

**GEOTECHNICAL INVESTIGATION  
FOR**

**EL PARAISO PROJECT  
HIDALGO COUNTY, TEXAS**

**Prepared For:  
Hidalgo County Precinct 3**

**Prepared By:  
B2Z Engineering, LLC  
[Texas Registered Engineering Firm F-11187]**

**B2Z Project No. 3101  
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## **INTRODUCTION**

**B2Z Engineering, LLC (B2Z)** was contracted by **Hidalgo County Precinct 3 (HC Pct 3)**, to perform a subsurface geotechnical investigation to assist in the preparation of Plans, Specifications and Estimates (PS&E) for the El Paraiso Project located in Hidalgo County, TX and consisting of the development of a property to include a Health Clinic & Indigent Care Facility and a Community Resource Center (CRC) as well as Parking and Through Drive areas.

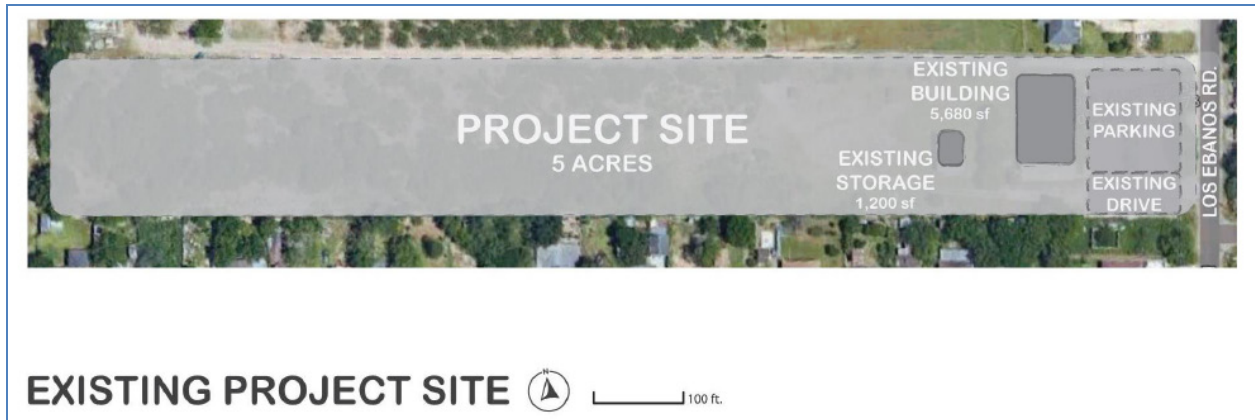
This report addresses shallow foundation recommendations for the proposed improvements, pavement recommendations for the site and soil class for septic tank field (leach field).

## **GENERAL PROJECT OVERVIEW**

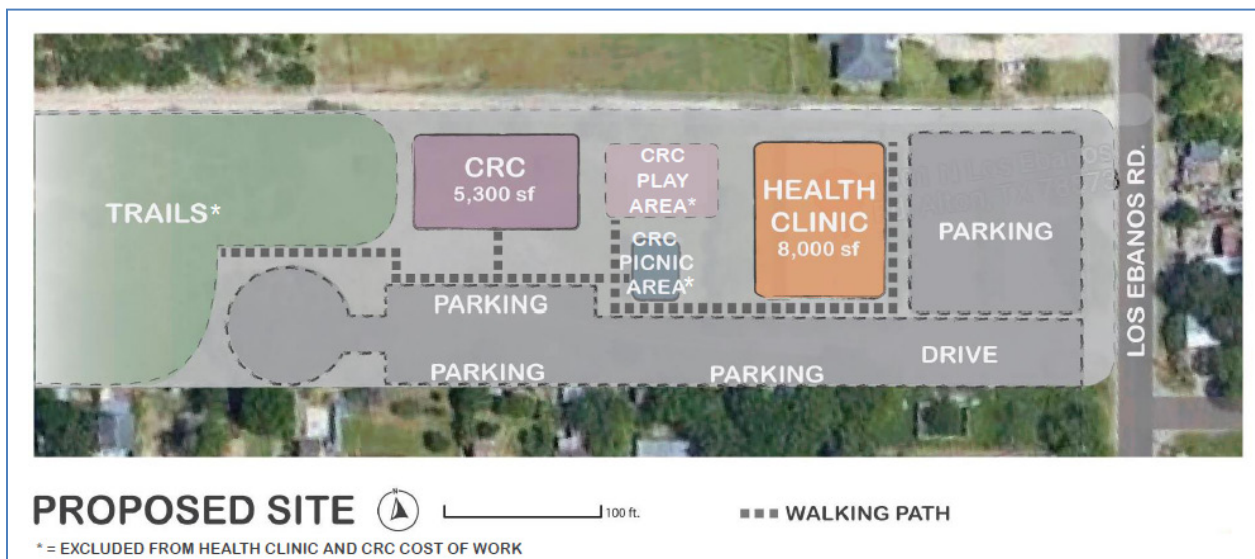
### **Project Description**

**B2Z** is pleased to submit this document presenting our findings as the result of a subsurface geotechnical exploration performed at the request of **HC Pct 3**. The project site is located within Hidalgo County, Texas, approximately 0.15 miles north of the intersection of Los Ebanos Rd. and St Jude Ave. (along Los Ebanos Rd.). The project site is within an existing relatively open area 5 acre piece of land with an existing approx. 5,680 square foot steel structure building (Paraiso-Ebanos Community Center) and an existing 1,200 steel structure storage building (just west of the main existing building) along with a small section of asphaltic pavement drives and parking adjacent to Los Ebanos Rd (providing access to the existing Community Center). Through coordination with the Client we understand the proposed project will include development of an approx. 8,000 square foot Health Clinic & Indigent Care Facility and an approx. 5,300 square foot Community Resource Center (CRC) along with parking areas and drives for access and parking at these facilities. We also understand that a Septic Tank Field (Leach Field) may be incorporated into the project to service the propose facilities in the west portion of the project site. Lastly, there are other future developments and amenity additions that are proposed such as Play Areas, Picnic Areas and Trails that are not currently considered within this report.

Existing site conditions were provided by the Client and are illustrated in Figure 1a. A Preliminary general site plan sheet/project layout for the proposed facility were also provided by the Client and are illustrated in Figure 1b. No grading plans or structural loads for the facilities/structures were provided; thus all foundation and site improvement recommendations as provided in this report are based on the geotechnical properties of the soils and generalized assumptions as noted. Any reference data provided from the Client and utilized in this report is included in Appendix C.



**Figure 1a – General Location of Project (Showing Existing Conditions)**



**Figure 1b – General Location of Project (Showing Proposed Improvements)**

### Scope and Limitations of Investigation

This report has been prepared in general accordance with accepted geotechnical engineering practices for the subject project site and the anticipated construction. No specific warranty program or other special standards, except acceptable industry standards for the general South Texas area, were followed during the course of this investigation and analysis. This geotechnical report is intended for use by **HC Pct 3**, and any direct representatives or affiliates. This geotechnical report may not contain sufficient information for purposes of other parties, or other uses in determining construction means and methods.

The strata, shown on the boring logs (included in Appendix B), represent the subsurface conditions at the boring locations at the time of our investigation. These strata designate approximate boundaries between subsurface materials; however, their actual transition may be gradual or may occur at varying depths. Variations may occur due to unexpected deposits of soft clays, silts or other undesirable soil material not detected through our investigation. It should be noted that the exploratory borings were performed within the limits of the proposed project as approved and agreed upon by all previously noted parties prior to the commencement of our field operations.

