DIVISION OF FINANCE – PURCHASING DEPARTMENT
100 N. Broadway St, Suite 610 Wichita, KS 67202 • Phone (316) 660-7255 • Fax (316) 660-1839
PURCHASING@SEDGWICK.GOV • SEDGWICKCOUNTY.ORG

REQUEST FOR PROPOSAL
RFP # 25-0017
ARCHITECTURAL AND ENGINEERING SERVICES
DESIGN AND CONSTRUCTION FOR
EMS POST 1

February 5, 2025

Sedgwick County, Kansas (hereinafter referred to as "county") is seeking a firm or firms to provide Architectural and Engineering Services to design and construct a new Sedgwick County Emergency Medical Services (EMS) Post 1 Facility. If your firm is interested in submitting a response, please do so in accordance with the instructions contained within the attached Request for Proposal. Responses are due no later than 1**:45 pm CDT Tuesday, March 4, 2025.**

All contact concerning this solicitation shall be made through the Purchasing Department. Proposers shall not contact county employees, department heads, using agencies, evaluation committee members or elected officials with questions or any other concerns about the solicitation. Questions, clarifications and concerns shall be submitted to the Purchasing Department in writing. Failure to comply with these guidelines may disqualify the Proposer's response.

Sincerely,

Lee Barrier

Euleeta (Lee) Barrier, NIGP-CPP
Senior Purchasing Agent

LB/ks

Table of Contents

I. About this Document

This document is a Request for Proposal. It differs from a Request for Bid or Quotation in that the county is seeking a solution, as described on the cover page and in the following Background Information section, not a bid or quotation meeting firm specifications for the lowest price. As such, the lowest price proposed will not guarantee an award recommendation. As defined in Charter Resolution No. 68, Competitive Sealed Proposals will be evaluated based upon criteria formulated around the most important features of the product(s) and/or service(s), of which quality, testing, references, service, availability or capability, may be overriding factors, and price may not be determinative in the issuance of a contract or award. The proposal evaluation criteria should be viewed as standards that measure how well a vendor's approach meets the desired requirements and needs of the county. Criteria that will be used and considered in evaluation for award are set forth in this document. The county will thoroughly review all proposals received. The county will also utilize its best judgment when determining whether to schedule a pre-proposal conference, before proposals are accepted, or meetings with vendors, after receipt of all proposals. A Purchase Order/Contract will be awarded to a qualified vendor submitting the best proposal. **Sedgwick County reserves the right to select, and subsequently recommend for award, the proposed service(s) and/or product(s) which best meets its required needs, quality levels and budget constraints**.

The nature of this work is for a public entity and will require the expenditure of public funds and/or use of public facilities, therefore the successful proposer will understand that portions (potentially all) of their proposal may become public record at any time after receipt of proposals. Proposal responses, purchase orders and final contracts are subject to public disclosure after award. All confidential or proprietary information should be clearly denoted in proposal responses and responders should understand this information will be considered prior to release, however no guarantee is made that information will be withheld from public view.

II. Background

Sedgwick County, located in south-central Kansas, is one of the most populous of Kansas' 105 counties with a population estimated at more than 514,000 persons. It is the 16th largest in area, with 1,008 square miles, and reportedly has the second highest per capita wealth among Kansas' counties. Organizationally, the county is a Commission/Manager entity, employs nearly 2,500 persons, and hosts or provides a full range of municipal services, e.g. – public safety, public works, criminal justice, recreation, entertainment, cultural, human/social, and education.

Sedgwick County seeks to select an A/E firm to prepare design drawings, specifications, bidding assistance, opinion of probable cost and construction administration for the new Sedgwick County EMS Post 1. This request for proposal will provide design for an approximate 3,000 square foot pre-engineered metal building with brick facade. The new building will be located on vacant property owned by the county and is located between 3059 and 3223 W. 13th Street North, Wichita, KS 67203. All recorded documents and agreements in reference to this site will be made available.

III. Project Objectives

Sedgwick County, Kansas (hereinafter referred to as "county") is seeking a firm or firms to provide Architectural and Engineering Services. The following objectives have been identified for this contract:

1. Acquire Architectural and Engineering Services meeting the parameters, conditions and mandatory requirements presented in the document.

2. Establish contract pricing with the vendor that has the best proven "track-record" in performance, service and customer satisfaction.

3. Acquire Architectural and Engineering Services with the most advantageous overall cost to the county.

4. Enter into a contract with a firm that has superior service history in providing the following types of A/E Services:

5. Experience in developing plans, coordinating large-scale correctional projects and administering simultaneous project.

6. Architecture

7. Mechanical Engineering

8. Structural Engineering

9. Electrical Engineering

10. Civil Engineering

11. Interior Design

12. Landscape Design

13. Topographic Survey and Subsurface Testing

14. Building Network and Telecommunications Design

15. Construction Cost Estimating

16. Utility and Maintenance Cost Estimating

17. Firms will not be limited in their use of subcontractors, but will be required to establish a standard hourly rate for services. Subcontractors can be selected based on the project need and their availability.

IV. Submittals

Carefully review this Request for Proposal. It provides specific technical information necessary to aid participating firms in formulating a thorough response. Should you elect to participate with an electronic response, the RFP number must be entered in the subject line and email the entire document with supplementary materials to:

Purchasing@sedgwick.gov

Should you elect to participate with a physical response, the response must be sealed and marked on the lower left-hand corner with the firm name and address, bid number, and bid due date. Submit one (1) original **AND** one (1) electronic copy (.PDF/Word supplied on a flash drive) of the entire document with any supplementary materials to:

Lee Barrier
Sedgwick County Purchasing Department
100 N. Broadway, Suite 610
Wichita, KS 67202

SUBMITTALS are due **NO LATER THAN 1:45 pm CST, TUESDAY, March 4, 2025.** If there is any difficulty submitting a response electronically, please contact the Purchasing Technicians at purchasing@sedgwick.gov for assistance. Late or incomplete responses will not be accepted and will not receive consideration for final award. If you choose to send a hard copy of your proposal, Sedgwick County will not accept submissions that arrive late due to the fault of the U.S. Postal Service, United Parcel Service, DHL, FedEx, or any other delivery/courier service.

Proposal responses will be acknowledged and read into record at Bid Opening, **which will occur at 2:15 pm CST on the due date**. No information other than the respondent's name will be disclosed at Bid Opening. We will continue to have Bid Openings for the items listed currently. If you would like to listen in as these proposals are read into the record, **please dial our Meet Me line @ (316) 660-7271 at 2:15 pm.**

V. Scope of Work

Design and administer construction administration services required to construct a new EMS Post 1 Facility. This request for proposal will provide design for an approximately 3,000 square foot single-story pre-engineered metal building with brick façade. The building must include: a drive-thru bay for two (2) ambulances, bay storage/safe room which can be combined as one (1) room, heated floors, no air conditioning required in the ambulance bay. If space allows, a separate smaller bay with drive-thru parking for one (1) supervisor's vehicle with room to allow off-loading of supplies and emergency equipment.

The interior living/office quarters must accommodate a 4-person crew per shift, one (1) shared office to accommodate the 4-person crew, one (1) office for a supervisor, a kitchen, separate shower/restroom facilities for both male and female, a shared locker area, day room, and a data server room. Direct access from offices/kitchen/dayroom to the bay is required. Sealed concrete flooring throughout and drywall interior. Exterior of the building to include a new generator, a small outdoor patio to accommodate one natural gas grill, with a privacy barrier. All exterior paving, landscaping, and connection to public utilities to be included in the scope.

Architect will assess existing spaces to verify space requirements, adjacency, equipment, environmental requirements and determine spaces to be added to the facility and optimum locations and arrangement of spaces. *Reference Background II in this document for more detailed information.*

Phase One (1) is to include the following:

1. Consult with county staff to determine project requirements and review available data in the county's possession.

2. Prepare preliminary schematic drawing in enough detail to develop a detailed construction estimate opinion of probable costs.

3. Submit an opinion of probable cost.

Phase Two (2) is to include the following:

1. Perform necessary research and field survey work as required to complete design including soil testing.

2. Prepare and present for approval preliminary design documents consisting of preliminary construction plans and outline specifications.

3. Develop a project schedule defining and establishing all owner's costs, consulting, A/E services, programming, design and construction activities and milestones in consultation with county staff. Opinion of probable cost is to be provided both at the end of the design phase, and then again once the final CD's are prepared.

4. Prepare and present for approval, final project plans and specifications, and assist in the preparation of other related documents. Assist in obtaining approvals by participating in submissions and negotiations with appropriate officials and authorities, including administrative hearings and meetings as reasonably required.

5. Design in such a manner to ensure Contractor's compliance with ADA Standards, with consideration for construction tolerances. Reference U.S. Access Board's final report, "Initiative on Dimensional Tolerances in Construction" dated January 2011 https://www.access-board.gov/research/building/dimensional-tolerances/ which identifies best practices for design and specifications.

6. Provide bidding assistance to include:

- Attending any Pre-Bid conference.

- Advising county staff as to the acceptability of substitute materials and equipment proposed.

- Providing addendums to bid documents.

7. Provide construction administration to include:

- Provide a minimum of one (1) site visit each week to observe the progress and quality of the work being completed, including review for compliance with ADA standards.

- Review contractor's applications for payment including any supplemental materials and advise the county as to the amount owed to contractor. Approval in writing of payment, should be based on observations and review, that the progress and quality is in accordance with the final project documents.

- Take appropriate action to review and approve shop drawings, samples, test results, substitutions of materials/equipment, maintenance and operating instructions, schedules, certificates of inspections, final plans, specifications, and contract documents as submitted by contractor.

- Verify that completed project confirms to the final plans including compliance with ADA standards.

- Provide written verification of approval or disapproval of work to project manager.

- Prepare all change orders as required.

- Conduct inspections to determine if the project is substantially complete and conduct a final inspection to determine if the project has been completed in accordance to all project documents. Upon disapproval, prepare a list of incomplete, unsatisfactory items, and a schedule for their completion. Upon approval of final inspection, provide written verification to county staff.

- Approve in writing, final payment upon receipt of guarantees, manuals, bonds, warranties, and as built drawing, etc.

- Act on behalf of the county to the extent authorized by county staff.

- The intent of the ADA review, during weekly site visits and for final project inspection, is to ensure quality control throughout the project, and to catch areas of ADA non-compliance early, rather than only at the final punch list inspection. The verification of ADA compliance shall include, but not be limited to, the following:

a. Verify that running slopes and cross slopes of ramps, sidewalks and accessible routes comply with ADA standards for maximum slope.

b. Verify plumbing fixtures and restroom compliance such as fixture locations, mounting height, clear floor space, grab bar heights, sizes, locations, knee clearance, and mirror and dispenser heights and locations, etc.

c. Review ramp or curb ramp features including, but not limited to, handrail heights and extensions, landing sizes, detectable warnings, side flares, and edge protection.

d. Review door opening force and door maneuvering clearances etc.

e. Verify proper signage mounting heights and locations.

f. Verify protruding object hazards do not exist.

g. Verify that operational parts are located within proper height range and that sufficient clear floor space exists.

h. Verify that parking space arrangement, slope, sizes, and signage comply with ADA Standards.

i. Any other services provided by the architect under the terms of the AIA Contract with the county's supplemental conditions.

All phases and areas within the project site must meet full ADA compliance per 2010 ADA Standards and any other applicable federal or state requirements. All work must meet Sedgwick County CAD standards.

VI. Sedgwick County's Responsibilities

- Provide information, as legally allowed, in possession of the county, which relates to the county's requirements or which is relevant to this project.
- Designate a person to act as the County Contract Manager with respect to the work to be performed under this contract.
- County reserves the right to make inspections at various points of the project. Contractor agrees to openly participate in said inspections and provide information to the county on the progress, expected completion date and any unforeseen or unexpected complications in the project.

VII. Proposal Terms

A. Questions and Contact Information

Any questions regarding this document must be submitted via email to Lee Barrier at Lee.Barrier@sedgwick.gov by 5:00 pm CDT, February 19, 2025. Any questions of a substantive nature will be answered in written form as an addendum and posted on the purchasing website at https://www.sedgwickcounty.org/finance/purchasing/current-bids-and-proposals/ under the Documents column associated with this RFP number by 5:00 pm CDT, Wednesday, February 26, 2025. Firms are responsible for checking the website and acknowledging any addenda on their proposal response form.

B. Minimum Firm Qualifications

This section lists the criteria to be considered in evaluating the ability of firms interested in providing the service(s) and/or product(s) specified in this Request for Proposal. Firms must meet or exceed these qualifications to be considered for award. Any exceptions to the requirements listed should be clearly detailed in proposer's response. Proposers shall:

1. Have a minimum of ten years' experience in providing services similar to those specified in this RFP.
2. Have an understanding of industry standards and best practices.
3. Have experience in managing projects of comparable size and complexity to that being proposed.
4. Have knowledge of and comply with all currently applicable, and as they become enacted during the contract term, federal, state and local laws, statutes, ordinances, rules and regulations. All laws of the State of Kansas, whether substantive or procedural, shall apply to the contract, and all statutory, charter, and ordinance provisions that are applicable to public contracts in the county shall be followed with respect to the contract.
5. Municipal and county government experience is desired, however, the county will make the final determination based on responses received and the evaluation process.
6. Have the capacity to acquire all bonds, escrows or insurances as outlined in the terms of this RFP.
7. Provide project supervision (as required) and quality control procedures.
8. Have appropriate material, equipment, and labor to perform specified services.
9. Park only in designated areas and display parking permit (if provided).
10. Wear company uniform or ID badge for identification purposes.

