

**ADDENDUM #1**

**REQUEST FOR QUALIFICATIONS  
FOR  
DESIGN-BUILD SERVICES**



**New Medical Clinic  
Pecos, TEXAS**

**Submission Date:**

**Monday, May 11, 2026 – 2:00 p.m.  
(C.D.T.)**

**Prepared By:**

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## ADDENDUM #1

### Narrative of Changes

Addendum #1 does not contain any significant changes to the RFQ and is exclusively derived from questions received to this point from potential respondents to this RFQ. Given that the responses to these questions represent no significant changes to the RFQ, the Owner does not believe any time or dates modifications are necessary at this point. Please read the RFQ document and the attachments in their entirety, and carefully, prior to submitting any questions. Please review the questions below, and the owner responses to the questions, carefully, and in their entirety.

Question #1 – Are the Initial Design team sub-consultants, (specifically, Kimley Horn, and Cleary Zimmermann), precluded from respondents proposed design team?

Response #1 – Yes, the Initial Design team, including RVK’s sub-consultant firms, are precluded from proposing with, or participating in the design of record, with all Design Build firms.

Question #2 – Can the Owner provide a draft copy of the modified AIA-141-2014 agreement, or a list of the specific modifications?

Response #2 – A draft copy of AIA-141-2014 agreement will not be provided at this time, however, in accordance with the available selections in Article 1.3, the method of dispute resolution will be “Litigation in Reeves County”.

Question #3 – The RFQ describes 9,000–10,000 SF of 2nd floor 'shell space.' Please clarify the intended condition of this shell space warm white shell vs cold dark shell for example. Specifically: (a) Will it be heated and cooled? (b) What level of MEP connections are expected to the shell boundary? (c) Are restrooms finishes required on the 2nd floor shell?

Response #3 – It will be a cold dark shell, any minimum amounts of heating of the shell space shall be coordinated with the requirements of the City of Pecos. No drywall on the interior walls of the shell space nor any restrooms or MEP connections.

Question #4 – Section 2.2.4 lists an 'Environmental Phase #1 Report' as an Owner-provided item excluded from the DBBL/CCL. Has the Phase I Environmental Site Assessment been completed? Were any Recognized Environmental Conditions (RECs) identified?

Response #4 – Yes, a Phase one Environmental Site Assessment has been completed and final report issued. Per the report’s conclusion, “*RECs or other environmental matters of significance were not identified in connection with the site.*” The report will be shared with the successfully awarded Design Build firm.

Question #5 – What specific medical specialties and clinical services are planned for the New Medical Clinic (e.g., primary care, specialty clinics, imaging/radiology, laboratory, infusion, pharmacy, behavioral health)? Will any rooms require radiation shielding? Are medical gas systems (oxygen, vacuum, medical air) anticipated?

Response #5 – Primary care with a small lab and medication storage will be provided, not a pharmacy. No imaging planned. No medical air or gas systems in the rooms but small bottle storage will be provided.

Question #6 – Is there a different funding source for the design consultant fees?

Response #6 – Please refer to RFQ section 2.2.4 for clarification of owner retained consultants, and the specified funding source of those fees.

Question #7 – The Design/Builder's Budget Limitation (DBBL) is \$34,015,000 and the Construction Cost Limitation (CCL) is \$32,368,000, a difference of \$1,647,000. Are there requirements about what can be used for the \$1,647,000 vs the \$32,368,000

Response #7 – No, there are no specific use requirements defined in the RFQ, however, it is assumed that respondents will adhere to typical industry standards for the allowable uses of CCL, and the remaining portion of DBBL. (i.e. Remaining DBBL portion = Soft Costs (Designer of record fees, Designer of record sub-consultants fees, Design management fees, Permits fees, Pre-con fees, etc.) CCL = Hard Costs (Subcontractors, material vendors, equipment rental, temporary utilities, Project Supervision and Labor, Bonds, Insurance, etc.)

Question #8 – Regarding consultant fees a. Is there a budget for consultant fees beyond the Design/Builder's Budget Limitation. B. When will be added to the initial Preconstruction fee, and C. will we be able to progress bill design during the DD and CD phase?

Response #8 – With regards to owner retained consultants, (specifically; Project Manager – Malish Development Group LLC., Initial Designer and their sub-consultants – RVK Architects, Kimley-Horn, Cleary Zimmermann Engineers, or future owner retained consultants, (specifically; materials testing consultants, commissioning consultants)), please refer to RFQ section 2.2.4. Consultants not listed above as owner retained consultants, will need to be provided by the DB firm and will need to be funded from the DBBL. Please refer to item #5 in the Design Criteria Package (Attachment A) for a list of DB design consultants. Progress billing during the DD and CD phase, or any subsequent phase, shall be in accordance with Article 2 and 9 of AIA-141-2014.

Question #9 – The 'Local Area' for Criterion Three is defined as within a 240-mile radius of Pecos, TX. Does this definition apply equally to the design team (architect, engineers) and the construction subcontractor team, or only to construction subcontractors?

Response #9 – This applies to the Design Build firms teams experience, if the design team and contractor team are employed by the same firm/entity, if not “in house” then it primarily applies to the General Contractors local area experience, though and to a lesser degree, the Design teams local area experience. Subcontractor experience is not necessary, nor will it be reviewed or considered at this time.

Question #10 – Are there any limitations on the percentage of work or specific trade scopes that the selected Design/Build firm may self-perform? Does the Owner require that any particular trade packages (e.g., MEP, structural steel) be competitively bid to a minimum number of subcontractors?

Response #10 – The RFQ does not list any limitations with regards to trade scopes that maybe self-performed. The expectation is that all trade packages will be competitively bid.

Question #11 – The nine criteria in Section 3 are assigned the following weights: Criterion 1 (5%), Criterion 2 (15%), Criterion 3 (25%), Criterion 4 (15%), Criterion 5 (10%), Criterion 6 (10%), Criterion 7 (10%), Criterion 8 (5%), Criterion 9 (5%), totaling 100%. However, Section 3 states that Qualifications constitute up to 50% of the total Respondent evaluation score. Please clarify what comprises the remaining 50% of the evaluation, and whether those additional factors (e.g., Phase Two proposal, interview performance) are weighted and published.

Response #11 – Correct, the written qualifications from the respondents will used to evaluate and short list respondents. (Maximum of 5) The remaining 50% shall be based upon those short listed respondents interviews, which will include owner’s questions regarding the phase two responses received. Upon contract execution with a Design Build firm for services, the evaluations will be published.

Question #12 – Who will be responsible for pulling the generator set environmental permits?

Response #12 – It is unclear what generator set your question pertains too, (i.e. Building Emergency Generator, or a temporary power for construction activities), nor are we currently aware of either scenario requiring an environmental permit. Regardless, all permits are the responsibility of the DB firm to secure and fund from DBBL.

Question #13 – Will a Commissioning Agent be engaged by the Owner and what will their scope be?

Response #13 – Commissioning Agent services have not been solicited nor procured by the owner, currently. Upon procuring those services, their scope will be shared with the awarded DB firm.

Question #14 – Does the Hospital have an Owner's Project Requirement, Owner's specifications, or Owner's Criteria document that establishes project requirements in addition to the forthcoming project-specific bridging documents?

Response #14 – Please reference Attachment A, for the design criteria for the project.

Question #15 – Does the owner have any pre-existing arrangements with the local electricity provider TNMP regarding expedited procurement of transformer equipment?

Response #15 – There are no pre-existing arrangements/agreements in place with TNMP, currently. Though it should be noted that we are in contact with TNMP currently, specifically to start the process to address the issue. (lead time on building power transformers)

Question #16 – The Geotechnical report sections on foundation/slab recommendations seems to specifically reference a “shade structure” instead of the entire clinic building. Can the owner confirm the foundation recommendations apply to the entire clinical building?

Response #16 – Yes, the owner can confirm the foundation recommendations apply to the entire clinical building. Please see the revised Geotechnical report that will be posted on the RRH website at the same time as this Addendum.

Question #17 – Can the engineers advancing SD's provide estimated lbs. per sq foot of Structural Steel?

Response #17 – There is no structural engineer engaged for the bridging document package.

Question #18 – Will cost associated with community outreach and trades engagement be reimbursable under the project?

Response #18 – Expenditures associated with community outreach and trades engagement, will be evaluated on a case by case basis, and costs will not be reimbursable without prior written authorization.

Question #19 – Will there being working hour requirements?

Response #19 – The RFQ and attachments do not identify working hour requirements.

Question #20 – Will temp services such as water and power be provided by owner?

Response #20 – Temporary services to the site, during the construction period, will be the responsibility of the selected DB firm.

Question #21 – Will stand alone mock ups be required or will first work in place be acceptable for review?

Response #21 – Stand alone mock-ups will be required.

Question #22 – Will we be able to forward bill for commodities with appropriate documentation in order to avoid escalation?

Response #22 – Cases of escalation will be evaluated on a case by case basis, and without prior written authorization, will not be forward billable.

Question #23 – Will offsite stored materials and prefabrication be able to be billed with appropriate documentation?

Response #23 – Progress billing shall be in accordance with Article 2 and 9 of AIA-141-2014.

Question #24 – Please describe any other requirements beyond that of an estimate, broken down by CSI Division and in conjunction with drawings and specification that will be required for finalizing GMP.

Response #24 – Please refer to AIA-141-2014, specifically Articles 3, 4, and 5, and Exhibit A – Design Build Amendment.

Question #25 – Is there a current fire hydrant flow test from within last 12 months that can be provided?

Response #25 – Yes, the data has already been received by the initial design team, and this data will be conveyed to the successful DB firm, upon award. The flow data is the basis for design criteria package items #5.f, 31, and 32, specifically.

Question #26 – It appears that the owner's intent is to issue a GMP after 50% CDs are complete. The Owner's timetable does not indicate a GMP until after 100% CDs are approved. We request this timetable be revisited by the owner. It would be advantageous for the project to be in a position to release long lead items after an initial GMP issuance followed by a final GMP for the balance of the scope.

Response #26 – The intent is to have the DB firm issue a GMP amendment package, based upon a document set that provides adequate levels of detail to the subcontractors and material vendors necessary in order to minimize the number of allowances, inclusions, exclusions, and perceived risk, while allowing adequate timeframes that will be required for the contractor team to solicit, compile bids, analyze, and select best value candidates, (6 weeks), detailed in depth owner review (minimum of 5 weeks), and final GMP approval by the Board (2 weeks). This timeline is specifically geared towards having the final approval of the DB GMP amendment just prior to, or at the same time as the building permit is anticipated to be received. Long lead items will be reviewed on a case by case basis, and some will likely be authorized in writing, (i.e. Emergency Generator), to be procure prior to the issuance or final approval of the GMP amendment. Based upon recent experience, multi-step or early release packages for limited scopes of work, (i.e. sitework and foundations), are specifically not desirable much less the intent.

