Surcharge) = $920.00
Permit fee includes: Application design review, site evaluation, and 1 final inspection. Additional inspections incur additional fees	
☐ Modification Permit	$675.00 (EPCPH Charge) + $23.00 (CDPHE Surcharge) = $698.00
Permit fee includes: Application design review, site evaluation, and 1 final inspection. Additional inspections incur additional fees	
☐ Major Repair Permit	$535.00 (EPCPH Charge) + $23.00 (CDPHE Surcharge) = $558.00
Permit fee includes: Application design review, site evaluation, and 1 final inspection. Additional inspections incur additional fees	
☐ Minor Repair Permit	$245.00 (EPCPH Charge) + $23.00 (CDPHE Surcharge) = $268.00
Permit fee includes: Application review, 1 final inspection. Additional inspections incur additional fees	
All Payments are due at the time of application submittal; by check or major credit card (Visa / MC) Permits expire one year from the date of issuance, unless otherwise noted.	

REQUIRED: ADDITIONAL PROPERTY INFORMATION

System Type	■ Engineered Design ☐ Conventional Design	Number of Structure(s) to be connected:	4

Written Scope of Work:
Installation of new septic system as per engineers specifications and design criteria and El Paso County regulations.

Please provide directions to the property from a main highway:
Take exit Hwy 105 from I-25, head West down 2nd street. Turn left on Mitchell. Turn right on Arnold. Turn left on Fairchild. Turn left on Chennault. Turn right on Rickenbacker. Third house on the left.

- Property address or lot number must be clearly marked and visible from the road
- Profile excavation test pit and/or soil profile holes must be clearly marked
- Proposed and alternate soil treatment areas must be protected from compaction and disturbance
- Locked gates require the gate code or lock combination be provided on front of application

Failure to comply with the above information may result in an additional charge for a return trip.

COMPLETE APPLICATION INCLUDES

EPCPH will only accept submissions when all required components are included in submission.

■ Colorado Professional Engineer (P.E.) stamped soils report: 55147

Soils report: including at least 2 soil profile excavation pits, in accordance with section 8.5 A-F of OWTS regulations

■ Calculation/Design Worksheet

▣ Clear legible 8.5'x11' Design Document

Design document must include proposed and alternate locations, profile pit locations with respect to system layout, all setbacks to pertinent structures and features in table 7-1.

I certify that the information provided on this application is in compliance with the Chapter 8 Onsite Wastewater System (OWS) Regulations of the El Paso County Board of Health. I also authorize the assigned representative of El Paso County Public Health to enter onto this property in order to obtain information necessary for the issuance of a permit.

Applicant Signature: Chris Jeub _____ Date: Aug 1, 2022

Submit application to HEASepticinfo@elpasoco.com

GEOQUEST, LLC
6825 Silver Ponds Heights #101
Colorado Springs, CO 80908
(719) 481-4560

To Whom It May Concern,

Attached are the results of the Profile Pit Evaluation performed for your site. **Completion of the report does NOT automatically place you in the queue to complete a design.** We require the following information is provided to us prior to placing a job in the queue.

1. Accurate number of bedrooms either proposed or existing in the house. Be sure to include all rooms with closets.

2. Designs for new construction also requires submittal of a site plan. This shall include at a minimum the following: all property lines dimensioned with lengths and angles, accurate dimensions from the house to property lines and corners, proposed construction of all buildings, location of Well with dimensions from structures and property lines, location of driveway, drawings **MUST** be to Scale, and slope or topography lines. **Additional fees will be assessed for incomplete and unclear site plans.** A surveyor's CADD file is preferred (.DWG or .DXF). It is your responsibility to provide correct information. Additional fees will be assessed if any information changes.

3. Site plans that are provided as DWG / DXF Files are exempt from redrawing fees. PDF Files of Surveyor's Site Plans for New Builds **WILL** incur a $50 Redrawing Fee. Hand drawn Site Plans for New Builds **WILL** incur a $200-$400 Redrawing Fee and a site walk will be required. Septic Repair Designs do **NOT** incur Additional Fees.

Please read the evaluation to determine if the system for your site shall be designed by a licensed engineer or if a conventional design is allowed. If a conventional system is allowed, a design document is still required by the health department, this may be provided by an engineer, installer, or builder familiar with On-Site Wastewater Treatment System (OWTS) regulations. OWTS Designs and Record Drawings are done at an additional cost. Please contact the office for pricing. If installing in El Paso County, an Engineer's Record Drawing (additional fee) is required for final acceptance by the health department. If installing in a different county please verify with the installer who will be completing the Record Drawing. We are happy to complete this for an additional fee.

Per county and state regulations, the Soil Treatment Area (STA), commonly referred to as the leach field, shall be installed adjacent to the test pit locations. **Any alteration or deviation from the tested locations will require additional testing at an additional cost.**

The homeowner shall be made aware of the responsibilities of owning a septic system. Please contact your local health department for homeowner responsibilities and Do's and Don'ts.

Geoquest, LLC provides no warranty for the evaluation or design (should this be completed). This evaluation and design have been prepared in compliance with the state and the local governing public health department's regulations. However, the test procedures are limited in determining soil absorption across the proposed STA. Many factors contribute to soil absorption outside of our control as well as unknown water usage. It is important to follow proper OWTS installation practices to minimize risk.

Please feel free to contact us at (719) 481-4560, if you have any questions.

GEOQUEST, LLC
6825 Silver Ponds Heights #101
Colorado Springs, CO 80908
(719) 481-4560

PROFILE PIT EVALUATION

FOR

CHRISTOPHER JEUB

JOB #22-0086

Lot #2, Block #1,
Vans Subdivision,
16315 Rickenbacker Avenue,
El Paso County,
Colorado

Sincerely,

Douglas J Pretzer

Douglas J. Pretzer, P.E.
Civil Engineer

COLORADO LICENSED
DOUGLAS J PRETZER
55147
2/21/22
PROFESSIONAL ENGINEER
Douglas J Pretzer

PROFILE PIT FINDINGS

Enclosed are the results of the profile pit for the septic system to be installed at **Lot #2, Block #1, Vans Subdivision, 16315 Rickenbacker Avenue, El Paso County, Colorado.** The location of the test pits was determined by Christopher Jeub. The residence will not be on a public water system. The number of bedrooms in the design for the residence is unknown. Due to the natural slope of the property, the entire system will feed to the east at approximately 15% at least 20 feet. All applicable portions of the El Paso County Public Health Department Onsite Wastewater Treatment System Regulations (OWTS) must be complied with for the installation of the treatment system.