The benchmarks of this geotechnical study are to:

1. explore the general existing subsurface conditions at the site
2. evaluate the relevant engineering properties of the subsurface materials
3. provide the maximum allowable bearing capacity of in-situ soils for shallow foundations
4. provide the potential vertical rise and recommendations to minimize shrink/swell
5. provide WRI/PTI parameters for the shallow foundation
6. provide recommendations for pavement thicknesses and materials
7. provide recommendations for soil classification in septic tank field (leach field)
8. provide recommendations for foundation construction

The scope of this geotechnical engineering study does not include an environmental assessment of the air, soil, rock or water conditions on or adjacent to the site. No environmental opinions are presented in this report. If environmental clearances are needed prior to construction, please contact our offices for assistance in this matter.

## **EXISTING SURFACE AND SUB-SURFACE CONDITIONS**

### **Site Location / Description**

The project site is located within Hidalgo County, Texas, approximately 0.15 miles north of the intersection of Los Ebanos Rd. and St Jude Ave. (along Los Ebanos Rd.). The project site is within an existing relatively open area 5 acre piece of land with an existing approx. 5,680 square foot steel structure building (Paraiso-Ebanos Community Center) and an existing 1,200 steel structure storage building (just west of the main existing building) along with a small section of asphaltic pavement drives and parking adjacent to Los Ebanos Rd (providing access to the existing Community Center). The boring locations were drilled as close as possible to the locations specified by the Client as shown on figures in Appendix A. No surveyor was contracted to determine the exact coordinates for the borings, as this was not a part of the scope of work for the project; however, field handheld GPS coordinates were retrieved and are noted on the boring logs in Appendix B. Elevations were approximated from Google Earth.

### **Geology**

The Geologic Atlas of Texas, McAllen-Brownsville Sheet, dated 1976, indicates that the subject site is located within the *Windblown Deposits* (Qds) section of the Holocene/Pleistocene epoch (Quaternary period). The description of the materials is as follows:

Windblown Deposits (Qds) – “Stabilized sand dune deposits, Qds, strong relict eolian grain, sparse grass; includes active blowout areas with depressed relief, hummocky, locally becomes fresh-water marsh in wet season, and well-established sand dunes with dense live-oak mottes and scrub; “moderate to very high permeability, low to moderate water-holding capacity, low compressibility, low shrink-swell potential, good to fair drainage, high shear strength, low plasticity, shallow water table””.

### **Soil Survey Description**

According to the Soil Survey of Hidalgo County, Texas, published by the United States Department of Agriculture, the proposed site is located primarily within the Hidalgo Fine Sandy Loam (Soil Map Unit #25).

Hidalgo Fine Sandy Loam, 0 to 1% Slopes (Soil Map Unit #25) – These soils are deep, nearly level soils on convex uplands. This unit is well drained with slow surface runoff, a moderate available water capacity (about 7.8 inches) and moderate permeability. It is non-saline to slightly saline (about 0.0 to 4.0 mmhos/cm) with no frequency of flooding or ponding. Typical plasticity index range of 1 to 8 with % fines of 35 to 56% based on upper 17 inches of soil profile and plasticity index range of 11 to 22 with % fines of 50 to 84% based on subsequent 17 to 80 inches of soil profile.

### **Rainfall**

The mean annual precipitation for this area of Hidalgo County is approximately 20-27 inches, as reported by the U.S. Department of Agriculture Soil Conservation Service. Our geotechnical investigation, performed in November 2022 was conducted during a non-drought condition (None, as noted by the National Weather Service and U.S. Drought Monitor).

## **SITE INVESTIGATION**

### **Soil Borings and Laboratory Tests**

Subsurface conditions at the site were evaluated through the following borings:

- Structural Borings – Two (2) borings (designated as B-01 and B-02) were drilled to a depth of 20 feet below natural ground elevation respectively.
  - Boring B-01 drilled at Proposed Health Clinic & Indigent Care Facility
  - Boring B-02 drilled at Proposed Community Resource Center
- Pavement Borings – Four (4) pavement borings (designated as B-PV-01 through B-PV-04) drilled to a depth of six (6) feet below natural ground elevation respectively.
- Septic Tank Leach Field Borings – One (1) pavement borings (designated as B-LF-01) drilled to a depth of six (6) feet below natural ground elevation.

All exploratory borings were drilled at the approximate locations shown on Figures in Appendix A. The borings were drilled in general accordance with American Society of Testing Materials Procedure (ASTM) D 420 and D 1452 using a truck mounted drilling rig.

As part of the drilling and sampling procedures, split barrel (spoon) and Standard Penetration Tests (SPT) were performed, collected and recorded. Standard Penetration Test results are noted on the boring logs as blows per foot or twelve (12) inch increment. The sampler was advanced through three (3) consecutive six inch increments; however, the first six inch increment is considered the seating drive, which eliminates the effect of cuttings or disturbances on the test result. The sum of the blows for the last two six (6) inch increments is considered the “standard penetration resistance value” or “field N-value”. Where hard or very dense materials were encountered, the SPT was terminated and noted on the boring log when one of the following situations occurred:

- 1. a total of 50 blows were applied on one six inch increment*
- 2. a total of 100 blows were applied during the test*
- 3. no observation of advancement of the sampler was detected during the application of 10 consecutive blows from the hammer*

Representative portions of the samples were identified, packaged, sealed in containers (to reduce moisture loss), and transported to our laboratory for subsequent testing. In the laboratory, each sample was evaluated and visually classified by a member of our Geotechnical Engineering staff. The properties of the strata were evaluated by a series of laboratory index tests (Tex-142-E, Laboratory Classification of Soils for Engineering Purposes and ASTM D 2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)).

A summary of the laboratory data and their corresponding depths are presented on the boring logs in Appendix B.

### **Subsurface Stratigraphy**

Based on the results of the field and laboratory sample analyses, the subsurface stratigraphy at the project location contains primarily lean clay and clayey sand in the upper 6 feet of soil profile (in varying layering configurations) and varies per boring below that (at B-01 it shows primarily clayey sands, while at B-02 it shows primarily sandy fat clay and fat clay to a depth of 20 feet). It should be noted, the Soil Strata and Description provided, are typical summarized representation of the site stratigraphy. The lines designating the interfaces between strata on the boring logs represent approximate boundaries. Transitions between strata may be gradual and may occur at varying depths.

### **Water Strikes**

During the drilling operations, water strike was not encountered at any of the borings, however moist soils were found in all of the borings. It should be noted that fluctuations in groundwater levels are influenced by variations in rainfall and surface water run-off from season to season. The construction process itself may also cause variations in the groundwater level. If the water level is critical to the construction process, **B2Z** recommends that the Contractor check the subsurface water conditions immediately prior to construction excavation through the installation of piezometer wells.

## **GEOTECHNICAL BORING ANALYSIS**

### **Moisture Content**

The moisture content of a soil is defined as the ratio of the weight of the water in the sample to the dry weight of the soil sample. The moisture contents for the samples obtained as part of our geotechnical exploration were performed in compliance with ASTM procedure D2216 (and Tex-103-E). A comprehensive list of all moisture contents by corresponding depth can be found on the boring logs.

### **Plasticity Index**

The Plasticity Index (PI) is defined as the difference between the liquid limit and the plastic limit of a soil. These limits are commonly referred to as the Atterberg limits, which describe the consistency of soils with respect to their varying moisture contents. The plasticity indices for the samples obtained as part of our geotechnical exploration were performed in compliance with ASTM procedure D4318 (and Tex-104-E thru Tex-106-E). A comprehensive list of all plasticity indices by corresponding depth can be found on the boring logs.