11. The safety of the county staff and public is paramount and must be considered in all project design and construction phases.
12. The firm will provide a single point of contact for the duration of the project.
13. The firm will ensure timely completion of plans, specifications, and responses to county staff questions.
14. Initial responses to county questions must occur within 24 hours of contact by the county.
15. Plans and specifications must be accurate and fully coordinated between all disciplines and be in full code compliance.
16. The firm will provide timely execution of administrative procedures related to the project such as change orders, proposals, shop drawings, contractor pay requests, final inspections, punch list items, etc.
17. The firm will maintain Architect's Errors and Omissions Insurance and a Primary Comprehensive General Liability Policy combine's single limit. Evidence of such coverage must be provided to the county at the time responses are due.
18. The firm shall not acquire any interest, direct or indirect, in any other professional capacity that would conflict in any manner or degree with the performance of services required to be performed under this agreement.
19. The firm and all subcontractors will adhere to AIA Code of Ethics and Professional Conduct.
20. The firm and all subcontractors shall maintain professional licenses needed to perform work in Sedgwick County and the State of Kansas. A copy of each license must be provided to the county at the time responses are due.
21. The firm will meet with applicable county departments to review project status, project budget, and project planning. These meetings will be scheduled at a time agreed on by the Project Manager, any applicable county department (s), and the A/E Firm.
22. The firm and/or subcontracting firm shall not utilize an employee with less than three (3) years' experience in the appropriate field and must have hands on experience in planning and designing requested projects of similar size and scope.
23. The firm shall notify the county in advance if subcontractors will be used. If subcontracting firm work experience and reference information was not provided during the solicitation process, it will need to be provided in advance of any work being completed. The county reserves the right to require an alternative subcontractor based on experience and reference information.
24. All media, citizen, and public official requests for information are to be directed to the Project Manager which the A/E firm is working with.
25. The firm will submit detailed monthly invoices for services provided. Monthly invoices shall detail the number of billable hours by individual person and by individual project for the preceding calendar month. The invoice must indicate total fees billed previously, total fees for current month, and total fees to date by the project. Invoices shall be delivered to the county no later than the 10th day of the month following when services were provided. Electronic invoices are accepted and may be emailed directly to the Project Manager.
26. The firm must provide information verifying capacity to perform the services in the required time as reflected by workload, availability of adequate personnel, equipment, and facilities.

C. Evaluation Criteria

The selection process will be based on the responses to this RFP. County staff will judge each response as determined by the scoring criteria below. Purchasing staff are not a part of the evaluation committee.

Component	Points
A. Ability to meet or exceed all Request for Proposal conditions and instructions as outlined herein.	20
B. Competence to perform the specified and mandatory services as reflected by technical training and education, experience in providing required services, and the qualifications and competence of persons who would be assigned to perform the services. Prior work experience, job sizes and history of proven performance.	20
C. Capacity to perform the services in the required time as reflected by workload, availability of adequate personnel, equipment and facilities. The ability to manage projects simultaneously and expeditiously, approach to problem/task resolution, methodology/data gathering techniques and procedures and teamwork.	20
D. Past performance with respect to cost control, quality of work, value engineering and ability to meet deadlines. This shall be determined in part by a check of references for similar projects and/or services provided for governmental entities or organizations of similar size and scope.	20
E. Proposing the services described herein with the most advantageous and prudent methodology and costs to the county.	20
Total Points	100

Assume the following cost proposals **(examples only)**

A. $50,000.00
B. $38,000.00
C. $49,000.00

Company B with a total price of $38,000.00 is the low offer. Take the low offer and divide each of the other offers into the low offer to calculate a percentage. This percentage is then multiplied by the number of points available for the cost. In this case, 10 points are allocated to cost.

A.	$38,000.00 divided by $50,000.00 =.76	.76*10	7.6 points
B.	$38,000.00 divided by $38,000.00 =1.00	1.00*10	10 points
C.	$38,000.00 divided by $49,000.00= .77	.77*10	7.7 points

Any final negotiations for services, terms and conditions will be based, in part, on the firm's method of providing the service and the fee schedule achieved through discussions and agreement with the county's review committee. The county is under no obligation to accept the lowest priced proposal and reserves the right to further negotiate services and costs that are proposed. The county also reserves the sole right to recommend for award the proposal and plan that it deems to be in its best interest.

The county reserves the right to reject all proposals. All proposals, including supporting documentation shall become the property of Sedgwick County. All costs incurred in the preparation of this proposal shall be the responsibility of the firm making the proposals. Sedgwick County reserves the right to select, and subsequently recommend for award, the proposed service which best meets its required needs, quality levels and budget constraints.

D. Request for Proposal Timeline

The following dates are provided for information purposes and are subject to change without notice. Contact the Purchasing Department at (316) 660-7255 to confirm any and all dates**.**

Distribution of Request for Proposal to interested parties	**February 5, 2025**
Questions and clarifications submitted via email by 5:00 pm CST	**February 19, 2025**
Addendum Issued by 5:00 pm CST	**February 26, 2025**
Proposal due before 1:45 pm CST	**March 4, 2025**
Evaluation Period	**March 5, 2025 - March 7, 2025**
Board of Bids and Contracts Recommendation	**March 13, 2025**
Board of County Commission Award	**March 19, 2025**

E. Contract Period and Payment Terms

A contract will be entered into upon approval from the Board of County Commissioners and a signed legal contract. The contract will continue until all services are completed upon agreement of both parties. The county reserves the right to cancel the contract and discontinue services with a thirty-day (30) written notice to the other party. It is understood that funding may cease or be reduced at any time, and in the event that adequate funds are not available to meet the obligations hereunder, either party reserves the right to terminate this agreement upon thirty (30) days prior written notice to the other. Payment will be remitted following receipt of monthly detailed invoice. Payment and Invoice Provisions https://www.sedgwickcounty.org/media/55477/payment-and-invoice-provisions.pdf

F. Insurance Requirements

Liability insurance coverage indicated below must be considered as primary and not as excess insurance. If required, contractor's professional liability/errors and omissions insurance shall (i) have a policy retroactive date prior to the date any professional services are provided for this project, and (ii) be maintained for a minimum of three (3) years past completion of the project. Contractor shall furnish a certificate evidencing such coverage, with county listed as an additional insured including both ongoing and completed operations, except for professional liability, workers' compensation and employer's liability. **Certificate shall be provided prior to award of contract.** Certificate shall remain in force during the duration of the project/services and will not be canceled, reduced, modified, limited, or restricted until thirty (30) days after county receives written notice of such change. All insurance must be with an insurance company with a minimum BEST rating of A-VIII and licensed to do business in the State of Kansas **(must be acknowledged on the bid/proposal response form).**

NOTE: If any insurance is subject to a deductible or self-insured retention, written disclosure must be included in your proposal response and also be noted on the certificate of insurance.

It is the responsibility of contractor to require that any and all approved subcontractors meet the minimum insurance requirements.

Workers' Compensation:	
Applicable coverage per State Statutes	
Employer's Liability Insurance:	$500,000.00
Commercial General Liability Insurance (on form CG 00 01 04 13 or its equivalent):	
Each Occurrence	$1,000,000.00
General Aggregate, per project	$2,000,000.00
Personal Injury	$1,000,000.00
Products and Completed Operations Aggregate	$2,000,000.00
Automobile Liability:	
Umbrella Liability: Following form for both the general liability and automobile **__X__ Required / ____ Not Required** Each Claim Aggregate	 $1,000,000.00 $1,000,000.00
Professional Liability/ Errors & Omissions Insurance: **_X__ Required / ____ Not Required** Each Claim Aggregate	 $1,000,000.00 $1,000,000.00
Pollution Liability Insurance: **____ Required / ___X_ Not Required** Each Claim Aggregate	 $1,000,000.00 $1,000,000.00

Special Risks or Circumstances:

Entity reserves the right to modify, by written contract, these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other special circumstances.

IF CONTRACTOR IS PROVIDING CONSTRUCTION SERVICES:

In addition to the above coverages, contractor shall also provide the following:

Builder's Risk Insurance:	In the amount of the initial Contract Sum, plus the value of subsequent modifications and cost of materials supplied and installed by others, comprising the total value for the entire Project on a replacement cost basis without optional deductibles. Entity, contractor, and all Subcontractors shall be included as named insured's.

G. Indemnification

To the fullest extent of the law, the provider, its subcontractor, agents, servants, officers or employees shall indemnify and hold harmless Sedgwick County, including, but not limited to, its elected and appointed officials, officers, employees and agents, from any and all claims brought by any person or entity whatsoever, arising from any act, error, or omission of the provider during the provider's performance of the agreement or any other agreements of the provider entered into by reason thereof. The provider shall indemnify and defend Sedgwick County, including, but not limited to, its elected and appointed officials, officers, employees and agents, with respect to any claim arising, or alleged to have arisen from negligence, and/or willful, wanton or reckless acts or omissions of the provider, its subcontractor, agents, servants, officers, or employees and any and all losses or liabilities resulting from any such claims, including, but not limited to, damage awards, costs and reasonable attorney's fees. This indemnification shall not be affected by any other portions of the agreement relating to insurance requirements. The provider agrees that it will procure and keep in force at all times at its own expense insurance in accordance with these specifications.

H. Confidential Matters and Data Ownership

The successful proposer agrees all data, records and information, which the proposer, its agents and employees, which is the subject of this proposal, obtain access, remains at all times exclusively the property of Sedgwick County. The successful proposer agrees all such data, records, plans and information constitutes at all times proprietary information of Sedgwick County. The successful proposer agrees that it will not disclose, provide, or make available any of such proprietary information in any form to any person or entity. In addition, the successful proposer agrees it will not use any names or addresses contained in such data, records, plans and information for the purpose of selling or offering for sale any property or service to any person or entity who resides at any address in such data. In addition, the successful proposer agrees it will not sell, give or otherwise make available to any person or entity any names or addresses contained in or derived from such data, records and information for the purpose of allowing such person to sell or offer for sale any property or service to any person or entity named in such data. Successful proposer agrees it will take all reasonable steps and the same protective precautions to protect Sedgwick County's proprietary information from disclosure to third parties as with successful proposer's own proprietary and confidential information. Proposer agrees that all data, regardless of form that is generated as a result of this Request for Proposal is the property of Sedgwick County.

I. Proposal Conditions

https://www.sedgwickcounty.org/media/31338/proposal-tc.pdf

Sample Contract
https://www.sedgwickcounty.org/media/67402/sample-contract-kws-13024.pdf

Contract Provisions for FEMA Projects (If Applicable)
https://www.sedgwickcounty.org/media/67302/sedgwick-county-federal-grant-contract-provisions.pdf

Suspension and Debarment
https://www.sedgwickcounty.org/finance/purchasing/suspension-and-debarment/

VIII. Required Response Content

All proposal submissions shall include the following:

1. Firm profile: the name of the firm, address, telephone number(s), contact person, year the firm was established, and the names of the principals of the firm.
2. The firm's relevant experience, notably experience working with government agencies.
3. At minimum, three (3) professional references besides Sedgwick County, with email addresses, telephone numbers, and contact persons where work has been completed within the last three (3) years.
4. A disclosure of any personal or financial interest in any properties in the project area, or any real or potential conflicts of interest with members of the Sedgwick County Board of County Commissioners or county staff.
5. A description of the type of assistance that will be sought from county staff, including assistance required from the county to lessen the costs of this project.
6. Proof of insurance meeting minimum insurance requirements as designated herein.
7. Those responses that do not include all required forms/items may be deemed non-responsive.
8. Proof of insurance meeting minimum insurance requirements as designated herein.
9. Those responses that do not include all required forms/items may be deemed non-responsive.
10. The names of any anticipated subcontractors that will be used and in what capacity.
11. The work experience of any anticipated subcontractors.
12. A completed copy of the Bid Form provided with this Request for Proposal.

NOTE: The proposed fee shall be in an amount sufficient to cover traditional reimbursable costs such as:

•Transportation and subsistence expenses of employees, principals, and partners incurred during travel.
•Communication expenses such as long distance telephone calls, telegraph, facsimile, express or messenger charges and postage.
•Sub consultant expenses for special services for associated consultants, such as structural, mechanical and electrical engineering, geo-technical investigation and reports, testing, and observation, etc.
•Specialized equipment including computers, computer time, software, printers, scanners, etc.
•Progress prints and in-house plots.
•Charges for personnel bonuses, employee training, employee morale programs, principal bonuses, general liability, auto liability, or professional liability insurance will not be accepted.

