GEOTECHNICAL ENGINEERING STUDY
Single Family Residence
1062 Colt Road, Lot 28 & 27
Springtown, Texas 76082

Prepared For

Mr. Bill Cherry
Owner
Cherry Built
1012 Platinum Court,
Weatherford, TX 76088

Prepared by:

PC Geotec LLC
14031 Vally Mills Dr, Frisco, TX 75033

PC Geotec Report No. 25G-017

January 12, 2026

14031 Vally Mills Dr.
Frisco, TX 75033

January 12, 2026
PC Geotec Project No. 25G-017

Mr. Bill Cherry
Owner
Cherry Built
1012 Platinum Court,
Weatherford, TX 76088

cherrybuilt@gmail.com
Ph: 682-333-9997

Subject: **GEOTECHNICAL ENGINEERING STUDY**
Single Family Residence
1062 Colt Road, Lot 28 & 27, Springtown, Texas 76082

Dear Mr. Cherry:

PC Goetec LLC has completed the authorized subsurface exploration and geotechnical engineering evaluation for the subject project.

Our engineering analysis as well as the results of the field exploration and laboratory testing are included in this report. Our firm is interested in providing the construction material testing (CMT) that will be required during the construction phase of the project.

We appreciate the opportunity to be of assistance on this project. Please feel free to contact us if you have any questions or if we can be of further service.

Sincerely,

PC Geotec
Texas Board of Professional Engineers Firm Reg, F-27009

Partheeban Selvarajah, P.E.
Geotechnical Engineer

1/12/2026

Copies Submitted: 1 pdf (via email)

TABLE OF CONTENTS

INTRODUCTION AND SITE DESCRIPTION

This report presents the geotechnical engineering study including design and construction recommendations for the proposed new house at 1062 Colt Road (Lot 28 & 27) in Springtown, Texas. It is our understanding that a new single-story house with an area of approximately 5,500 square feet will be constructed at this site. A Site Vicinity Map and boring location plan is provided in Appendix A and labeled as Figure 1 and Figure 2, respectively. Topography of the site is relatively level and covered with vegetation consisting of bushes and small trees.

PURPOSE OF STUDY

The purpose of this study is to explore the subsurface conditions at the project site, perform laboratory testing on select recovered samples and provide geotechnical engineering recommendations to aid in the design and construction of foundation of proposed structure.

LIMITATIONS

Recommendations provided in this report were based on the limited borings and laboratory testing. Subsurface conditions at locations other than the boring locations may differ from those encountered at the boring locations. The variation in subsurface conditions including groundwater conditions may not be fully defined in this report. Our scope of work did not cover environmental studies of any kind.

This report was prepared for the exclusive use of the client based on the information provided while preparing a proposal. Our team should be given an opportunity to review the project plans to confirm that the recommendations provided in this report are incorporated into the design. We should be informed about any changes in the project plans following the submittal of this report.

EXPLORATORY BORING

Subsurface conditions at the site was evaluated by drilling three (3) borings at the site. Each borings were drilled to a depth of 20 feet on December 27, 2025. The approximate locations of the borings are shown on the Boring Location Plan (Figure 3) provided in Appendix A. The boring locations were selected after consultation with the client and were approved by the client. The boring was located in the field using hand-held GPS.

Borings were performed using track-mounted drill rig using continuous flight augers. Drilling was performed in accordance with ASTM D 1452. Sampling was performed in accordance with ASTM D 1586 procedures for performing the Standard Penetration Test

(SPT) or ASTM D 1587 for thin-walled tube sampling. Groundwater measurements at the boring was noted during drilling and at the completion of the drilling. Boring was backfilled with bentonite chips and soil cuttings.

Field logging of borings was conducted by the drill crew during the drilling operations. The final boring logs are provided in Appendix A of this report. Boring logs were prepared by Engineer based on field logs, visual observation of sample and laboratory testing. Soil strata boundaries shown on the boring logs are approximate. The stratification boundaries shown on the boring logs represent the approximate locations of the changes in the soil and rock types; in situ, the transition between material types may be gradual and indistinct. A key to terms and symbols used on the boring logs is included in Appendix A.