### **Particle Size Analysis (Determination of Fines Content)**

The standard grain size analysis is used to determine the relative proportions of different grain sizes as they are distributed along a range of different sized sieves. The minus 200 sieve analysis is used commonly as a tool for soil classification and identification using the Unified Soils Classification System. Results for this test are reported as a percentage of soil passing the No. 200 sieve, which has openings 0.075mm wide. The particle size analyses for the samples obtained as part of our geotechnical exploration were performed in compliance with ASTM procedure D1140 (and Tex-111-E). A comprehensive list of all fines contents by corresponding depth can be found on the boring logs.

### **Particle Size Analysis (Gradation Curves)**

Full standard gradation analysis is necessary to establish soil gradation curves. Standard gradation analysis involves two parts, the sieve analysis and the hydrometer analysis. The sieve analysis consists of stacking progressively finer sieves and passing a soil mass through. The sieve sizes correspond to different particle sizes within a soil. Hydrometer analyses are used primarily in fine grained soils but are also very useful in establishing the ‘tail-end’ of a gradation curve for soils having a mixture of coarse grained and fine grained soil constituents. Full standard gradation analysis is also useful in defining percentages of particle diameters. Full gradation curves can be found in [Appendix B](#).

## FOUNDATION RECOMMENDATIONS

### Proposed Project Foundation System Information

The proposed facilities, as previously noted, will be constructed throughout the project site. At the time this report was written, the Client had indicated 1 main type of proposed construction at the site for the structures:

- General Slab on Grade (SOG) w/ Potential Grade Beams and Shallow Footings

A shallow type foundation system selected for construction must be designed with sufficient bearing capacity to resist the imposed loadings without experiencing failure of the underlying soils. The foundation system must also resist soil movements, or volume change, from expansion and contraction of soils due to changes in moisture content. The following sections will provide allowable bearing capacities, potential vertical rise (including earthwork recommendations to minimize shrink and swell), and Slab on Grade design parameters (Welded Reinforcement Institute – WRI, Post-Tensioning Institute – PTI). It should be noted that the recommendations provided are based on geotechnical properties of the project soils and assumptions of construction of this type since no structural loadings were provided. If structural loadings exceed capacities as provided in this report, **B2Z** should be advised of the loadings to re-analyze and provide alternate recommendations, if needed.

### Bearing Capacity of Soils (Shallow Foundations)

The bearing capacity of the existing natural ground is defined as the ability of a foundation to safely support the imposed loadings (surcharge), without experiencing any form of shear failure. The ultimate bearing capacity is a measure of the soil's maximum resistance immediately prior to a bearing capacity failure. The ultimate bearing capacity was estimated using the methods and equations, as recommended by the USACE in Manual EM 1110-1-1905 titled "Bearing Capacity of Soils"

$$q_u = c N_c \zeta_c + \frac{1}{2} B \gamma_h N_\gamma \zeta_\gamma + \sigma N_q \zeta_q$$

where:

$q_u$  = ultimate bearing capacity

$c$  = soil cohesion

$B$  = effective width of foundation

$\gamma_h$  = effective unit weight of soil within failure zone

$\sigma$  = effective soil surcharge pressure at depth

$N_c, N_\gamma, N_q$  = Bearing capacity factors

$\zeta_c, \zeta_\gamma, \zeta_q$  = dimensionless correction factors for cohesion, soil unit weight, and surcharge

$N_c, N_\gamma,$  and  $N_q$  are the dimensionless bearing capacity factors developed by Meyerhof, Hansen, and Vesic for general shear failure listed in Table 4-4 of EM 1110-1-1905. Cohesion values for cohesive soils and angle of friction values for granular soils were estimated using a correlation with the Standard Penetration Tests performed in the field. All correlations used were in accordance with the applicable USACE manuals. Where cohesive material was prevalent, the angle of friction value was conservatively assumed to equal zero.

The factor of safety used in our analysis was equal to 3.0, as recommended by Chapter 1 of EM 1110-1-1905. The absolute minimum factor of safety, as recommended by Chapter 1 of EM 1110-1-1905 for this construction is 2.0. The maximum allowable bearing capacity was calculated by dividing the ultimate bearing capacity by the factor of safety. All recommendations reflect the maximum allowable bearing capacity in pounds per square foot.

#### Bearing Capacity of Soils (Foundation Pads, Slabs on Grade, Shallow Footings)

The maximum allowable bearing capacity for this project overall is **1,850 pounds per square foot**. This value was calculated using rectangular/square foundation geometry and a factor of safety equal to 3 (FOS = 3).

#### **Potential Vertical Rise (Slab on Grade)**

The Potential Vertical Rise (PVR) calculations for the general soil profile were performed using the Texas Department of Transportation's (TxDOT) TEX 124-E method. Based on review of the soil log, water table observation, geometric configuration of the area, and typical climatic conditions of the area, zone of influence was estimated.

The calculated **PVR** value for the existing soil profile, based on the strata found and the existing conditions, was calculated to approximately **1.9 to 2.0 inches**. This value represents total vertical in-situ movements and does not consider differential swell between any two points on the ground; nor does it take into account movements caused by uncontrolled water sources such as poor drainage, migration of subsurface water from off-site locations, and utility line leaks. Typically, **PVR** values of around **1.0 inch (+/- 0.5 inch)** are considered acceptable for most at grade or shallow foundation designs. Based on the results of the PVR calculations, the project site soil conditions with the introduction of the proposed elements will not require any major earthwork to meet the typical PVR requirement. We recommend adherence to the recommendations as presented in the 'Earthwork Recommendations (Shallow Foundations – Prep. of Foundation Pads)' section.

#### **Post-Tensioning Institute (PTI) Slab Design Parameters**

The recommendations for foundation design criteria in this section have been calculated using the method described by the Post-Tensioning Institute manual, "Design of Post-Tensioned Slabs-on-Ground" Third Edition; also known as the PTI method. This method gives soil parameters for ribbed or uniform thickness (monolithic) foundations that can be used in the design of post-tensioned or traditionally reinforced foundations. The PTI method does not allow for the development of design parameters for collapsing soils or other highly unusual conditions. It must be emphasized that the determination of these parameters is based upon normal climate-moisture variance from season to season in the local area and are invalid when influenced to any significant degree by other conditions, including but not limited to those mentioned in the previous sections.

The edge moisture variation distances ( $e_m$ ) for the center and edge lift conditions were derived based on a Thornthwaite index of -30 for the project site. The Thornthwaite index is based on the average rainfall over a significant period of time (e.g. 20 or 30 years) in excess or deficit of the average evapotranspiration rates of the area. Other parameters and influencing variables were derived using information collected from the laboratory tests performed on the recovered soil samples as stated in the PTI guidelines for geotechnical exploration and laboratory testing schedule. Table 1 lists the PTI design parameters for a slab-on-grade foundation supported in the shallow surface soils.

	Center Lift Conditions		Edge Lift Conditions	
Equilibrium Soil Suction (pF)	Center Moisture Variation Distance $e_m$ (ft)	Est. Differential Movement $y_m$ (in)	Edge Moisture Variation Distance $e_m$ (ft)	Est. Differential Movement $y_m$ (in)
4.04	9.00	0.17	4.60	0.65

**Table 1 - Recommended PTI Slab Design Parameters**

*\*Incl. Foundation Improvements denoted in 'Earthwork Recommendations' section of this report*

### Wire Reinforcement Institute (WRI) Slab Design Parameters

The Wire Reinforcement Institute (WRI) method is an empirically derived foundation design method that was developed by observing slab performance over time and creating and modifying equations to give results which approximate foundation designs that exhibit the best results. While the WRI method deals only with foundations reinforced with reinforcing bars or welded wire reinforcement, the procedure has been developed to be independent of the type of reinforcement used.

