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**WASTEWATER STUDY  
NORTH PARK SUBDIVISION  
PARCEL NO. 61000-00-369  
EL PASO COUNTY, COLORADO**



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June 16, 2026

Respectfully Submitted,  
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LLL/JCG

**PCD No.**

## **Table of Contents**

|          |                                                              |           |
|----------|--------------------------------------------------------------|-----------|
| <b>1</b> | <b>SUMMARY.....</b>                                          | <b>1</b>  |
| <b>2</b> | <b>GENERAL SITE CONDITIONS AND PROJECT DESCRIPTION .....</b> | <b>2</b>  |
| <b>3</b> | <b>SCOPE OF THE REPORT .....</b>                             | <b>2</b>  |
| <b>4</b> | <b>FIELD INVESTIGATION .....</b>                             | <b>3</b>  |
| <b>5</b> | <b>SOIL, GEOLOGY, AND ENGINEERING GEOLOGY.....</b>           | <b>4</b>  |
| 5.1      | General Geology .....                                        | 4         |
| 5.2      | Soil Conservation Survey .....                               | 4         |
| 5.3      | Site Stratigraphy .....                                      | 6         |
| 5.4      | Soil Conditions .....                                        | 7         |
| 5.5      | Groundwater .....                                            | 8         |
| <b>6</b> | <b>ON-SITE WASTEWATER TREATMENT .....</b>                    | <b>10</b> |
| <b>7</b> | <b>CLOSURE.....</b>                                          | <b>11</b> |
| <b>8</b> | <b>REFERENCES.....</b>                                       | <b>12</b> |

## **FIGURES**

Figure 1: Vicinity Map

Figure 2: USGS Map

Figure 3: Site and Exploration

Figure 4: Geology/Engineering Geology Map

Figure 5: OWTS Suitability Map

APPENDIX A: Site Photographs

APPENDIX B: Test Boring and Test Pit Logs

APPENDIX C: Laboratory Test Results

APPENDIX D: Soil Survey Descriptions

APPENDIX E: Existing OWTS Records

## 1 SUMMARY

### ***Project Location***

The project site is located within the SE¼ of Section 11, Township 12 South, Range 65 West of the 6<sup>th</sup> Principal Meridian in El Paso County, Colorado. The site is located approximately 4 miles east of the town of Monument, Colorado on the eastern side of Highway 83 between Hodgen Road and Walker Road. The location of the site is as shown in the Vicinity Map (Figure 1).

### ***Project Description***

A fifteen-lot rural residential subdivision is proposed for the approximate 48-acre parcel. Two residences (Lots 4 and 9) with existing water wells and on-site wastewater systems (OWTS) and a barn (Lot 7) are currently located on the property. These structures are expected to remain. The lots will be 2.5 to 3.56 acres and will be serviced by individual water wells and on-site wastewater treatment systems (OWTS). The lots will be accessed by an extension of the existing Needles Drive from the southern side of the site. A detention pond is proposed in the northwestern portion of the site.

### ***Scope of Report***

This report presents the results of our geologic evaluation and treatment of 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 groundwater areas, and the potential for elevated radon levels. 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 west, with several minor drainages in the eastern and southern portions of the site. The drainages were dry at the time of our site observations. A tributary of West Cherry Creek is located in the southern extent of the site. West Cherry Creek which flows north is located on the west side of Highway 83. The site boundaries are indicated in the USGS Map (Figure 2). Previous land uses have included rural residential. Vegetation observed on the site includes field grasses, weeds, and Ponderosa Pines with landscaped areas around the existing residences. Site photographs are included in Appendix A.

The project consists subdividing of the 48-acres into a fifteen rural residential lots. The lots will be 2.5 to 3.65 acres and will be serviced by individual water wells and OTWS. The proposed lot configuration is shown in the Site and Exploration Plan (Figure 3). Grading plans were not available at the time of this investigation, however, grading is anticipated to be minimal, limited to road grading associated with the extension of Needles Drive, and the construction of the proposed detention pond.

## **3 SCOPE OF THE REPORT**

The scope of this report includes a general geologic analysis utilizing published geologic data and evaluates the site for on-site wastewater treatment. 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 April 29, 2026. Site photographs are included in Appendix A.

Six (6) test borings were drilled and Six (6) tactile test pits were excavated on the site to evaluate the soil conditions and 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 4 to 8 feet.

The locations of the test boring and test pits are indicated on the Site and Exploration Plan (Figure 3). 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 just north of the Palmer Divide. A major structural feature known as the Rampart Range Fault lies approximately 8 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 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. 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

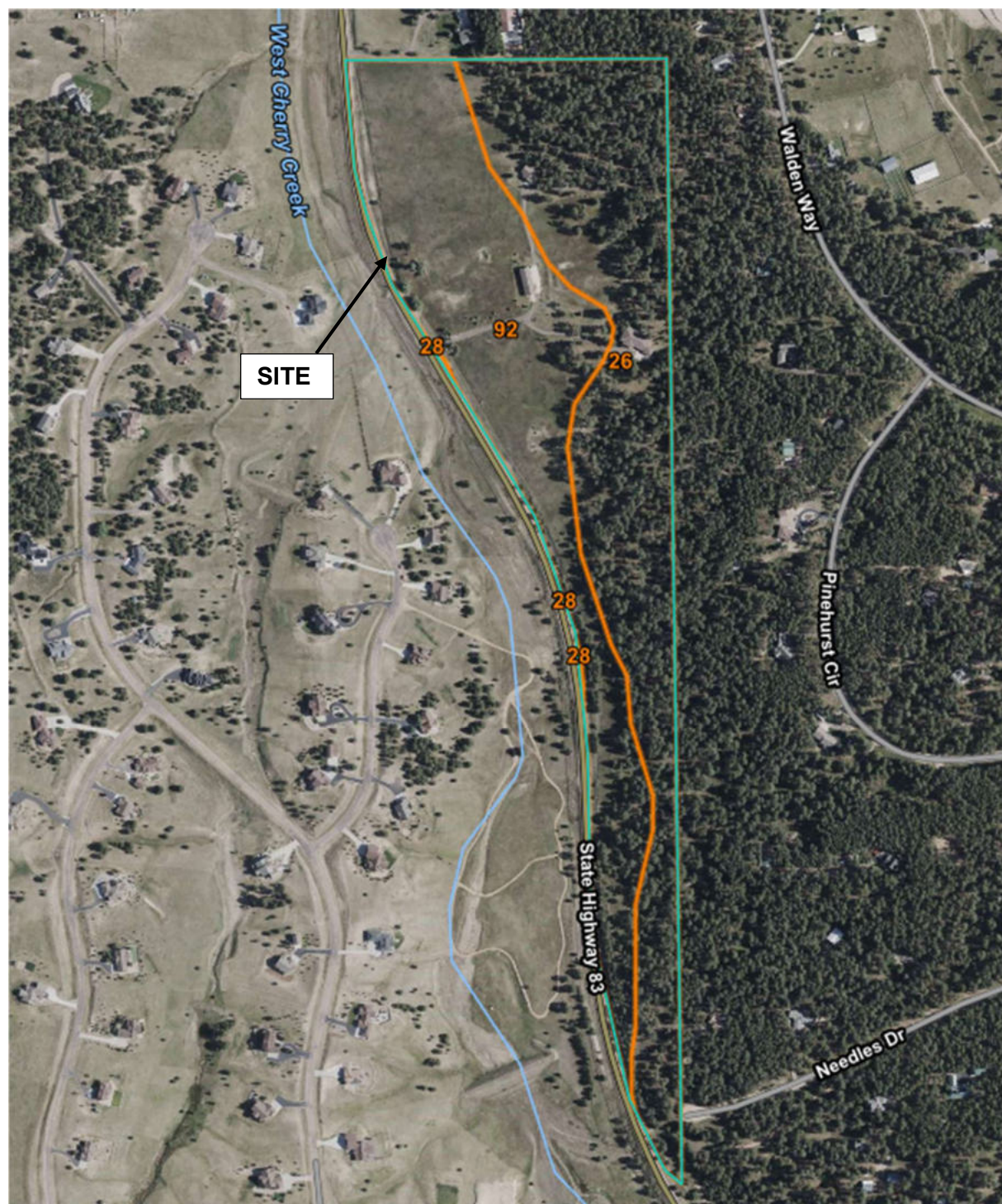
The Natural Resource Conservation Service (Reference 2), previously the Soil Conservation Service (Reference 3), has mapped three soil types on the site. In general, they are loamy sands. The soils are described in Exhibit 1, and shown in Exhibit 2.

**Exhibit 1: Soil Survey Description**

| Type | Description                                |
|------|--------------------------------------------|
| 26   | Elbeth sandy loam, 8 to 15% slopes         |
| 28   | Ellicott loamy coarse sand, 0 to 5% slopes |
| 92   | Tomah-Crowfoot loamy sands, 3 to 8% slopes |

## Exhibit 2: 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, slopes, 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**

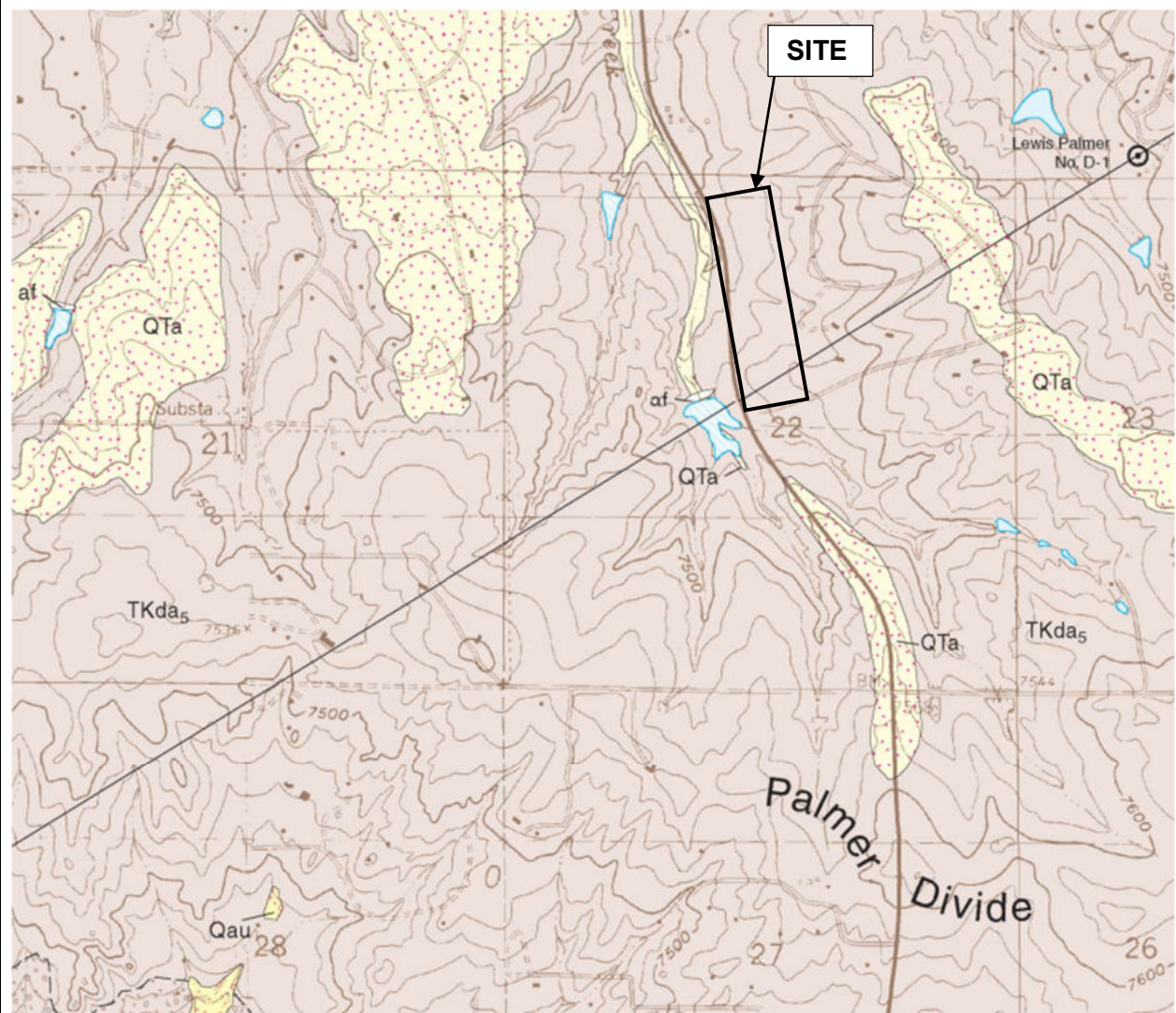
The Geologic Map of the Monument Quadrangle showing the site is presented in Exhibit 4 below (Reference 4). The Geology/Engineering Geology Map prepared for the site is presented in Figure 4. One mappable unit was identified on this site that are described as follows:

**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° x 2° 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 4.

### Exhibit 3: Geologic Map of the Monument Quadrangle

Colorado Geological Survey – OF-02-04



#### 5.4 Soil Conditions

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

Gravelly Sandy Loam (Soil Type 2 and 2A) The gravelly sandy loam and sandy loam were encountered in the upper portions of TP-1 through TP-6 and extended to depths of 1 to 8 feet bgs.

Sandy Clay Loam (Soil Type 3A or R1) The sandy clay loam (residually weathered sandstone) was encountered in TP-2, TP-3, TP-4, and TP-5 underlying the topsoil or the sandy loam (Soil Type 2 and 2A) and extended to 6 feet bgs.

Sandy Clay (Soil Type 4A or R1) The sandy clay (residually weathered clayey sandstone) when was encountered at 6 feet in TP-6 and extended to the termination of the test pit 8 feet bgs.

The Test Pit Logs are presented in Appendix B. Laboratory Test Results are presented in Appendix C, and a Summary of Laboratory Test Results is presented in Table C-1.

## **5.5 Groundwater**

Groundwater was not encountered in the test borings during or subsequent to drilling. Redoximorphic features were encountered in TP-6 at a depth of 6 feet during excavation. Areas of potentially seasonal shallow groundwater have been mapped in the drainages and some low-lying areas on 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.

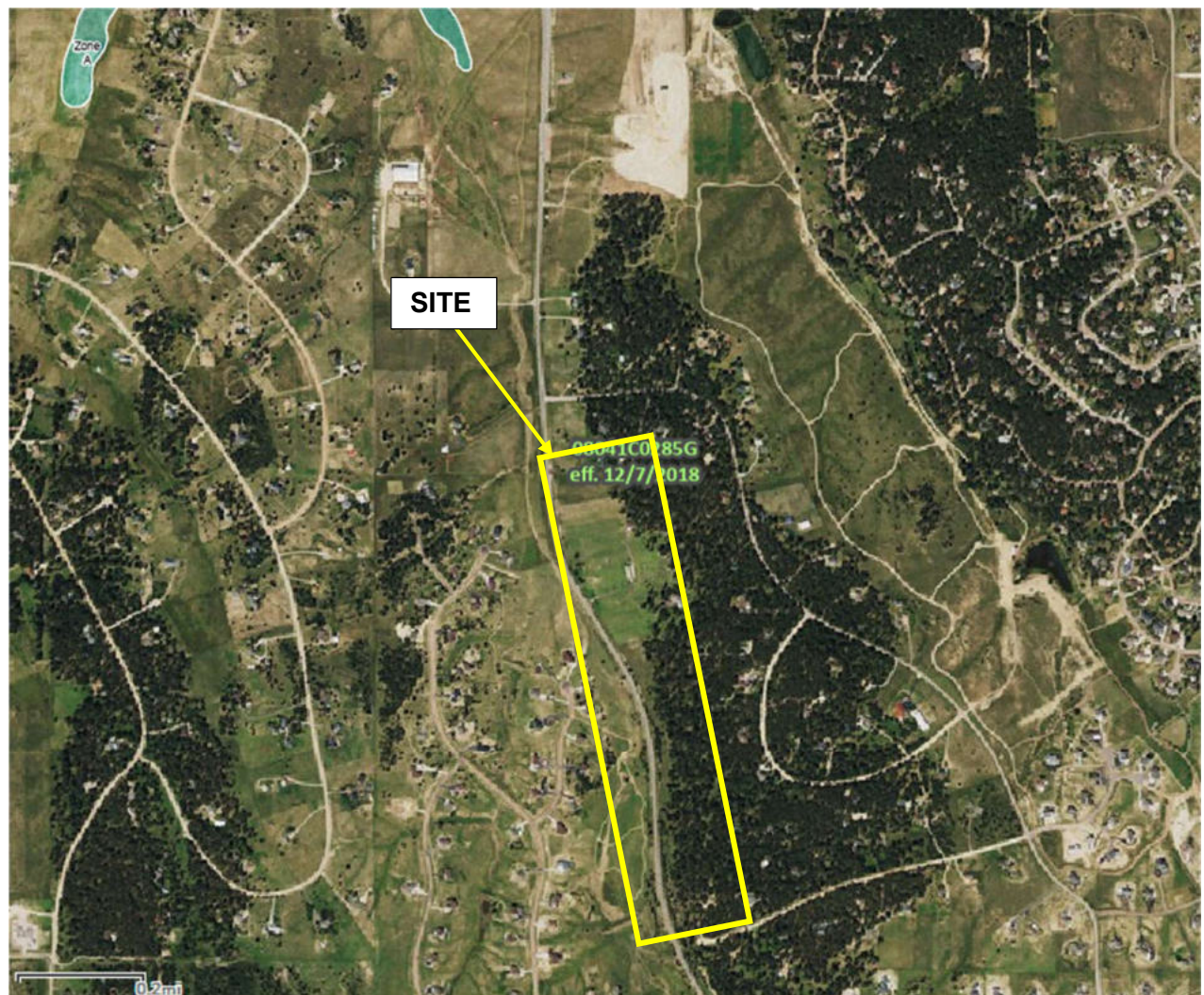
For the sandy materials on site, it should be noted that some groundwater conditions might be encountered due to the variability in the soil profile. Isolated sand and gravel layers within the soils, sometimes only a few feet in thickness and width, can carry water in the subsurface. Groundwater may 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 No. 08041C0285G (Figure 6, Reference 8). West Cherry Creek flows to the north and is located on the west side of Highway 83. Several minor drainage swales are located in the northeastern and southern portions of the site. A tributary of West Cherry Creek is located in the southern extent of the site. The drainages 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 4: FEMA Flood Map

FEMA Map No. 08041C0285G, eff. 12/7/2018



#### Potentially Seasonal Shallow Groundwater Areas – Constraint

In these areas, we would anticipate periodic high subsurface moisture conditions and frost heave potential on a seasonal basis. Groundwater was not encountered in the test borings during or subsequent to drilling. Redoximorphic features were encountered in TP-6 at a depth of 6 feet during excavation.

Mitigation: OWTS absorption fields should not be placed in areas where there is the potential for shallow groundwater.

## 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 3), the Geology/Engineering Geology Map (Figure 4), and the OWTS Suitability Map, Figure 5. 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 three soil descriptions. The Soil Survey Map (Reference 2) is presented in Exhibit 2, 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 loam to gravelly sandy loam, sandy clay loam to gravelly sandy clay loam, and gravelly sandy clay (residually weathered sandstone). Signs of seasonal occurring groundwater were observed in TP-6 at a depth of 6 feet, but were not encountered in the remaining test pits. The limiting layers encountered in the test pits are the gravelly sandy loam (2A), gravelly sandy clay loam (3A/R1), and gravelly sandy clay (4A/R1). The soil types correspond to LTAR value of 0.50 to 0.20 gallons per day per square foot. Based on the test pits and soil evaluation it is expected that conventional systems may be appropriate for portions of the site. In areas of clayey soils and high rock percentage an engineered OWTS will likely be required. Based on the county records the systems for the existing structures consist of conventional systems 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 including, but not limited to earthwork grading, berming and diversion swale implementation, installation of secondary sand filters or any other higher treatment levels and dosing as required on a per lot basis and determined by test pit results and site topography. There are no identified geologic hazards on the site that are prohibitive to future OWTS design at this time.

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 according to El Paso County and State Guidelines and properly maintained. An OWTS Suitability Map is presented in Figure 5. 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. 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. 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 North Park, LLC 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.

## 8 REFERENCES

1. Bryant, Bruce, McGrew, Laura W., and Wobus, Reinhard A. 1981. *Geologic Structure Map of the Denver 1° x 2° 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, <http://web soil survey.nrcs.usda.gov>.
3. United States Department of Agriculture Soil Conservation Service. June 1981. *Soil Survey of El Paso County Area, Colorado*.
4. Thorson, Jon P. and Madole, Richard F. 2003. *Geologic Map of the Monument Quadrangle, El Paso County, Colorado*. Colorado Geological Survey. Open-File Report 02-4.
5. Thorson, Jon P., Carroll, Christopher J., and Morgan, Matthew L. 2001. *Geologic Map of the Pikeview Quadrangle, El Paso County, Colorado*. Colorado Geological Survey. Open-File Report 01-03.
6. Trimble, Donald E. and Machette, Michael N. 1979. *Geologic Map of the Colorado Springs-Castle Rock Area, Front Range Urban Corridor, Colorado*. USGS, Map I-857-F.
7. Bryant, Bruce, McGrew, Laura W., and Wobus, Reinhard A. 1981. *Geologic Map of the Denver 1° x 2° Quadrangle, North-Central Colorado*. U.S. Geologic Survey. Map 1-1163.
8. Hart, Stephen S. 1974. *Potentially Swelling Soil and Rock in the Front Range Urban Corridor, Colorado*. Colorado Springs-Castle Rock Map. Colorado Geological Survey. Environmental Geology 7.
9. Federal Emergency Management Agency. December 7, 2018. *Flood Insurance Rate Maps for the City of Colorado Springs, Colorado*. Map Number 08041C0285G.
10. U.S. Fish & Wildlife Service, May 1, 2020. *National Wetlands Inventory*. Department of the Interior, [fws.gov/wetlands/data/Mapper.html](https://fws.gov/wetlands/data/Mapper.html).