LABORATORY TESTING

Soil samples obtained from the subsurface exploration were visually observed by Geotechnical Engineer for classification and laboratory test assignments.

Index property testing such as water content, Atterberg limits, and percent passing No. 200 sieve were performed on select samples. The results of the index property tests are presented in the boring logs included in Appendix A. The laboratory testing was performed in accordance with applicable ASTM standards.

SUBSURFACE CONDITIONS

Geology

The earth materials underlying the project site have been regionally mapped as Paluxy Formation (Kpa). Paluxy Formation consists of interbedded claystone and siltstone.

General Stratigraphy

The generalized subsurface profile is developed based on field exploration and laboratory testing data.

Stratum I - This near-surface stratum was encountered at depths ranging from the ground surface to approximately 5 to 6 feet below grade, with its thickness varying across the site. The predominant soil type present in this stratum is CLAYEY SAND with varying amounts of fines. These soils are low to medium plastic. These soils have very stiff to hard or medium dense to dense in consistency.

Stratum II - This stratum varies in depth range from 6 feet to maximum depth explored (20 feet). The predominant soil type present in this stratum is partially cemented HIGHLY WEATHERED SILTSTONE with interbedded clay and sand seams. The Siltstone is soft to hard.

Groundwater

Boring was advanced using continuous flight augers. Groundwater seepage was monitored in the boring during drilling and on completion of drilling activities. Groundwater was not observed in boring during drilling activities on December 27, 2025.

The scope of work did not include long-term monitoring of groundwater conditions. Groundwater levels will often change significantly over periods of drought and rainfall. Seasonal conditions and temperature effect also contribute to groundwater fluctuations. Perched groundwater conditions may be present at the site when soil with higher permeability such as gravel, sand and silts are present above less permeable soil such as clay or bedrock. For these reasons, we recommend that the groundwater level should be verified immediately prior to construction.

This report does not include dewatering recommendations, if applicable. Dewatering during construction is the responsibility of the contractor.

DESIGN AND CONSTRUCTION RECOMMENDATIONS

Expansive Soils and Soil Moisture Variation

Expansive soils, often referred to as shrink-swell soils, can present significant challenges for building foundations due to their tendency to expand when wet and shrink when dry. Such volume changes can result in cracking/distress and structural damage if not properly designed. These clays rich in minerals such as montmorillonite are known for their ability to absorb water and expand. These soils Clays can shrink when they lose water and swell (grow in volume) when they gain water. Clays with a higher PI generally have a greater potential for soil volume changes due to moisture content variations. **The soils found at this site have low to medium swelling and shrinking potential.**

Potential vertical rise (PVR) was calculated using TxDOT method (Tex 124-E). Considering an active zone of 10-feet, **PVR was estimated to be 1 or less**.

Building Pad Recommendations

The building pad recommendations are as below:

- Strip away any existing vegetation, trees and tree roots (if any), topsoil, soft and wet materials and debris are removed and disposed of off-site.
- After excavation to the proposed grade, exposed subgrade should be proof rolled with a heavily loaded dump truck weighing at least 20 tons. Soft and compressible areas identified during proffrolling should be undercut to the depth recommended by Project Geotechnical Engineer and replaced with compacted on-site material to existing grades.

- Following proofroll, the excavated area should be scarified to a depth of 6 inches and compacted between 95 and 100 percent of maximum dry density with moisture content of 2 points of optimum and be compacted to a minimum of 95% of its Maximum Dry Density (MDD) determined by the Standard Proctor test, ASTM D 698.
- Field density tests should be taken at the rate of at least one test per each 2,500 square feet, per lift, in the area of all compacted fill. For areas where hand tamping is required, the testing frequency should be increased to approximately one test per lift, per 100 linear feet of area.

