



CITY OF ROCKWALL

**385 SOUTH GOLIAD
ROCKWALL, TX 75087
972-771-7700**

REQUEST FOR PROPOSAL

DESIGN-BUILD SERVICES FOR FLAGPOLE PROJECT

SUBMITTALS due 3:00 PM CST, June 1, 2022

To

**Lea Ann Ewing, Purchasing Agent
City of Rockwall, 385 S. Goliad St., Rockwall TX 75087**

**CITY OF ROCKWALL
REQUEST FOR PROPOSAL (RFP)
DESIGN-BUILD SERVICES
Public Notice**

The City of Rockwall invites the submittal of responses to this RFP from qualified firms interested in providing design-build services in connection with the install of a Flagpole located at the intersection of IH 30 and Village Drive, Rockwall Texas. Responses are solicited for this service in accordance with the terms, conditions and instructions set forth in the RFP guidelines.

The City will receive responses to this RFP at the office of Lea Ann Ewing, Purchasing Agent, 385 S. Goliad, Rockwall, Texas 75087 until **3:00 pm, June 1, 2022**. The Request for Proposal document may be obtained on the City's website at www.rockwall.com/finance/asp. Bid, Performance, Payment bonds, liability and statutory worker's compensation insurances are required for this project. **Pre bid meeting begins at 10 am on May 13, 2022 at the site location; intersection of IH 30 and Village Drive, Rockwall TX 75087.**

Receipt of responses does not bind the City to any contract for said services, nor does it guarantee that a contract for the Project will be awarded. For additional information, contact Lea Ann Ewing at lewing@rockwall.com

Publish Dates: May 6, 2022 and May 13, 2022

REQUEST FOR PROPOSAL (RFP) DESIGN-BUILD SERVICES

I. PURPOSE OF RFP

The City of Rockwall, Texas (City) invites the submittal of responses to this Request for Proposal (RFP) from qualified firms interested in providing design-build construction services for a new flagpole located at the intersection of IH 30 and Village Drive, Rockwall, Texas 75087.

II. OBJECTIVES

The City proposes to retain a highly qualified, capable firm to act as the Respondent during the design and construction of the Project for a fixed price. The firm who participates in this RFP process may be referred to as "Respondent". The City will give prime consideration to the Respondent with significant, current experience in the development, design, and construction of similar projects. The City reserves the right to negotiate with one or more parties and is not obligated to enter into any contract with any Respondent on any terms or conditions.

III. SCOPE OF WORK

General Project Synopsis

This project is for the design, build and installation of all-inclusive 190-foot flagpole including foundation, borings, electrical, lighting and flags. This process is an all or none proposal and a best value to the City of Rockwall. Exhibit "A" includes 1) Site Location, 2) Site Survey and 3) Site Geotechnical Engineering Report.

Required Specifications

One each - 190' Ground Set Diminishing Section Steel Flagpole with Electric Winch

- Material: Carbon Steel A-36
- Exposed Height : 190.0'
- Overall Height : 210.0'
- Butt Diameter : 42.0"
- Top Diameter : 8.625"
- Wall Thickness : 0.375
- Pole Weight (Appx.) : 28,000 Lbs.
- Color : Optional
- Wind Load 130MPH Unflagged & 90MPH w/50X80 Nylon Flag
- Fittings & Hardware : 24" Heavy Duty Truck Ball Assembly, 1.25" SS Spindle, 420' 1/4" 7x19 Braided SS Aircraft
- Cable, Beaded Retainer Rings, 2" SS Snap hooks, SS Quik-Links, Electric Winch
- SS Swivel, Locking Access Door, Steel Corrugated Ground Sleeve W/ Lightning Spike
- Flag (2) 50X80 US Nylon

- Flag Service, Repair and Rotation as needed; Re-hem & Repair Flag
- 3' Light Pedestals Powder Coated Color of the Flagpole
- Flagpole design is to be performed using a finite element method structural analysis program that accounts for the secondary P-Delta effects on the structure
- Flagpole foundation design is to be based on the soil parameters and conditions as noted in the supplied geotechnical report
- LUX-400 LED lights

IV. SELECTION PROCESS

The City will review and evaluate the duly submitted proposals, contractor's qualifications and price proposal, and may invite firms to be interviewed before making a final selection of a contractor for this project. If the City desires to interview a firm, that firm will receive notification of the date and time of the interview.

The selected Respondent then may negotiate with the City on fee and contract conditions. If a reasonable fee cannot be achieved with the Respondent of choice, in the opinion of the City, negotiations will proceed with the second choice Respondent until a mutually agreed contract can be negotiated.