April 28, 2026

Via email: [luke@malishgroup.net](mailto:luke@malishgroup.net)

Ms. Brenda McKinney  
Reeves Regional Health  
2349 Medical Drive  
Pecos, Texas, 79772

**Reference: Geotechnical Report  
Reeves County Health Clinic  
Pecos, Texas  
BEYOND Project No. GT2512060**

Dear Ms. McKinney:

Beyond Engineering and Testing, LLC (BEYOND) is pleased to present our geotechnical engineering study for the proposed Reeves County Health Clinic in Pecos, Texas. Reeves Regional Health (Client) commissioned this geotechnical engineering study to explore and evaluate the subsurface conditions at the site, develop geotechnical design parameters, and provide related construction recommendations for the project. Our geotechnical report describes our field exploration and laboratory testing program, our engineering interpretation pertinent to the project, as well as earthwork guidelines for the project.

We appreciate the opportunity to serve you. We look forward to working with you on construction materials testing services during construction phase. Note that BEYOND is already under contract with Client for this project. As such, a simple change order is needed to approve testing services during construction phase. Please call us if you have any questions concerning this report or any of our other services.

Respectfully submitted,  
**Beyond Engineering and Testing, LLC**



Maria Pope  
Project Manager

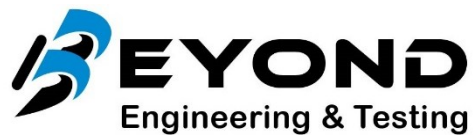
# GEOTECHNICAL REPORT

**Reeves County Health Clinic**  
Pecos, Texas

*Prepared For:*

**Reeves Regional Health**  
**2349 Medical Drive**  
**Pecos, Texas, 79772**

*Prepared By:*



Beyond Engineering and Testing, LLC  
3011-B South County Road 1260  
Midland, Texas 79706

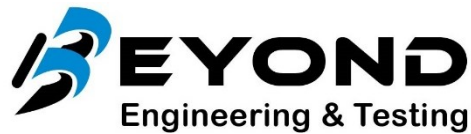
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April 28, 2026  
BEYOND Project No. GT2512060

# Geotechnical Report

**Reeves County Health Clinic**  
PECOS, TEXAS

This Report Prepared By:



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3011-B South County Road 1260  
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Maria Pope  
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Reviewed by:

  
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Yanfeng Li, P.E.  
Chief Geotechnical Engineer

**FIRM REGISTRATION NO. F-19523 - TEXAS**

**April 28, 2026**

**Project No. GT2512060**

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**Geotechnical Report  
Reeves County Health Clinic  
Pecos, Texas**

**TABLE OF CONTENTS**

<b>1.0 INTRODUCTION.....</b>	<b>1</b>
<b>2.0 PROPOSED CONSTRUCTION.....</b>	<b>1</b>
<b>3.0 FIELD EXPLORATION.....</b>	<b>1</b>
<b>4.0 SUBSURFACE CONDITIONS.....</b>	<b>3</b>
4.1 Regional Geology.....	3
4.2 Subsurface Stratigraphy.....	3
4.3 Groundwater Conditions.....	4
4.4 Infiltration Test.....	4
<b>5.0 LABORATORY TESTS.....</b>	<b>5</b>
5.1 Geotechnical Laboratory Test Results.....	6
5.2 Soil Corrosiveness.....	6
<b>6.0 FOUNDATION DESIGN AND GEOTECHNICAL RECOMMENDATIONS.....</b>	<b>7</b>
6.1 Shallow Foundations.....	7
6.2 Slab-On-Grade Foundation.....	8
6.3 Seismic Parameters.....	10
<b>7.0 FOUNDATION CONSTRUCTION CRITERIA.....</b>	<b>10</b>
7.1 Site Preparation.....	10
7.2 Soil Remediation.....	11
7.3 Select Fill Below Foundation and Floor Slab.....	11
7.4 Shallow Foundation Construction.....	12
7.5 Open Excavations.....	12
7.6 Drainage.....	13
<b>8.0 PAVEMENTS.....</b>	<b>13</b>
8.1 Design Recommendations for Pavements.....	13
8.2 Material Specifications.....	14
<b>9.0 LIMITATIONS.....</b>	<b>14</b>

**APPENDIX A**

Figure A.1: Project Site Location Map

Figure A.2: Borehole Locations Map

Figure A.3: Site Vicinity Geologic Map

**APPENDIX B**

Log of Boring Key

Logs of Boring

**APPENDIX C**

Summary of Laboratory Test Results

Grain Size Distribution Analysis Results – ASTM D6913

Sulfate and Chlorides Content: EPA 300/300.1

**APPENDIX D**

Summary of In-situ Infiltration Test Result – ASTM D6391

**Geotechnical Report**  
**Reeves County Health Clinic**  
**Pecos, Texas**

## **1.0 INTRODUCTION**

Beyond Engineering and Testing, LLC (BEYOND) is pleased to present our subsurface exploration and geotechnical engineering evaluation for the proposed Reeves County Health Clinic project. The proposed project is located near the intersection of Schmidt Drive and Medical Drive, just north of the Interstate 20 Service Road, adjacent to the existing Reeves Regional Health facility in Pecos, Texas. The approximate project location is shown on Figure 1, Project Site Location Map, within Appendix A.

The purpose of this geotechnical investigation and report is to:

- Explore subsurface conditions;
- Conduct field and laboratory testing to characterize the engineering properties of subsurface materials;
- Provide geotechnical engineering parameters for the design and construction of foundation systems;
- Provide pavement recommendations for the parking lot; and
- Provide earthwork requirements.

The recommendations contained in this report are based upon field and laboratory test results, engineering analyses, experience with similar subsurface conditions, and our project understanding.

## **2.0 PROPOSED CONSTRUCTION**

BEYOND understands the proposed Reeves Regional Health Clinic will comprise a two-story building approximately 30,000 SF and associated parking/paving areas will be about 60,000 SF. The project also includes multiple detention ponds near the proposed building and parking areas.

## **3.0 FIELD EXPLORATION**

BEYOND prepared and executed a field exploration program for the proposed project on 1/15/2026 and 1/16/2026. The approximate boring locations are shown on Figure 2, Borehole Locations Map, within Appendix A of this report. A summary of approximate geographic latitude and longitude coordinates and depth of each boring drilled as part of the subsurface exploration program is presented in Table 3.0.1.

**Table 3.0.1 – Summary of Boring Locations and Depths**

Boring No.	Latitude (degrees)	Longitude (degrees)	Total Boring Depth (feet)	Proposed Structure
B-1	31.400278	-103.516225	20.0	Building
B-2	31.400229	-103.515971	20.0	
B-3	31.399840	-103.515912	20.0	
B-4	31.399894	-103.516163	20.0	
P-1	31.400437	-103.516532	10.0	Parking
P-2	31.399720	-103.515643	10.0	
DP-1	31.400616	-103.517041	1.0	Detention Ponds
DP-2	31.399854	-103.517228	4.0	
DP-3	31.399689	-103.515829	1.0	
DP-4	31.400126	-103.515747	4.0	

Notes: Latitude and longitude coordinates provided in Table 3.0.1 were obtained from a hand-held GPS device with accuracy of approximate 15 to 20 feet.

BEYOND utilized solid stem augers drilling method to advance the boreholes. We collected samples using Standard Penetration Testing (SPT) split spoon samplers. We collected all samples from the samplers in the field, performed visual soil classification, labeled the samples as to location and depth, and bagged soil samples to minimize moisture changes. We conducted the SPT tests in general accordance with ASTM D1586: Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils. SPT test results are shown on the attached Boring Logs under the “Field Data” column and are preceded by the letter “N”. SPT testing was performed using automatic hammer.

BEYOND prepared field logs for each boring drilled. The field logs contain visual classifications of the materials encountered during drilling as well as interpolation of the subsurface conditions between samples. We also observed for groundwater level in the borehole while advancing the boreholes. These observations are discussed in subsequent sections of this report.

The project engineer reviewed the field logs, samples, and laboratory data to make appropriate modifications to the field logs. BEYOND classified soils in general accordance with the Unified Soil Classification System (USCS). The soil classification symbols on the boring logs are described in the *Boring Log Key* included in Appendix B. The final logs of boring include modifications based on our laboratory test results and observations performed on the soil samples collected in the field. The final logs of boring describe the materials encountered, strata thickness, the various depths at which the samples were obtained, as well as field test results.

## 4.0 SUBSURFACE CONDITIONS

### 4.1 Regional Geology

As per the Geologic Atlas of Texas, Pecos sheet, the geology at the project site and in the vicinity consists of the following:

#### Quaternary Period Units

- **Alluvium (Qal):** Floodplain and alluvial plain deposits; floodplain deposits include low terrace deposits near floodplain level, bedrock locally in streams channels; alluvial plain deposits include fan deposits and colluvium locally near margins, coarser material toward margins, mostly sandy silt elsewhere, subject to modification by sheet wash action.
- **Fluviatile Terrace Deposits (Qt):** Gravel, sand, and silt; gravel, commonly with pebbles and cobbles of chert, quartzite, igneous rock, metamorphic rock, caliche and at higher levels abraded Gryphea; quartz sand, crossbedded to massive lenticular, reddish brown, pink, gray to light gray, contiguous terraces of different ages separated by the solid line.
- **Gypsite (Qgy):** Granular gypsum. White to light gray of several ages.

Site vicinity geologic map is shown on Figure A.3 within Appendix A of this report.

### 4.2 Subsurface Stratigraphy

As indicated on our logs of boring drilled as part of this study, native soils were encountered beneath the topsoil and extended to the termination depth of the borings. The subsurface soils generally encountered are summarized in Table 4.2.1.

**Table 4.2.1 Generalized Subsurface Stratigraphy**

Stratum Number	Depth Range (Approx., ft.)	Soil/Rock Classification and Consistency/Relative Density/Hardness
I		Topsoil (4.5" to 5.5")
II	0.0 – 10.0	Lean Clay (CL) / Silt (ML), trace gypsum - SPT "N" values between 9 to 54 - Stiff to Hard
III	10.0 – 20.0	Silt (ML) - SPT "N" values between 13 to 57 - Stiff to Hard

The above descriptions are general and depth ranges are approximate because boundaries between different strata are seldom clear and abrupt in the field. In addition, the lines separating major strata types on the logs of borings do not necessarily represent distinct lines of demarcation of the various strata. Detailed logs of borings for locations drilled as part of this study, which present the stratum descriptions, types of sampling used, laboratory test data, and additional field data, are presented in Appendix B. The Boring Log Key, defining the terms and descriptive symbols used on each log of boring, is also presented in Appendix B.

### **4.3 Groundwater Conditions**

Groundwater was encountered at Boring B-2 at the depth of 17.0 ft during drilling operations. The borings were backfilled with soil cuttings immediately following the completion of field operations; therefore, subsequent groundwater measurement was not obtained.

Based on the Texas Water Development Board (TWDB) Groundwater Database of water wells within a 1-mile radius from the project site locations, groundwater levels at adjacent water wells were recorded at depths of 16 to 35 ft. below ground surface. These measurements are from submitted driller's well reports from 2004 to 2011.