IX. Response Form

REQUEST FOR PROPOSAL
RFP #25-0017
ARCHITECTURAL AND ENGINEERING SERVICES
DESIGN AND CONSTRUCTION FOR
EMS Post 1

The undersigned, on behalf of the proposer, certifies that: (1) this offer is made without previous understanding, agreement or connection with any person, firm, or corporation submitting a proposal on the same project; (2) is in all respects fair and without collusion or fraud; (3) the person whose signature appears below is legally empowered to bind the firm in whose name the proposer is entered; (4) they have read the complete Request for Proposal and understands all provisions; (5) if accepted by the county, this proposal is guaranteed as written and amended and will be implemented as stated; and (6) mistakes in writing of the submitted proposal will be their responsibility.

NAME _____

DBA/SAME _____

CONTACT_____

ADDRESS_____ **CITY/STATE**_____ **ZIP**_____

PHONE_____ **FAX**_____ **HOURS**_____

STATE OF INCORPORATION or ORGANIZATION _____

COMPANY WEBSITE ADDRESS_____ **EMAIL**_____

NUMBER OF LOCATIONS_____ **NUMBER OF PERSONS EMPLOYED**_____

TYPE OF ORGANIZATION: Public Corporation _____ Private Corporation_____ Sole Proprietorship _____

Partnership_____ Other (Describe): _____

BUSINESS MODEL: Small Business _____ Manufacturer _____ Distributor _____ Retail _____

Dealer _____ Other (Describe): _____

Not a Minority-Owned Business: _____ **Minority-Owned Business:** _____ **(Specify Below)**

____African American (05) _____ Asian Pacific (10) _____ Subcontinent Asian (15) _____ Hispanic (20)

____Native American (25) _____ Other (30) - Please specify_____

Not a Woman-Owned Business: _____ **Woman-Owned Business:** _____ **(Specify Below)**

_____Not Minority -Woman Owned (50) _____ African American-Woman Owned (55) _____Asian Pacific-Woman Owned (60)

_____ Subcontinent Asian-Woman Owned (65) _____Hispanic Woman Owned (70) _____Native American-Woman Owned (75)

_____Other – Woman Owned (80) – Please specify_____

ARE YOU REGISTERED TO DO BUSINESS IN THE STATE OF KS: _____Yes _____ No

UEI (UNIQUE ENTITY IDENTIFIER) NO._____

INSURANCE REGISTERED IN THE STATE OF KS WITH MINIMUM BEST RATING OF A-VIII: _____Yes _____No

ACKNOWLEDGE RECEIPT OF ADDENDA: All addendum(s) are posted to our RFB/RFP web page and it is the vendor's responsibility to check and confirm all addendum(s) related to this document by going to https://www.sedgwickcounty.org/finance/purchasing/.

NO._____, DATED _____; NO._____, DATED_____; NO._____, DATED_____

In submitting a proposal, vendor acknowledges all requirements, terms, conditions, and sections of this document. Proposal submission format should be by order in which sections are listed throughout the document. All minimum and general requirements should be specifically addressed and detailed in proposer's response. **Exceptions to any part of this document should be clearly delineated and detailed**.

Signature_____ Title_____

Print Name_____ Dated _____

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DESIGN AND CONSTRUCTION FOR
EMS Post 1

Consistent with the guidance provided in Section 1 of this Request for Proposal, Sedgwick County is subject to the Kansas Open Records Act (K.S.A. 45-215 *et seq*.). As such, portions, and potentially all, of your proposal may become accessible to the public through records requests even if it is not awarded the contract.

If you are claiming some of the submitted documentation should not be disclosed, indicate the associated information and the basis for such claims of privilege in the spaces below. In the event records requests are submitted for information identified as privileged, proprietary or confidential, Sedgwick County may attempt to coordinate a response and would expect for you to be available to defend your claims in court. Failure to provide information in the spaces below shall constitute a waiver of any claims of violation of privileged, proprietary or confidential information resulting from the production of these records, regardless of other language or claims within your Response.

PRIVILEGE LOG		
Page and/or Section of Information Not Subject to Disclosure	**Description of Information that You Claim are Privileged or Confidential. Do not include specific details, but rather categories or general descriptions of the information in question.**	**Basis for the Claim of Privilege. Please include the Applicable Federal or State Law Cite and Rationale**

EMS POST 1
PARCEL DETAILS – Lot: Approximately 37,156 Square Feet

EMS POST 1
PARCEL AERIAL VIEW

EXHIBIT A

CAD 2D Drawing Standards for Sedgwick County

A. Software Requirements

a. All drawings must be provided in DWG file format that is supported by Autodesk AutoCAD©.
b. Use of only AutoCAD© version 2000 format or later will be accepted.
c. All electronic drawings must be delivered on CD-ROM or DVD, formatted using Windows© 2000 or higher.

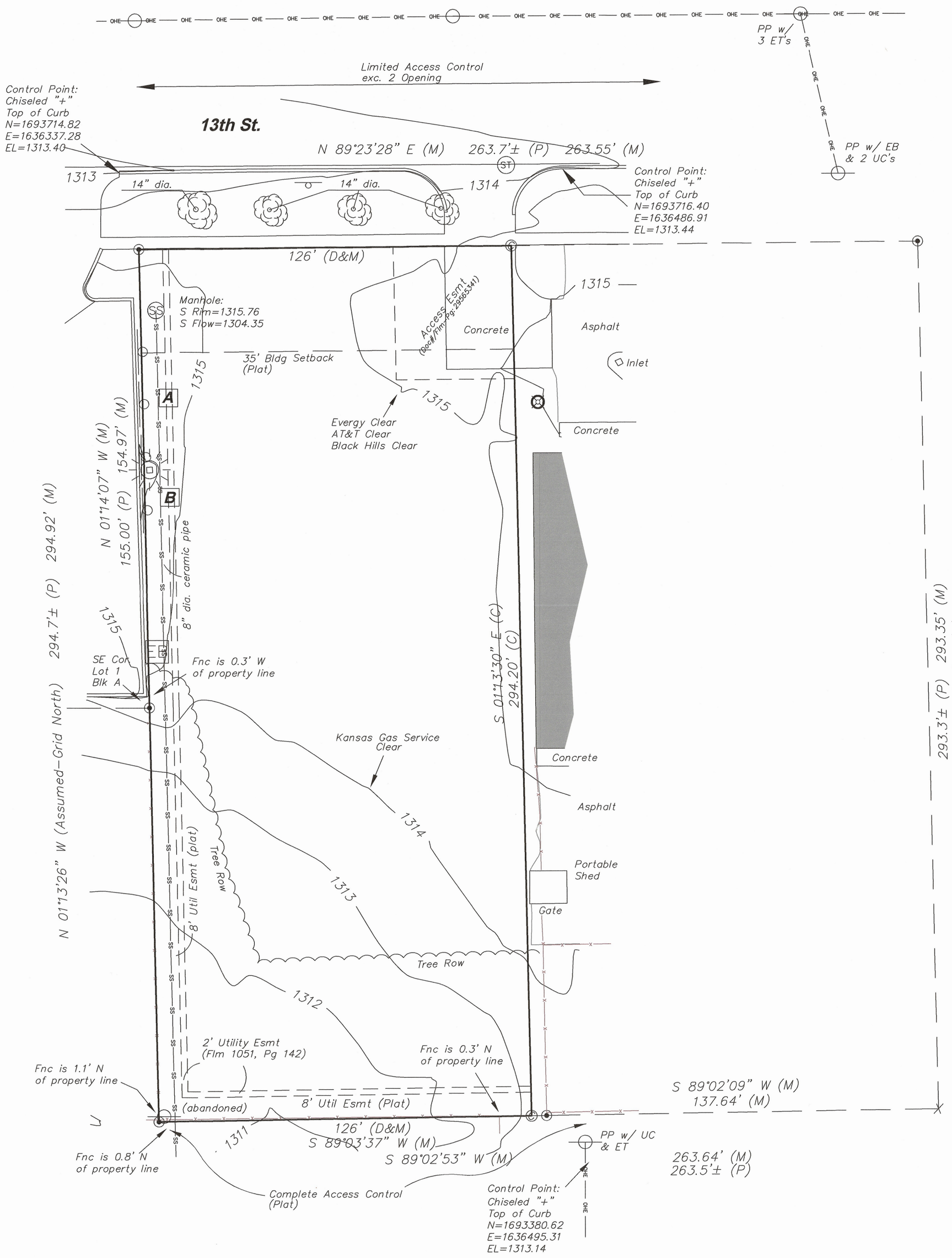
B. Drawing Requirements

a. All files must be "readable" and must open without any errors (such as proxy, font substitution, xref resolution, etc…). Objects, layers, and other file properties must also remain intact.
b. All drawings must be free of password protection or encryption.
c. All drawings must be purged of duplicate object lines.
d. All drawings must be purged of blocks, layers, attributes, etc. not referenced in the drawing.
e. Ensure that xrefs are attached without drive or directory specifications. No unbound references to external source drawing files are permitted.
f. The contractor shall retain a copy of all electronic deliverables for at least one year. During this time if requested, the contractor shall provide up to two additional copies of each at no additional cost to Sedgwick County.

C. Drawing Formats

a. Scale - All CAD drawings must be drafted at full-scale with the exception of schematic drawings which may be drawn to any scale.
b. Units – Architectural units of feet and inches are to be used unless nature of the drawing requires otherwise (in the case of a schematic drawing).
c. Tolerances – Tolerances are at the discretion of the contractor but should be selected to most accurately reflect the data in the drawing.
d. Dimensioning – All drawings must use Associative Dimension (updates automatically when distances on drawing are changed).
e. Fonts and Text Styles – Only AutoCAD© True Type fonts may be used at the discretion of the contractor. Special fonts not packaged with AutoCAD© are not permitted.
f. Line types – Only standard AutoCAD© line types are permitted. Contour lines, dashed lines, and other fonted lines must be made of one continuous line segment and not a series of separate line segments.
g. Line weights – Line weights are at the discretion of the contractor but must be assigned to the specific layers and not to individual drawing entities. It is recommended that line weights follow standard drafting conventions.
h. Layers – All drawing files must conform to the AIA (American Institute of Architects) *CAD Layer Guidelines*.
i. Layer Colors – The layer colors are at the discretion of the contractor. Darker colors and half tones are recommended.
j. Hatching – Hatching shall not deviate from AutoCAD© defaults. Do not use polylines with increased width for hatching.
k. Blocks – Blocks are to be used anytime a graphic entity repeatedly occurs. All components used to create blocks must be created on layer 0.
l. Title Blocks – Each drawing should have only one title block located in the lower right hand corner or in the right pane of the drawing. At a minimum the title block should contain:
    - Customer Name (Sedgwick County)
    - Firm Name
    - Project Name
    - Building Name/Number
    - Project Number
    - Drawing Title
    - Sheet Identification
    - Date of Drawing
    - Drawing Number
    - Drawing Scale
    - North Arrow
m. Model Space and Paper Space – Contractors are strongly encouraged to use paper space but not required to do so as long as the drawing in the model space contains the required data.
n. Graphics – All images included in the drawing must be embedded within the CAD file. Acceptable graphic types include JPG, TIF, GIF, PDF, BMP, etc…

EXHIBIT B



NOTES:
1. Utilities located from above ground observation and per KS One Call Ticket No. 24477038.
2. Elevation Datum=NAVD88
3. Basis of Bearing=KS State Plane Coordinates–Grid North.
4. Coordinate datum: NAD83, Kansas State Plane projected to ground.

State of Kansas
SS
County of Sedgwick

I, Chad R. Abbott, P.S. #1340, do hereby certify that this Topographic Survey was performed by me or under my direct supervision and that I am duly licensed Land Surveyor in the State of Kansas.

Legal Description:
The West 126 feet of Lot 2, Block A, Kastens Addition, City of Wichita, Sedgwick County, Kansas.

Date of Survey: September 24, 2024
Date of Preparation: August 14, 2024

CHAD R. ABBOTT LICENSED PS-1340 10-24-24 KANSAS PROFESSIONAL SURVEYOR

Chad R. Abbott, P.S. #1340

SCALE: 1" = 20'

-20 0 10 20 40 60

LEGEND:

(P) = Platted
(M) = Measured
(D) = Described
(C) = Calculated
Tree (size noted)
Well
= Found 1/2" Pipe
= Calculated
= Found Chiseled "+"
EB Electric Box
Light Pole
Power Pole
SS Sanitary Sewer Manhole
ST Storm Manhole
Sign
PP=Power Pole
UC=Underground Conduit
EB=Electric Box
ET=Electric Transformer
= Fence
OHE OHE = Overhead Electric Line

Significant Observations:
A Adjoiner signs crosses onto subject property 0.4'–0.8'
B Light Pole crosses onto subject property 1.9'

Dwn. By: AMF	Aprvd. By: CRA
Dwg. No. A24-09-009	Scale: 1" = 20'

FILE: C: drawings/topo/A24-09-009

Wichita-Sedgwick County
Metropolitan Area
Planning Department

EXHIBIT B1

November 20, 2024

Donaldson-Loescher Liv. Trust
3057 N. Bluebird
Wichita, KS 67204

Sedgwick County
525 N. Main
Wichita, KS 67203

Ref: VAC2024-00044: Vacation request in the City to vacate a portion of platted access control to permit a 3rd driveway for future EMS station on property zoned LC Limited Commercial District, located on the south side of West 13th Street North and within one-half mile west of North Meridian Avenue.