Foundation System

A foundation system consisting of slab-on-grade with stiffening beams is recommended for this site. The foundation elements including slab and beams should be designed specifically for the soil conditions encountered at this site. The design parameters for the post-tensioned slab on grade are given below. Also, the building pad and/or site must be improved as outlined in the previous report section. Also, the building pad and/or site must be improved as outlined in the previous report section.

The foundation should be designed with exterior and interior grade beams adequate to provide sufficient rigidity to the foundation system to sustain the vertical soil movements. The depth of the grade beam should be at least 2 feet and width should be 10 inches. A net allowable soil bearing pressure of 2,500 psf can be used for the native soils. The bottom of the beams should be free of any loose or soft material prior to the placement of the concrete. All grade beams and floor slabs should be adequately reinforced to minimize cracking as normal movements occur in the foundation soils. Grade beams may be thickened and widened at concentrated loads to serve as spread footings. It should be understood by all parties that a soil-supported foundation system will experience movement with time.

A moisture barrier of polyethylene sheeting or similar material should be placed between the slab and the subgrade soils to retard moisture migration through the slab. We recommend that at least a 10-mil vapor retarder be used under the slab. The vapor retarder should conform to ASTM E1745, Class C or better and shall have a maximum water vapor permeance of 0.044 perms when tested in accordance with ASTM E96. A 10 mil Stego Wrap by Stego Industries LLC or other similar products meeting these requirements would be acceptable.

PTI Parameters- Based on soil conditions encountered at the location of the test borings drilled for this site and referring to the Post Tensioning Institute (PTI), Design of Post-Tensioned Slabs-on-Ground, 3rd Edition, with 2008 Supplement, recommended

parameters for stiffened slab foundation design parameters are presented in the following table.

Table 2: PTI Slab Design Parameters

Edge Moisture Variation Distance e_m: Center lift: 9.0 ft Edge lift: 4.8 ft	Differential Movement y_m (in.) Center Lift: -0.7 Edge Lift: 1.0
Allowable Bearing Capacity, psf	2,500
Plasticity Index (PI)	0-15' PI: 20
Depth to constant Soil Suction:	Approximately 10-ft

The PTI differential soil movements estimates do not account for site preparation and vegetative influences, such as prior trees and residential landscaping, which can greatly influence foundation performance. The actual performance of slab-on-grade foundations will largely depend on actual soil moisture conditions, construction techniques, site preparation and landscaping. The construction of post-tensioned slabs requires close attention to detail during construction. We recommend that root barrier should be installed between trees and foundation in order to minimize the effect of absorption of moisture by trees from the subgrade foundation soils.

EARTHWORK RECOMMENDATIONS AND SPECIFICATIONS

Site Preparation

Existing topsoil, surficial vegetation including tree roots, organics and other debris should be cleared from building area. Any existing utilities should be relocated from the building area.

The building pad should then be constructed in accordance with the procedure described in the Building Pad Recommendation section of this report.

Drainage

Installation of a properly designed drainage system increases the life of the structure and pavement. Areas should be graded to prevent ponding adjacent to building, curbs or edges. Deeper bar ditch sections are likely to severely decrease the service life of a structure and pavement. The service life of the pavement may also be reduced due to water infiltration into foundation or subgrade soils through heave induced cracks.

Utility considerations

All utilities should be removed to a depth of at least 2 feet below the lowest anticipated depth of any new construction. Care should be taken that utility cuts are not left open for extended periods and that the cuts are properly backfilled. A positive cut-off at the building line is recommended to help prevent water migrating in the utility trench backfill from entering the building.

Design Measures to Reduce Changes in Soil Moisture

Although subgrade modification is recommended to reduce potential foundation movements, the design and construction of a grade-supported foundation should also include the following elements:

- Roof drainage should be controlled by gutters and carried well away from the structure. The ground surface adjacent to the building perimeter should be sloped and maintained a minimum of 5% grade away from the building for 10 feet to result in positive surface flow or drainage away from the building perimeter.
- Hose bibs, sprinkler heads, and other external water connections should be placed well away from the foundation perimeter such that surface leakage cannot readily infiltrate into the subsurface or compacted fills placed under the proposed foundations and slabs.
- No trees or other vegetation over six (6) feet in height shall be planted within 20 feet of the structure unless specifically accounted for in the foundation design.
- Utility bedding should not include gravel within four (4) feet of the perimeter of the foundation. Compacted clay or flowable fill trench backfill should be used in lieu of permeable bedding materials between 2 feet inside the building to a distance of four (4) feet beyond the exterior of the building edge to reduce the potential for water to infiltrate within utility bedding and backfill material.
- Paved areas around the structure are helpful in maintaining equilibrium within the soil water content. If possible, pavement and sidewalks should be located immediately adjacent to the building and sloped away from the building.
- Flower beds and planter boxes should be piped or water-tight to prevent water infiltration under the building. Experience indicates that landscape irrigation is a common source of foundation movement problems and pavement distress.
- Site work excavations should be protected and backfilled without delay to reduce changes in the natural moisture regime.

Flatwork Considerations

Minor differential movements between the planned structure and abutting sidewalks should be expected if the flatwork is supported on similar building pad conditions. Flatwork supported on the unimproved, natural site conditions will result in foundation movements of the magnitudes reported earlier in this report. We recommend that the

flatwork and the building be designed to include details that permit foundation movements without resulting in vertical separations and without distressing either element. Control joints should include steel reinforcing to prevent vertical shear, but to allow bending.

The flatwork and abutting sidewalks should be designed and constructed to allow for positive drainage away from the building foundation. The planned site grading should allow for potential future differential movements and should **never** be allowed to reach a level or negative slope that promotes drainage toward the foundation. If the potential differential movements cannot be tolerated, the Owner may wish to consider extending the foundation pad beneath the planned sidewalks and incorporating the flatwork as part of the foundation system.

Stem Walls and Retaining Walls – Not Included in Scope

The scope of this geotechnical engineering study is limited to providing recommendations for a slab-on-grade foundation system and associated earthwork for the proposed single-family residence. The evaluation, analysis, or design of stem walls, retaining walls, or any other structural wall systems is **not included** in this study. If stem walls, retaining walls, or other grade-separation structures are planned for this project, additional geotechnical evaluation and design recommendations should be requested so that appropriate wall design parameters, lateral earth pressures, drainage requirements, and global stability considerations can be provided.

Construction Materials Testing and Inspection

Construction materials testing and inspections shall be an integral part of the construction process to ensure compliance and conformity with the engineer's specification. It is our opinion that the following general specifications shall be adequate for quality control for this project:

- Earthwork, including compaction of paving areas: minimum one test per 2,500 SF of subgrade
- A minimum of one set of five cylinders for each 100 CY of concrete place

APPENDIX A

PC Geotec

Project Name: Single Family Residence

VICINITY MAP

Project Location: 1062 Colt Road, Lot 28 & 27, Springtown, Texas 76082

Client: Cherry Built Project No: 25G-017

Source: Map Data ©2026 Google Date:1/10/2026

FIGURE: 1

Project Name: Single Family Residence		BORING PLAN
Project Location: 1062 Colt Road, Lot 28 & 27, Springtown, Texas 76082		
Client: Cherry Built Project No: 25G-017		FIGURE: 2
Source: Map Data ©2026 Google	Date:1/10/2026	

PC Geotec
14031 Vally Mills Drive,Frisco, TX 75033
P: 808-221-3776

LOG OF BORING NO. B-1

FIGURE: 3

Project Name: Geotechnical Engineering Study - Single Family Residence
Project Location: 1062 Colt
Project No.: 25G-017
Client: Cherry Built

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/SPT	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.5+	**CLAYEY SAND (SC),** medium dense to dense, tan and brown - with gravel from 2 to 6'	16	35	13	22	43			
			13-11-12									
5'			34-50/6"									
			50/3"	**HIGHLY WEATHERED SILTSTONE,** soft to hard, tan, partially cemented - with interbedded sand and clay layers								
10'			42-50/6"									
			15-45-50/4"		16				72			
15'												
			50/6"		12	27	9	18	73			
20'				Termination depth = 20 ft.								
25'												
30'												
35'												
40'												