The climatic rating reflects the stability of the moisture content which may be expected in the soil due to the climatic conditions which may vary from year to year. The effective design Plasticity Index was obtained by weighting the test values in each boring as described in the WRI procedures. The slope correction factor is based on the average slope of the tract of land. Since the slope is relatively small the adjustment factor was negligible. Table 2 lists these WRI design parameters for a slab-on-grade foundation supported in the shallow surface soils.

Effective PI	Climatic Rating	Slope Coefficient	Soil Support Index, C
20	15	1	0.94

**Table 2 - Recommended WRI Slab Design Parameters**

*\*Incl. Foundation Improvements denoted in 'Earthwork Recommendations' section of this report*

### **Earthwork Recommendations (Shallow Foundations – Prep. of the Foundation Pads)**

**B2Z** recommends the following earthwork recommendations within the foundation footprint areas:

- Clear and grub all vegetation, organic topsoil, and other miscellaneous debris up to a minimum of 5 feet beyond all proposed foundation pad areas.
- The exposed subgrade below the excavation to minimum depth of 12 inches shall be scarified, moisture conditioned and re-compacted to a minimum 95% of the maximum dry density, as determined by ASTM D-698 at a moisture content ranging from 0 to +3 percent of the optimum moisture content.
- The foundation shall be brought to grade (excavated area should then be filled) with ‘Select Fill’ or ‘Structural Fill’ that meets the requirements of the “General Construction Considerations – Select Fill and Structural Fill Recommendations” section of this report.

## PAVEMENT RECOMMENDATIONS

### **Background Information**

The pavement recommendations contained in this report were limited to the data recovered from the field and laboratory testing performed for the borings. No traffic loading data was presented for the future proposed parking lot and drives.

Our recommendations are based on design procedures found in the Army Corps of Engineers Manuals EM 1110-3-131 (Flexible Pavement Design), EM 1110-3-132 (Rigid Pavement Design), and our experience with similar soils and site conditions. The traffic composition used in our analysis was grouped under ‘Category I’, which is comprised of traffic essentially free of trucks (not more than 1% two-axle trucks). The road type selected was ‘Class D’, with a flat slope and low volume (under 1,000 average daily vehicles).

### **Subgrade Analysis**

The existing subgrade index properties (plasticity index and grain size) were used to correlate the Modulus of Soil Reaction (k) and the California Bearing Ratio (CBR) values of the subgrade. These values were then applied to the corresponding design procedures, according to the applicable Army Corps of Engineers manuals to determine the recommended minimum pavement thickness for flexible pavement designs. A subgrade k value of **200 pci** and a CBR value of **10** were utilized in the pavement designs.

### **Pavement Section Recommendations**

After completing the pavement designs and analyzing several options for construction, **B2Z** has provided the following recommendations within Tables 3 and 4 for pavement thickness:

Materials	Flexible Pavement Design Recommendation
Dense Graded Hot-Mix Asphalt (HMA)	<b>2.0 in.</b>
Flexible Base Material (See Options) (w/ Prime Coat atop Base)	<b>6.0 in.</b>
Stabilized Subgrade	<b>8.0 in.</b>

**Table 3 – Flexible Pavement Recommendation**

Materials	Rigid Pavement Design Recommendation	
	Light Duty	Heavy Duty
Reinforced Concrete Pavement (RCP)	<b>5.0 in.</b>	<b>6.0 in.</b>
Stabilized Subgrade	<b>8.0 in.</b>	<b>8.0 in.</b>

**Table 4 – Rigid Pavement Recommendation**

## **Pavement Material Specification Recommendations**

**Dense-Graded Hot-Mix Asphalt (HMA)** – This item shall meet the requirements of the TxDOT 2014 Special Specification Item 3076 (Dense-Graded Hot-Mix Asphalt). In addition, the item shall meet the requirements of the current TxDOT Pharr District General Notes.

**Reinforced Concrete Pavement (RCP)** – This item shall meet the requirements of the current TxDOT 2014 Specification Item 360 (Concrete Pavement). In addition, the item shall meet the requirements of the current TxDOT Pharr District General Notes. The concrete used for pavement shall meet the requirements of TxDOT Specifications Item 360 (Concrete Pavement) and Item 421 Hydraulic Cement Class P concrete, designed with a minimum average flexural strength of 570 psi or a minimum average compressive strength of 4,000 psi at 28 days (or as otherwise noted in the pertinent item). The hydraulic cement concrete properties shall be in accordance with the specification items previously outlined for the given class of concrete (temperature, slump, air content, etc.) The reinforcement shall consist of Grade 60 steel or better rebar distributions with a recommended minimum of 0.1% longitudinal and transverse steel in the cross-sectional area. This is equivalent to a reinforcing scheme of #3 rebar at 18 inch center to center spacing in both the transverse and longitudinal directions for a 6 inch slab. It is recommended that transverse and longitudinal contraction joints be spaced at a maximum 15 feet, saw cut to a depth of two (2) inches. We further recommend that all joints be sealed. It is very important the reinforcing steel is positioned correctly and properly supported with adequate materials to maintain the integrity of the reinforcement during the paving process.

**Prime Coat** – This item shall meet the requirements of the TxDOT 2014 Standard Specification Item 310 (Prime Coat). In addition, the item shall meet the requirements of the current TxDOT Pharr District General Notes.

**Flexible Base Material (Treated Caliche) (Option 1)** – This item shall meet the requirements of the TxDOT 2014 Standard Specification Item 247 (Flexible Base). In addition, the item shall meet the requirements of the current TxDOT Pharr District General Notes. If this item is selected for base, we recommend TxDOT Type E Grade 4 Flexible Base be used for this project composed of Caliche. If possible, we further recommend treatment of material with two (2) percent lime or Portland Cement by weight. Lime and cement treatments shall be in compliance with all applicable sections of TxDOT Item 260 and 275 specifications. Lime and cement treatments shall be in compliance with all applicable sections of TxDOT Item 260 and 275 specifications. Flexible base shall be compacted in the field as required by the referenced TxDOT specification item and/or TxDOT Pharr District General Notes. See requirements of this item in the “General Construction Considerations – Select Fill & Structural Fill Recommendations” section of this report.

**Flexible Base Material (Crushed Limestone) (Option 2)** – This item shall meet the requirements of the TxDOT 2014 Standard Specification Item 247 (Flexible Base). In addition, the item shall meet the requirements of the current TxDOT Pharr District General Notes. If this item is selected for base, we recommend TxDOT Type A Grade 1-2 Flexible Base be used for this project composed of Limestone. Flexible base shall be compacted in the field as required by the referenced TxDOT specification item and/or TxDOT Pharr District General Notes. See requirements of this item in the “General Construction Considerations – Select Fill & Structural Fill Recommendations” section of this report.

Stabilized Subgrade (Lime Treated) – This item shall meet the requirements of the current TxDOT 2014 Specification Item 260 (Lime Treatment (Road-Mixed)). In addition, the item shall meet the requirements of the current TxDOT Pharr District General Notes. Subgrade shall be compacted in the field as required by the referenced TxDOT specification item and/or TxDOT Pharr District General Notes. **B2Z** recommends compacted subgrade be treated through incorporation of a minimum two (2) percent lime by weight.

## **SEPTIC TANK FIELD RECOMMENDATIONS**

### **Background Information**

Through coordination with the Client, it is our understanding that an On-Site Sewage Facility (OSSF) is planned for the site which may use a Septic Tank Field (Leach Field) placed towards the back end (west side) of the property. This section of the report will provide the Soils Analysis (Soil Class) as required by Texas Administrative Code (TAC) Title 30 (Environmental Quality), Part 1 (Texas Commission on Environmental Quality (TCEQ)), Chapter 285 (OSSF), Subchapter D for OSSF.

