ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599

August 22, 2024

Runge Architecture
5315 Germaine Ct
Colorado Springs, CO 80919

Attn: Chuck Runge

Re: OWTS Observation – Final Letter
7530 Mohawk Road
Lot 4, Block 2, Pawnee Rancheros, Filing 1
El Paso County, Colorado
Entech Job No. 230493

Dear Mr. Runge:

As requested, personnel of Entech Engineering, Inc. observed the installation of the on-site wastewater treatment system (OWTS) at the address referenced above. The purpose of our visits was to observe the excavation, septic tank excavation and installation, absorption field installation, pipe installation, air release valve, automatic multi-zone valve manifolds, and the final cover. Reference is made to the On-site Wastewater System Plan dated July 10, 2023, revised November 2, 2023, prepared by Entech Engineering, Inc., Entech Job No. 230493. The site observations were conducted May 2, 2024 through July 2, 2024.

Observations of the OWTS installation were as listed below:

- **May 2, 2024 –** Excavation observation. Observed the bed excavations, four (4) 60-feet by 6-feet by approximately 3.0-feet deep excavations prior to sand placement. Observed one (1) 1,500-gallon concrete two-compartment septic tank and a 500-gallon poly pump chamber.

- **June 21, 2024 –** Unburied observation. Observed the completed beds with lateral pipe laid out on an average 24-inch thick sand filter. Verified imported secondary sand and took sample for sieve analysis (Figure 1). The sample appears to be in general compliance with the El Paso County requirements for secondary sand. Four zones with 30 Quick4 infiltrators per zone. Observed orifices every 36-inches in the 2 and 10 o'clock positions per plan. One (1) 4-inch inspection port at each corner of the beds and one (1) 1.5-inch cleanout for each lateral to extend above grade or into landscaping covers flush with grade. The Zoeller Model 152, 1/2-hp pump and SJE Rhombus control panel including pump-on, pump-off, high water alarm float switches and event run-time counters were installed at the time of this observation

    - The Soil Treatment Area (STA) is approximately 60 feet in length and approximately 42-feet in width;
    - Four (4) beds, four (4) zones, laterals 60 feet in length. Laterals are 1.5-inch Sch. 40 PVC;
    - One (1) 1,500-gallon, concrete septic tank with effluent filter, two risers, 48-inch average riser height;
    - 500-gallon poly chamber, one riser, 48-inch average riser height;

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- Zoeller Model 152 1/2-hp pump and SJE Rhombus control panel including pump-on, pump-off, high water alarm float switches and event and run-time counters;
- System piping and treatment field inspection ports had been installed; 4" SCH.40 PVC pipe for sewer service line, and 1.5-inch Sch. 40 PVC pipe for the pressure distribution and lateral piping;
- One Automatic Multi-Zone valve to direct flow to one zone at a time;
- Air vacuum release valve located at system highpoint in pump chamber;

- **July 2, 2024** – Observed final grading of STA. Observed completed system. 4-inch inspection ports and 1.5-inch cleanouts extend at least 6-inches above final ground surface or into landscaping covers, flush with grade. A swale was observed during our observation at the uphill side of the STA to divert runoff around the STA. The Well was not installed at the time of our observations.

An as-built diagram with the approximate dimensions is attached to this report (Sheet 1).

It is recommended that the areas around the absorption field be landscaped by planting a native grass seed mix appropriate for the climate and elevation. The area must also be protected from erosion. This can be achieved by using a North American Green SC150 or other approved erosion control material. Any additional grading should be completed prior to placing the seed/blanket.

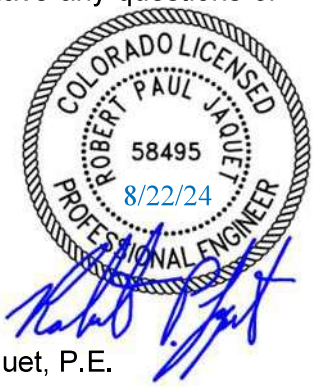
Based on our observations, the OWTS has been installed in general conformance with the above referenced design.

We trust this has provided you with the information you required. If you have any questions or need additional information, please do not hesitate to contact us.

Respectfully Submitted,

ENTECH ENGINEERING, INC.

Reviewed by:



Christopher A. Wiese

Robert P. Jaquet, P.E.

RPJ/cw

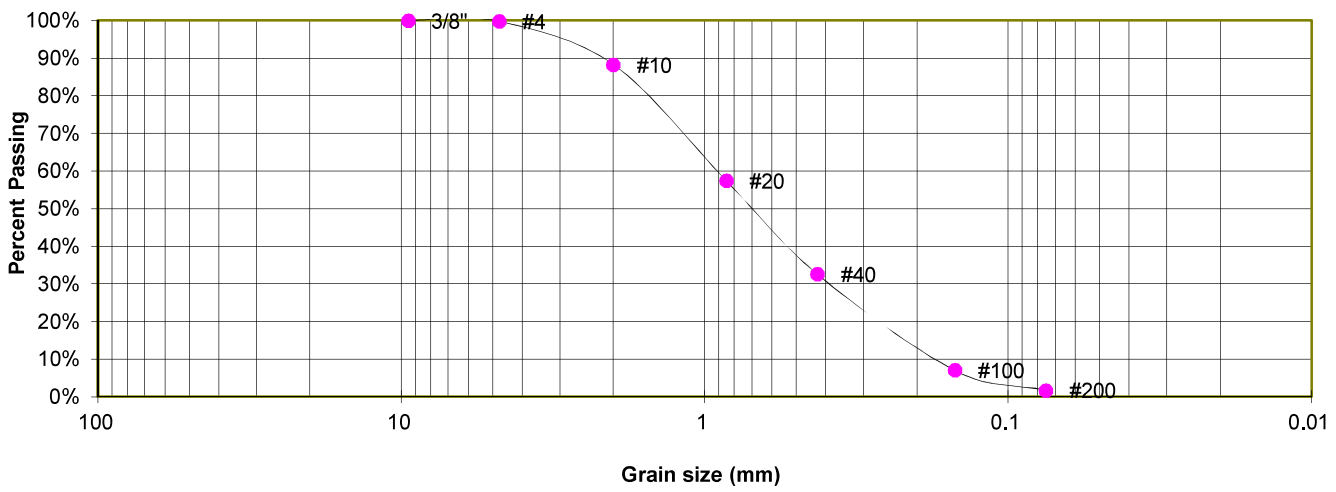
Robert Jaquet Digitally signed by Robert Jaquet
Date: 2024.08.23 10:30:54 -06'00'

Encl.

