

**CITY OF KERRVILLE, TEXAS
RESOLUTION NO. 10-2021**

**A RESOLUTION AUTHORIZING THE CITY'S ACCEPTANCE OF
THE OWNERSHIP OF PRIVATE STREETS FOR PUBLIC USE;
SUCH STREETS LOCATED WITHIN THE KEYSTONE SECTION
THREE SUBDIVISION AND CONSISTING OF WILMINGTON
AVENUE, CRESWELL LANE, AND ROANOKE LANE;
AUTHORIZING THE CITY MANAGER TO TAKE ACTIONS TO
EFFECTUATE THE CONVEYANCE SUBJECT TO VARIOUS
CONDITIONS**

WHEREAS, the Keystone Section Three Subdivision ("Keystone"), whose entrance is off of Yorktown Boulevard and is located within the city of Kerrville, was developed as a residential subdivision with private streets; and

WHEREAS, Keystone consists of approximately 42 residential lots, is almost completely built out, and has an existing property owners association (the "Association"); and

WHEREAS, Keystone's private streets consist of Wilmington Avenue, Creswell Lane, and Roanoke Lane (the "Streets"), which are designated as Lot H pursuant to the plat filed at Volume 8, Pages 113-14 of the Kerr County Real Property Records; and

WHEREAS, the plat which created the Streets as Lot H, also reserved this lot as a public utility easement; and

WHEREAS, per the *Declaration of Restrictions, Covenants & Conditions of Keystone Section Three Subdivision* (the "Declaration"), filed at Volume 1761, Page 812 of the Kerr County Property Records, the Association owns various common interest within Keystone; and

WHEREAS, pursuant to the Special Warranty Deed filed at Volume 1778, Page 584 of the Kerr County Real Property Records, the developer of Keystone conveyed the Streets (Lot H) and two medians as Lots B and C to the Association; and

WHEREAS, the Association has requested that the City accept ownership of the Streets for public use and thus, pursuant to its powers and authority under the Declaration, seeks to convey the Streets (Lot H) and the two medians (Lots B and C) to the City; and

WHEREAS, following the Association's request, City staff inspected the Streets and the corresponding right-of-ways, to include sidewalks, to ensure that these improvements comply with the City's current public improvement standards, as to construction and size; and state and federal laws, as to accessibility, which staff confirms that they do; and

WHEREAS, City Council, based upon the facts presented above and the conditions required for the City's acceptance as specified below, believes it to be in the public interest to accept the Streets for public use and maintenance;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF KERRVILLE, KERR COUNTY, TEXAS:

SECTION ONE. The above findings are found to be true and correct.

SECTION TWO. City Council hereby directs the City Manager to effectuate the City's acceptance of the Streets for public use, subject to the following requirements and conditions:

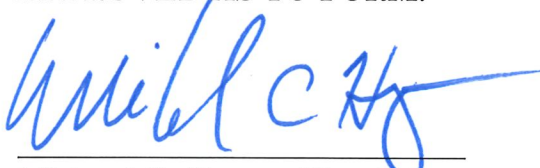
- a. The Association must present the City with proof, in a form acceptable to the City Attorney, that the Association, pursuant to the Declaration with respect to requirements for called meetings and votes, has approved the conveyance and dedication of the Streets and median areas to the City for public use; such Streets and median areas are more specifically defined by the plat filed at Volume 8, Pages 113-14, and the deed filed at Volume 1778, Page 584, both of which are filed in the Real Property Records of Kerr County (collectively referred to herein as the "Property"); and as depicted on the document attached hereto as **Exhibit A**;
- b. The City will accept the Property as a right-of-way easement (the "Easement") in a form acceptable to the City, with the limited right to use the Property as a public right-of-way, meaning that the Association will own the remaining rights to the Property;
- c. The Easement will also reaffirm the City's continued right to use the Streets as a public utility easement, as it is doing now, pursuant to the plat referenced above;
- d. Following the execution of the Easement, the Association shall file this Resolution and the Easement in the Real Property Records of Kerr County and provide proof of such filing to the City;

- e. The Association acknowledges, understands, and agrees that the City will maintain the Property in accordance with its standards for such, which may be amended. The City, however, is under no obligation to maintain the Property as currently configured to any standard and may at any time, with or without notice to the Association, and as an example, remove the medians in accordance with City policy or for safety or traffic concerns; and
- f. The authority granted hereby will remain effective for 180 days from the date that Council approved this Resolution, as specified below; should the conveyance of the Property not occur prior to the expiration of that time, the authority granted hereby will automatically expire.

PASSED AND APPROVED ON this the 09 day of March A.D.,
2021.


Bill Blackburn, Mayor

APPROVED AS TO FORM:


Michael C. Hayes, City Attorney

ATTEST:


Shelley McElhannon, City Secretary

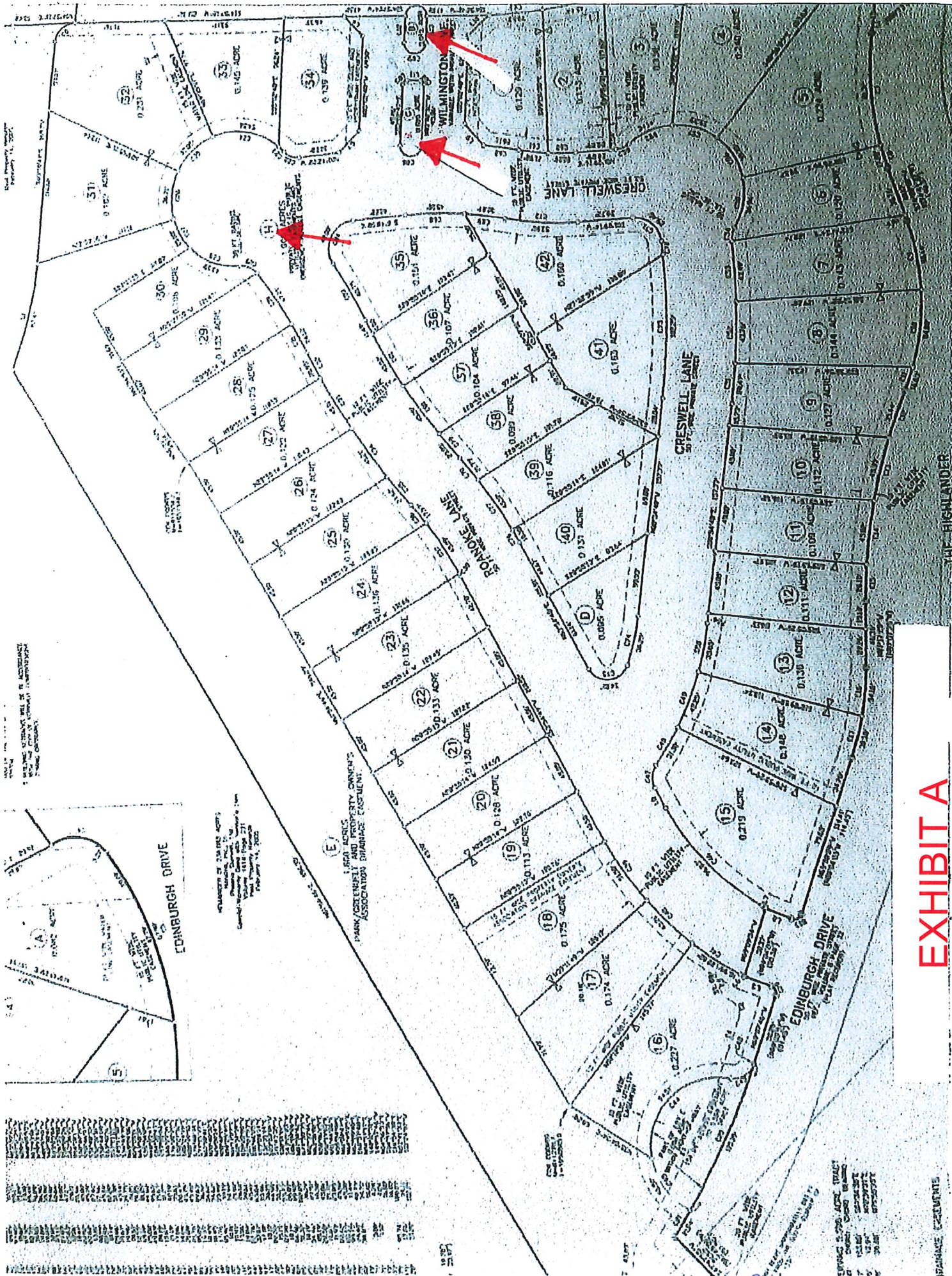
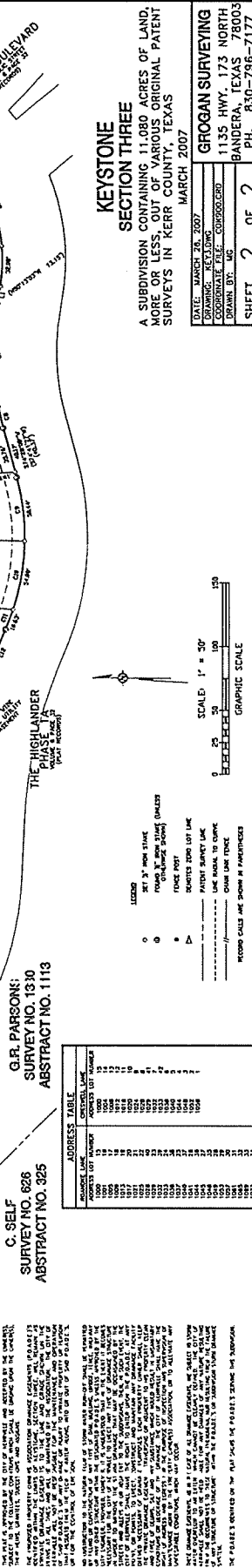


EXHIBIT A

RESO 10-2021



GROGAN SURVEYING
1135 HWY. 173 NORTH
BANDERA, TEXAS 78003
PH. 830-796-7177

DATE: MARCH 26, 2007
DRAWING: KET5.DWG
COORDINATE FILE: CORP000.CRD
DRAWN BY: MC
SHEET 2 OF 2

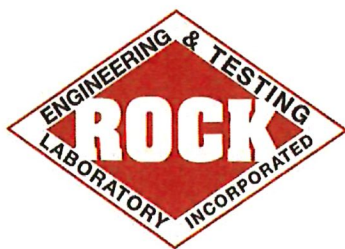
----- PATENT SURVEY LINE
----- LINE RADIAL TO CURVE
----- CHAIN LINE (TDC)
----- RECORD CALLS ARE SHOWN IN PARENTHESES

C. SELF
SURVEY NO. 626
ABSTRACT NO. 325

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- GEOTECHNICAL ENGINEERING
- CONSTRUCTION MATERIALS
ENGINEERING & TESTING
- SOILS • ASPHALT • CONCRETE

April 21, 2020

Keystone Section Three Property Owners Association
PO Box 293502
Kerrville, Texas 78028

Attention: Robert Gentry, President

SUBJECT: **PAVEMENT INVESTIGATION LETTER REPORT
KEYSTONE SECTION 3
KERRVILLE, TEXAS
RETL Project No.: 220139**

Dear Mr Gentry,

Introduction

In accordance with our agreement, Rock Engineering & Testing Lab, Inc. (RETL) has conducted a pavement investigation for the existing Keystone Section 3 roadways. The results of this investigation are to be found in this letter report, an electronic copy being transmitted herewith.

Proposal Authorization

The work for this project was performed in accordance with RETL Proposal No. P022120A, dated February 20, 2020. The proposal was approved and signed by Robert Gentry on February 26, 2020 and returned to RETL via email. Written authorization from Mr. Gentry to prepare a letter report was received on April 16, 2020.

Purpose and Scope

The purpose of this investigation was to identify the existing asphalt and base material thicknesses and the types of subgrade materials, compare the existing pavement section to the City of Kerrville Subdivision Standards and provide an evaluation of the section to support an 80,000-pound vehicle similar to a fire apparatus.

The scope of the investigation included performing pavement cores, field sampling, documentation and classification of the base and subgrade materials, performing DCP tests, performing laboratory tests and preparation of this letter report.

This report has been prepared for the exclusive use of Keystone Section Three Property Owners Association for the specific application to the exiting Keystone Unit 3 roadways in Kerrville, Texas.

General

The investigation of the pavement conditions reported herein is considered sufficient in detail and scope to determine the engineering properties of the existing pavements and subgrade materials, and to complete an engineering evaluation of the existing pavement section.

The Geotechnical Engineer states that the findings and opinions contained herein, have been presented after being prepared in a manner consistent with the level of care and skill ordinarily exercised by reputable members of the Geotechnical Engineer's profession practicing contemporaneously under similar conditions in the locality of the project. RETL operates in accordance with "*Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction*", (ASTM D3740). No other representations are expressed or implied, and no warranty or guarantee is included or intended.

Field Exploration

The field exploration to identify the existing pavement and subgrade conditions included performing asphalt coring, measuring asphalt and base material thickness, performing DCP tests, and obtaining samples of the base and subgrade materials. During the sample recovery operations, the materials encountered were classified and recorded in accordance with "*Standard Guide for Field Logging of Subsurface Exploration of Soil and Rock*", (ASTM D5434).

Six (6) cores were performed at the locations selected by RETL and were terminated at a depth of approximately 12 to 16-inches where rock was generally encountered. Upon completion of the coring operations, the core holes were patched with asphalt mix. A Core Location Plan is attached.

Dynamic Cone Penetrometer (DCP) Tests - Dynamic Cone Penetrometer (DCP) tests were performed on the subgrade materials below the pavement materials. The Kessler Dynamic Cone Penetrometer is a device used to estimate the strength characteristics of fine-grained soils, granular construction material, and weak stabilized or modified material. The device is driven into the soil by dropping a sliding 17.6-pound hammer from a height of 22.6-inches.

The depth of cone penetration is measured at selected penetration or hammer drop intervals and the soil shear strength is reported in terms of DCP index. The DCP index is based on the average penetration depth resulting from one blow of the 17.6-pound hammer.