The inspection was performed on February 4, 2022, in accordance with Table 10-1 of the **E.P.C.P.H. OWTS Regulations.**

Soil Profile #1:

0 to 4" - Topsoil - loam, organic composition.

4" to 8' - USDA soil texture sandy loam, soil type 2A, structure shape massive, structure grade 0, non-cemented, LTAR 0.50, dark brown in color, 10 YR 3/3, 18% rock.

Soil Profile #2:

0 to 4" - Topsoil - loam, organic composition.

4" to 8' - USDA soil texture sandy loam, soil type 2A, structure shape massive, structure grade 0, non-cemented, LTAR 0.50, very dark grayish brown in color, 10 YR 3/2, 15% rock.

Groundwater was not encountered during the inspection. Bedrock was not encountered during the inspection. No known wells were observed within 100 feet of the proposed system. **All setbacks shall conform to county regulations.**

Due to a multi-family system being required, the septic system to be installed on this site shall be designed by a Colorado Licensed Engineer. Based on the observed conditions, we feel a design based on an LTAR of 0.50 GPD/SF (USDA 2A, treatment soil, treatment level 1) is reasonable. Maximum depth of the installation shall not be deeper than 4 feet below the existing grade.

If during construction of the field itself, subsurface conditions change considerably or if the location of the proposed field changes, this office shall be notified to determine whether the conditions are adequate for the system as designed or whether a new system needs to be designed.

Weather conditions at the time of the test consisted of clear skies with freezing temperatures.

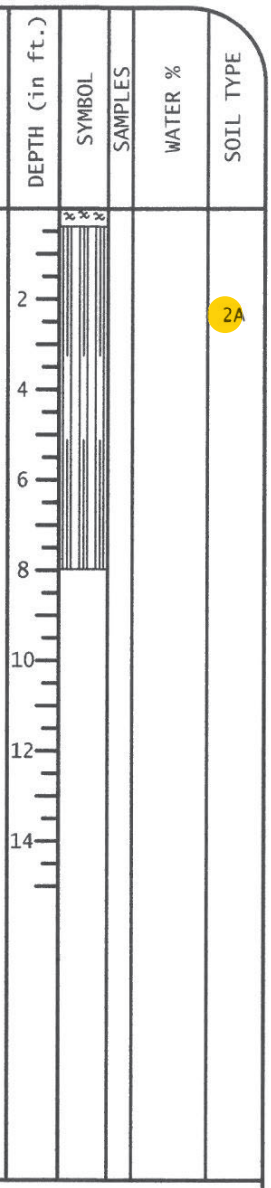
PROFILE PIT LOG - Profile Pit #1

JOB#: 22-086
DATE EVALUATED: 04 February 2022
EQUIPMENT USED: MINI-EXCAVATOR

0"-4" **TOPSOIL**
Loam
Organic Composition

4"- 8' **Sand**
Fine-coarse Grained
High Density
Low-moderate Moisture Content
Low-moderate Clay Content
Low-moderate Cohesion
Low-moderate Plasticity
Dark Brown Color
10YR 3/3

USDA Soil Texture: Sandy Loam
USDA Soil Type: 2A
USDA Structure Shape: Massive
USDA Structure Grade: 0
Cementation Class: Non-cemented
Long Term Acceptance Rate (LTAR, Treatment Level 1):0.50
18% Rock



LTAR to be Used for OWTS Sizing: **0.50GPD/SF (USDA Type 2A, Treatment soil, Treatment Level 1)**
Depth to Groundwater (Permanent or Seasonal): Not Encountered
Depth to Bedrock and Type: Not Encountered
Depth to Proposed Infiltrative Surface from Ground Surface: Unknown (Maximum 4 ft Below Existing Ground Surface)
Soil Treatment Area Slope and Direction: East @ 15%

Note: See El Paso County Board of Health Regulation Chapter 8: On-Site Wastewater Treatments Systems (OWTS) Regulations for Additional Information. Refer to Table 10-1 for Corresponding LTAR if Treatment Level 2, 2N, 3, or 3N will be Implemented in the Design of the OWTS. System Sizing Depends on a Number of Factors (i.e. LTAR, # of Bedrooms, Type of Soil Treatment Area (STA), Method of Transfer to the STA (Gravity, Dosed, or Pressure Dosed), and Type of Storage / Distribution Media Used in the STA)

Project: 22-0086	Project Name and Address
Sheet: 1 of 2	Chris Jeub
Date: 11 Feb 2022	16315 Rickenbacker Avenue
	Lot 2, Block 1
	Vans Subdivision
Scale: 1/4" = 1'	Sch. No. 7127001011
Drawn by: rah	El Paso County, Colorado
Checked by: djp	

GEOQUEST, LLC.
6825 SILVER PONDS HEIGHTS
SUITE 101
COLORADO SPRINGS, CO
80908

OFFICE: (719) 481-4560
FAX: (719) 481-9204

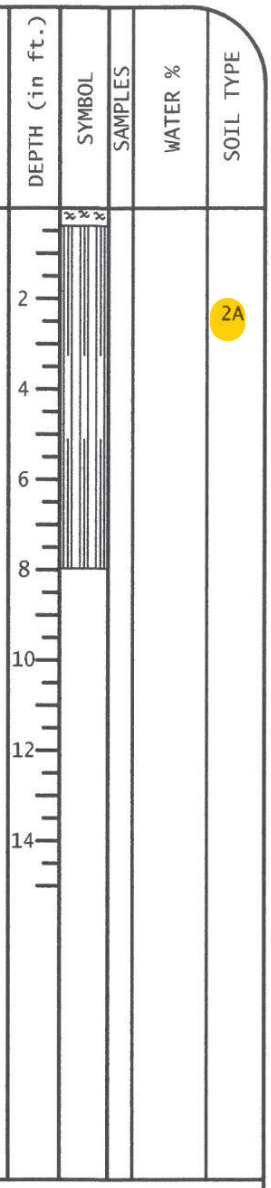
PROFILE PIT LOG - Profile Pit #2

JOB#: 22-086
DATE EVALUATED: 04 February 2022
EQUIPMENT USED: MINI-EXCAVATOR

0"-4" **TOPSOIL**
Loam
Organic Composition

4"- 8' **Sand**
Fine-coarse Grained
High Density
Low-moderate Moisture Content
Low-moderate Clay Content
Low-moderate Cohesion
Low-moderate Plasticity
Very Dark Grayish Brown Color
10YR 3/2