Entech Job No. 230493
AA projects/2023/230493 - owts obs – final

SAMPLE LOCATION	ON-SITE	SOIL DESCRIPTION	SAND, SLIGHTLY SILTY
DEPTH (FT)	GRAB	SOIL TYPE	SECONDARY SAND

Sieve Analysis
Grain Size Distribution



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.8%
10	88.3%
20	57.5%
40	32.6%
100	7.0%
200	1.7%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SW

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LABORATORY TEST RESULTS

7530 MOHAWK DRIVE
RUNGE ARCHITECTURE

JOB NO. 230493

FIG. 1

AS-BUILT PLAN

REVISIONS	BY:

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907
(719) 531-5599

ONSITE WASTEWATER TREATMENT SYSTEM
7530 MOHAWK ROAD
EL PASO COUNTY, COLORADO
FOR: RUNGE ARCHITECTURE

DRAWN BY:	R. JAQUET/PJM
DESIGNED BY:	R. JAQUET
CHECKED BY:	R. JAQUET
DATE:	8/22/2024
SCALE:	1" = 25'
JOB NO.:	230493
SHEET NO.:	1 OF 1 SHEETS

El Paso County, CO
Public Health
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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.: 137889	**Record ID:** ON0051731	**Issued:** November 21, 2023	**Expires:** November 21, 2024
SYSTEM INFORMATION			
OWTS Location: 7530 Mohawk Rd, Colorado Springs CO 80908			
Owner: St. Johns Orthodox Church	**Schedule #:** 5304005008	**Permit Type:** New	
Proposed Use: Commercial	**Facility Type:** Church/warming kitchen	**Design Flow (gpd):** 750	
System Type: Pressure Distribution	**Treatment Level:** TL1PD	**Water Source:** Well	
PERMIT REQUIREMENTS			
Tank: 1500 **Pump Tank**: 500	**STA:** 1364 sq ft (114 Q4/ 91 ARC 36)	**Media:** Chambers/bed	
STA Depth: Maximum 18”	**Sand Filter:** Yes **Depth:** 24”	**O&M Req:** Yes	
Design Document: ENTECH Engineering	**Document ID#:** 230493	**Date:** 11.2.2023	

PERMIT COMMENTS

- An Engineered OWTS system to be installed on site due to encountering high rock content soil and commercial OWTS, requiring a Tier II licensed installer.
- TIER II LICENSED INSTALLER MUST BE NAMED AND VERIFIED PRIOR TO FINAL APPROVAL OF SYSTEM.
- **MAXIMUM 18” INSTALLATION DEPTH DUE TO REFUSAL AT 54”**
- **INSTALLATION IN AREA OF pp1/pp2**
- SAND GRADATION MUST BE WITHIN 30 DAYS OF SAND PLACEMENT AND VERIFIED BY ENGINEER AS PART OF FINAL CERTIFICATION OF SYSTEM
- 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.
- Installation of an OWTS system with higher level treatment requires Operation and Maintenance inspections and a maintenance contract by a certified O&M Specialist. See EPCPH OWTS regulations section 8.14 for more details.

Operation and Maintenance will require biannual submission of wastewater strength testing. Sustained high BOD/TSS on subsequent tests will require alteration with ATU to the system.

- 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.

Review Specialist: Kat McGarvy, M.S., R.E.H.S	**Contact:** katmcgarvy@elpasoco.com

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

El Paso County, CO
Public Health
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Environmental Health Division

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

OWTS Application Review - Commercial

System #: ON0051731 **Permit Type**: New

Property Address: 7530 Mohawk Rd, Colorado Springs CO

Approvals Rcvd: DSD (*new permits only*): 11/21/2023

Floodplain: FP on property: NO Proposed system location outside FP: NO

Specialist: Kat McGarvy Date of Review: 10.27.2023

New/Major Repair/Modification: Site Evaluation date: 10.30.2023

Soil Report: Report date: 5.17.2023

Engineer: ENTECH Engineering Job #: 230493

High Rock Content**:** R-1 Soil Type: 3A LTAR: 0.55

Limiting Layer: Groundwater: NONE Bedrock: Refusal at 54”

Design Document: Design signed: 11.2.2023

Engineer: ENTECH Engineering Job # 230493

Commercial Facility Type: Church with warming Kitchen Design Flow: 750

- *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: 1500 Pump Tank: 500

Pump Specs: Pump: Zoller 152

Gal/dose: 200 Flow(gpm): 22.3 Total Dynamic Head: 28.5

Run Time(min): NA Off Time: NA Override: NA

STA Capacity:

Sq. Ft. (10-1): 1364 Sq. Ft. (10-2): 1364 Sq. Ft. (10-3): 1364 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 adj: NA Dist Area: NA Basal Area: NA

End slope: NA Up slope: NA Down slope: NA Greenbelt: NA

STA:

Distribution: Pressure Distribution Add. Components: ADV

ATU: NA Design TL: TL1PD Recirculation: NO

Media: Chambers Configuration: Bed Depth of Installation: 18” MAX

Q4 chambers: 114 Arc 36 chambers: 91 Laterals: NA

Comments: Church with warming kitchen – O&M will require submission of Biannual wastewater strength testing as there is no ATU on this design. Should there be sustained high BOD/TSS in testing within any 12 month period an ATU will be required. Must clear type 4 material – with engineer to verify open hole prior to sand placement – install in area of PP1/2.

EH Specialist: Kat McGarvy **Approved Date**: 10.9.2023

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(719) 575-3188 *fax*
www.elpasocountyhealth.org

ON-SITE WASTEWATER TREATMENT SYSTEM PERMIT APPLICATION

Submit application to HEASepticinfo@elpasoco.com

PROPERTY INFORMATION				
Applicant Name	Drew Fletemeyer Fred Fletemeyer Co			
Property Address	7530 Mohawk		City, State, Zip	Colorado Springs CO 80908
Phone	719-491-2338	Email	drew@fletemeyercompany.com	
Legal Description	Lot 4, Block 2, Pawnee Rancheros, Filing 1			
Tax Schedule #	5304005008	Lot Size	4.77 ac	
Is the property gated?	☐ Yes ■ No Code:		Water Supply	■ Well ☐ Cistern ☐ Municipal
Proposed Use:	☐ Residential ☐ Multifamily ■ Commercial			Potential Number of Bedrooms: 0

OWNER INFORMATION			
Name	St. Johns Orthodox Church	Phone	
Mailing Address	2770 Chestnut	City, State, Zip	CSC 80903
Email	drew@fletemeyercompany.com		
General Contractor	Fred Fletemeyer Co	Phone/Email	drew@fletemeyercompany.com
System Installer	Broders Excavating	Phone/Email	richardbroders1946@gmail.com
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:	

Written Scope of Work:
Septic System for St. John's Orthodox Church

Please provide directions to the property from a main highway:
Northwest corner of Mohawk and Woodman Rd.

