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WASTEWATER STUDY
SIESTA GROVE SUBDIVISION
PARCEL NO. 61000-00-292
EL PASO COUNTY, COLORADO



Prepared for:

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September 18, 2026

PCD No.

Entech Job No. 261465

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1 SUMMARY

Project Location

The project site is located within the W½ of Section 25, Township 11 South, Range 66 West of the 6th Principal Meridian in El Paso County, Colorado. The site is approximately 4 miles east of the town of Monument, Colorado, located southwest of Hodgen Road and Farrar Road in El Paso County, Colorado. The location of the site is as shown in the Vicinity Map (Figure 1).

Project Description

A four-lot rural residential subdivision is proposed for the 35-acre parcel. An existing residence with several barns is located in the western portion property which will remain on the proposed 29- acre lot. Three new 2.5 to 2.65 acre lots are proposed for the eastern portion of the parcel. The new lots will be serviced by individual water wells and on-site wastewater treatment systems (OWTS).

Scope of Report

This report presents the results of our field investigation and geologic evaluation and also our engineering geologic hazard study with respect to OWTS proposed for the subdivision.

Land Use and Engineering Geology

This site was found to be suitable for the proposed development; however, geologic conditions in certain areas will impose some minor constraints on development and land use. These include areas of artificial fill, potentially expansive soils, potential seasonally shallow and shallow groundwater areas, and areas of erosion. These conditions are discussed in greater detail in this report.

In general, it is our opinion that the development can be achieved if the observed geologic conditions on site are either properly mitigated or avoided. All recommendations are subject to the limitations discussed in the report.

2 GENERAL SITE CONDITIONS AND PROJECT DESCRIPTION

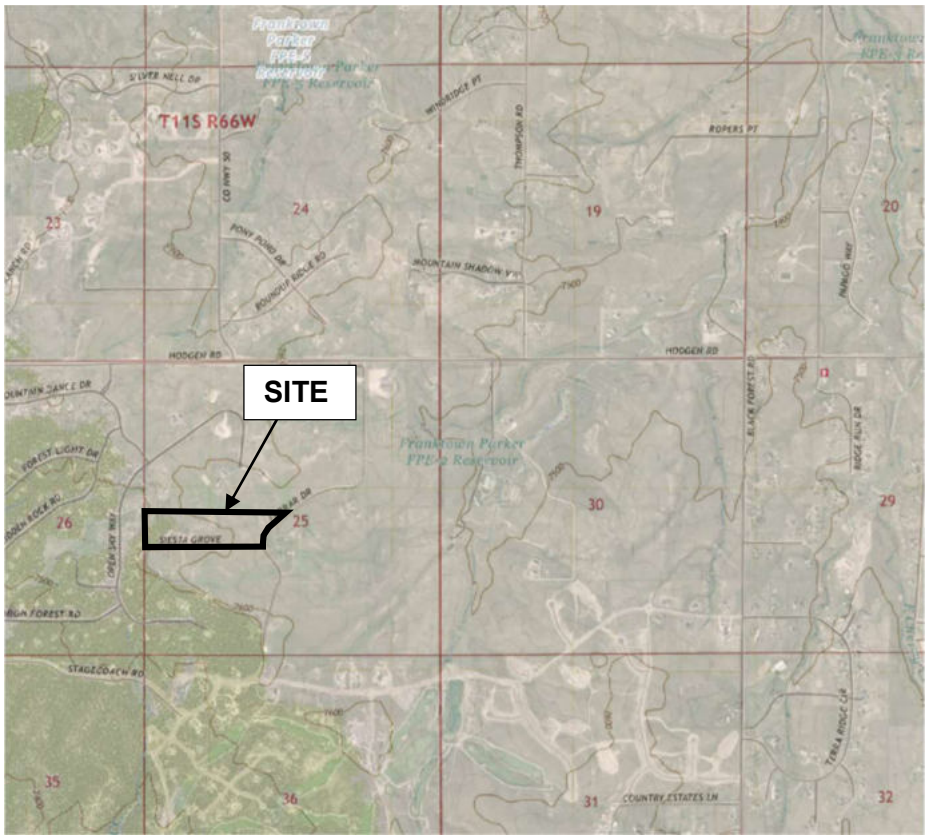
The topography of the site is generally gradually to moderately sloping to the east northeast towards a minor drainage and seasonal pond in the eastern portion of the site. Palmer Divide is located in the western portion of the site west of the existing residence. The drainage and seasonal pond were dry at the time of our site observations. The site boundaries are indicated in the USGS Map (Exhibit 1). Previous land uses have included agricultural grazing. Vegetation

observed on the site includes field grasses, cacti, weeds, and Ponderosa Pines primarily in the western portion of the site. Site photographs are included in Appendix A.

The project consists subdividing the 35-acres into four rural residential lots. Three 2.5 to 2.62 acres, and one large 29 acre lot with the existing house are proposed. The lots will be serviced by individual water wells and OTWS. The proposed lot configuration is shown in the Site and Exploration Plan (Figure 2). Grading plans were not available at the time of this investigation, however, proposed grading discussions indicated the seasonal pond in the eastern portion of the site will be filled.

Exhibit 1: USGS Topography Map

Black Forest Quadrangle - 2022



3 SCOPE OF THE REPORT

The scope of this report includes a general geologic analysis utilizing published geologic data. Detailed site-specific mapping was conducted to obtain general information with respect to major geographic and geologic features, geologic descriptions, and their effects on the development of the property in accordance with the El Paso Land Development Code.

4 FIELD INVESTIGATION

Our field investigation consisted of the preparation of a geologic map of any bedrock features and significant surficial deposits. The site was also evaluated using the Web Soil Survey from the Natural Resource Conservation Service (NRCS), formerly known as the Soil Conservation Service (SCS). The position of mappable units within the subject property is shown on the Geologic Map. Our mapping procedures involved both field reconnaissance and measurements and air photo reconnaissance and interpretation. The same mapping procedures have also been utilized to produce the Geology/Engineering Geology Map, which identified pertinent geologic conditions affecting development. The field mapping was performed by personnel of Entech on August 5, 2026. Site photographs are included in Appendix A.

Four (4) test borings (TB-1 through TB-4) were drilled and three (3) tactile test pits (TP-1 through TP-3) were excavated to determine the classification and engineering characteristics of the soils. The borings were drilled to depths of 20 feet using a truck-mounted, continuous flight auger drilling rig supplied and operated by Entech. The test pits were excavated with a mini-excavator operated by Entech to depths of 5.5 to 8 feet. TB-1 through TB-3 were drilled in potential future building locations, and TB-4 was located in the seasonal pond. A temporary piezometer (P1) was installed in TB-4 which will be monitored to evaluate the potential seasonal groundwater fluctuation.

The locations of the test borings and test pits are indicated on the Site and Exploration Plan (Figure 2). The Test Boring and Test Pit Logs are included in Appendix B, and Laboratory Test Results are included in Appendix C. The results of the testing will be discussed later in this report.

Laboratory testing was performed to classify and determine the engineering characteristics of the soils. Laboratory tests included moisture content testing (ASTM D2216), grain-size analysis (ASTM D6913), and Atterberg Limits testing (ASTM D4318). Results of the laboratory testing are included in Appendix C.

5 SOIL, GEOLOGY, AND ENGINEERING GEOLOGY

5.1 General Geology

The site lies in the western portion of the Great Plains Physiographic Province along the Palmer Divide. A major structural feature known as the Rampart Range Fault lies approximately 10 miles to the west. This fault marks the boundary between the Great Plains Physiographic Province and the Southern Rocky Mountain Province. The site exists within the southwestern edge of a large structural feature known as the Denver Basin. Bedrock in the area tends to be very gently dipping in a northeasterly direction (Reference 1). The rocks in the area of the site are sedimentary in nature and typically Tertiary to Cretaceous in age. The bedrock underlying the site consists of the Dawson Arkose Formation of Tertiary to Cretaceous Age. Overlying this formation are unconsolidated deposits of alluvium, colluvium, sheetwash, and residual soils of Quaternary Age. The residual soils are produced by the in-situ action of weathering of the bedrock on site. Artificial fill associated with Farrar Road and earthen embankment for the pond. Some colluvial soils deposited by gravity and sheetwash exist. The site's stratigraphy will be discussed in more detail in Section 5.3.

5.2 Soil Conservation Survey

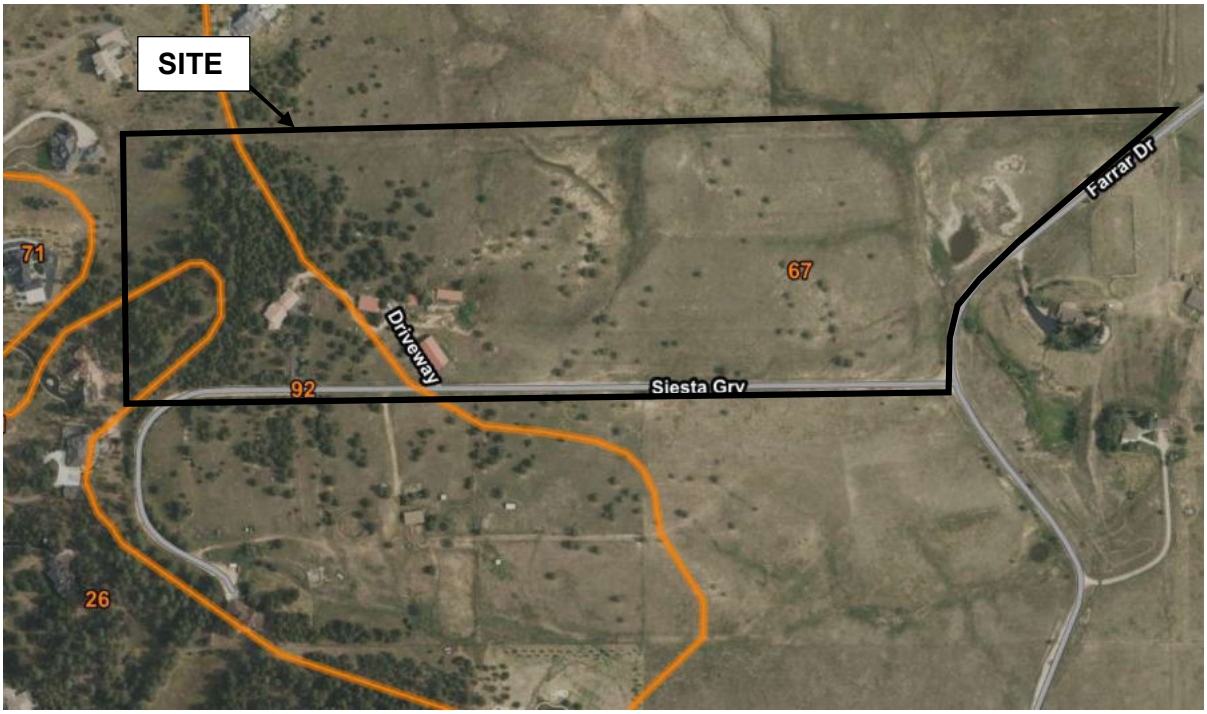
The Natural Resource Conservation Service (Reference 4), previously the Soil Conservation Service (Reference 5), has mapped three soil types on the site. In general, they are gravely loamy sands to loamy sands. The soils are described in Exhibit 2, and shown in Exhibit 3.