The California Bearing Ratio (CBR) can be estimated using the DCP index. The penetration per blow, or penetration rate (PR), is then used to estimate the in-situ CBR, or shear strength, using the appropriate correlation depending on the soil type. The following correlations were provided by the DCP manufacturer, Kessler Soils Engineering Products, Inc., and have been recommended by the US Army Corps of Engineers:

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1. $CBR = 292 / PR^{1.12}$ (All soils except those listed in #2 and #3)
2. $CBR = 1 / (0.017019 * PR)^2$ (CL soils w/ CBR less than 10)
3. $CBR = 1 / (0.002871 * PR)$ (CH Soils)

PR= DCP Penetration Rate, mm per blow

It should be noted that a field DCP measurement results in a field, or in-situ, CBR and will not normally correlate with the laboratory, or soaked, CBR of the same material. The test is thus intended to evaluate the in-situ strength of a material under existing field conditions compared to controlled conditions in a lab.

Pavement Conditions

The types of pavement and subgrade materials encountered at the core locations have been visually classified and are described in detail on the Core Logs. Representative samples of the base and subgrade materials were placed in polyethylene bags and are now stored in the laboratory for further analysis, if desired. Unless notified to the contrary, all samples will be disposed of three months after issuance of this report.

The summary of the materials, as shown on the Core Logs represent the conditions at the actual coring locations. Variations may occur between or beyond the coring locations. It should be noted that, whereas the coring was performed by experienced personnel, it is sometimes difficult to record changes in materials within narrow limits.

Pavement Investigation Findings

The results of the pavement coring are provided in the following table:

PAVEMENT CORING RESULTS			
Core No.	HMAC Thickness (in.)	Base Thickness (in.)	Subgrade Classification
C-1	1.75	8	Silty Clayey Sand (SC-SM) CBR= 15+ to Refusal
C-2	3	3	Sandy Silt (ML) CRR= 15+ to Refusal
C-3	2	3	Sandy Silty Clay (CL-ML) CBR= Refusal
C-4	2.25	3	Silty Clayey Sand (SC-SM) CBR= 30+ to Refusal
C-5	2	3	Silty Clayey Sand (SC-SM) CBR= Refusal
C-6	2.5	5	Silty Clayey Sand (SC-SM) CBR= 20+ to Refusal

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Evaluation of Existing Pavements

The HMAC ranged from 1.75 to 3-inches in thickness with an average thickness of 2.25-inches. The base section was 3 to 8-inches in thickness with an average thickness of 4-inches. Limestone rock was generally encountered at 12 to 16-inches. The subgrade materials below the base and above the limestone rock were very similar to the base materials. It is possible that the base materials and subgrade materials above the rock were on-site processed weathered and/or competent limestone materials. Visual inspection of the approximately 9-year old pavements showed relatively no distress.

The City of Kerrville (COK) Subdivision Ordinance (2008) requires a minimum of 1.5 inches of HMAC, 8-inches of flexible base and 6-inches of compacted stabilized subgrade for a road servicing more than 20 subdivision lots. **Considering the thickness of the existing HMAC and base sections, the low plasticity and high bearing characteristics of the materials below the base, and the presence of shallow competent limestone rock, the existing pavements have a structural capacity equivalent to the required COK section.**

RETL has also evaluated the existing pavement section for loading conditions as described in Section 503.2.3 and Appendix D, Section D102, Part D102.1 of the 2015 International Fire Code, which states that facilities shall be "accessible to fire apparatus by way of an approved fire apparatus access road with an approved driving surface capable of supporting the imposed load of fire apparatus weighing at least 80,000 pounds". **RETL has determined that the existing pavement section will satisfy the above-described 80,000-pound loading requirement, even under saturated conditions.**

Closing

We appreciate the opportunity to provide our geotechnical engineering services. If there are any questions, please contact our office.

Sincerely,



Kyle D. Hammock, P.E.
Vice President - San Antonio

KDH/dr

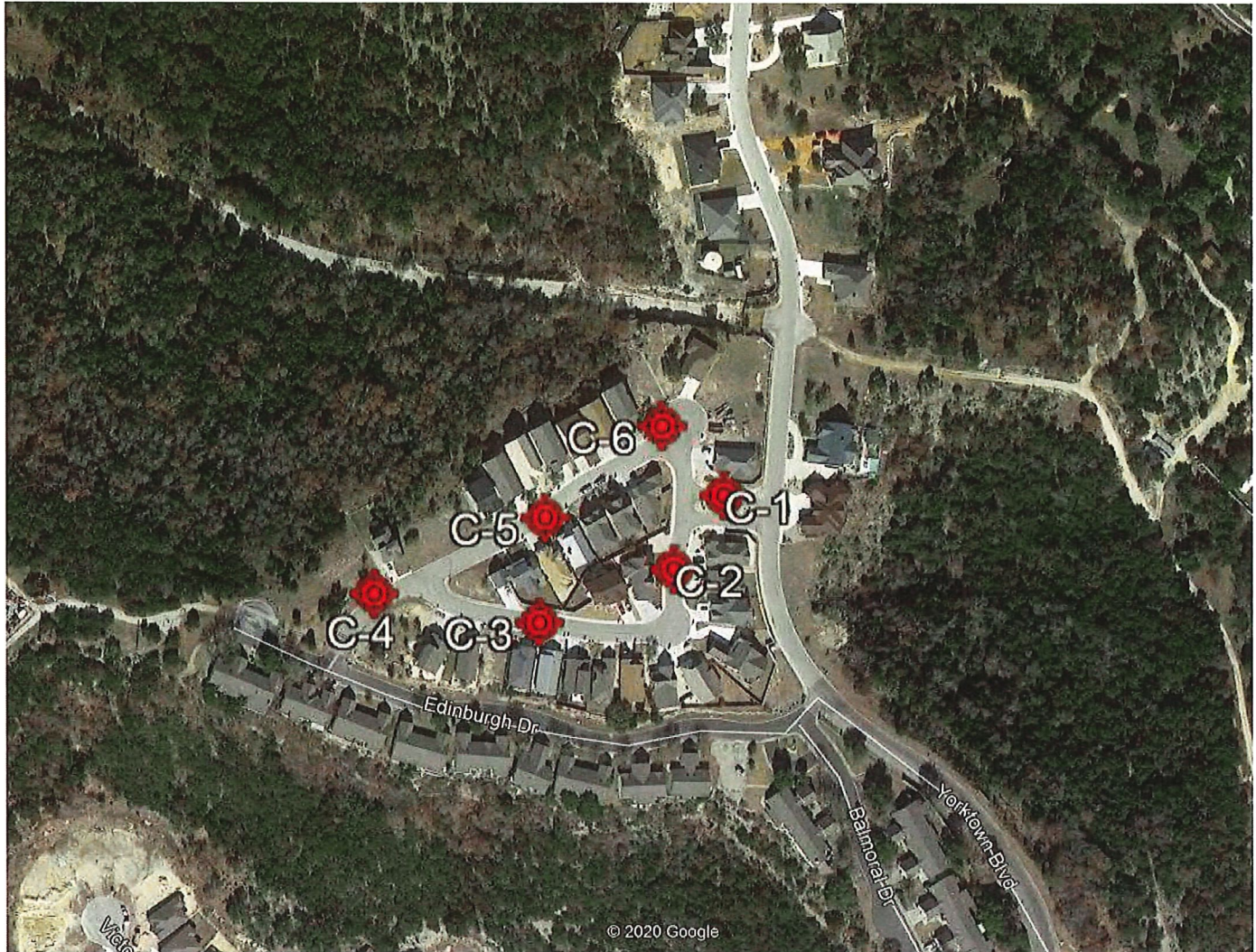


Attachments: Core Location Plan
Cores C-1 to C-6 Logs
DCP Results
Key to Soil Classifications