USDA Soil Texture: Sandy Loam
USDA Soil Type: 2A
USDA Structure Shape: Massive
USDA Structure Grade: 0
Cementation Class: Non-cemented
Long Term Acceptance Rate (LTAR, Treatment Level 1):0.50
15% Rock



LTAR to be Used for OWTS Sizing: **0.50GPD/SF (USDA Type 2A, Treatment soil, Treatment Level 1)**
Depth to Groundwater (Permanent or Seasonal): Not Encountered
Depth to Bedrock and Type: Not Encountered
Depth to Proposed Infiltrative Surface from Ground Surface: Unknown (Maximum 4 ft Below Existing Ground Surface)
Soil Treatment Area Slope and Direction: East @ 15%

Note: See El Paso County Board of Health Regulation Chapter 8: On-Site Wastewater Treatments Systems (OWTS) Regulations for Additional Information. Refer to Table 10-1 for Corresponding LTAR if Treatment Level 2, 2N, 3, or 3N will be Implemented in the Design of the OWTS. System Sizing Depends on a Number of Factors (i.e. LTAR, # of Bedrooms, Type of Soil Treatment Area (STA), Method of Transfer to the STA (Gravity, Dosed, or Pressure Dosed), and Type of Storage / Distribution Media Used in the STA)

Project: 22-0086
Sheet: 2 of 2
Date: 11 Feb 2022
Scale: 1/4" = 1'
Drawn by: rah
Checked by: djp

Project Name and Address

Chris Jeub

16315 Rickenbacker Avenue
Lot 2, Block 1
Vans Subdivision
Sch. No. 7127001011
El Paso County, Colorado

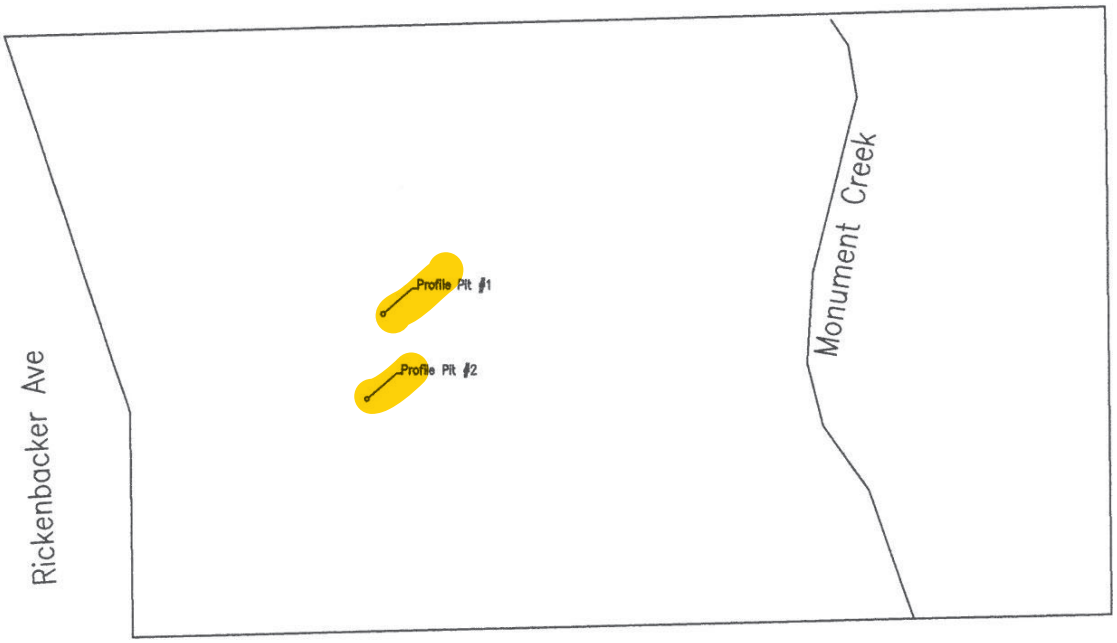
GEOQUEST, LLC.
6825 SILVER PONDS HEIGHTS
SUITE 101
COLORADO SPRINGS, CO
80908

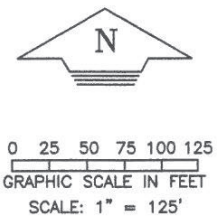
OFFICE: (719) 481-4560
FAX: (719) 481-9204

GEOQUEST LLC

SITE MAP

Lot 2, Block 1
Vans Subdivision
16315 Rickenbacker Avenue
El Paso County
Colorado
Job #22-0086





*Location from Southwest Lot Corner to Profile Pit #1: S. 45° E. - 346'
Location from Profile Pit #1 to Profile Pit #2: N. 12° E. - 60'
GPS Coordinates Profile Pit #1: N. 39° 04' 5.0" , W. 104° 52' 28.9"
GPS Coordinates Profile Pit #2: N. 39° 04' 5.5" , W. 104° 52' 28.8"

Cover Page

CALCULATIONS (New OWTS):
Multi-Family Camping Site
Up to 4 Plumbed "Premium" Campsites (2 Occupants/Site)
Bathhouse Serving up to 4 "Off-Grid" Campsite (2 Occupants/Site)
n=16 Occupants
q=75 GPD/Occupant
NO SEWER CONNECTION FOR AGRICULTURAL BARN.

LTAR = 0.50 Gallons per Day per Square Foot (GPD/SF).
USDA Soil Type 2A per Profile Pit 2/4/2022.