Exhibit 2: Soil Survey Description

Type	Description
26	Elbeth sandy loam, 8 to 415% slopes
67	Peyton sandy loam, 5 to 9% slopes
92	Tomah-Crowfoot loamy sands, 3 to 8% slopes

Exhibit 3: USDA – Web Soil Survey

Soil Map – El Paso County Area, Colorado



Complete descriptions of each soil type are presented in Appendix D. The soils have generally been described as having moderately high to high permeabilities. Limitations on development include limited ability to support a load, shrink-swell potential, and frost action potential. Possible hazards with soil erosion are present on the site. The erosion potential can be controlled with vegetation. The soils have been described to have moderate erosion hazards.

5.3 Site Stratigraphy

The Geologic Map of the Black Forest Quadrangle showing the site is presented in Exhibit 4 below (Reference 4). The Geology/Engineering Geology Map prepared for the site is presented in Figure 4. Two mappable units were identified on this site that are described as follows:

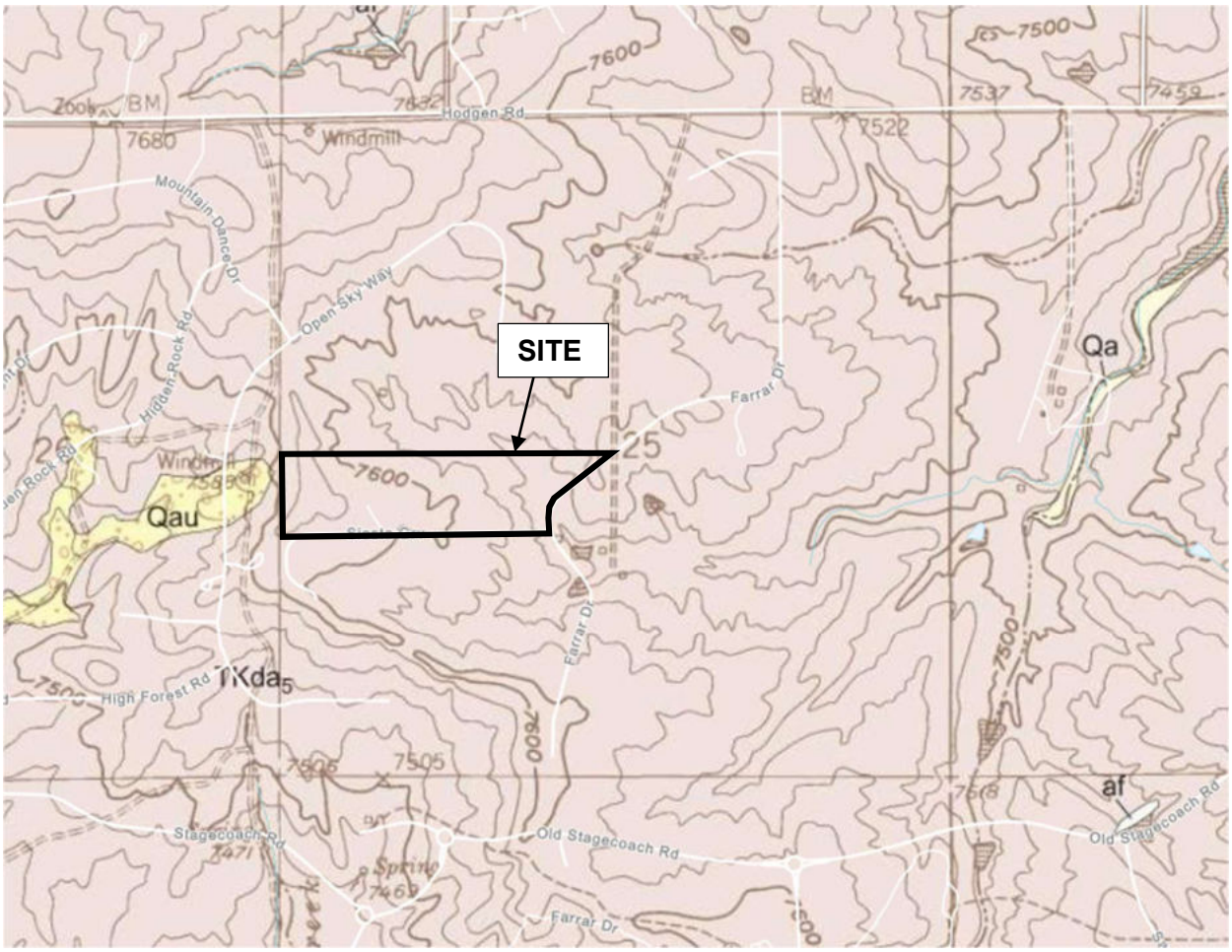
Qaf **Artificial Fill of Holocene Age:** These are man-made fill deposits associated with Farrar Road and the earthen embankment for the seasonal pond in the eastern portion of the site along Farrar Drive.

Qc/Tkd **Colluvium of Quaternary Age overlying Dawson Formation of Tertiary to Cretaceous Age:** The Dawson Formation typically consists of arkosic sandstone with interbedded fine-grained sandstone, siltstone, and claystone. Overlying this formation is a variable layer of colluvium and residual soils. The residual soils were derived from the in-situ weathering of the bedrock materials on-site. These soils consist of clayey sands and sandy clays. The colluvial materials are derived from the bedrock materials and have been re-deposited by the action of sheetwash and gravity.

The soils listed above were mapped from site-specific mapping, the *Geologic Map of the Black Forest Quadrangle* distributed by the Colorado Geological Survey in 2003 (Reference 4), the *Geologic Map of the Colorado Springs-Castle Rock Area*, distributed by the US Geological Survey in 1979 (Reference 5), and the *Geologic Map of the Denver 1^0 x 2^0 Quadrangle*, distributed by the US Geological Survey in 1981 (Reference 6). The Test Borings and Test Pit Logs used in evaluating the site are included in Appendix B. The Geology/Engineering Geology Map prepared for the site is presented in Figure 3.

Exhibit 4: Geologic Map of the Black Forest Quadrangle

Colorado Geological Survey – OF-03-06



5.4 Soil Conditions

The soils encountered in the test pits can be grouped into three general soil types. The soils were classified using the USDA textural soil classification.

Test Pit 1 Soils encountered in TP-1 consisted of sandy clay loam (3A) overlying residually weathered claystone or sandy clay when classified as a soil (4A). Redoximorphic features were observed at a depth of 4.5 feet.

Test Pit 2 Soils encountered in TP-2 consisted of very gravelly sandy loam (2A/R1) overlying residually weathered claystone or sandy clay when classified as a soil (4A). Redoximorphic features were observed at a depth of 6 feet.

Test Pit 3 Soils encountered in TP-3 consisted of a sandy clay loam (3) overlying sandy clay when classified as a soil (4A). Redoximorphic features were not encountered in the test pit.

The Test Pit Logs are presented in Appendix B. Laboratory Test Results are presented in Appendix C.

5.5 Groundwater

Groundwater was not encountered in the test borings (drilled to 20 feet) during or subsequent to drilling. Redoximorphic features were encountered in two of the the test pits (TP-1 and TP-2) at depths of 4.5 and 6 feet. Areas of potentially seasonal shallow and shallow groundwater have been mapped in the drainage and seasonal pond in the eastern portion of the site. These areas are discussed in the following section. Fluctuation in groundwater conditions may occur due to variations in rainfall and other factors including development of the site and surrounding areas.

A piezometer (P1) was installed in the seasonal pond to evaluate the groundwater conditions. The piezometer was measured the day following installation on August 13, 2026, and on September 15, 2026. The piezometer has remained dry to a depth of 20 feet. The piezometer will continue to be monitored during the coming seasons. Review of historical aerial photographs indicated that the pond seasonally has contained water, however, the pond has been dry during 2026.

For the sandy materials on site, it should be noted that some groundwater conditions might be encountered due to the variability in the soil profile. Isolated sand and gravel layers within the soils, sometimes only a few feet in thickness and width, can carry water in the subsurface. Groundwater may also flow on top of the underlying bedrock or clays. Builders and planners should monitor potential occurrences of such subsurface water features during construction on-site and mitigate as necessary at the time of construction.

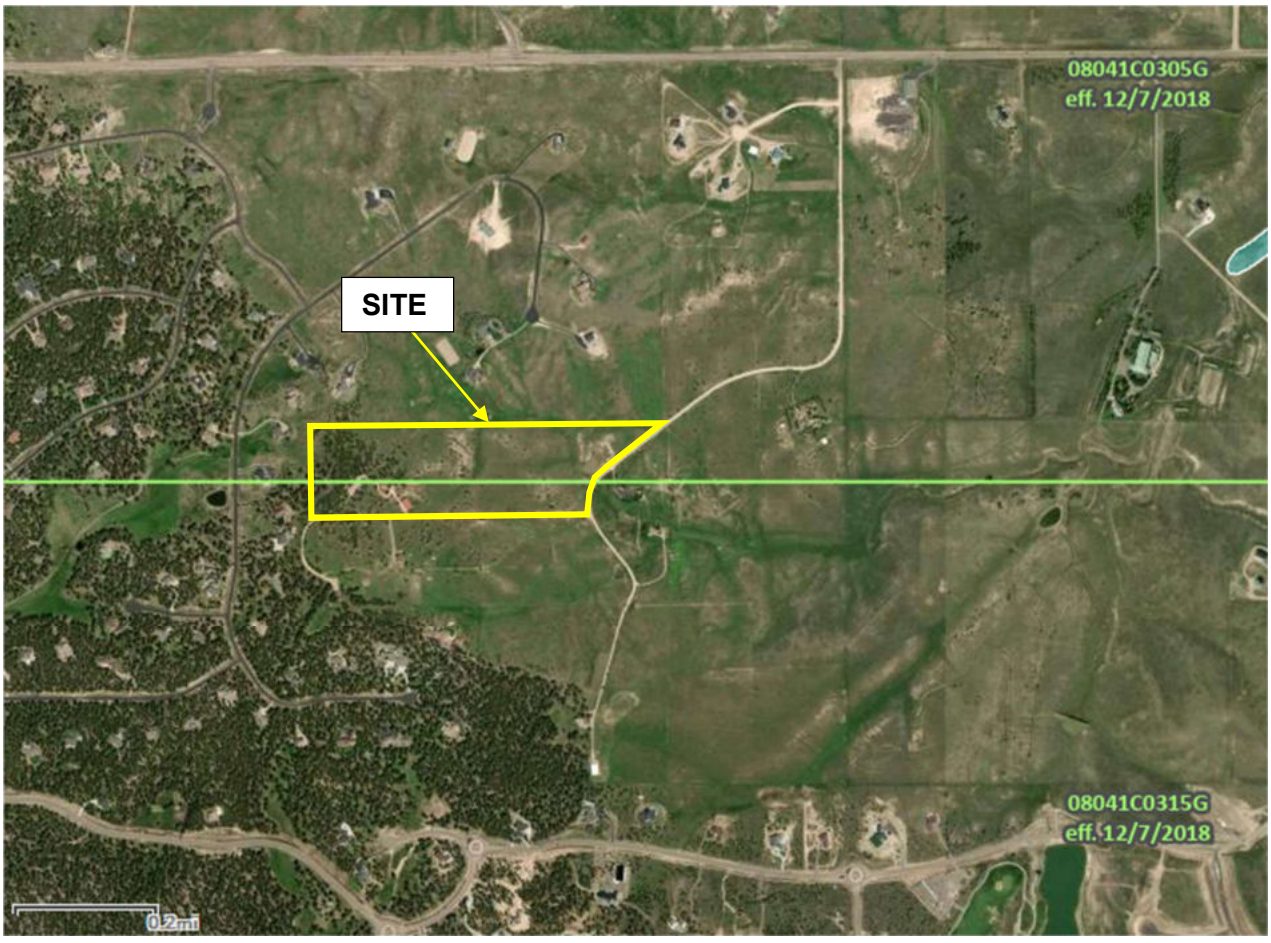
Drainage and Floodplain Areas – Constraint

The site is not located within any mapped floodplains according to FEMA Map Nos. 08041C0305G and 08041C0315G (Exhibit 4, Reference 8). The topography of the site is generally gradually to moderately sloping to the east, with a minor drainage and seasonal pond in the eastern portion of the site. The drainage and pond were dry at the time of our site observations. The drainage onsite flows in a southeasterly direction to a tributary of East Cherry Creek. The drainage and pond area onsite were dry at the time of our site observations, however, the potential for seasonal shallow groundwater exists in these areas. These areas are discussed

further below. Specific drainage studies and floodplain locations are beyond the scope of this report.