## FIGURES



## VICINITY MAP

NORTH PARK SUBDIVISION  
NORTH PARK, LLC

JOB NO.  
260494

**FIG. 1**



## USGS TOPOGRAPHY MAP

NORTH PARK SUBDIVISION  
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JOB NO.  
260494

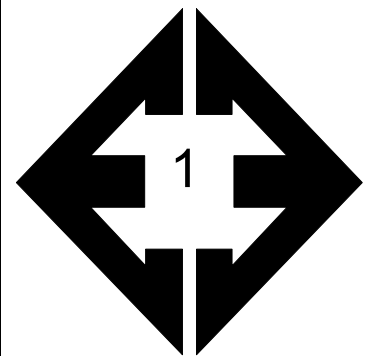
**FIG. 2**





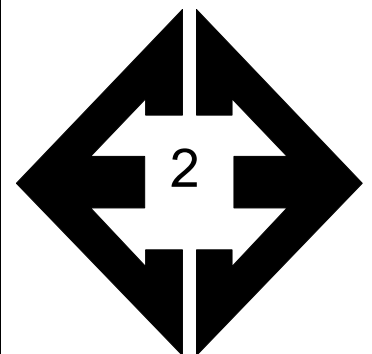


## **APPENDIX A: Site Photographs**



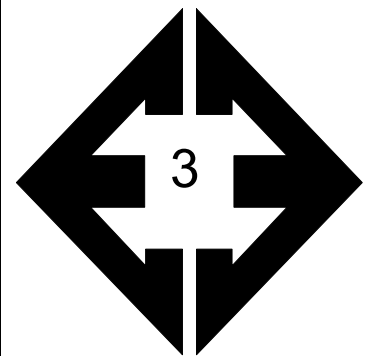
**Looking south from  
the northern portion of  
the site.**

April 8, 2026



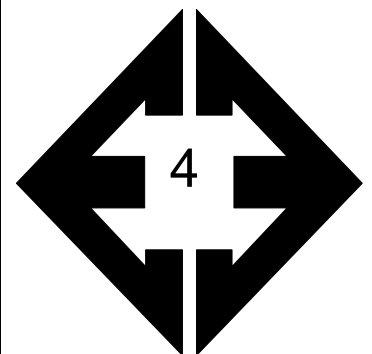
**Looking north from the  
northern portion of the  
site.**

April 8, 2026



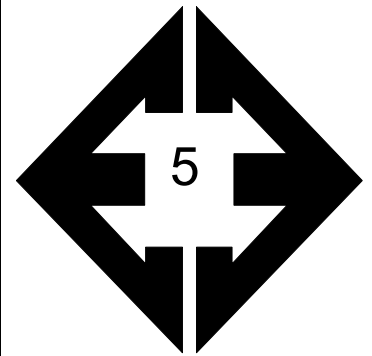
**Looking west towards  
proposed detention  
pond area in the  
northern portion of the  
site.**

April 8, 2026



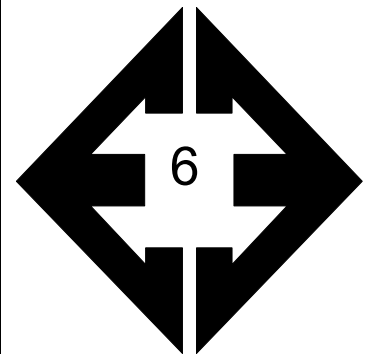
**Looking east along  
minor drainage swale  
Lot 3.**

April 8, 2026



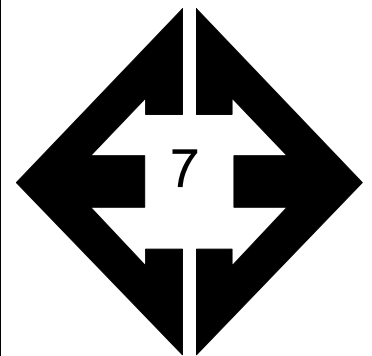
**Looking northeast  
towards existing  
residence on Lot 8.**

April 8, 2026



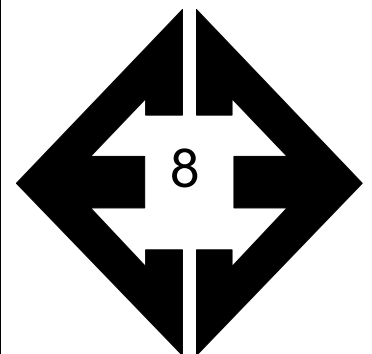
**Looking north from the  
southern portion of the  
site.**

April 8, 2026



**Looking east from the  
southern portion of the  
site.**

April 8, 2026



**Looking southeast  
along minor drainage  
swale Lot 14**

April 8, 2026

## **APPENDIX B: Test Boring and Test Pit Logs**

TEST BORING 1  
DATE DRILLED 3/26/2026  
REMARKS

| Depth (ft)                                                                                       | Symbol | Samples | Blows per foot | Watercontent % | Soil Type |
|--------------------------------------------------------------------------------------------------|--------|---------|----------------|----------------|-----------|
| DRY TO 20', 4/15/26                                                                              |        |         |                |                |           |
| 6" TOPSOIL                                                                                       |        |         |                |                |           |
| SAND, SILTY, BROWN to TAN,<br>DENSE to LOOSE, MOIST to DRY                                       |        |         | 17             | 4.6            | 1         |
| 5                                                                                                |        |         | 31             | 2.5            | 1         |
| 10                                                                                               |        |         | 22             | 2.2            | 1         |
| 15                                                                                               |        |         | 9              | 6.9            | 1         |
| SANDSTONE, EXTREMELY WEAK,<br>LIGHT RED, HIGHLY WEATHERED<br>(SAND, SILTY, VERY DENSE,<br>MOIST) |        |         | 50<br>10"      | 9.4            | 3         |

TEST BORING 2  
DATE DRILLED 3/26/2026  
REMARKS

| Depth (ft)                                                                                  | Symbol | Samples | Blows per foot | Watercontent % | Soil Type |
|---------------------------------------------------------------------------------------------|--------|---------|----------------|----------------|-----------|
| DRY TO 20', 4/15/26                                                                         |        |         |                |                |           |
| 6" TOPSOIL                                                                                  |        |         |                |                |           |
| SAND, SILTY, TAN                                                                            |        |         | 50<br>9"       | 3.1            | 3         |
| SANDSTONE, EXTREMELY WEAK,<br>TAN, HIGHLY WEATHERED (SAND,<br>WITH SILT, VERY DENSE, MOIST) |        |         | 50<br>5"       | 3.6            | 3         |
| 5                                                                                           |        |         |                |                |           |
| 10                                                                                          |        |         | 50<br>7"       | 7.6            | 3         |
| 15                                                                                          |        |         | 50<br>8"       | 6.4            | 3         |
| 20                                                                                          |        |         | 50<br>6"       | 4.2            | 3         |



## TEST BORING LOGS

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

FIG. B-1

TEST BORING 3  
DATE DRILLED 3/26/2026  
REMARKS

| Depth (ft)                                                     | Symbol | Samples | Blows per foot | Watercontent % | Soil Type |
|----------------------------------------------------------------|--------|---------|----------------|----------------|-----------|
| DRY TO 20', 4/15/26                                            |        |         |                |                |           |
| 6" TOPSOIL                                                     |        |         |                |                |           |
| SAND, CLAYEY, LIGHT BROWN, MEDIUM DENSE to DENSE, DRY to MOIST |        |         | 20             | 1.8            | 1         |
|                                                                |        |         | 41             | 5.3            | 1         |
| SAND, SILTY, TAN, DENSE to MEDIUM DENSE, MOIST                 |        |         | 32             | 6.3            | 1         |
|                                                                |        |         | 23             | 7.1            | 1         |
|                                                                |        |         | 33             | 11.5           | 1         |

TEST BORING 4  
DATE DRILLED 3/26/2026  
REMARKS

| Depth (ft)                                                                            | Symbol | Samples | Blows per foot | Watercontent % | Soil Type |
|---------------------------------------------------------------------------------------|--------|---------|----------------|----------------|-----------|
| DRY TO 20', 4/15/26                                                                   |        |         |                |                |           |
| 9" TOPSOIL                                                                            |        |         |                |                |           |
| SAND, SILTY, TAN, MEDIUM DENSE, DRY                                                   |        |         | 10             | 1.4            | 1         |
|                                                                                       |        |         | 12             | 1.5            | 1         |
| SANDSTONE, EXTREMELY WEAK, TAN, HIGHLY WEATHERED (SAND, WITH SILT, VERY DENSE, MOIST) |        |         | 50<br>9"       | 5.8            | 3         |
|                                                                                       |        |         | 50<br>7"       | 5.8            | 3         |
|                                                                                       |        |         | 38             | 10.5           | 3         |



## TEST BORING LOGS

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

FIG. B-2

TEST BORING 5  
DATE DRILLED 3/26/2026  
REMARKS

DRY TO 20', 4/15/26

6" TOPSOIL  
SILT, SANDY, BROWN, VERY STIFF  
to STIFF, MOIST

SANDSTONE, EXTREMELY WEAK,  
TAN, HIGHLY WEATHERED (SAND,  
WITH SILT, VERY DENSE, MOIST)

| Depth (ft) | Symbol | Samples | Blows per foot | Watercontent % | Soil Type |
|------------|--------|---------|----------------|----------------|-----------|
| 5          |        |         | 22             | 8.0            | 2         |
|            |        |         | 13             | 3.5            | 2         |
| 10         |        |         | 23             | 10.0           | 1         |
| 15         |        |         | 50<br>9"       | 5.9            | 3         |
| 20         |        |         | 50<br>7"       | 8.5            | 3         |

TEST BORING 6  
DATE DRILLED 3/26/2026  
REMARKS

DRY TO 20', 4/15/26

6" TOPSOIL  
SAND, SILTY, TAN, MEDIUM  
DENSE to DENSE, MOIST

| Depth (ft) | Symbol | Samples | Blows per foot | Watercontent % | Soil Type |
|------------|--------|---------|----------------|----------------|-----------|
| 5          |        |         | 23             | 3.5            | 1         |
|            |        |         | 35             | 3.5            | 1         |
| 10         |        |         | 20             | 4.4            | 1         |
| 15         |        |         | 20             | 5.4            | 1         |
| 20         |        |         | 11             | 7.6            | 1         |



## TEST BORING LOGS

17675 HIGHWAY 83  
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**FIG. B-3**

**TABLE B-1**  
**DEPTH TO BEDROCK**

| TEST BORING | DEPTH TO<br>BEDROCK (ft.) |
|-------------|---------------------------|
| 1           | 17                        |
| 2           | 1                         |
| 3           | >20                       |
| 4           | 9                         |
| 5           | 12                        |
| 6           | >20                       |

TEST PIT 1  
DATE EXCAVATED 4/15/2026

REMARKS

| REMARKS                                                            | Depth (ft) | Symbol | Samples | Soil Structure Shape | Soil Structure Grade | Soil Type |
|--------------------------------------------------------------------|------------|--------|---------|----------------------|----------------------|-----------|
| topsoil 0-24", sandy loam, dark brown, moist                       | 1          |        |         |                      |                      |           |
|                                                                    | 2          |        |         |                      |                      |           |
| sandy loam, fine to coarse grained with gravel, light brown, moist | 3          |        |         | gr                   | w                    | 2A        |
|                                                                    | 4          |        |         |                      |                      |           |
|                                                                    | 5          |        |         |                      |                      |           |
| sandy loam, fine to medium grained, light brown, moist             | 6          |        |         | gr                   | w                    | 2A        |
|                                                                    | 7          |        |         |                      |                      |           |
|                                                                    | 8          |        |         |                      |                      |           |
|                                                                    | 9          |        |         |                      |                      |           |
|                                                                    | 10         |        |         |                      |                      |           |

TEST PIT 2  
DATE EXCAVATED 4/15/2026

REMARKS

| REMARKS                                                                                                | Depth (ft) | Symbol | Samples | Soil Structure Shape | Soil Structure Grade | Soil Type |
|--------------------------------------------------------------------------------------------------------|------------|--------|---------|----------------------|----------------------|-----------|
| refusal at 4'                                                                                          | 1          |        |         |                      |                      |           |
| topsoil 0-6", sandy loam, dark brown, moist                                                            | 2          |        |         |                      |                      |           |
| sandy loam, fine to medium grained, light brown, moist                                                 | 3          |        |         | gr                   | w                    | 2A        |
|                                                                                                        | 4          |        |         | ma                   |                      | 3A R1     |
| very gravelly, sandy clay, fine to coarse grained, light brown, moist (residually weathered sandstone) | 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  
structureless - sl



**TEST PIT LOGS**

17675 HIGHWAY 83  
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**FIG. B-4**

TEST PIT 3  
DATE EXCAVATED 4/15/2026  
REMARKS

refusal @ 5.5'

topsoil 0-6", sandy loam, dark brown, moist

sandy loam, fine to coarse grained, light brown, moist

gravelly, sandy clay loam, fine to coarse grained, light brown, moist (redissually weathered sandstone)

| Depth (ft) | Symbol | Samples | Soil Structure Shape | Soil Structure Grade | Soil Type |
|------------|--------|---------|----------------------|----------------------|-----------|
| 1          |        |         | gr                   | w                    | 2A        |
| 2          |        |         |                      |                      |           |
| 3          |        |         |                      |                      |           |
| 4          |        |         | ma                   |                      | 3A R1     |
| 5          |        |         |                      |                      |           |
| 6          |        |         |                      |                      |           |
| 7          |        |         |                      |                      |           |
| 8          |        |         |                      |                      |           |
| 9          |        |         |                      |                      |           |
| 10         |        |         |                      |                      |           |

TEST PIT 4  
DATE EXCAVATED 4/15/2026  
REMARKS

refusal @ 5'

topsoil 0-12", sandy clay loam, dark brown, moist

gravelly, sandy loam, fine to coarse grained, tan, moist

gravelly, sandy clay, fine to coarse grained, light brown, moist (redissually weathered sandstone)

| Depth (ft) | Symbol | Samples | Soil Structure Shape | Soil Structure Grade | Soil Type |
|------------|--------|---------|----------------------|----------------------|-----------|
| 1          |        |         |                      |                      |           |
| 2          |        |         |                      |                      |           |
| 3          |        |         | gr                   | m                    | 2         |
| 4          |        |         | ma                   |                      | 3A R1     |
| 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



**TEST PIT LOGS**

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**FIG. B-5**

TEST BORING 5  
DATE DRILLED 4/15/2026

TEST BORING 6  
DATE DRILLED 4/15/2026

REMARKS

refusal @ 5'

topsoil 0-18", sandy clay, dark brown, moist

sandy loam, fine to coarse grained, light brown, moist

gravelly, sandy clay loam, fine to coarse grained, light brown, moist (redissually weathered sandstone)

| Depth (ft) | Symbol | Samples | Soil Structure Shape | Soil Structure Grade | Soil Type |
|------------|--------|---------|----------------------|----------------------|-----------|
| 1          |        |         |                      |                      |           |
| 2          |        |         | gr                   | w                    | 2A        |
| 3          |        |         |                      |                      |           |
| 4          |        |         | ma                   |                      | 3A R1     |
| 5          |        |         |                      |                      |           |
| 6          |        |         |                      |                      |           |
| 7          |        |         |                      |                      |           |
| 8          |        |         |                      |                      |           |
| 9          |        |         |                      |                      |           |
| 10         |        |         |                      |                      |           |

REMARKS

topsoil 0-12", sandy clay loam, dark brown, moist

sandy clay loam, fine to coarse grained, brown to light brown, moist

gravelly, sandy clay, fine to coarse grained, light brown, moist (redissually weathered clayey sandstone)  
\*redoximorphic features at 6'

| Depth (ft) | Symbol | Samples | Soil Structure Shape | Soil Structure Grade | Soil Type |
|------------|--------|---------|----------------------|----------------------|-----------|
| 1          |        |         |                      |                      |           |
| 2          |        |         | gr                   | w                    | 3A        |
| 3          |        |         |                      |                      |           |
| 4          |        |         |                      |                      |           |
| 5          |        |         |                      |                      |           |
| 6          |        |         | bl                   | m                    | 4A R1     |
| 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



**TEST PIT LOGS**

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**FIG. B-6**

## **APPENDIX C: Laboratory Test Results**

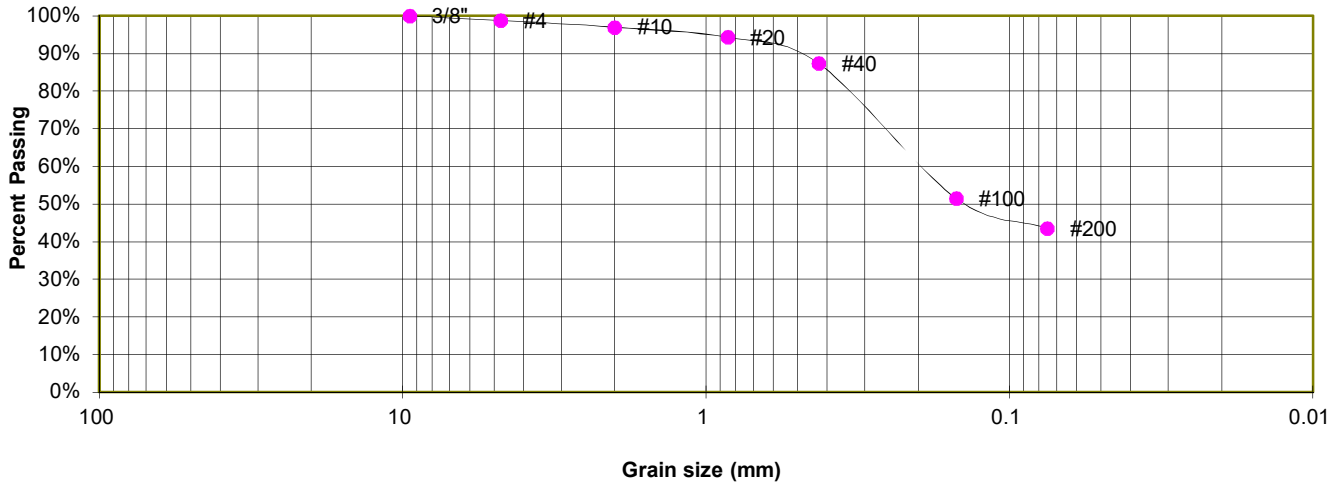
**TABLE C-1**  
**SUMMARY OF LABORATORY TEST RESULTS**

| SOIL TYPE | TEST BORING NO. | DEPTH (FT) | PASSING NO. 200 SIEVE (%) | LIQUID LIMIT | PLASTIC LIMIT | PLASTIC INDEX | SULFATE (WT %) | FHA SWELL (PSF) | USCS  | SOIL DESCRIPTION            |
|-----------|-----------------|------------|---------------------------|--------------|---------------|---------------|----------------|-----------------|-------|-----------------------------|
| 1         | 1               | 2-3        | 43.6                      | NV           | NP            | NP            |                | 160             | SM    | SAND, SILTY                 |
| 1         | 3               | 5          | 22.7                      | 28           | 19            | 9             | <0.01          |                 | SC    | SAND, CLAYEY                |
| 1         | 4               | 2-3        | 13.4                      |              |               |               |                |                 | SM    | SAND, SILTY                 |
| 1         | 6               | 5          | 29.9                      |              |               |               |                |                 | SM    | SAND, SILTY                 |
| 2         | 5               | 10         | 53.4                      |              |               |               |                |                 | ML    | SILT, SANDY                 |
| 3         | 2               | 10         | 11.4                      | NV           | NP            | NP            | 0.00           |                 | SW-SM | SANDSTONE (SAND, WITH SILT) |

TEST BORING 1  
DEPTH (FT) 2-3

SOIL DESCRIPTION SAND, SILTY  
SOIL TYPE 1

**Sieve Analysis  
Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 98.8%            |
| 10              | 97.0%            |
| 20              | 94.3%            |
| 40              | 87.3%            |
| 100             | 51.5%            |
| 200             | 43.6%            |

**ATTERBERG LIMITS**

|               |    |
|---------------|----|
| Plastic Limit | NP |
| Liquid Limit  | NV |
| Plastic Index | NP |

**FHA SWELL**

|                           |       |
|---------------------------|-------|
| Moisture at start         | 14.0% |
| Moisture at finish        | 17.5% |
| Moisture increase         | 3.4%  |
| Initial dry density (pcf) | 102   |
| Swell (psf)               | 160   |

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SM



**LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
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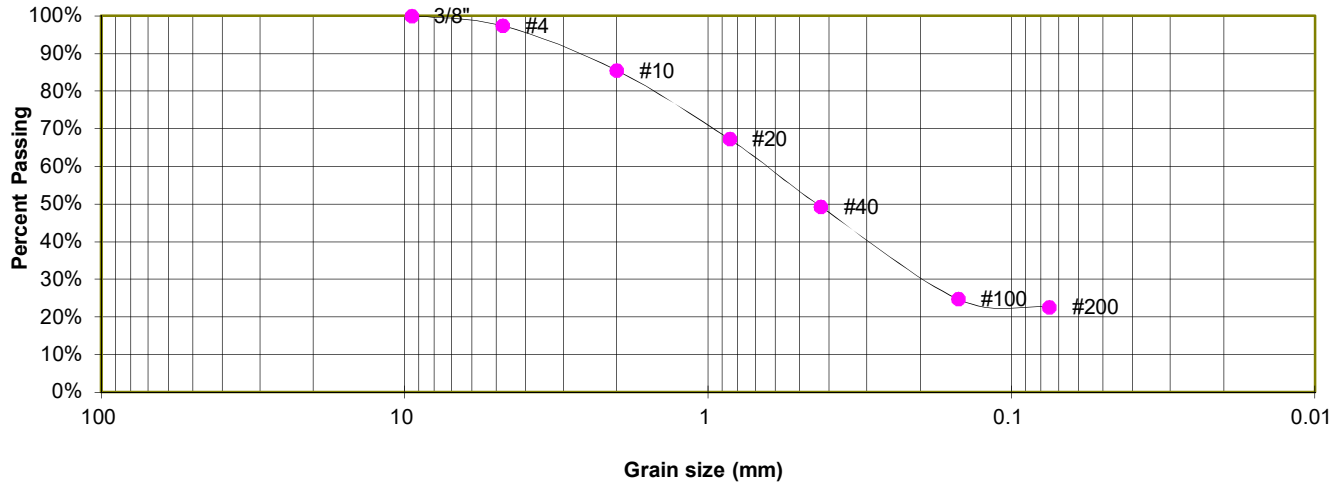
JOB NO.  
260494