- 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:

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: Drew Fletemeyer Date: 9/11/23

Submit application to HEASepticinfo@elpasoco.com

ENTECH
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505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599
FAX (719) 531-5238

May 17, 2023

Runge Architecture
5315 Germaine Ct
Colorado Springs, CO 80919

Attn: Chuck Runge

Re: OWTS Site Evaluation
7530 Mohawk Road
Lot 4, Block 2, Pawnee Rancheros, Filing 1
El Paso County, Colorado

Dear Mr. Runge:

As requested, personnel of Entech Engineering, Inc. have observed the excavation of four test pits in the area of the proposed on-site wastewater treatment systems (OWTS) absorption field location at the above referenced site. This letter presents the results of our testing.

The locations of the test pits are shown in Figure 1. The test pits were excavated on April 11, 2023, to approximate depths of 3.5 to 6.0 feet. Soils encountered in the test pits consisted of sandy clay with underlying gravelly sandy loam to gravelly sandy clay loam and gravelly sandy clay loam to gravelly sandy loam with underlying sandy clay. The Test Pit Logs and Laboratory Test Results are shown in Figures 2 through 8. Bedrock was encountered in the test pits at approximately 4.5 to 6.0 feet below grade. Redoximorphic features were encountered in Test Pit No. 3 at approximately 6.0 feet below grade.

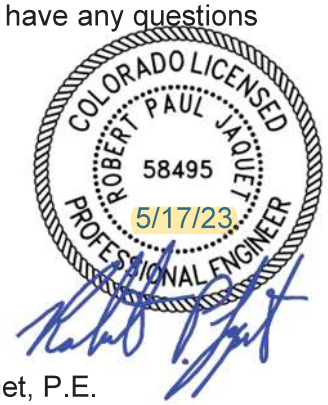
Visual and tactile evaluation of the soils was performed. The limiting layers encountered in the test pits are the gravelly sandy loam, gravelly sandy clay loam and sandy clay, which classified as USDA Soil Type R1, 3A, and 4A. For design purposes a LTAR Value of 0.15 gallons per day per square foot is recommended for Treatment Level 1. A maximum LTAR Value of 0.20 gallons per day per square foot is recommended for Treatment Level 3. An engineer designed system is required for this site due to the Type 3A, 4A, R-1 Soil Types and shallow bedrock and redoximorphic features. The absorption field should be installed in accordance with El Paso County Health Department regulations.

We trust that this has provided you with the information you required. If you have any questions or need additional information, please do not hesitate to contact us.

Respectfully Submitted,

ENTECH ENGINEERING, INC.

Reviewed by:



Christopher A. Wiese

Robert P. Jaquet, P.E.

RPJ/cw
Encl.
Entech Job No. 230493
AA projects/2023/230493 owts site eval

TP- APPROXIMATE TEST PIT LOCATION AND NUMBER

-	TP-1	38°56'29.69"N,	104°39'53.81"W
-	TP-2	38°56'29.92"N,	104°39'53.40"W
-	TP-3	38°56'28.83"N,	104°39'57.23"W
-	TP-4	38°56'29.46"N,	104°39'56.94"W

N

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907 (719) 531-5599

TEST PIT LOCATION MAP
7530 MOHAWK ROAD
LOT 4, BLK 2, PAWNEE RANCHEROS, FIL 1
EL PASO COUNTY, COLORADO
FOR: RUNGE ARCHITECTURE

JOB NO.: 230493

FIG NO.: 1

TEST PIT NO. 1
DATE EXCAVATED 4/11/2023
Job # 230493

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
refusal @ 5'-6"						
topsoil, sandy clay loam, brown, moist	1					
sandy clay, fine to medium grained, brown, moist	2			ma		4A
gravelly sandy loam, fine to medium grained, light brown, moist	3			gr	s	2/R1
sandy clay loam, fine to coarse grained, tan, moist	4					
	5			ma		3A
	6					
	7					
	8					
	9					
	10					

TEST PIT NO. 2
DATE EXCAVATED 4/11/2023
CLIENT RUNGE ARCHITECTURE
LOCATION 7530 MOHAWK DRIVE

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
refusal @ 4'-6"						
topsoil, sandy clay loam, brown, moist	1					
gravelly sandy loam, fine to medium grained, light brown, moist	2			gr	s	2/R1
sandy clay loam, fine to coarse grained, tan, moist	3					
	4			ma		3A
	5					
	6					
	7					
	8					
	9					
	10					

Soil Structure Shape
granular - gr
platy - pl
blocky - bl
prismatic - pr
single grain - sg
massive - ma

Soil Structure Grade
weak - w
moderate - m
strong - s
loose - l

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505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

TEST PIT LOG

JOB NO.: 230493
FIG NO.: 2

TEST PIT NO. 3
DATE EXCAVATED 4/11/2023
Job # 230493

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
topsoil, sandy clay loam, brown, moist	1					
gravelly sandy loam, fine to medium grained, light brown, moist	2			gr	s	2/R1
	3					
	4					
sandy clay, fine to medium grained, tan, moist	5			ma		4A
redoximorphic features @ 6'-0"	6					
	7					
	8					
	9					
	10					

TEST PIT NO. 4
DATE EXCAVATED 4/11/2023
CLIENT RUNGE ARCHITECTURE
LOCATION 7530 MOHAWK DRIVE

REMARKS	Depth (ft)	Symbol	Samples	Soil Structure Shape	Soil Structure Grade	USDA Soil Type
topsoil, sandy clay loam, brown, moist	1					
gravelly sandy clay loam, fine to coarse grained, tan, moist	2			gr	m	3
sandy clay, fine to medium grained, brown, moist	3			ma		4A
Redoximorphic features @ 4'-0" refusal @ 4'-6"	4					
	5					
	6					
	7					
	8					
	9					
	10					