It is imperative to note that the short-term groundwater level observations performed as part of this study are not an accurate evaluation of groundwater levels at the project site and should not be interpreted as a comprehensive groundwater study. The observations made during this investigation may also not represent conditions at the time of construction and it should be understood the presence of groundwater may have an effect on certain construction activities and long-term performance of foundations and pavements. Groundwater levels are highly dependent on climatic and hydrologic conditions before and after construction, and site development including irrigation demands, drainage and other factors. If a detailed groundwater study is desired, a groundwater hydrologist should be retained to perform these services.

### **4.4 Infiltration Test**

Four (4) Infiltration tests were performed within the proposed detention pond areas. The test holes were drilled to depths of 1.0 feet and 4.0 feet below the existing ground surface. The preparation and testing of the Infiltration test holes was performed in general accordance with ASTM D6391 as described below:

- Test hole was drilled with a CME 55 track-mounted drill rig utilizing continuous flight auger drilling techniques from the existing ground surface to the required depth below the existing ground surface. The diameter of test hole is approximately 4.25-inches;
- The sides and bottom of each test hole were scarified to remove areas that became smeared by the auger;
- All loose materials were removed from test hole;
- Approximately 4-inches of gravel was added to the bottom of test hole to protect the bottom from scouring and sediment;
- Potable water was used to fill each test hole to the ground surface, allowing the soil to saturate and swell during the test time;
- Test hole was filled with potable water to the top of the hole;
- Periodic measurements at 5-minute intervals were recorded measuring the water seeped away.
- A refill was conducted after 40 minutes, with continued measurements at regular intervals.

The average percolation rate was calculated by averaging the drop of water level to percolate through the soil in inches during every minute.

**Percolation Rate= Inches of Drop/Time**

Percolation testing was conducted in Test Holes DP-1 through DP-4 to evaluate subsurface infiltration characteristics. The percolation rate was calculated as the drop of water level in inch during every minute (inch per minute). The results are summarized in Table 4.4.1.

**Table 4.4.1 – Summary of Boring Locations and Depths**

Boring Test	Test Depth (ft)	Test Stage	Minimum Rate (in/min)	Maximum Rate (in/min)	Average Rate (in/min)
DP-1	1.0	Initial	0.25	1.25	0.58
		Refill	0.10	0.60	0.27
DP-2	4.0	Initial	0.10	0.40	0.20
		Refill	0.10	0.40	0.20
DP-3	1.0	Initial	0.10	0.20	0.17
		Refill	0.04	0.10	0.08
DP-4	4.0	Initial	0.10	0.30	0.24
		Refill	0.30	0.40	0.37

The detailed percolation test data sheets and field observations are included in **Appendix D**.

**5.0 LABORATORY TESTS**

BEYOND performed various laboratory tests to determine the soil’s physical properties. These tests allow us to classify soils and to assess soil performance under the project design conditions. Laboratory tests are presented in each respective *Log of Boring* and in the *Summary of Laboratory Tests* in Appendix B. The project geotechnical engineer assigned appropriate laboratory tests on selected soil samples. BEYOND performed the following laboratory methods for soil analyses:

- Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System): ASTM D2487;
- Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass: ASTM D2216;
- Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils: ASTM D4318;
- Standard Test Methods for Amount of Material in Soils Finer than No. 200 (75-µm) Sieve: ASTM D1140;
- Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis: ASTM D6913; and

- Sulfate and Chlorides Content: EPA 300/300.1.

### 5.1 Geotechnical Laboratory Test Results

Moisture content tests were performed, in accordance with ASTM D2216, on selected soil samples. The test results are provided on Logs of Boring in Appendix B of the report as well as on the Summary of Laboratory Results in Appendix C of this report.

Percent finer than No. 200 (75-µm) sieve tests were performed, in accordance with ASTM D1140, on selected soil samples. The test results are provided on Logs of Boring in Appendix B of the report as well as on the Summary of Laboratory Results in Appendix C of this report. Particle-size distribution (gradation) analyses were performed, in accordance with ASTM D6913, on selected soil samples. The test results are provided in Appendix C of this report.

Laboratory test results indicate that the native clay soils have liquid limit (LL) values range from about 28 to 45% and plastic limit (PL) value ranging from 17 to 31%, with Plasticity Index (PI) values ranging from about 2 to 17%. Based on FHWA-NHI-10-016 for the method of identifying low swell potential.

**Table 5.1.1 – Method of Identifying Potentially Expansive Soils (from FHWA-NHI-10-016)**

Liquid Limit (%)	Plasticity Index	Potential Swell (%)	Potential Swell Classification
< 50	< 25	< 0.5	Low
50 to 60	25 to 35	0.5 to 1.5	Marginal
> 60	> 35	> 1.5	High

The Potential Vertical Rise (PVR) is the potential ability of a soil material to swell, at a given density, moisture and loading condition, when exposed to capillary or surface water. We estimate the PVR value for lightly loaded slabs-on-grade or shallow footings to be less than 1-inch, using the TxDOT method Tex-124-E.

A summary of laboratory testing results is presented in Appendix C of this report.

### 5.2 Soil Corrosiveness

BEYOND obtained the services of Xenco Laboratories to perform analytical tests to determine the content of soluble sulfate and chloride in the soils at or near foundation bearing depths. The results of soluble sulfate and chloride content are summarized in Table 5.2.1.

**Table 5.2.1 – Results of Soluble Sulfate and Chloride Content**

Boring No.	Depth of Sample (feet)	Soluble Chlorides (mg/kg)	Soluble Sulfate (mg/kg)
B-2	2-3.5	3,030	16,700
B-3	0-1.5	19,400	3,430

Boring No.	Depth of Sample (feet)	Soluble Chlorides (mg/kg)	Soluble Sulfate (mg/kg)
P-1	4-5.5	1,360	14,200

Gypsum is hydrated calcium sulphate in chemical form and if it is present in excess amount, it could cause sulfate attack to concrete and it is also corrosive to steel especially when combined with humidity.

Water-soluble sulfate test results indicate the sulfate content of surficial soils ranges from 3,430 to 16,700 mg/kg. This indicates a severe to very severe corrosion potential for concrete. Sulfate resistant concrete should be used for construction. If it is not economically viable to utilize sulfate resistant cement, another alternative is to provide a minimum of 12 inches of separation between the concrete and the surrounding sulfate-containing soils. This separation can be achieved using compacted, imported fill material having negligible sulfate concentration of 1,000 ppm or less, as described in Section 7.3 of the geotechnical report. Proper precautions should be taken to mitigate corrosive potential. Structural concrete should be properly designed by the Civil/Structural Engineer to have sufficient protection for sulfate exposure.

Water-soluble chlorides in the soils range from 1,360 to 19,400 mg/kg. This indicates a severe to very severe corrosion potential for chloride on metals. Proper precautions should be taken to mitigate corrosive potential.

The Xenco test results are included within Appendix C.

## 6.0 FOUNDATION DESIGN AND GEOTECHNICAL RECOMMENDATIONS

Based on the site geotechnical conditions, shallow foundations may be used to support the proposed Health Clinic building. The building may use either a monolithic, stiffened slab foundation or footings independent of the floor slab. Earthwork requirements for the proposed construction are provided under Section 7.

Due to the relative low strength and high sulfate and high chloride content of the subsurface soil, we recommend that a minimum of 3 feet of native subgrade soils should be removed and replaced with imported select fill material as specified in Section 7.3. The details for the soil remediation are presented in Section 7.2 of this report.

We recommend that BEYOND's geotechnical engineer or our qualified representative be retained to observe shallow foundation excavations in this area to assess the need for any over-excavation and re-compaction and/or replacement.

### 6.1 Shallow Foundations

We recommend that the spread footings and strip footings at the site should have a minimum embedment of 2 feet below final site grade for confinement, and the strip footings should have a

minimum embedment of 1.5 feet below final site grade. The footings should bear on select fill placed in accordance with Section 7 of this report. We recommend a minimum width of 18 inches for strip footings and a minimum of 24 inches for spread footings.

Based on U.S. Army Corps of Engineers, Engineer Manual, EM 1110 1-1905, frost penetration is anticipated to be less than 1 foot deep below existing ground surface at the project site.

For our engineering analyses, we utilized the strength parameters provided in Table 6.1.1. Site grading plans for the proposed project site were not available during preparation of this report. BEYOND assumes minimum grading, with a cut/fill of 12 to 18 inches to bring the site to final grade.

**Table 6.1.1 – Engineering Properties of Subsurface Materials for Shallow Foundation**

Angle of Internal Friction, $\phi'$ (degree)	Total Unit Weight, $\gamma$ (pcf)	Design Groundwater Depth below Existing Grade (feet)	Ultimate Coefficient of Friction, $\mu$
29	115	15	0.35

Table 6.1.2 provides the values for net allowable bearing pressures against general shear failure based on a safety factor of 3 for strip and spread footings that bear on select fill placed in accordance with Section 7 of this report. We estimate total footing settlement should not exceed 1-inch based on the allowable bearing pressures provided in Table 6.1.2.

**Table 6.1.2 – Allowable Bearing Pressures for Shallow Foundations**

Footing Type	Footing Width (feet)	Footing Depth (feet)	Allowable Bearing Pressure (psf)
Continuous Footing	1.5	1.5	1,400
Spread Footing	2.0	2.0	2,300
Spread Footing	3.0	2.0	2,500

Proper drainage must be maintained during construction and throughout the life of the structures to provide improved shallow foundation performance. Other design and construction recommendations as outlined in the ACI design manual should be followed.

## **6.2 Slab-On-Grade Foundation**

A floating slab-on-grade is structurally independent of the spread footings. This option is also viable for the proposed shade structure. The slab-on-grade can be supported on properly prepared subgrade in accordance with Section 7.1 of this report. A properly prepared subgrade should provide a modulus of subgrade reaction,  $K_1$ , of about 100 psi/inch, where  $K_1$  corresponds to modulus of subgrade reaction corresponds to a 1-ft x 1-ft plate.

For square footing on cohesionless soil subgrade, the subgrade modulus value may be modified for various foundation widths based upon the following equation:

$$K_s = K_1 \left[ \frac{B+1}{2B} \right]^2$$

Where:

$K_s$  = adjusted modulus of subgrade reaction based on actual footing width;

$K_1$  = modulus of subgrade reaction corresponds to a 1-ft x 1-ft plate;

B = footing width (in feet)

For square footing on cohesive soil subgrade, the subgrade modulus value may be modified for various foundation widths based upon the following equation:

$$K_s = K_1 \left[ \frac{1}{B} \right]$$

Where:

$K_s$  = adjusted modulus of subgrade reaction based on actual footing width;

$K_1$  = modulus of subgrade reaction corresponds to a 1-ft x 1-ft plate;

B = footing width (in feet)

We recommend an optional crushed stone layer of four (4) inches in thickness immediately below the floor slab. The crushed stone should meet TxDOT Item 247, Grade 3. The crushed stone will provide increased support, assist in reducing differential floor settlements, and provide uniform friction across the bottom of the slab. Most importantly, the crushed stone allows truck traffic during construction without rutting. The design team may choose to avoid the crushed stone layer. With this option, we recommend using a pump to place concrete. Using a pump avoids truck traffic on the finished subgrade.