Dear Applicant,

At the **Tuesday, November 19, 2024**, meeting of the Wichita City Council, the above-referenced vacation request was approved.

If you have any questions concerning this case, please contact our office at 268-4421.

Sincerely,

Philip Zevenbergen
Current Plans
Division Manager

PZ: JM

Sedgwick County
Register of Deeds - Bill Meek
Doc.#/Flm-Pg: 29565341
Receipt #: 1952271
Pages Recorded: 3
Recording Fee: $28.00
Authorized By:
Cashier: KVENATOR
Date Recorded: 10/21/2015 10:35:54 AM

EXHIBIT B2

ACCESS EASEMENT GRANT

THIS ACCESS EASEMENT GRANT made this 15TH day of OCTOBER, 2015, by Donaldson-Loescher Living Trust, herein referred to as the Grantors, being the owners of the following described properties, to-wit:

PARCEL "A"

Lot 2, except the west 126.00 feet thereof, Block A, Kastens Addition to Wichita, Kansas.

and

PARCEL "B"

The west 126.00 feet of Lot 2, Block A, Kastens Addition to Wichita, Kansas.

and

WHEREAS, said Parcel "A" and Parcel "B" are contiguous to and lie directly adjacent to each other; and

WHEREAS, Grantors desire to provide a perpetual access easement for the benefit of Parcel "A" over, across, and through a portion of said Parcel "B" (later described as Parcel "C"), to allow Parcel "A" access to 13th Street North.

NOW THEREFORE, be it known that Grantors hereby grant to the owners of Parcel "A" the right to use for ingress and egress purposes the access easement described as Parcel "C".

PARCEL "C"

The north 45.00 feet of the east 40.00 feet of the west 126.00 feet of Lot 2, Block A, Kastens Addition to Wichita, Kansas.

Such access easement shall be a perpetual easement until and unless amended, revoked, or released by all of the parties in interest or their successors or assigns and that the same shall be a covenant running with the land and shall be binding upon the grantors herein, their grantees, their heirs, assigns, licensees, successors, and assignees in interest.

It is further contracted and covenanted that such easement shall be for driveway, ingress, and egress purposes and such easement shall not be used for parking purposes or utilized in any manner so as to impede or inconvenience the use of such easement for the purposes herein setforth. Maintenance of said easements shall be in the mutual interests and responsibilities to all party's interest and their successors, heirs, and/or assigns.

EXECUTED the day and year first written.

By: Donaldson-Loescher Living Trust

Holly M. Donaldson, Co-Trustee

Nancy J. Loescher, Co-Trustee

STATE OF KANSAS)
SEDGWICK COUNTY) SS:

BE IT REMEMBERED, that on this 15th day of October, 2015, before me, the undersigned, a Notary Public, in and for the County and State aforesaid, came Holly M. Donaldson, Co-Trustee of the Donaldson-Loescher Living Trust, personally known to me to be the same person(s) who executed the within instrument of writing and such person(s) duly acknowledged the execution of the same.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year above written.

Kelly A. Thomas
Notary Public

(My Appointment Expires: 4-16-16)

KELLY A. THOMAS
Notary Public - State of Kansas
My Appt. Expires 4-16-16

STATE OF KANSAS)
SEDGWICK COUNTY) SS:

BE IT REMEMBERED, that on this 15th day of October, 2015, before me, the undersigned, a Notary Public, in and for the County and State aforesaid, came Nancy J. Loescher, Co-Trustee of the Donaldson-Loescher Living Trust, personally known to me to be the same person(s) who executed the within instrument of writing and such person(s) duly acknowledged the execution of the same.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal the day and year above written.

Kelly A. Thomas
Notary Public

(My Appointment Expires: 4-16-16)

KELLY A. THOMAS
Notary Public - State of Kansas
My Appt. Expires 4-16-16

EXHIBIT B3

Phase I Environmental Site Assessment

EMS Post 1 Proposed Site

Introduction

Staff from the Sedgwick County Environmental Resources Department was asked to review the property between 3059 and 3223 W. 13th St. N., Wichita, Kansas, as a potential location for the new Sedgwick County EMS Post 1. The property is approximately .85 acres and is currently an open lot. The land use is Commercial highest and best use.

The property is shown in figure. 1 below.

Figure 1. Property adjacent to 3059 and 3223 W. 13th St. N.

Scope of Work

The scope of work focused on the following specific tasks related to an Environmental Assessment.

Task 1 – Perform Historical Search of Past and Current Property Use

Historical land use was reviewed by County Appraisal history. A visual assessment of the property was also performed.

Task 2 – Review of Environmental Databases

Available environmental databases maintained by federal, state and local environmental agencies were reviewed for any known contaminated sites or permitted petroleum storage tanks.

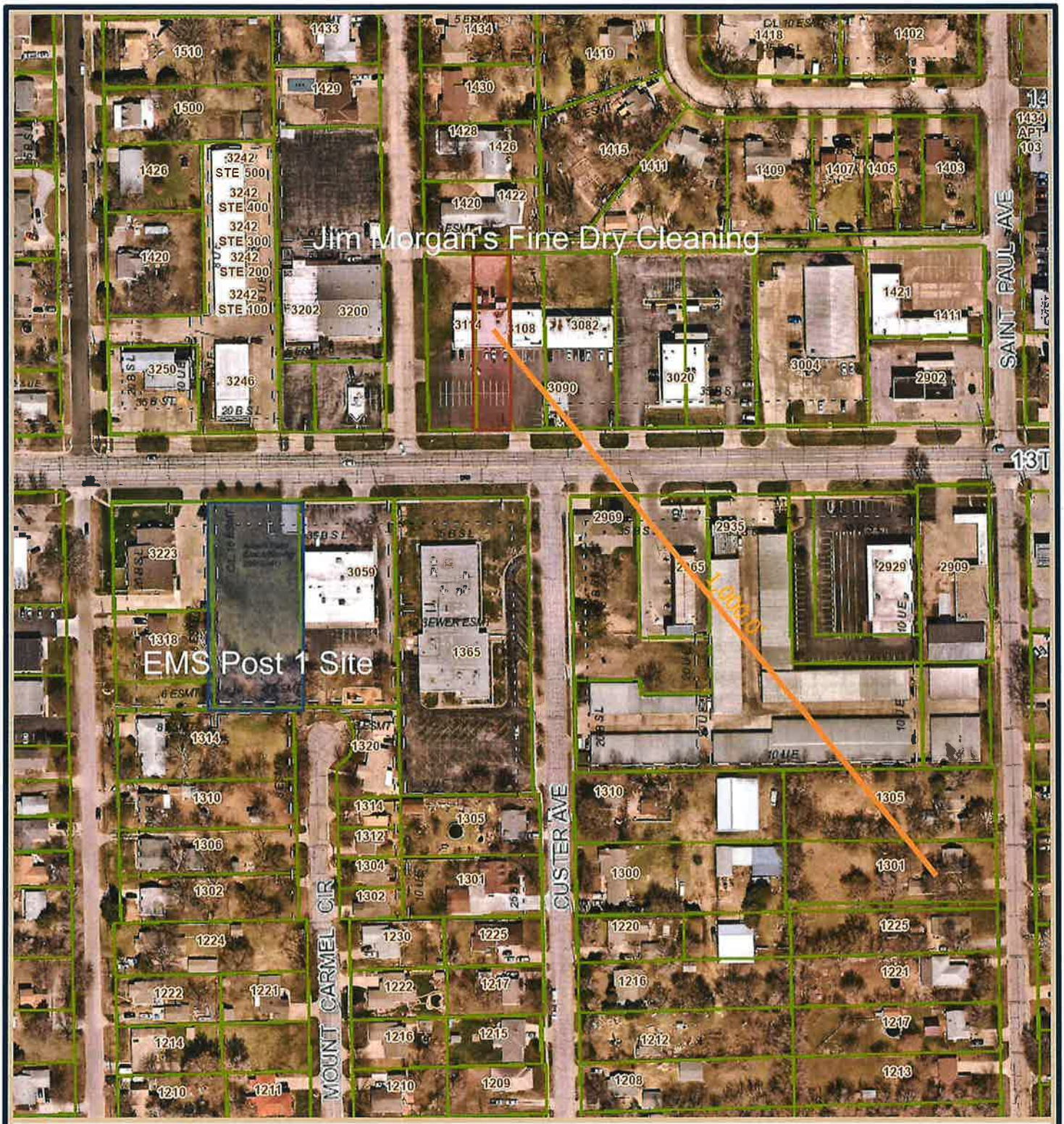
Task 3 – Review Geologic, Hydrogeologic Data and Species Data

Publicly available documents and/or personal contact to determine the potential for localized hazards such as flooding, faults, or the presence of threatened and endangered species was undertaken.

Findings

The property between 3059 and 3223 W. 13th St. N., Wichita, Kansas was visually inspected. It is currently a vacant lot and no issues were found. A 1950 historic aerial photo shows a mix of cropland and residential properties in this area. Surrounding houses were built in the late 1940's to early 1950's.

The Kansas Department of Health and Environment (KDHE) Bureau of Environmental Remediation maintains an Identified Sites List Database, which identifies sites for environmental remediation. There is 1 active remediation site within 0.1 miles of the property. Jim Morgan's Fine Dry Cleaning, 3110 W. 13th Street, is to the northeast of the proposed EMS Post 1 property. The dry cleaner had tetrachloroethylene (PCE) detected in the soil and groundwater in 2004. KDHE believes the PCE traveled to the southeast approximately 1,000 to 1,500 feet. This movement is away from the proposed EMS Post 1 property. Remedial activities continue currently. This can be seen on the following map.



Geographic Information Services
Sedgwick County... working for you

Date: 8/27/2024

EMS Post Aerial View

Sedgwick County, Kansas

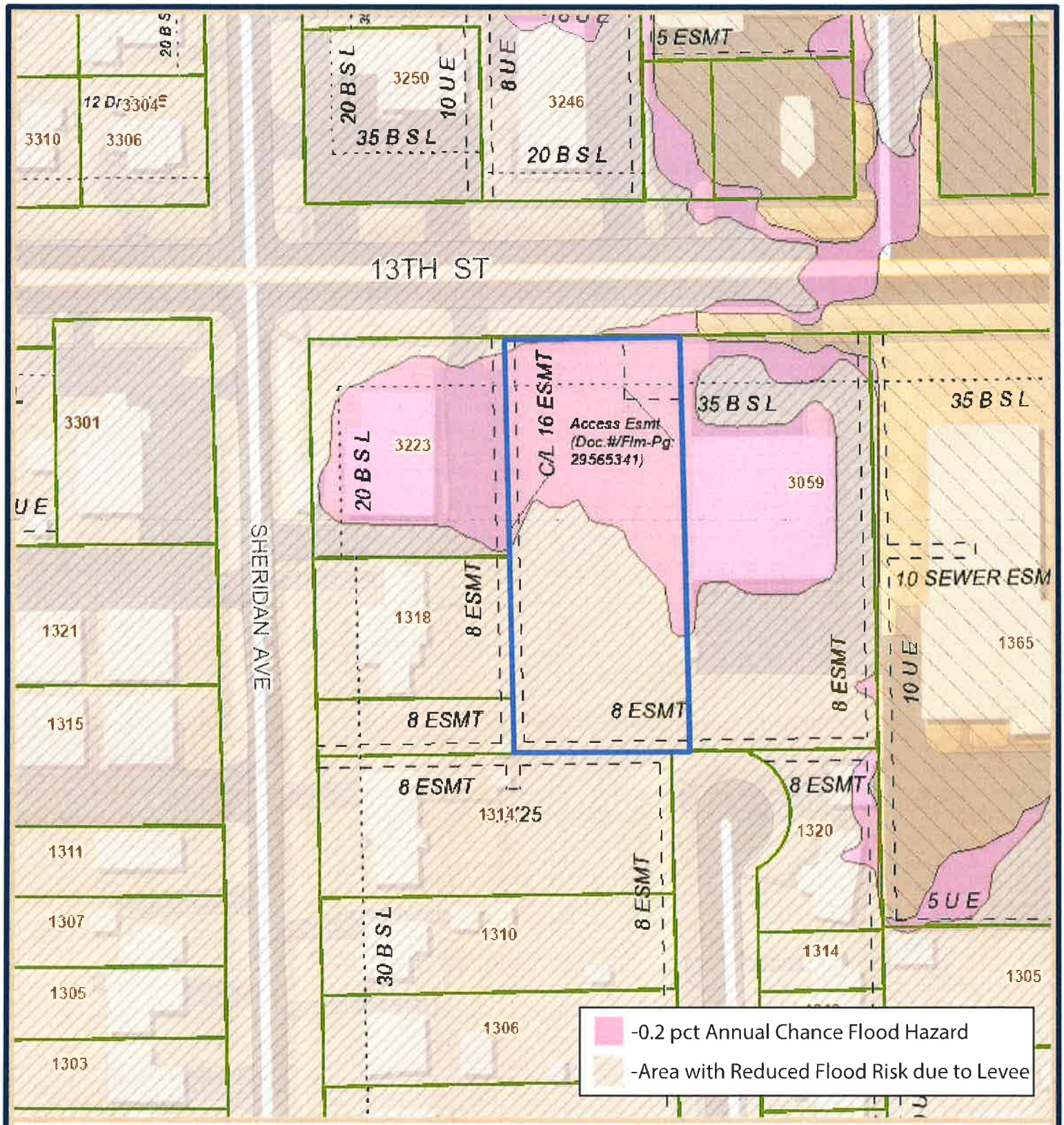
N
W E
S

1:2,257

mi
0 0.01 0.02

The Kansas Department of Health and Environment (KDHE) website was reviewed to determine if there were any permitted underground storage tanks (UST) or above-ground storage tanks on these properties. None were found.