Soil Structure Shape
granular - gr
platy - pl
blocky - bl
prismatic - pr
single grain - sg
massive - ma

Soil Structure Grade
weak - w
moderate - m
strong - s
loose - l

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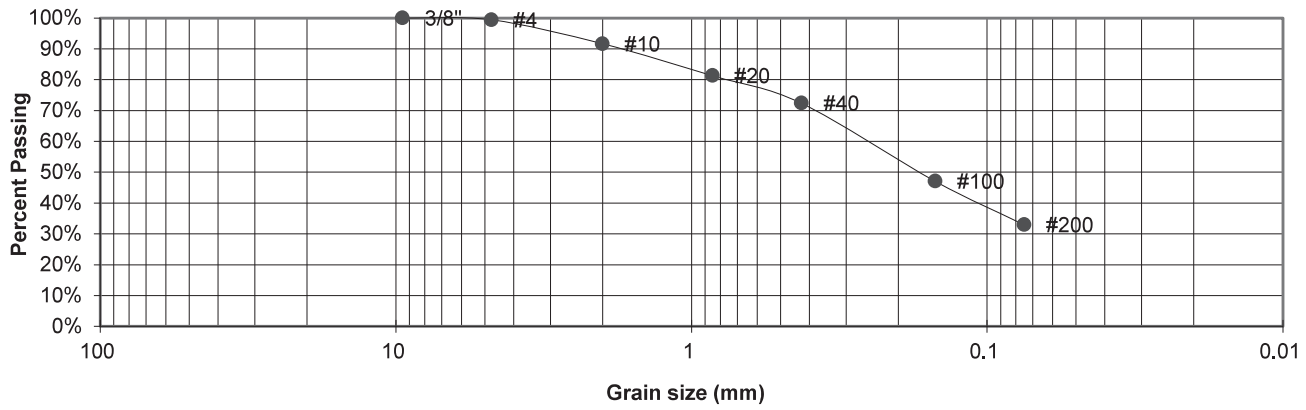
COLORADO SPRINGS, COLORADO 80907

TEST PIT LOG

JOB NO.: 230493
FIG NO.: 3

BORING NO.	TP-1	UNIFIED CLASSIFICATION	SC	TEST BY	BL
DEPTH(ft)	2	AASHTO CLASSIFICATION		JOB NO.	230493
CLIENT	RUNGE ARCHITECTURE				
PROJECT	7530 MOHAWK DRIVE				



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.4%
10	91.6%
20	81.3%
40	72.4%
100	47.1%
200	33.0%

Atterberg Limits

Plastic Limit

Liquid Limit

Plastic Index

Swell

Moisture at start

Moisture at finish

Moisture increase

Initial dry density (pcf)

Swell (psf)

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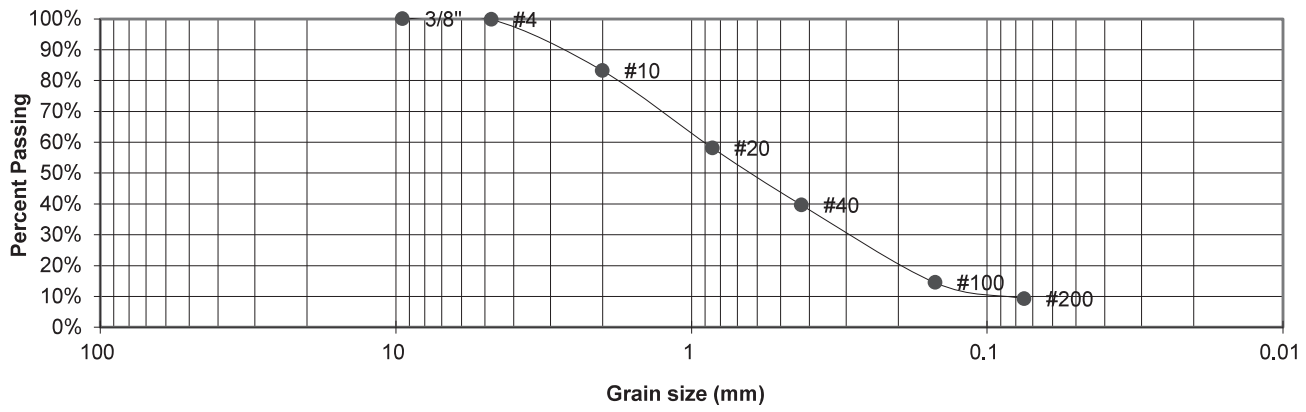
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

LABORATORY TEST RESULTS

JOB NO.: 230493

FIG NO.: 4

BORING NO.	TP-1	UNIFIED CLASSIFICATION	SM-SW	TEST BY	BL
DEPTH(ft)	3	AASHTO CLASSIFICATION		JOB NO.	230493
CLIENT	RUNGE ARCHITECTURE				
PROJECT	7530 MOHAWK DRIVE				



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.8%
10	83.2%
20	58.1%
40	39.7%
100	14.5%
200	9.3%

Atterberg Limits

Plastic Limit

Liquid Limit

Plastic Index

Swell

Moisture at start

Moisture at finish

Moisture increase

Initial dry density (pcf)

Swell (psf)

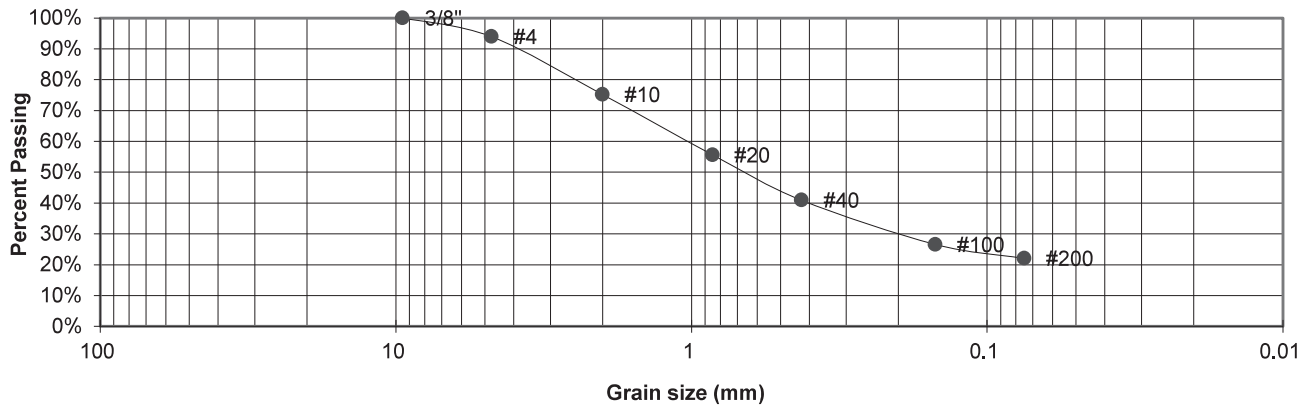
ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