Based on our experience of similar projects, we provide the following guidelines for concrete floor slab design and construction. The concrete specifications should require a low water/cement ratio and the concrete should be placed with a relatively dry slump. Control joints should be constructed while the concrete is relatively green, before it shrinks. Spacing for control joints should be 15 to 20 feet to control shrinkage cracks.

In order to improve aesthetics by reducing shrinkage cracks and irregular surface textures, BEYOND also recommends the following: the ready-mix concrete should arrive at the target slump and the contractor should not be allowed to add water to the mixture. Water sprayed onto the slab during 'bull floating' must be minimal; otherwise, alligator cracking of the surface may develop. If vapor barriers are used, the designer should also consider adding a thin sand cushion on top of the vapor barrier. This bedding sand allows the concrete to cure evenly from top to bottom. Other design and construction recommendations as outlined in the ACI design manual should be followed.

### 6.3 Seismic Parameters

The following seismic parameters are based on ASCE 7-16 and a Site Class D for this project site. The Mapped Spectral Response Acceleration for the 1 second ( $S_1$ ) and short periods ( $S_s$ ) were obtained using the web-based application program *ASCE Hazard Tool*. Table 6.3.1 summarizes recommended seismic parameters to be used in the design:

**Table 6.3.1 Recommended Seismic Parameters**

Parameter	Calculated Value
$S_s$ – Mapped Spectral Response Acceleration at Short Period (0.2-Second)	0.144 g
$S_1$ – Mapped Spectral Response Acceleration at 1-Second Period	0.047 g
$F_a$ (Site Coefficient) – Site Class D	1.6
$F_v$ (Site Coefficient) – Site Class D	2.4

Note: Seismic Parameters were obtained from <https://ascehazardtool.org/>

## 7.0 FOUNDATION CONSTRUCTION CRITERIA

In this section, we provide various specifications and construction recommendations to allow earthwork to meet the intent of the geotechnical parameters provided in Section 6. We recommend that BEYOND be retained to provide verification testing services during construction. This allows us to verify that construction of foundation items are in compliance with our recommendations.

### 7.1 Site Preparation

Prior to construction, the contractor should establish proper and positive drainage to maintain a relatively dry condition at the proposed construction site. This will be important if any work is attempted during prolonged rainfall periods. Water ponding in construction areas should be avoided.

Winter weather conditions can also impact the construction process. Newly placed fill should not be placed on frozen subgrade and frozen material should not be used for fill.

Site preparation should begin by removing surface debris, vegetation, organic topsoil, and major root systems, if any. Compact resulting subgrade and verify stability using a proof-roll test. Conduct a proof-roll tests using a loaded dump truck or loaded double-axle water truck with a minimum weight of 20 tons. Passing proof-roll tests must show less than ½-inch deflection and no area pumping. Any soft spots or areas that exhibit pumping should be excavated and re-compacted to a minimum compaction of 98% of the maximum dry density as determined by ASTM D698 and moisture conditioned within +/- 2% of optimum moisture content.

The base of each foundation excavation should be observed by the geotechnical engineer or a qualified representative prior to foundation installation.

## **7.2 Soil Remediation**

Under the building footprint, a minimum of 3 feet of native subgrade soils should be removed and replaced with imported select fill material free of gypsum as specified in Section 7.3. The removal of the native subgrade soil should extend at a minimum 5 feet beyond the building footprint. Prior to placing any fill, conduct proof-roll tests using a loaded dump truck or loaded double-axle water truck with a minimum weight of 20 tons. Passing proof-roll tests must show less than ½-inch deflection and no area pumping. Any soft spots or areas that exhibit pumping should be excavated and re-compacted to a minimum compaction of 98% of the maximum dry density as determined by ASTM D698 and moisture conditioned within +/- 2% of optimum moisture content for cohesive soils or moisture conditioned within +/- 3% of optimum moisture content for cohesionless soils. Replace native stockpiled subgrade materials in compacted lifts. If additional material is needed to complete the earthen pad, use select fill materials meeting the requirements in Section 7.3 of this report.

The base of each foundation excavation should be observed by the geotechnical engineer or a qualified representative prior to foundation installation.

## **7.3 Select Fill Below Foundation and Floor Slab**

Select non-expansive fill material placed within foundation and floor slab areas should be imported, free of gypsum and meet one of the following soil classifications: SC-SM, SM, SC, CL, GC or GW-GC. In addition, select fill shall possess a plasticity index, PI of less than 18 and shall not possess particle sizes greater than 3-inches. Native soils at the project site are not suitable to be used as select fill due to the very high sulphate and chloride content and the select fill material should be imported from outside sources and tested showing no gypsum before imported to the site. In addition, select fill within min. 12 inches of any structural concrete or concrete pavement should be tested to have low sulfate concentration of 1000 ppm or less, low chloride concentration of 100 ppm or less, unless the concrete is designed to have sufficient protection for sulfate exposure.

Select fill below the foundation should be placed in loose lifts not exceeding 9-inches. In order to reduce potential settlement, BEYOND recommends the following:

- BEYOND recommends compacting the materials to a minimum compaction of 98% of the maximum dry density as determined by ASTM D698.
- Materials shall be moisture conditioned within +/- 2% of optimum moisture content for cohesive soils or moisture conditioned within +/- 3% of optimum moisture content for cohesionless soils.
- Compacted backfill density should be verified by nuclear density tests, with at least one test per 2,500 square feet for each lift under buildings and one test per 5,000 square feet in other areas.

#### **7.4 Shallow Foundation Construction**

The following construction criteria and general guidance should be observed during shallow foundation construction:

1. Remove loose soils from footing excavations. Do not allow loose, excavated soils from the footings to be spread out within the building pad. These loose soils will cause differential settlements.
2. Excavations for footings should be accomplished with a smooth-mouthed bucket. If a toothed bucket is used, excavation with this bucket should be terminated a few inches above final grade and the excavation completed with a smooth-mouthed bucket or by manual labor. Debris or loose material in the bottom of the excavation should be re-compacted or removed prior to placing concrete. This is especially important along footing excavations.
3. The foundation excavation should be sloped sufficiently to create internal sumps for runoff collection and removal. Foundation excavations subject to rainfall and possible deterioration from accumulated water should be protected using a protective “mud-slab” (concrete). If surface runoff water or groundwater seepage accumulates at the bottom of the foundation excavation, it should be collected and removed and not allowed to adversely affect the quality of the bearing surface.
4. The foundation excavations should be checked for size and cleaned of loose material and debris prior to the placement of reinforcing steel. Precautions should be taken during the placement of reinforcement and concrete to prevent the loose excavated material from falling into the excavation.
5. Prior to the placement of concrete, any water must be removed from the foundation excavation.
6. Prompt placement of concrete in the excavation as it is completed, cleaned, and observed is strongly recommended.

#### **7.5 Open Excavations**

Temporary construction slopes and/or permanent embankment slopes should be protected from surface runoff water. Site grading should be designed to allow drainage at planned areas where erosion protection is provided, instead of allowing surface water to flow down unprotected slopes. Surcharge loads, either static or dynamic, should not be applied to an excavation slope. Construction equipment should be prevented from traveling along or near the top of the excavation slope. Monitoring of temporary slopes, trenches, and dewatering during construction should be undertaken by the contractor to detect early warnings of movement within slopes, structures, pavements, etc.

In all cases of excavations in soils, sloped excavations and trench shields are required for excavations greater than four feet in depth. The contractor's "Competent Person" (as defined by OSHA) must inspect each trench to determine the type of bench or slope that is actually required. With all excavations, only a "competent person" shall determine whether sloped, benched, or trench shields can be used. OSHA and applicable state and local standards should be observed and followed. Site safety is the responsibility of the contractor.

## **7.6 Drainage**

Proper drainage should be provided away from the foundation elements during all phases of construction and post-construction grading. Proper drainage is essential to the long-term stability of the structure. Ponding of water near the foundation elements from improper drainage should not be permitted. Downspouts should use splash blocks that divert water away from the foundation. Planters near buildings should be lined and should not allow saturation of soils near the foundation.

## **8.0 PAVEMENTS**

The proposed pavement sections presented here are calculated based solely on engineering structural parameters. Construction cost is not included in this analysis. Daily traffic volume or 18-kips Equivalent Single-Axle Loads (ESAL's) for the proposed pavement was not available during preparation of this report. We anticipate traffic will mostly consist of passenger cars, pick-up trucks, and occasional heavy trucks. For our analysis, we estimated that the proposed pavement will require approximately 50,000 ESAL's for a pavement design life of 20 years.

### **8.1 Design Recommendations for Pavements**

BEYOND calculated pavement section options in accordance with the *AASHTO Guide for Design of Pavement Structures 1993*. For pavement analysis we assumed the following parameters:

- Design life: 20 years;
- Reliability: 85% (Flexible) or 90% (Rigid);
- Overall Standard Deviation: 0.45 (Flexible) or 0.35 (Rigid);
- Initial Serviceability: 4.2 (Flexible) or 4.5 (Rigid);
- Terminal Serviceability: 2.0 (Flexible) or 2.5 (Rigid);
- Assumed CBR-value: 4
- Design Resilient Modulus (psi): 6,200
- Asphaltic Concrete: Layer structural coefficient of 0.44, and a drainage coefficient of 1.0; and
- Aggregate Base Course: Layer structural coefficient of 0.14, drainage coefficient of 1.0;
- Load Transfer Coefficient (J-Factor): 3.8; and
- Concrete compressive strength: 4,000 psi (sulfate resistant).

Table 8.1.1 presents our pavement sections based on our assumed design parameters.

**Table 8.1.1 Recommended Pavement Section**

ESALs	Option	Structural Number	Concrete Thickness (inches)	HMAC Thickness (inches)	Aggregate Base Course Thickness (inches)
50,000	HMAC	2.00	--	3.0	8.0
	PCC	--	5.0	--	--

Notes: HMAC = Hot-Mix Asphalt Concrete; PCC = Portland Cement Concrete.

BEYOND recommends using a heavy-duty section of rigid (concrete) paving for heavily loaded areas, such as the area in front of dumpsters, and at driveway entrances. For such areas, we recommend the concrete pavement to be minimum 6.0-inch thick with reinforced joints and rebar reinforcement (not wire mesh). Additionally, transverse and longitudinal contraction joints (induced joints) should be spaced at intervals not exceeding 12 feet. For the proposed fire lane, heavy-duty concrete pavement section should be used.