Q = (16 Occupants)(75 GPD/Occupant)
Q = 1,200.0 GPD

$$A = \frac{Q}{LTAR} = \frac{1{,}200.0\ GPD}{0.50\ GPD/SF}$$

A = 2,400.0 SF

Gravity Fed Chamber Beds:
A = (2,400.0 SF)(1.2)(0.7)
A = 2,016.0 SF Required

CHAMBER BED SYSTEM (Gravity Fed):
Infiltrator Systems Inc. Quick 4 Standard Chambers
Chambers = SF RQD / 12.0 SF per Chamber
Chambers = 2,016.0 SF / 12.0 SF = Min. 168 Chambers
Install 2 Zones: 4 Rows x 21 Chambers Long
Chambers Provided = 168 Total
Total Contact Area = 2,016.0 SF Actual
Total Contact Area = 2,016.0 SF Required

Note: Use of Alternative Chambers is Acceptable.
For ARC 36 Standard Chambers (15.0 SF / Chamber, Min. 135 Chambers). Install 2 Zones with 4 Rows of 17 Chambers (136 Total). Contact Engineer for Clarification.

MAXIMUM DEPTH:
48" As Measured on the Up-Hill Side of the Excavation

TANK SIZES:
Minimum Tank Capacity = Min. 2,500 Gallons. USE 1,500 Gallon (One-Compartment) + 1,000 Gallon (One-Compartment). EPCPH Approved Effluent Filter on Outlet.
Lift Station = 1,000 Gallon (Two-Compartment) + 500 Gallon Pump Chamber.

INSPECTIONS REQUIRED ARE AS FOLLOWS:
1.) Engineer Will Inspect the Installation of All OWTS Components (i.e. All Plumbing, Tanks, Pump Chamber, STA, etc.) Prior to Backfill.
2.) Engineer to Inspect the Soil Treatment Area After Backfill to Insure Min. Cover and Proper Drainage Away from Soil Treatment Area.
Please Notify this Office Min. 24 Hours Prior to Inspection.

PIPE NOTES:
Provide 2.0% Min. Grade on Pipe to Septic Tank. Provide 2.0% Min. Grade on Pipe to the Soil Treatment Area.

All Bends Limited to 45 Degree Ells or Long Sweep Quarter Bends. Areas Under Driveways Shall Be Protected as Per El Paso County Health Department Regulations.

Building Sewer Clean-Outs Shall Be Installed within 5 FT of the Structure and at Intervals Not to Exceed 100' in Straight Runs and When the Cumulative Change in Direction Exceeds 135 Degrees.

FINAL GRADING NOTES:
Soil Treatment Area Shall Be Crowned and Covered with a Minimum of 6" of Select Topsoil to Provide a Base for Good Vegetative Cover.

Contact Soil Conservation Service or County Extension Agent for Vegetation Best Suited for the Area. Grasses are Best. Trees and Shrubs May Damage/Block Pipes. Vegetation Shall Be Maintained and Mowed to Prevent Formation of Bio-Matting. Do Not Pave Over the Soil Treatment Area.

Provide Drainage Swale Around Uphill Side of the Soil Treatment Area.

HOMEOWNER RESPONSIBILITY:
- Have Septic Tank Pump Every 3-5 Years (or As Needed, Contact Licensed Pumper)
- Have OWTS Inspected Annually
  -Clean Effluent Filter
  -Check Water Levels in Inspection Ports
- Plant Native Grass Over STA (No Plants with Roots or that Require Irrigation)
- Don't Pour Chemicals Down Drain
- Don't Throw Trash in Toilet (Minimize Toilet Paper Consumption)
- Use of Garbage Disposal is Discouraged
- Conserve Water and Repair Leaking Fixtures

This is NOT a Complete List (Contact Local Health Department and EPA List of Septic "Do's and Don'ts"

GENERAL NOTES:
All Work per El Paso County Board of Health Regulations Chapter 8: On-Site Wastewater Treatment Systems (OWTS) Criteria.

All Setbacks Shall Conform to El Paso County Regulations (See Table 7-1 in the Regulations for Additional Information). Contractor/Homeowner Must Verify All Setbacks and Obtain Utility Clearances Prior to Construction.

Contractor/Homeowner is Responsible for Permit. Contractor/Homeowner Must Obtain Approval of Engineered OWTS from the El Paso County Health Department.

All Bends Limited to 45 Degree Ells or Long Sweep Quarter Bends. Areas Under Driveways Shall Be Protected as Per El Paso County Health Department Regulations.

Building Sewer Clean-Outs Shall Be Installed within 5 FT of the Structure and at Intervals Not to Exceed 100 FT in Straight Runs, Upstream at Each Change of Direction Greater Than 45°, and at Any Combination of Bends Greater Than 45° within a 40 FT Section of Building Sewer.

Grade Surrounding Area to Drain Away from the Soil Treatment Area (STA).

Paving, Planting of Trees/Shrubs, Irrigation, Vehicular Traffic or Hoofed Animal Traffic of Any Kind Over the STA may Cause Premature Failure and is Prohibited.

Refer to Sheet 2, 3, 4, and 5 for Additional Details and Information.

GEOQUEST, LLC.
5072 LIST DRIVE
COLORADO SPRINGS,
COLORADO 80919

OFFICE: (719) 481-4560

COLORADO LICENSED
DOUGLAS J PRETZER
55147
11/1/22
PROFESSIONAL ENGINEER

Project: 22-0086	Project Name and Address
Sheet: 1 of 5	Christopher Jeub
Date: 7 Mar 2022	16315 Rickenbacker Avenue
Revised: 1 Nov 2022	Lot #2, Block #1,
Drawn by: djp	Vans Subdivision,
Checked by: djp	Sch. No. 7127001011
	El Paso County, Colorado

CHAMBER BED SYSTEM (Gravity Fed):
Infiltrator Systems Inc. Quick 4 Standard Chambers
Chambers = SF RQD / 12.0 SF per Chamber
Chambers = 2,016.0 SF / 12.0 SF = Min. 168 Chambers
Install 2 Zones: 4 Rows x 21 Chambers Long
Chambers Provided = 168 Total
Total Contact Area = 2,016.0 SF Actual
Total Contact Area = 2,016.0 SF Required

Note: Use of Alternative Chambers is Acceptable. For ARC 36 Standard Chambers (15.0 SF / Chamber, Min. 135 Chambers). Install 2 Zones with 4 Rows of 17 Chambers (136 Total). Contact Engineer for Clarification.