### **Soil Class**

Our scope included the drilling of one (1) geotechnical boring (Boring B-LF-01) at or near the proposed location of the proposed OSSF and drilled to a depth of 6 feet below top of natural ground. Soil boring was drilled in accordance with ASTM D1452 and field testing / sample retrieval was performed at approximately 0.5-2 feet, 2.5-4 feet and 4.5-6 feet below natural ground. Laboratory testing of the soil samples retrieved from the soil survey included Atterberg Limits, -200 Sieve Gradation, Full Sieve Gradation and Moisture Content (in accordance with the applicable ASTM procedures). General results of the testing showed the on-site soils to be Average Moisture Content = 5-12%, Average Plasticity Index = 14-21 and Average Fines Content (-200 Sieve Gradation) = 35-47% for a United Soils Classification System (USCS) (in accordance with ASTM D2487) of Clayey Sand (SC) (with lean clay binder).

Engineering services completed as a function of this study were review of the soils information and guidelines of TCEQ Chapter 285, Subchapter D for OSSF facilities to determine accurate Soil Class. Based on review of all information gathered within this memo, we recommend the soils at this site (specific boring location) be considered Soil Class Ib. This class includes sand and loamy sand soils that contain less than or equal to 30% gravel.

## **GENERAL CONSTRUCTION CONSIDERATIONS**

### **Site Grading Recommendations**

Site grading plans can result in changes in almost all aspects of foundation recommendations. We have prepared the foundation recommendations based on the existing ground surface and the stratigraphic conditions encountered at the time of our study. We recommend gradual slopes away from foundations at structure locations to assist with site drainage, ponding, and any potential shrink/swell issues. Based on the upper site soils, erosion and slope sloughing, causing for periodic maintenance are limitations when utilizing 2:1 slopes or steeper. We recommend the use of 3:1 slopes (or flatter) for general site grading.

### **Site Drainage Recommendations**

Drainage is one of the most important aspects to be addressed to ensure the successful performance of any foundation. Positive surface drainage should be implemented prior to, during and maintained after construction to prevent water ponding at or adjacent to the proposed facilities. We advise that construction drainage programs be implemented to assist with standing waters from precipitation, general surface runoff or other moisture intrusion. It is recommended that the site design include site drainage features to channel runoff away from the proposed site location and most importantly away from all shallow foundations.

### **Site Preparation Recommendations**

The proposed site areas and all areas used to support foundation construction should be cleared and grubbed of all vegetation, organic topsoil and other miscellaneous debris up to a minimum of five (5) feet beyond the proposed site perimeters. This shall include the removal of all trees, brush, roots, weeds, or other organic debris that will interfere with construction. After clearing, the contractor should follow the earthwork procedures outlined in the ‘Foundation Recommendations’ section of this report. Any soft and/or compressible soft spots noted during compaction activities shall be over-excavated and replaced with Select Fill. All placements of Select Fill and Structural Fill shall be in accordance with the “General Construction Considerations – Select Fill & Structural Fill Recommendations” section of this report.

### **Select Fill & Structural Fill Recommendations**

Materials used for **Select Fill** (General Site Grading) shall meet the following requirements:

1. Soils classified according to the Unified Soils Classification System as SM, SC, GM, GC, CL, ML and combinations of these soils. These soils shall be free of organic material, topsoil, debris, or other deleterious material that cannot be properly compacted. In addition to the USCS classification, select materials shall have a **liquid limit of less than 40 and a plasticity index between 8 and 20**.
2. Soils classified as CH, MH, OH, OL and PT, under the USCS are not considered suitable for use as select fill materials at this site.
3. **BZZ** recommends additional quality control of all ‘General Site Fill’ materials as they are placed and compacted to ensure that they meet the requirements specified.

**Select Fill** shall be placed in lifts not to exceed 8 inches loose (6 inches compacted) and compacted to a minimum 95 percent of the maximum dry density as determined in accordance with ASTM D698. The water content of the fill shall be maintained within the range of optimum moisture to three (3) percentage points above the optimum moisture content until the fill is permanently covered. The fill should be properly compacted in accordance with these recommendations and tested for compaction as specified.

Materials used for **Structural Fill** shall meet the following requirements:

1. Soils classified as Base Material meeting the requirements of TxDOT 2014 Specification Item 247 Type E, Grade 4 - Caliche (see Table 5 for specifications & requirements) or Item 247 Type A, Grade 1-2 - Limestone (see Table 6 for specifications & requirements).
2. **B2Z** recommends additional quality control of all Structural Fill materials as they are placed and compacted to ensure that they meet the requirements specified.

**Structural Fill** shall be compacted to a minimum 98 percent of the maximum dry density as determined by the ASTM D698 at moisture contents ranging between minus two (-2) and plus two (+2) percentage points of the optimum moisture content. Structural Fill shall be placed in loose lifts not to exceed 8 inches (6 inches compacted). The fill should be properly compacted in accordance with these recommendations and tested for compaction as specified.

Gradation - Sieve Size	Percent Retained on Sieve
2"	0%
1/2"	20-60%
No. 4	40-75%
No. 40	70-90%
Laboratory Test	Limit Values
Max. PI:	15
Max. Wet Ball PI:	15
Wet Ball Mill Max Amount:	50
Min. Comp. Strength PSI:	150 at 15 PSI Lateral Pressure
Triaxial Test	Tex-117-E

**Table 5 – Structural Fill - Type E Grade 4 Specifications**

Gradation - Sieve Size	Percent Retained on Sieve
2"	0%
1 3/4"	0-10%
7/8"	10-35%
3/8"	30-65%
No. 4	45-75%
No. 40	65-90%
Laboratory Test	Limit Values
Max. PI / Max. LL:	10 / 40
Wet Ball Mill Max Amount:	40
Min. Comp. Strength PSI:	35 at 0 PSI Lateral Pressure 175 at 15 PSI Lateral Pressure
Triaxial Test	Tex-117-E

**Table 6 – Structural Fill - Type A Grade 1-2 Specifications**

### **Excavation, Sloping, Benching and Utility Considerations**

If trenches are to extend to or below a depth of five (5) ft, the contractor or persons doing the trenching should adhere to the current Occupational Health and Safety Administration (OSHA) guidelines on trench excavation safety and protection measures or other applicable industry standards. The collection of specific geotechnical data and development of a plan for trench safety, sloping, benching or various types of temporary shoring, is beyond the scope of the this study. Utilities that protrude through the slab-on-grade should be designed with some degree of flexibility or with sleeves. Such features will help reduce the risk of damage to utility facilities from soil movements related to shrinkage and expansion.

### **Maintenance Recommendations (Slab on Grade)**

It is important to stress the fact that maintenance of Slab on Grade foundations will help to reduce the potential for structural damage in the present and for the life of the structure. Maintenance can include, but is not limited to procedures such as:

1. Ensure positive drainage around the perimeter of the foundation through site grading
2. Incorporate paving or sidewalks adjacent to foundations for moisture protection
3. Do not plant vegetation closer to the foundation than its mature height
4. Extend canopies or roof drains away from foundation to prevent ponding near foundation
5. Avoid excess wetting or drying of soils around foundations

### **Miscellaneous Pavement Recommendations**

Adequate perimeter drainage is essential for long-term performance of any pavement structure. Infiltration of surface water from unpaved areas surrounding the pavement should be minimized. Base materials under curb and gutters should be compacted to the same requirements as other areas. It is recommended that these curb and gutters be extended through the base and a minimum of three (3) inches into the subgrade. This will reduce the potential of intrusion of moisture from adjacent areas. An adequate seal should be provided at all base-asphalt interfaces.