## **8.2 Material Specifications**

The pavement should be specified, constructed, and tested to meet the following requirements:

1. *Natural Subgrade* – Remove all vegetation and construction debris. Scarify the resulting subgrade to at least 12 inches, moisture condition and compact to a minimum of 98% of the maximum density per ASTM D698 and moisture conditioned within +/- 2% of optimum moisture content for cohesive soils or moisture conditioned within +/- 3% of optimum moisture content for cohesionless soils. The compacted surface shall be proof-rolled using a loaded tandem-axle dump truck or water truck of 20 tons or heavier. Passing proof-roll tests must show less than 1-inch deflection and no area pumping. Soft spots or areas exhibiting pumping should be excavated and re-compacted. Use select fill placed in accordance with Section 7.3 to reach final target site grade.
2. *Crushed Limestone Base Material (Flexible Base)* - Crushed rock as per Texas Department of Transportation, Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (2024), Item 247, **Grade 2** or better. The material should be compacted to a minimum of **95%** of the maximum density as per **ASTM D1557**.
3. *Portland Cement Concrete* - BEYOND recommends using a TxDOT **Class P** concrete mix design, or similar.
4. *HMAC* – **Type D** Hot Mix Asphaltic Concrete surface course. This material should meet TxDOT Item 341 specifications.
5. *Prime Coat* – Texas Department of Transportation Item 310.

## **9.0 LIMITATIONS**

Recommendations contained in this report are based on our field observations and subsurface explorations, limited laboratory tests, and our present knowledge of the proposed construction. It

is possible that soil conditions will vary between or beyond the points explored. If soil conditions are encountered that differ from those described herein, we should be notified immediately. If the scope of the proposed design or construction changes from that described in this report, our data should also be reviewed.

We prepared this report in substantial compliance with the generally accepted geotechnical engineering practice, as it exists in the area at the time of our study. No warranty is expressed or implied. The recommendations provided in this report are based on the assumption that BEYOND will conduct an adequate program of tests and observations during the construction phase in order to evaluate compliance with our recommendations.

This report may be used only by the client, their design team, and only for the purposes stated, within three years from its issuance. Land use, site conditions (both on site and off site) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this Report shall notify BEYOND of such intended use. Based on the intended use of the report, BEYOND may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release BEYOND from any liability resulting from the use of this report by any unauthorized party.

This is a geotechnical engineering report and is not intended to provide information about possible contaminated soils or the locations of any abandoned underground storage tanks. The owner should consult with an environmental specialist to determine whether this site is suitable from an environmental perspective.

Other standards or documents referenced in any given standard cited in this report, or otherwise relied upon by the authors of this report, are only mentioned in the given standard; they are not incorporated into it or "included by reference," as that latter term is used relative to contracts or other matters of law.

# APPENDIX A

# MAPS

# APPENDIX A.1

# PROJECT SITE LOCATION MAP

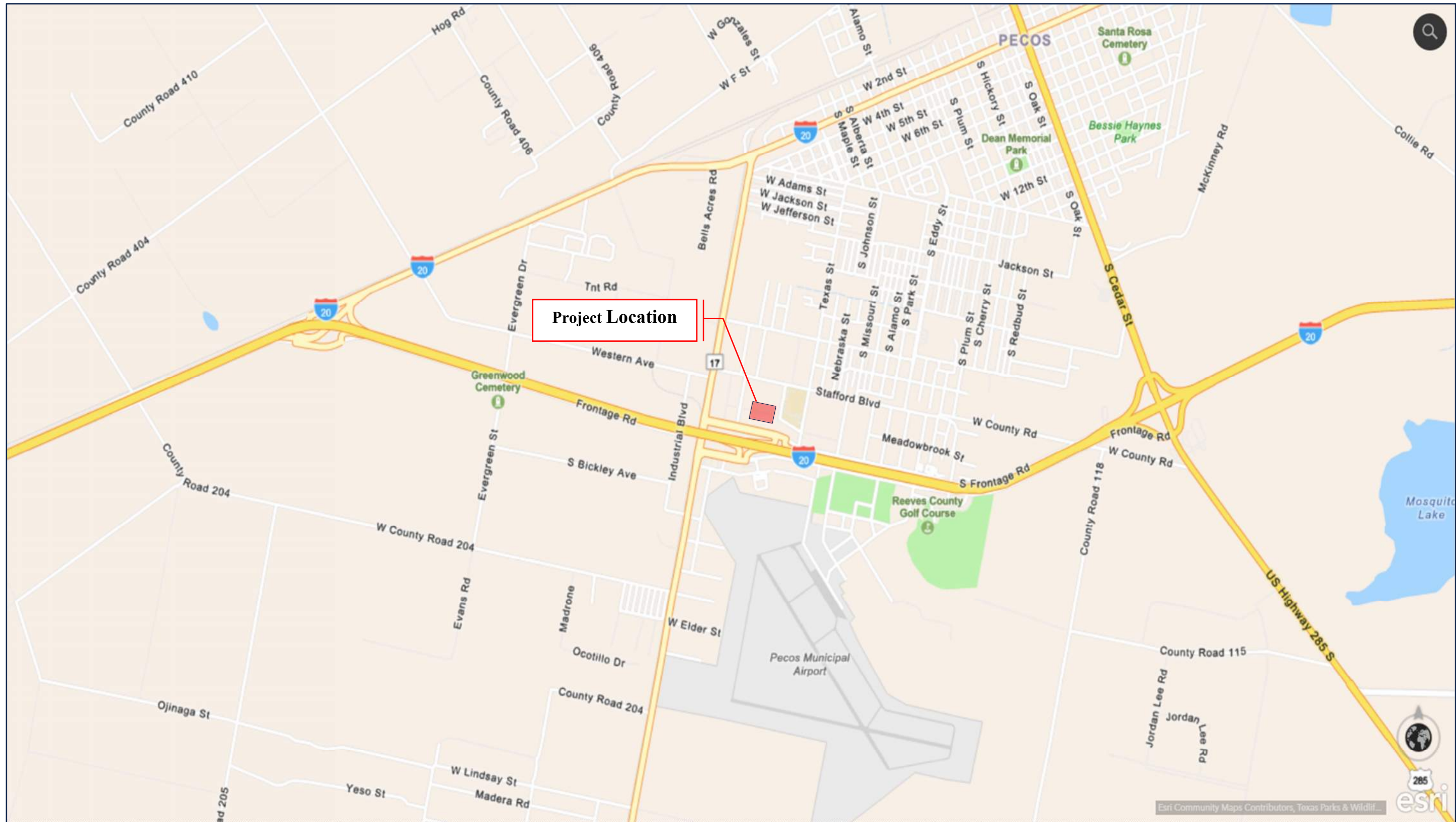


Figure A.1 – Project Site Location Map

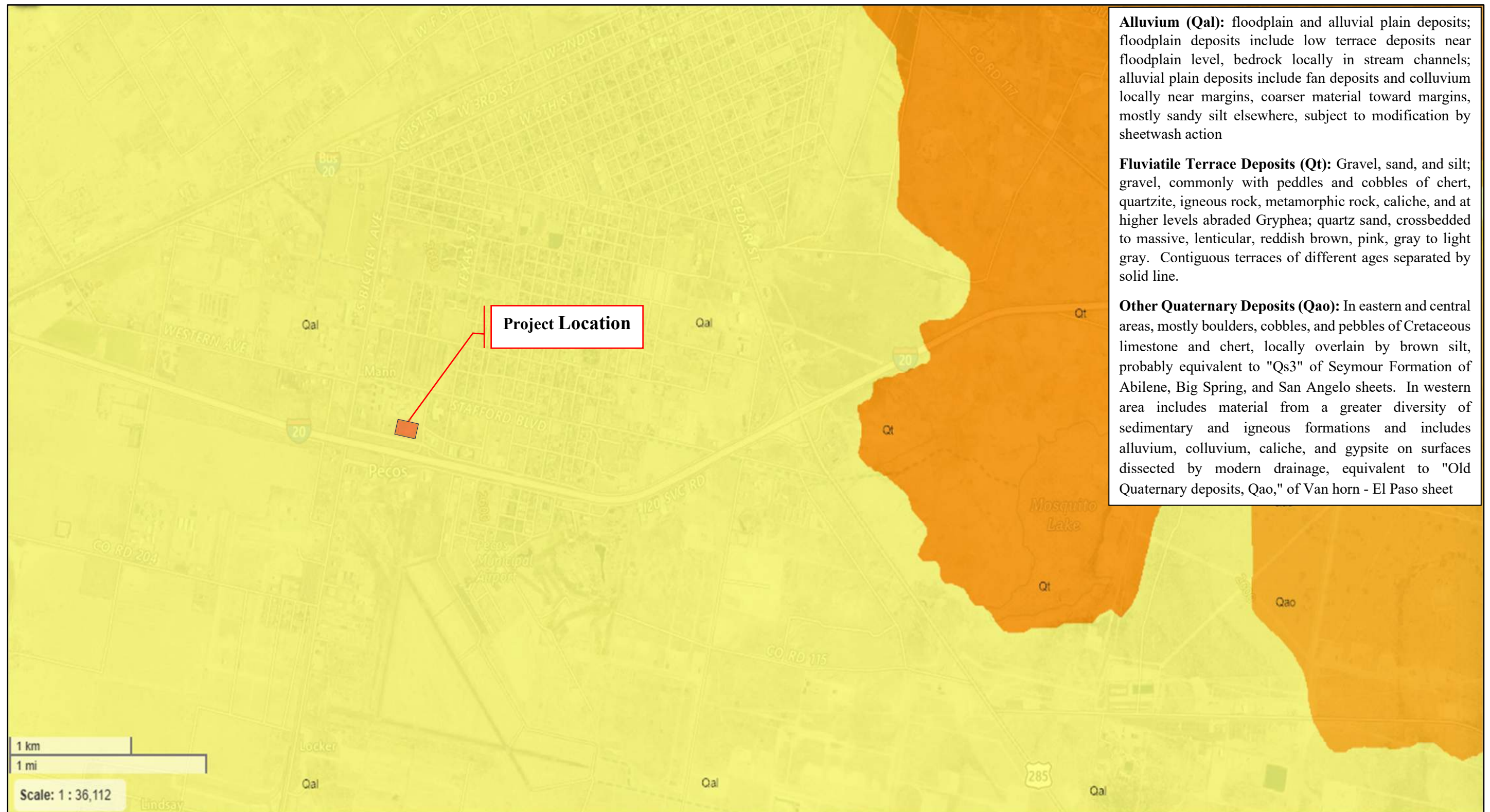
# APPENDIX A.2

# BOREHOLE LOCATIONS MAPS



Figure A.2 – Borehole Locations Map

**APPENDIX A.3**  
**SITE VICINITY GEOLOGIC MAP**



**Alluvium (Qal):** floodplain and alluvial plain deposits; floodplain deposits include low terrace deposits near floodplain level, bedrock locally in stream channels; alluvial plain deposits include fan deposits and colluvium locally near margins, coarser material toward margins, mostly sandy silt elsewhere, subject to modification by sheetwash action

**Fluvial Terrace Deposits (Qt):** Gravel, sand, and silt; gravel, commonly with peddles and cobbles of chert, quartzite, igneous rock, metamorphic rock, caliche, and at higher levels abraded Gryphea; quartz sand, crossbedded to massive, lenticular, reddish brown, pink, gray to light gray. Contiguous terraces of different ages separated by solid line.