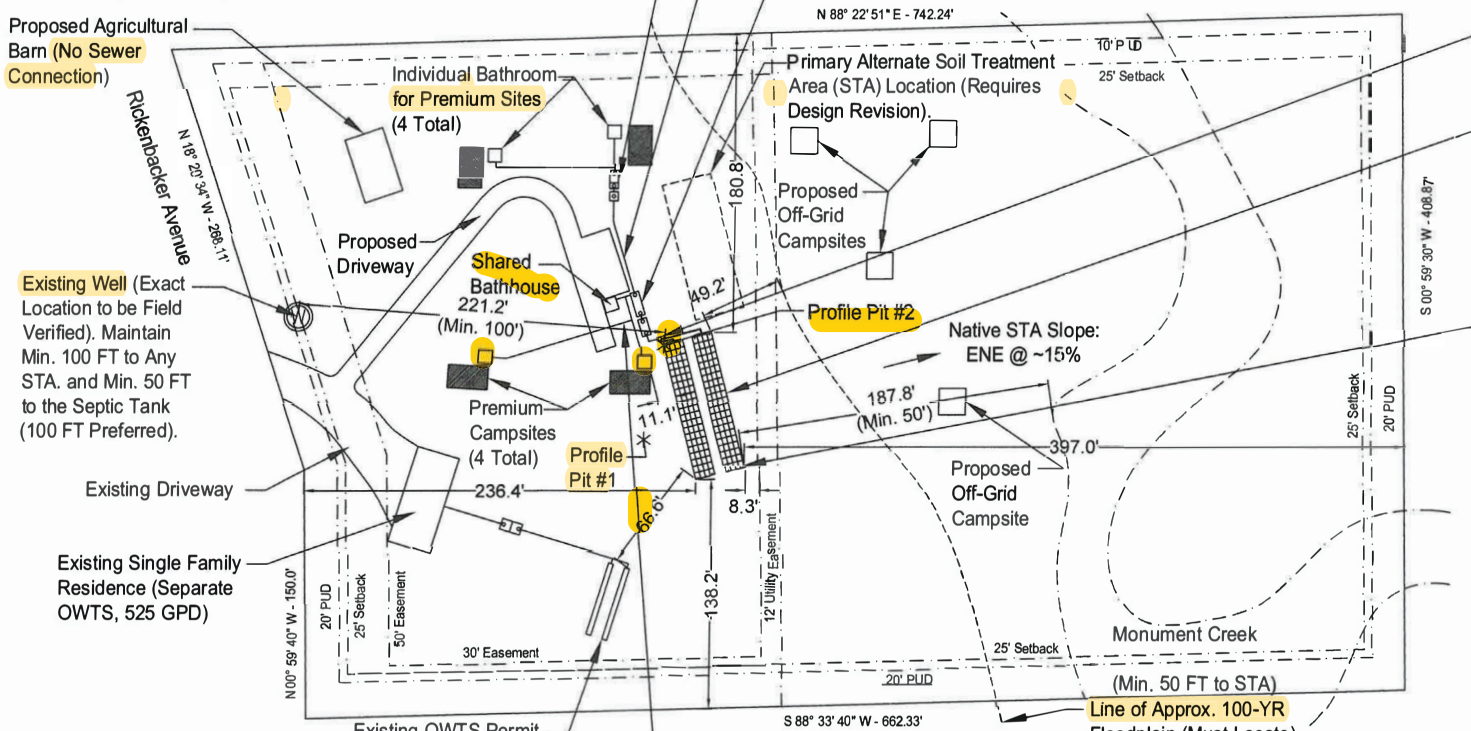
1060 Gal. Two-Compartment Infiltrator Septic Tank. Inlet Approx. 24" Below Existing Grade. Risers to Grade. Install EPCPH Approved Effluent Filter on Outlet (Requires Regular Maintenance). PLUS 540 Gal Infiltrator Pump Chamber. See Pump Chamber Detail on Page 5. Inlet Approx. 30" Below Existing Grade. Exact Location to be Field Determined.

2"Ø Sch. 40 PVC from Pump Chamber to Main Septic Tank. Install Air Relief Valve at the Highest Point in the Line from Pump to Tank. Transition to 4"Ø Sch. 40 PVC Before Inlet to Main Septic Tank. See Page 5 for Detail.

1530 Gal. One-Compartment Infiltrator Septic Tank PLUS 1060 Gal. One-Compartment Infiltrator Septic Tank w/ EPCPH Approved Effluent Filter on Outlet (Requires Regular Maintenance). Inlet Approx. 24" Below Existing Grade. Risers to Grade with Secure Access Cover (Water Tight, Min. 3" Above Finish Grade, Typ. All Septic Tank Access Locations). Exact Location to be Field Determined.

Minor Rotation or Curvature (ie. Less Than 15°) of the Soil Treatment Area (STA) Beds to Best Fit the Site Topography is Acceptable (i.e. Parallel to Site Contours). STA shall Maintain the Approximate Orientation Shown w/ Respect to Buildings and Lot Lines. Contact Engineer for Clarification.

Install Drainage Swale Between the House and Soil Treatment Area to Ensure Surface Runoff is Diverted Around the STA. Downspouts near the STA Shall Discharge into the Swale or Extended Beyond the STA.



Distribution Box w/ Speed Levelers to Ensure Equal Distribution. Install a Secure Access Riser to Grade to Allow for Future Speed Leveler Adjustment.

Quick4 Plus Standard Chambers:
34" W x 48" L x 12" H Each
2 Zones: 4 Rows x 21 Chambers Long (168 Total).
Max. Depth of Installation 48" Below Native Grade (As Measured on the Uphill Side). See STA Layout and Cross-Section for Additional Detail and Clarification.

Inspection Port / Vent at Each Corner of Each Bed (Typ. of 8 Total). See Detail on Page 3 for Additional Information.

OWTS to be Roped Off (Caution Tape or Temporary Construction Fencing is Acceptable) Prior To and During Construction to Prevent Construction Traffic from Compacting Surface Soils and Protect the STA from Traffic After Installation.