Executive Summary

Respondent to provide an executive summary of your firm's response to this RFP. The firm should prepare a narrative description of your experience and how you would accomplish the design and recommended construction of the project. This summary should identify the primary benefits to the City of retaining your firm and your firm's commitment to the City to complete the project on time and within budget. (25 points)

Experience on similar projects

Respondent to provide a list of similar projects your firm has completed for other entities/customers. Be specific and provide examples of projects that closely match in size and scope, the projects for which you are proposing. Provide contact information for these references. Identify any major design or construction issues associated with the project. (25 points)

Qualifications of project manager and key personnel

Provide the names, qualifications and a list of similar projects for the project manager and key personnel. Provide an organizational chart showing all personnel and subcontractors. (25 points)

Proposed time line

Provide a schedule for each phase of the project including surveying, preliminary design, final design, construction and project completion. (25 points)

V. EVALUATION

City Staff will evaluate the submittals and make a recommendation to the City Council for formal selection of the Respondent with which contract negotiations may be initiated.

VI. ADDITIONAL INSTRUCTIONS, NOTIFICATIONS AND INFORMATION

- A. No Gratuities** – Respondents will not offer any gratuities, favors, or anything of monetary value to any official or employee of the City for the purpose of influencing this selection. Any attempt by a Respondent to influence the selection process by any means, other than disclosure of Proposal and credentials through the proper channels, will be grounds for exclusion from the selection process. Accordingly, contacts with those involved in the selection process should not be initiated.
- B. All Information True** – By submitting a response, Respondents represent and warrant to the City that all information provided in the response submitted shall be true, correct and complete. Respondents who provide false, misleading or incomplete information, whether intentional or not, in any of the documents presented to the City of Rockwall for consideration in the selection process may be excluded.
- C. Interviews** – After the initial evaluation of the statements of Proposal, Respondents may be interviewed to discuss the Respondent’s program approach and design professionals who would be directly involved in the Project.
- D. Inquiries** – Do not contact the City to make inquiries about the progress of this selection process. Respondents will be contacted when it is appropriate to do so. Process inquiries should be directed to Ms. Lea Ann Ewing, Purchasing Agent for the City, 972-772-6418 or lewing@rockwall.com.
- E. Cost of Responses** – The City will not be responsible for the costs incurred by anyone in the submittal of responses.
- F. Contract Negotiations** – This RFP is not to be construed as a contract or as a commitment of any kind. If this RFP results in a contract offer by the City the specific scope of work, associated fees, and other contractual matters will be determined during contract negotiations. To ensure that the appropriate staff is assigned to the Project, the City intends to make the inclusion of a “key persons” clause a part of the contract negotiations.
- G. No Obligation** – The City reserves the right to: (1) evaluate the responses submitted; (2) waive any irregularities therein; (3) select candidates for the submittal of more detailed or alternate Proposal; (4) accept any submittal or portion of submittal; (5) reject any or all Respondents submitting responses; or (6) cancel the entire process.
- H. Non Discrimination** – The Respondent shall not deny employment to any person on the basis of race, creed or religion and will insure that all Federal and State laws pertaining to salaries, wages and operating requirements are met or exceeded.

- I. Bonds and Insurance** – The Respondent shall provide bid, performance and payment bonds for this project. Liability and statutory worker’s compensation insurances are required, adding the City of Rockwall as an additional insured on the liability policy.

VII. SUBMITTAL INSTRUCTIONS

Sealed submittals are required. Submittals must be in a sealed envelope and delivered to Lea Ann Ewing, Purchasing Agent, City of Rockwall, at the address set forth below at or before **3:00 pm on June 1, 2022.** All submittals must be labeled on the outside with the Respondent’s name, the name of the Project “Flagpole”. Late submittals may not be considered.

Provide two (2) copies of the response delivered to:

Ms. Lea Ann Ewing, Purchasing Agent
City of Rockwall
385 S. Goliad
Rockwall, TX 75087

To enable the City to efficiently evaluate the responses, it is important that Respondents follow the required format in preparing their responses. **RESPONSES THAT DO NOT CONFORM TO THE PRESCRIBED FORMAT MAY NOT BE EVALUATED.**

Pre Bid Meeting – May 13, 2022 at 10 AM at the intersection of IH 30 and Village Drive, Rockwall TX 75087. Respondent attendance is required for proposal consideration. Staff will be available in person to answer questions regarding this project and give project site visit.

VII. CONTENT OF SUBMITTAL

Each response shall be submitted as outlined in this section. The first page shall be a letter transmitting the response to the City and stating that the Proposal set forth in it remains effective for a period of 60 calendar days. At least one copy of the transmittal letter shall contain the original signature of a partner, principal, or officer of the Respondent.

A. General Company Information

1. General Information

Firm name, address, and telephone number;
Names of principles in the firm;
Primary contact name, phone and email

2. History and Experience

How many years has your organization been in business?

Please describe the last five flagpole construction projects of a similar scope that your organization has recently completed, giving the name and location of project, name of the entity, and date of completion.

B. References

Please provide references for at least three (3) similar projects completed within the last five (5) years.

C. Design

Provide proposed design documents with submittal based on Item III Scope of Work. This document does not have to be engineer signed and sealed at the time of submittal.

Warranties – Include in the submittal all available contractor and manufacturer’s warranties (with cost) for labor, materials and supplies.

D. Cost Proposal

Provide cost proposal document with submittal based on Item III Scope of Work. City of Rockwall required permit fees for the project are waived. Chosen Contractor will be responsible for contacting, acquiring related permits and paying all fees required by other entities i.e. Federal (FAA), State and Local.