Exhibit 5: FEMA Flood Map

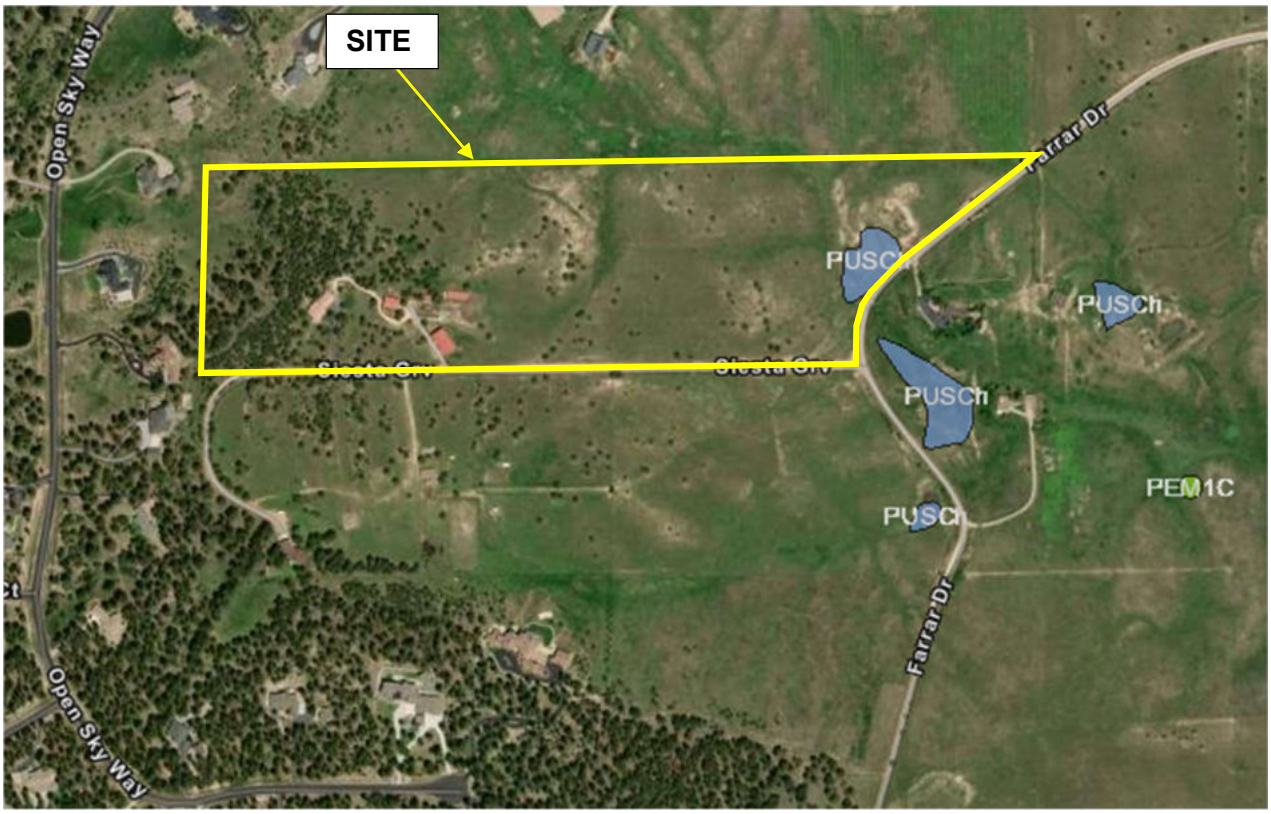
FEMA Map Nos. 08041C0305G and 08041C0315G, eff. 12/7/2018



The seasonal pond in the eastern portion of the site has been included in the National Wetlands Inventory as a Freshwater Wetland habitat classified as **PUSCh** (Palustrine – P; Unconsolidated Shore – US, Seasonally Flooded – C, Diked/Impounded) (Exhibit 5, Reference 9). Grading plans were not available at the time of this report, however, based on preliminary grading discussions the pond area will be filled to increase more buildable areas for the new lots. Fill placement recommendations are provided in Section 9.

Exhibit 6: USFWS Wetland Mapper

Wetland Map



6 ON-SITE WASTEWATER TREATMENT

The site was evaluated for individual on-site wastewater treatment systems in accordance with El Paso Land Development Code. Test pits were located in potential locations of future soil treatment areas on the lots. The approximate locations of the Test Pits are indicated on the Site and Exploration Plan (Figure 2), the Geology/Engineering Geology Map (Figure 3), and the OWTS Suitability Map, Figure 4. Test Pit Logs are included in Appendix B, with Laboratory Test Results presented in Appendix C. Records for the existing OWTS located on the site are included in Appendix E.

The Natural Resource Conservation Service (Reference 2), previously the Soil Conservation Service (Reference 3) has been mapped with two soil descriptions. The Soil Survey Map (Reference 3) is presented in Exhibit 3, and the Soil Survey Descriptions are presented in Appendix D. The soils are described as having rapid percolation rates. The majority of the soils have been described with moderate to high permeabilities.

Soils encountered in the tactile test pits consisted of sandy clay loam (3A), very gravelly sandy loam (2A/R1), sandy clay (4A) and residually weathered claystone (4A). Signs of seasonal occurring groundwater were encountered in TP-1 at a depth of 4.5 feet, and in TP-2 at a depth of 6 feet. The limiting layers encountered in the test pits are the very gravelly sandy loam (2A/R1), sandy clay loam (3A), sandy clay and claystone (4A). The soil types correspond to LTAR values of 0.80 to 0.20 gallons per day per square foot. Based on the test pits and soil evaluations it is expected that engineered systems will be required for the new lots due to the clay soils, high rock percentage, and the redoximorphic features. Based on the county records the system for the existing structure consists of a conventional system with pipe and chambers.

On-site Wastewater Systems are to be evaluated for the new lots prior to obtaining a building permit. The systems must meet County Chapter 8 OWTS criteria and State CDPHE criteria including any required mitigation to accommodate respective leach fields and infrastructure. This may include earthwork grading, berming and diversion swale implementation, installation of secondary sand filters or other higher treatment levels and dosing as required on a per lot basis and determined by test pit results and site topography. The lots have suitable areas for OWTS.

In summary, it is our opinion that site is suitable for individual on-site wastewater treatment systems (OWTS) and that contamination of surface and subsurface water resources should not occur provided the OWTS sites are evaluated and installed and maintained according to El Paso County and State Guidelines. An OWTS Suitability Map is presented in Figure 4. OWTS sites should not be located within defined drainages. Absorption fields must be located a minimum of 100 feet from any well, including those on adjacent properties. Absorption fields must also be located a minimum of 50 feet from any drainages, floodplains or ponded areas and 25 feet from dry gulches.

7 CLOSURE

It is our opinion that the existing geologic engineering and geologic conditions will impose some constraints on development and construction of the site. The majority of these conditions can be mitigated through proper engineering design and construction practices or avoidance. The proposed development and use are consistent with anticipated geologic and engineering geologic conditions.

It should be pointed out that because of the nature of data obtained by random sampling of such variable and non-homogeneous materials as soil and rock, it is important that we be informed of

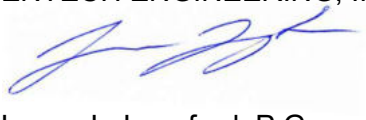
any differences observed between surface and subsurface conditions encountered in construction and those assumed in the body of this report. Individual investigations for OWTS sites will be required prior to construction on each lot. Construction and design personnel should be made familiar with the contents of this report. Reporting such discrepancies to Entech Engineering, Inc. soon after they are discovered would be greatly appreciated and could possibly help avoid construction and development problems.

This report has been prepared for Quentin Dassonville for application to the proposed project in accordance with generally accepted geologic soil and engineering practices. No other warranty expressed or implied is made.

We trust that this report has provided you with all the information that you required. Should you require additional information, please do not hesitate to contact Entech Engineering, Inc.

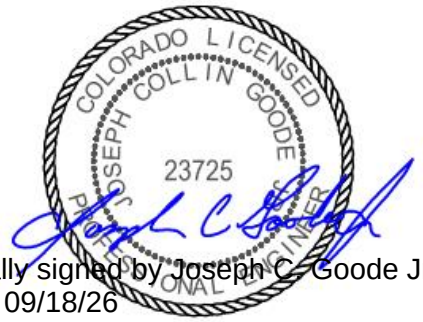
Respectfully Submitted,

ENTECH ENGINEERING, INC.



Logan L. Langford, P.G.
Sr. Geologist

Reviewed by:



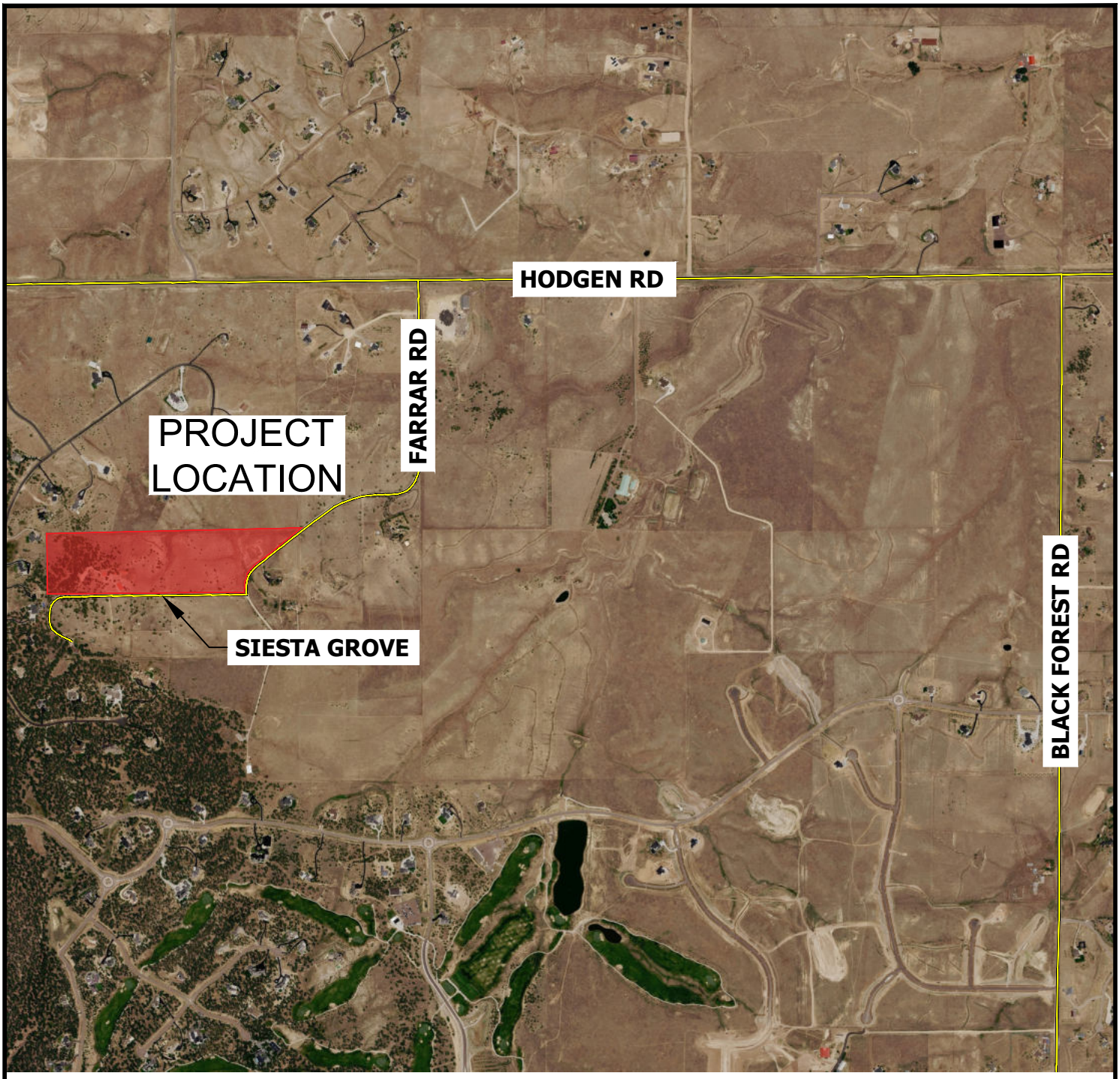
Digitally signed by Joseph C. Goode Jr.
Date: 09/18/26