LABORATORY TEST RESULTS

JOB NO.: 230493

FIG NO.: 5

BORING NO.	TP-2	UNIFIED CLASSIFICATION	SM	TEST BY	BL
DEPTH(ft)	4	AASHTO CLASSIFICATION		JOB NO.	230493
CLIENT	RUNGE ARCHITECTURE				
PROJECT	7530 MOHAWK DRIVE				



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	94.0%
10	75.2%
20	55.6%
40	40.9%
100	26.6%
200	22.1%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

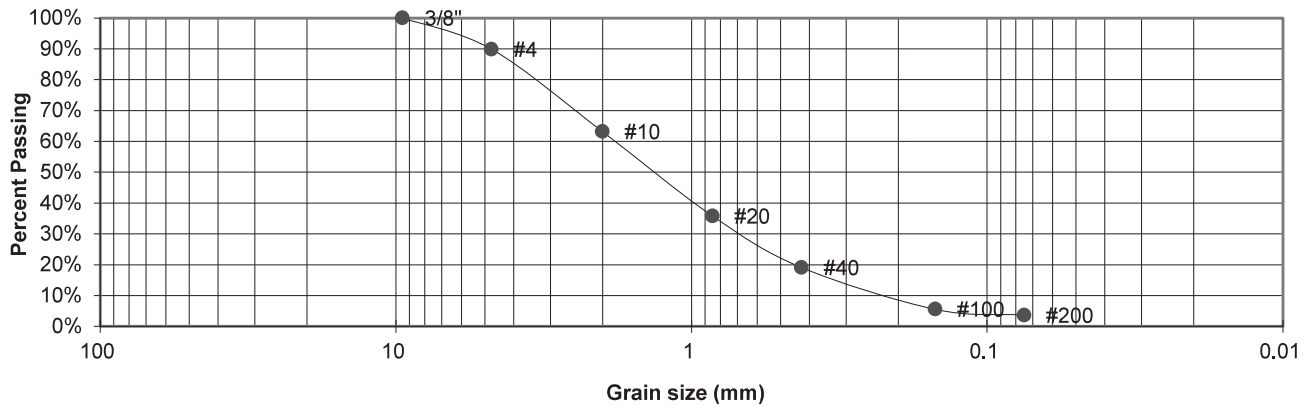
ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

LABORATORY TEST RESULTS

JOB NO.: 230493

FIG NO.: 6

BORING NO.	TP-3	UNIFIED CLASSIFICATION	SW	TEST BY	BL
DEPTH(ft)	2	AASHTO CLASSIFICATION		JOB NO.	230493
CLIENT	RUNGE ARCHITECTURE				
PROJECT	7530 MOHAWK DRIVE				



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	89.9%
10	63.1%
20	35.8%
40	19.1%
100	5.6%
200	3.7%

Atterberg Limits

Plastic Limit

Liquid Limit

Plastic Index

Swell

Moisture at start

Moisture at finish

Moisture increase

Initial dry density (pcf)

Swell (psf)

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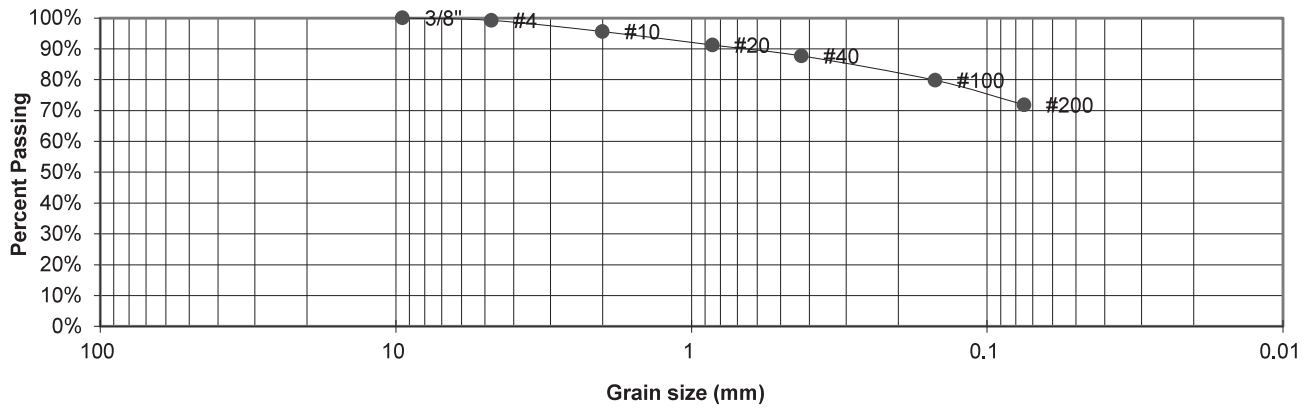
LABORATORY TEST RESULTS

JOB NO.: 230493

FIG NO.: 7

BORING NO.	TP-4	UNIFIED CLASSIFICATION	CL	TEST BY	BL
DEPTH(ft)	3	AASHTO CLASSIFICATION		JOB NO.	230493
CLIENT	RUNGE ARCHITECTURE				
PROJECT	7530 MOHAWK DRIVE				



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.2%
10	95.6%
20	91.2%
40	87.7%
100	79.8%
200	71.8%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

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LABORATORY TEST RESULTS

JOB NO.: 230493

FIG NO.: 8

NOTES:
Site conditions require a designed septic system. We recommend a septic tank and pressure dosed chambers. A pumping chamber will be required. Wastewater strength testing shall be conducted on a biannual basis to determine if a MicroFast system or similar aerobic pre-treatment system is required for this site.

DESIGN CRITERIA:
El Paso County Health Department: Onsite Wastewater Treatment System (OWTS) Regulations Dated May 23, 2018 effective July 7, 2018.