A maintenance plan is recommended for the long-term performance of paved areas. Asphaltic pavements have a tendency to strip and become oxidized with exposure to the elements. Thus cracks may become present in the pavement. It is recommended that a maintenance schedule of biannual crack sealing, fog seals and overlays every five to ten years be used over the life of the pavement.

## REFERENCES

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15. Post-Tensioning Institute, 2004, "Design of Post-Tensioned Slabs on Ground", Phoenix, AZ.
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## **APPENDIX A – FIGURES**

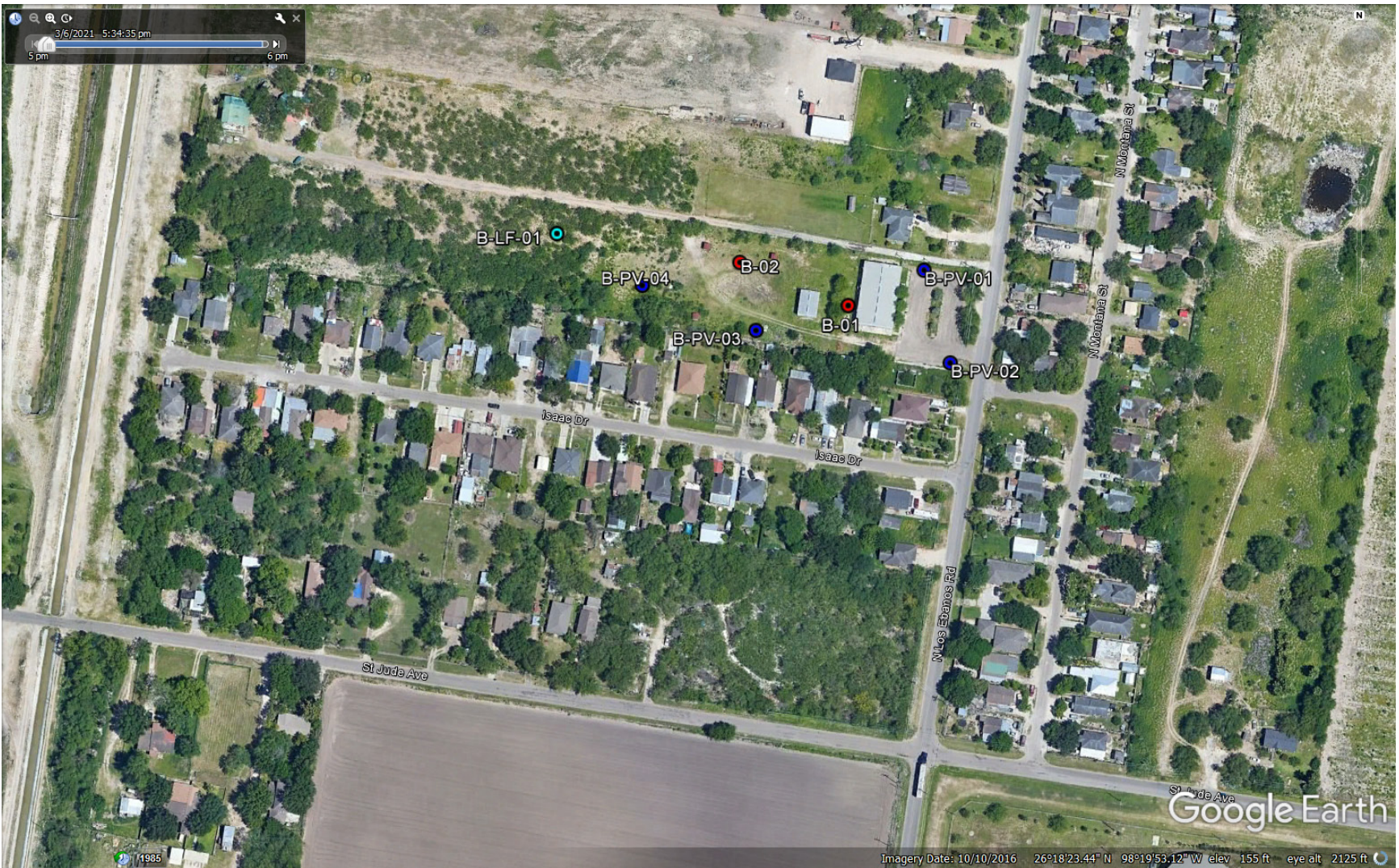


Figure 1 – Boring Location Map (Google Earth Imagery)

## **APPENDIX B – BORING LOGS & GRADATION CURVES**

CLIENT Hidalgo County Pct 3

PROJECT NAME El Paraiso Project

PROJECT NUMBER 3101

PROJECT LOCATION Hidalgo County

**LITHOLOGIC SYMBOLS**  
*(Unified Soil Classification System)*



CH: USCS High Plasticity Clay



CL: USCS Low Plasticity Clay



SC: USCS Clayey Sand

**SAMPLER SYMBOLS**



Standard Penetration Test

**WELL CONSTRUCTION SYMBOLS**

**ABBREVIATIONS**

LL - LIQUID LIMIT (%)  
 PI - PLASTIC INDEX (%)  
 W - MOISTURE CONTENT (%)  
 DD - DRY DENSITY (PCF)  
 NP - NON PLASTIC  
 -200 - PERCENT PASSING NO. 200 SIEVE  
 PP - POCKET PENETROMETER (TSF)

TV - TORVANE  
 PID - PHOTOIONIZATION DETECTOR  
 UC - UNCONFINED COMPRESSION  
 ppm - PARTS PER MILLION  
 Water Level at Time Drilling, or as Shown  
 Water Level at End of Drilling, or as Shown  
 Water Level After 24 Hours, or as Shown

**CLIENT** Hidalgo County Pct 3 **PROJECT NAME** El Paraiso Project  
**PROJECT NUMBER** 3101 **PROJECT LOCATION** Hidalgo County  
**DATE STARTED** 11/8/22 **COMPLETED** 11/8/22 **GROUND ELEVATION** 168 ft **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** B2Z Engineering, LLC **GROUND WATER LEVELS:**  
**DRILLING METHOD** Solid Stem Auger **AT TIME OF DRILLING** --- No Waterstrike Encountered  
**LOGGED BY** JS **CHECKED BY** HC **AT END OF DRILLING** ---  
**NOTES** GPS 26°18'20.21"N, 98°19'39.40"W (Approx. Elev.) **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(CL) Sandy Lean Clay, Lt. Brown, Stiff, Dry	SPT 1		4-5-7 (12)			13	48	19	30	69
		(SC) Clayey Sand, Lt. Grayish Brown, Med. Dense, Dry	SPT 2		10-7-4 (11)			11				40
5		(SC) Clayey Sand, Lt. Brown to Brwon, Very Loose to Loose, Dry to Moist	SPT 3		3-2-2 (4)			14	36	15	22	
			SPT 4		2-3-5 (8)			17				49
10		(SC) Clayey Sand, Brown to Tan, Med. Dense, Moist	SPT 5		5-10-17 (27)			20	47	22	25	
15			SPT 6		8-9-13 (22)			25				37
20		(CH) Sandy Fat Clay, Brown, w/ Calcareous Nodules, Hard, Moist	SPT 7		9-18-30 (48)			27	115	42	73	60
Bottom of borehole at 20.0 feet.												