E. Contractor Insurance Requirements for this Project

Requirements

Contractors performing work on City property or public right-of-way for the City of Rockwall shall provide the City a certificate of insurance evidencing the coverages and coverage provisions identified herein. Contractors shall provide the City evidence that all subcontractors performing work on the project have the same types and amounts of coverages as required herein or that the subcontractors are included under the contractor’s policy. The City, at its own discretion, may require a certified copy of the policy.

All insurance companies and coverages must be authorized by the Texas Department of Insurance to transact business in the State of Texas and must be acceptable to the City of Rockwall.

Listed below are the types and amounts of insurance required. The City reserves the right to amend or require additional types and amounts of coverages or provisions depending on the nature of the work.

Type of Insurance	Amount of Insurance	Provisions
1. Commercial General (Public) Liability to include coverage for: a) Premises/Operations b) Products/Completed Operations c) Independent Contractors d) Personal Injury e) Contractual Liability	\$1,000,000 each occurrence, \$2,000,000 general aggregate; Or \$2,000,000 combined single limits	City to be listed as additional insured and provided 30-day notice of cancellation or material change in coverage. City prefers that insurer be rated B+VI or higher by A.M. Best or A or higher by Standard & Poors
1. Business Auto Liability	As required by State of Texas	
Workers' Compensation & Employers' Liability	Statutory Limits \$100,000 each accident	City to be provided a waiver of subrogation

Questions regarding this insurance should be directed to the City of Rockwall Purchasing Department at (972) 772-6418.

Contractor shall add the City of Rockwall as an additional insured on all required insurance policies, except worker's compensation, employer's liability and errors and omissions insurance. The Commercial General Liability Policy and Umbrella Liability Policy shall be of an "occurrence" type policy.

EXHIBIT A

TO FOLLOW

LOCATION EXHIBIT

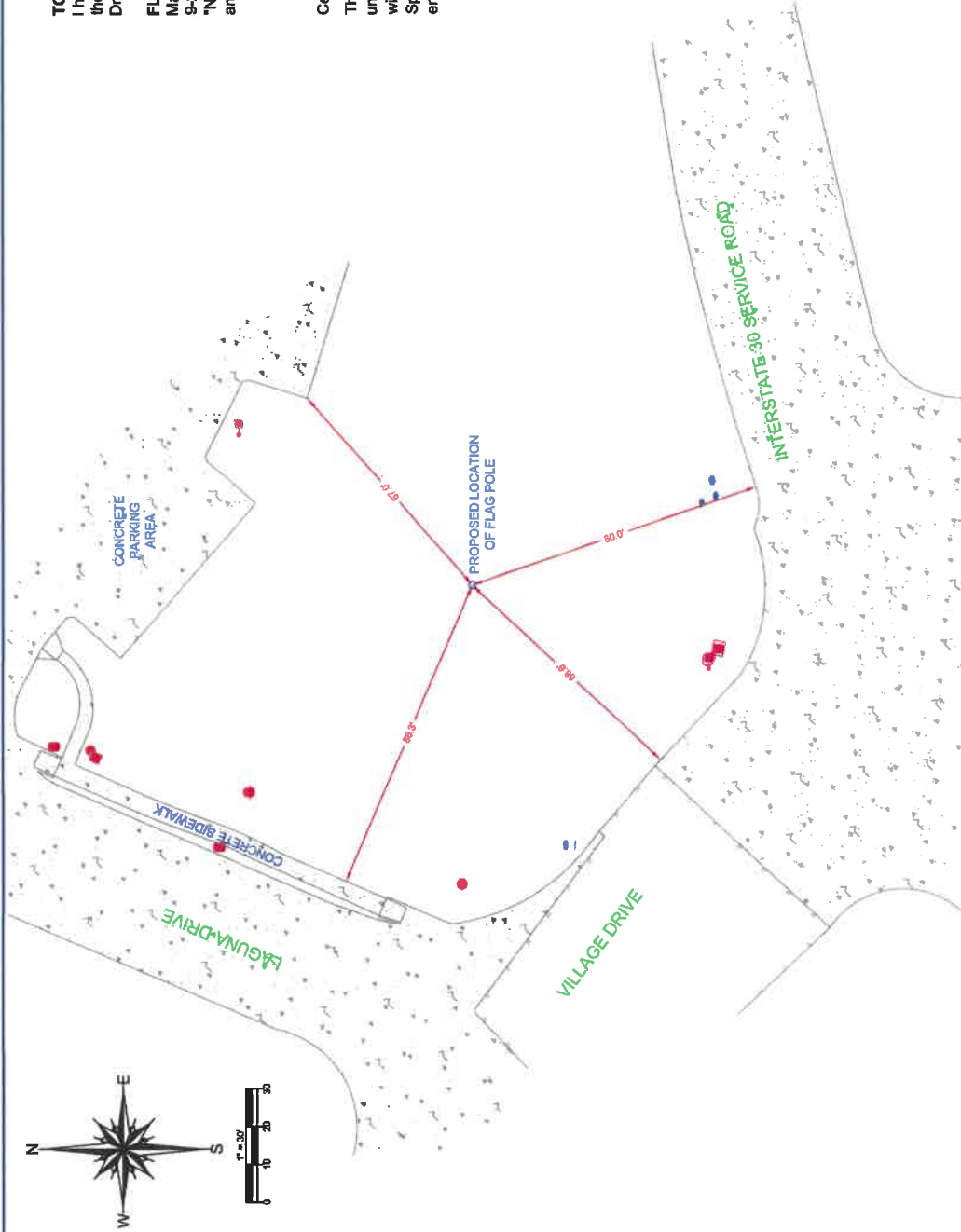
TO ALL PARTIES DIRECTLY INTERESTED IN THE PREMISES SURVEYED
I have this date directed a careful and accurate survey made on the grounds of the property located at the intersection of Interstate Highway 30 and Village Drive, in the City of Rockwall, Texas.