TEST PIT OBSERVATION:
Four test pits were observed by Entech Engineering, Inc. The results were provided in a letter dated May 17, 2023, Entech Job No. 230493. An LTAR value of 0.55 gallons per day square foot is recommended for Treatment Level 3, Soil Type R-1 Option 1 (LTAR = 0.55). The sandy clay layer must be fully penetrated by the Minimum 2 feet thick secondary sand filter into underlying gravelly sandy clay loam soils. Bedrock was encountered at approximately 4.5 to 5.5 feet below grade in Test Pit Nos. 1 and 2. Groundwater was not encountered in the Test Pit Nos. 1 or 2.

The soil treatment area shall not be installed near Test Pit Nos. 3 and 4, see report for conditions encountered.

DESIGN FLOW:
5 GALLONS PER PERSON / DAY - CHURCH (WARMING KITCHEN NO MAJOR FOOD PREP)
CHURCH - 139 PERSON OCCUPANCY USE 150 PERSONS OCCUPANCY FOR DESIGN
Total Average Flow = 750 gpd
Minimum Area required = Q(1.0)(1.0) / 0.55 = 750 / 0.55 = 1,364 sq. ft.

SOIL TYPE:
Gravelly Sandy Clay Loam, R-1 Option 1, 0.55 LTAR , T.L.3

SEPTIC TANK:
The septic tank capacity for the proposed church should be a minimum of 1,500 gallons. The septic tank shall comply with El Paso County Health Department regulations. The tank should be checked periodically and pumped as needed.

PUMPING CHAMBER:
A pumping chamber with a capacity of 500 gallons shall be sealed at all joints and shall be coated with a suitable asphaltic waterproofing. A pump with a high water alarm shall be installed in the pumping chamber. The pumping chamber shall comply with El Paso County Health Department regulations. Periodic monitoring of water usage is recommended to adjust dosing to 3 to 4 doses per day, with a 200 gallon minimum dose. Install check valve / air release valve to permit line to drain to pumping tank or to field.

INSTALLATION OBSERVATION:
The installation of the septic system shall be observed to check compliance with the design. Recommended observations include:
1) A meeting with Entech, builder, property owner and the installer to stake the field locations.
2) Site observation of required test pit(s) prior to excavating beds.
3) Site observation(s) during and after the beds are excavated (BEFORE SAND PLACEMENT).
4) Site observation of pipe installation, infiltrators, distribution valves and manifold assembly, pumping chamber, and verify that the stand pipes have been installed;
5) Site observation of final including soil cover over the chambers.

PRE-CONSTRUCTION MEETING:
Contractor should contact Entech Engineering, Inc. to discuss installation and scheduling of recommended observations. A site meeting with an engineer from Entech Engineering, Inc., an El Paso County Health Officer and the ISDS contractor is required prior to excavation or installation of the field. The absorption field location will be finalized at the pre-construction meeting. The installed system minimum horizontal distances must be maintained from pertinent physical features according to El Paso County Health Department Regulations.

WATER
The well must be located a minimum of 100 feet away from the absorption field.

CALCULATIONS

150 PERSONS X 5 GPD = 750 QPD

LTAR (0.55)

BASIC REQUIRED AREA

$$A = \frac{Q\ (GPD)}{LTAR}$$

FOR BED SYSTEM (CHAMBERS)

Q = 750 GPD
LTAR = 0.55 = SOIL TYPE 3A, TL - 3
ADJ FACTOR = 1.0 = BED (DOSED)
ADJ FACTOR = 1.0= (CHAMBERS)

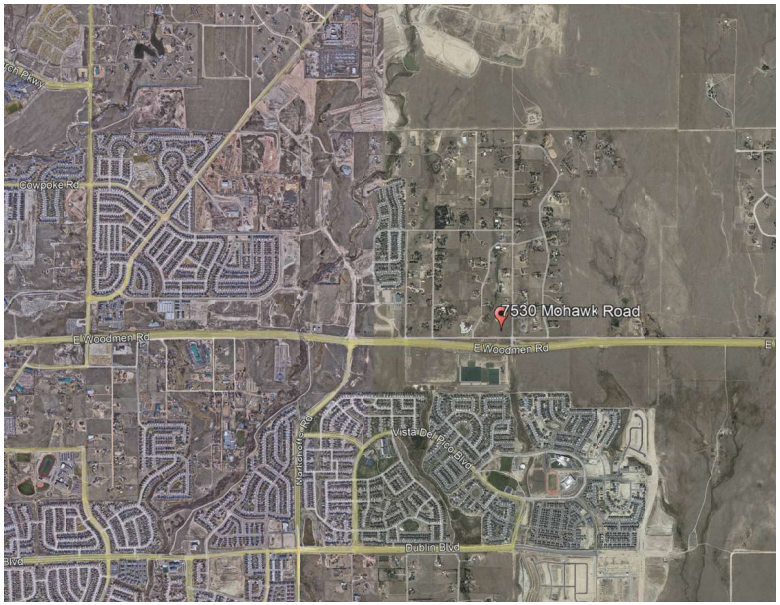
$$A = \frac{(750)(1.0)(1.0)}{0.55}$$

A= 1,364 SF ✓ USE 1,440 SF

$$L.P.\ QUICK\text{-}4 = \frac{1,440}{12} = 120$$ USE 120 ✓

TOTAL = 120 LOW PROFILE QUICK-4

USE (2) 4 ROWS OF 15 INFILTRATORS FOR TOTAL OF 120 QUICK-4 INFILTRATORS



VICINITY MAP
SCALE: N.T.S.

N

MODIFICATIONS TO THIS DESIGN MAY BE REQUIRED, TO BE DETERMINED AT THE TIME OF SITE OBSERVATIONS.

Robert Jaquet
Digitally signed by Robert Jaquet
Date: 2023.11.02 09:40:14 -06'00'

COLORADO LICENSED
ROBERT PAUL JAQUET
58495
11/2/23
PROFESSIONAL ENGINEER
STATE OF COLORADO P.E.