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CORE LOCATION PLAN

NO SCALE
CORE LOCATIONS ARE APPROXIMATE



April 21, 2020
Keystone Section 3 POA
RETL Project No.: 220139

PAVEMENT INVESTIGATION
Keystone Section 3
Kerrville, Texas



ROCK ENGINEERING AND TESTING LABORATORY, INC.
10856 VANDALE STREET
SAN ANTONIO, TEXAS 78216
(210) 495-8000

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LOG OF BORING C-1

SHEET 1 of 1



Rock Engineering & Testing Lab, Inc.
10856 Vandale Street
San Antonio, Texas 78216
Telephone: (210) 495-8000
Fax: (210) 495-8015

CLIENT: Keystone Section 3 Property Owners Assoc.
PROJECT: Keystone Section 3 Subdivision
LOCATION: Kerrville, Texas
NUMBER: 220139

DATE(S) DRILLED: 03/03/2020

DRILLING METHOD(S):
Pavement Coring / Hand Auger

GROUNDWATER INFORMATION:
Groundwater was not encountered during coring, nor measured upon the completion of the core.

SURFACE ELEVATION: N/A

DESCRIPTION OF STRATUM

ASPAHLT= 1.75-INCHES

SILTY CLAYEY SAND WITH GRAVEL BASE= 8-INCHES,
pale brown, dry.

SILTY CLAYEY SAND, with gravel, brown, slightly moist.
(SC-SM)

Core terminated at a depth of 16-inches.

FIELD DATA

LABORATORY DATA

SOIL SYMBOL	DEPTH (FT)	SAMPLE NUMBER	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: TONS/SQ FT Qc: TONS/SQ FT	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	MINUS NO. 200 SIEVE (%)
						LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
						LL	PL	PI			
		CORE S-1									
		CORE S-2			8						
	1	AUGER S-3			11	22	16	6			44

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:

Core location determined by RETL. Coring operations performed by RETL.
GPS Coordinates: N 30.06498°, W -99.13435°

LOG OF BORING C-2

SHEET 1 of 1



Rock Engineering & Testing Lab, Inc.
 10856 Vandale Street
 San Antonio, Texas 78216
 Telephone: (210) 495-8000
 Fax: (210) 495-8015

CLIENT: Keystone Section 3 Property Owners Assoc.
 PROJECT: Keystone Section 3 Subdivision
 LOCATION: Kerrville, Texas
 NUMBER: 220139

DATE(S) DRILLED: 03/03/2020

DRILLING METHOD(S):
 Pavement Coring / Hand Auger

GROUNDWATER INFORMATION:

Groundwater was not encountered during coring, nor measured upon the completion of the core.

SURFACE ELEVATION: N/A

DESCRIPTION OF STRATUM

ASPAHLT= 3-INCHES

SILTY CLAYEY SAND WITH GRAVEL BASE= 3-INCHES,
 pale brown, dry.

SANDY SILT, with gravel, pale brown, slightly moist. (ML)

Core terminated at a depth of 12.25-inches.

N - STANDARD PENETRATION TEST RESISTANCE
 Qc - STATIC CONE PENETROMETER TEST INDEX
 P - POCKET PENETROMETER RESISTANCE

REMARKS:

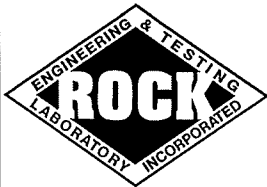
Core location determined by RETL. Coring operations performed by RETL.
 GPS Coordinates: N 30.06465°, W -99.13461°

LOG_OF_BORING_220139.LOGS.GPJ ROCK_ETL.GDT 3/23/20

RESO 10-2021

LOG OF BORING C-3

SHEET 1 of 1



Rock Engineering & Testing Lab, Inc.
10856 Vandale Street
San Antonio, Texas 78216
Telephone: (210) 495-8000
Fax: (210) 495-8015

CLIENT: Keystone Section 3 Property Owners Assoc.
PROJECT: Keystone Section 3 Subdivision
LOCATION: Kerrville, Texas
NUMBER: 220139

DATE(S) DRILLED: 03/03/2020

DRILLING METHOD(S):
Pavement Coring / Hand Auger

GROUNDWATER INFORMATION:
Groundwater was not encountered during coring, nor measured upon the completion of the core.

SURFACE ELEVATION: N/A

DESCRIPTION OF STRATUM

ASPAHLT= 2-INCHES

SILTY CLAYEY SAND WITH GRAVEL BASE= 3-INCHES,
pale brown, slightly moist.

SANDY SILTY CLAY, with gravel, pale brown, slightly moist.
(CL-ML)

Core terminated at a depth of 12-inches.

REMARKS:

Core location determined by RETL. Coring operations performed by RETL.
GPS Coordinates: N 30.06441°, W -99.13531°

FIELD DATA

LABORATORY DATA

SOIL SYMBOL	DEPTH (FT)	SAMPLE NUMBER	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: TONS/SQ FT Qc: TONS/SQ FT	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	MINUS NO. 200 SIEVE (%)
						LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
						LL	PL	PI			
		CORE S-1									
		CORE S-2			10						
		AUGER S-3			10	21	16	5			53

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

RESO 10-2021

LOG OF BORING C-4

SHEET 1 of 1



Rock Engineering & Testing Lab, Inc.
10856 Vandale Street
San Antonio, Texas 78216
Telephone: (210) 495-8000
Fax: (210) 495-8015

CLIENT: Keystone Section 3 Property Owners Assoc.
PROJECT: Keystone Section 3 Subdivision
LOCATION: Kerrville, Texas
NUMBER: 220139

DATE(S) DRILLED: 03/03/2020

DRILLING METHOD(S):
Pavement Coring / Hand Auger

GROUNDWATER INFORMATION:

Groundwater was not encountered during coring, nor measured upon the completion of the core.

SURFACE ELEVATION: N/A

DESCRIPTION OF STRATUM

ASPAHLT= 2.25-INCHES

SILTY CLAYEY SAND WITH GRAVEL BASE= 3-INCHES,
brown, slightly moist. (SC-SM)

SILTY CLAYEY SAND, with gravel, pale brown, slightly moist.

Core terminated at a depth of 12-inches.

REMARKS:

Core location determined by RETL. Coring operations performed by RETL.
GPS Coordinates: N 30.06454°, W 99.13617°

FIELD DATA

LABORATORY DATA

SOIL SYMBOL	DEPTH (FT)	SAMPLE NUMBER	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: TONS/SQ FT Qc: TONS/SQ FT	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	MINUS NO. 200 SIEVE (%)
						LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
						LL	PL	PI			
		CORE S-1									
		CORE S-2			10	20	16	4			42
		AUGER S-3			11						

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

RESO 10-2021

LOG OF BORING C-5

SHEET 1 of 1



Rock Engineering & Testing Lab, Inc.
10856 Vandale Street
San Antonio, Texas 78216
Telephone: (210) 495-8000
Fax: (210) 495-8015

CLIENT: Keystone Section 3 Property Owners Assoc.
PROJECT: Keystone Section 3 Subdivision
LOCATION: Kerrville, Texas
NUMBER: 220139

DATE(S) DRILLED: 03/03/2020

DRILLING METHOD(S):
Pavement Coring / Hand Auger

GROUNDWATER INFORMATION:
Groundwater was not encountered during coring, nor measured upon the completion of the core.