**FIG. C-1**

|             |   |
|-------------|---|
| TEST BORING | 3 |
| DEPTH (FT)  | 5 |

|                               |
|-------------------------------|
| SOIL DESCRIPTION SAND, CLAYEY |
| SOIL TYPE 1                   |

**Sieve Analysis  
Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 97.4%            |
| 10              | 85.5%            |
| 20              | 67.3%            |
| 40              | 49.3%            |
| 100             | 24.7%            |
| 200             | 22.7%            |

**ATTERBERG LIMITS**

|               |    |
|---------------|----|
| Plastic Limit | 19 |
| Liquid Limit  | 28 |
| Plastic Index | 9  |

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



**LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
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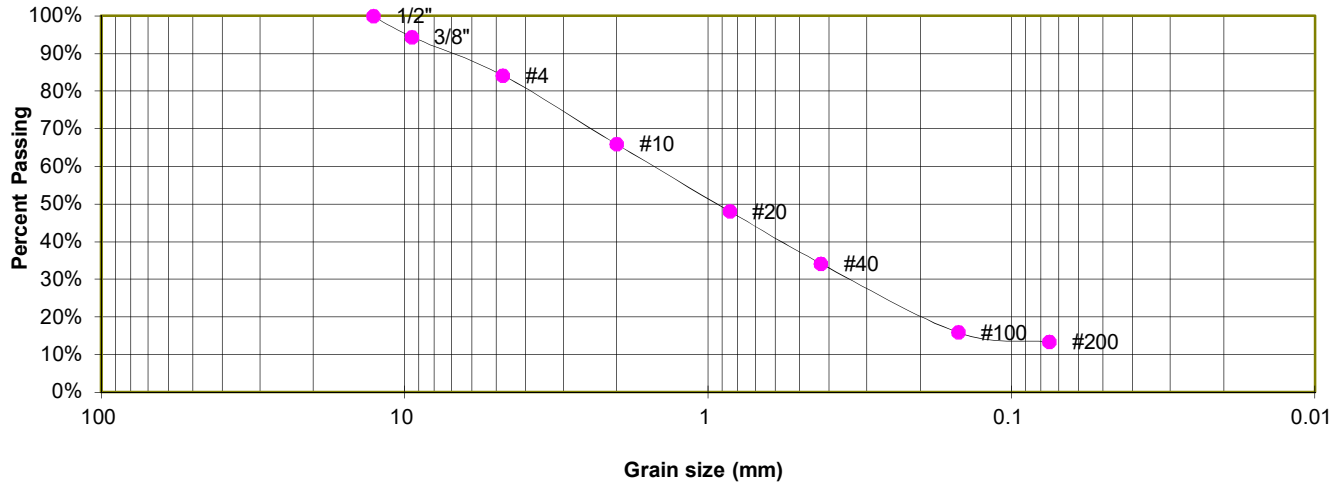
JOB NO.  
260494

**FIG. C-2**

TEST BORING 4  
DEPTH (FT) 2-3

SOIL DESCRIPTION SAND, SILTY  
SOIL TYPE 1

### Sieve Analysis Grain Size Distribution



#### GRAIN SIZE ANALYSIS

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            | 100.0%           |
| 3/8"            | 94.4%            |
| 4               | 84.2%            |
| 10              | 65.9%            |
| 20              | 48.1%            |
| 40              | 34.2%            |
| 100             | 15.9%            |
| 200             | 13.4%            |

#### SOIL CLASSIFICATION

USCS CLASSIFICATION: SM



#### LABORATORY TEST RESULTS

17675 HIGHWAY 83  
NORTH PARK, LLC

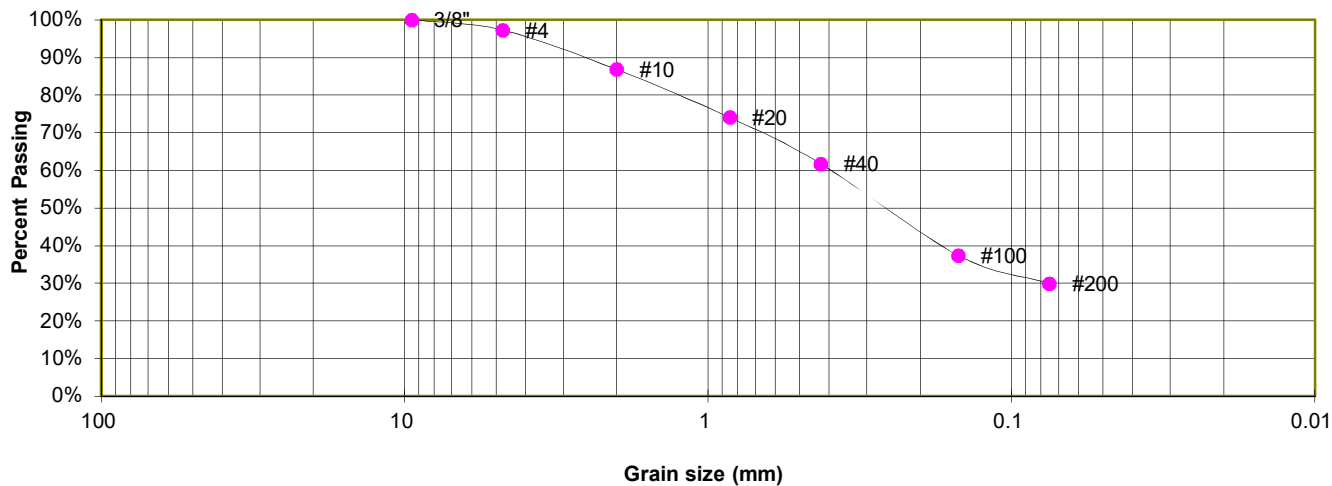
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**FIG. C-3**

TEST BORING 6  
DEPTH (FT) 5

SOIL DESCRIPTION SAND, SILTY  
SOIL TYPE 1

### Sieve Analysis Grain Size Distribution



#### GRAIN SIZE ANALYSIS

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 97.3%            |
| 10              | 86.8%            |
| 20              | 74.1%            |
| 40              | 61.8%            |
| 100             | 37.4%            |
| 200             | 29.9%            |

#### SOIL CLASSIFICATION

USCS CLASSIFICATION: SM



#### LABORATORY TEST RESULTS

17675 HIGHWAY 83  
NORTH PARK, LLC

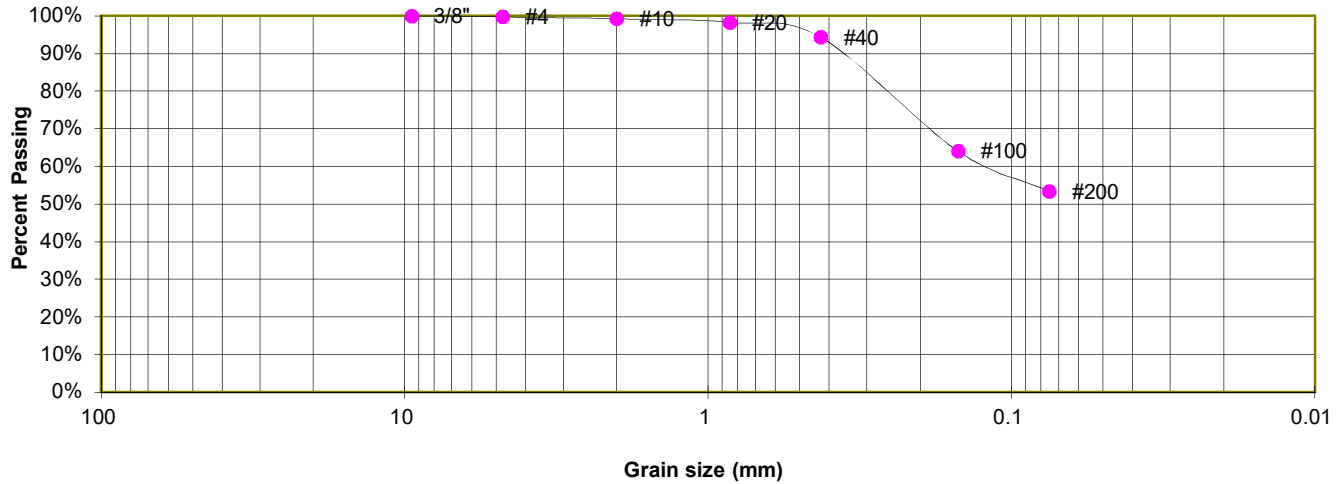
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FIG. C-4

TEST BORING 5  
DEPTH (FT) 10

SOIL DESCRIPTION SILT, SANDY  
SOIL TYPE 2

**Sieve Analysis  
Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 99.8%            |
| 10              | 99.2%            |
| 20              | 98.3%            |
| 40              | 94.3%            |
| 100             | 64.0%            |
| 200             | 53.4%            |

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: ML



**LABORATORY TEST RESULTS**

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NORTH PARK, LLC

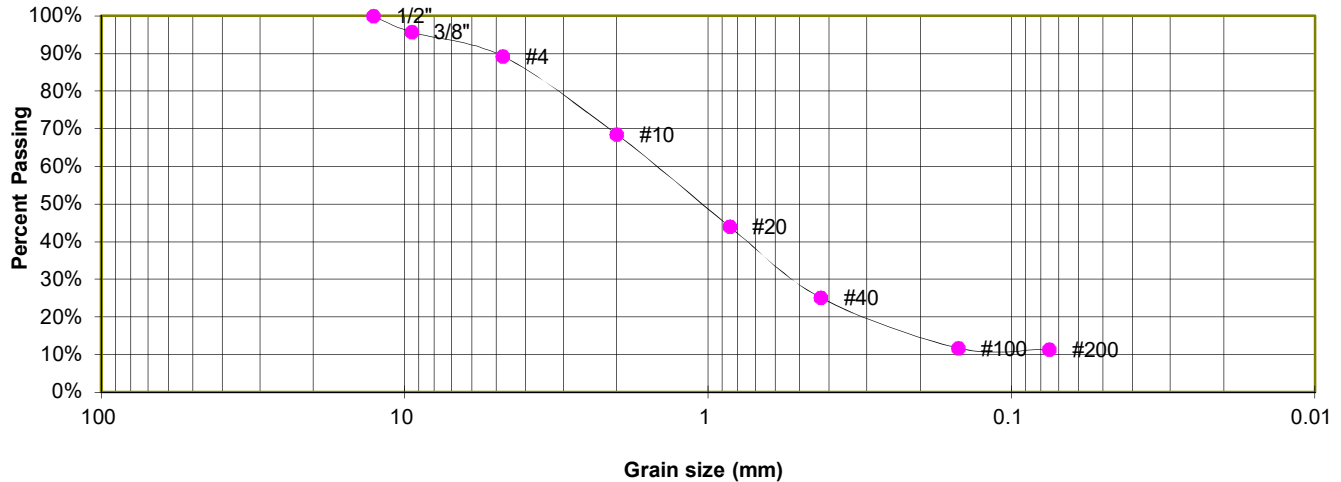
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**FIG. C-5**

|             |    |
|-------------|----|
| TEST BORING | 2  |
| DEPTH (FT)  | 10 |

|                                              |
|----------------------------------------------|
| SOIL DESCRIPTION SANDSTONE (SAND, WITH SILT) |
| SOIL TYPE 3                                  |

### Sieve Analysis Grain Size Distribution



#### GRAIN SIZE ANALYSIS

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            | 100.0%           |
| 3/8"            | 95.7%            |
| 4               | 89.3%            |
| 10              | 68.6%            |
| 20              | 44.0%            |
| 40              | 25.1%            |
| 100             | 11.7%            |
| 200             | 11.4%            |

#### ATTERBERG LIMITS

|               |    |
|---------------|----|
| Plastic Limit | NP |
| Liquid Limit  | NV |
| Plastic Index | NP |

#### SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM



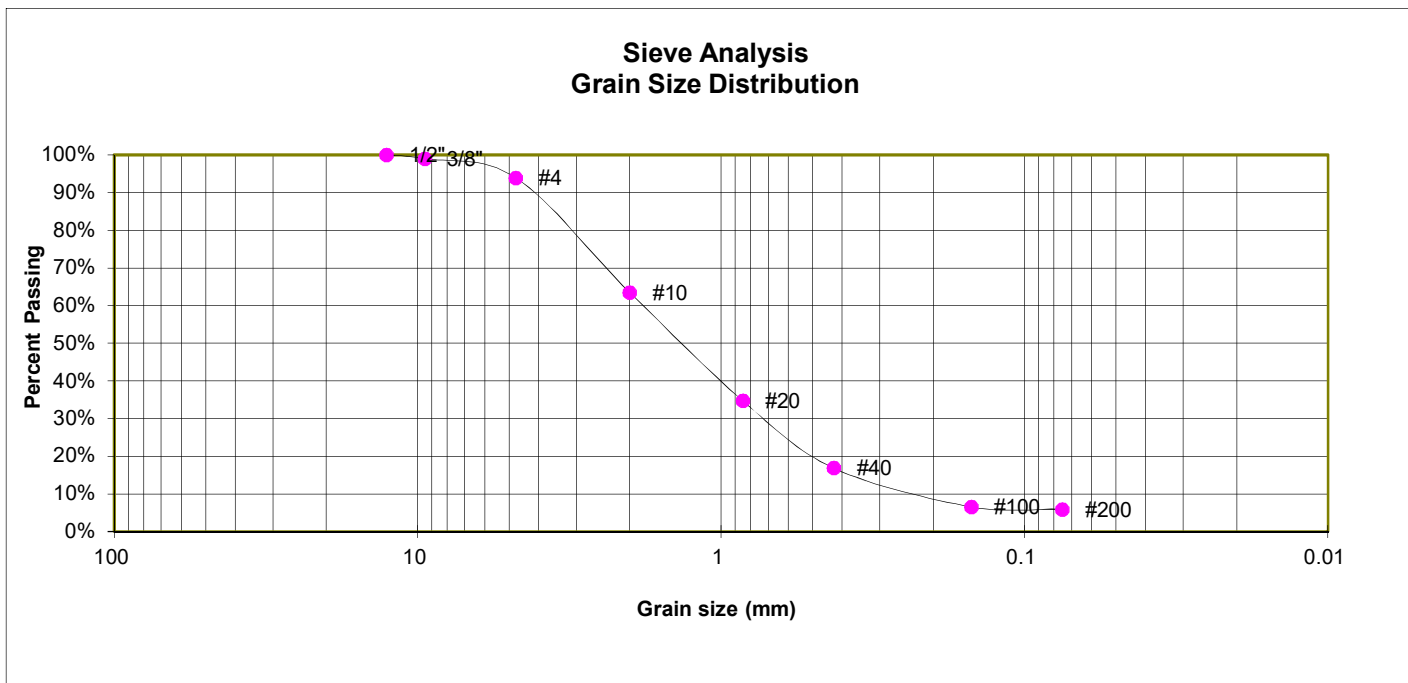
### LABORATORY TEST RESULTS

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**FIG. C-6**

|            |        |                                  |
|------------|--------|----------------------------------|
| TEST PIT   | TP-1   | SOIL DESCRIPTION SAND, WITH SILT |
| DEPTH (FT) | 24-36" | SOIL TYPE # 1                    |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            | 100.0%           |
| 3/8"            | 99.0%            |
| 4               | 94.0%            |
| 10              | 63.5%            |
| 20              | 34.8%            |
| 40              | 16.8%            |
| 100             | 6.6%             |
| 200             | 5.9%             |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SW-SM



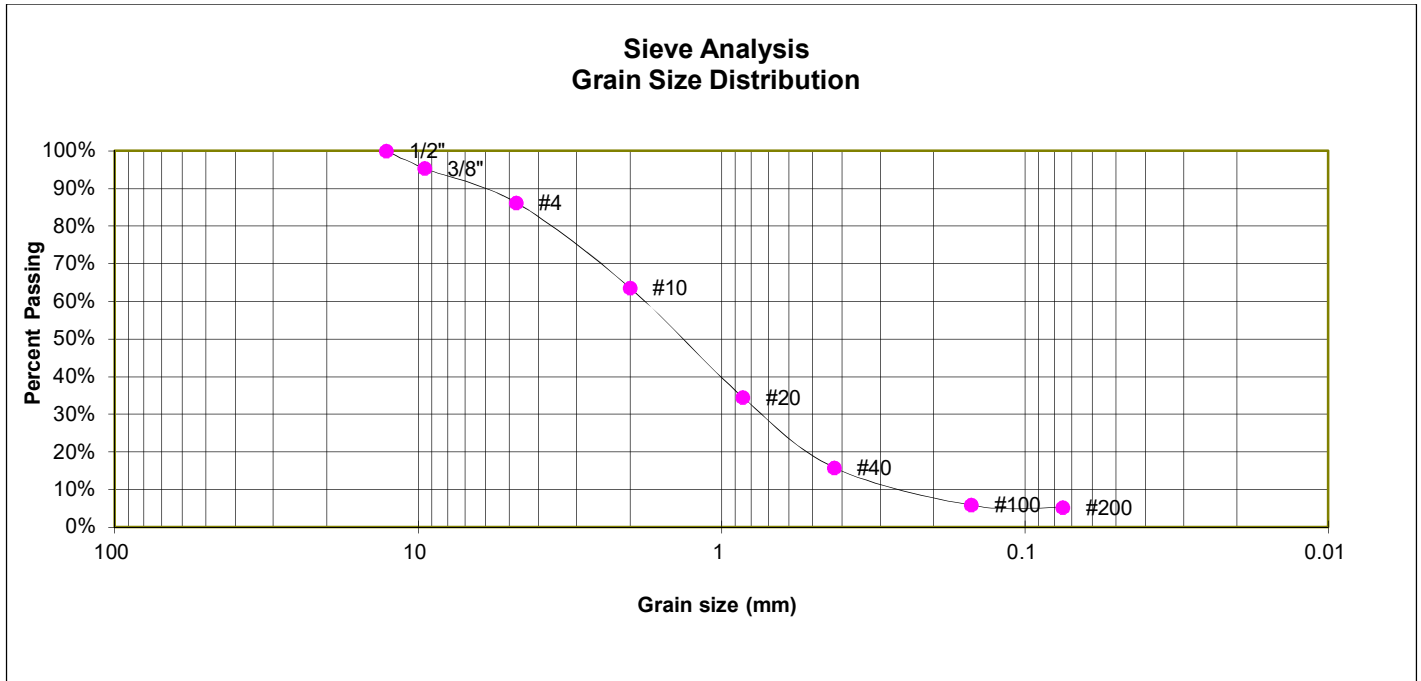
#### **LABORATORY TEST RESULTS**

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**FIG. C-7**

|            |        |                                            |
|------------|--------|--------------------------------------------|
| TEST PIT   | TP-1   | SOIL DESCRIPTION SAND, GRAVELLY, WITH SILT |
| DEPTH (FT) | 36-60" | SOIL TYPE # 1                              |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            | 100.0%           |
| 3/8"            | 95.3%            |
| 4               | 86.2%            |
| 10              | 63.6%            |
| 20              | 34.5%            |
| 40              | 15.8%            |
| 100             | 5.8%             |
| 200             | 5.2%             |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SW-SM



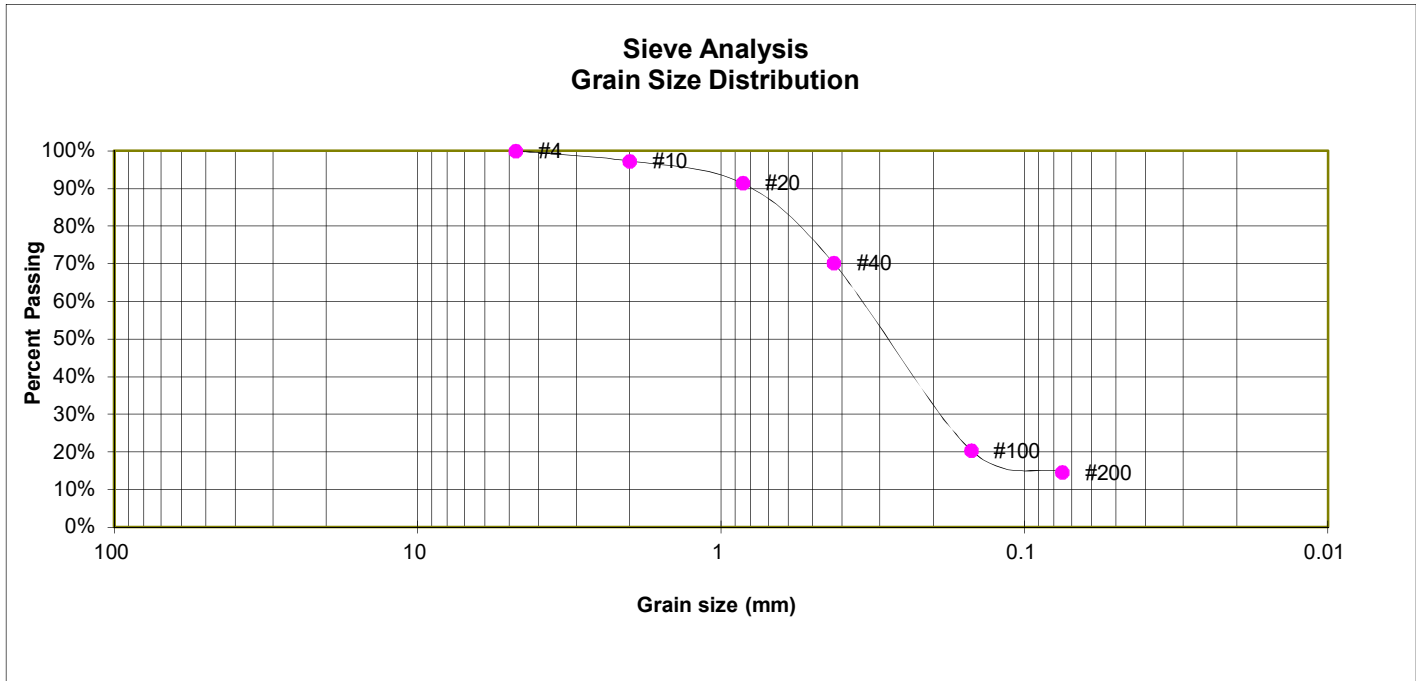
#### **LABORATORY TEST RESULTS**

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**FIG. C-8**

|            |        |                              |
|------------|--------|------------------------------|
| TEST PIT   | TP-1   | SOIL DESCRIPTION SAND, SILTY |
| DEPTH (FT) | 78-96" | SOIL TYPE # 1                |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            |                  |
| 4               | 100.0%           |
| 10              | 97.3%            |
| 20              | 91.4%            |
| 40              | 70.1%            |
| 100             | 20.4%            |
| 200             | 14.6%            |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SM