Joseph C. Goode Jr., P.E.
President

LLL/JCG

8 REFERENCES

1. Bryant, Bruce, McGrew, Laura W., and Wobus, Reinhard A. 1981. *Geologic Structure Map of the Denver 1º x 2º Quadrangle, North-Central Colorado*. U.S. Geologic Survey. Map 1-1163.
2. Natural Resource Conservation Service, June 20, 2007. *Web Soil Survey.* United States Department Agriculture, hhtp://web soil survey.nrcs.usda.gov.
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6. Bryant, Bruce, McGrew, Laura W., and Wobus, Reinhard A. 1981. *Geologic Map of the Denver 1º x 2º Quadrangle, North-Central Colorado*. U.S. Geologic Survey. Map 1-1163.
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8. Federal Emergency Management Agency. December 7, 2018. *Flood Insurance Rate Maps for the City of Colorado Springs, Colorado.* Map Numbers 08041C0305G and 08041C0315G.
9. U.S. Fish & Wildlife Service, May 1, 2020. *National Wetlands Inventory*. Department of the Interior, fws.gov/wetlands/data/Mapper.html.
10. McCoy, KM; Morgan, ML; Berry, KL. 2018. *Debris Flow Susceptibility Map of El Paso County, Colorado.* Colorado Geological Survey. Open-File Report 18-11.



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VICINITY MAP

SIESTA GROVE
QUENTIN DASSONVILE

JOB NO. 261465

FIG. 1



TB- APPROXIMATE TEST BORING LOCATION AND NUMBER

TP- APPROXIMATE TEST PIT LOCATION AND NUMBER

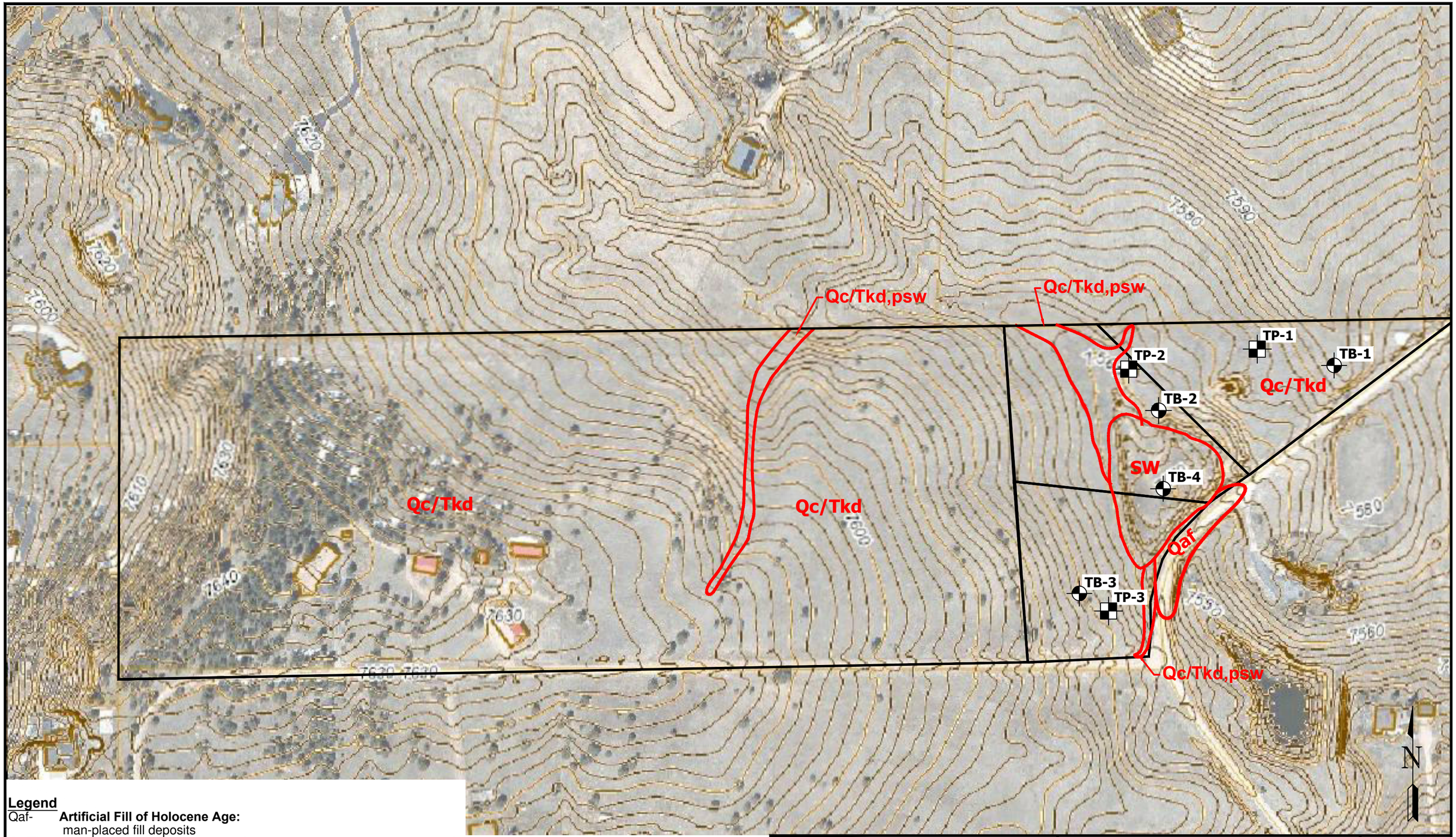
ENTECH ENGINEERING, INC.

SITE AND EXPLORATION PLAN

SIESTA GROVE SUBDIVISION
QUENTIN DASSONVILE

JOB NO. 261465

FIG. 2



Legend

Qaf- **Artificial Fill of Holocene Age:**
man-placed fill deposits

Qc/Tkd- **Colluvium of Quaternary Age Overlying the Dawson Formation of Tertiary to Cretaceous Age:**
Sheetwash and residual soil deposits overlying arkosic sandstone with interbedded siltstone and claystone

sw - Seasonally shallow groundwater

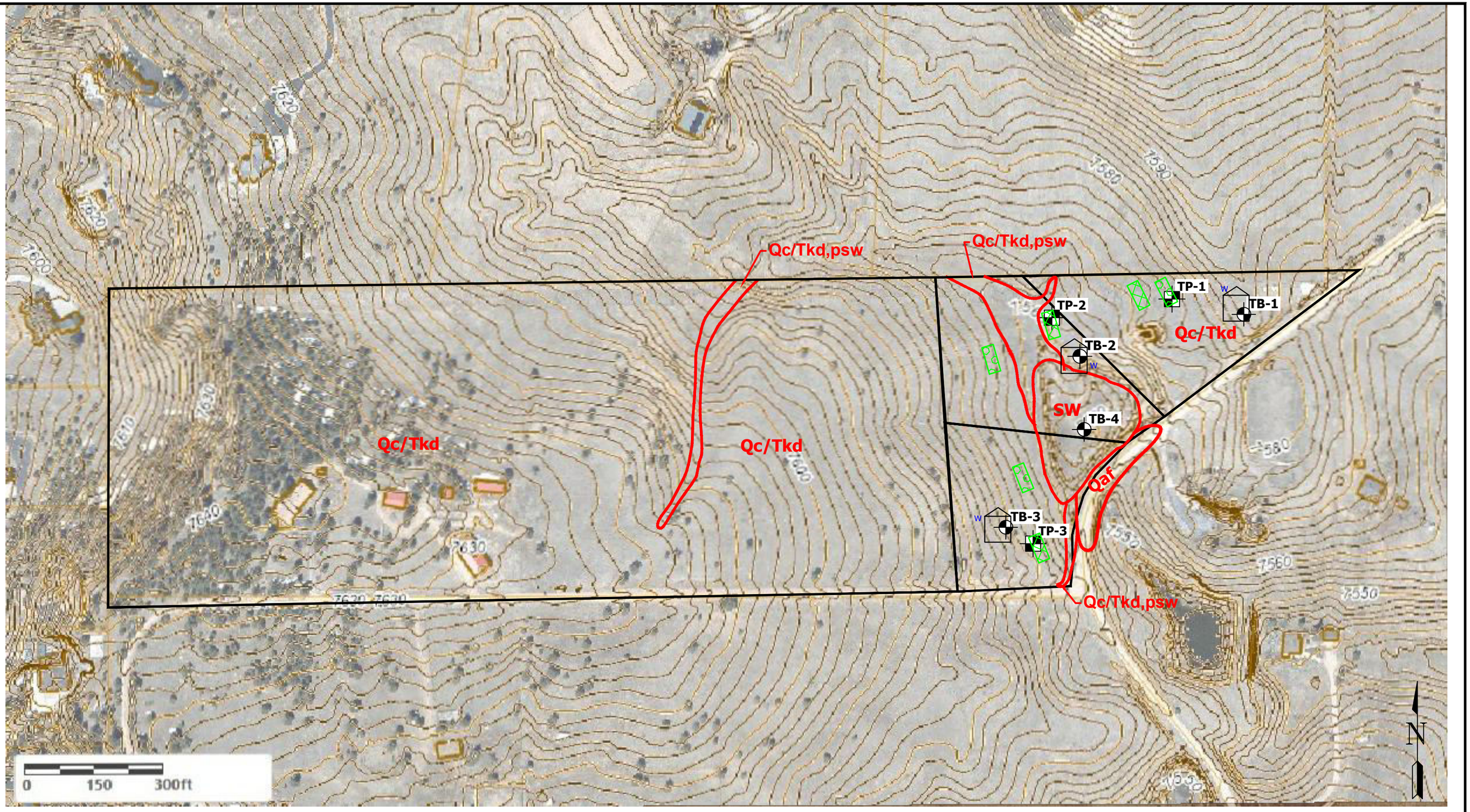
psw - Potentially Seasonally shallow groundwater

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GEOLOGY / ENGINEERING GEOLOGY MAP
SIESTA GROVE SUBDIVISION
QUENTIN DASSONVILE

JOB NO. 261465

FIG. 3



LEGEND:

- POSSIBLE OWTS LOCATIONS
- POSSIBLE OWTS ALTERNATE LOCATIONS
- POSSIBLE HOUSE LOCATION

W

*- WATER WELLS MUST BE A MINIMUM OF 100 FT FROM OWTS ABSORPTION FIELDS

ENTECH ENGINEERING, INC.