4" Ø Sch. 40 PVC Solid Pipe from Each Bathroom to the Septic Tank, with Cleanouts within 5 FT of Each Structure and at Intervals Not to Exceed 100 FT in Straight Runs, Upstream at Each Change of Direction Greater Than 45°, and at Any Combination of Bends Greater Than 45° within a 40 FT Section of Building Sewer. Maintain 2.0% Min. Grade on Pipe Feeding the Septic Tank. When Pipes Merge Use Sanitary Tee or Wye Fittings.

✳Indicates Geoquest, LLC. Profile Pit Test Locations
Location from Northwest Lot Corner to Profile Pit #1: S. 45° E. - 346'
Location from Profile Pit #1 to Profile Pit #2: N. 12° E. - 60'
GPS Coordinates Profile Pit #1: N. 39° 04' 5.0" , W. 104° 52' 28.9"
GPS Coordinates Profile Pit #2: N. 39° 05' 5.5" , W. 104° 52' 28.8"

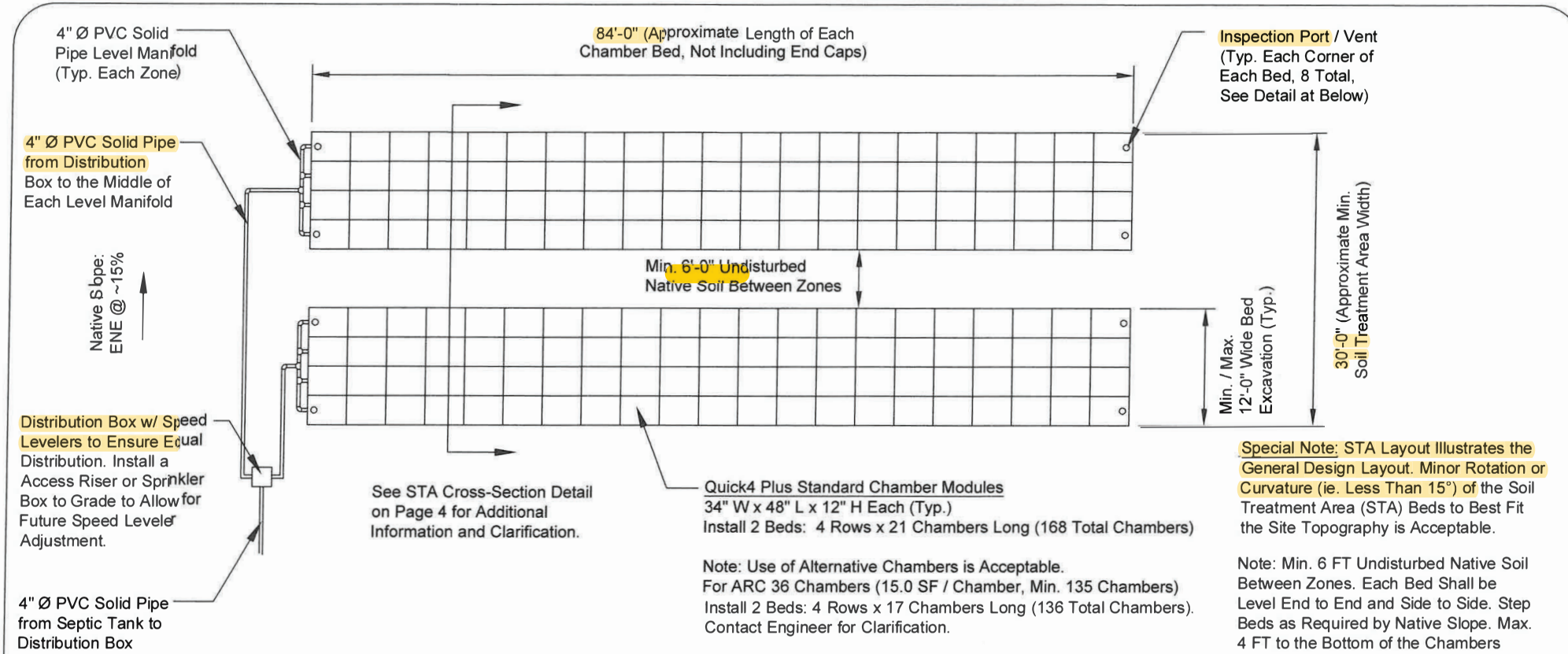
N
0 25 50 75
GRAPHIC SCALE IN FEET
SCALE: 1" = 75'

Site Plan

GEOQUEST, LLC.
5072 LIST DRIVE
COLORADO SPRINGS, COLORADO 80919
OFFICE: (719) 481-4560

COLORADO LICENSED
DOUGLAS J PRETZER
55147
11/1/22
PROFESSIONAL ENGINEER

Project: 22-0086	Project Name and Address
Sheet: 2 of 5	Christopher Jeub
Date: 7 Mar 2022	16315 Rickenbacker Avenue
Revised: 1 Nov 2022	Lot #2, Block #1,
Drawn by: djp	Vans Subdivision,
Checked by: djp	Sch. No. 7127001011
	El Paso County, Colorado

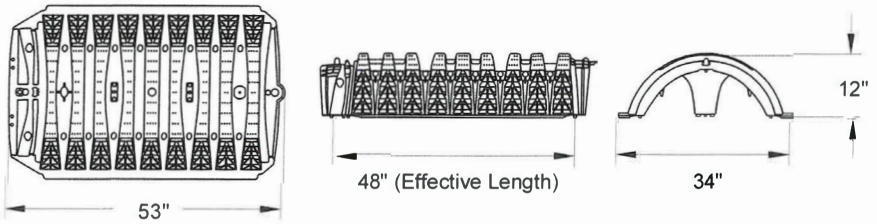


Special Note: STA Layout Illustrates the General Design Layout. Minor Rotation or Curvature (ie. Less Than 15°) of the Soil Treatment Area (STA) Beds to Best Fit the Site Topography is Acceptable.