**Other Quaternary Deposits (Qao):** In eastern and central areas, mostly boulders, cobbles, and pebbles of Cretaceous limestone and chert, locally overlain by brown silt, probably equivalent to "Qs3" of Seymour Formation of Abilene, Big Spring, and San Angelo sheets. In western area includes material from a greater diversity of sedimentary and igneous formations and includes alluvium, colluvium, caliche, and gypsite on surfaces dissected by modern drainage, equivalent to "Old Quaternary deposits, Qao," of Van horn - El Paso sheet

Figure A.3 – Site Vicinity Geologic Map Based of Geologic Atlas of Texas, Pecos Sheet

Source: <https://webapps.usgs.gov/txgeology>

# APPENDIX B


























# FIELD EXPLORATION

# APPENDIX B.1





# KEY TO TERMS

## LOG OF BORING KEY







### TYPICAL MATERIAL SYMBOLS (USCS CLASSIFICATION)

 Fill  Topsoil  Asphalt  Concrete	 Lean Clay (CL)  Fat Clay (CH)  Silt (ML)  Elastic Silt (MH)  Silty Clay (CL-ML)  Clayey Sand (SC)  Silty Sand (SM)	 Poorly Graded Sand (SP)  Well-Graded Sand (SW)  Poorly Graded Gravel (GP)  Well-Graded Gravel (GW)  Clayey Gravel (GC)  Silty Gravel (GM)	 Bedrock  Basalt  Limestone  Sandstone  Siltstone  Shale  Mudstone  Marl
--	--	---	---

### DRILLING METHOD SYMBOLS

 Air Rotary   Mud Rotary   Rock Coring	 Hollow Stem Auger
---	---

### SAMPLING METHOD SYMBOLS

 Split Spoon Sample   Shelby Tube Sample   Texas Cone Penetrometer	 Bulk Sample   Grab Sample   Rock Core Sample
---	--

- TESTING SYMBOL DEFINITION -

S – STANDARD PENETRATION TEST RESISTANCE  
 N – SPT N-VALUE (BLOWS FROM 6 TO 18 INCHES)  
 PP – POCKET PENETROMETER RESISTANCE  
 TxC – TXDOT CONE PENETRATION RESISTANCE  
 REC – ROCK CORE RECOVERY  
 RQD – ROCK QUALITY DESIGNATION

- COMPRESSIVE TEST ABBREVIATIONS -

UC – UNCONFINED / UNIAXIAL  
 COMPRESSIVE STRENGTH TEST  
  
 UU – UNCONSOLIDATED UNDRAINED  
 TRIAXIAL COMPRESSION TEST

### SOIL CHARACTERISTICS

Soil Consistency, Cohesive Soils – Clay and Silt		
Consistency (Cohesive)	Uncorrected SPT N-values	Unconfined Compressive Strength, $q_u$ (tsf)*
Very soft	< 2	< 0.25
Soft	2 – 4	0.25 – 0.50
Medium Stiff	5 – 8	0.50 – 1.0
Stiff	9 – 15	1.0 – 2.0
Very stiff	16 – 30	2.0 – 4.0
Hard	31 – 60	> 4.0
Very hard	> 60	

\*Pocket Penetrometer and unconfined compression tests yield  $q_u$ , within clay.

Soil Density, Cohesionless Soils – Sand and Gravel	
Relative Density/Density (Cohesionless)	Uncorrected SPT N-values
Very loose	< 4
Loose	4 – 10
Medium Dense	11 – 30
Dense	31 – 50
Very dense	> 50

Soil Structure
Calcareous..... Containing calcium carbonate
Slickensided.. The presence of planes of weakness having a slick and glossy appearance
Interbedded.... Alternating layers of varying materials

### BEDROCK CHARACTERISTICS

Hardness	Field Identification
Very hard	Rock will scratch knife. Core requires many blows of hammer to fracture or chip. Hammer rebounds after impact.
Hard	Rock can be scratched with knife blade or pick with difficulty.
Moderate Hard	Cannot scratch with fingernail but can be peeled with knife. Fracturing with single blow of hammer.
Soft	Rock can be scratched with fingernail or knife. Crumbles under firm blow with hammer. Grains from sandstones and mudstones/shales can be rubbed off with fingers.
Very Soft	Can be indented with fingers or crushed with fingers. Can be excavated easily with point of geologic hammer.

Weathering	Description
Fresh	No visible sign of rock material weathering; slight discoloration on major discontinuity surfaces is possible.
Slightly weathered	Discoloration indicates weathering of rock material and discontinuity surfaces. All rock material may be discolored by weathering and the external surface may be somewhat weaker than in its fresh condition.
Moderately weathered	Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a discontinuous framework or as corestones. A minimum 2 in. diameter sample cannot be broken readily by hand across the rock fabric
Highly weathered	More than half of the rock is decomposed and/or disintegrated to soil. Fresh or discolored rock is present either as a discontinuous framework or as corestones. A minimum 2 in. diameter sample can be broken readily by hand across the rock fabric
Completely weathered	All rock material is decomposed and/or disintegrated to soil. The original mass structure is largely still intact. Material can be granulated by hand.
Residual soil	All rock material is converted to soil. Material can be easily broken apart by hand

# APPENDIX B.2 LOGS OF BORING



# Borehole No.: B-1

Client: Reeves Regional Health

Project: Regional Health Clinic

Location: Pecos, Texas

Project Number: GT2512060

Date Started: 01/15/2026

Date Completed: 01/15/2026

SYMBOL	elevation depth (ft)	FIELD DATA				LABORATORY RESULTS							Logged By		Depth (ft)
		DRILLING METHOD	SAMPLE GRAPHIC	S: BLOW COUNTS N: BLOWS/FT PP: TONS/SQ FT TXC: BLOW COUNTS REC: % RQD: %	MOISTURE CONTENT (%)	PASSING #200 (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	DRY DENSITY (PCF)	COMPRESSIVE STRENGTH (TSF)	% STRAIN	CONFINING PRESSURE (PSI)	Jacob Chadwick Driller Bill Holloway Latitude, Longitude 31.400278, -103.516225 Surface Elevation 0.00' During Drilling N.E. After Drilling N.E.	
MATERIAL DESCRIPTION															
				S = 5-5-6 N = 11	16.8									TOPSOIL, 5.5 in.	
				S = 8-11-20 N = 31	27.7	98.2	45	28	17					SILT (ML), trace sand, brown to light brown, stiff to hard, moist, trace calcareous deposits, trace gypsum.	
	5			S = 10-17-30 N = 47										LEAN CLAY (CL), trace sand, light brown, hard, moist	
				S = 14-24-30 N = 54	22.0	88.0	37	24	13						
	10			S = 13-22-30 N = 52										SILT (ML), trace sand, light brown, hard, moist	
				S = 16-17-20 N = 37	27.1										
	15			S = 13-18-39 N = 57											
	20	Boring terminated at 20'													

Notes: GPS Coordinates obtained by handheld device.



# Borehole No.: B-2

Client: Reeves Regional Health

Project: Regional Health Clinic

Location: Pecos, Texas

Project Number: GT2512060

Date Started: 01/15/2026

Date Completed: 01/15/2026

SYMBOL	elevation depth (ft)	FIELD DATA				LABORATORY RESULTS							Logged By		Depth (ft)					
		DRILLING METHOD	SAMPLE GRAPHIC	S: BLOW COUNTS N: BLOWS/FT PP: TONS/SQ FT TXC: BLOW COUNTS REC: % RQD: %	MOISTURE CONTENT (%)	PASSING #200 (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	DRY DENSITY (PCF)	COMPRESSIVE STRENGTH (TSF)	% STRAIN	CONFINING PRESSURE (PSI)	Driller		Jacob Chadwick				
	5			S = 5-5-6 N = 11																
				S = 8-10-13 N = 23	27.7															
				S = 9-18-30 N = 48	26.1	97.0	42	25	17											5
				S = 7-13-23 N = 36																
	10			S = 14-22-30 N = 52	23.6	93.9	37	27	10											10
				S = 15-21-26 N = 47	37.0															15
	15			S = 10-7-6 N = 13																20
	20			Boring terminated at 20'																20

Logged By: Jacob Chadwick  
 Driller: Bill Holloway  
 Latitude, Longitude: 31.400229, -103.515971  
 Surface Elevation: 0.00'  
 During Drilling: 17'  
 After Drilling: 16.5'

MATERIAL DESCRIPTION

TOPSOIL, 4.5 in.  
 SILT (ML), trace sand, dark brown, stiff to hard, moist, trace calcareous deposits, trace gypsum.  
 LEAN CLAY (CL), trace sand, light brown, hard, moist  
 SILT (ML), light brown, stiff to hard, moist to wet, trace calcareous deposits.

Notes: GPS Coordinates obtained by handheld device.



# Borehole No.: B-3

Client: Reeves Regional Health

Project: Regional Health Clinic

Location: Pecos, Texas

Project Number: GT2512060

Date Started: 01/15/2026

Date Completed: 01/15/2026

SYMBOL	elevation depth (ft)	FIELD DATA				LABORATORY RESULTS							Logged By		Depth (ft)	
		DRILLING METHOD	SAMPLE GRAPHIC	S: BLOW COUNTS N: BLOWS/FT PP: TONS/SQ FT TXC: BLOW COUNTS REC: % RQD: %	MOISTURE CONTENT (%)	PASSING #200 (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	DRY DENSITY (PCF)	COMPRESSIVE STRENGTH (TSF)	% STRAIN	CONFINING PRESSURE (PSI)	Jacob Chadwick Driller Latitude, Longitude Surface Elevation During Drilling After Drilling		Bill Holloway 31.399840, -103.515912 0.00' N.E. N.E.
MATERIAL DESCRIPTION																
	0														TOPSOIL, 5.5 in.	
	5			S = 2-4-5 N = 9											SILT (ML), with sand, dark brown, stiff to hard, moist, trace calcareous deposits, trace gypsum.	
				S = 7-10-13 N = 23											- color changed to light brown.	
				S = 13-26-26 N = 52	22.1	78.4	39	27	12							5
				S = 15-23-26 N = 49	21.9											
	10			S = 10-18-25 N = 43												
				S = 15-31-17 N = 48	22.5	83.8	28	26	2							15
	15			S = 7-5-8 N = 13												
	20	Boring terminated at 20'														20

Notes: GPS Coordinates obtained by handheld device.





# Borehole No.: P-1

Client: Reeves Regional Health

Project: Regional Health Clinic

Location: Pecos, Texas

Project Number: GT2512060

Date Started: 01/16/2026

Date Completed: 01/16/2026

SYMBOL	elevation depth (ft)	FIELD DATA				LABORATORY RESULTS							Logged By		Depth (ft)		
		DRILLING METHOD	SAMPLE GRAPHIC	S: BLOW COUNTS N: BLOWS/FT PP: TONS/SQ FT TXC: BLOW COUNTS REC: % RQD: %	MOISTURE CONTENT (%)	PASSING #200 (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	DRY DENSITY (PCF)	COMPRESSIVE STRENGTH (TSF)	% STRAIN	CONFINING PRESSURE (PSI)	Driller		Jacob Chadwick	
				S = 6-8-6 N = 14	14.6	80.3	30	17	13						Bill Holloway	31.400437, -103.516532	
				S = 9-11-20 N = 31												0.00'	
	5			S = 13-22-23 N = 45	25.4										During Drilling	N.E.	
				S = 11-20-23 N = 43											After Drilling	N.E.	
				S = 11-14-17 N = 31													
	10	End of boring at 10'															10

Notes: GPS Coordinates obtained by handheld device.