OWTS SUITABILITY MAP

SIESTA GROVE SUBDIVISION

QUENTIN DASSONVILE

JOB NO. 261465

FIG. 4

APPENDIX A: Site Photographs



1

Looking west from the northeastern portion of the site.

August 5, 2026



2

Looking southwest from the northeastern portion of the site.

August 5, 2026

Job No. 261465



3

Looking northeast from the southeastern portion of the site.

August 5, 2026



4

Looking north from the southeastern portion of the site.

August 5, 2026

Job No. 261465



5

Looking west from the central portion of the site.

August 5, 2026



6

Looking east from the central portion of the site.

August 5, 2026

Job No. 261465

APPENDIX B: Test Boring and Test Pit Logs

TEST BORING 1
DATE DRILLED 8/13/2026

REMARKS

DRY TO 20', 8/14/26

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			30	7.2	1
5			34	5.2	1
			47	9.1	1
10					
			50/9"	12.6	3
15					
			42	12.7	3
20					

6" TOPSOIL

SAND, SILTY, RED BROWN to TAN, DENSE, MOIST

SANDSTONE, EXTREMELY WEAK, TAN, COMPLETELY WEATHERED (SAND, SILTY, VERY DENSE, MOIST)

TEST BORING 2
DATE DRILLED 8/13/2026

REMARKS

DRY TO 20', 8/14/26

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			33	3.2	1
5			37	7.9	1
			35	14.9	1
10					
			45	6.6	1
15					
			41	14.2	1
20					

SAND, SILTY, TAN to LIGHT RED, DENSE, MOIST

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TEST BORING LOGS

SIESTA GROVE
QUENTIN DASSONVILE

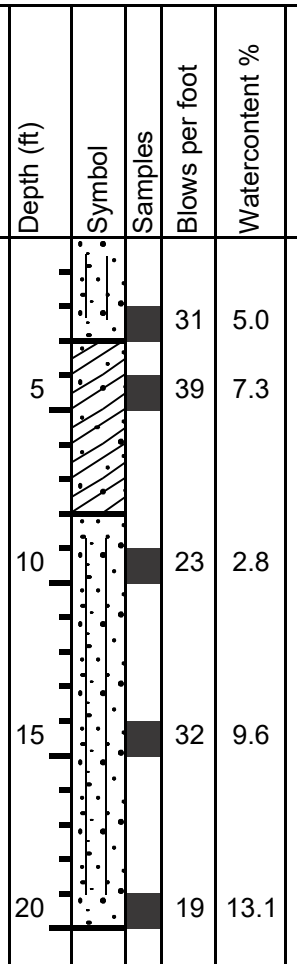
JOB NO. 261465

FIG. B-1

TEST BORING 3
DATE DRILLED 8/13/2026

REMARKS

DRY TO 20', 8/14/26

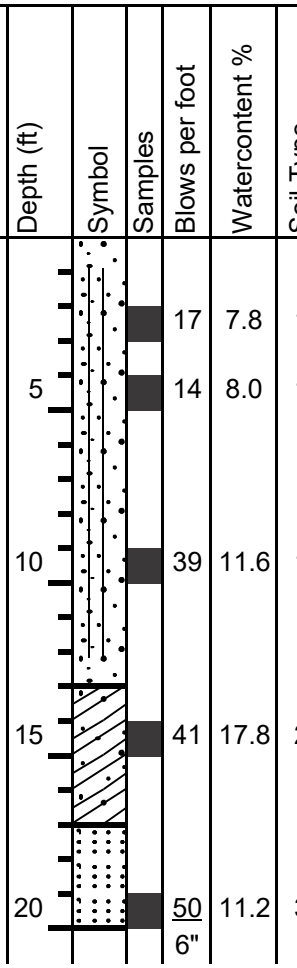


Depth (ft)	Description	Blows per foot	Watercontent %	Soil Type
	6" TOPSOIL			
	SAND, SILTY, LIGHT BROWN, DENSE, MOIST	31	5.0	1
	CLAY, WITH SAND, LIGHT BROWN, HARD, MOIST	39	7.3	2
	SAND, SILTY, TAN, MEDIUM DENSE to DENSE, DRY to MOIST	23	2.8	1
		32	9.6	1
		19	13.1	1

TEST BORING 4
DATE DRILLED 8/13/2026

REMARKS

PIEZOMETER NO. 1
DRY TO 20', 8/14/26



Depth (ft)	Description	Blows per foot	Watercontent %	Soil Type
	SAND, SILTY, TAN, MEDIUM DENSE to DENSE, MOIST	17	7.8	1
		14	8.0	1
		39	11.6	1
	CLAY, WITH SAND, LIGHT BROWN, HARD, MOIST	41	17.8	2
	SANDSTONE, EXTREMELY WEAK, TAN, COMPLETELY WEATHERED (SAND, SILTY, VERY DENSE, MOIST)	50/6"	11.2	3

ENTECH ENGINEERING, INC.

TEST BORING LOGS

SIESTA GROVE
QUENTIN DASSONVILE

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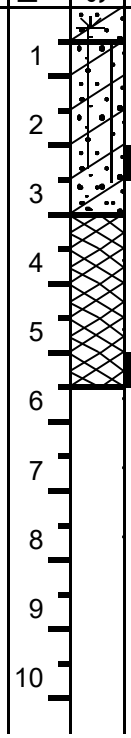
FIG. B-2

TEST PIT 1
DATE DRILLED 8/13/2026

REMARKS

redoximorphic features at 4.5'

Depth (ft)	Symbol	Samples	Structure Shape	Structure Grade	Soil Type
topsoil, sandy loam, dark brown, moist					
sandy clay loam, fine to coasre grained, light brown, moist			gr	w	3A
claystone (sandy clay, fine to coarse grained, light brown, moist)			ma		4A

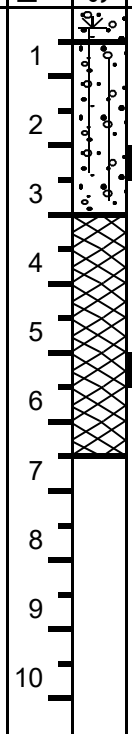


TEST PIT 2
DATE DRILLED 8/13/2026

REMARKS

redoximorphic features at 6'

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
topsoil, sandy loam, brown, moist					
very gravelly sandy loam, fine to coasre grained, light brown, moist			gr	w	2A R1
claystone (sandy clay, fine to coarse grained, light brown, moist)			ma		4A



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

ENTECH ENGINEERING, INC.

TEST PIT LOGS

SIESTA GROVE
QUENTIN DASSONVILE

JOB NO. 261465

FIG. B-3

TEST PIT 3
DATE DRILLED 8/13/2026

REMARKS	Depth (ft)	Symbol	Samples	Structure Shape	Structure Grade	Soil Type
topsoil, sandy loam, dark brown, moist	1					
sandy clay loam, fine to medium grained, light brown,	2					
	3			gr	m	3
	4					
	5					
sandy clay, fine to medium grained, light brown, moist	6			gr	w	4A
	7					
	8					
	9					
	10					

REMARKS	Depth (ft)	Symbol	Samples	Structure Shape	Structure Grade	Soil Type
	1					
	2					
	3					
	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

ENTECH ENGINEERING, INC.

TEST PIT LOGS

SIESTA GROVE
QUENTIN DASSONVILE

JOB NO. 261465

FIG. B-4

APPENDIX C: Laboratory Test Results

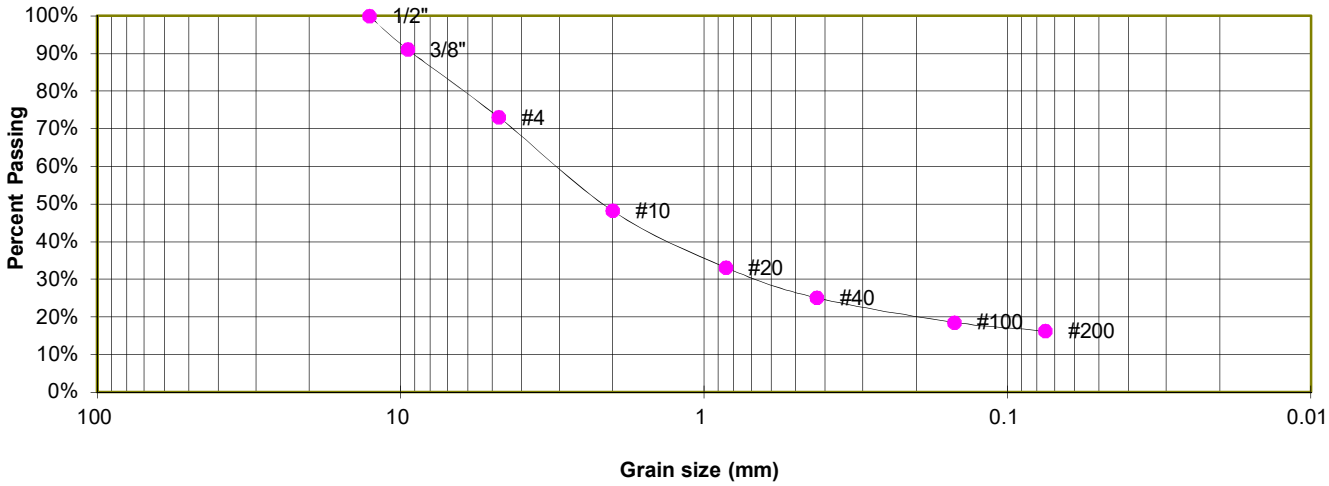
ENTECH ENGINEERING, INC.