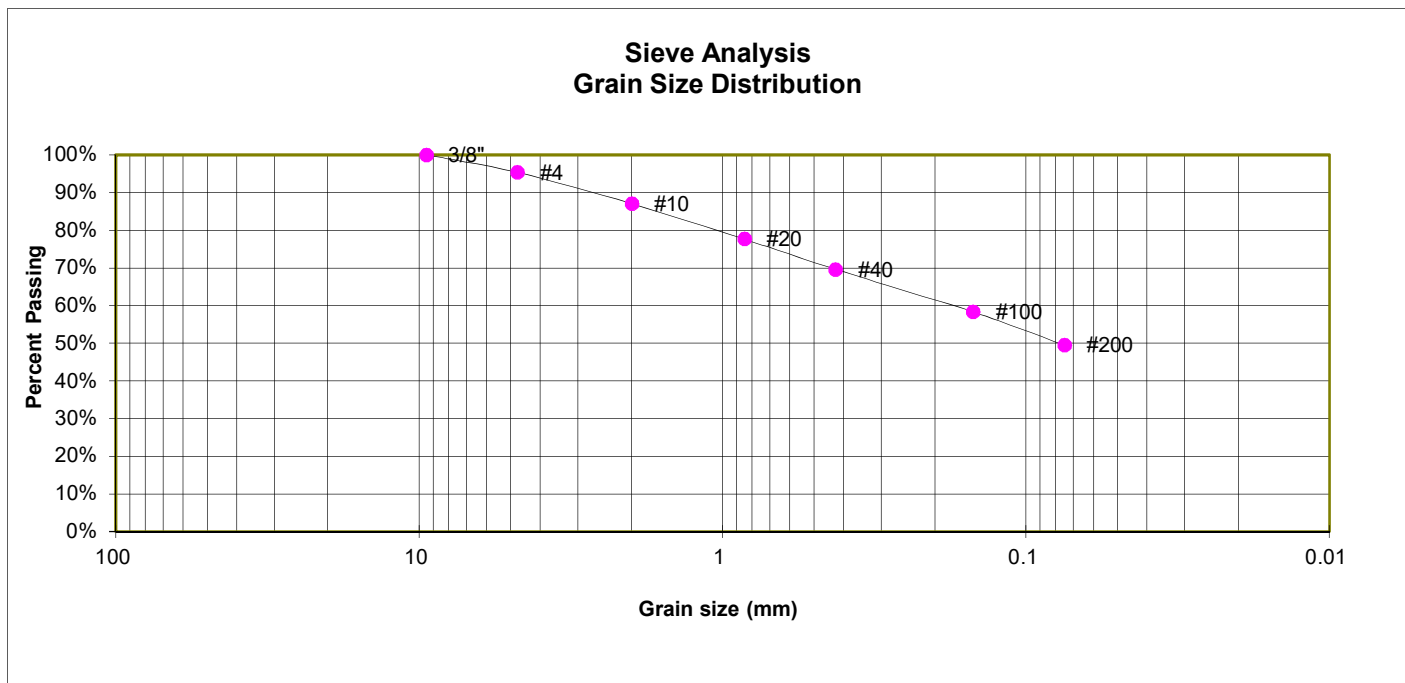
#### **LABORATORY TEST RESULTS**

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NORTH PARK, LLC

JOB NO.  
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**FIG. C-9**

|            |       |                               |
|------------|-------|-------------------------------|
| TEST PIT   | TP-2  | SOIL DESCRIPTION SAND, CLAYEY |
| DEPTH (FT) | 6-18" | SOIL TYPE # 2A                |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 95.4%            |
| 10              | 87.1%            |
| 20              | 77.7%            |
| 40              | 69.6%            |
| 100             | 58.3%            |
| 200             | 49.5%            |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



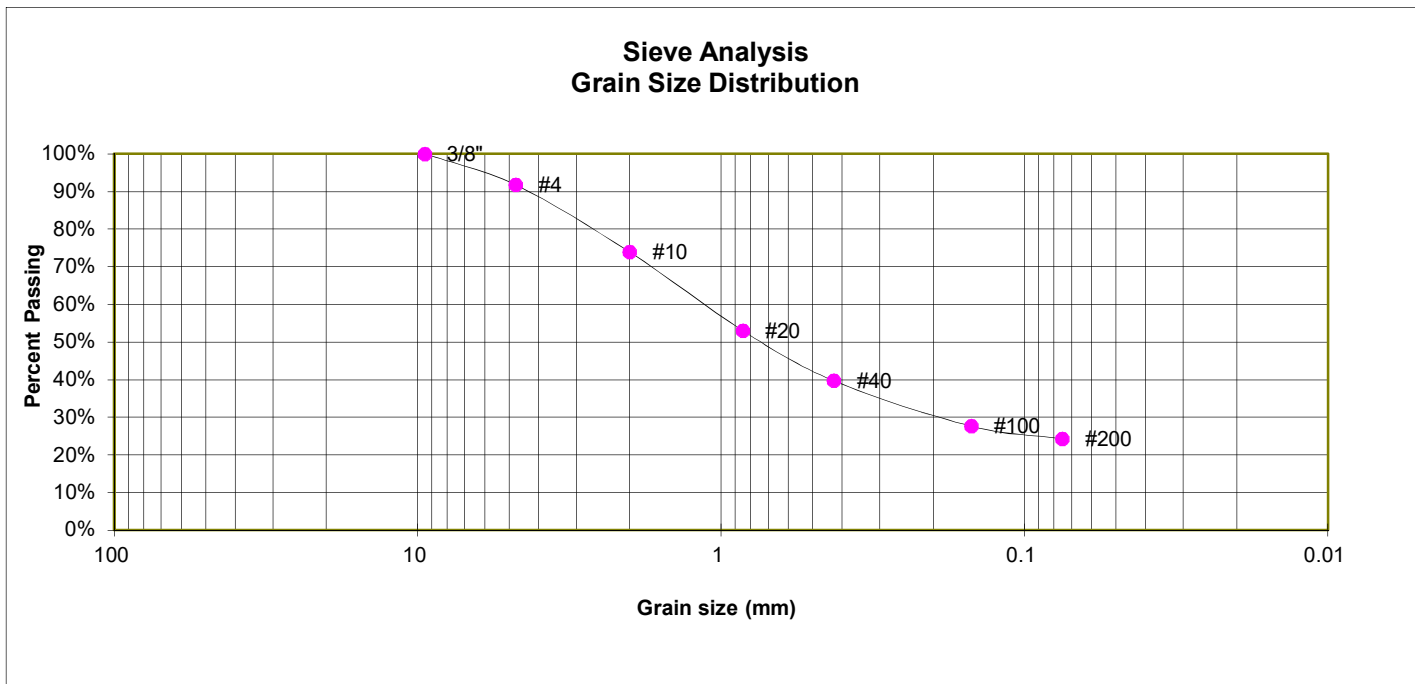
#### **LABORATORY TEST RESULTS**

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**FIG. C-10**

|            |        |                               |
|------------|--------|-------------------------------|
| TEST PIT   | TP-2   | SOIL DESCRIPTION SAND, CLAYEY |
| DEPTH (FT) | 12-48" | SOIL TYPE # 2                 |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 91.7%            |
| 10              | 73.9%            |
| 20              | 53.1%            |
| 40              | 39.7%            |
| 100             | 27.6%            |
| 200             | 24.3%            |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



#### **LABORATORY TEST RESULTS**

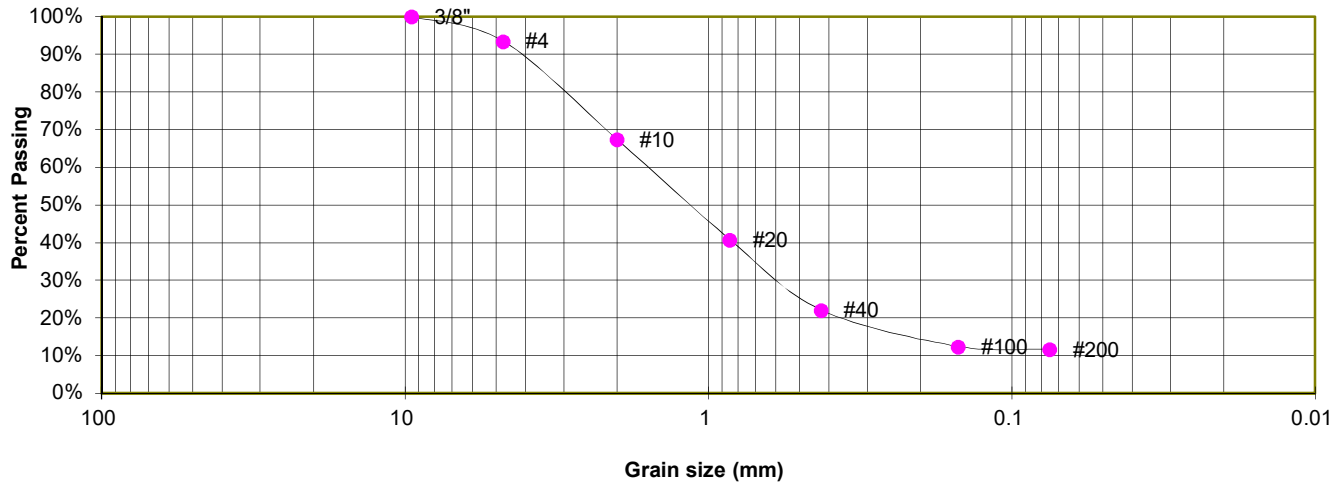
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**FIG. C-11**

|            |       |                                  |
|------------|-------|----------------------------------|
| TEST PIT   | TP-3  | SOIL DESCRIPTION SAND, WITH SILT |
| DEPTH (FT) | 6-18" | SOIL TYPE # 1                    |

### Sieve Analysis Grain Size Distribution



#### GRAIN SIZE ANALYSIS

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 93.5%            |
| 10              | 67.4%            |
| 20              | 40.8%            |
| 40              | 22.1%            |
| 100             | 12.5%            |
| 200             | 11.7%            |

#### SOIL CLASSIFICATION

USCS CLASSIFICATION: SW-SM



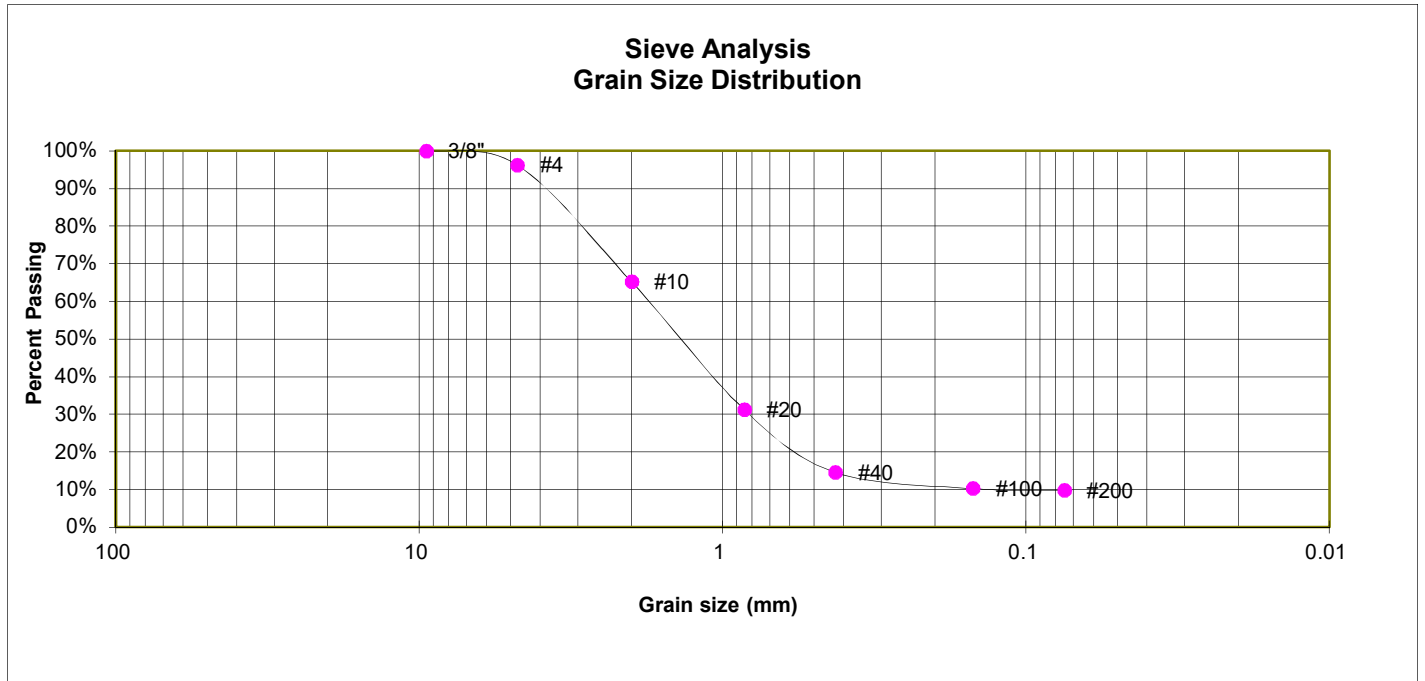
### LABORATORY TEST RESULTS

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**FIG. C-12**

|            |        |                                  |
|------------|--------|----------------------------------|
| TEST PIT   | TP-3   | SOIL DESCRIPTION SAND, WITH SILT |
| DEPTH (FT) | 18-36" | SOIL TYPE # 1                    |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 96.3%            |
| 10              | 65.3%            |
| 20              | 31.3%            |
| 40              | 14.6%            |
| 100             | 10.3%            |
| 200             | 9.8%             |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SP-SM



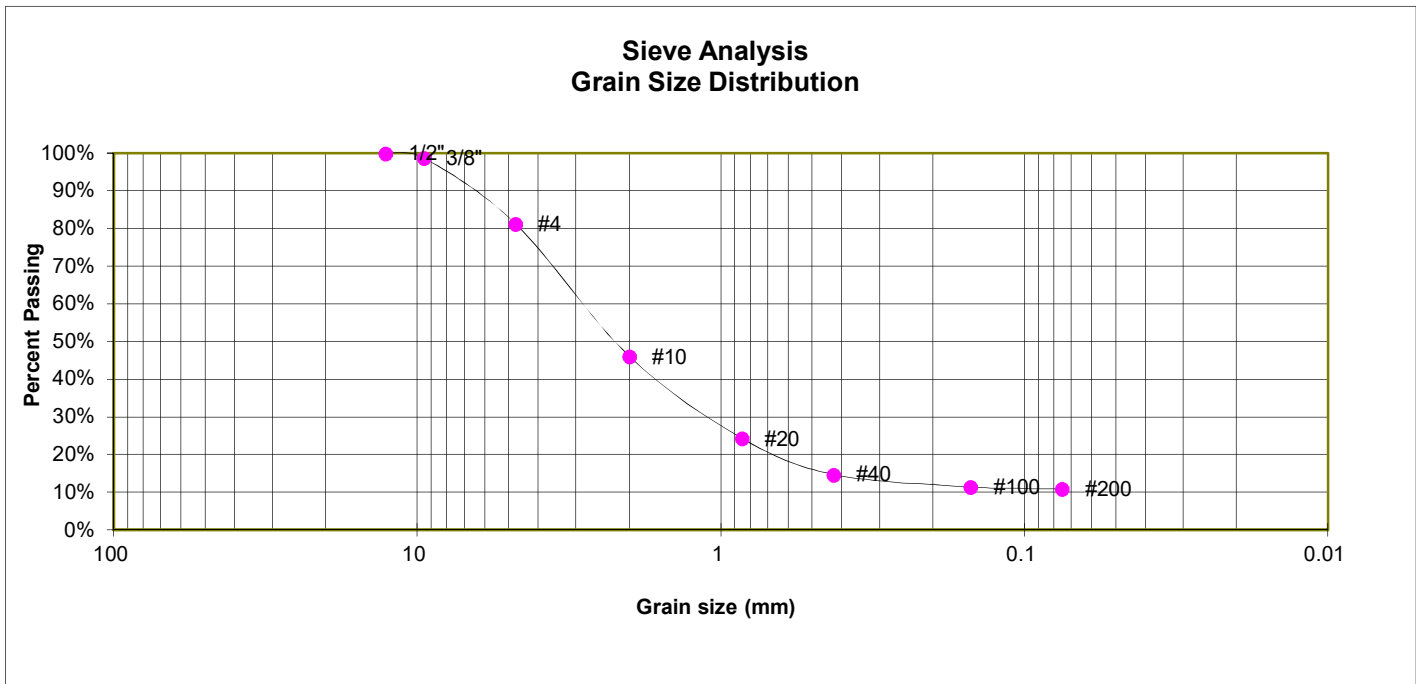
#### **LABORATORY TEST RESULTS**

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**FIG. C-13**

|            |        |                                  |
|------------|--------|----------------------------------|
| TEST PIT   | TP-3   | SOIL DESCRIPTION SAND, WITH SILT |
| DEPTH (FT) | 36-66" | SOIL TYPE # 1                    |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            | 100.0%           |
| 3/8"            | 98.7%            |
| 4               | 81.3%            |
| 10              | 46.0%            |
| 20              | 24.2%            |
| 40              | 14.7%            |
| 100             | 11.4%            |
| 200             | 10.9%            |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SP-SM



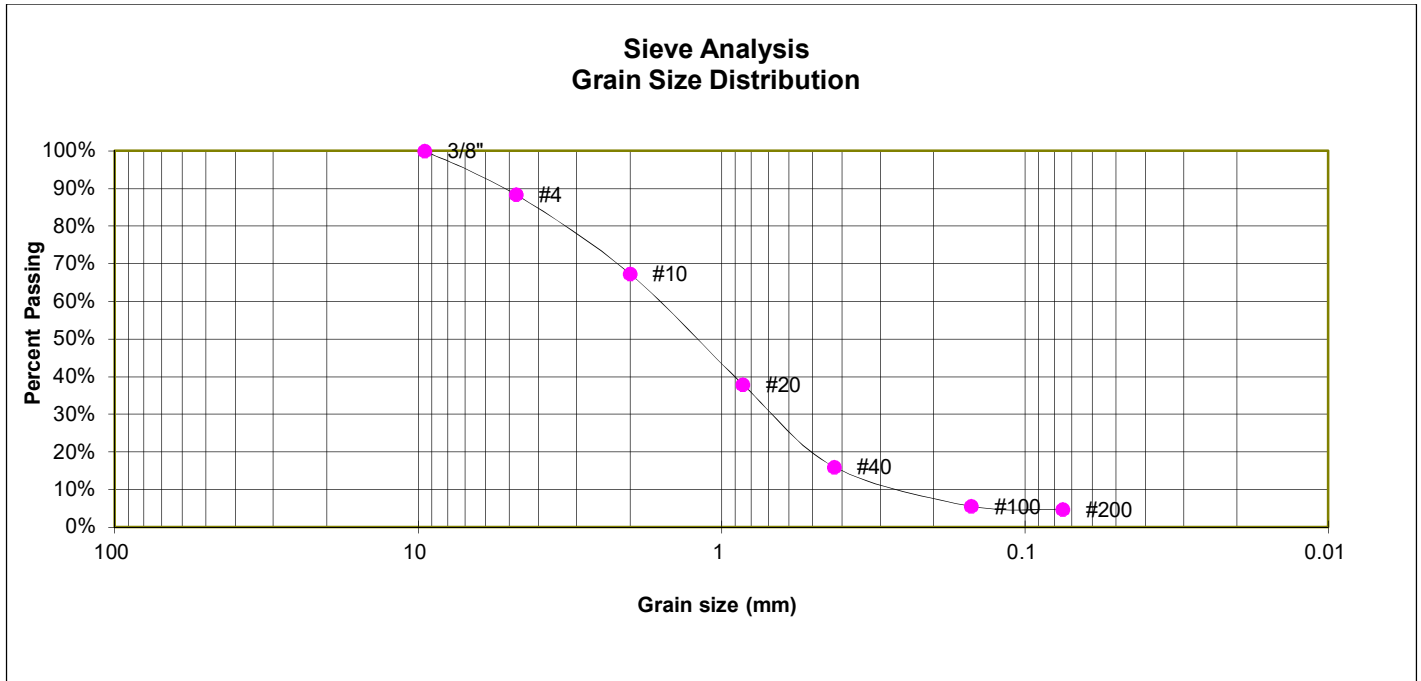
#### **LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