REVISIONS	BY:
11/2/2023	RPJ

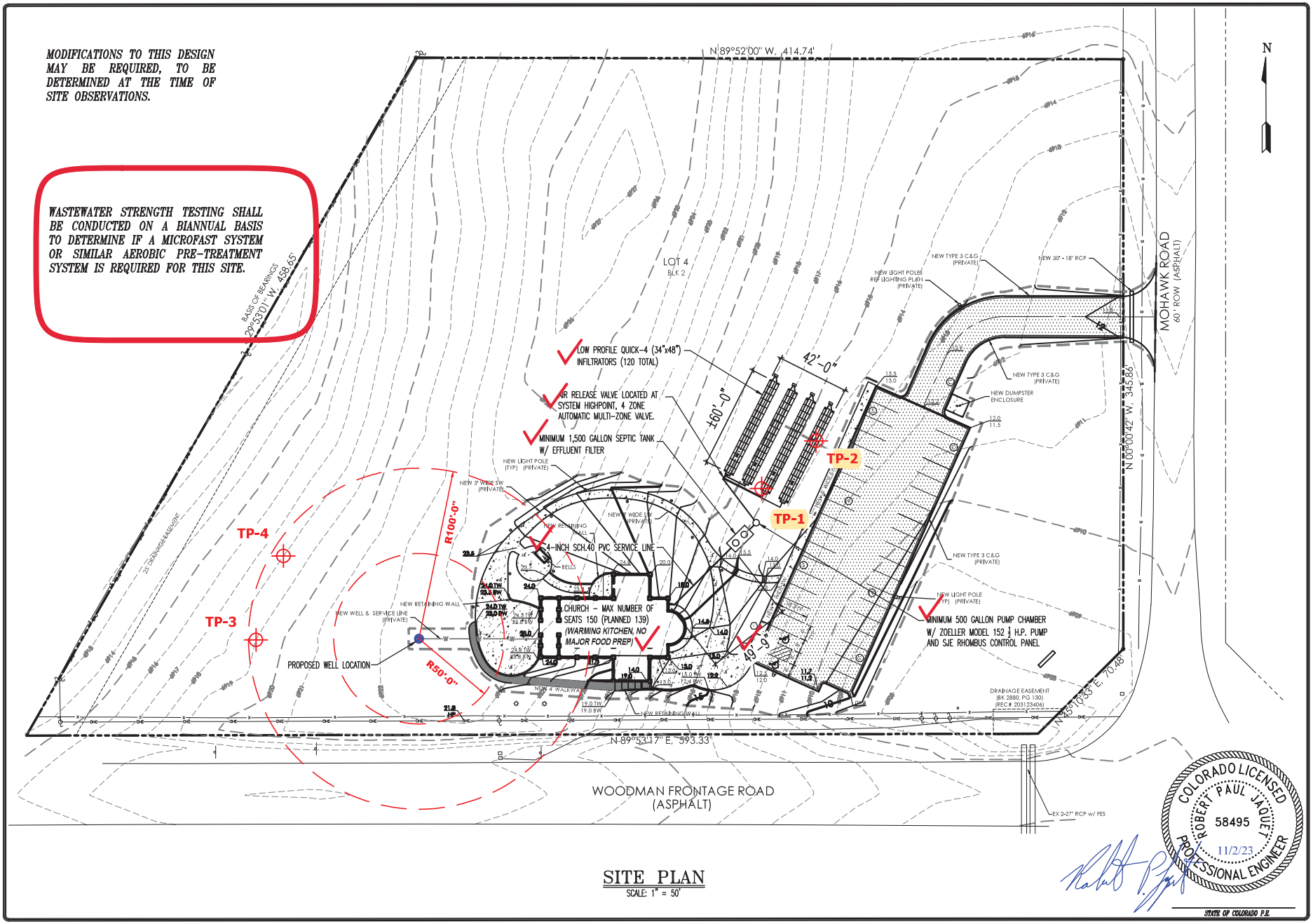
ENTECH ENGINEERING, INC.
595 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907
(719) 531-5599

ONSITE WASTEWATER TREATMENT SYSTEM
7530 MOHAWK ROAD
EL PASO COUNTY, COLORADO
FOR: RUNGE ARCHITECTURE

DRAWN BY:	R. JAQUET
DESIGNED BY:	R. JAQUET
CHECKED BY:	R. JAQUET
DATE:	7/10/2023
SCALE:	AS SHOWN
JOB NO.:	230493
SHEET NO.:	1 OF 3 SHEETS

MODIFICATIONS TO THIS DESIGN MAY BE REQUIRED, TO BE DETERMINED AT THE TIME OF SITE OBSERVATIONS.

WASTEWATER STRENGTH TESTING SHALL BE CONDUCTED ON A BIANNUAL BASIS TO DETERMINE IF A MICROFAST SYSTEM OR SIMILAR AEROBIC PRE-TREATMENT SYSTEM IS REQUIRED FOR THIS SITE.



SITE PLAN

SCALE: 1" = 50'

REVISIONS	BY:
11/2/2023	RPJ

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907
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ONSITE WASTEWATER TREATMENT SYSTEM
7530 MOHAWK ROAD
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FOR: RUNGE ARCHITECTURE

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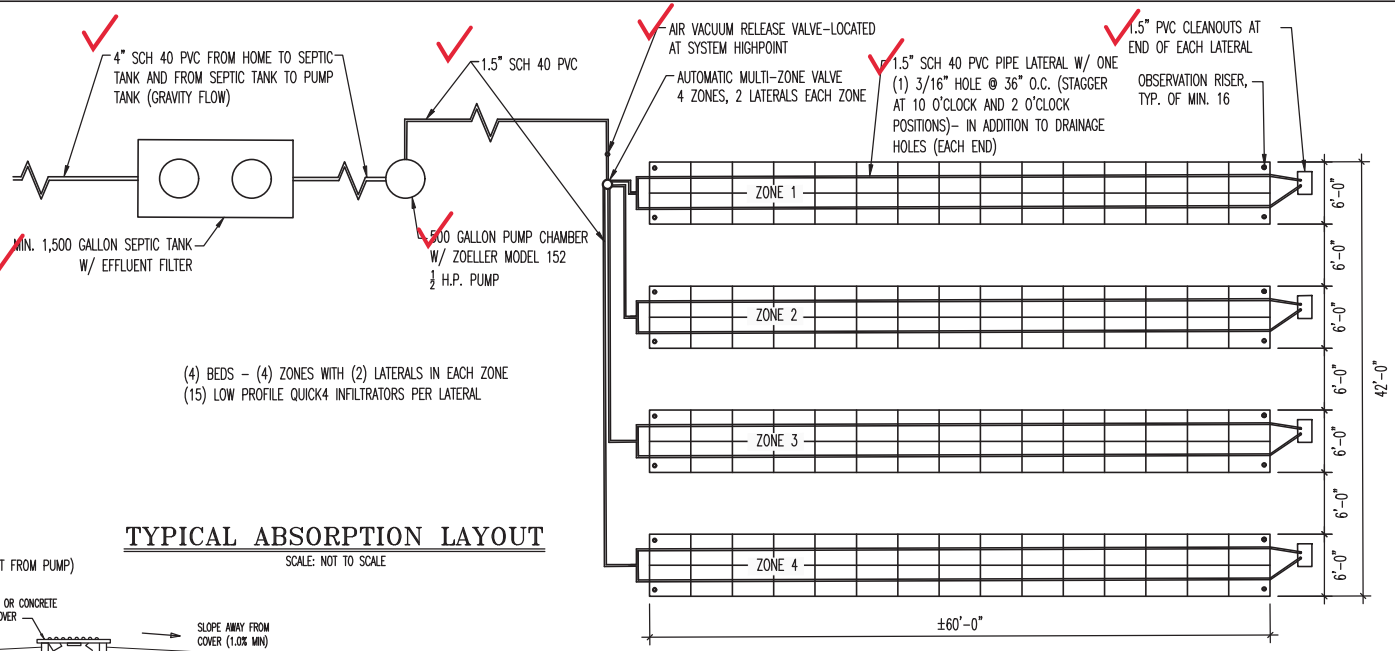
DRAWN BY:	R. JAQUET
DESIGNED BY:	R. JAQUET
CHECKED BY:	R. JAQUET
DATE:	7/10/2023
SCALE:	AS INDICATED
JOB NO.:	230493
SHEET NO.:	2 OF 3 SHEETS