TABLE C-1
SUMMARY OF LABORATORY TEST RESULTS

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTIC INDEX	SULFATE (WT %)	SWELL/ CONSOL (%)	USCS	SOIL DESCRIPTION
1	2	5			16.3	NV	NP	NP	<0.01		SM	SAND, SILTY
1	4	10			22.8						SM	SAND, SILTY
2	3	5	8.5	92.9	72.8	23	14	9	<0.01	-0.7	CL	CLAY, WITH SAND
3	1	20			20.6	47	36	11	<0.01		SM	SANDSTONE (SAND, SILTY)

Project: Siesta Grove Subdivision
Client: Quetin Dassonville
Job No: 261465

TEST BORING	2	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	5	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	91.1%
4	73.1%
10	48.2%
20	33.2%
40	25.1%
100	18.6%
200	16.3%

ATTERBERG LIMITS

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

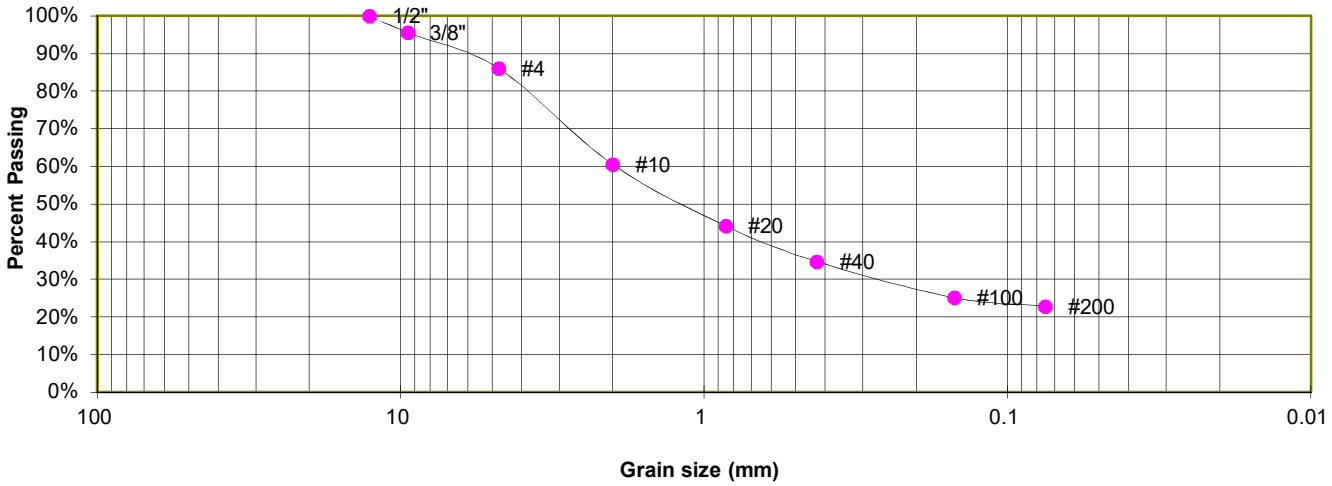
LABORATORY TEST RESULTS

SIESTA GROVE
QUENTIN DASSONVILE

JOB NO. 261465

FIG. C-1

TEST BORING	4	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	10	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	95.6%
4	86.0%
10	60.5%
20	44.2%
40	34.7%
100	25.1%
200	22.8%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

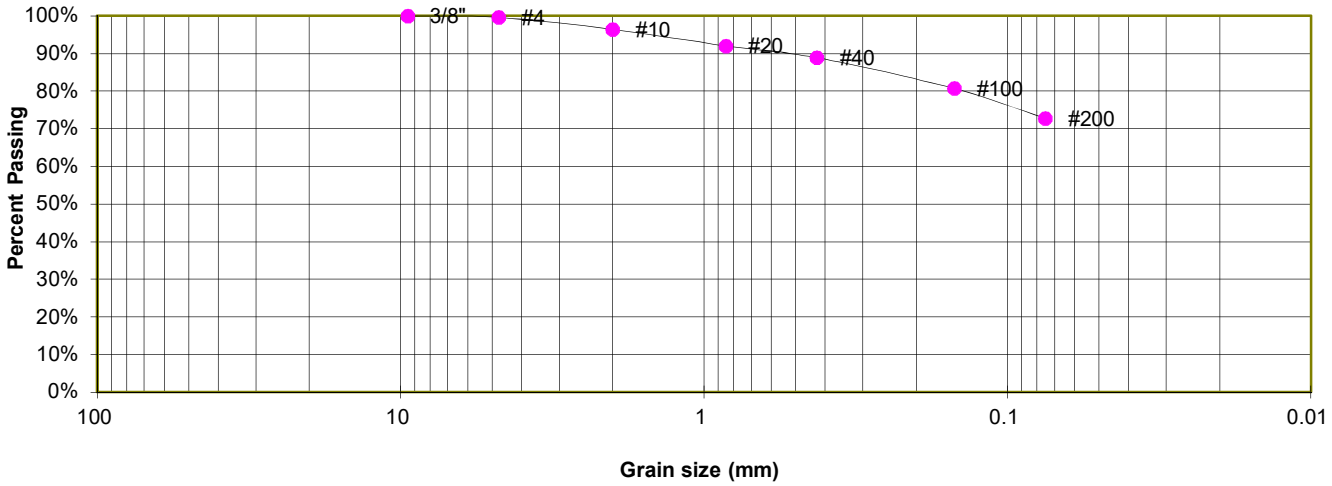
LABORATORY TEST RESULTS

SIESTA GROVE
QUENTIN DASSONVILE

JOB NO. 261465

FIG. C-2

TEST BORING	3	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	5	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.6%
10	96.4%
20	92.1%
40	88.9%
100	80.7%
200	72.8%

ATTERBERG LIMITS

Plastic Limit	14
Liquid Limit	23
Plastic Index	9

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

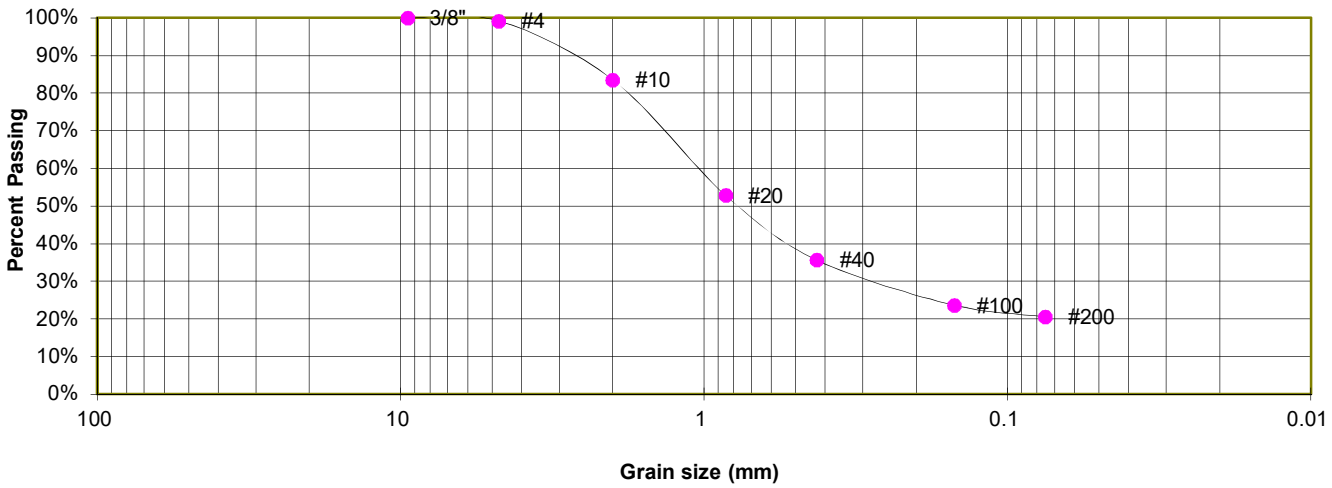
LABORATORY TEST RESULTS

SIESTA GROVE
QUENTIN DASSONVILLE

JOB NO. 261465

FIG. C-1

TEST BORING	1	SOIL DESCRIPTION	SANDSTONE (SAND, SILTY)
DEPTH (FT)	20	SOIL TYPE	3



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.2%
10	83.6%
20	52.9%
40	35.6%
100	23.7%
200	20.6%

ATTERBERG LIMITS

Plastic Limit	36
Liquid Limit	47
Plastic Index	11

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

SIESTA GROVE
QUENTIN DASSONVILLE

JOB NO. 261465

FIG. C-4

TEST BORING	3	SOIL DESCRIPTION	CLAY, WITH SAND
DEPTH (FT)	5	SOIL TYPE	2



SWELL/COLLAPSE TEST RESULTS

NATURAL UNIT DRY WEIGHT (PCF):	93
NATURAL MOISTURE CONTENT:	8.5%
SWELL/COLLAPSE (%):	-0.7%

ENTECH ENGINEERING, INC.

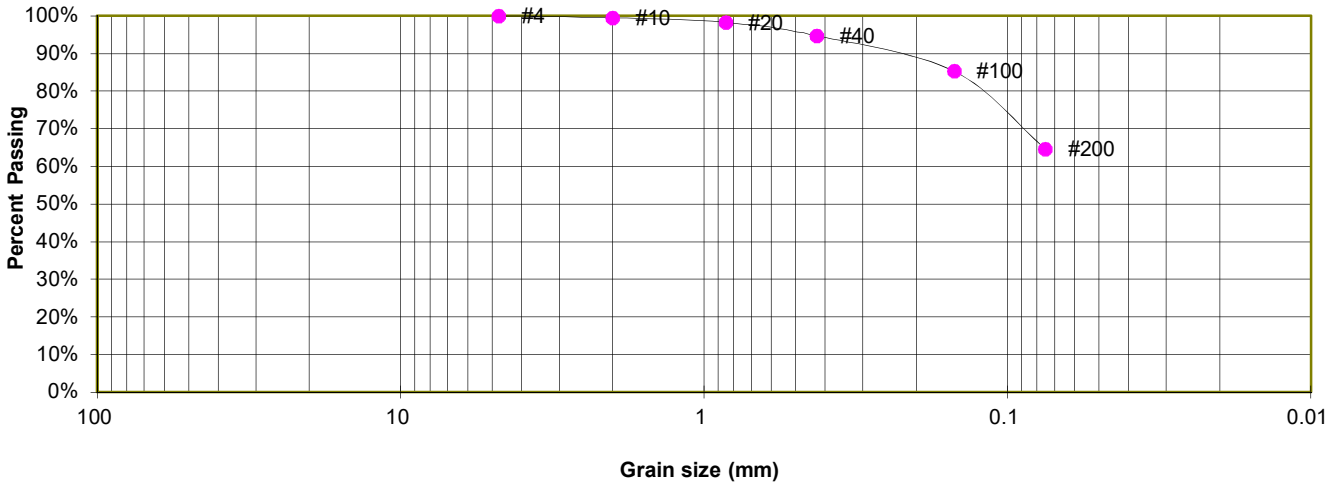
SWELL TEST RESULTS

SIESTA GROVE
QUENTIN DASSONVILE

JOB NO. 261465

FIG. C-5

TEST BORING	TP-1	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	2-3	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.5%
20	98.3%
40	94.7%
100	85.3%
200	64.7%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

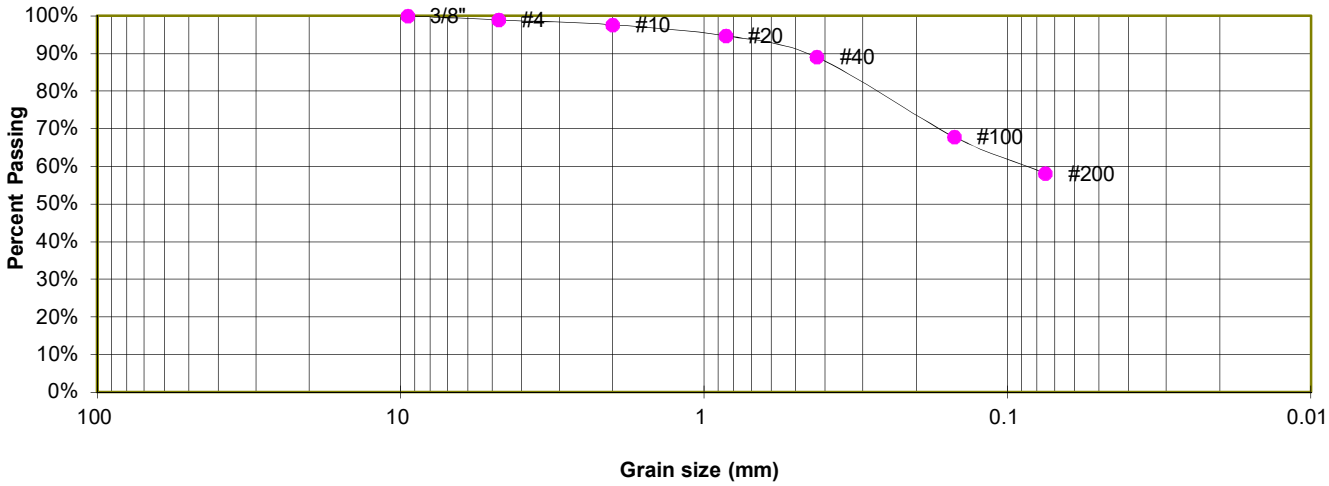
LABORATORY TEST RESULTS

SIESTA GROVE SUBDIVISION
QUENTIN DASSONVILLE

JOB NO. 261465

FIG. C-5

TEST BORING	TP-1	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5-6	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	98.9%
10	97.6%
20	94.7%
40	89.0%
100	67.9%
200	58.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