**FIG. C-14**

|            |        |                                       |
|------------|--------|---------------------------------------|
| TEST PIT   | TP-4   | SOIL DESCRIPTION SAND, SLIGHTLY SILTY |
| DEPTH (FT) | 18-42" | SOIL TYPE # 0                         |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 88.4%            |
| 10              | 67.3%            |
| 20              | 37.9%            |
| 40              | 16.0%            |
| 100             | 5.6%             |
| 200             | 4.8%             |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SP



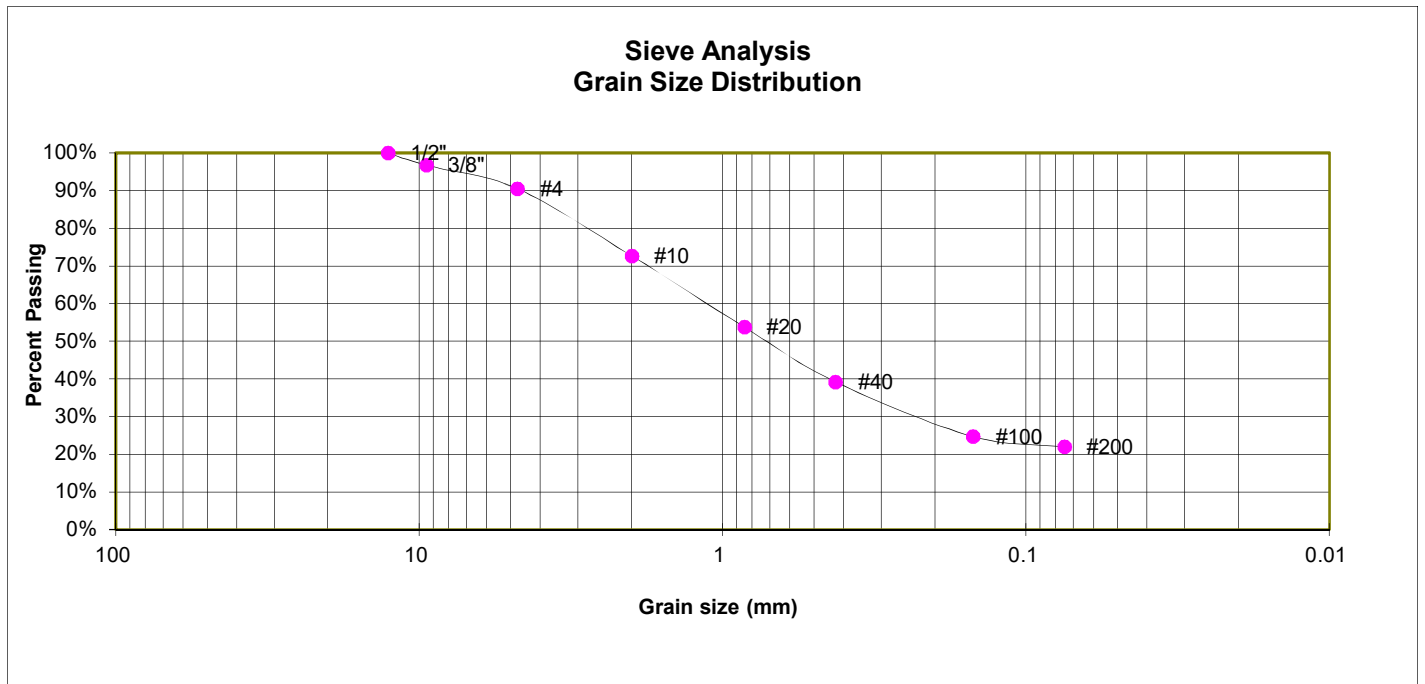
#### **LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

**FIG. C-15**

|            |        |                               |
|------------|--------|-------------------------------|
| TEST PIT   | TP-4   | SOIL DESCRIPTION SAND, CLAYEY |
| DEPTH (FT) | 42-60" | SOIL TYPE # 2                 |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            | 100.0%           |
| 3/8"            | 96.7%            |
| 4               | 90.5%            |
| 10              | 72.7%            |
| 20              | 53.8%            |
| 40              | 39.2%            |
| 100             | 24.7%            |
| 200             | 22.0%            |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



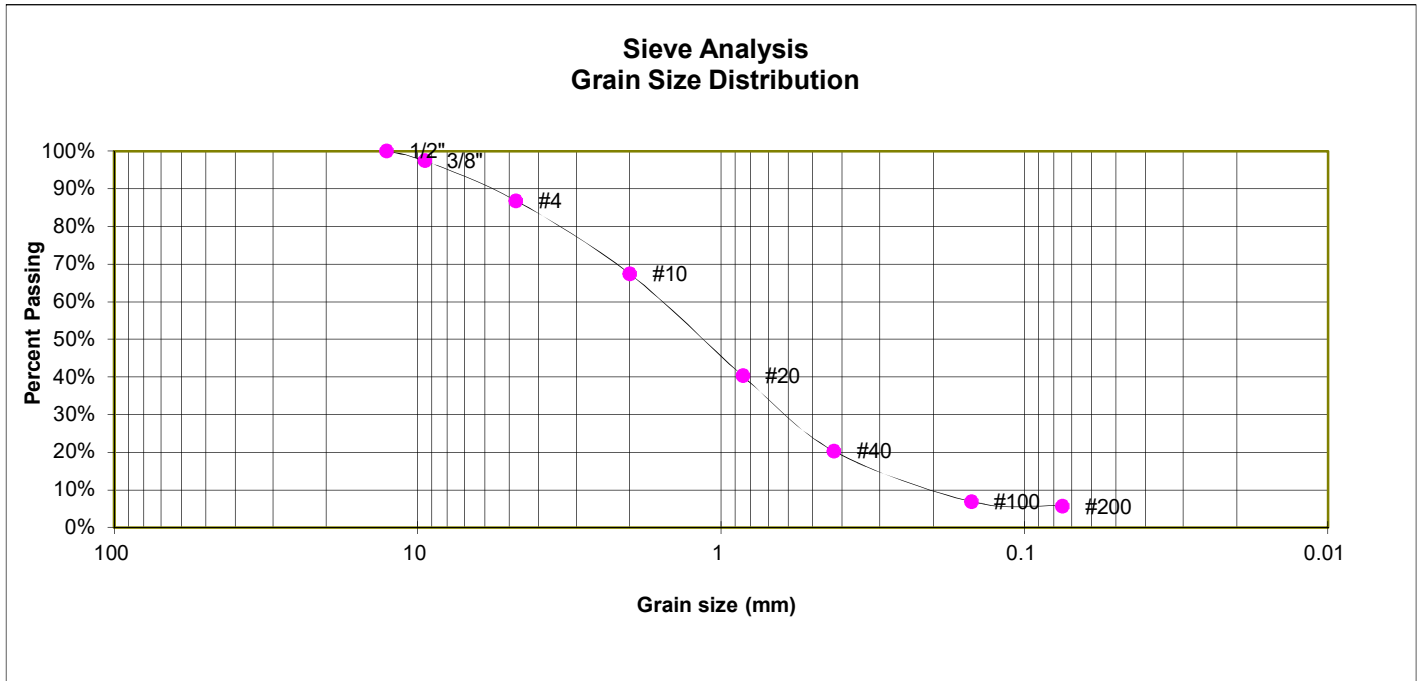
#### **LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

**FIG. C-16**

|            |        |                                            |
|------------|--------|--------------------------------------------|
| TEST PIT   | TP-5   | SOIL DESCRIPTION SAND, GRAVELLY, WITH SILT |
| DEPTH (FT) | 18-30" | SOIL TYPE # 1                              |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            | 100.0%           |
| 3/8"            | 97.5%            |
| 4               | 86.9%            |
| 10              | 67.4%            |
| 20              | 40.3%            |
| 40              | 20.3%            |
| 100             | 6.9%             |
| 200             | 5.7%             |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SW-SM



#### **LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

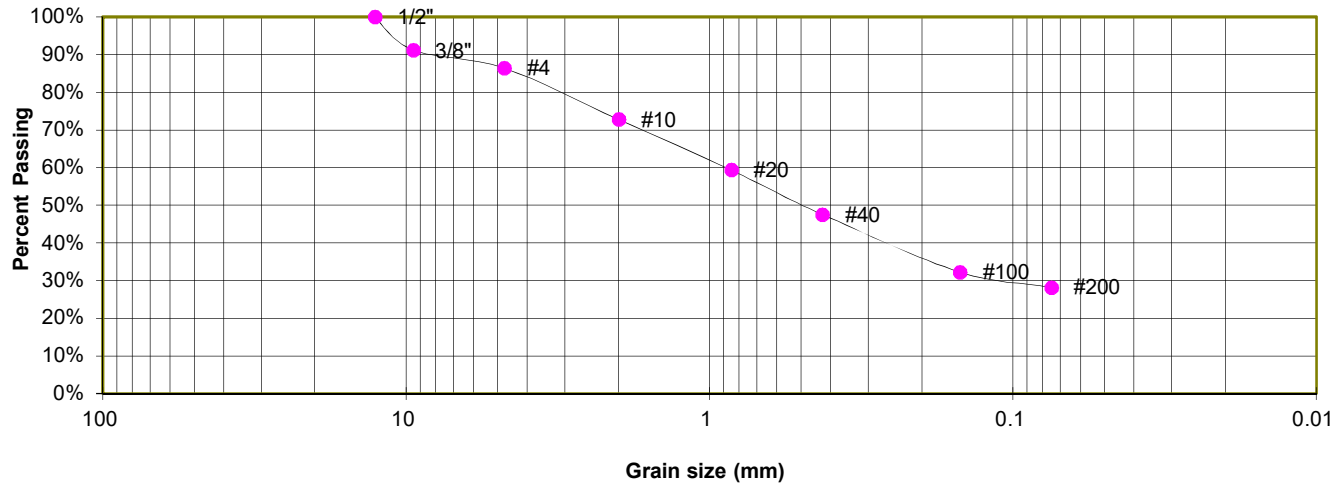
**FIG. C-17**

TEST PIT  
DEPTH (FT)

TP-5  
30-48"

SOIL DESCRIPTION SAND, GRAVELLY, CLAYEY  
SOIL TYPE # 2A

**Sieve Analysis  
Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            | 100.0%           |
| 3/8"            | 91.2%            |
| 4               | 86.4%            |
| 10              | 72.8%            |
| 20              | 59.3%            |
| 40              | 47.5%            |
| 100             | 32.3%            |
| 200             | 28.2%            |

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



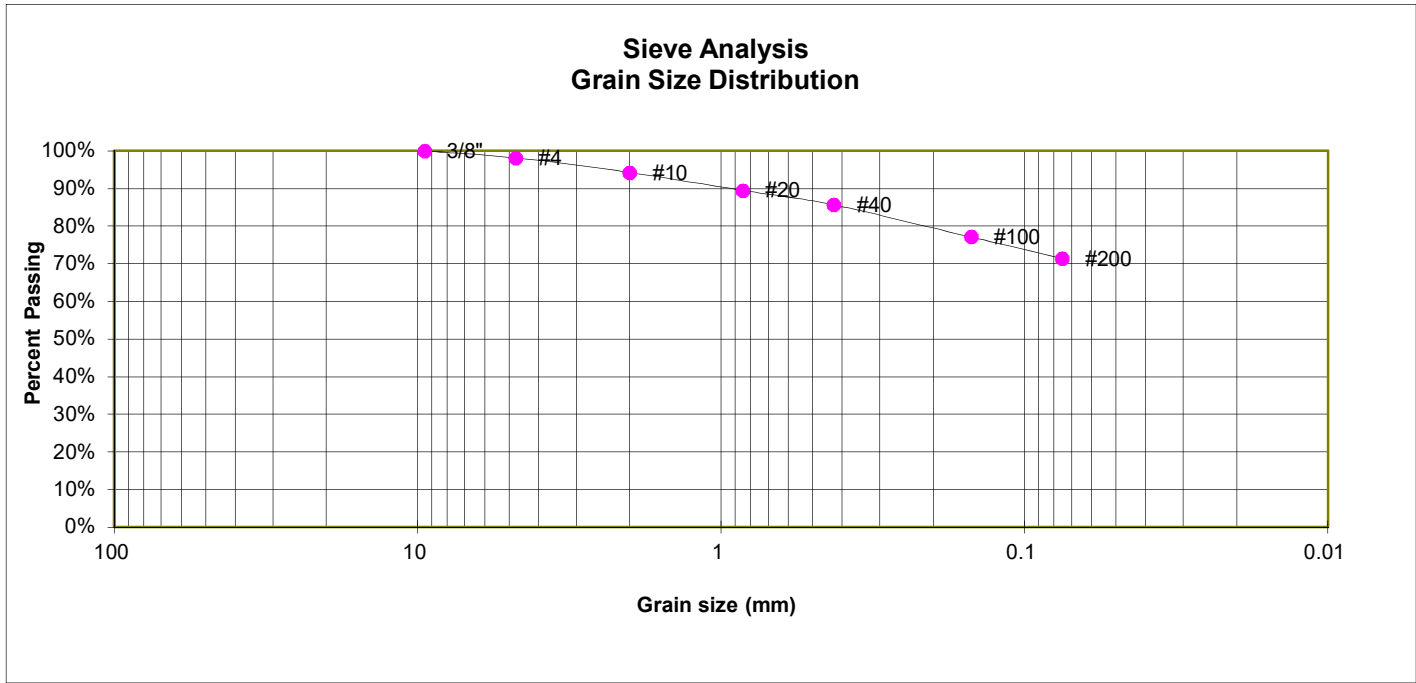
**LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

**FIG. C-18**

|            |        |                  |                 |
|------------|--------|------------------|-----------------|
| TEST PIT   | TP-5   | SOIL DESCRIPTION | CLAY, WITH SAND |
| DEPTH (FT) | 48-60" | SOIL TYPE #      | 4               |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 98.2%            |
| 10              | 94.3%            |
| 20              | 89.5%            |
| 40              | 85.6%            |
| 100             | 77.1%            |
| 200             | 71.5%            |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: CL



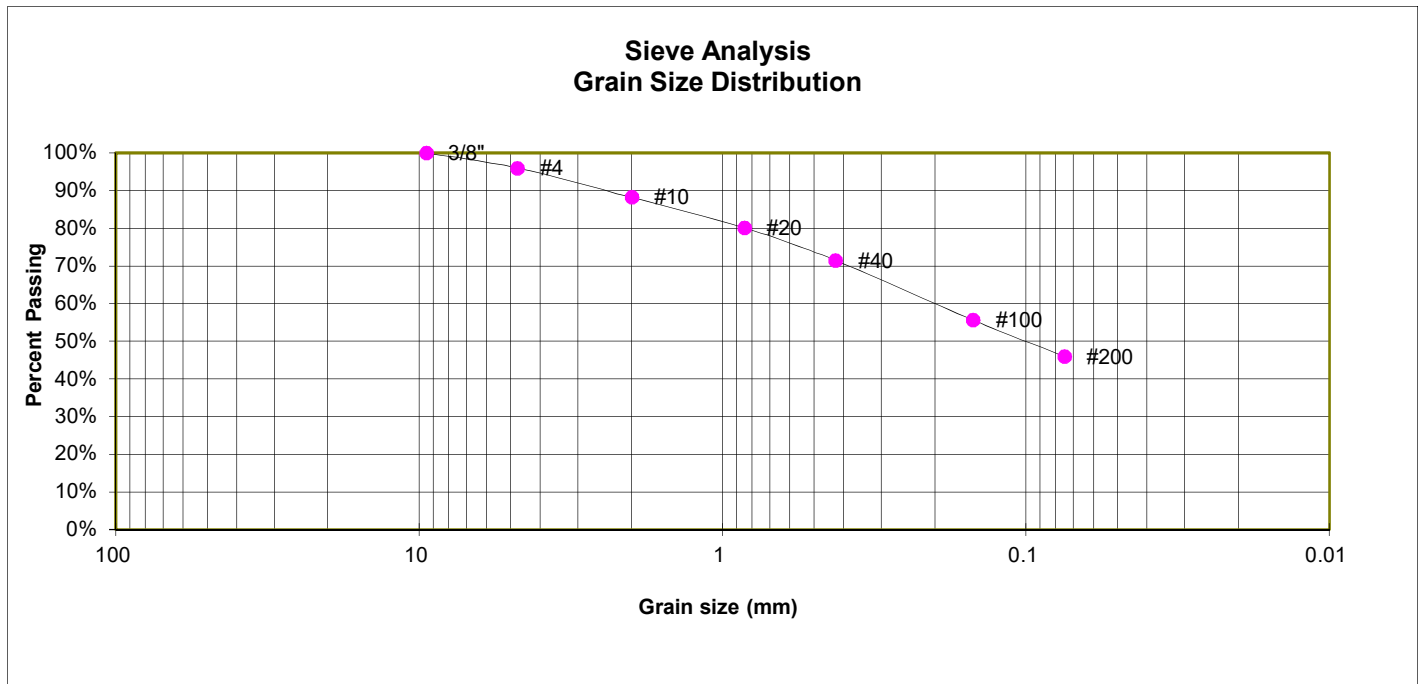
#### **LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

**FIG. C-19**

|            |        |                               |
|------------|--------|-------------------------------|
| TEST PIT   | TP-6   | SOIL DESCRIPTION SAND, CLAYEY |
| DEPTH (FT) | 12-30" | SOIL TYPE # 3                 |



#### **GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 96.0%            |
| 10              | 88.2%            |
| 20              | 80.1%            |
| 40              | 71.5%            |
| 100             | 55.7%            |
| 200             | 46.0%            |

#### **SOIL CLASSIFICATION**

USCS CLASSIFICATION: SC



#### **LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

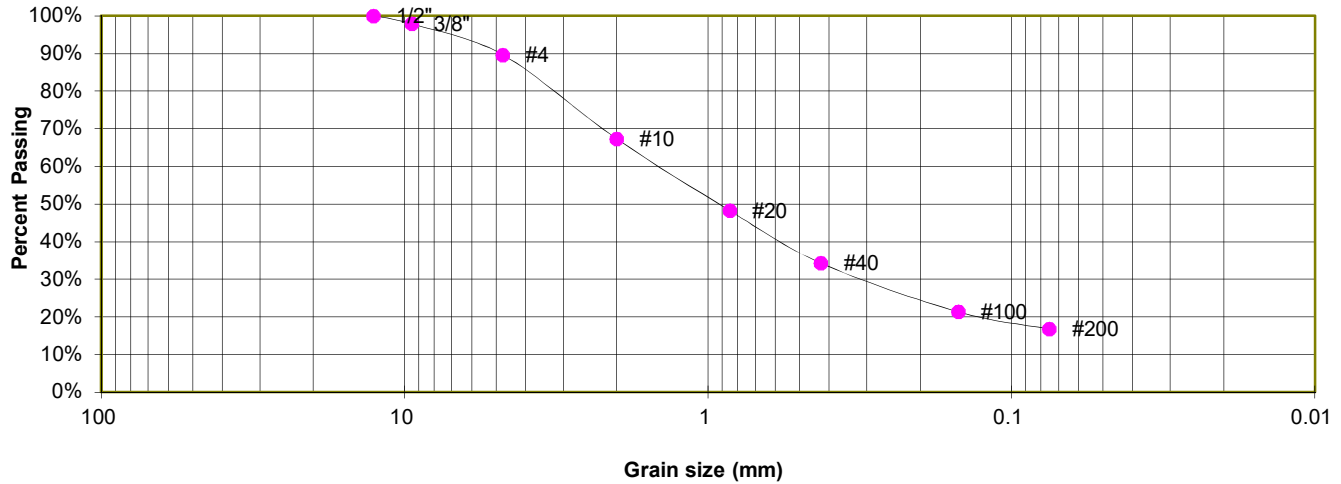
**FIG. C-20**

TEST PIT  
DEPTH (FT)

TP-6  
30-54"

SOIL DESCRIPTION SAND, GRAVELLY, SILTY  
SOIL TYPE # 1

**Sieve Analysis  
Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            | 100.0%           |
| 3/8"            | 97.9%            |
| 4               | 89.7%            |
| 10              | 67.3%            |
| 20              | 48.3%            |
| 40              | 34.3%            |
| 100             | 21.4%            |
| 200             | 16.8%            |

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SM



**LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

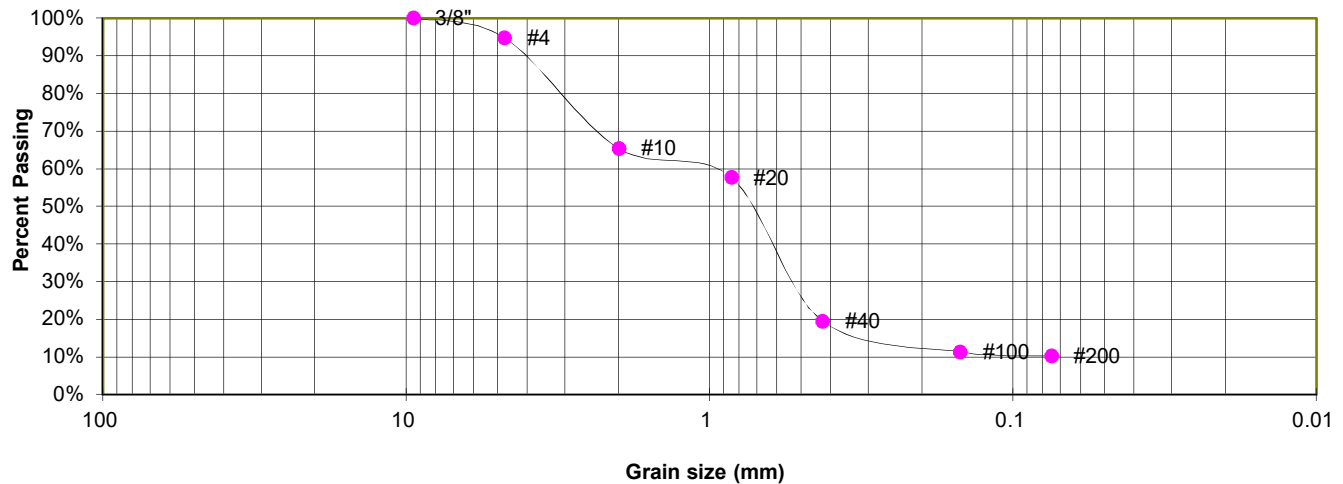
**FIG. C-21**

TEST PIT  
DEPTH (FT)