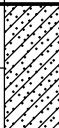
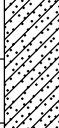
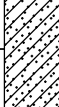
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**CLIENT** Hidalgo County Pct 3 **PROJECT NAME** El Paraiso Project  
**PROJECT NUMBER** 3101 **PROJECT LOCATION** Hidalgo County  
**DATE STARTED** 11/8/22 **COMPLETED** 11/8/22 **GROUND ELEVATION** 167 ft **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** B2Z Engineering, LLC **GROUND WATER LEVELS:**  
**DRILLING METHOD** Solid Stem Auger **AT TIME OF DRILLING** --- No Waterstrike Encountered  
**LOGGED BY** JS **CHECKED BY** HC **AT END OF DRILLING** ---  
**NOTES** GPS 26°18'20.90"N, 98°19'41.33"W (Approx. Elev.) **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(SC) Clayey Sand, Brown to Lt. Brown, w/ Calcareous Nodules & Streaks, Loose, Dry to Moist	SPT 1		6-5-5 (10)			7				42
			SPT 2		4-3-3 (6)			11				50
5			SPT 3		4-5-5 (10)			16	35	17	18	
		(CH) Sandy Fat Clay, Lt. Grayish Brown w/ Black Mottles, w/ Calcareous Nodules & Streaks, Very Stiff, Moist	SPT 4		5-8-12 (20)			16				53
			SPT 5		7-9-10 (19)			21	67	23	44	
10			SPT 6		4-12-15 (27)			26				64
15			SPT 7		13-23-31 (54)			13	56	23	34	88
20		(CH) Fat Clay, Lt. Brown w/ Black Mottles, w/ Calcareous Nodules, Hard, Moist										
Bottom of borehole at 20.0 feet.												

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**CLIENT** Hidalgo County Pct 3 **PROJECT NAME** El Paraiso Project  
**PROJECT NUMBER** 3101 **PROJECT LOCATION** Hidalgo County  
**DATE STARTED** 11/8/22 **COMPLETED** 11/8/22 **GROUND ELEVATION** 169 ft **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** B2Z Engineering, LLC **GROUND WATER LEVELS:**  
**DRILLING METHOD** Solid Stem Auger **AT TIME OF DRILLING** --- No Waterstrike Encountered  
**LOGGED BY** JS **CHECKED BY** HC **AT END OF DRILLING** ---  
**NOTES** GPS 26°18'21.35"N, 98°19'44.58"W (Approx. Elev.) **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(SC) Clayey Sand, Brown to Lt. Grayish Brown, Loose, Dry to Moist										
			SPT 1		4-5-4 (9)			5	39	18	21	35
			SPT 2		3-3-3 (6)			12				47
5			SPT 3		4-4-4 (8)			12	30	16	14	44

Bottom of borehole at 6.0 feet.

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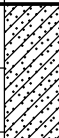


**CLIENT** Hidalgo County Pct 3 **PROJECT NAME** El Paraiso Project  
**PROJECT NUMBER** 3101 **PROJECT LOCATION** Hidalgo County  
**DATE STARTED** 11/8/22 **COMPLETED** 11/8/22 **GROUND ELEVATION** 168 ft **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** B2Z Engineering, LLC **GROUND WATER LEVELS:**  
**DRILLING METHOD** Solid Stem Auger **AT TIME OF DRILLING** --- No Waterstrike Encountered  
**LOGGED BY** JS **CHECKED BY** HC **AT END OF DRILLING** ---  
**NOTES** GPS 26°18'20.77"N, 98°19'38.06"W (Approx. Elev.) **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0												
		(SC) Clayey Sand, Dk. Brown to Brown, Med. Dense to Very Loose, Moist	SPT 1		4-4-8 (12)			12	24	17	7	33
			SPT 2		3-2-2 (4)			13				
5		(CL) Sandy Lean Clay, Brown, Med. Stiff, Moist	SPT 3		3-3-4 (7)			17	36	16	20	51

Bottom of borehole at 6.0 feet.

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**CLIENT** Hidalgo County Pct 3 **PROJECT NAME** El Paraiso Project  
**PROJECT NUMBER** 3101 **PROJECT LOCATION** Hidalgo County  
**DATE STARTED** 11/8/22 **COMPLETED** 11/8/22 **GROUND ELEVATION** 168 ft **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** B2Z Engineering, LLC **GROUND WATER LEVELS:**  
**DRILLING METHOD** Solid Stem Auger **AT TIME OF DRILLING** --- No Waterstrike Encountered  
**LOGGED BY** JS **CHECKED BY** HC **AT END OF DRILLING** ---  
**NOTES** GPS 26°18'19.29"N, 98°19'37.59"W (Approx. Elev.) **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0												
		(SC) Clayey Sand, Lt. Brown to Brown, w/ Traces of Fine Gravel, Med. Dense to Loose, Dry	SPT 1		11-11-15 (26)			5	28	16	12	
			SPT 2		6-3-2 (5)			7	27	16	11	42
5		(CL) Sandy Lean Clay, Brown, w/ Calcareous Nodules, Med. Stiff, Moist	SPT 3		3-3-4 (7)			16				52

Bottom of borehole at 6.0 feet.

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**CLIENT** Hidalgo County Pct 3 **PROJECT NAME** El Paraiso Project  
**PROJECT NUMBER** 3101 **PROJECT LOCATION** Hidalgo County  
**DATE STARTED** 11/8/22 **COMPLETED** 11/8/22 **GROUND ELEVATION** 167 ft **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** B2Z Engineering, LLC **GROUND WATER LEVELS:**  
**DRILLING METHOD** Solid Stem Auger **AT TIME OF DRILLING** --- No Waterstrike Encountered  
**LOGGED BY** JS **CHECKED BY** HC **AT END OF DRILLING** ---  
**NOTES** GPS 26°18'19.81"N, 98°19'41.04"W (Approx. Elev.) **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0												
		(SC) Clayey Sand, Brown to Lt. Grayish Brown, w/ Calcareous Nodules, Loose, Dry to Moist	SPT 1		6-5-4 (9)			6	23	17	6	35
			SPT 2		3-3-2 (5)			11				
5			SPT 3		2-3-5 (8)			15	36	15	21	45