# Borehole No.: P-2

Client: Reeves Regional Health

Project: Regional Health Clinic

Location: Pecos, Texas

Project Number: GT2512060

Date Started: 01/16/2026

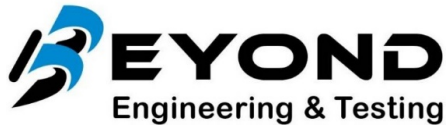
Date Completed: 01/16/2026

SYMBOL	elevation depth (ft)	FIELD DATA				LABORATORY RESULTS							Logged By		Depth (ft)	
		DRILLING METHOD	SAMPLE GRAPHIC	S: BLOW COUNTS N: BLOWS/FT PP: TONS/SQ FT TXC: BLOW COUNTS REC: % RQD: %	MOISTURE CONTENT (%)	PASSING #200 (%)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	DRY DENSITY (PCF)	COMPRESSIVE STRENGTH (TSF)	% STRAIN	CONFINING PRESSURE (PSI)	Jacob Chadwick Driller Bill Holloway Latitude, Longitude 31.399720, -103.515643 Surface Elevation 0.00' During Drilling N.E. After Drilling N.E.		
MATERIAL DESCRIPTION																
														TOPSOIL, 5.0 in.		
				S = 5-6-6 N = 12										LEAN CLAY (CL), with gravel, trace sand, light brown, hard, moist, trace calcareous deposits.		
				S = 8-12-14 N = 26	27.9	98.5	43	30	13					SILT (ML), trace sand, light brown, hard, moist, trace gypsum.		
	5			S = 9-21-30 N = 51											5	
				S = 8-22-27 N = 49												
				S = 12-18-18 N = 36	26.6											
	10	End of boring at 10'														10

Notes: GPS Coordinates obtained by handheld device.

# APPENDIX C LABORATORY TEST RESULTS

**APPENDIX C.1**  
**SUMMARY OF LABORATORY TEST**  
**RESULTS**



## SUMMARY OF LABORATORY RESULTS

Beyond Engineering and Testing, LLC  
 3011-B south county Road 1260  
 Midland, TX 79706  
 Telephone: 432.561.5780  
 www.BeyondET.com

CLIENT: Reeves Regional Health

PROJECT: Reeves County Regional Health Clinic

LOCATION: Pecos, Texas

NUMBER: GT2512060

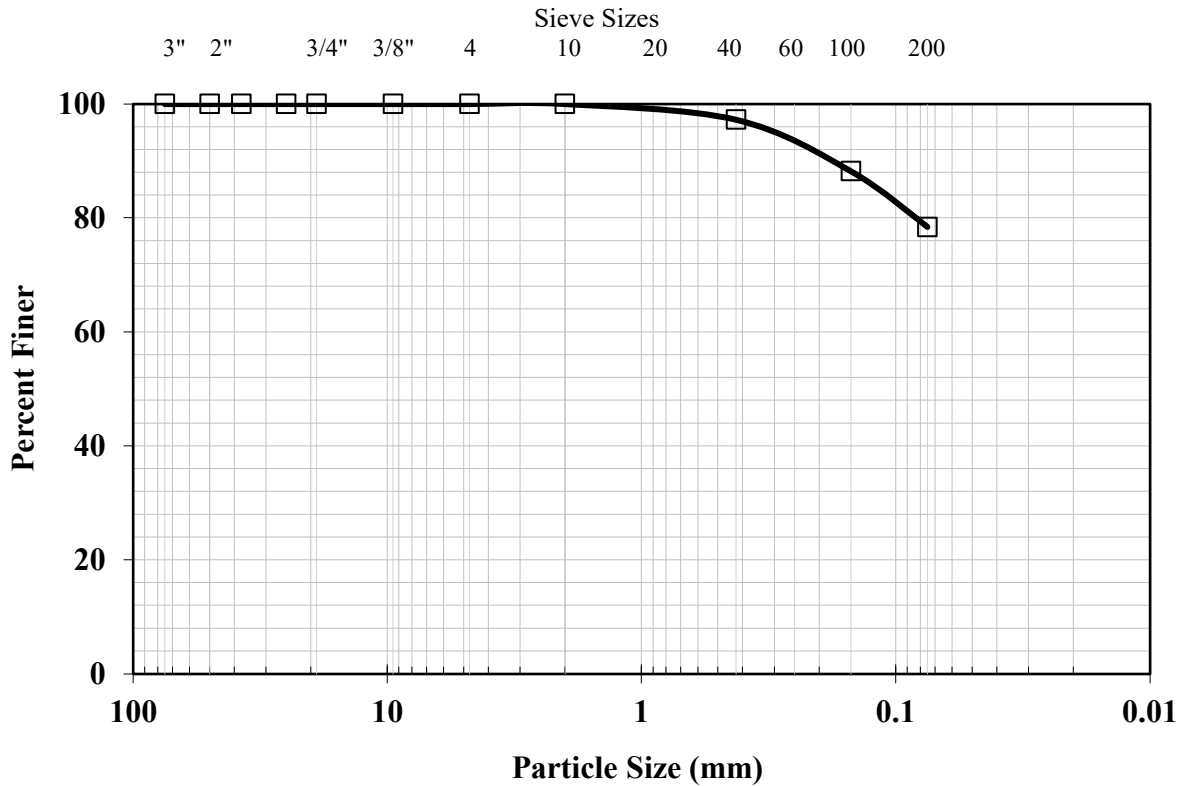
Location	Depth (ft)	USCS	Water Content (%)	< No. 200	LL	PL	PI	Chlorides (mg/Kg)	Sulfates (mg/Kg)
B-1	0.5	ML	16.8	-	-	-	-	-	-
B-1	2.0	ML	27.7	98.2	45	28	17	-	-
B-1	6.0	CL	22.0	88.0	37	24	13	-	-
B-1	13.5	ML	27.1	-	-	-	-	-	-
B-2	2.0	ML	27.7	-	-	-	-	3030.0	16700.0
B-2	4.0	CL	26.1	97.0	42	25	17	-	-
B-2	8.5	ML	23.6	93.9	37	27	10	-	-
B-2	13.5	ML	37.0	-	-	-	-	-	-
B-3	0.0	ML	-	-	-	-	-	3430.0	19400.0
B-3	4.0	ML	22.1	78.4	39	27	12	-	-
B-3	6.0	ML	21.9	-	-	-	-	-	-
B-3	13.5	ML	22.5	83.8	28	26	2	-	-
B-4	0.5	CL	14.9	85.8	35	18	17	-	-
B-4	4.0	ML	23.9	94.4	40	31	9	-	-
B-4	8.5	ML	21.9	93.5	-	-	-	-	-
B-4	13.5	ML	23.0	-	-	-	-	-	-
P-1	0.0	CL	14.6	80.3	30	17	13	-	-
P-1	4.0	ML	25.4	-	-	-	-	1360.0	15200.0
P-2	2.0	ML	27.9	98.5	43	30	13	-	-
P-2	8.5	ML	26.6	-	-	-	-	-	-

**APPENDIX C.2**  
**GRAIN SIZE DISTRIBUTION**  
**ANALYSIS RESULTS – ASTM-D6913**

## Particle Size Analysis for Soils

Project: Reeves Regional Health Clinic  
 Sample: B-3 at 4-5.5 ft

Project No.: GT2512060  
 Test Method: ASTM D6913  
 Test Date: 01/29/26



Sieve Analysis	
Sieve Size	Percentage Passing (%)
3 in.	100.0
2 in.	100.0
1.5 in.	100.0
1 in.	100.0
3/4 in.	100.0
3/8 in.	100.0
No. 4 (4.75 mm)	100.0
No. 10 (2.0 mm)	100.0
No. 40 (425 µm)	97.3
No. 100 (150 µm)	88.2
No. 200 (75 µm)	78.4

Victor Moreno, 01/29/2026

Quality Review/Date

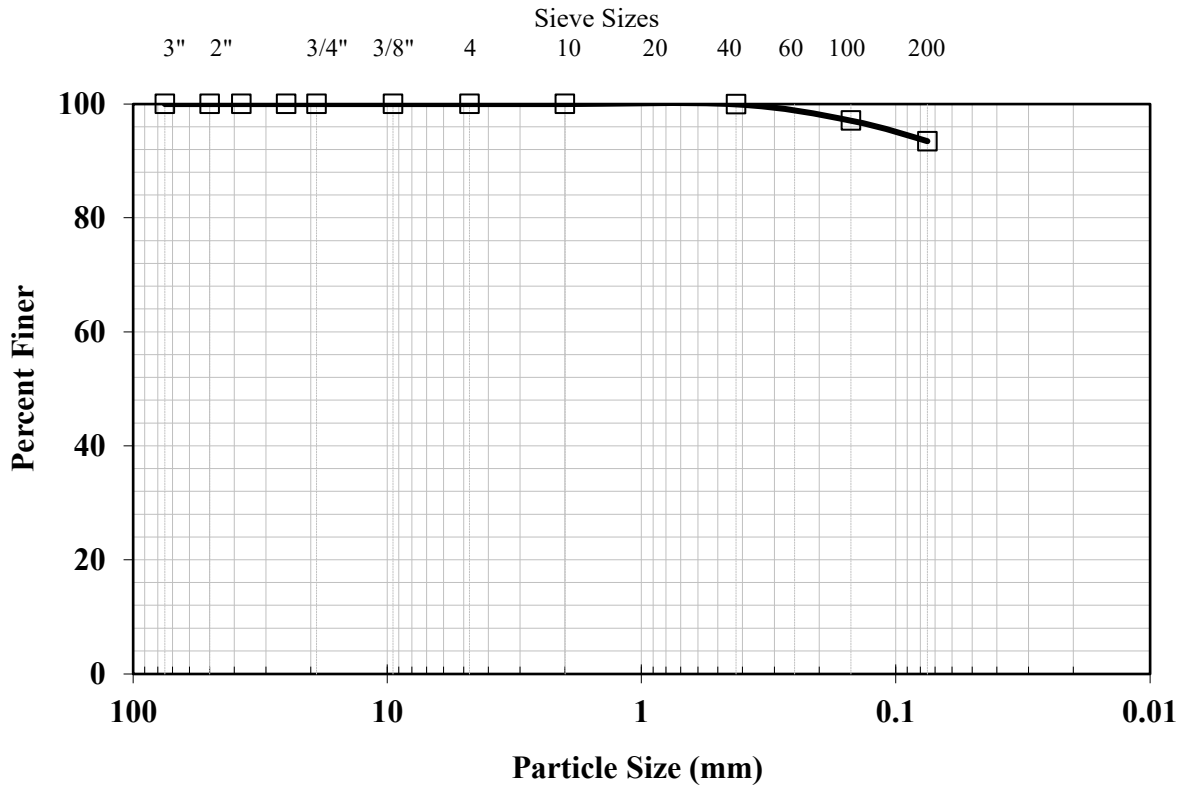
Tested by: M.G.