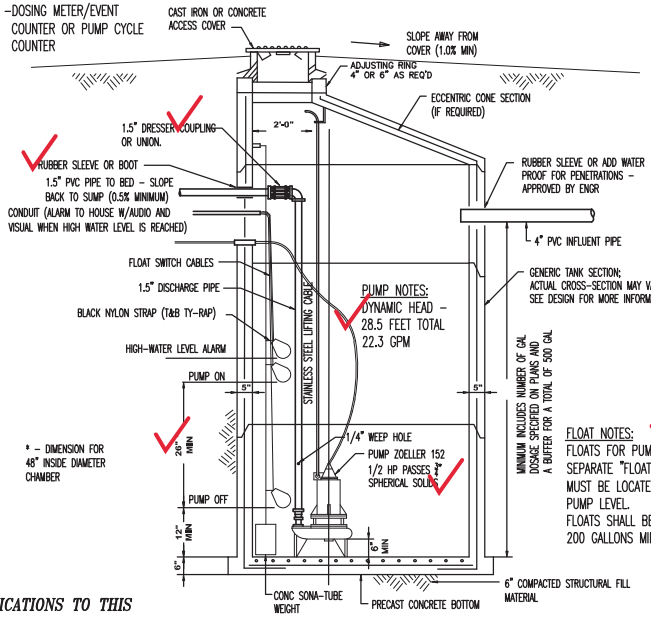


(4) BEDS - (4) ZONES WITH (2) LATERALS IN EACH ZONE
(15) LOW PROFILE QUICK4 INFILTRATORS PER LATERAL

TYPICAL ABSORPTION LAYOUT

SCALE: NOT TO SCALE

NOTE:
CONTROL PANEL MUST HAVE:
-AUDIO/VISUAL ALARM (SEPARATE CIRCUIT FROM PUMP)
-HOA SWITCH
-DOSING METER/EVENT COUNTER OR PUMP CYCLE COUNTER



PUMP NOTES:
DYNAMIC HEAD - 28.5 FEET TOTAL
22.3 GPM

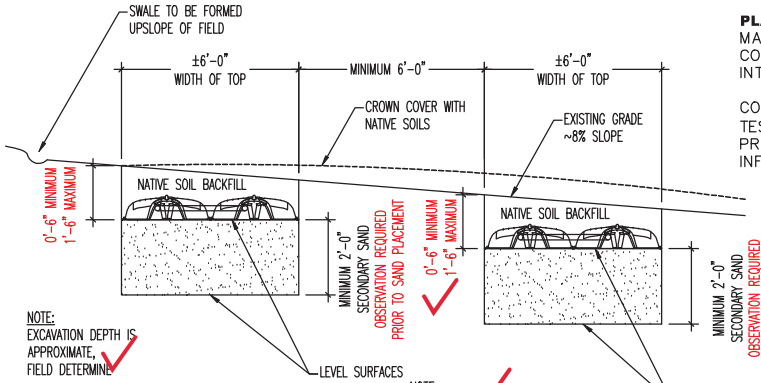
FLOAT NOTES:
FLOATS FOR PUMP MUST BE ON A SEPARATE "FLOAT TREE." OFF-FLOAT MUST BE LOCATED ABOVE THE PUMP LEVEL.
FLOATS SHALL BE SET TO ACHIEVE 200 GALLONS MINIMUM DOSE.

MODIFICATIONS TO THIS DESIGN MAY BE REQUIRED, TO BE DETERMINED AT THE TIME OF SITE OBSERVATIONS.

EXISTING PUMPING CHAMBER

SCALE: N.T.S.

NOTE:
12" MINIMUM COVER OVER TOP OF LOW PROFILE QUICK 4 INFILTRATORS.



NOTE:
EXCAVATION DEPTH IS APPROXIMATE, FIELD DETERMINE

NOTE:
MAINTAIN 3'-0" MINIMUM SEPARATION FROM WEATHERED BEDROCK ENCOUNTERED AT APPROXIAMTELY 4'-6" BELWO GRADE.

SECTION A-A

SCALE: NOT TO SCALE

NOTE: TYPE 4/4A SOILS MUST BE FULLY PENETRATED THROUGHOUT SOIL TREATMENT AREA.

SOIL TYPE: *TYPE 3A, LTAR = 0.55, R-1 Option 1. Soil Type 4/4A, if encountered during excavation, shall be fully penetrated by the imported secondary sand filter.*

PLACEMENT AND TESTING:
MATERIAL SHALL BE PLACED TO CONTROL SETTLEMENT WITHOUT INTENTIONAL COMPACTION.

CONTACT ENTECH FOR REQUIRED TESTING OF PLACED SOILS/SAND PRIOR TO PLACEMENT OF INFILTRATORS.

NOTE:
BEDS #3 AND #4 NOT SHOWN FOR CLARITY

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DATE:	7/10/2023
SCALE:	AS SHOWN
JOB NO.:	230493
SHEET NO.:	3 OF 3 SHEETS