Note: Min. 6 FT Undisturbed Native Soil Between Zones. Each Bed Shall be Level End to End and Side to Side. Step Beds as Required by Native Slope. Max. 4 FT to the Bottom of the Chambers from Finished Grade as Measured on the Uphill Side of Each Chamber Bed.

Soil Treatment Area (STA) Layout (Chamber Beds)

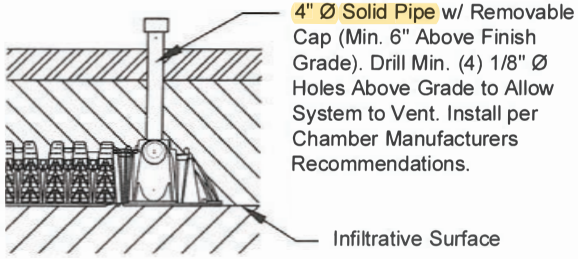
SCALE: 1" = 10'



TOP VIEW | SIDE VIEW | END VIEW

Quick 4 Plus Standard Details

Not to Scale



Inspection Port / Vent Detail

Not to Scale

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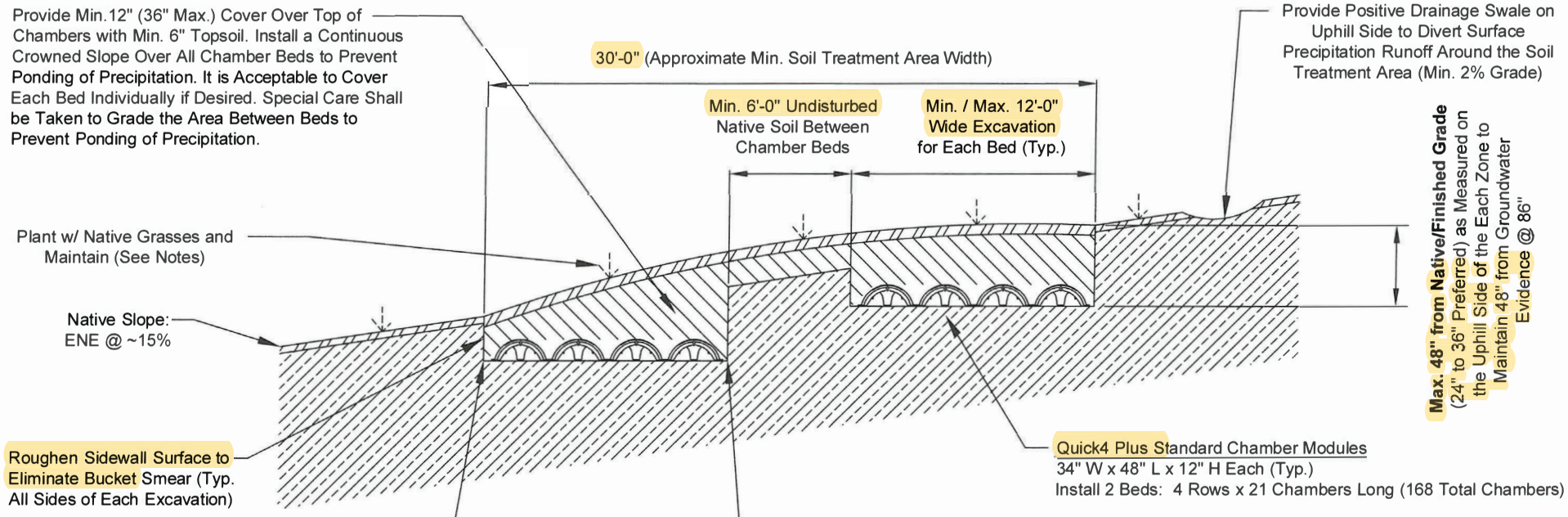

Note: Use of Alternative Chambers is Acceptable.
For ARC 36 Chambers (15.0 SF / Chamber, Min. 135 Chambers)
Install 2 Beds: 4 Rows x 17 Chambers Long (136 Total Chambers).
Contact Engineer for Clarification.

Remove All Native Topsoil within STA Footprint and Stockpile for Re-Use (Approx. 4" Native), then Remove Approx. 20"-32" Native Material in the Area Each Chamber Bed. Scarify Bottom of Each Bed and Eliminate Bucket Smear on All Excavation Sidewalls (Prior to Placing Chambers, Typ. Each Bed). Max. 48" to the Bottom of the Chambers from Finished Grade as Measured on the Uphill Side of Each Chamber Bed.

Note: Min. 6 FT Undisturbed Native Soil Between Zones. Each Bed Shall be Level End to End and Side to Side. Step Beds as Required by Native Slope. Max. 48" to the Bottom of the Chambers from Finished Grade as Measured on the Uphill Side of Each Chamber Bed.

Special Note: STA Layout Illustrates the General Design Layout. Minor Rotation or Curvature (ie. Less Than 15°) of the Soil Treatment Area (STA) Beds to Best Fit the Site Topography is Acceptable.

Soil Treatment Area (STA) Cross-Section (Chamber Beds)

Not to Scale

Topsoil (Min. 6" on Final Cover)
Native Topsoil (Approx. 4", Remove All from STA Footprint and Stockpile for Re-Use on Final Cover)

Approved Material to Provide Cover (Min. 12", Max. 36" Total, Including Topsoil)

Native Soil - Sandy Loam (USDA 2A, Approx. 4" - 8' Below Existing Grade)