FLOOD STATEMENT: I have reviewed the F.E.M.A. Flood Insurance Rate Map for the City of Rockwall, Community Number 480547 effective date 9-26-2008 and that map indicates as scaled, that this property is within "Non-Shaded Zone X" defined as "Areas determined to be outside the 0.2% annual chance flood (500-year)" as shown on Panel 40 L of said map.

SURVEYORS CERTIFICATION

Certified to Nouveau Construction, the City of Rockwall and assigns:

This survey correctly represents the results of an on-the-ground survey made under my direction and supervision on 10-14-2021, and substantially complies with the current Texas Society of Professional Surveyors Standards and Specifications for a Category 5, Condition II Survey. There are no apparent encroachments, intrusions or protrusions except as shown herein.



LEGEND

- = LIGHT POLE
- = GAS EQUIPMENT
- = TELEPHONE RISER
- = CABLE VAULT
- = BURIED CABLE MARKER
- = BURIED GAS PIPELINE MARKER
- = TRAFFIC SIGNAL CONTROLS
- = TRAFFIC SIGN
- = ASPHALT
- = CONCRETE



K&Z SURVEYING
1720 WESTMINSTER
DENTON, TX 76205
(940)382-3446
JOB NUMBER: 210898
DRAWN BY: HCI
DATE: 11-04-2021
R.P.L.S.
KENNETH A. ZOLLINGER
TX FIRM REGISTRATION # 10002100



0 50 100 Feet
1 inch = 60 feet
Date: 2/12/2021
CITY OF WILSONVILLE

City of
Rockwall

IH30 @ VILLAGE DR - FLAG POLE SITE
(50' X 80' FLAG SIZE)



Geotechnical Engineering Report

**City of Rockwall Flagpole
Rockwall, Rockwall County, Texas**

August 11, 2021

Terracon Project No. 94195393

Prepared for:

City of Rockwall, State of Texas
Rockwall, Texas

Prepared by:

Terracon Consultants, Inc.
Dallas, Texas



August 11, 2021



City of Rockwall, State of Texas
385 S. Goliad Street
Rockwall, Texas 75087

Attn: Mr. Joey Boyd
P: (972) 772 -6408
E: jboyd@rockwall.com

Re: Geotechnical Engineering Report
City of Rockwall Flagpole
NE corner of Village Drive and I-30 Frontage Road
Rockwall, Rockwall County, Texas
Terracon Project No. 94195393

Dear Mr. Boyd:

This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning the design and construction of foundations for the proposed flagpole project. This study was performed in general accordance with Terracon Revised Proposal No. P94195393 dated August 6, 2020 and authorized on July 1, 2021.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.



Naga Velpuri, M.S.,
Project Manager



Saad M. Hineidi, P.E.
Senior Principal



REPORT TOPICS

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Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the **GeoReport** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS
SUPPORTING INFORMATION

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Engineering Report
City of Rockwall Flagpole
NE corner of Village Drive and I-30 Frontage Road
Rockwall, Rockwall County, Texas
Terracon Project No. 94195393
August 11, 2021

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services for the proposed flagpole to be located at NE corner of Village Drive and I-30 Frontage Road in Rockwall, Rockwall County, Texas. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Foundation design and construction
- Groundwater conditions
- Seismic site classification per IBC

The geotechnical engineering Scope of Services for this project included the advancement of one test boring to a depth of 30 feet below existing site grades. Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples are included on the boring logs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located NE corner of Village Drive and I-30 Frontage Road in Rockwall, Rockwall County, Texas Latitude/Longitude (approximate): 32.896237 N /-96.476035° W See Site Location
Existing Improvements	None.
Current Ground Cover	Grass.
Existing Topography	Based on the Google Earth maps, the site general slopes from South to North from El. 545 to El. 535 feet.

Geotechnical Engineering Report

City of Rockwall Flagpole ■ Rockwall, Rockwall County, Texas

August 11, 2021 ■ Terracon Project No. 94195393



PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Project Description	The project will involve construction of a 195 feet tall flagpole embedded in the ground 20 feet.