SURFACE ELEVATION: N/A

DESCRIPTION OF STRATUM

ASPAHLT= 2-INCHES

SILTY CLAYEY SAND WITH GRAVEL BASE= 3-INCHES,
pale brown, dry.

SILTY CLAYEY SAND, with gravel, pale brown, dry. (SC-SM)

Core terminated at a depth of 12-inches.

FIELD DATA

LABORATORY DATA

SOIL SYMBOL	DEPTH (FT)	SAMPLE NUMBER	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: TONS/SQ FT Qc: TONS/SQ FT	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	MINUS NO. 200 SIEVE (%)
						LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX			
						LL	PL	PI			
		CORE S-1									
		CORE S-2			8						
		AUGER S-3			9	20	15	5			35

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:

Core location determined by RETL. Coring operations performed by RETL.
GPS Coordinates: N 30.06488°, W -99.13528°

RESO 10-2021

LOG OF BORING C-6

SHEET 1 of 1



Rock Engineering & Testing Lab, Inc.
10856 Vandale Street
San Antonio, Texas 78216
Telephone: (210) 495-8000
Fax: (210) 495-8015

CLIENT: Keystone Section 3 Property Owners Assoc.
PROJECT: Keystone Section 3 Subdivision
LOCATION: Kerrville, Texas
NUMBER: 220139

DATE(S) DRILLED: 03/03/2020

DRILLING METHOD(S):
Pavement Coring / Hand Auger

GROUNDWATER INFORMATION:
Groundwater was not encountered during coring, nor measured upon the completion of the core.

SURFACE ELEVATION: N/A

DESCRIPTION OF STRATUM

ASPAHLT= 2.5-INCHES

SILTY CLAYEY SAND WITH GRAVEL BASE= 5-INCHES,
pale brown, dry. (SC-SM)

SILTY CLAYEY SAND, with gravel, pale brown, dry.

Core terminated at a depth of 13.5-inches.

N - STANDARD PENETRATION TEST RESISTANCE
Qc - STATIC CONE PENETROMETER TEST INDEX
P - POCKET PENETROMETER RESISTANCE

REMARKS:

Core location determined by RETL. Coring operations performed by RETL.
GPS Coordinates: N 30.06529°, W -99.13467°

LOG_OF_BORING_220139 LOGS.GPJ ROCK_ETL.GDT 3/23/20

RESO 10-2021

DCP TEST DATA

Project: 220139

Location: C-1

Date: 3-Mar-20

Soil Type(s): SC-SM

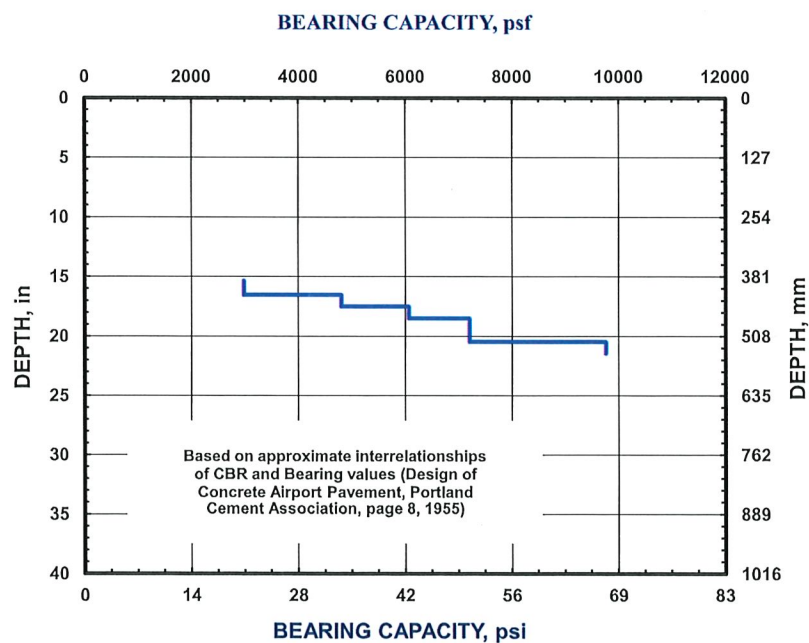
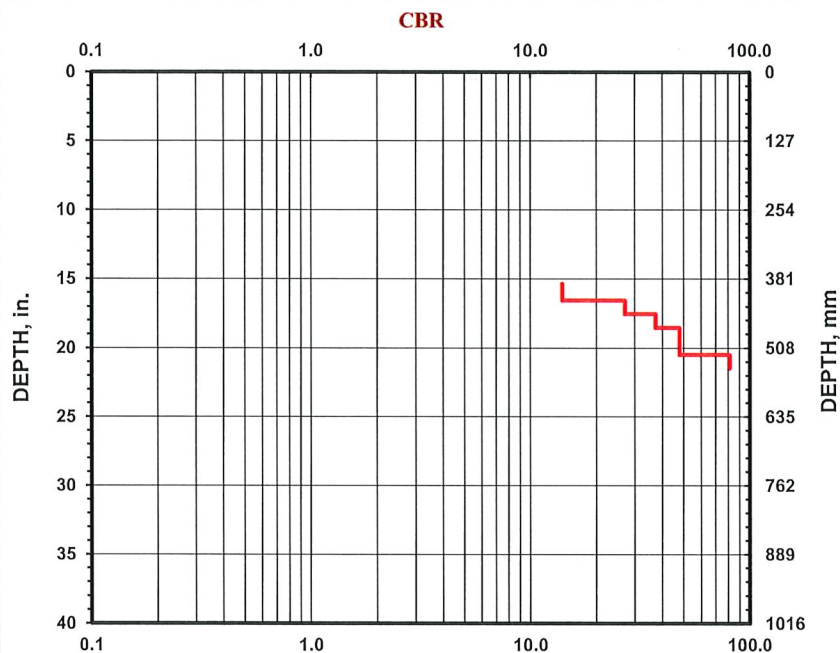
Hammer
☐ 10.1 lbs.
☒ 17.6 lbs.
☐ Both hammers used

Soil Type

☐ CH

☐ CL

☒ All other soils

[illegible]