Completion Depth: 20'
Date Drilled: 12/27/2025
Water Level During Drilling: N/A
Water Level Upon Completion: N/A

PC Geotec
14031 Vally Mills Drive,Frisco, TX 75033
P: 808-221-3776

LOG OF BORING NO. B-2

FIGURE: 4

Project Name: Geotechnical Engineering Study - Single Family Residence
Project Location: 1062 Colt
Project No.: 25G-017
Client: Cherry Built

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/SPT	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.5+	**CLAYEY SAND (SC),** medium dense to very dense, tan and brown	9	32	13	19	43			
				- with gravel from 2 to 5'								
			14-26-42/2"									
5'					16	28	15	13	50			
			50/5"	**HIGHLY WEATHERED SILTSTONE,** soft to hard, tan, partially cemented								
				- with interbedded sand and clay layers								
			50/5.5"									
10'			50/3.5"									
			50/2.5"		10				57			
15'												
			50/4"									
20'												
				Termination depth = 20 ft.								
25'												
30'												
35'												
40'												

Completion Depth: 20'
Date Drilled: 12/27/2025
Water Level During Drilling: N/A
Water Level Upon Completion: N/A

PC Geotec
14031 Vally Mills Drive,Frisco, TX 75033
P: 808-221-3776

LOG OF BORING NO. B-3

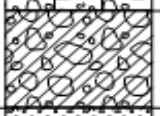
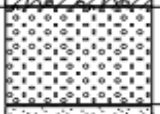
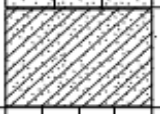
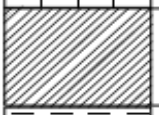
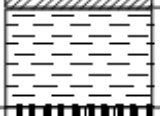
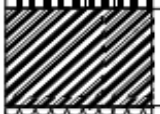
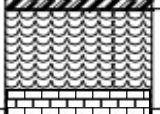
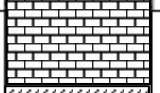
FIGURE: 5

Project Name: Geotechnical Engineering Study - Single Family Residence
Project Location: 1062 Colt Road, Lot 28 & 27, Springtown, Texas 76082
Project No.: 25G-017
Client: Cherry Built

Depth (feet)	Sample Type	Sample Type	Pocket Pen (tsf) REC/RQD (%) TCP/SPT	Stratum Description	Water Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Passing No.200 Sieve (%)	Unit Dry Weight (pcf)	UU, (tsf) Undrained Shear Strength	Uc, (tsf) Unconfined Strength
			4.0	**SANDY LEAN CLAY (SC), very stiff to hard**, tan and brown	25	37	14	23	58			
				- with gravel from 2 to 5'								
			15-50/5"									
5'												
			50/4"	**HIGHLY WEATHERED SILTSTONE,** soft to hard, tan, partially cemented								
				- with interbedded sand and clay layers								
			50/2.5"									
10'			50/5"		11				60			
			25-50/4"		12				80			
15'												
20'			50/2"									
				Termination depth = 20 ft.								
25'												
30'												
35'												
40'												

Completion Depth: 20'
Date Drilled: 12/27/2025
Water Level During Drilling: N/A
Water Level Upon Completion: N/A

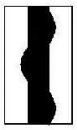
SOIL & ROCK CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
ROCK AND OTHERS				-	GRAY LIMESTONE, UNWETHERED
				-	SANDSTONE

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

FIGURE:__6__

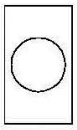
Sampler Graphics Legend



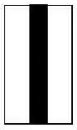
Auger Cuttings

Grab Sample

Modified California Sampler

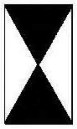


No Recoverey

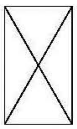


Rock Core

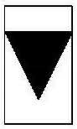
Shelby Tube



Standard Penetration Test

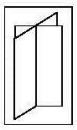


Split Spoon



Texas Cone Penetration

Undisturbed



Vane Shear

FIGURE:__7_