Geologic and hydrogeologic maps were used to determine location of floodplains and faults. The property is dissected by 2 areas of flood hazard. The northern portion is designated as Zone X, 0.2% Annual Chance Flood Hazard (Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile). The southern portion is designated Zone X, Area with Reduced Flood Risk due to Levee. This can be seen on the following 2 maps.



Geographic Information Services
Sedgwick County... working for you

Date: 8/27/2024

Proposed EMS Post 1 Floodplain

Sedgwick County, Kansas

N W E S

1:1,128

mi
0 0.0065 0.013

National Flood Hazard Layer FIRMette

FEMA

97°23'6"W 37°42'44"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

97°22'28"W 37°42'16"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/27/2024 at 9:43 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

According to the Kansas Department of Wildlife and Parks, there are no threatened or endangered species that would be impacted at this property.

Special Considerations

It should be noted that environmental assessments of this type are noninvasive and cannot eliminate the potential that hazardous, toxic, or petroleum substances are present or have been released beyond what is identified by the scope of this environmental assessment. It should be recognized that environmental concerns may be documented in public records that were not reviewed, though care has been taken to review known records. This site assessment is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions. This must be considered when formulating opinions as to risks associated with these sites.

EXHIBIT B4

GEOTECHNICAL EXPLORATION REPORT
Sedgwick County EMS Post 1
West 13th Street North & North Sheridan
Wichita, Kansas

UES Project No. A24125.00762.000
October 1, 2024

Prepared by:

GSI Engineering, LLC
A UES Company (UES)
4503 East 47th Street South
Wichita, Kansas 67210
(316) 554-0725

Prepared for:

Sedgwick County
271 W. 3rd Street, Suite 325
Wichita, Kansas 67206

COLIN DEAN PARKER
LICENSED
28732
10/1/2024
KANSAS
PROFESSIONAL ENGINEER

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Kansas.

October 1, 2024

Colin D. Parker, P.E. Date

My license renewal date is April 30, 2025.
Sections covered by this seal: Sections 1 through 6 and all pages included as appendices within this bound document.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

TABLE OF CONTENTS

APPENDICES

Appendix A -	General Vicinity Map
	Boring Location Plan
Appendix B -	Boring Logs
	Key to Symbols
	Legend & Nomenclature
	Unified Soil Classification System (USCS)
Appendix C -	Field & Laboratory Test Results

1. INTRODUCTION

1.1 General

This report summarizes the findings of our geotechnical exploration for the proposed Sedgewick County EMS Post 1 located south of West 13th Street between Sheridan Avenue and Custer Avenue in Wichita, Kansas. The scope of work was outlined in our proposal dated August 27, 2024. Ms. Sandy Anguelov of Sedwick County authorized this exploration on September 9, 2024 with issuance of Purhcase Order No.: 4300121469.

The purpose of this geotechnical study is to explore the subsurface conditions at the proposed site with exploratory borings, evaluate the engineering properties of the subsurface materials with appropriate field and laboratory tests, and perform engineering analyses for developing design and construction recommendations for the proposed project.

1.2 Project Description

The proposed project will be located south of W. 13th Street between Sheridan Avenue and Custer Avenue in Wichita, Kansas. We understand the development will consist of the construction of a new EMS facility with associated parking and drives. The single-story structure will be of steel or wood frame construction with a concrete slab-on-grade floor. We estimate the structure will have maximum column and continuous wall loads on the order of 50 kips and 3 kips per linear foot, respectively.

We anticipate that the pavement will support predominately emergency vehicles with less frequent passenger cars, panel delivery vans, passenger vans, and trash trucks.

We assume site grading required to bring the building pad to the desired elevation will be minimal, with cuts or fills less than 2 feet. Please contact us if site grading will be more significant so we may evaluate and adjust our recommendations if necessary.

A site plan is included in Appendix A for reference.

2. FIELD EXPLORATION

We drilled 4 borings for this geotechnical exploration on September 11, 2024 with a CME 55 truck-mounted drilling rig using 2.25-inch inside diameter hollow stem augers. We drilled 2 borings within the building footprint and 2 borings in the parking/drive areas to depths of approximately 20 feet below the site grade at the time of our exploration.

We selected boring locations based on a preliminary site plan/boring location plan provided by Sedgwick County on August 26, 2024. UES personnel established field locations using a hand-held GPS unit with an accuracy of +/- 10 feet. Boring locations in relation to existing and proposed features are indicated on the Boring Location Plan included in Appendix A. The boring locations should be considered accurate only to the degree implied by the methods used in their determination.

We interpolated ground surface elevations at the boring locations using elevations obtained from ground surface profiling provided by Google Earth. The ground surface elevations at the borings are shown on the boring logs included in Appendix B. The boring elevations should be considered accurate only to the degree implied by the methods used in their determination.

Our drill crew obtained soil samples at the intervals shown on the boring logs in Appendix B. Recovered samples were sealed in plastic containers, labeled, and protected for transportation to the laboratory for further examination, testing, and classification.

We obtained split-barrel samples (designated "Split Spoon" or "S" samples) while performing Standard Penetration Tests (SPT) with a 1-3/8 inch I.D. thick-walled sampler, driven using an automatic hammer in general accordance with ASTM D1586, "*Penetration Test and Split-Barrel Sampling of Soils*." The "N" value, reported in blows per foot (bpf), equals the number of blows required to drive the sampler through the last 12 inches of the 18-inch sample interval using a 140-pound hammer falling 30 inches.

Our drilling personnel prepared field boring logs during drilling operations. These field logs report drilling and sampling methods, sampling intervals, groundwater measurements and the subsurface conditions we encountered. At the conclusion of drilling, our drill crew made groundwater measurements and backfilled the borings in accordance with Kansas state regulations.

3. SITE CONDITIONS

3.1 Regional Geology

The project site lies within the Arkansas River Lowlands region of western and central Kansas. The topography in this region is typified by flat alluvial plains. Soil stratigraphy generally comprises sand, silt and gravel of Pleistocene Age or younger, weathered from as far as the Rocky Mountains and transported by the Arkansas River. As the river flows eastward, the current slows, and the materials in the water column are deposited within the flood plain. In the project area, the alluvial deposits are underlain by the Wellington Shale of the Permian bedrock system.

3.2 Surface Conditions

The project site comprises an undeveloped grass-covered lot with several mature trees to the south end of the site. The site exhibits approximately 2 feet of elevation change sloping downgradient from the north to the south. The site is bound to the north by West 13th Street North, the east by Adventure planet, the south by residential lots, and the west by Indian Hills Animal Clinic.

3.3 Subsurface Conditions

Although we observed some variability, the subsurface materials we encountered within the depths of exploration generally comprised of 6 inches of topsoil overlying clayey sand to poorly graded sand with an interbedded layer of lean clay with varying amounts of sand. General descriptions of the strata we encountered are presented below, while more detailed subsurface information is presented on the boring logs located in Appendix B. Please note that the indicated depths are relative to the site grade at the time of our exploration.

Stratum 1

We encountered clayey sand to poorly graded sand in each of our soil borings, underlying the surficial topsoil at the surface, and extending to boring termination depths of approximately 20 feet below the site grade at the time of our exploration. This material was generally described as dark brown to light brown, dry to slightly moist, and fine to coarse grained. We measured SPT N-values between 7 and 25 bpf, indicating the sand soils are in a loose to medium dense condition.

Stratum 2

We encountered lean clay with varying amounts of sand in each of our soil borings, underlying and interbedded in the sand soils between 2.5 and 13.5 feet below the site grade at the time of our exploration.

This material was generally described as dark brown to brown, grayish brown, or reddish brown, and slightly moist to moist. We measured Standard Penetration Test (SPT) N-values between 7 and 23 blows per foot (bpf), indicating the lean clay is in a medium stiff to very stiff condition.

3.4 Groundwater Conditions

Our drill crew made water level observations during drilling and after completion of the borings to evaluate groundwater conditions. We did not encounter groundwater in any of our soil borings.

The groundwater conditions we observed during our exploration program should not be construed to represent an absolute or permanent condition. Uncertainty is involved with short-term water level observations in boreholes.

The free groundwater surface or groundwater table within unconfined aquifers is generally a subdued reflection of surface topography. Water generally flows downward from upland positions (recharge zones) to low lying areas or surface water bodies (discharge zones). As such, the groundwater level and the amount and level of any perched water on the site may be expected to fluctuate with variations in precipitation, site grading, drainage and adjacent land use. Further, the groundwater elevation is expected to vary locally with changes in the nearby creek level. Long-term monitoring utilizing piezometers or observation wells is required to evaluate the potential range of groundwater conditions.

3.5 Seismic Site Classification

We have reviewed the boring logs and laboratory test data for this project. We have also reviewed other geologic data from the general area available to us for further information on the soils extending to a depth of 100 feet below the existing grade.

Based on the above resources, we estimate that the weighted average N-value for soil and rock across this depth is greater than 15 but less than 50 blows per foot (bpf). As defined in ASCE 7-16 as well as the 2018 version of the International Building Code, this building site is assigned a Site Class of D.

4. LABORATORY TESTING

Our engineering staff reviewed the field boring logs to outline the depth, thickness and extent of the soil strata. The samples taken from the borings were examined in our laboratory and visually classified in general accordance with ASTM D2488, "*Description and Identification of Soils (Visual-Manual Procedure)*." We established a testing program to evaluate the engineering properties of the recovered samples. A UES technician performed laboratory testing in general accordance with the following current ASTM test methods:

- Moisture Content (ASTM D2216, "*Laboratory Determination of Water (Moisture) Content of Soil and Rock*")
- Atterberg Limits (ASTM D4318, "*Liquid Limit, Plastic Limit, and Plasticity Index of Soils*")
- Minus No. 200 Sieve Wash (ASTM D1140, *"Amount of Material in Soils Finer Than the No. 200 (75-µm) Sieve")*

Laboratory test results are presented on the boring logs in Appendix B and tabulated in Appendix C.

Moisture content tests were used to evaluate the existing moisture condition of the soils. The Atterberg limits and Minus No. 200 sieve tests were used to help classify the soils under the Unified Soils Classification System. The Atterberg limits were also used to evaluate the plasticity characteristics of the soils.

The following data summarize our laboratory test results. We used these data to develop the allowable bearing values, anticipated settlements, and other geotechnical design criteria for the project.

- Natural Moisture Content ..... 2.3 to 25.1%
- Liquid Limit..... 31 to 40
- Plastic Limit ..... 15 to 16
- Plasticity Index ..... 15 to 24
- Percent Passing the No. 200 Sieve ..... 40.9 to 43.6%
- Standard Penetration Test (SPT 'N' blows per foot)..... 7 to 25

Based on the results of this testing program, we reviewed and supplemented the field logs to arrive at the final logs as presented in Appendix B. The final logs represent our interpretation of the field logs and reflect the additional information obtained from the laboratory testing. Stratification boundaries indicated on the boring logs were based on observations made during drilling, an extrapolation of information obtained by

evaluating samples from the borings, and comparisons of similar engineering characteristics. Locations of these boundaries are approximate and the transitions between soil types may be gradual rather than clearly defined.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 General Geotechnical Considerations

The soils we encountered in the test borings are generally capable of supporting the anticipated loads on shallow foundations. We did not encounter groundwater within the depth of expected excavation.

The near-surface clayey sand and lean clay soils we encountered at the site generally exhibit low plasticity and limited shrink/swell potential. These soils may be used for direct support of floor slabs or pavements, if properly moisture conditioned and compacted as outlined later in this report.

5.2 Earthwork

5.2.1 Site Preparation

We recommend that any existing utilities within the proposed building area be relocated to avoid passing beneath the new structure. Abandoned utility pipes that cannot be removed must be plugged with grout to reduce the potential for future collapse or moisture migration into the subgrade soils. Excavations resulting from utility removal must be replaced with engineered structural fill as outlined in Section 5.2.5.

Trees within the areas to be prepared for development must be removed. The root-balls and surrounding soils containing observable organic material must also be removed. We expect the root-balls will extend to substantially greater depths than the topsoil stripping depth. The root-ball excavations must be filled with an engineered structural fill that is placed, moisture conditioned and compacted in accordance with Section 5.2.4.