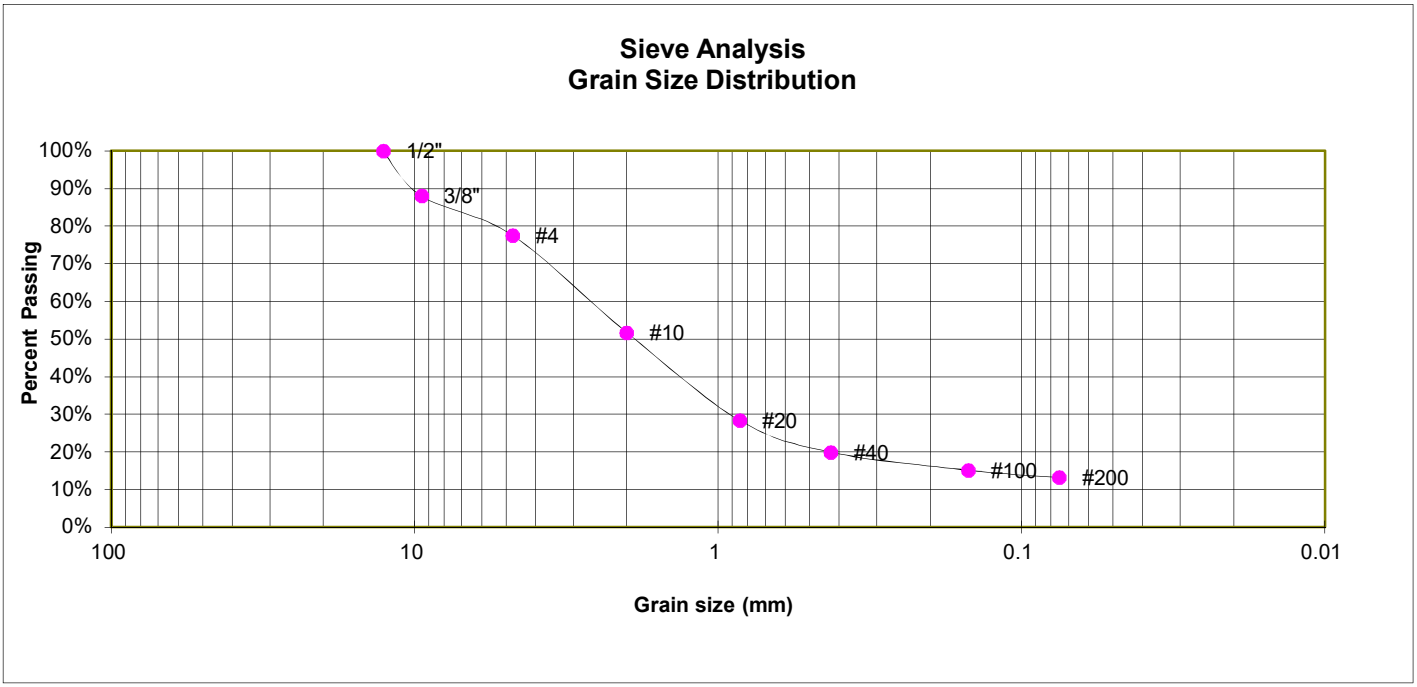
LABORATORY TEST RESULTS

SIESTA GROVE SUBDIVISION
QUENTIN DASSONVILLE

JOB NO. 261465

FIG. C-6

TEST BORING	TP-2	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	2-3	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	88.0%
4	77.5%
10	51.7%
20	28.4%
40	19.9%
100	15.2%
200	13.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

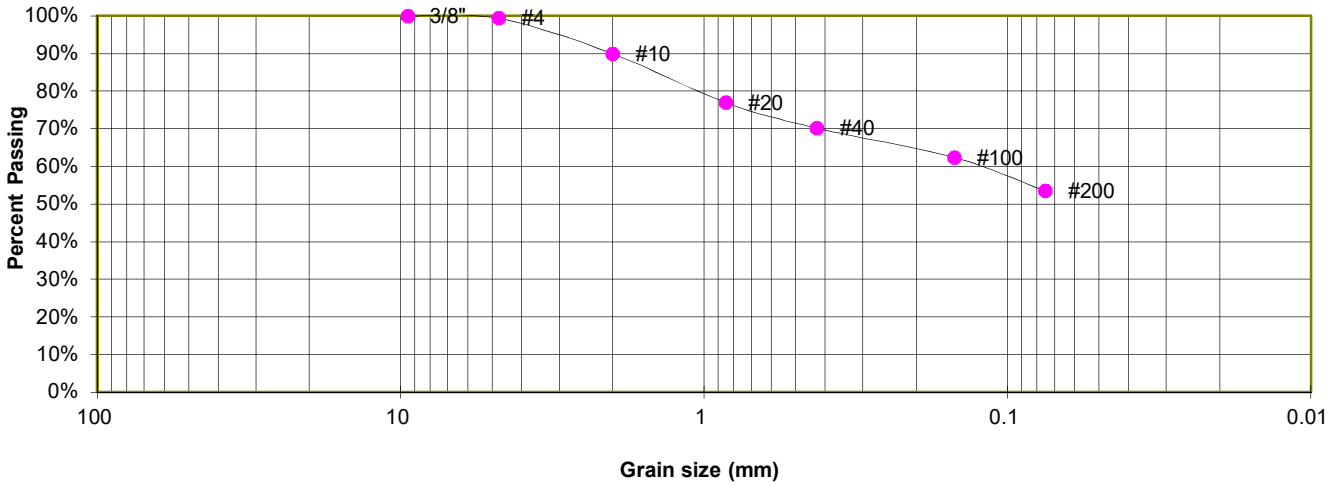
LABORATORY TEST RESULTS

SIESTA GROVE SUBDIVISION
QUENTIN DASSONVILLE

JOB NO. 261465

FIG. C-7

TEST BORING	TP-2	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	4-5	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.4%
10	90.0%
20	76.9%
40	70.2%
100	62.4%
200	53.5%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

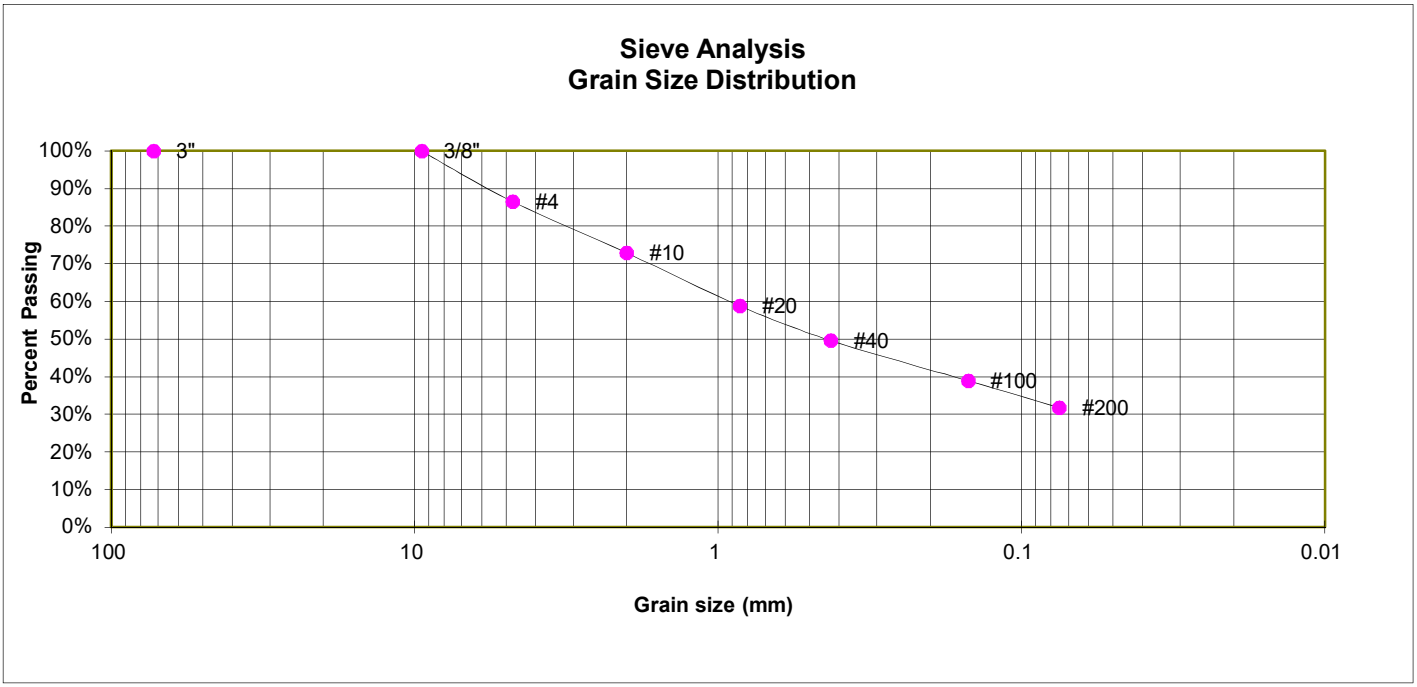
LABORATORY TEST RESULTS

SIESTA GROVE SUBDIVISION
QUENTIN DASSONVILLE

JOB NO. 261465

FIG. C-8

TEST BORING	TP-3	SOIL DESCRIPTION	SAND, SILTY
DEPTH (FT)	2-3	SOIL TYPE	1



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	100.0%
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	86.5%
10	72.9%
20	58.8%
40	49.6%
100	38.9%
200	31.8%

SOIL CLASSIFICATION

USCS CLASSIFICATION: SM

ENTECH ENGINEERING, INC.