TP-6  
72-96"

SOIL DESCRIPTION SAND, WITH SILT  
SOIL TYPE # 1

**Sieve Analysis  
Grain Size Distribution**



**GRAIN SIZE ANALYSIS**

| U.S.<br>Sieve # | Percent<br>Finer |
|-----------------|------------------|
| 3"              |                  |
| 1 1/2"          |                  |
| 3/4"            |                  |
| 1/2"            |                  |
| 3/8"            | 100.0%           |
| 4               | 94.8%            |
| 10              | 65.4%            |
| 20              | 57.7%            |
| 40              | 19.5%            |
| 100             | 11.3%            |
| 200             | 10.2%            |

**SOIL CLASSIFICATION**

USCS CLASSIFICATION: SP-SM



**LABORATORY TEST RESULTS**

17675 HIGHWAY 83  
NORTH PARK, LLC

JOB NO.  
260494

**FIG. C-22**

## **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

### 28—Ellicott loamy coarse sand, 0 to 5 percent slopes

#### Map Unit Setting

*National map unit symbol:* 3680

*Elevation:* 5,500 to 6,500 feet

*Mean annual precipitation:* 13 to 15 inches

*Mean annual air temperature:* 47 to 50 degrees F

*Frost-free period:* 125 to 145 days

*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Ellicott and similar soils:* 97 percent

*Minor components:* 3 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Ellicott

##### Setting

*Landform:* Stream terraces, Flood plains

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Linear

*Across-slope shape:* Linear

*Parent material:* Sandy alluvium

##### Typical profile

*A - 0 to 4 inches:* loamy coarse sand

*C - 4 to 60 inches:* stratified coarse sand to sandy loam

##### Properties and qualities

*Slope:* 0 to 5 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Somewhat excessively drained

*Runoff class:* Very low

*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (5.95 to 19.98 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* Frequent

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Low (about 4.1 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 7w

*Hydrologic Soil Group:* A

*Ecological site:* R069XY031CO - Sandy Bottomland

*Other vegetative classification:* SANDY BOTTOMLAND  
(069AY031CO)

*Hydric soil rating:* No



### **Minor Components**

#### **Fluvaquentic haplaquoll**

*Percent of map unit:* 1 percent

*Landform:* Swales

*Hydric soil rating:* Yes

#### **Other soils**

*Percent of map unit:* 1 percent

*Hydric soil rating:* No

#### **Pleasant**

*Percent of map unit:* 1 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**



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](http://www.elpasocountyhealth.org)

## ON-SITE WASTEWATER TREATMENT SYSTEM OWTS MULTIPLE SYSTEM NOTICE

Please be advised that multiple OWTS systems are associated with this parcel.  
Each OWTS serves a separate structure and has its own individual records on file.  
To request all OWTS records that exist for this parcel please email  
[HEASepticInfo@elpasoco.com](mailto:HEASepticInfo@elpasoco.com).

EL PASO COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT  
INDIVIDUAL SEWAGE DISPOSAL SYSTEM INSPECTION FORM

Permit # 8896  
Date APRIL 18 1995

APPROVED: YES ☒ NO ☐ # 610000243 ENVIRONMENTALIST KRUEGER

Address 7675 HIGHWAY 83 B Owner HERBERTSON

Legal Description ATTACHED  
Residence ☒ # of bedrooms 5; Commercial ☐; System Installer V+K

**SEPTIC TANK:**

Commercial ☒; Noncommercial ☐ L ☐ W ☐ WD ☐  
Construction Material CONCRETE, capacity 2250 gallons.

**DISPOSAL FIELD:**

**Rock Systems:**

Trench: depth ☐, width ☐, total length ☐, sq. feet ☐

Bed: depth ☐, length ☐, width ☐, sq. feet ☐

Rock type ☐, depth ☐, under PVC ☐, over PVC ☐

Seepage Pits: # of pits ☐, total # of rings ☐, working depth(s) ☐  
size of pit(s) L X W ☐, lining material ☐, total sq. feet ☐

**Rockless Systems:**

Chamber: Type INFILTRATOR, number of chambers 26, bed ☐, trench ☒  
sq. ft./section 18, reduction allowed 50%, sq. ft. required 928

total sq. ft. installed 236, depth of installation 30"

Engineer Design Y or ☒ N, Designing Engineer ☐

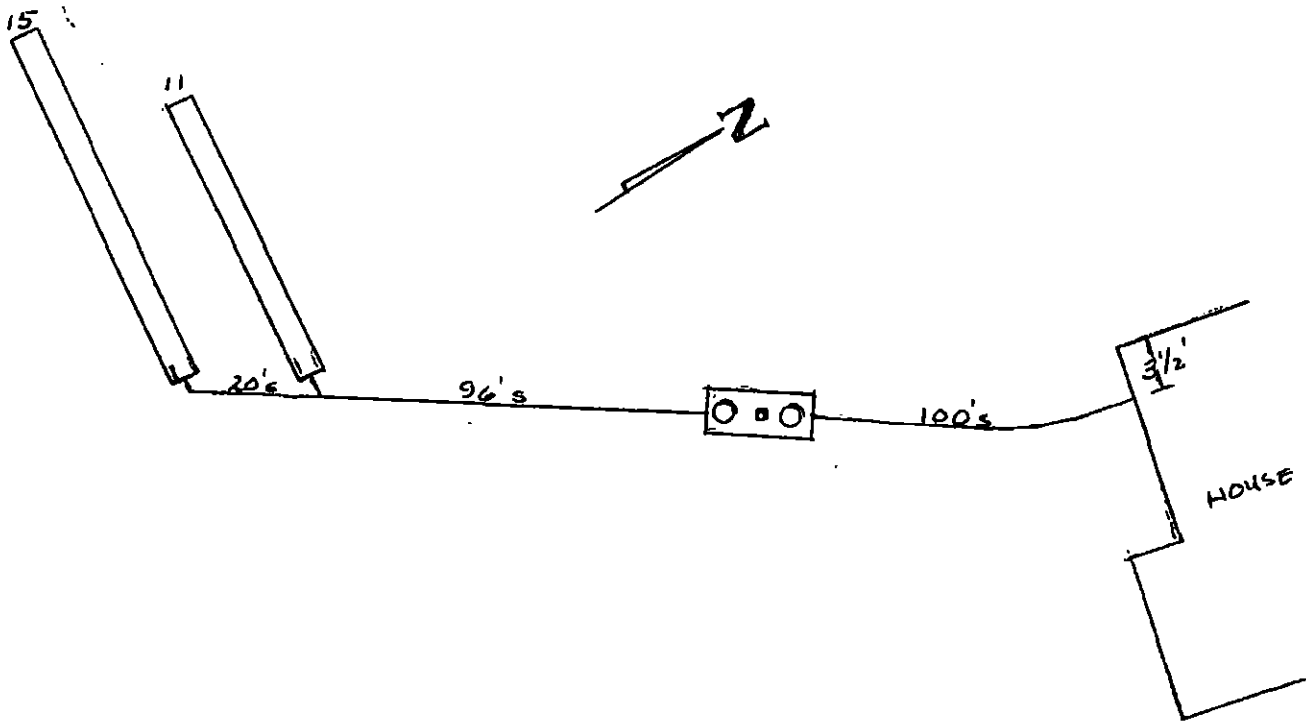
Approval letter provided? Y or N

Well 50 feet from tank Y or N 100 feet from leach field Y or N

Well installed at time of septic system inspection Y or ☒ N Public Water ☐

\*Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the disposal field.

**NOTES:**



Acres 48

**EL PASO COUNTY**

**• DEPARTMENT OF HEALTH AND ENVIRONMENT**

**301 South Union Blvd. • Colorado Springs, Colorado • 578-3125**

Water Supply WI

Permit 3396

**TO CONSTRUCT, ALTER, REPAIR OR MODIFY ANY INDIVIDUAL SEWAGE DISPOSAL SYSTEM**

Receipt No. 2139

Issued to ELMER HERBERTSON

Date 3-14-95

Address of Property 17675 HIGHWAY 83

Phone 598-7208

(Permit valid at this address only)

Sewage-Disposal System work to be performed by JIM MURPHY J+K

Phone 495-0451

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)

3-14-96

John D. Smith, Jr.  
DIRECTOR, DEPARTMENT OF HEALTH AND ENVIRONMENT

DATE OF EXPIRATION

K. Mueger  
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 | total square feet | total square feet | total square feet   |
| 1750              | 928 *             |                   |                     |
| gallons           | ft. of trench     |                   | rings or diam.x w/d |
|                   | inches wide       |                   |                     |
|                   | ft. of trench     |                   |                     |
|                   | inches wide       |                   |                     |

**NOTES: STAY IN AREA OF PERCOLATION TEST. MEET ALL DISTANCE REQUIREMENTS. \*RECOMMEND ADDITIONAL 60 PER CENT FOR WASHER AND DISPOSAL. KEEP TRENCHES AT PERC TEST DEPTH.**

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 time for the purpose of making such inspections as are necessary to determine compliance with requirements of this law.

EL PASO COUNTY DEPARTMENT OF HEALTH & ENVIRONMENT  
301 South Union Boulevard  
Colorado Springs, CO 80909-3423  
(719) 578-3125

Pine Crest Court  
Box 488-1884  
Builder: 443-4583 Agan

APPLICATION FOR A PERMIT TO CONSTRUCT, REMODEL, OR INSTALL A SEWAGE DISPOSAL SYSTEM

NAME OF OWNER Elmer Herberkson HOME PHONE 580-7208 WORK PHONE ---  
ADDRESS OF PROPERTY 12675 Highway 83 Monument DATE 2/21/95  
LEGAL DESCRIPTION OF PROPERTY See Plat  
TAX SCHEDULE NUMBER 6000-00-243 SYSTEM CONTRACTOR HUNSON PHONE 495-0451  
OWNER'S ADDRESS IF DIFFERENT 6584 Bull Hill Ct. J/c.  
TYPE OF HOUSE CONSTRUCTION Frame & Brick SOURCE AND TYPE OF WATER SUPPLY Well  
SIZE OF LOT 4.3 Acres MAXIMUM POTENTIAL NUMBER OF BEDROOMS 5 EASEMENT (yes or no)  
PERCOLATION TEST RESULTS ATTACHED (yes or no) yes

A plot plan and accompanying information are essential; it may be drawn on the back of this application or be attached. Please include by measured distance the location of wells including neighbors' wells, springs, water supply lines, cisterns, buildings, proposed structures, property lines, property dimensions, subsoil drains, lakes, ponds, water courses, streams, and dry gulches. Please show the location of the proposed septic system by directions and distances from actual and/or proposed dwellings, structures, or fixed reference objects. Give complete directions to the property from major highways. (ANSWER QUESTIONS ON BACK OF FORM).

Applicant acknowledges that the completeness of the application is conditional upon such further mandatory and additional tests and reports as may be required by the department to be made and furnished by the applicant for purposes of evaluation of the application; and issuance of the permit is subject to such terms and conditions as deemed necessary to ensure compliance with rules and regulations adopted under Article 10, Title 25, C.R.S. 1973 as amended. The undersigned hereby certifies that all statements made, information and reports submitted by the applicant are or will be represented to be true and correct to the best of my knowledge and belief and are designed to be relied on by the El Paso County Health Dept. in evaluating the same for purposes of issuing the permit applied for herein. I further understand that any falsification or misrepresentation may result in the denial of the application or revocation of any permit granted based upon said application and in legal action for perjury as provided by law.

SIGNATURE [Signature]

HEALTH DEPARTMENT USE ONLY

PERMIT NUMBER 8896 RECEIPT NUMBER 2139 DATE TO LAND USE DEPARTMENT 2-22-95  
DESCRIPTION AREA \* 928' TANK CAPACITY 1750 DATE OF SITE INSPECTION 2/28/95

REMARKS: NEED PLANNING APPROVAL. STAY IN AREA OF PERC TEST.  
MEET ALL DISTANCE REQUIREMENTS. \* RECOMMEND ADDITIONAL  
60% FOR WASHER + DISPOSAL KEEP TRENCHES @ PERC TEST DEPTH

APPLICATION IS APPROVED ( ) DENIED ( ) DATE 2/28/95 ENVIRONMENTALIST Krueger  
Mail to  
1265 Deer Creek Rd  
Monument CO 81132

ANSWER THE FOLLOWING ITEMS AND/OR INCLUDE ON PLOT PLAN.

PROPERTY LINES ☒  
PROPERTY DIMENSIONS ☒  
LOCATION OF PROPOSED SEPTIC SYSTEM ☒  
LOCATION OF WELL ☒  
LOCATION OF ADJACENT WELLS ☒  
BUILDINGS ☒  
PROPOSED BUILDINGS ☒  
WATER SUPPLY LINE ☒  
CISTERNS \_\_\_\_\_  
SPRINGS \_\_\_\_\_  
LAKES \_\_\_\_\_  
PONDS \_\_\_\_\_  
WATER COURSES \_\_\_\_\_  
STREAMS \_\_\_\_\_  
DRY GULCHES \_\_\_\_\_  
SUBSOIL DRAINS \_\_\_\_\_

DIRECTIONS TO PROPERTY FROM MAIN HIGHWAYS:

ONE MILE SOUTH OF ~~105~~ Highway 105 ON Highway 93

East side of Highway -

~~Call Ken at Pine crest - # on front~~  
gate - someone will have to meet  
you - Call Ken at Pine crest - # on front



**FRONT RANGE  
GEOTECHNICAL  
INC.**

P.O.Box 1351  
Monument, CO 80132

17675 Highway 83 A

6100000369

E

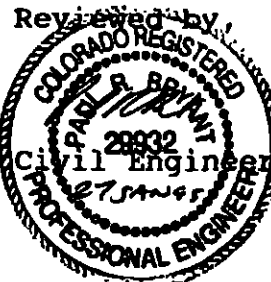
2-9-07

**PERCOLATION TEST  
FOR  
PINE CREST CONSTRUCTION**

17675 State Highway #83,  
El Paso County,  
Colorado

Respectfully submitted,

Jeff Houchin  
Geologist



## PERCOLATION TEST FINDINGS

Enclosed are the results of the percolation test for the septic system to be installed at 17675 State Highway #83, El Paso County, Colorado. The residence will not be on a public sewer system or on a public water system. The number of bedrooms in the design for the residence is three. Due to the natural slope of the property, the entire system will gravity feed to the southwest approximately 240 feet down slope. All applicable regulations of the El Paso County Health Department will be complied with for the installation of the disposal system.

The percolation test was performed on January 24, 1995, with three test holes being dug. The location of these test holes was determined by Ken Starkey, builder. These test holes had one foot of water placed in them that dissipated in less than ten minutes: (Table 3-8, Falling Head Percolation Test Procedure, Colorado Department of Health). For the test, the holes were filled to the bottom 25% of the hole and allowed to drain while measurements were taken every ten minutes of the test. The field data and results of the percolation test are on the following page.

The average of the three test holes is one inch in 16.8 minutes which I feel is representative of the soils conditions in the area. A rate of one inch in 16.8 minutes will be adequate for the design and sizing of the disposal system. While there are some variations in the rate of percolation for each hole there is no significant variation in the composition of materials encountered while drilling these holes. The test and procedures conform to El Paso County Health Department regulations. The soil profile for the disposal system is as follows.

0 to 12" - Topsoil- sandy loam, organic composition.  
12" to 12' - Sand-medium grained, moderate density and moisture content, low clay content, non-plastic, tan-buff in color, density increases with depth.

No water was encountered during the drilling of all holes. Bedrock was not encountered during drilling. No known wells were observed within 100 feet of the proposed system. The following setbacks shall be followed during the construction of the field: Property line setback - 10', building foundation setback - 20', any well - 100'.

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 partly cloudy skies, with mild temperatures.

# FRONT RANGE GEOTECHNICAL, INC

## PERCOLATION TEST DATA FORM

NAME PINECREST CONST. ADDRESS 17675 STATE HIGHWAY 83  
 CITY \_\_\_\_\_ STATE COLORADO ZIP \_\_\_\_\_ PHONE \_\_\_\_\_  
 LOCATION OF TEST SEE SITE MAP COUNTY EL PASO  
 WATER SUPPLY PRIVATE BEDROOMS 3 SLOPE S.W. 79°  
 DATE OF TEST 1-24-95 DIAMETER 5" DEPTH 32"  
 DROP IN INCHES

| TIME                  | P-1                 | P-2    | P-3    |
|-----------------------|---------------------|--------|--------|
| 9:55                  |                     |        |        |
| 10:05                 | 8 3/8               | 6 7/8  | 6 5/16 |
| 10:15                 | 5 1/2               | 3 1/2  | 3 3/8  |
| 10:25                 | 3 3/4               | 2 3/4  | 2 1/8  |
| 10:35                 | 2 -                 | 1 7/16 | 1 -    |
| 10:45                 | 1 9/16              | 1 1/8  | 9/16   |
| 10:55                 | 1 1/8               | 1 1/16 | 1/2    |
| 11:05                 | 3/4                 | 5/8    |        |
| 11:15                 | 1 1/16              |        |        |
|                       |                     |        |        |
|                       |                     |        |        |
|                       |                     |        |        |
| AVERAGE FOR EACH HOLE | 14.5                | 16     | 20     |
| TOTAL AVERAGE         | 16.8 MINUTES / INCH |        |        |

PROFILE 0-1' TOPSOIL; 1'-12' SAND - MEDIUM GRAINED,  
 5' MODERATE DENSITY AND MOISTURE CONTENT,  
 BLOW COUNT 21 LOW CLAY CONTENT, NON-PLASTIC, TAN-BUFF  
 12" COLOR, DENSITY INCREASES WITH DEPTH.

GROUNDWATER NONE

BEDROCK NONE

# Site Map

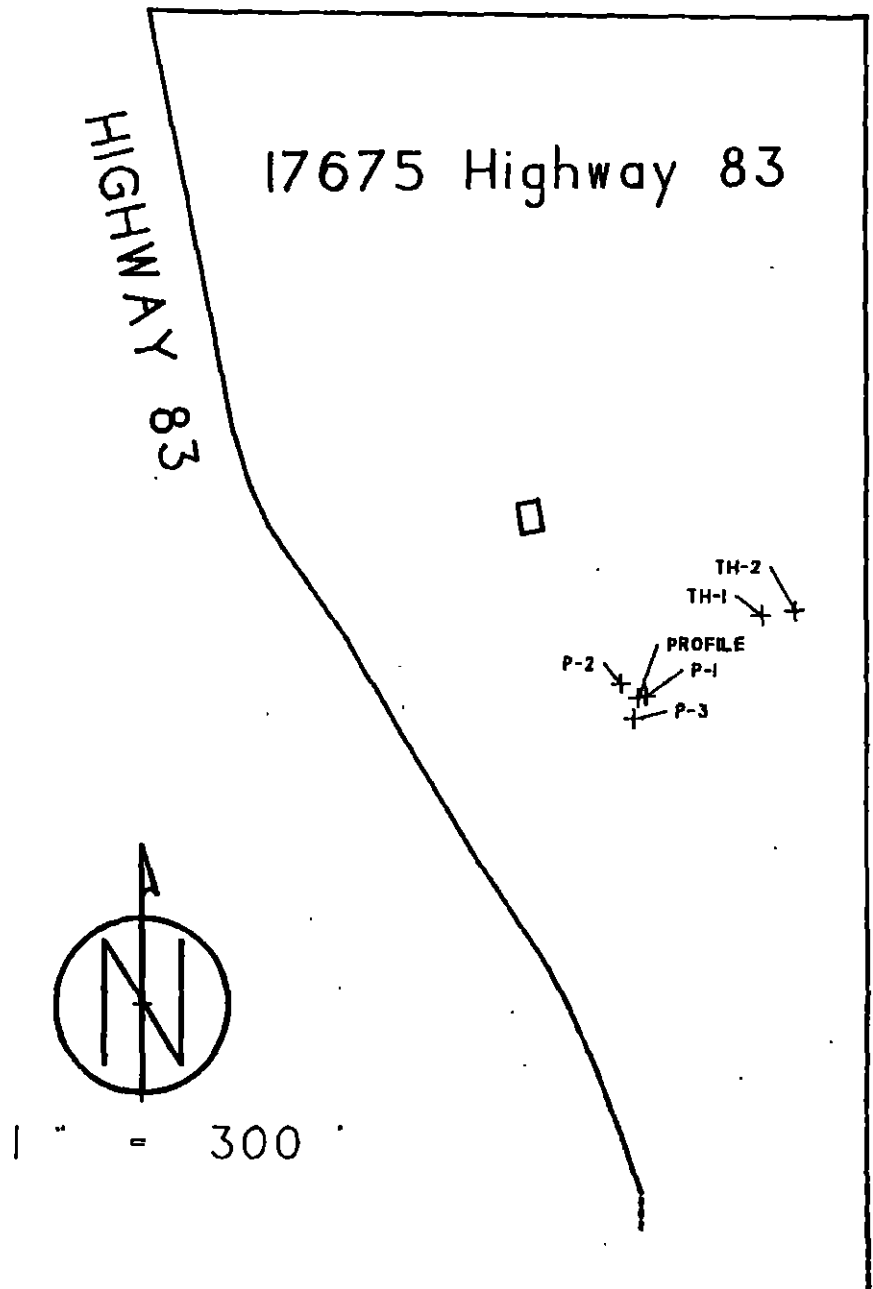
17675 State Highway #83,  
El Paso County, Colorado