The results shown on this report are for the exclusive use of the client for whom they were obtained and apply only to the sample tested and / or inspected. They are not intended to be indicative of qualities of apparently identical products. The use of our name must receive prior written approval. Reports must be reproduced in their entirety. Unauthorized use or copying of this document is strictly prohibited by anyone other than the client for the specific project.

## Particle Size Analysis for Soils

Project: Reeves Regional Health Clinic  
 Sample: B-4 at 8.5-10.0 ft

Project No.: GT2512060  
 Test Method: ASTM D6913  
 Test Date: 01/29/26



Sieve Analysis	
Sieve Size	Percentage Passing (%)
3 in.	100.0
2 in.	100.0
1.5 in.	100.0
1 in.	100.0
3/4 in.	100.0
3/8 in.	100.0
No. 4 (4.75 mm)	100.0
No. 10 (2.0 mm)	100.0
No. 40 (425 µm)	100.0
No. 100 (150 µm)	97.1
No. 200 (75 µm)	93.5

Victor Moreno, 01/29/2026

Quality Review/Date

Tested by: M.G.

The results shown on this report are for the exclusive use of the client for whom they were obtained and apply only to the sample tested and / or inspected. They are not intended to be indicative of qualities of apparently identical products. The use of our name must receive prior written approval. Reports must be reproduced in their entirety. Unauthorized use or copying of this document is strictly prohibited by anyone other than the client for the specific project.

**APPENDIX C.3**  
**Sulfate and Chlorides Content: EPA**  
**300/300.1**

# Client Sample Results

Client: Beyond Engineering & Testing, LLC  
 Project/Site: Reeves Regional Health Clinic

Job ID: 880-67541-1

**Client Sample ID: B-2**

**Lab Sample ID: 880-67541-1**

Date Collected: 01/15/26 00:00

Matrix: Solid

Date Received: 01/28/26 15:09

Sample Depth: 2

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3030		199	mg/Kg			01/29/26 17:47	20
Sulfate	16700		199	mg/Kg			01/29/26 17:47	20

**Client Sample ID: B-3**

**Lab Sample ID: 880-67541-2**

Date Collected: 01/15/26 00:00

Matrix: Solid

Date Received: 01/28/26 15:09

Sample Depth: 0

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	19400		501	mg/Kg			01/29/26 18:00	50
Sulfate	3430		501	mg/Kg			01/29/26 18:00	50

**Client Sample ID: P-1**

**Lab Sample ID: 880-67541-3**

Date Collected: 01/16/26 00:00

Matrix: Solid

Date Received: 01/28/26 15:09

Sample Depth: 4

**Method: EPA 300.0 - Anions, Ion Chromatography - Soluble**

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1360		99.2	mg/Kg			01/29/26 18:13	10
Sulfate	15200		198	mg/Kg			01/29/26 18:52	20

# APPENDIX D

# Infiltration Test Report

Project Name: Reeves County Regional Health Clinic  
 Location: Pecos, Texas  
 Project Number: GT2512960  
 Report: Infiltration Test Report

Test Hole No.	DP-1	Latitude	31.400616		
Date	1/16/2026	Longitude	-103.517041		
Depth of Boring(ft):	1	Soil Type at Bottom of Hole	Dark Brown, Lean Clay (CL)		
Boring Diameter (in.):	4.25				
Reading	Time (minutes)	Initial Water Level (inches)	Final Water Level (inches)	Water Drop (inches)	Percolation Rate (in/min.)
1	0	8.0			-
2	2	8.0	5.5	2.5	1.25
3	2	5.5	5	0.5	0.25
4	2	5	4.5	0.5	0.25
4	2	4.5	4.5	0.0	-
5	2	4.5	4.5	0.0	-
6	2	4.5	4.5	0.0	-
7	2	4.5	4.5	0.0	-
8	2	4.5	4.5	0.0	-
9	2	4.5	4.5	0.0	-
10	2	4.5	4.5	0.0	-

Minimum Percolation Rate 0.25 in/min  
 Maximum Percolation Rate 1.25 in/min  
 Average Percolation Rate 0.58 in/min

### Refill

Test Hole No.	DP-1	Latitude	31.400616		
Date:	1/16/2026	Longitude	-103.517041		
Depth of Boring(ft):	1.0	Soil Type at Bottom of Hole	Dark Brown, Lean Clay (CL)		
Boring Diameter (in.):	4.25				
Reading	Time (minutes)	Initial Water Level (inches)	Final Water Level (inches)	Water Drop (inches)	Percolation Rate (in/min.)
1	0	8.0			-
2	5	8.0	5.0	3.0	0.60
3	5	5.0	4.5	0.5	0.10
4	5	4.5	4.5	0.0	0.00
5	5	4.5	4.0	0.5	0.10
6	5	4.0	4.0	0.0	-
7	5	4.0	4.0	0	-

Minimum Percolation Rate 0.10 in/min  
 Maximum Percolation Rate 0.60 in/min  
 Average Percolation Rate 0.27 in/min

Project Name: Reeves County Regional Health Clinic  
 Location: Pecos, Texas  
 Project Number: GT2512960  
 Report: Infiltration Test Report

Test Hole No.	DP-2	Latitude	31.399854		
Date	1/16/2026	Longitude	-103.517228		
Depth of Boring(ft):	4.0	Soil Type at Bottom of Hole	Light Brown, Lean Clay (CL)		
Boring Diameter (in.):	4.25				
Reading	Time (minutes)	Initial Water Level (inches)	Final Water Level (inches)	Water Drop (inches)	Percolation Rate (in/min.)
1	0	44.0			-
2	5	44.0	42.5	1.5	0.3
3	5	42.5	40.5	2.0	0.4
4	5	40.5	40.0	0.5	0.1
4	5	40.0	39.5	0.5	0.1
5	5	39.5	39.0	0.5	0.1
6	5	39.0	38.0	1.0	0.2
7	5	38.0	38.0	0.0	-
8	5	38.0	38.0	0.0	-
9	5	38.0	38.0	0.0	-
10	5	38.0	38.0	0.0	-

Minimum Percolation Rate 0.1 in/min  
 Maximum Percolation Rate 0.4 in/min  
 Average Percolation Rate 0.2 in/min

### Refill

Test Hole No.	DP-2	Latitude	31.400616		
Date	1/16/2026	Longitude	-103.517228		
Depth of Boring(ft):	4	Soil Type at Bottom of Hole	Light Brown, Lean Clay (CL)		
Boring Diameter (in.):	4.25				
Reading	Time (minutes)	Initial Water Level (inches)	Final Water Level (inches)	Water Drop (inches)	Percolation Rate (in/min.)
1	0	44.0			-
2	5	44.0	42.0	2.0	0.4
3	5	42.0	41.0	1.0	0.2
4	5	41.0	40.0	1.0	0.2
5	5	40.0	39.5	0.5	0.1
6	5	39.5	39.0	0.5	0.1
7	5	39.0	38.0	1.0	0.2
8	5	38.0	38.0	0.0	-
9	5	38.0	38.0	0.0	-

Minimum Percolation Rate 0.1 in/min  
 Maximum Percolation Rate 0.4 in/min  
 Average Percolation Rate 0.2 in/min

Project Name: Reeves County Regional Health Clinic  
 Location: Pecos, Texas  
 Project Number: GT2512960  
 Report: Infiltration Test Report

Test Hole No.	DP-3	Latitude	31.399689		
Date	1/16/2026	Longitude	-103.515829		
Depth of Boring(ft):	1	Soil Type at Bottom of Hole	Dark Brown, Lean Clay (CL)		
Boring Diameter (in.):	4.25				
Reading	Time (minutes)	Initial Water Level (inches)	Final Water Level (inches)	Water Drop (inches)	Percolation Rate (in/min.)
1	0	8.0			-
2	5	8.0	7.0	1.0	0.20
3	5	7.0	6.0	1.0	0.20
4	5	6.0	5.5	0.5	0.10
4	5	5.5	5.5	0.0	-
5	5	5.5	5.5	0.0	-
6	5	5.5	5.5	0.0	-

Minimum Percolation Rate 0.1 in/min  
 Maximum Percolation Rate 0.2 in/min  
 Average Percolation Rate 0.17 in/min

### Refill

Test Hole No.	DP-3	Latitude	31.400616		
Date:	1/16/2026	Longitude	-103.515829		
Depth of Boring(ft):	1	Soil Type at Bottom of Hole	Dark Brown, Lean Clay (CL)		
Boring Diameter (in.):	4.25				
Reading	Time (minutes)	Initial Water Level (inches)	Final Water Level (inches)	Water Drop (inches)	Percolation Rate (in/min.)
1	0	8.0			-
2	5	8.0	7.7	0.3	0.06
3	5	7.7	7.5	0.2	0.04
4	5	7.5	7.0	0.5	0.10
5	5	7.0	6.5	0.5	0.10
6	5	6.5	6.0	0.5	0.10
7	5	6.0	6.0	0.0	-
8	5	6.0	6.0	0.0	-

Minimum Percolation Rate 0.04 in/min  
 Maximum Percolation Rate 0.10 in/min  
 Average Percolation Rate 0.08 in/min

Project Name: Reeves County Regional Health Clinic  
 Location: Pecos, Texas  
 Project Number: GT2512960  
 Report: Infiltration Test Report

Test Hole No.	DP-4	Latitude	31.400126		
Date	1/16/2026	Longitude	-103.515747		
Depth of Boring(ft):	4	Soil Type at Bottom of Hole	Light Brown, Silt (ML)		
Boring Diameter (in.):	4.25				
Reading	Time (minutes)	Initial Water Level (inches)	Final Water Level (inches)	Water Drop (inches)	Percolation Rate (in/min.)
1	0	44.0			-
2	5	44.0	43.0	1.0	0.20
3	5	43.0	41.5	1.5	0.30
4	5	41.5	40.0	1.5	0.30
5	5	40.0	38.5	1.5	0.30
6	5	38.5	38.0	0.5	0.10
7	5	38.0	38.0	0.0	-
8	5	38.0	38.0	0.0	-

Minimum Percolation Rate 0.10 in/min  
 Maximum Percolation Rate 0.30 in/min  
 Average Percolation Rate 0.24 in/min

### Refill

Test Hole No.	DP-4	Latitude	31.400126		
Date:	1/16/2026	Longitude	-103.515747		
Depth of Boring(ft):	4	Soil Type at Bottom of Hole	Light Brown, Silt (ML)		
Boring Diameter (in.):	4.25				
Reading	Time (minutes)	Initial Water Level (inches)	Final Water Level (inches)	Water Drop (inches)	Percolation Rate (in/min.)
1	0	44.0			-
2	5	44.0	42.0	2.0	0.40
3	5	43.0	41.0	2.0	0.40
4	5	41.5	40.0	1.5	0.30
5	5	40.0	40.0	0.0	-
6	5	40.0	40.0	0.0	-

Minimum Percolation Rate 0.30 in/min  
 Maximum Percolation Rate 0.40 in/min  
 Average Percolation Rate 0.37 in/min