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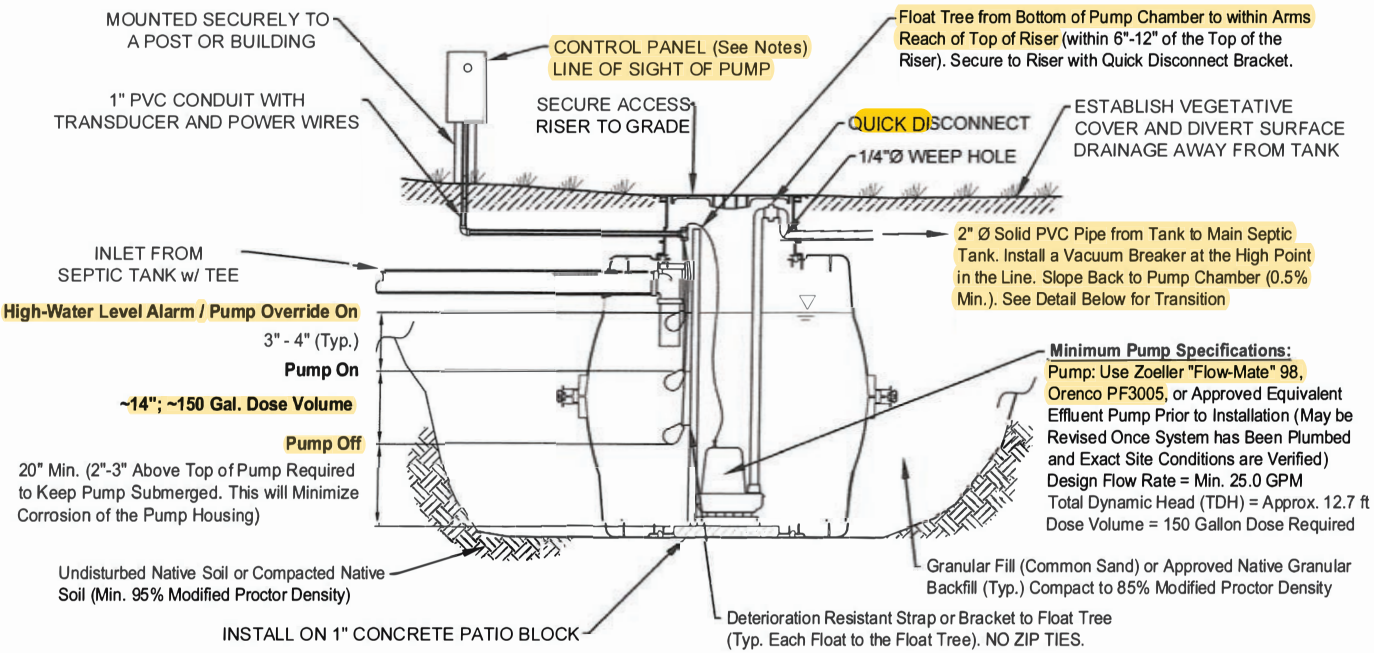
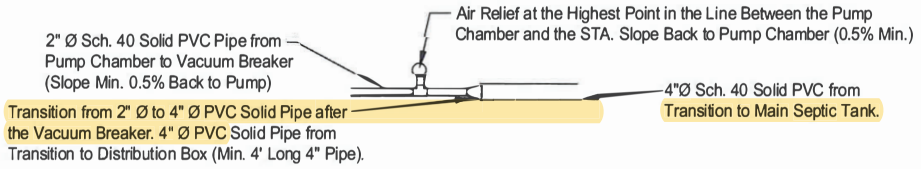


IM-540 Pump Chamber Cross Section

Not to Scale



Transport Pump Transition Detail

Not to Scale

Electrical Code Requirements: All Electrical Work, Equipment, and Material Shall Comply with the Requirements of the Currently Applicable National Electrical Code as Designated by the State Electrical Board Rules and Regulations (3 CCR 710-1) on the Date of the Permit. The Electrical Installer Shall Contact the Electrical Inspector for the Location where the OWTS is Constructed. All Electrical Components Shall be Protected from Moisture and Corrosive Gases. Special Care Shall be Taken to Ensure the Electrical Requirements of Each Component Meet Manufacturer Specifications (i.e. Voltage and Amperage).

1. All Wire Splices Shall be Enclosed in a National Electrical Manufacturers Association (NEMA) 4x Splice Box OR Control Panel. The Splice Box or Control Panel Shall be Placed in an Accessible Location Positioned Outside of the Tank Riser.
2. All Wires Shall be Spliced with Corrosion-Resistant, Watertight Connectors. **NO WIRE SPLICES ARE ALLOWED WITHIN THE PUMP CHAMBER OR RISER.**
3. Conduits Shall be Sealed to Prevent Gases from Entering the Splice Box or the Control Panel (if System is so Equipped) and Electrical panel.
4. A Means to Disconnect the House Power Supply to OWTS Components Shall be Provided at the Splice Box or at the Pump Control Panel (if System is so Equipped).
5. The Branch Circuit Wire from the Building to the Splice Box or Control Panel Shall be a Minimum of 24" Below the Ground Surface. Lines Buried Less than 24" are Allowed, but Will be Required to be in Conduit or have Ground Fault Protection on the Circuit. Conduit from the Spice Box or Control Panel to the House is Strongly Recommended for All Wiring.
6. Conduit Risers for Physical Protection Must Extend Min. 18" Below Finish Grade.

Best Practices Guidelines: The Following "Best Practices" are Intended to Facilitate Maintenance and Servicing of the Electrical Components Associated with Lift Stations, Dosing Systems, and Treatment Units that are Part of an OWTS.

1. The "Quick Disconnect" for the Pump Discharge pipe (i.e. Union) Shall be Located within 6"-12" of the Top of the Riser(s). Electrical Lines at the Septic Tank, Dosing Tank, or Treatment Unit Must be Placed in such a Manner as to Protect them from Damage During Backfill. Conduit from the Spice Box or Control Panel to the House is Strongly Recommended for All Wiring.
2. The Floats Shall be Secured to a Separate Float Tree with Approved Connecting Straps or Brackets that will Remain Secure Underwater and Not Deteriorate. Electrical Tape is Not Acceptable. Top of Float Tree to be within 6" - 12" of the Top of the Lift Station, Dosing System Tank or Treatment Unit Riser.
3. If a Separate Riser is Used, it Shall be Secured to the Tank to Maintain the Riser in an Upright and Plumb Position.
4. Control Panels, if Used, Shall be Placed within "Line of Sight" of the Pump.
5. The Alarm, Pump Control Floats, and Pump Shall be Placed on a Separate Dedicated Circuits

CONTROL PANEL AND ALARM: A Manual Pump Run Switch is Required. A Control Panel is the Most Common Device to Fulfill these Requirements (as well as the Alarm System). We Recommend the use of the Orenco MVP, Aquaworkx IPC, SJE-Rhombus or Approved Equivalent Control Panel Equipped with a Manual Pump Run Switch. Engineer to Approve Prior to Installation.

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