Location from S.E. Corner of Existing Metal Shed to:

PROFILE: S. 29° E. - 310'

Locations from PROFILE to:

|      |           |   |     |
|------|-----------|---|-----|
| P-1: | N. 72° E. | - | 13' |
| P-2: | N. 50° W. | - | 36' |
| P-3: | S. 12° W. | - | 33' |



EL PASO COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT  
INDIVIDUAL SEWAGE DISPOSAL SYSTEM INSPECTION FORM

Permit # ON 0007529 <sup>289</sup> *288*  
Date 9 Feb 2007

APPROVED: Yes ☒ No ☐ Environmental Health Specialist: J. Christensen

Address 17725 Hwy 83 80908 Owner Elmer Herbertson  
Legal Description Twp 10S, R15E, S4SW4, SEC 22-11-66  
Residence ☒ # Bedrooms 3 Commercial ☐ System Installer J+K Excavating

**SEPTIC TANK:**

Commercial ☐ Noncommercial ☒ Construction Material Concrete Capacity Gallon 1250

**DISPOSAL FIELD:**

Trench: Depth (Range) \_\_\_\_\_ Width \_\_\_\_\_ Total Length \_\_\_\_\_ Sq. Ft. \_\_\_\_\_

Bed: Depth (Range) \_\_\_\_\_ Length \_\_\_\_\_ Width \_\_\_\_\_ Sq. Ft. \_\_\_\_\_

Depth of Rock \_\_\_\_\_ Under PVC \_\_\_\_\_ Type of cover on Rock \_\_\_\_\_

**DRYWELLS:** # of Pits \_\_\_\_\_ Rings (Pit 1) \_\_\_\_\_ Rings (Pit 2) \_\_\_\_\_ Working Depth #1 \_\_\_\_\_ #2 \_\_\_\_\_

Size (L x W) #1 \_\_\_\_\_ #2 \_\_\_\_\_ Total Sq. Ft. \_\_\_\_\_

**ROCKLESS SYSTEMS:**

Standard Chamber: Type Biodiffuser #Chambers 38 Sq. Ft./Chamber 5.5 Bed ☒ Trench ☐

High Profile Units: Type Chamber \_\_\_\_\_ #Chambers \_\_\_\_\_ Sq. Ft./Chamber \_\_\_\_\_ Bed ☐ Trench ☐

Reduction Allowed 35 % Sq. Ft. Required 891 Depth (Range) 12" - 28"

Sq. Ft. Installed 589 Equivalent Sq. Ft. Installed with Reduction 906

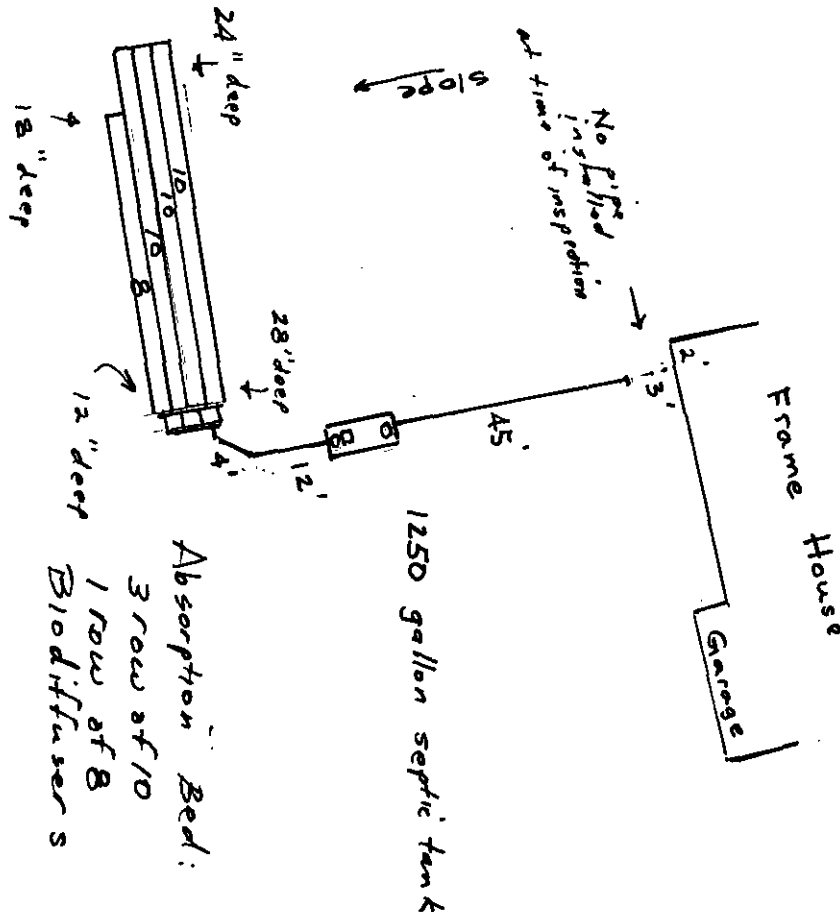
Engineer Design: Y ☒ Engineering Firm N/A

Approval letter provided? Y ☒

Well installed at time of septic system inspection? Y ☒ Public Water? \_\_\_\_\_

\*Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the disposal field.

NOTES: All septic pipe 4" SDR35. House sewer stub out not installed at time of inspection.



*[Handwritten signature]*

299

## INDIVIDUAL SEWAGE DISPOSAL SYSTEM PERMIT

OWNER NAME: ELMER J HERBERTSON  
ADDRESS: 17725 HIGHWAY 83  
CITY, STATE, ZIP: COLORADO SPRINGS CO 80908  
INSTALLED BY:

PERMIT NUMBER: ON0007529  
DATE PERMITTED: 11/20/2006  
PHONE NUMBER: 7194881884

This permit is issued in accordance with 25-10-107 Colorado Revised Statutes. 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). If both a building and an ISDS permit are issued for the same property and construction has not commenced prior to the expiration date of the building permit, the ISDS permit shall expire at the same time as the building permit. This permit is revokable if all stated requirements are not met.  
Sewage disposal system to be installed by an El Paso County Licensed System Contractor or the property owner.

**THIS PERMIT DOES NOT DENOTE APPROVAL OF ZONING AND ACREAGE REQUIREMENTS.**

*Rosemary C. Baker-Martin*

DIRECTOR, EL PASO COUNTY DEPARTMENT OF HEALTH AND ENVIRONMENT

PERMIT EXPIRATION DATE :  
Expires twelve months from date of issue

*Brad Wallan* 578-3127  
ENVIRONMENTALIST / PHONE NUMBER\*

WATER SOURCE: WELL

MINIMUM SEPTIC TANK SIZE : 1,250 GALLONS

MINIMUM ABSORPTION AREA REQUIRED 891 SQ FT

PLANNING DEPARTMENT



ENUMERATION



FLOOD PLAIN



WASTEWATER



### COMMENTS:

\* FOR INSPECTIONS CALL 575-8699 BEFORE 8:30 A.M. OF THE DAY TO BE INSPECTED.  
(WEEKENDS & HOLIDAYS EXCLUDED)  
LEAVE THE ENTIRE SEWAGE DISPOSAL SYSTEM UNCOVERED FOR FINAL INSPECTION.

INSTALL ABSORPTION SYSTEM IN AREA AND AVERAGE DEPTH (34 INCHES) OF SOIL PERCOLATION TEST.

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 time for the purpose of making such inspections as are necessary to determine compliance with requirements of this law.

### FOR ADMINISTRATIVE USE ONLY

Permit Ready: 11-22-06 Called \_\_\_\_\_ Mailed \_\_\_\_\_

Final Inspection Requested: BY: John / J & K

Date Called In: 2-9-07

Phone # 331-4321

Septic Site will be ready: Now

481-2417

**EL PASO COUNTY ENVIRONMENTAL HEALTH SERVICES**

301 South Union Boulevard • Colorado Springs, CO • 80910-3123 • (719) 578-3125 • Fax: (719) 578-3188

**\*ALL PAYMENTS ARE DUE AT TIME OF SUBMITTAL IN CASH OR CHECK****APPLICATION FOR AN ON-SITE WASTEWATER TREATMENT SYSTEM PERMIT**☒ **NEW CONSTRUCTION** ☐ **MINOR REPAIR** ☐ **MAJOR REPAIR/ADD**

Owner Elmer J. Hecker NEW HOUSE 17725 Ken Starkey Daytime Phone 488-1884  
 Address of Property 17575 Highway 83 City & Zip Colo Spgs, CO 80908  
 Legal Description Tolson Sub Attachment SE 4 SW 4 Sec 15 T11N R6E  
 Owner's MAILING Address P.O. Box 2160 City, State & Zip HOUSTON TX 77032  
 Lot Size 47 1/2 Tax Schedule # 61000 00 369

Type of Building: ☒ Frame ☐ Modular ☐ Mobile ☐ Commercial ☐ Manufactured ☐ Other \_\_\_\_\_Water Supply: ☒ Well or Spring ☐ Cistern ☐ Public Inside City Limits: ☒ No ☐ Yes-City \_\_\_\_\_☐ MAIL PERMIT OR ☒ PICK UP PERMIT ☐ THERE IS AN ADDITIONAL RESIDENCE ON THIS PROPERTYMAXIMUM POTENTIAL NUMBER OF BEDROOMS 3Percolation Test Attached ☒ Y ☐ N Basement Y ☒ N Garbage Disposal ☒ Y ☐ N Clothes Washer ☒ Y ☐ N

I have supplied a plot plan as described on the back of this form. I acknowledge the completeness of the application is conditional upon such further mandatory and additional tests and reports as may be required by the Department to be made and furnished by an applicant for purposes of evaluating the application, and issuance of the permit is subject to such terms and conditions as deemed necessary to ensure compliance with rules and regulations adopted pursuant to C.R.S. 25-10-107 et. seq. I hereby certify all represented to be true and correct to the best of my knowledge and belief, and are designed to be relied on by the El Paso County Department of Health and Environment in evaluating the same for purposes of issuing the permit applied for herein. I further understand any falsification or misrepresentation may result in the denial of the application or revocation of any permit granted based upon said application and in legal action for perjury as provided by law.

OWNER'S SIGNATURE Elmer J. HeckerDate 11/16/06You will be notified by telephone when your permit is ready for pick up. Please allow a minimum of 10 days for new septic.**DEPARTMENT OF HEALTH USE ONLY**

1250 gallons Minimum Tank Capacity 891 ft<sup>2</sup> Minimum Absorption Area 17 Nov. 2006 Date of Site Inspection  
 REMARKS N 39° 05' 28" W 104° 46' 12" Acc. 14 feet  
Install absorption system in area and average depth (34 inches)  
of soil percolation test.

EHS INSPECTOR Janet Christensen DATE 11/17/06 ☒ APPROVED ☐ DENIED**FEES AS OF 01/01/04:**

NEW CONSTRUCTION \$483.00 + Planning Department Surcharge of \$30. = \$513.00

MAJOR REPAIR/ADDITION \$489.00

MINOR REPAIR/ADDITION \$263.00

DATE TO PLANNING / WASTEWATER: \_\_\_\_\_

DATE TO FLOODPLAIN/ENUMERATIONS 11-16-2006**PLEASE COMPLETE THE BACK OF THIS FORM**

- 1) We require an original of your **PERCOLATION (PERC) TEST** with an original professional engineer's (PE) stamp and signature as well as a plot of the percolation test hole locations with measurements from a fixed reference point.
- 2) **PROPERTY ADDRESS OR LOT NUMBER MUST BE POSTED AND CLEARLY VISIBLE FROM ROAD. PERC HOLES MUST BE CLEARLY MARKED OR AN ADDITIONAL CHARGE FOR A RETURN TRIP TO THE SITE MAY BE ASSESSED.**
- 3) A **PLOT PLAN** must be drawn (not to scale) on an 8 ½ x 11 sheet of paper. The plot plan must include:
 

|                        |                                         |                                                                 |
|------------------------|-----------------------------------------|-----------------------------------------------------------------|
| 1) a north bearing     | 4) all buildings (proposed or existing) | 7) driveway (proposed or existing and name of adjoining street) |
| 2) property lines      | 5) proposed septic system site          |                                                                 |
| 3) property dimensions | 6) alternate septic system site         |                                                                 |
- 4) Initial any of the following features that apply to your property and **INCLUDE** them on your **PLOT PLAN**.
 

|                                             |                                                    |                                        |
|---------------------------------------------|----------------------------------------------------|----------------------------------------|
| <input checked="" type="checkbox"/> Well(s) | <input type="checkbox"/> Adjacent property well(s) | <input type="checkbox"/> Subsoil drain |
| <input type="checkbox"/> Cistern            | <input type="checkbox"/> Water line                |                                        |
- 5) Initial any of the following that are within 100 feet of your proposed septic system and **INCLUDE** on your **PLOT PLAN**.
 

|                                        |                                                     |
|----------------------------------------|-----------------------------------------------------|
| <input type="checkbox"/> Spring(s)     | <input type="checkbox"/> Lake(s)                    |
| <input type="checkbox"/> Pond(s)       | <input type="checkbox"/> Stream(s)                  |
| <input type="checkbox"/> Dry Gulch(es) | <input type="checkbox"/> Natural drainage course(s) |

6) GIVE COMPLETE DIRECTIONS TO THE PROPERTY FROM A MAIN HIGHWAY

*North on Highway 83 just before 1 mile*

*Driveway has brick posts on either side, wrought iron gate. (Just south of John Westfall's house)*

5  
+  
=

333.9

890.5

2 + 1 18

60%



P.O. Box 1351  
Monument, CO 80132  
719 481-4560  
Fax 481-9204

17725 Hwy 83  
# 6100000369

E

02-09-07

**PERCOLATION TEST**

**FOR**

**PINECREST CONSTRUCTION**

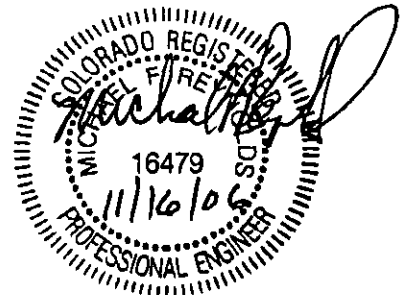
**JOB #15160**

17725 Highway 83,  
El Paso County,  
Colorado

Respectfully submitted,

A handwritten signature in cursive script that reads "Jeff Houchin".

Jeff Houchin  
Geologist



Michael F. Reynolds, P.E.  
Civil Engineer

**PERCOLATION TEST FINDINGS**

Enclosed are the results of the percolation test for the septic system to be installed at **17725 Highway 83, El Paso County, Colorado**. The locations of the percolation test borings were determined by Ken Starkey. 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 west at 4% approximately 93 feet. All applicable regulations of the El Paso County Health Department will be complied with for the installation of the disposal system.

The percolation test was performed on June 19, 2006, in accordance with **Section VI, Soil Test, ISDS Regulations, E.P.C.D.H. & E**. The field data and results of the percolation test are as follows:

| PERC.<br>TEST<br>@ TIME | PERC HOLE #1<br>@ 34" DEPTH<br>DROP (IN<br>INCHES) | PERC HOLE #2<br>@ 34" DEPTH<br>DROP (IN<br>INCHES) | PERC HOLE #3<br>@ 34" DEPTH<br>DROP (IN<br>INCHES) |
|-------------------------|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| 3:45                    | 7                                                  | 4-3/8                                              | 3-1/8                                              |
| 3:55                    | 4-1/16                                             | 1-5/8                                              | 1-1/2                                              |
| 4:05                    | 2                                                  | 1-1/8                                              | 1-1/16                                             |
| 4:15                    | 1-3/16                                             | 11/16                                              | 9/16                                               |
| 4:25                    | 3/4                                                | 5/8                                                | 1/2                                                |
| 4:35                    | 13/16                                              |                                                    |                                                    |
|                         |                                                    |                                                    |                                                    |
| Rate/Hole               | 12.3                                               | 16.0                                               | 20.0                                               |

The average of the test holes is 16.1 minutes per inch.

The soil profile for the disposal system is as follows:

- 0 to 6" - Topsoil- loam, organic composition.
- 6" to 12' - Sand- fine to medium grained, low density, moderate moisture content, low clay content, low plasticity, buff-tan in color.

No water was encountered during the drilling of all holes. Bedrock was not encountered. No known wells were observed within 100 feet of the proposed system. All setbacks shall conform to county regulations.

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 partly cloudy skies, with warm temperatures.

**FRONT RANGE GEOTECHNICAL INC.**  
**SITE MAP**

17725 Highway 83,  
El Paso County,  
Colorado  
Job #15160

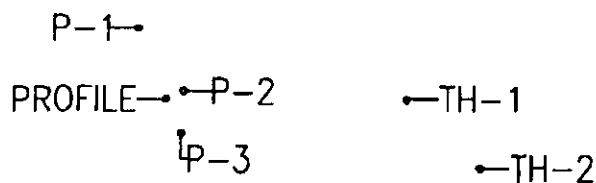
Location from Northeast Barn Corner to Profile: N. 16° W. - 360'

Location from Profile to:

P-1: N. 21° W. - 30'

P-2: N. 66° E. - 7.5'

P-3: S. 22° E. - 15'



Northeast  
Barn  
Corner



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



Prevent • Promote • Protect

Environmental Health Division

1675 W. Garden of the Gods Rd., Suite 2044  
Colorado Springs, CO 80907  
(719) 578-3199 phone  
(719) 575-8664 fax  
www.elpasocountyhealth.org

## ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION FORM

ON-SITE ID: ON0024320

APN # 6100000369

DATE: 10/27/2015

APPROVED YES ☒ NO ☐

Environmental Health Specialist: Janet Christensen

Address: 17675 State Hwy 83 Owner: Elmer Herbertson

Residence: ☒ #Bedrooms: 5 Commercial: ☐ System Installer: J&K Excavating

SEPTIC TANK: Construction Material Concrete

Capacity Gallon 2250

### SOIL TREATMENT AREA:

Trench: Depth (Range):      Width:      Total Length:      Sq. Ft.:     

Bed: Depth (Range):      Width:      Total Length:      Sq. Ft.:     

Depth of Rock:      Under PVC:      Type of cover on Rock:     

SEEPAGE PITS: # of Pits:      Working Depth #1:      #2:      Size (L x W) #1      #2      Total Sq. Ft.     

### CHAMBER SYSTEMS:

Type of Chamber: ARC36 #Chambers: 40 Sq. Ft./Chamber: 15 Bed: ☐ Trench: ☒ Depth (Range): 2 1/2 - 3'

Sq. Ft. Required (10-1): 1000 Sq. Ft. Required (10-2): 1000 Sq. Ft. Required (10-3): 1000 Sq. Ft. Required for Diverter Valve: 500

Sq. Ft. Installed: 600

Engineer Design: Y ☐ N ☒ Engineering Firm: N/A Approval Letter Provided: Y ☐ N ☒

Well installed at time of OWTS inspection: Y ☒ N ☐ Public Water: Y ☐ N ☒

\*Approval will be revoked if in the future the well is found to be within 50 feet of the septic tank and/or 100 feet of the soil treatment area.

Notes:

Diverter Valve installed. 10/27/15

Existing Septic Tank installed 4/18/15.

Existing absorption trenches 936ft<sup>2</sup>.

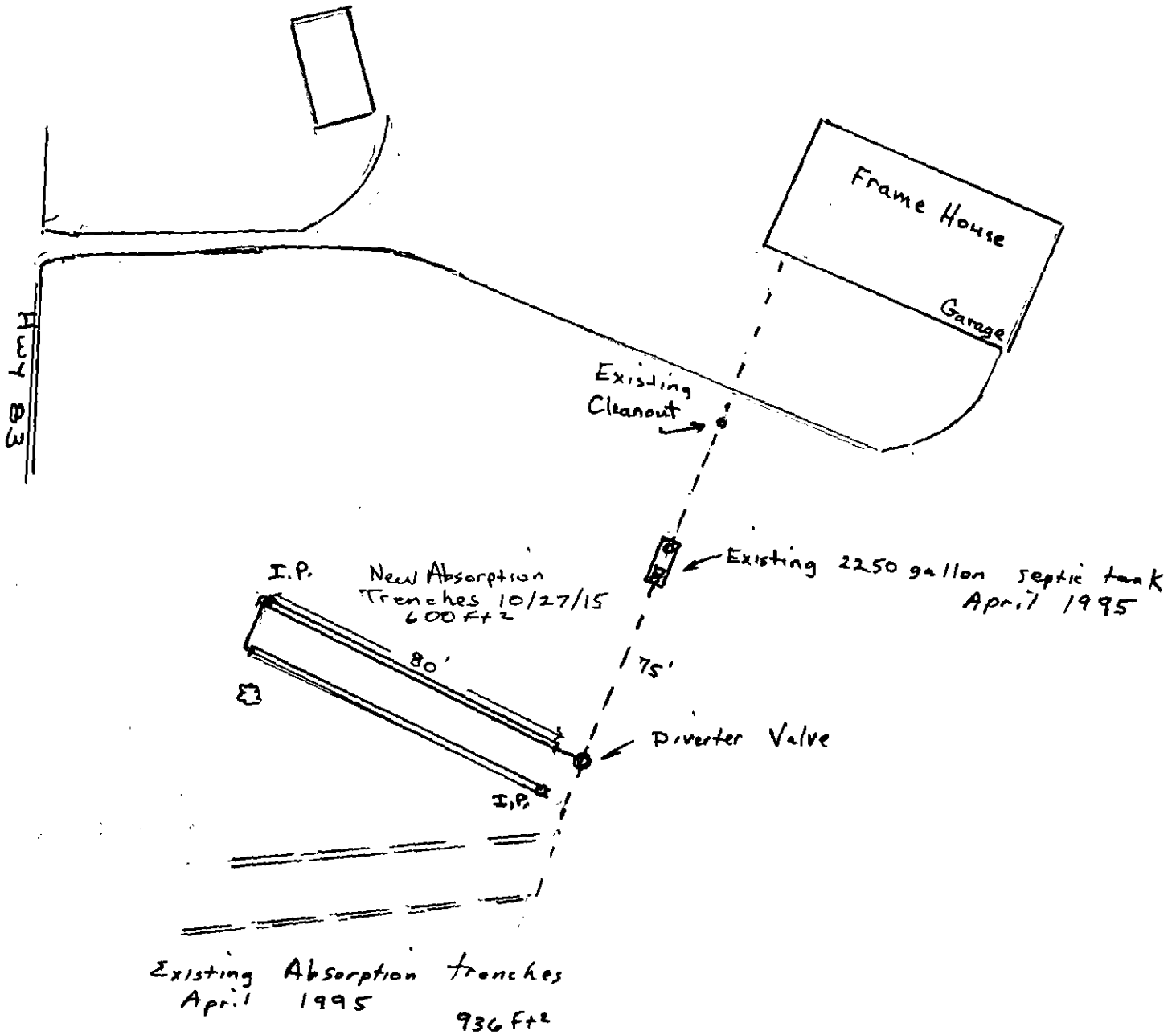
As-Built

17675 State Hwy 83

ON 00 24320

APN# 6100000369

10/27/15



Attn: HERBERTSON ELMER J & ANNA F  
17675 HIGHWAY 83 HWY  
COLORADO SPRINGS, CO 80908

Notify Environmental Health of any change of ownership, type of business activity, business name, or billing address by calling (719) 578-3199. Failure to notify Environmental Health may result in late penalties, Permit/License denial or revocation, and business closure. PERMITS/LICENSES TO OPERATE AND ANNUAL FEE PAYMENTS ARE NOT TRANSFERABLE. Permits become void on change of ownership. New owners must apply and pay for a new Permit(s)/License(s) prior to beginning operation.