In preparing the site for construction, surface vegetation and topsoil containing a significant percentage of organic matter should be removed from the areas beneath structures and any other areas that are to be paved, cut or receive fill. The removal depth for this site is expected to be approximately 6 inches. However, the removal depth should be monitored during stripping and adjusted as required. This material should either be removed from the site or stockpiled for later use in landscaping of unpaved or non-structural areas.

Prior to fill placement, the top 9 inches of the ground surface in fill areas should be scarified, moisture conditioned and recompacted in accordance with Section 5.2.4 to eliminate a plane of weakness along the contact surface.

The subgrade should be proof rolled with a loaded tandem axle dump truck or equivalent (loaded water truck, loaded concrete mixer or motor grader with a minimum weight of 20 tons). A proof-roll is considered acceptable if no ruts greater than one inch deep appear behind the loaded vehicle, and no pumping or weaving is observed as the wheels pass over the area. Any soft or unsuitable areas should be compacted or removed and replaced with stable fill material similar in composition to the surrounding soils. If necessary, clean materials such as crushed concrete or crushed stone may be used to stabilize areas where wet soil or water is present. Geogrid or structural geotextile may be used in conjunction with crushed concrete or stone to provide additional stabilization.

Whether in cut or fill, the final subgrade surface must be maintained in a stable condition at the moisture content and level of compaction identified in Section 5.2.4. Verification and maintenance of the completed subgrade may require scarification, moisture conditioning, recompaction, and proof rolling.

5.2.2 General Structural Fill

General structural fill may be used for mass site grading, landscaping applications or as utility trench backfill outside of building areas. General structural fill may also be used to within 9 inches of the base of any granular cushion beneath floor slabs and to within 9 inches of the base of any vehicular or pedestrian pavements. In the former applications, low volume change materials are required immediately below the floor slabs or pavements (low volume change material is discussed in the following section).

General structural fill may comprise cohesive or granular material but should be free from organic matter or debris. Granular materials used as general structural fill should be well graded, have a maximum particle size of 1.5 inches, and meet KDOT freeze/thaw durability and sulfate soundness requirements.

Off-site material used as general structural fill should have a liquid limit (LL) of less than 50 and a plastic index (PI) of less than 30.

If free of organic matter or debris, the on-site soils may be reused as general structural fill within the areas outlined above.

5.2.3 Low Volume Change Material (LVC)

Low volume change (LVC) material as specified for use below floor slabs and pavements must consist of granular material or cohesive soil with a liquid limit (LL) less than 40 and a plasticity index (PI) between 10 and 20.

Granular material used as LVC must have sufficient cohesion to form a compactable, uniform, and stable subgrade. This typically translates to a material with greater than 15 percent fines (percent passing the No. 200 sieve) and a maximum particle size of 1.5 inches. Silty gravel (such as KDOT AB-3), crushed concrete with a maximum particle size of 1.5 inches, or limestone screenings are also acceptable LVC materials. Granular materials with less than 15 percent fines may be used within confined areas such as within foundation stem walls. LVC materials should be free of organic matter or debris.

The on-site clayey sand and lean clay soils may be considered LVC material as defined in this section, if properly moisture conditioned and recompacted in place as outline in Section 5.2.4 of this report.

5.2.4 Compaction of Engineered Structural Fills

Unless otherwise noted, fill materials should be placed in loose lifts not to exceed 9 inches and be compacted to a minimum of 95 percent of the maximum dry unit weight obtained from ASTM D698 (Standard Proctor). Moisture content at the time of compaction should be controlled to between optimum and 4 percent above optimum moisture content.

Granular fill materials which produce a definable moisture-density curve when tested according to ASTM D698 should be compacted to a minimum of 95 percent of the maximum dry unit weight obtained from ASTM D698. Granular fill materials which do not produce a definable moisture-density curve should be compacted to a minimum of 75 percent relative density (ASTM D4253, *"Maximum Index Density and Unit Weight of Soils Using a Vibratory Table"* and ASTM D4254, "*Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density"*). Granular materials should be placed at a moisture content that will achieve the desired densities. Please note that relative density and standard Proctor tests measure different parameters and are not interchangeable.

In general, proper compaction of cohesive soils can be achieved with sheepsfoot or pneumatic-type compactors, while compaction of granular soils can be achieved with smooth-drum or smooth-plate vibratory compactors. Water flooding is not an acceptable compaction method for any soil type.

5.2.5 Utility Trench Backfill

As a minimum, utility trench backfill material should meet the requirements of general structural fill as defined in Section 5.2.2. Where utility trenches pass beneath the structure, pavements or flatwork, the upper foot of utility backfill should meet the requirements of LVC material as defined in Section 5.2.3.

Backfill soils in utility trenches must be placed in lifts of 6 inches or less in loose thickness and be compacted in accordance with Section 5.2.4.

Controlled low strength material (CLSM) or flowable fill may also be used for utility backfills. We recommend designing flowable fill with a compressive strength between 50 and 300 pounds per square inch (psi). CLSM with a maximum compressive strength less than 300 psi can be readily excavated with a backhoe. The intent for the CLSM is to provide a backfill that can be placed in a single lift, without personnel entering the excavation and without the need for compaction equipment.

Where used beneath pavements, flatwork or the structure, CLSM should be terminated a minimum of one foot below the structure, floor slab or pavement subgrade elevation. To provide uniform support beneath pavements, flatwork, and the structure, the fill placed over the CLSM should be of similar composition as the surrounding bearing materials and be constructed as moisture-conditioned and compacted engineered structural fill in accordance with Section 5.2.4.

5.2.6 Foundation Backfill

As a minimum, backfill soils for formed foundations should meet the requirements of general structural fill as defined in Section 5.2.2. However, we recommend fill around foundations meet the requirements of LVC material as defined in Section 5.2.3. The use of LVC material to backfill foundations is intended to help reduce lateral swell pressures on the foundation wall and reduce desiccation cracking adjacent to the structure, which can provide a pathway for water to infiltrate the foundation subgrade. If other cohesive materials are used to backfill foundations, the risk of differential movements caused by water infiltration into the foundation subgrade may be increased.

We also recommend the upper 18 inches of exterior foundation backfill have sufficient cohesion to direct surface water away from the structure. Granular materials such as sand and gravel are not suitable for use as exterior foundation backfill in the surficial 18 inches.

Backfill soils around formed foundations must be placed in lifts of 6 inches or less in loose thickness and be moisture conditioned and compacted in accordance with Section 5.2.4. Care should be exercised during compaction to avoid applying excessive stress to the foundation surfaces. Where both sides of a foundation wall are backfilled, the fill should be placed simultaneously in uniform lifts on both sides of the wall to reduce unbalanced lateral loads.

5.2.7 Correction of Unsuitable Foundation Soils

If soft, loose, or otherwise unsuitable soils are encountered at the base of any foundations, an over-excavation and replacement/recompaction procedure will be required. The unsuitable soils beneath the foundations should be removed to the required depth, with the excavation extending laterally 9 inches in all directions for each vertical foot of over-excavation. Structural fill for the over-excavated areas should be of similar composition as the surrounding materials or meet the requirements of LVC material as defined in Section 5.2.3. Backfill material should be compacted in accordance with Section 5.2.4. CLSM, as defined in Section 5.2.5 may also be used to backfill over-excavated areas.

5.2.8 Excavation Slopes

Vertical cuts and excavations may stand for short periods of time, but should not be considered stable in any case. All excavations should be sloped back, shored, or shielded for the protection of workers. As a minimum, trenching and excavation activities should conform to federal and local regulations.

The clayey sand and lean clay with varying amounts of sand soils we encountered in the test borings generally classify as a type "C" soil according to OSHA's Construction Standards for Excavations. In general, the maximum allowable slope for shallow excavations of less than 20 feet in a type "C" soil is 1.5H:1.0V, although other provisions and restrictions may apply. If different soil types are encountered, the maximum allowable slope may be different.

The Contractor is responsible for designing any excavation slopes or temporary shoring. The Contractor must also be aware that slope height, slope inclination, and excavation depths (including utility trench excavations) should in no case exceed those specified in federal, state, or local safety regulations, such as OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations.

The information presented in this section is solely for our client's reference. **UES assumes no responsibility for site safety or the implementation of proper excavation techniques.**

5.3 Shallow Foundations

Based on the subsurface conditions revealed by the boring and testing program, this site appears suitable for use of a shallow foundation system. The selection of an allowable soil bearing pressure for shallow foundation elements must fulfill two requirements. First, the foundation load must be sufficiently less than the ultimate soil bearing capacity to ensure stability. Second, the total and differential settlements must not exceed amounts which will produce adverse behavior of the superstructure.

In order to meet the previous criteria, we have explored both the bearing capacity and the load settlement characteristics of the subsurface materials. The allowable soil bearing pressure is based on a factor of safety of three against the ultimate bearing capacity of the soil, with additional consideration given to limiting settlement to acceptable levels. In our analysis, we used a maximum allowable total vertical movement of 1 inch and a maximum allowable differential vertical movement of ¾ of an inch within 25 linear feet. These limits are generally considered acceptable for most structures.

A net allowable soil bearing pressure of 3,000 pounds per square foot (psf) may be used to size shallow foundation elements bearing on the native soils at a depth of 2 feet or greater below the existing site grade. The allowable bearing pressure is expressed in terms of the net pressure transferred to the soil. The net allowable bearing pressure is defined as the total structural dead load including the weight of the foundation elements, less the weight of the soil excavated for the foundation elements. This value may be increased by one-third for transient loading conditions such as wind or seismic forces.

All exterior and any interior foundation elements exposed to freezing conditions should be constructed at least 2.5 feet below the surrounding exterior grade to help reduce the effects of frost and seasonal moisture changes. Interior footings, which will be protected from the effects of frost, may be founded 1.5 feet below finished floor elevation.

We recommend that concrete be placed as soon as practical after footing excavation, with as little disturbance to the bearing soil as possible. Footing excavations should be free of loose soil or debris. Loose or disturbed soil must be removed or compacted prior to foundation construction. Water that collects in the excavations should be promptly removed to prevent softening of the foundation supporting soils prior to concrete placement. In addition, we recommend all excavations be observed by our geotechnical personnel prior to placement of concrete for the possible presence of unsuitable bearing soils. If unsuitable bearing soils are encountered during construction, these areas should be corrected in accordance with Section 5.2.7.

If shallow foundations are designed and constructed in accordance with the recommendations presented, total vertical movements are not expected to exceed 1 inch with differential vertical movements less than ¾ of an inch within 25 linear feet

5.4 Floor Slabs

The soils we encountered at this site generally exhibit a low swell potential. Most slabs-on-grade will experience some amount of vertical movement, which the Owner must be willing to accept. Recommendations to help reduce the risk of movement of slab are presented below.

To provide uniform support for floor slabs and reduce the potential for subgrade volume change, we recommend all floor slabs bear on a minimum of 9 inches of LVC material as defined in Section 5.2.3. The placement and compaction of the LVC material should conform to the recommendations in Section 5.2.4 of this report. Depending on final site grades, this LVC layer could comprise on-site soils that have been moisture-conditioned and recompacted in place.

By constructing a 9-inch layer of low plasticity, low volume change material immediately beneath the floor slab and closely controlling the moisture and density of the scarified soil and new fill materials, it is our opinion that the potential for detrimental floor slab movement will be sufficiently reduced. A greater thickness of low volume change material beneath the floor slab may further reduce potential slab movement. If even slight slab movements are not acceptable, please contact UES for further floor slab recommendations.

We recommend a 2- to 4-inch thick granular cushion be placed beneath the floor slab in addition to the low plasticity, low volume change material. This layer should be free-draining, well-graded and compacted by vibration prior to placing the floor slab.

We also recommend the moisture content of upper 9 inches of the subgrade be checked prior to placement of a granular base, reinforcing steel or concrete floor slab. If the moisture content of the subgrade is below optimum, we recommend the subgrade be scarified, moisture conditioned and recompacted according to Section 5.2.4.

In many construction projects, the moisture content of the floor slab subgrade is tested during grading of the site. The subgrade then remains exposed until floor slab placement occurs several weeks later. In this situation, even LVC material is subject to some swell movement if not properly moisture conditioned prior to slab placement. Periodic applications of water will help maintain the proper moisture content of subgrade soils. The risk of differential movements can be reduced by creating and properly preparing a LVC zone beneath the slab as well as ensuring proper drainage is maintained around the structure at all times.

In finished areas, the floor covering manufacturer should be consulted regarding the use of a vapor retarder beneath floor slabs. If a vapor retarder is recommended by the floor covering manufacturer, it should conform to the manufacturer's specifications to maintain the product warranty. In other areas, vapor retarder should be placed in accordance with recommendations outlined in ACI 302.1R-15, "Guide to Concrete Floor and Slab Construction."

5.5 Pavement Recommendations

The asphalt and Portland cement concrete pavement recommendations provided below are separated into a regular duty and a heavy duty section. To perform properly, the pavement sections require that the subgrade be prepared in accordance with the recommendations in Section 5.5.1.

5.5.1 Pavement Subgrade Preparation

Pavement performance is directly affected by the degree of compaction, uniformity, and stability of the subgrade. The stability and quality of the pavement subgrade is particularly important where high traffic volume and heavy axle loads are anticipated.