GEOTECHNICAL CHARACTERIZATION

Site Geology

Review of surface geology maps indicates the site is situated on the border between the Wolfe City and Neylandville and Marlbrook Marl Undivided Formations, both of the Cretaceous Age. The Wolfe City Formation consists of sand and silt in the upper formation with calcareous mudstone below. The Neylandville and Marlbrook Marl Undivided Formation generally consists of silty or sandy calcareous clay or marl.

Subsurface Characterization

Subsurface conditions were investigated by one boring drilled at the approximate location shown on **Site Location and Exploration Plan**. The boring log is shown in the **Exploration Results** section of the report. The boundaries between soil and rock strata are approximated and may be more gradual in transition than implied by the boring log strata break lines.

Lean clays were present in the top 2 feet underlined by expansive clays to a depth of 7 feet. The clays are hard in consistency. The expansive clays had liquid limits ranging from 51 to 54 with plasticity indices ranging from 26 to 35.

Gray shale suitable for support of the flagpole was encountered at a depth of 7 feet and extended to the completion depth of 30 feet.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at boring location, refer to the GeoModel

Model Layer	Layer Name	General Description
1	Low Plasticity Clay	Brown, hard with shale seams and pieces

Model Layer	Layer Name	General Description
2	Hight Plasticity Clay	Light brown to gray, hard with shale fragments
3	Shale	Gray

Groundwater Conditions

The boring was advanced using dry auger drilling techniques which allows short-term groundwater observations to be made while drilling. Groundwater was not encountered during drilling and at the completion of drilling.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the boring was performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring log.

GEOTECHNICAL OVERVIEW

The proposed flagpole can be supported on a straight drilled shaft foundation bearing in the gray shale. We estimate the potential magnitude of moisture induced potential vertical movements at this site to be about 2.5 inches at or near existing grades when the soils are in a dry moisture condition.

DEEP FOUNDATIONS

Straight Drilled Shafts – Axial Capacity

A straight drilled shaft foundation system can be used to support the flagpole. Recommended design parameters for straight drilled shafts are presented in the following table.

Design Parameter	Recommendations
Bearing stratum	Gray Shale
Anticipated depth to bearing stratum	7 feet
Maximum net allowable end bearing capacity	27,500 psf
Allowable skin friction – compression	3,400 psf
Allowable skin friction – tension	2,400 psf

Geotechnical Engineering Report

City of Rockwall Flagpole ■ Rockwall, Rockwall County, Texas

August 11, 2021 ■ Terracon Project No. 94195393



Design Parameter	Recommendations
Minimum penetration into shale to develop end bearing	3 feet or one shaft diameter, whichever is greater
Minimum penetration into shale to develop skin friction	3 feet or below depth of temporary casing below top of gray shale, whichever is greater
Soil induced uplift	A uniform uplift of 1,600 psf over the shaft diameter to a depth of 7 feet or to the top of gray shale, whichever depth is shallower.
Total settlement	Less than 1 inch

Drilled Shaft - Lateral Capacity

The drilled shafts may be subject to lateral loads. Parameters for lateral load analysis are provided in the following table for use in Ensoft's L-PILE computer program.

Soil Type	Fat Clays	Gray Shale
LPILE material type	Stiff Clay w/o Water	Strong Rock (Reese)
Effective soil unit weight (pcf)	125	135
Undrained cohesion, c (psf)	2,000	N/A
Strain factor, ϵ_{50}	0.008	N/A
Young's modulus, E_r (psi)	N/A	40,000
Uniaxial compressive strength (psi)	N/A	400

Straight Drilled Shaft - Construction Considerations

The construction of all drilled shafts should be observed by experienced geotechnical personnel during construction to confirm: 1) the bearing stratum; 2) the minimum bearing depth; 3) the removal of all cuttings 4) that groundwater seepage is correctly handled; and 5) that the shafts are within acceptable vertical tolerance.

Recommendations for drilled shaft construction are presented in the following table.

Item	Recommendation
Drilled shaft installation specification	Current version of American Concrete Institute's "Standard Specification for the Construction of Drilled Piers" ACI 336.

Geotechnical Engineering Report

City of Rockwall Flagpole ■ Rockwall, Rockwall County, Texas

August 11, 2021 ■ Terracon Project No. 94195393



Item	Recommendation
Top of shaft completion	Enlarged (mushroom-shaped) top in contact with the clays should not be allowed.
Time to complete	Straight drilled shafts should be completed within 8 hours after design penetration into shale is begun.
Groundwater control in straight drilled shafts	Groundwater seepage was not observed in the boring; however, groundwater seepage could be encountered during installation of the straight drilled shafts, particularly during wet periods of the year. Seepage rates and caving soils will require the use of temporary casing for installation of the straight shafts. The casing should be seated below groundwater with all water and most loose material removed prior to beginning the design penetration. Care must then be taken that a sufficient head of plastic concrete is maintained within the casing during extraction.
Special conditions	The shale bedrock is relatively hard and can be difficult to penetrate. A contractor experienced with drilling in rock should be retained for this project.

The drilled shaft installation process should be performed under the direction of the Geotechnical Engineer. The Geotechnical Engineer should document the shaft installation process including soil/rock and groundwater conditions encountered, consistency with expected conditions, and details of the installed shaft.

SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC).

Based on the soil/bedrock properties encountered at the site and as described on the exploration logs and results, it is our professional opinion that the **Seismic Site Classification is B**. Subsurface explorations at this site were extended to a maximum depth of 30 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

Geotechnical Engineering Report

City of Rockwall Flagpole ■ Rockwall, Rockwall County, Texas

August 11, 2021 ■ Terracon Project No. 94195393



GENERAL COMMENTS

Terracon should be retained to review the final design plans and specifications, so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide observation and testing services during grading, excavation, foundation construction and other earth-related construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between borings, across the site, or due to the modifying effects of weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Boring ID	Boring Depth (feet)	Location
1	30	Flagpole

Boring Layout and Elevations: Elevations obtained from Google Earth. Coordinates were obtained from the hand-held GPS device in the field.

Subsurface Exploration Procedures: The boring was sampled using push tube sampling procedures. Load carrying capacity of the bedrock were evaluated in the field using the Texas Department of Transportation's (TxDOT) Cone Penetration Test. The boring was continuously sampled in the upper 10 feet. TxDOT Cone Penetration tests were performed at 5-foot intervals. The boring was backfilled with auger cuttings after their completion.

The sampling depths, penetration distances, and other sampling information are recorded on the field boring log. The samples are placed in appropriate containers and taken to our soil laboratory for testing and classification by a geotechnical engineer. The final boring log was prepared from the field log. The final boring log represents the geotechnical engineer's interpretation of the field log and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D2166/D2166M Standard Test Method for Unconfined Compressive Strength of Cohesive Soil
- Dry Unit Weight

The laboratory testing program often included examination of soil samples by an engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System, summarized in [Supporting Information](#).

Liquid and Plastic Limits tests, moisture content, and unit weight measurements were performed to aid in classifying the soils in accordance with the USCS. Strength of cohesive soils was measured by unconfined compressive strength and hand penetrometer tests.

The results of the laboratory tests are presented on the individual boring log in **Exploration Results**.

SITE LOCATION AND EXPLORATION PLANS PORTRAIT

SITE LOCATION

City of Rockwall Flagpole ■ Rockwall, Rockwall County, Texas
August 11, 2021 ■ Terracon Project No. 94195393