**EL PASO COUNTY PUBLIC HEALTH  
ENVIRONMENTAL HEALTH DIVISION**  
1675 W. GARDEN OF THE GODS ROAD, SUITE 2044  
COLORADO SPRINGS, CO 80907  
PHONE: (719) 578-3199 FAX: (719) 578-3188  
[www.elpasocountyhealth.org](http://www.elpasocountyhealth.org)

## MAJOR REPAIR PERMIT - OWTS

Valid From 10/15/2015 To 10/15/2016

PERMITEE :

HERBERTSON ELMER J & ANNA F  
17675 HIGHWAY 83 HWY  
COLORADO SPRINGS, CO 80908

Onsite ID: ON0024320

Tax Schedule # : 6100000369

Permit Issue Date: 10/15/2015

Dwelling Type: RESIDENTIAL

OWNER NAME :

HERBERTSON ELMER J & ANNA F

# of Bedrooms (if Res): 5

Proposed Use (if Comm):

Designed Gallons/Day:

Water Source: PRIVATE WELL

### System Installation Requirements:

- A repair/addition to an existing soil treatment area (STA) is to be installed.
- Install the diverter valve and chambers in trench configuration per approved design document. 500 square feet minimum is required.

**The OWTS must be installed per the stamped and approved Design Document dated 10/15/2015.**

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 8:30 a.m. of the day that the inspection is requested  
Weekends & Holidays excluded.**

 578-3141

Authorized By: Environmental Health Specialist

58000376 1980008014

**APPLICATION FOR AN ON-SITE WASTEWATER TREATMENT SYSTEM PERMIT**
☐ NEW PERMIT ☒ MAJOR REPAIR PERMIT ☐ MINOR REPAIR PERMIT

Owner Elmer Herbertson Daytime Phone 719-481-2417  
 System Installer JEK Excavating Daytime Phone 719-331-4321  
 Property Address 77675 State Hwy 83 City and Zip C/S, CO 80908  
 Legal Description \_\_\_\_\_  
 Owners Mailing Address \_\_\_\_\_  
 Email Address kmwestfall5@gmail.com Fax # \_\_\_\_\_  
 Tax Schedule # 6100000369 Lot Size 60000 47.55  
 Site Located Inside City Limits ☐ Yes ☒ No Primary Contact ☐ Owner ☒ Contractor  
 Proposed Use: ☒ Single Family ☐ Multi-Family ☐ Commercial  
 Water Supply: ☒ Well ☐ Cistern ☐ Municipal Number of Bedrooms 5  
☐ Pick up: ☐ Fax: ☒ Email: kmwestfall5@gmail.com

**CURRENT FEES AS APPROVED BY THE EL PASO COUNTY BOARD OF HEALTH****New Permit:** \$650.00 (EPCPH Charge) + \$147.00 (EPC Planning Dept. Surcharge) + \$23.00 (CDPHE Surcharge) = \$820.00**Major Repair Permit:** \$515.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge) = \$538.00**Minor Repair Permit:** \$230.00 (EPCPH Charge) + \$23.00 (CDPHE Surcharge) = \$253.00

- All Payments are due at the time of application submittal; by cash, check or major credit card (Visa / MC)
- This permit will expire one year from the date of issuance.

I certify that the information provided on this application is in compliance with Section 8.3, Chapter 8 of the 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.

Applicants Signature: Jim M Westfall Date: Oct 13, 15Site Insp. Date: 10-15-15 Perc. Rate: 0.60 L/TAR Permit # 000024320E.H.S. Review Notes: Existing installed 2/9/07
3 bedroom TAX # 6100000369 is for 17725 Hwy 83  
E-DOCS
Date to: E.P.C. Development Services N/A Flood Plain and Enumerations N/A**Permit Requirements:**Existing 2250 gallons

Min. Septic Tank Capacity

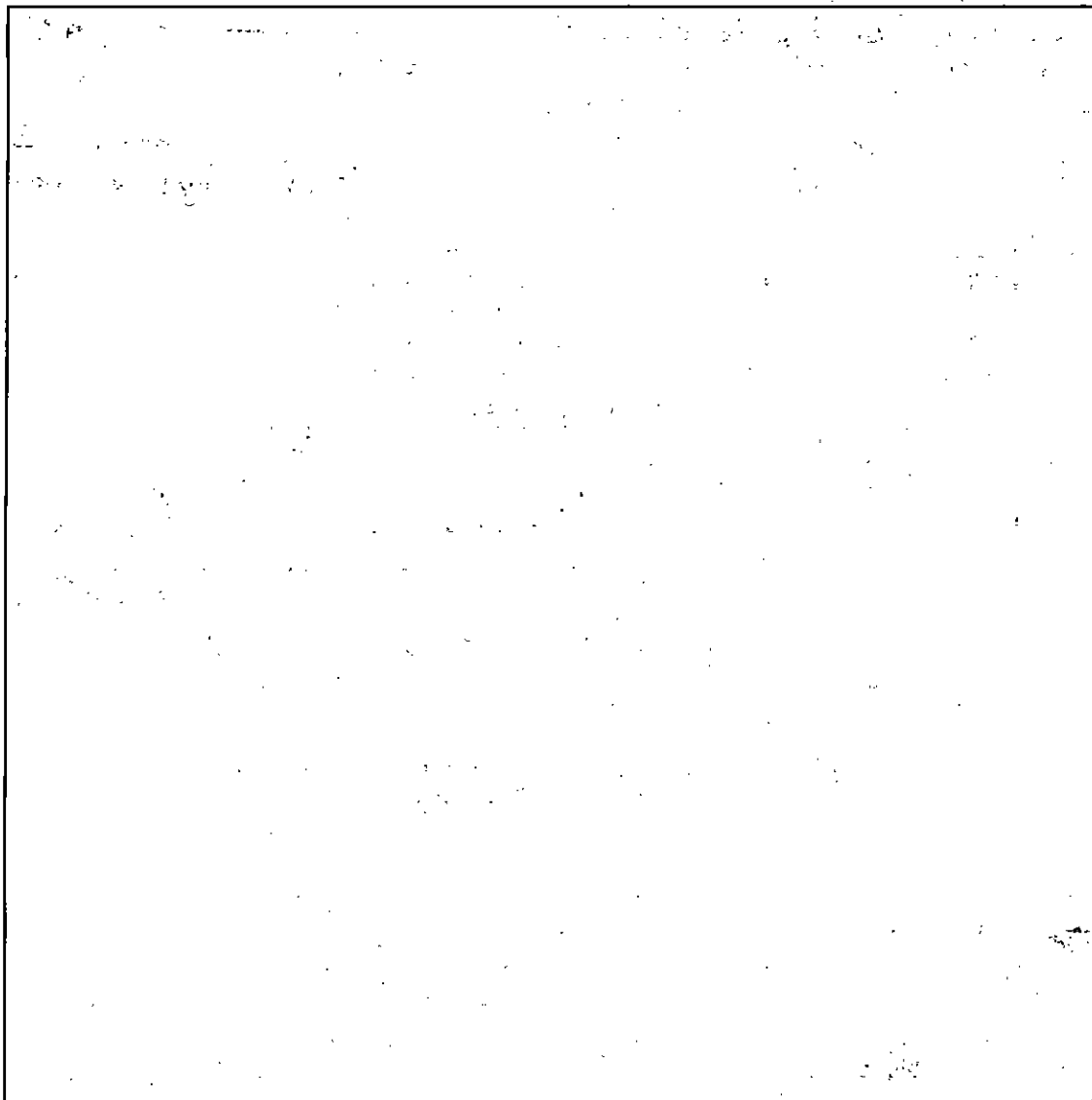
500 FT<sup>2</sup>

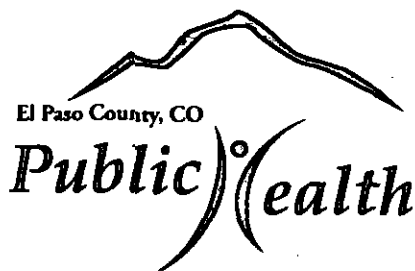
Min. Absorption Area

E.H. Specialist Janet ChristensenDate 10-15-15☒ Approved ☐ Denied

Janet

- 1) A report is required per Section 8.5 A-E, "Site and Soil Evaluation", or Section 8.5 A-F if the OWTS requires design by a Colorado Registered Professional Engineer. If your permit application submittal is incomplete, the application will not be accepted.
- 2) Property address or lot number must be posted and clearly visible from the road. The percolation test holes and/ or soil profile test pit must be clearly marked or an additional charge for a return trip to the site may be assessed.
- 3) The proposed soil treatment area must be protected from compaction and disturbance by staking, fencing, posting or other effective method.
- 4) In the Box below, please provide complete and accurate directions to the property from a main highway.

A large, empty rectangular box with a black border, intended for the user to provide complete and accurate directions to the property from a main highway.



Environmental Health Division

1675 W. Garden of the Gods Rd., Suite 2044  
Colorado Springs, CO 80907  
(719) 578-3199 phone  
(719) 575-8664 fax  
www.elpasocountyhealth.org

Prevent • Promote • Protect  
6100000369

17675 State Highway 83 B  
CONVENTIONAL (NON-ENGINEERED) ON0024320

**ON-SITE WASTEWATER TREATMENT SYSTEM (OWTS) DESIGN WORKSHEET**  
**(MUST BE COMPLETED FOR ALL CONVENTIONAL DESIGNS)**

**Wastewater Flow**

Total number of bedrooms:

5

Design wastewater flow (gallons/day) from Table 6-1:

600

**Septic Tank**

Septic tank size (in gallons) from Table 9-1:

2250

Tank burial depth (from top of tank, in inches)

12"

(NOTE: Shall not exceed 48 inch depth by regulation)

Will groundwater affect tank?

Yes No  
☐ ☒

Will an effluent screen be installed?

Yes No  
☐ ☒

(Note: Effluent screens are required for all new systems or replacement of the septic tank)

**Soil Treatment Area (STA)**

Long Term Acceptance Rate (LTAR) From Table 10-1:

.60

Unadjusted STA size (see 8.10.C.4) – show calculation:

$600 \div .6 = 1000$

Design flow (gallons per day)

LTAR (gallons/day/sq.ft.)

=

Depth of STA (cannot exceed 48"):

Trenches are preferred. If bed system is selected,  
the selection reason must be specified:

Type of STA (check which applies):

☒ Trench ☐ Bed

**FOR REPAIRS ONLY** (check which applies):

☐ Wide Bed (more than 12 feet wide)  
☐ Deep Gravel Trenches  
☐ Seepage Pit  
☐ None of the Above

**Method of Septic Tank Effluent Application (check which applies):**

- ☒ Gravity  
☐ Pump to gravity  
☐ Dispersed by siphon

**Type of Distribution Media (check which applies):**

- ☐ Rock  
☐ Tire chips  
☒ Chambers  
☐ Other \_\_\_\_\_ Other type \_\_\_\_\_

Adjusted STA size, using factors from Table 10-2 & 10-3 (show calculation, with adjustment factors utilized):

$600 \div .6 = 1000 - 1000 \div 2 = 500$   
 $500 \div 15 = 34 \text{ chambers in trench}$  *owner will put in 40 chambers*

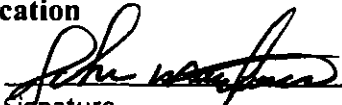
A scale drawing *shall* be provided with each design document (see attached example design documents), showing:

- Layout of entire OWTS, including the STA configuration (trench, bed, etc.)
- Dimensions of the trench(s) or the bed(s)
- Location of all OWTS components and distances to all applicable physical features in Table 7-1
- Depths of all components (or elevations relative to a designated benchmark)
- Location of the soil profile test pit excavation(s), or percolation test holes, if required
- Location of the alternate STA site
- North direction arrow
- Graphic scale (1" = 20', 1" = 30', etc.)
- Contours, OR slope direction and % slope

**Note: It is recommended that the design document is completed by a professional in the OWTS industry. EPCPH does not complete, or alter design documents. Contact EPCPH with any questions.**

The proposed STA sites must be protected from disturbance, compaction, or other damage by staking, fencing, posting or other effective methods.

**Certification**

  
Signature

John Westfall  
Print Name

10-10-15  
Date

17675 Hwy 83  
Property Address

JWK EXCAVATING  
Company Name

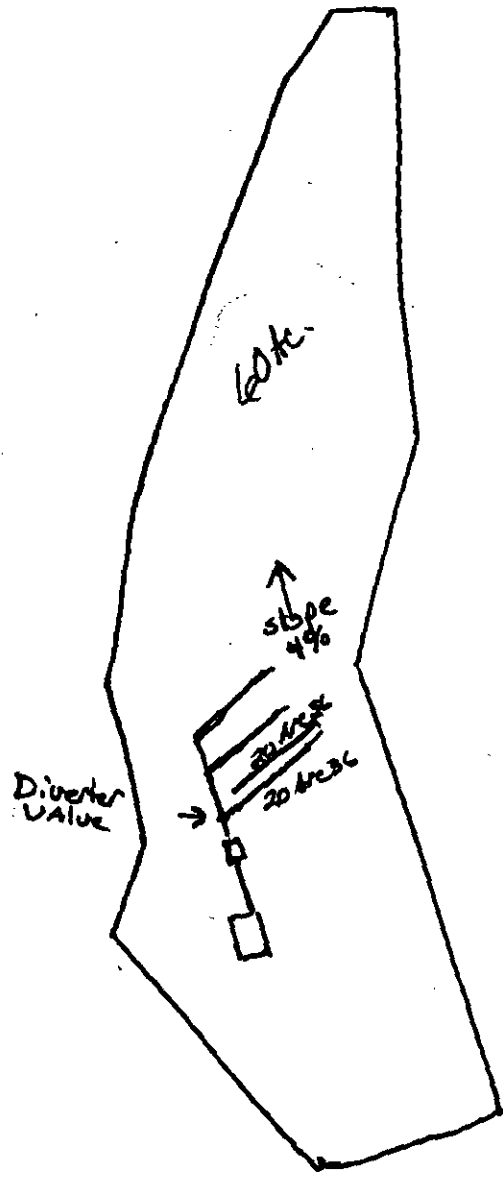
P.O. Box 584, Monument, Co. 80132  
Address

719-331-4321  
Phone

K.M. Westfall 5@Gmail.com  
Email

(See attached Tables and Design Document examples)

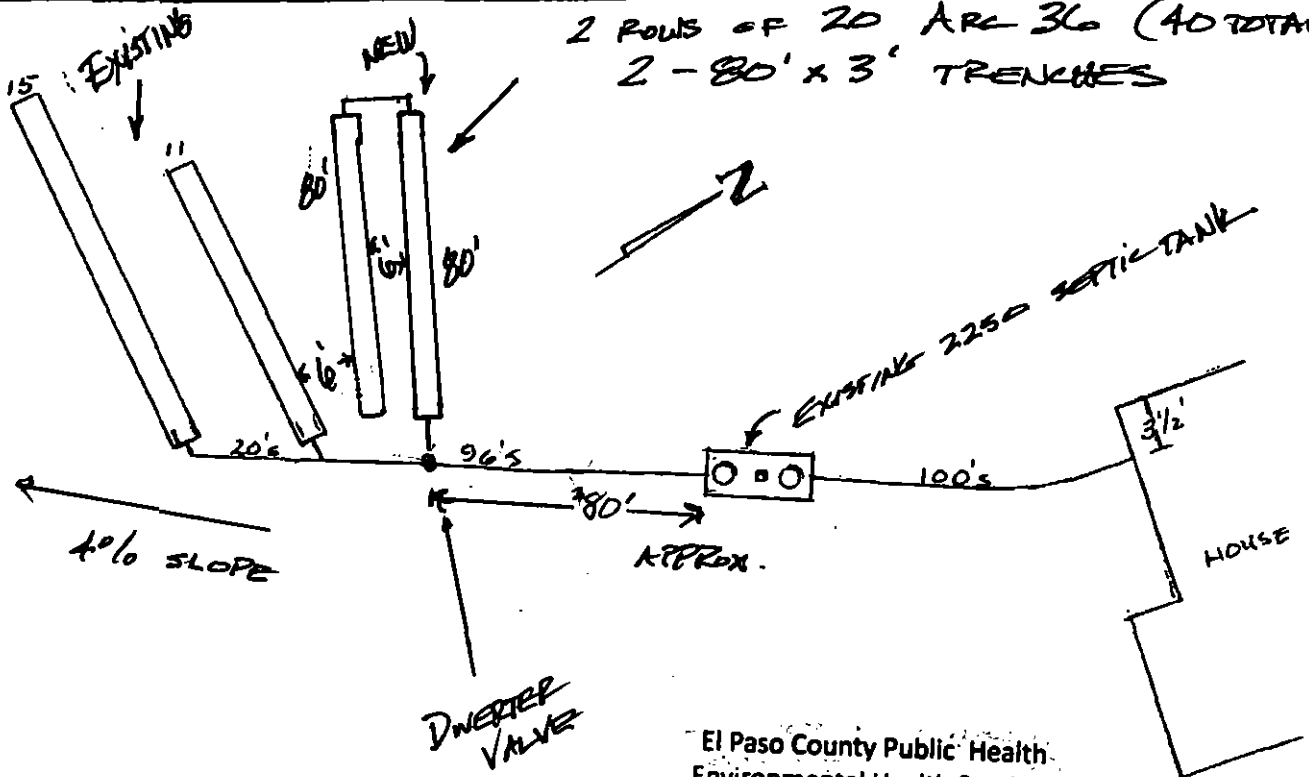
1  
2



From tank to leach Field  
 Install Diverter valve  
 Install 40 - Are 36 Chambers  
 in trenches, Between tank  
 & old leach Field  
 Inspection ports on end of  
 each Row

10-1  
 5 Bedroom House  
 $600 \div 16 = 1000$   
 $1000 \div 2 = 500$   
 $500 \div 15 = 34 \text{ chambers}$

2 ROWS OF 20 ARE 36 (40 TOTAL)  
2 - 80' x 3' TRENCHES

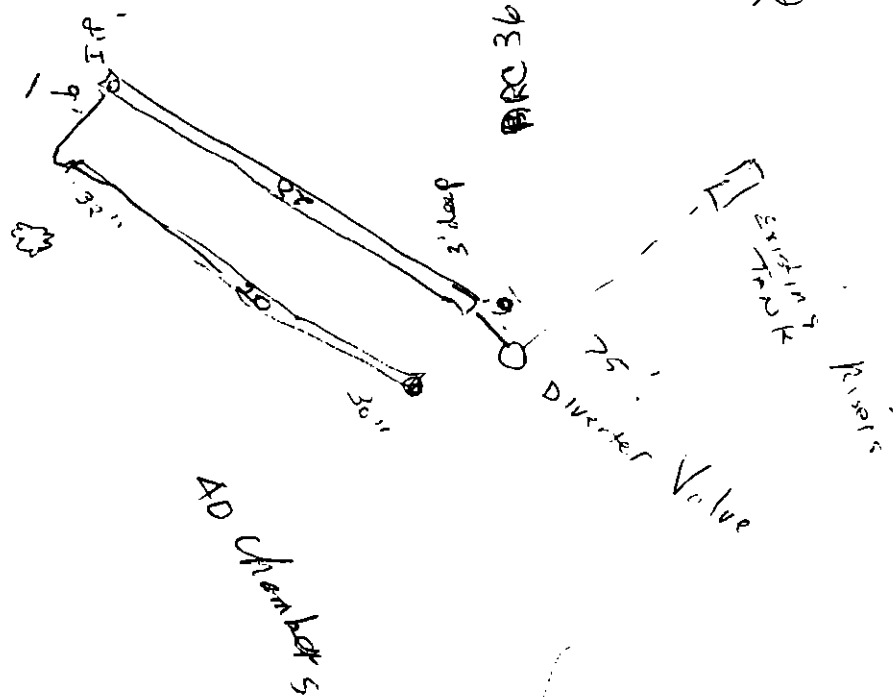


El Paso County Public Health  
Environmental Health Services  
1675 W. Garden of the Gods Rd., Suite 2044  
Colorado Springs, CO 80907

*John Christ*

10-15-15

88



For field