RESO 10-2021

DCP TEST DATA

Location: C-2

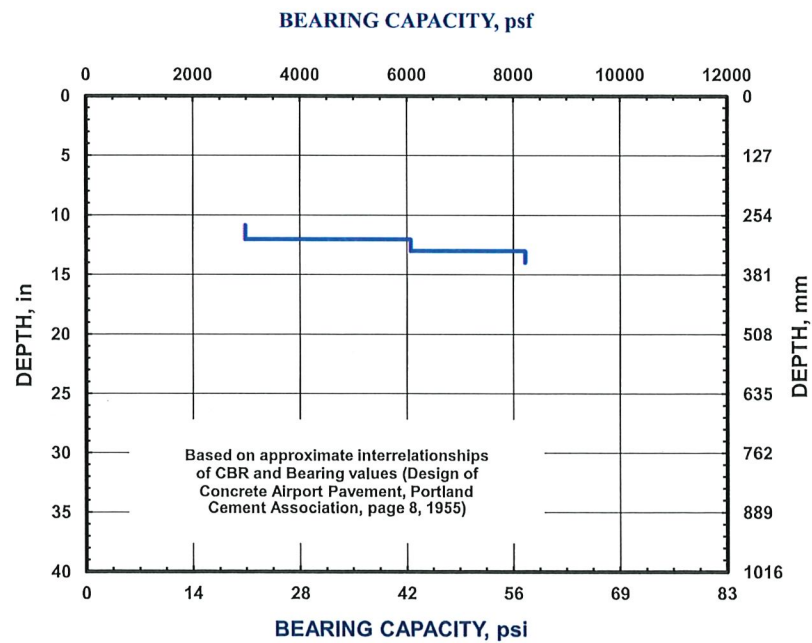
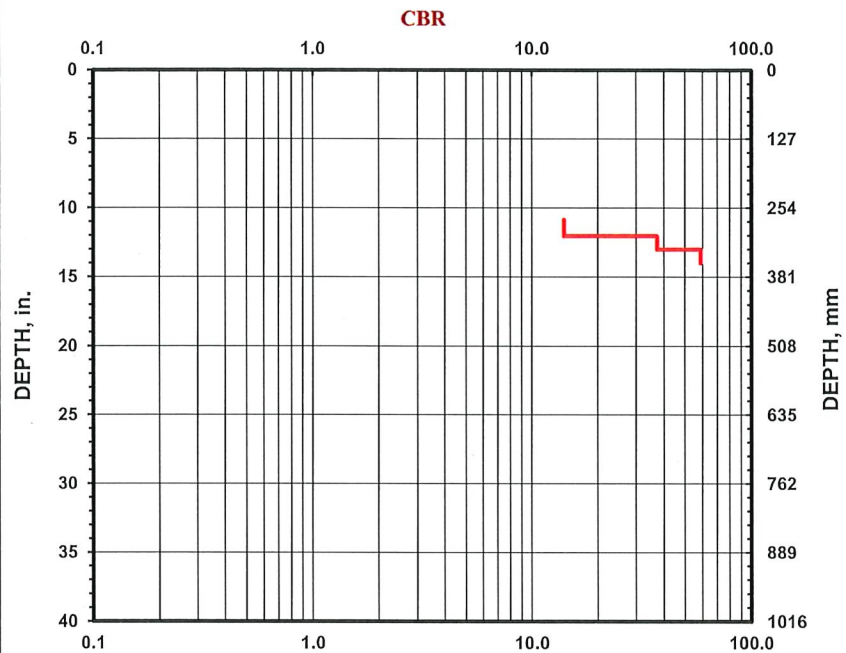
Soil Type(s): ML

Soil Type

☐ CH

☐ CL

☒ All other soils

[illegible]

RESO 10-2021

DCP TEST DATA

Project: 220139

Location: C-3

Date: 3-Mar-20

Soil Type(s): CL-ML

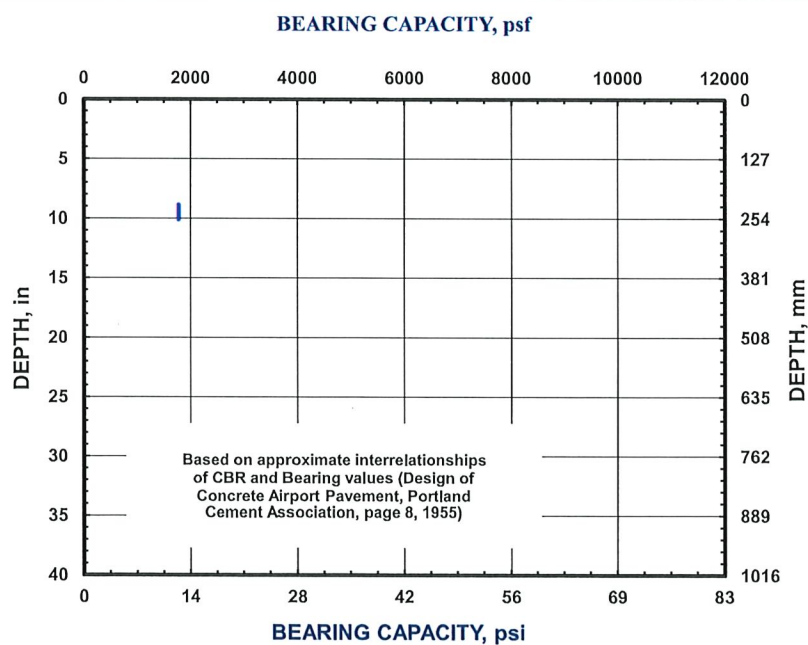
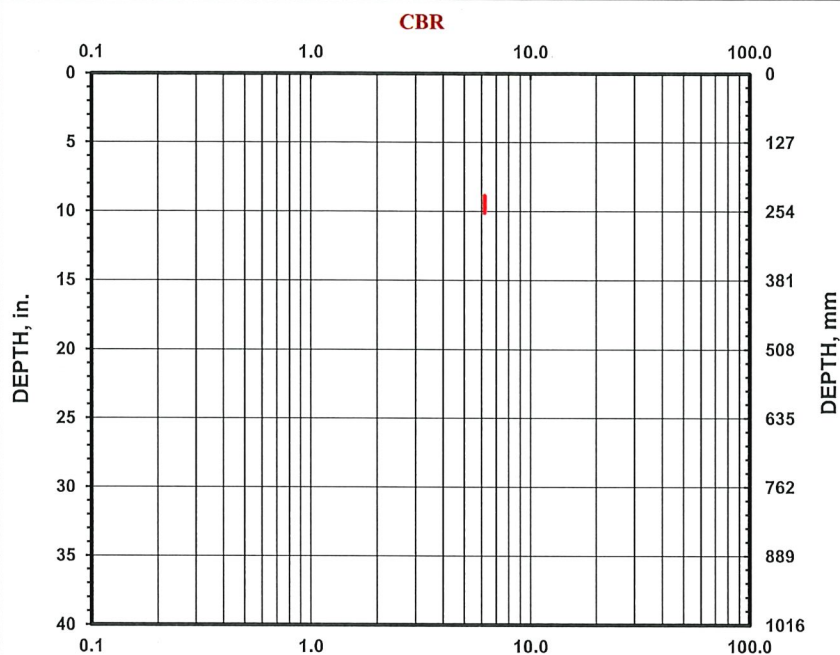
Hammer
☐ 10.1 lbs.
☒ 17.6 lbs.
☐ Both hammers used

Soil Type

☐ CH

☐ CL

☒ All other soils

[illegible]