Terracon
GeoReport

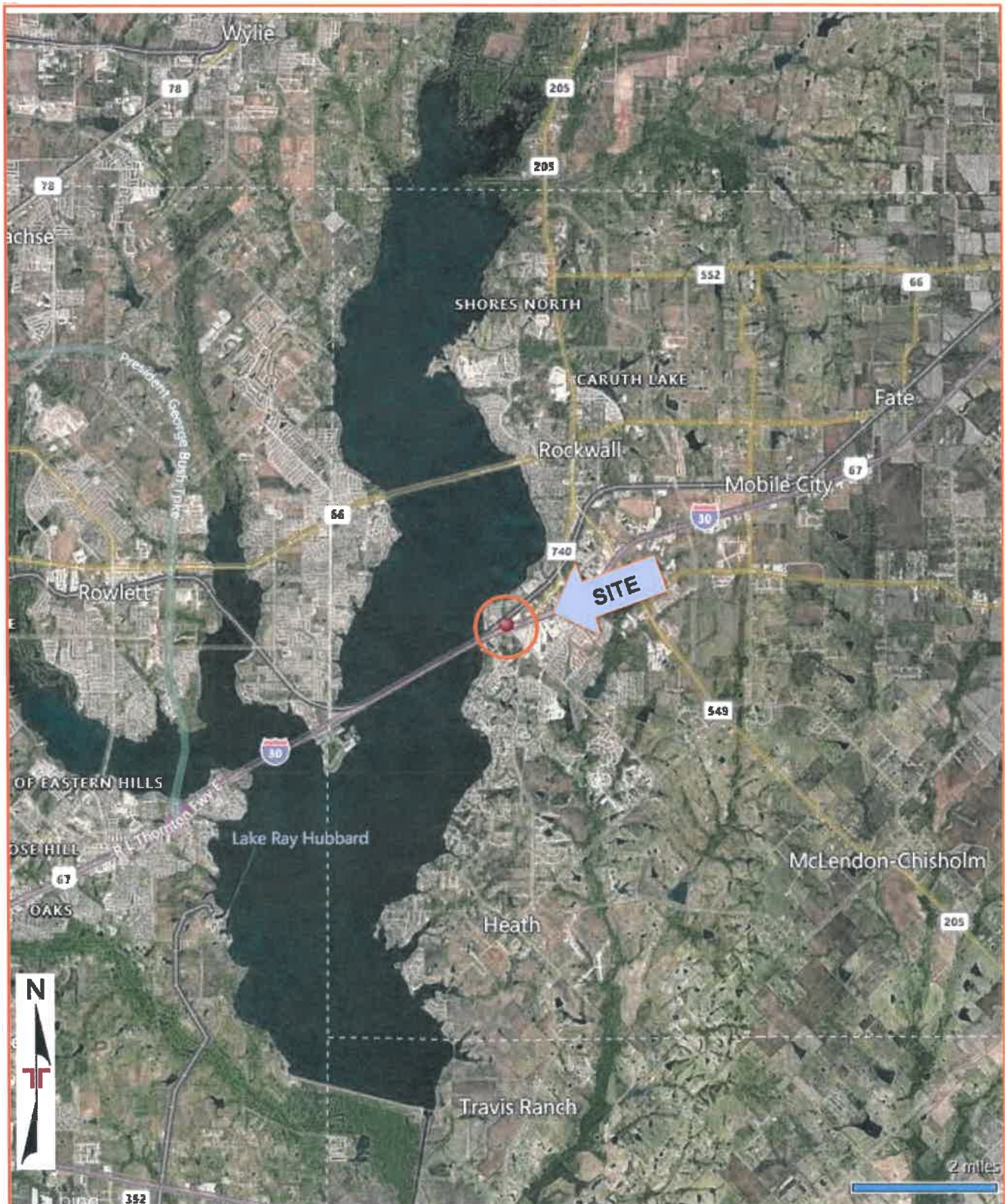


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN

City of Rockwall Flagpole ■ Rockwall, Rockwall County, Texas
August 11, 2021 ■ Terracon Project No. 94195393

Terracon
GeoReport

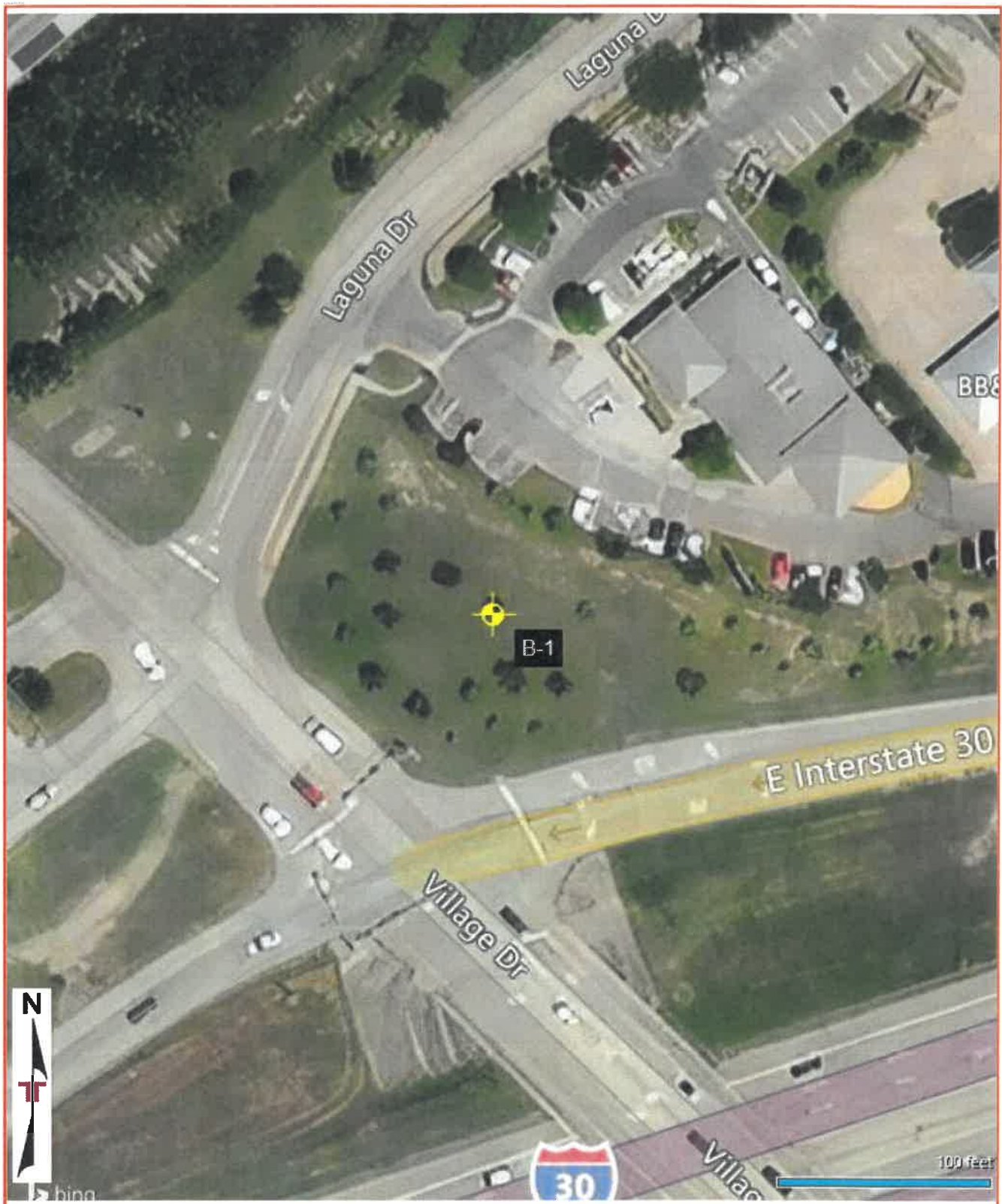


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS

Contents:

Boring Log (B-1)

BORING LOG NO. B-1

Page 1 of 2

PROJECT: City of Rockwall Flagpole

CLIENT: City of Rockwall TX
Rockwall, TX

SITE: Village Dr and I-30 Frontage Rd
Rockwall, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.8962° Longitude: -96.4760° Approximate Surface Elev.: 545 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
1		LEAN CLAY (CH) , brown, hard, with shale seams and pieces	2.0			4.5+ (HP)				16.1		40-14-26	
2		FAT CLAY (CH) , light brown to gray, hard, with shale fragments	5.0			4.5+ (HP)	UC	4.04	3.9	15.5	118		
			7.0			4.5+ (HP)	UC	7.75	7.5	15.5	112	54-19-35	
		SHALE , gray				28-50/6"						51-17-34	
						TC=100/2"							
						TC=100/1.25"							
						TC=100/0.75"							
						TC=100/0.5"							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Dry Augered

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (If any).

Notes:

Latitudes and longitudes were obtained from a hand held GPS device. Elevation was obtained from Google Earth.

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

No seepage encountered

Dry at completion

Terracon
8901 John W Carpenter Fwy Ste 100
Dallas, TX

Boring Started: 07-16-2021

Boring Completed: 07-16-2021

Drill Rig: CME 75

Driller: Total Depth

Project No.: 94195393

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 94195393 CITY OF ROCKWALL.GPJ TERRACON_DATATEMPLATE.GDT 8/2/21


BORING LOG NO. B-1

Page 2 of 2

PROJECT: City of Rockwall Flagpole

CLIENT: City of Rockwall TX
Rockwall, TX

SITE: Village Dr and I-30 Frontage Rd
Rockwall, TX

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 32.8962° Longitude: -96.4760° Approximate Surface Elev.: 545 (Ft.) +/- DEPTH ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST			WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)				
3		SHALE , gray (<i>continued</i>) 30.0 515+/-	30			TC=100/0.5"							
		Boring Terminated at 30 Feet											

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:
Dry Augered

See [Exploration and Testing Procedures](#) for a description of field and laboratory procedures used and additional data (if any).

Notes:

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

See [Supporting Information](#) for explanation of symbols and abbreviations.

WATER LEVEL OBSERVATIONS

No seepage encountered
Dry at completion

Terracon
8901 John W Carpenter Fwy Ste 100
Dallas, TX

Boring Started: 07-16-2021

Boring Completed: 07-16-2021

Drill Rig: CME 75

Driller: Total Depth

Project No.: 94195393

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 94195393 CITY OF ROCKWALL.GPJ TERRACON_DATATEMPLATE.GDT 8/2/21

SUPPORTING INFORMATION

Contents:

General Notes

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A					Soil Classification		
					Group Symbol	Group Name ^B	
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	Cu ≥ 4 and 1 ≤ Cc ≤ 3 ^E		GW	Well-graded gravel ^F	
			Cu < 4 and/or [Cc<1 or Cc>3.0] ^E		GP	Poorly graded gravel ^F	
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH		GM	Silty gravel ^{F, G, H}	
			Fines classify as CL or CH		GC	Clayey gravel ^{F, G, H}	
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	Cu ≥ 6 and 1 ≤ Cc ≤ 3 ^E		SW	Well-graded sand ^I	
			Cu < 6 and/or [Cc<1 or Cc>3.0] ^E		SP	Poorly graded sand ^I	
		Sands with Fines: More than 12% fines ^D	Fines classify as ML or MH		SM	Silty sand ^{G, H, I}	
			Fines classify as CL or CH		SC	Clayey sand ^{G, H, I}	
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots on or above "A"		CL	Lean clay ^{K, L, M}	
			PI < 4 or plots below "A" line ^J		ML	Silt ^{K, L, M}	
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay ^{K, L, M, N}	
			Liquid limit - not dried			Organic silt ^{K, L, M, O}	
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line		CH	Fat clay ^{K, L, M}	
			PI plots below "A" line		MH	Elastic Silt ^{K, L, M}	
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay ^{K, L, M, P}	
			Liquid limit - not dried			Organic silt ^{K, L, M, Q}	
		Highly organic soils: Primarily organic matter, dark in color, and organic odor				PT	Peat
		^A Based on the material passing the 3-inch (75-mm) sieve.					^H If fines are organic, add "with organic fines" to group name.
^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.					^I If soil contains ≥ 15% gravel, add "with gravel" to group name.		
^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.					^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.		
^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.					^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.		
$Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$					^L If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.		
^F If soil contains ≥ 15% sand, add "with sand" to group name.					^M If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.		
^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.					^N PI ≥ 4 and plots on or above "A" line.		
					^O PI < 4 or plots below "A" line.		
					^P PI plots on or above "A" line.		
					^Q PI plots below "A" line.		

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

$$^E C_u = \frac{(D_{60})^2}{D_{10} \times D_{60}} \quad C_c = \frac{D_{30}}{D_{10} \times D_{60}}$$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.