If vehicular and pedestrian pavements will be placed on native soils, we recommend the top 9 inches of the subgrade be moisture conditioned and recompacted as outlined in Section 5.2.4 of this report. If off-site soils are used to raise the site grade, we recommend these materials meet the requirements of LVC material as defined in Section 5.2.3.

The top 9 inches of pavement subgrade should be compacted to a minimum of 95 percent of the maximum dry unit weight determined by ASTM D698. The moisture content should also be controlled to between optimum and 4 percent above the optimum moisture content.

To detect any localized areas of instability, the final subgrade should be proof rolled with a loaded tandem axle dump truck or equivalent (loaded water truck, loaded concrete mixer or motor grader with a minimum weight of 20 tons) immediately prior to placement of the concrete or asphalt. Unstable areas should be removed and replaced or reworked to provide a more uniform subgrade. If necessary, clean materials such as crushed concrete or crushed stone may be used to stabilize areas where wet soil or water is present. Geogrid or structural geotextile may be used in conjunction with crushed concrete or stone to provide additional stabilization.

We also recommend the moisture content of the subgrade be checked prior to paving. If the moisture content is below optimum, we recommend the subgrade be scarified, moisture conditioned and recompacted according to Section 5.2.4.

5.5.2 Recommended Design Sections

The pavement sections for this project are based on our experience with similar pavements and a design life of 15 to 20 years. The regular duty pavement sections are intended for passenger car and light truck traffic and parking areas. The heavy duty pavement sections are intended for areas that will experience high traffic volumes or heavy axle loads such as main access drives or delivery truck routes. Portland cement concrete pavements are recommended for areas with frequent start-stop or turning traffic such as entrance and exit aprons or the parking stalls closest to buildings, as well as areas that support stationary loads such as dumpsters.

Our recommendations for full-depth asphalt and Portland cement concrete pavement sections are presented in the following tables.

Table 5.5.2-1: Full-Depth ACC Pavement Design Recommendations

	Regular Duty Section	Heavy Duty Section
KDOT BM-2 Wear Course (in.)	2.0	2.0
KDOT BM-2 Base Course (in.)	3.5	5.5
LVC Subgrade	9.0 (minimum)	9.0 (minimum)

**LVC subgrade placed and compacted in accordance with Section 5.5.1.*

Table 5.5.2-2: PCC Pavement Design Recommendations

	Thickness (Inches)		
	Sidewalks & Pedestrian Areas	Regular Duty Section	Heavy Duty Section
KDOT MA-2 Air Entrained Portland Cement Concrete (in.)	4.0	5.0	6.0
LVC Subgrade	9.0 (minimum)	9.0 (minimum)	9.0 (minimum)

**LVC subgrade placed and compacted in accordance with Section 5.5.1.*

5.5.3 Asphaltic Cement Concrete Pavement Construction

We recommend that both the asphalt surface and base coarse aggregate gradations meet KDOT SM-12.5A with a performance graded asphalt binder meeting KDOT PG 64-22. If asphalt mixes with recycled asphalt pavement are considered, we recommend that a maximum of 15% RAP be used in the surface course and that a maximum of 20% RAP be used in the base courses. If RAP is used, the aggregate gradation should meet KDOT SR-12.5A.

Asphalt should be placed at an ambient temperature above 40 degrees Fahrenheit. Asphalt temperature at the time of compaction should be between 265 and 330 degrees Fahrenheit. We recommend the initial asphalt lift placed directly on the subgrade should be compacted to a minimum of 94 percent of the Marshall density with subsequent asphalt lifts compacted to a minimum of 96 percent of the Marshall density. Please note that recommendations regarding compaction temperature and percentage for a specific pavement design should supersede these recommendations.

All asphaltic concrete mix designs should be submitted to UES and reviewed to determine if the designs are consistent with the recommendations given in this report. We also recommend a UES representative be present during paving operations to help ensure adherence to project pavement specifications.

5.5.4 General Pavement Considerations

Pavement service life can be significantly reduced if the pavement is constructed on a poor subgrade, if poor surface or subsurface drainage is present, or if the pavement is not maintained properly. We emphasize the importance of preparing the pavement subgrade in accordance with the procedures listed in the previous sections of this report.

Drainage of surface and subsurface water is also a critical component of pavement performance. Wetting of the subgrade soils or base course will cause loss of support strength resulting in premature pavement distress. Surface drainage should be designed to remove all water from paved areas. All curbs, including those surrounding pavement islands, should be backfilled as soon as possible after construction of the pavement. Backfill should be compacted and sloped to prevent water from ponding and infiltrating under the pavement. Regular active maintenance of pavements, which includes filling of cracks and joints, is required to minimize water infiltration and lengthen pavement life.

We recommend that parking lot islands be surfaced with low permeability paving to prevent water infiltration into the pavement subgrade.

5.6 Lateral Earth Pressures

Earth-retaining structures should be designed to withstand lateral earth pressures caused by adjacent soil and applied surcharge loads. The magnitude of the lateral earth pressure will depend on the height of the walls, stiffness of the walls, magnitude of the surcharge loads behind the walls, and the backfill and existing soil conditions behind the walls.

Table 5.6-1: Lateral Earth Pressure Coefficients

Soil Type (USCS Symbol)	Wet Unit Weight (pcf)	Drained Friction Angle (Φ')	At Rest (K_o)	Active (K_a)	Passive (K_p)
Lean Clay w/ Varying Sand	125	25	0.58	0.41	2.46
Clayey Sand (SC)	115	30	0.50	0.33	3.00
Granular Backfill* (SP, SW)	115	32	0.47	0.31	3.25
Granular Backfill* (GP, GW)	125	35	0.43	0.27	3.69

Values for material compacted in accordance with Section 5.2.4

The values provided above are empirical and are based on basic testing as well as our experience with similar materials. These values also assume a vertical wall with a horizontal retained surface behind the wall. Lateral earth pressure parameters for granular backfill may be used only if the granular backfill extends upward from the heel of the wall at a slope shallower than 1.0H:1.0V. Please contact us if different backfill materials or wall geometries are a consideration for this project.

Static surcharge loads imposed on below-grade walls may be computed by multiplying the static surcharge load (q) by the appropriate lateral earth pressure coefficient (K_a or K_o). Appropriate factors of safety should be applied to the computed lateral earth pressures.

5.7 Surface Drainage and Landscaping

The success of the shallow foundation system, slab-on-grade floor system, and pavement section is contingent upon keeping the moisture content of subgrade soils as constant as possible and not allowing surface drainage to have a path to the subsurface soils. Positive surface drainage away from structures must be maintained throughout the life of the structures. Landscaped areas should be designed and

constructed such that irrigation and other surface water will be collected and carried away from foundation elements. Pavements should be sloped or crowned to direct surface water to storm sewer systems or detention/retention ponds.

During construction, temporary grades should be established to prevent runoff from entering excavations or footing trenches. Backfill should be placed as soon as concrete structural strength requirements are met and should be graded to drain away from the building.

The final grade of the foundation backfill and any overlying pavements should have a positive slope away from foundation walls on all sides. We typically recommend a minimum slope of one inch per foot for the first 5 to 10 feet for uncovered surfaces. However, the slope may be decreased if the ground surface adjacent to foundations is covered with concrete slabs or asphalt pavements. For other areas of the site, we recommend a minimum slope of two percent. Pavements and exterior slabs that abut structures should be carefully sealed against moisture intrusion at the joint. All downspouts and faucets should discharge onto splash blocks that extend at least five feet from the building line or be tied into the storm drain system. Splash blocks should slope away from the foundation walls.

The placement of vegetation and plantings next to foundations should be minimized. Where landscaping is required, we recommend considering plants and vegetation that require minimal irrigation. Irrigation within ten feet of the foundation should be carefully controlled and minimized.

5.8 Construction Considerations

If construction of the project is to be performed during periods of freezing temperatures, steps should be taken to prevent the soils under floor slabs, footings, or pavements from freezing. In no case should the fill materials, floor slabs, foundations, pavements, or other exterior flat work be placed on frozen or partially frozen materials. Frozen materials should be removed and replaced with a suitable material as described in earlier sections of this report.

Construction performed during periods of high precipitation may result in saturated unstable soils, and caving or sloughing of excavations. Control of soil moisture will be necessary for successful soil compaction, and to maintain soil bearing capacity.

5.9 Construction Observation and Quality Assurance

We recommend that UES review those portions of the plans and specifications that pertain to foundations and earthwork to evaluate consistency with our findings and recommendations. UES will provide up to 2 hours of engineering support services at no charge to review project documents for adherence to our recommendations.

Site grading, including proof-rolling, replacement or recompaction of material, and placement of fill and backfill, should be observed by a quality assurance technician from UES under the direction of a registered professional engineer. The technician should perform density tests and make any other observations necessary to assure that the requirements of the specifications are being achieved.

It is the opinion of UES that construction observation by the geotechnical engineer of record or his designated representative is necessary to complete the design process. Field observation services are viewed as essential and a continuation of the design process. Unless these services are provided by UES, the geotechnical engineer will not be responsible for improper use of our recommendations or failure by others to recognize conditions which may be detrimental to the successful completion of the project.

UES will be available to make field observations and provide consultation services as may be necessary. A written proposal outlining the cost of construction testing services such as soil, concrete, steel, and pavement quality assurance can be provided upon request.

6. CLOSING REMARKS AND LIMITATIONS

This report is presented in broad terms to provide an assessment of the subsurface conditions and their potential effect on the adequate design and economical construction of the proposed structure and pavement. The analyses, conclusions, and recommendations contained in this report are based on the site conditions existing at the time of the exploration, the project layout described herein, and the assumption that the information obtained from our 4 borings is representative of subsurface conditions throughout the site.

Any changes in the design or location of the proposed structure should be assumed to invalidate the conclusions and recommendations given in this report until we have had the opportunity to review the changes and, if necessary, modify our conclusions and recommendations accordingly. If subsurface conditions different from those encountered in the explorations are observed during construction or appear to be present beneath excavations, UES should be advised at once so that the conditions can be reviewed and recommendations reconsidered where necessary.

If there is a substantial lapse in time between the submission of this report and the start of construction, or if site conditions or the project layout have significantly changed (due to further development of grading plans, natural causes, or construction operations at or adjacent to the site), we recommend that this report be reviewed to determine the applicability of our previous conclusions and recommendations.

Our geotechnical exploration and subsequent recommendations address only the design and construction considerations contained in this report. We make no warranty for the contents of this report, neither expressed nor implied, except that our professional services were performed in accordance with engineering principles and practices generally accepted at this time and location.

The scope of services for this exploration did not include a wetlands evaluation, an environmental assessment, or an investigation for the presence of hazardous or toxic materials in the soil, surface water, groundwater, or air within or adjacent to this site. If contamination is suspected or is a concern, we recommend the scope of this study be expanded to include an environmental assessment.

This report was prepared by the firm of GSI Engineering, LLC (GSI) a UES Company (UES) under the supervision of a professional engineer registered in the State of Kansas. Report preparation was in accordance with generally accepted geotechnical engineering practices for the exclusive use of our client for evaluating the design of the project as it relates to the geotechnical aspects discussed herein.

Recommendations are based on the applicable standards of the profession at the time of this report within this geographic area. GSI Engineering, LLC a UES Company (UES) will not be responsible for misrepresentation of this report resulting from partial reproduction or paraphrasing of its contents.

We appreciate the opportunity to be of service on this project. Please contact us if we can provide further information regarding the contents of this report or the scope and cost of additional services.