RESO 10-2021

DCP TEST DATA

Project: 220139

Location: C-4

Date: 3-Mar-20

Soil Type(s): SC-SM

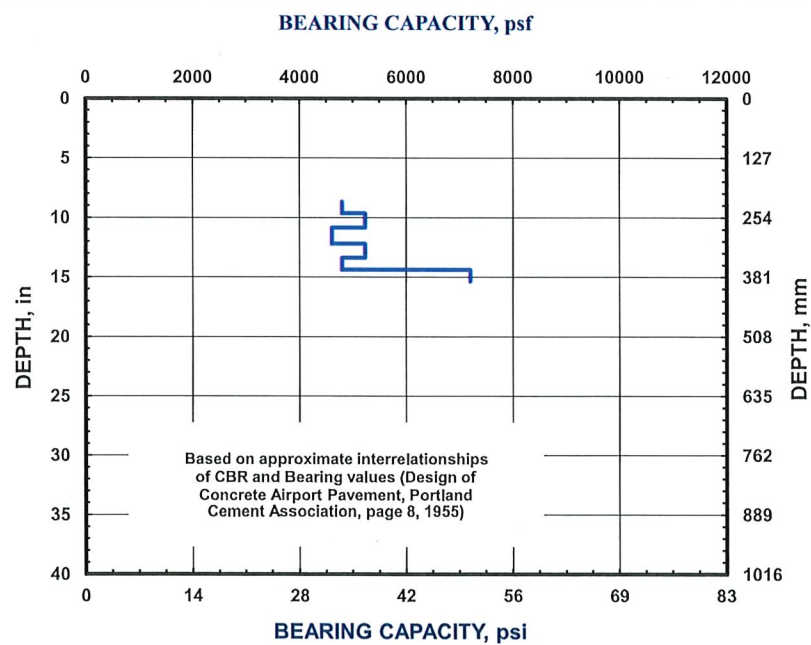
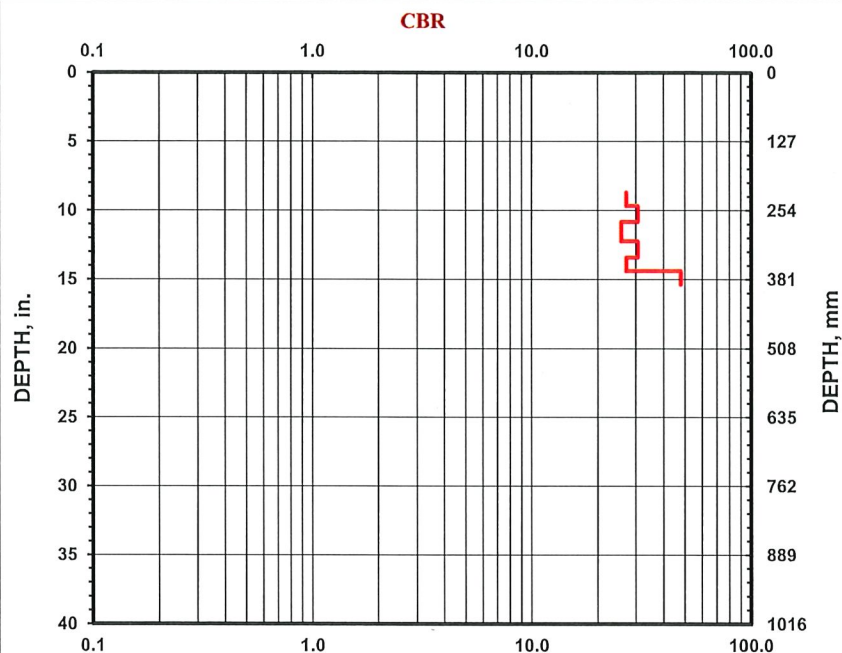
Hammer
☐ 10.1 lbs.
☒ 17.6 lbs.
☐ Both hammers used

Soil Type

☐ CH

☐ CL

☒ All other soils

[illegible]

RESO 10-2021

DCP TEST DATA

Location: C-5

Date: 3-Mar-20Soil Type(s): SC-SM

Hammer

☐ 10.1 lbs.

☒ 17.6 lbs.

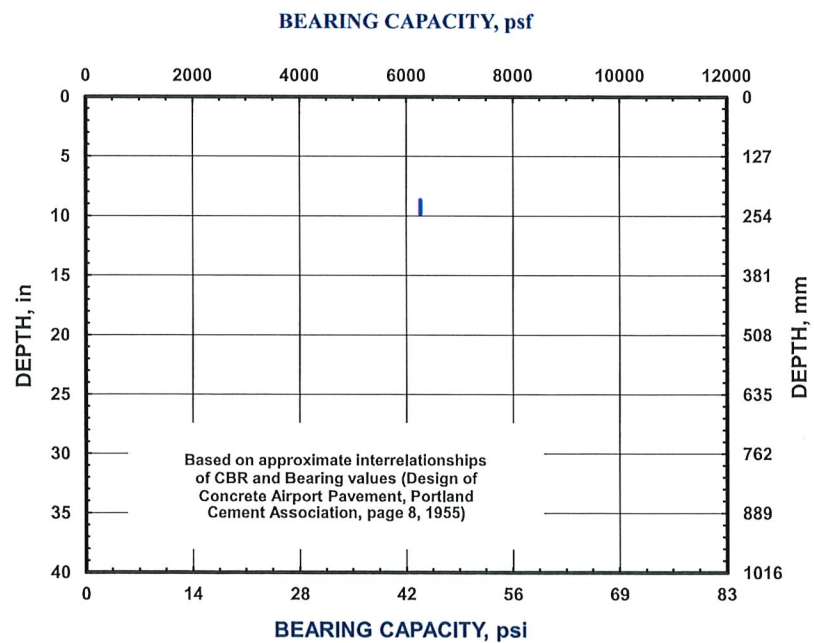
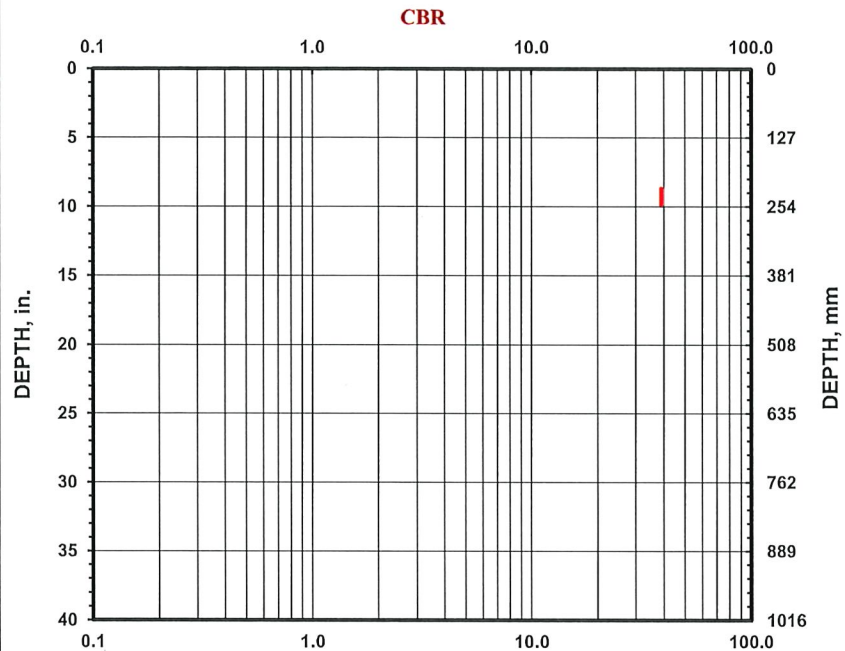
☐ Both hammers used

Soil Type

☐ CH

☐ CL

☒ All other soils

[illegible]

RESO 10-2021

DCP TEST DATA

Project: 220139

Location: C-6

Date: 3-Mar-20Soil Type(s): SC-SM

Hammer

☐ 10.1 lbs.