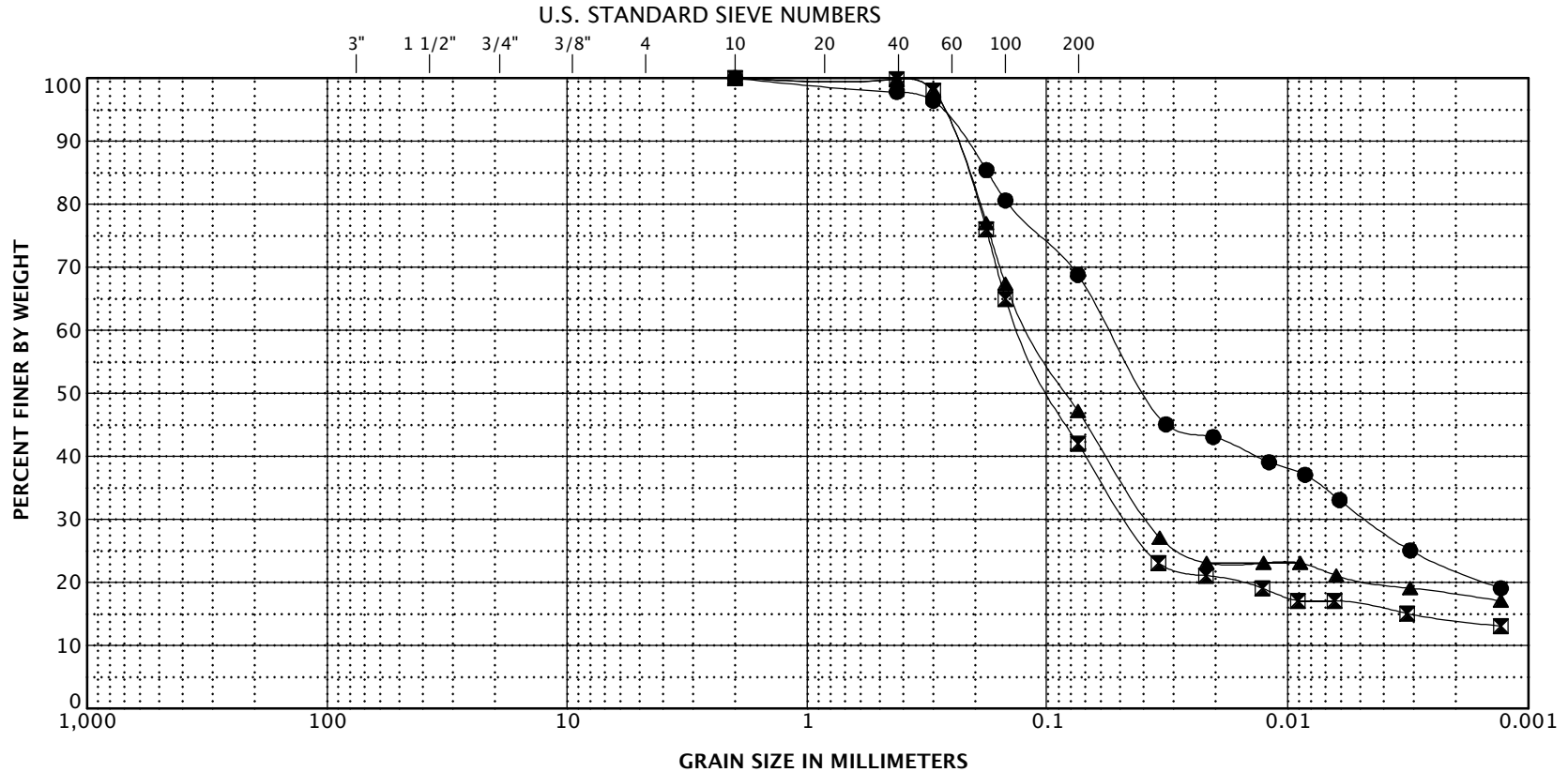
Bottom of borehole at 6.0 feet.

**CLIENT** Hidalgo County Pct 3 **PROJECT NAME** El Paraiso Project  
**PROJECT NUMBER** 3101 **PROJECT LOCATION** Hidalgo County  
**DATE STARTED** 11/8/22 **COMPLETED** 11/8/22 **GROUND ELEVATION** 168 ft **HOLE SIZE** 4 inches  
**DRILLING CONTRACTOR** B2Z Engineering, LLC **GROUND WATER LEVELS:**  
**DRILLING METHOD** Solid Stem Auger **AT TIME OF DRILLING** --- No Waterstrike Encountered  
**LOGGED BY** JS **CHECKED BY** HC **AT END OF DRILLING** ---  
**NOTES** GPS 26°18'20.53"N, 98°19'43.06"W (Approx. Elev.) **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		(SC) Clayey Sand, Brown to Lt. Brown, w/ Calcareous Nodules, Loose, Dry to Moist	SPT 1		7-5-3 (8)			8	36	17	19	
			SPT 2		3-3-3 (6)			17	27	15	12	45
5			SPT 3		3-4-6 (10)			16				45

Bottom of borehole at 6.0 feet.

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BOULDERS	COBBLES	GRAVEL		SAND			FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY

KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	D90	D60	D50	D30	D10	GRAVEL (PERCENT)	SAND (PERCENT)	SILT (PERCENT)	CLAY (PERCENT)
●	B-1	0.5		0.22	0.05	0.038	0.005		0	31	38	31
■	B-2	0.5		0.25	0.13	0.095	0.046		0	58	26	16
▲	B-LF-1	2.5		0.25	0.12	0.083	0.038		0	53	27	20



**GRAIN-SIZE TEST RESULTS**

EL PARAISO PROJECT  
HIDALGO COUNTY

**FIGURE**

Pavement Depth Info (from Borings)

Boring Log #	ACP Thickness (in.)	Flexible Base Thickness (in.)
B-PV-01	1.5	12

## **APPENDIX C – REFERENCE DOCUMENTS (FROM CLIENT)**



EL PARAISO PROJECT  
PRELIMINARY DESIGN  
HIDALGO COUNTY | PRECINCT 3

APRIL 5, 2022

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# EXISTING PROJECT SITE



EXISTING PROJECT SITE   100 ft.

APRIL 5, 2022

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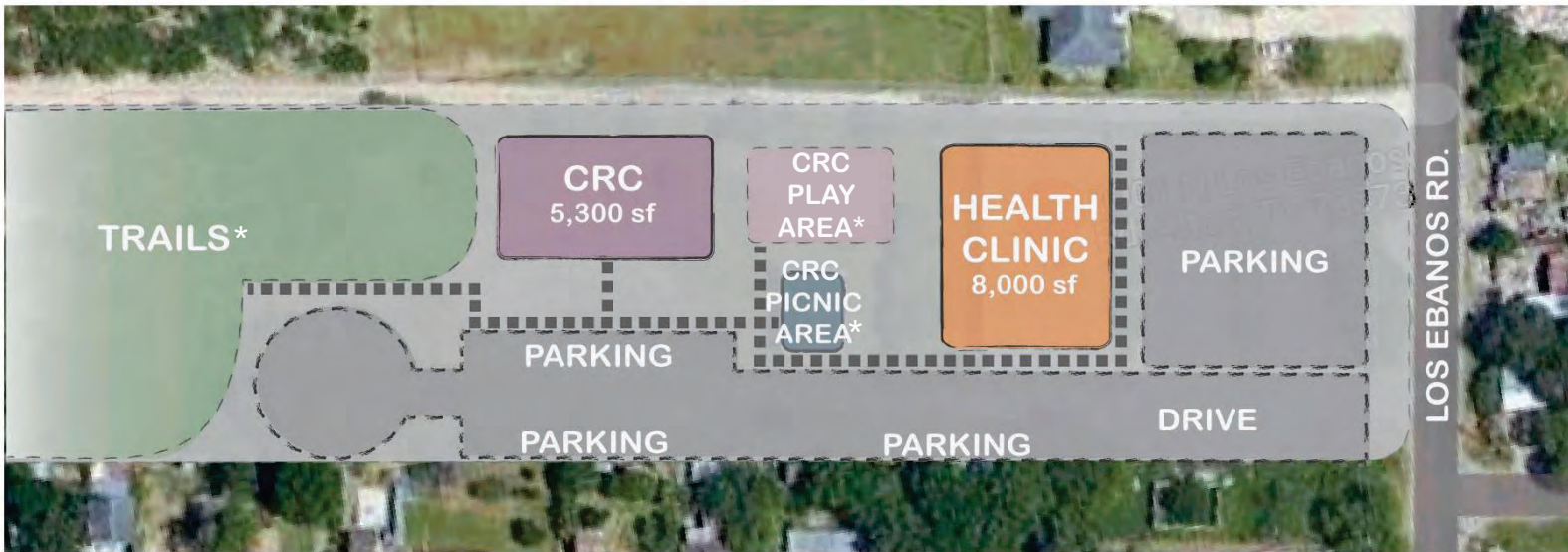


# BUILDING PROGRAM SQUARE FOOTAGES

DEPARTMENT	PROGRAMMED SQUARE FEET	PHASE
HEALTH CLINIC & INDIGENT CARE	8,000 SF	PRELIMINARY DESIGN
COMMUNITY RESOURCE CENTER (CRC)	5,300 SF	PRELIMINARY DESIGN
TOTAL	13,300 SF	



# PROPOSED SITE PLAN



## PROPOSED SITE



100 ft.

■■■ WALKING PATH

\* = EXCLUDED FROM HEALTH CLINIC AND CRC COST OF WORK

APRIL 5, 2022

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