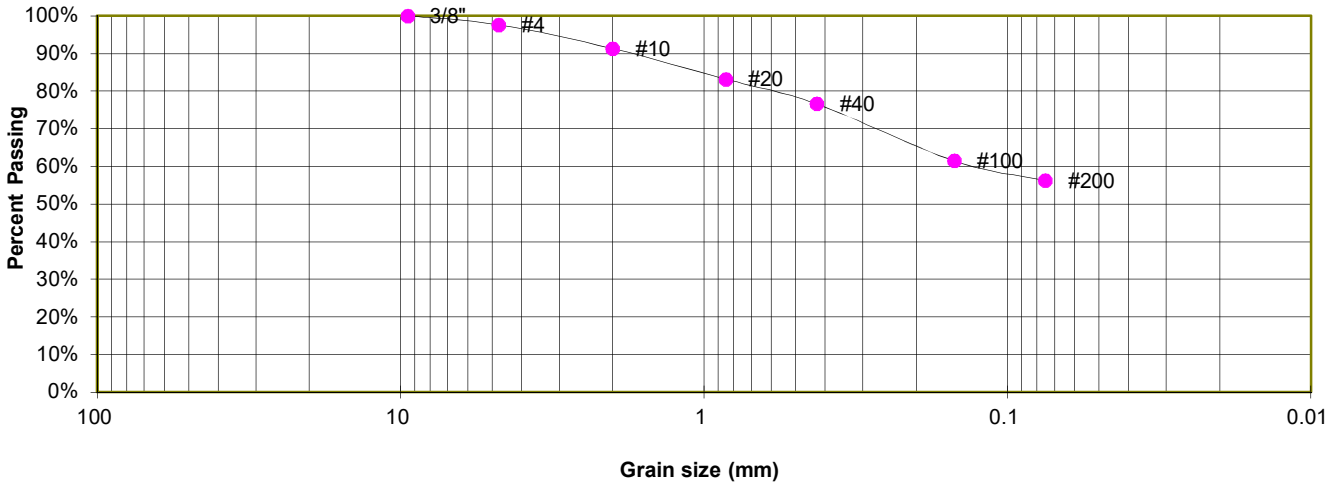
LABORATORY TEST RESULTS

SIESTA GROVE SUBDIVISION
QUENTIN DASSONVILLE

JOB NO. 261465

FIG. C-9

TEST BORING	TP-3	SOIL DESCRIPTION	CLAY, SANDY
DEPTH (FT)	5-6	SOIL TYPE	2



GRAIN SIZE ANALYSIS

U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	97.6%
10	91.3%
20	83.2%
40	76.6%
100	61.5%
200	56.2%

SOIL CLASSIFICATION

USCS CLASSIFICATION: CL

ENTECH ENGINEERING, INC.

LABORATORY TEST RESULTS

SIESTA GROVE SUBDIVISION
QUENTIN DASSONVILLE

JOB NO. 261465

FIG. C-10

APPENDIX D: USDA Soil Survey Descriptions

El Paso County Area, Colorado

26—Elbeth sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 367y
Landscape: Uplands
Elevation: 7,300 to 7,600 feet
Farmland classification: Not prime farmland

Map Unit Composition

Elbeth and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elbeth

Setting

Landscape: Uplands
Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from arkose

Typical profile

A - 0 to 3 inches: sandy loam
E - 3 to 23 inches: loamy sand
Bt - 23 to 68 inches: sandy clay loam
C - 68 to 74 inches: sandy clay loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F048AY908CO - Mixed Conifer
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 10 percent
Hydric soil rating: No

Pleasant

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 23, Aug 29, 2025

El Paso County Area, Colorado

67—Peyton sandy loam, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 369d
Landscape: Uplands
Elevation: 6,800 to 7,600 feet
Mean annual air temperature: 43 to 45 degrees F
Frost-free period: 115 to 125 days
Farmland classification: Not prime farmland

Map Unit Composition

Peyton and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Peyton

Setting

Landscape: Uplands
Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Arkosic alluvium derived from sedimentary rock and/or arkosic residuum weathered from sedimentary rock

Typical profile

A - 0 to 12 inches: sandy loam
Bt - 12 to 25 inches: sandy clay loam
BC - 25 to 35 inches: sandy loam
C - 35 to 60 inches: sandy loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B

Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Minor Components

Other soils
Percent of map unit: 10 percent
Hydric soil rating: No

Pleasant
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 23, Aug 29, 2025

El Paso County Area, Colorado

92—Tomah-Crowfoot loamy sands, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 36b9
Elevation: 7,300 to 7,600 feet
Farmland classification: Not prime farmland

Map Unit Composition

Tomah and similar soils: 50 percent
Crowfoot and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tomah

Setting

Landform: Alluvial fans, Hills
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from arkose and/or residuum weathered from arkose

Typical profile

A - 0 to 10 inches: loamy sand
E - 10 to 22 inches: coarse sand
Bt - 22 to 48 inches: stratified coarse sand to sandy clay loam
C - 48 to 60 inches: coarse sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Description of Crowfoot

Setting

Landform: Hills, Alluvial fans
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 12 inches: loamy sand
E - 12 to 23 inches: sand
Bt - 23 to 36 inches: sandy clay loam
C - 36 to 60 inches: coarse sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: R049XY216CO - Sandy Divide
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 15 percent
Hydric soil rating: No

Pleasant

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 23, Aug 29, 2025

APPENDIX E: Existing El Paso County Health Department Septic Records

EL PASO COUNTY HEALTH DEPARTMENT
INDIVIDUAL SEWAGE DISPOSAL INSPECTION FORM

Permit # 6073

#6100000292

Date 9/11/91 FINAL

APPROVED YES ✓ NO ____ ENVIRONMENTALIST Krueger

Address 15850 SIESTA GROVE Owner EWELL

Legal Description LOT 4 EAGLE CREST ESTATES

Residence ✓ Commerical ____ # of Bedrooms 4 System Installer D+B TRENCHING

SEPTIC TANK

Commercial ____ Noncommercial ____ Measurements: L ____ W ____ D ____

Construction Material CONCRETE Liq. Cap. 1500

DISPOSAL FIELD INFILTRATOR TRENCHES

Exc. Depth 18"-24" Width ____ Total Length ____ Sq. Ft. 262

Rock N/A Depth ____ Under ____ Over ____

Rockless System: Diameter of Pipe INFILTRATOR

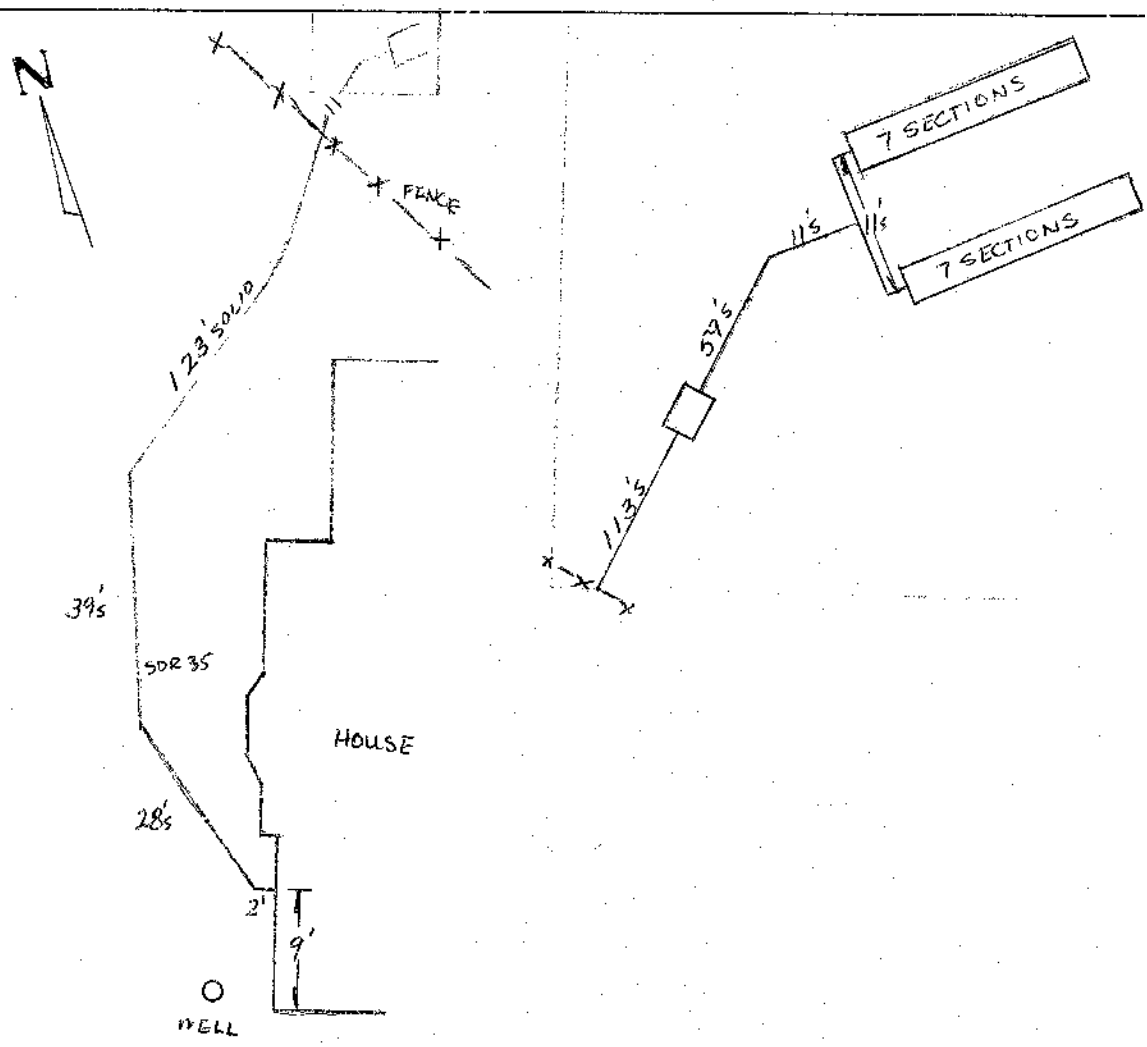
Seepage Pits: Number of rings ____ Lining Material ____ Sq. Ft. ____

Working Depth ____ Width ____

Engineer Design Yes ____ Type ____ Engineer Approval Letter Yes ____

Well 50 feet from Tank yes 100 feet from leach field yes

Well Installed at Time of Septic System Inspection Yes ✓ No ____ Public Water ____



Acres 3+ **EL PASO COUNTY • COUNTY HEALTH DEPARTMENT** Permit 6073

501 North Foote Avenue • Colorado Springs, Colorado • 578-3125

Water Supply well Receipt No. 5-464

PERMIT

TO CONSTRUCT, ALTER, REPAIR or MODIFY ANY INDIVIDUAL SEWAGE DISPOSAL SYSTEM

Issued To JON EWELL Date 6/21/91

Address of Property 15850 SIESTA GROVE Phone 637-1807

(Permit valid at this address only)

Sewage-Disposal System work to be performed by D & B Trenching Phone 683-2400

This Permit is issued in accordance with 25-10-106 Colorado Revised Statutes 1973, as amended. PERMIT EXPIRES upon completion-installation of sewage-disposal system or at the end of twelve (12) months from date of Issue—whichever occurs first—(unless work is in progress). This permit is revokable if all stated requirements are not met.

—THIS PERMIT DOES NOT DENOTE APPROVAL OF ZONING AND ACREAGE REQUIREMENTS—

$150.00
PERMIT FEE (NOT REFUNDABLE)

John Bruck M.D.
DIRECTOR, COUNTY HEALTH DEPARTMENT

6/21/92
DATE OF EXPIRATION

A. Mikkelsen for N. Kemper
ENVIRONMENTALIST

NOTE: LEAVE ENTIRE SEWAGE-DISPOSAL SYSTEM UNCOVERED FOR FINAL INSPECTION. 48 HOUR ADVANCE NOTICE REQUIRED.

SEPTIC TANK:	TRENCH SYSTEM:	BED SYSTEM:	SEEPAGE PIT SYSTEM:
	total square feet 805 476 GK		total square feet
1500 gallons	~~282~~ 157 ft. of trench ~~36~~ 36 inches wide	total square feet	rings or diam.x w/d

NOTES: Keep Field in perc. location. Meet all distance requirements.

NEW PERC. 476' LEACH TO BE NO DEEPER THAN 24" DUE TO SANDSTONE @ 6'

The Health Office shall assume no responsibility in case of failure or inadequacy of a sewage-disposal system, beyond consulting in good faith with the property owner or representative. Free access to the property shall be authorized at reasonable times for the purpose of making such inspections as are necessary to determine compliance with requirements of this law.