☒ 17.6 lbs.

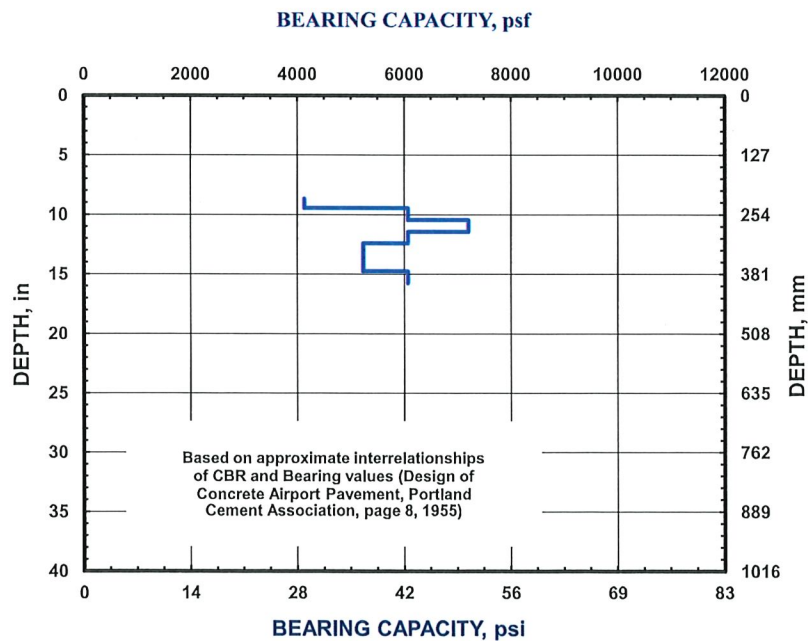
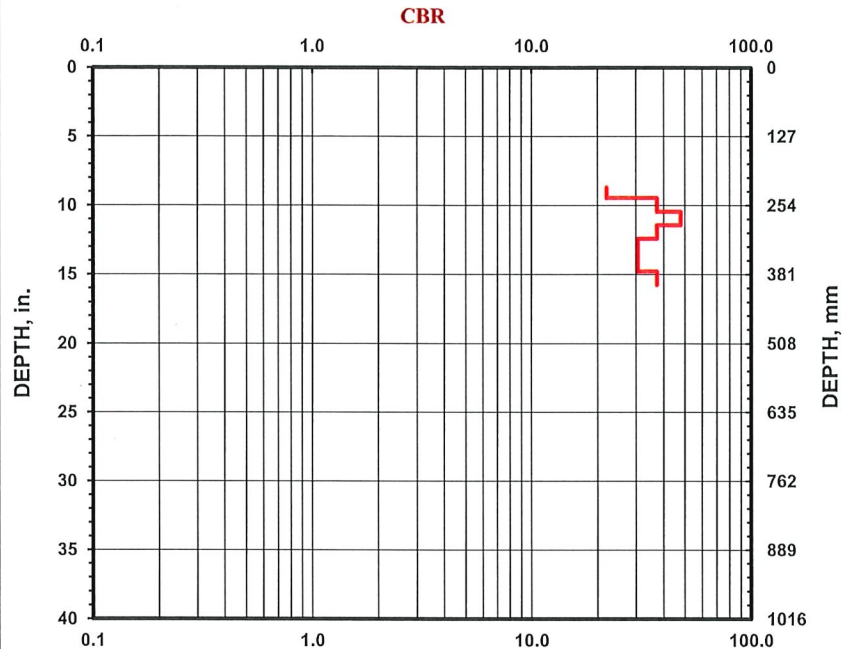
☐ Both hammers used

Soil Type

☐ CH

☐ CL

☒ All other soils

[illegible]
















RESO 10-2021




Engineering & Testing
Laboratory, Inc.


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10856 Vandale
San Antonio, TX 78216
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KEY TO SOIL CLASSIFICATION AND SYMBOLS


UNIFIED SOIL CLASSIFICATION SYSTEM				TERMS CHARACTERIZING SOIL STRUCTURE
MAJOR DIVISIONS		SYMBOL	NAME	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	 Well Graded Gravels or Gravel-Sand mixtures, little or no fines	SLICKENSIDED - having inclined planes of weakness that are slick and glossy in appearance FISSURED - containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical LAMINATED (VARVED) - composed of thin layers of varying color and texture, usually grading from sand or silt at the bottom to clay at the top CRUMBLY - cohesive soils which break into small blocks or crumbs on drying CALCAREOUS - containing appreciable quantities of calcium carbonate, generally nodular WELL GRADED - having wide range in grain sizes and substantial amounts of all intermediate particle sizes POORLY GRADED - predominantly of one grain size uniformly graded) or having a range of sizes with some intermediate size missing (gap or skip graded)
		GP	 Poorly Graded Gravels or Gravel-Sand mixtures, little or no fines	
		GM	 Silty Gravels, Gravel-Sand-Silt mixtures	
		GC	 Clayey Gravels, Gravel-Sand-Clay Mixtures	
	SAND AND SANDY SOILS	SW	 Well Graded Sands or Gravelly Sands, little or no fines	
		SP	 Poorly Graded Sands or Gravelly Sands, little or no fines	
		SM	 Silty Sands, Sand-Silt Mixtures	
		SC	 Clayey Sands, Sand-Clay mixtures	
FINE GRAINED SOILS	SILTS AND CLAYS LL < 50	ML	 Inorganic Silts and very fine Sands, Rock Flour, Silty or Clayey fine Sands or Clayey Silts	
		CL	 Inorganic Clays of low to medium plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays	
		OL	 Organic Silts and Organic Silt-Clays of low plasticity	
	SILTS AND CLAYS LL > 50	MH	 Inorganic Silts, Micaceous or Diatomaceous fine Sandy or Silty soils, Elastic Silts	
		CH	 Inorganic Clays of high plasticity, Fat Clays	
		OH	 Organic Clays of medium to high plasticity, Organic Silts	
HIGHLY ORGANIC SOILS		PT	 Peat and other Highly Organic soils	


SYMBOLS FOR TEST DATA


 — Groundwater Level (Initial Reading)

 — Groundwater Level (Final Reading)

 — Shelby Tube Sample

 — SPT Samples

 — Auger Sample

 — Rock Core

TERMS DESCRIBING CONSISTENCY OF SOIL

COARSE GRAINED SOILS		FINE GRAINED SOILS		
DESCRIPTIVE TERM	NO. BLOWS/FT. STANDARD PEN. TEST	DESCRIPTIVE TERM	NO. BLOWS/FT. STANDARD PEN. TEST	UNCONFINED COMPRESSION TONS PER SQ. FT.
Very Loose	0 - 4	Very Soft	< 2	< 0.25
Loose	4 - 10	Soft	2 - 4	0.25 - 0.50
Medium	10 - 30	Firm	4 - 8	0.50 - 1.00
Dense	30 - 50	Stiff	8 - 15	1.00 - 2.00
Very Dense	over 50	Very Stiff	15 - 30	2.00 - 4.00
		Hard	over 30	over 4.00

Field Classification for "Consistency" is determined with a 0.25" diameter penetrometer

RESO 10-2021