Respectfully submitted,
GSI Engineering, LLC a UES Company (UES)

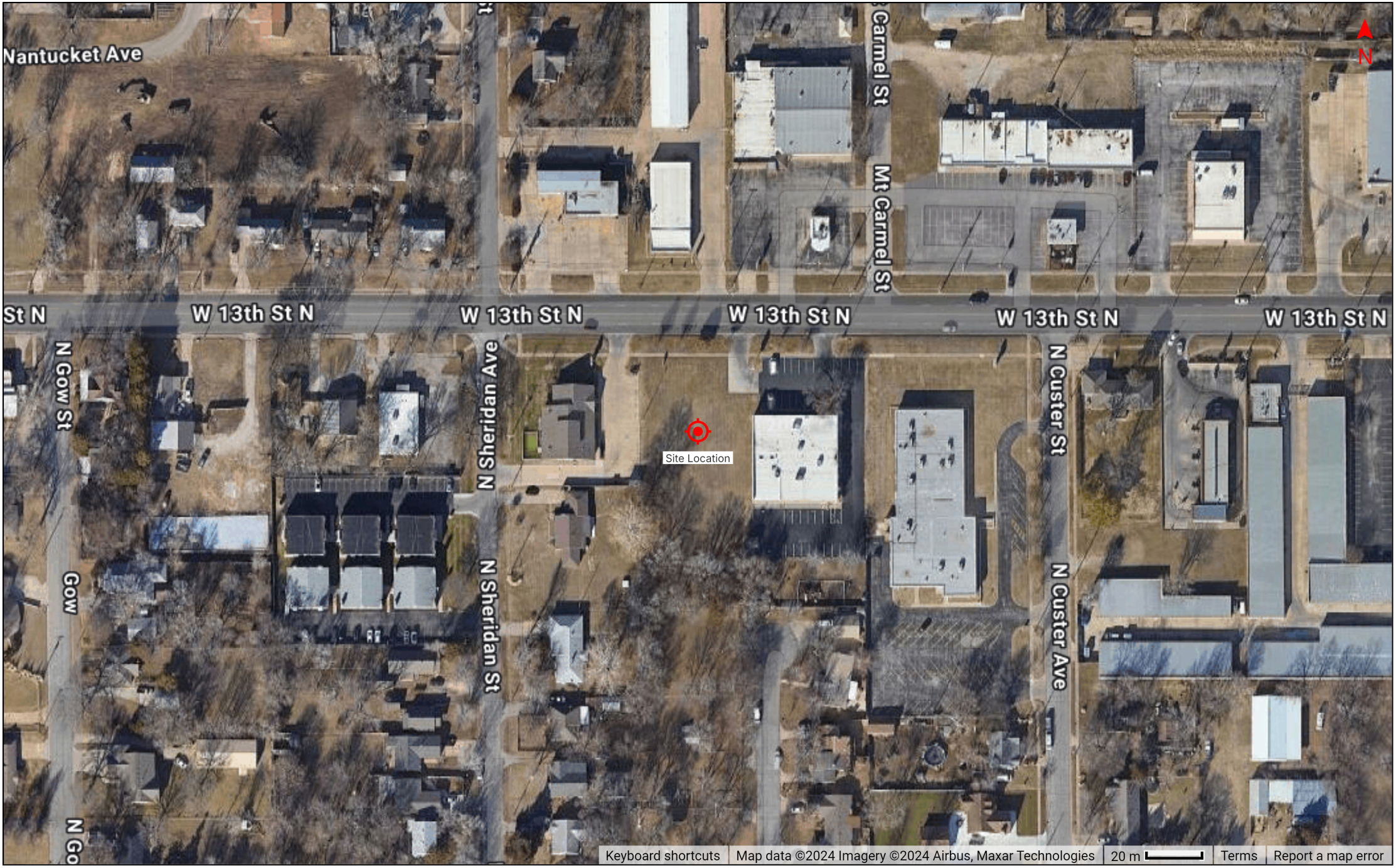
Blake L. Gronlie
Staff Geologist

Colin D. Parker, P.E.
Project Geotechnical Engineer

BLG/CDP

APPENDIX A

General Vicinity Map
Boring Location Plan



UES™

PREPARED BY
GSI Engineering, LLC a UES Company
Wichita, Kansas

PROJECT
Name: Sedwick County EMS Post 1
Number: A24125.00762.000

LOCATION
37.708416, -97.379705
Wichita, KS

SYMBOL KEY
Soil Boring

UES	**PREPARED BY** GSI Engineering, LLC a UES Company Wichita, Kansas	**PROJECT** Name: Sedwick County EMS Post 1 Number: A24125.00762.000	**LOCATION** 37.708416, -97.379705 Wichita, KS	**SYMBOL KEY** Soil Boring

APPENDIX B

Boring Logs
Keys to Symbols
Legend & Nomenclature
Unified Soil Classification System (USCS)

Sedwick County EMS Post 1

3059 W 13th St N, Wichita, KS 67203, USA

B-1

Drilling Co.:	UES	Project No.:	A24125.00762.000	Remarks:	-
Driller:	JC	Date Drilled:	09/11/2024		
Logged By:	BC	Boring Depth:	20'		
Equipment:	CME 55	Boring Elevation:	1314'		
Hammer Type:	Auto	Coordinates:	37.708548, -97.379576		
Drilling Method:	2.25-inch Inside Diameter Hollow Stem Augers	Water Level At Time Of Drilling:	N/A	Delayed Water Level:	N/A
		Cave-in At Time Of Drilling:	N/A	Delayed Water Observation Date:	N/A

Depth (ft)	Sample Graphic	Samples: Sample ID	Samples: Uncorrected N-Value	Samples: Pocket Penetrometer (tsf)	Samples: REC (%) / RQD (%)	Graphic Log	Visual Classification	USCS	Lab: Moisture Content (%)	Lab: Wet Density (PCF)	Lab: Compressive Strength (KSF)	Lab: Percent Passing #200 Sieve	Lab: Atterberg Limits (LL-PL-PI)	Elevation (ft)
0		S-1	20				TOPSOIL 0.5							1314
		S-2	14				CLAYEY SAND - dark brown, slightly moist, medium dense, fine grained, trace roots 2.5	SC	7.1			43.6		
5		S-3	16				SANDY LEAN CLAY - brown, slightly moist, stiff - moist, else as above		7.7				31-16-15	1310
		S-4	16				8.5	CL	17.7					
10		S-5	20				LEAN CLAY - grayish brown, moist, stiff 13.5		19.1					1305
15		S-6	20				POORLY GRADED SAND - brown, dry, medium dense, fine to coarse grained, trace clay - fine to medium grained, clay lense, else as above 20.0	SP	4.8					1300
20							End of Boring at 20'							1295

Graphics Legend

- Topsoil
- SC
- CL
- CL
- SP
- Auger
- SPT - Standard Penetration Test

FIGURE

B-1

Sedwick County EMS Post 1

3059 W 13th St N, Wichita, KS 67203, USA

B-2

Drilling Co.:	UES	Project No.:	A24125.00762.000	Remarks:	-
Driller:	JC	Date Drilled:	09/11/2024		
Logged By:	BC	Boring Depth:	20'		
Equipment:	CME 55	Boring Elevation:	1314'		
Hammer Type:	Auto	Coordinates:	37.708484, -97.379896		
Drilling Method:	2.25-inch Inside Diameter Hollow Stem Augers	Water Level At Time Of Drilling:	N/A	Delayed Water Level:	N/A
		Cave-in At Time Of Drilling:	N/A	Delayed Water Observation Date:	N/A

Depth (ft)	Sample Graphic	Samples: Sample ID	Samples: Uncorrected N-Value	Samples: Pocket Penetrometer (tsf)	Samples: REC (%) / RQD (%)	Graphic Log	Visual Classification	USCS	Lab: Moisture Content (%)	Lab: Wet Density (PCF)	Lab: Compressive Strength (KSF)	Lab: Percent Passing #200 Sieve	Lab: Atterberg Limits (LL-PL-PI)	Elevation (ft)
							TOPSOIL 0.5							
		S-1	11				CLAYEY SAND - dark brown, slightly moist, medium dense	SC	10.3					
		S-2	13				- as above 5.0		6.7			41.1		1310
5		S-3	14				LEAN CLAY - dark brown, slightly moist, stiff, trace sand		14.1					
		S-4	16				- grayish brown, moist, else as above	CL	21.9					1305
10							13.5							
		S-5	25				POORLY GRADED SAND - brown, slightly moist, medium dense, fine grained		5.2					1300
15								SP						
		S-6	23				- trace clay, else as above 20.0		5.20					1295
20							End of Boring at 20'							

Graphics Legend

- Topsoil
- SC
- CL
- SP
- Auger
- SPT - Standard Penetration...

FIGURE

B-2

Sedwick County EMS Post 1

3059 W 13th St N, Wichita, KS 67203, USA

B-3

Drilling Co.:	UES	Project No.:	A24125.00762.000	Remarks:	-
Driller:	JC	Date Drilled:	09/11/2024		
Logged By:	BC	Boring Depth:	20'		
Equipment:	CME 55	Boring Elevation:	1314'		
Hammer Type:	Auto	Coordinates:	37.708345, -97.379651		
Drilling Method:	2.25-inch Inside Diameter Hollow Stem Augers	Water Level At Time Of Drilling:	N/A	Delayed Water Level:	N/A
		Cave-in At Time Of Drilling:	N/A	Delayed Water Observation Date:	N/A

Depth (ft)	Sample Graphic	Samples: Sample ID	Samples: Uncorrected N-Value	Samples: Pocket Penetrometer (tsf)	Samples: REC (%) / RQD (%)	Graphic Log	Visual Classification	USCS	Lab: Moisture Content (%)	Lab: Wet Density (PCF)	Lab: Compressive Strength (KSF)	Lab: Percent Passing #200 Sieve	Lab: Atterberg Limits (LL-PL-PI)	Elevation (ft)
		S-1	7				TOPSOIL 0.5							
							CLAYEY SAND - dark brown, slightly moist, medium stiff, fine grained 2.5	SC	9.5					
		S-2	15				SANDY LEAN CLAY - dark brown, slightly moist, stiff, fine grained 5.0		7.8				33-15-18	1310
5		S-3	10				LEAN CLAY with SAND - dark brown, slightly moist, stiff, trace roots 8.5	CL	14.1					
		S-4	11				LEAN CLAY - dark brown, moist, stiff 13.5		25.1					1305
10		S-5	21				CLAYEY SAND - light brown, slightly moist, medium dense 18.5	SC	10.0					1300
15		S-6	15				POORLY GRADED SAND - light brown, slightly moist, medium dense 20.0	SP						1295
20							End of Boring at 20'							

Graphics Legend

- Topsoil
- SC
- CL
- CL
- SP
- Auger
- SPT - Standard Penetration Test

FIGURE

B-3

Sedwick County EMS Post 1

3059 W 13th St N, Wichita, KS 67203, USA

B-4

Drilling Co.:	UES	Project No.:	A24125.00762.000	Remarks:	-
Driller:	JC	Date Drilled:	09/11/2024		
Logged By:	BC	Boring Depth:	20'		
Equipment:	CME 55	Boring Elevation:	1312'		
Hammer Type:	Auto	Coordinates:	37.708132, -97.379753		
Drilling Method:	2.25-inch Inside Diameter Hollow Stem Augers	Water Level At Time Of Drilling:	N/A	Delayed Water Level:	N/A
		Cave-in At Time Of Drilling:	N/A	Delayed Water Observation Date:	N/A

Depth (ft)	Sample Graphic	Samples: Sample ID	Samples: Uncorrected N-Value	Samples: Pocket Penetrometer (tsf)	Samples: REC (%) / RQD (%)	Graphic Log	Visual Classification	USCS	Lab: Moisture Content (%)	Lab: Wet Density (PCF)	Lab: Compressive Strength (KSF)	Lab: Percent Passing #200 Sieve	Lab: Atterberg Limits (LL-PL-PI)	Elevation (ft)
		S-1	9				TOPSOIL 0.5							1310
		S-2	11				CLAYEY SAND - dark brown, slightly moist, loose, trace roots 2.5	SC	11.1			40.9		
5		S-3	7				LEAN CLAY with SAND - dark brown, moist, stiff 5.0		15.1				40-16-24	
		S-4	23				LEAN CLAY - brown, slightly moist, medium stiff, trace silt		14.3					1305
10							- reddish brown, moist, very stiff, trace sand, iron and calcium, else as above	CL	15.2					1300
		S-5	21				13.5							
15							POORLY GRADED SAND - light brown, dry, medium dense, fine grained, clay lense	SP						1295
		S-6	19				fine to coarse grained, trace gravel, else as above 20.0		2.3					
20							End of Boring at 20'							

Graphics Legend

- Topsoil
- SC
- CL
- CL
- SP
- Auger
- SPT - Standard Penetration Test

FIGURE

B-4

Boring Log
Legend and Nomenclature

Items shown on boring logs refer to the following:

1. **Depth** - Depth below ground surface or drilling platform

2. **Sample** -Types designated by letter:

   A - Disturbed sample, obtained from auger cuttings or wash water.

   S - Split barrel sample, obtained by driving a 2-inch split-barrel sampler unless otherwise noted.

   C - California liner sample, obtained using a thick-walled liner sampler containing 2-inch-diameter liner tubes.

   U - Undisturbed sample, obtained using a thin-walled tube, 3-inch-diameter, or as noted, and open sampling head.

   Recovery - Recovery is expressed as a percentage of the length recovered to the total length pushed, driven or cored.

   Resistance - Resistance is designated as follows:

   P - Sample pushed in one continuous movement by hydraulic rig action.

   12 - The Standard Penetration Resistance is the number of blows for the last 12 inches of penetration of split spoon sampler, driven by a 140-pound hammer falling 30 inches.

   50/4" - Number of blows to drive sampler distance shown.

3. **Soil Description** - Description of material according to the Unified Soil Classification: word description giving soil constituents, consistency or density, and other appropriate classification characteristics. Geologic name or type of deposit and other pertinent information, where appropriate, is shown under Geologic Description or other Remarks. A solid line indicates the approximate location of stratigraphic change.

4. **Lab Data** – Laboratory test data.

5. **Legend**

A.D.	—	After drilling	N.A.	—	Not Applicable
A.T.D.	—	At time of drilling	N.D.	—	Not detectable due to drilling method
C.F.A.	—	Continuous flight auger			
D.W.L.	—	Drill water loss	N.E.	—	None encountered
D.W.R.	—	Drill water return	N.R.	—	Not recorded
E.D.	—	End of drilling	R.Q.D.	—	Rock quality designation
H.B.	—	Hole backfilled	R.W.B.	—	Rotary wash boring

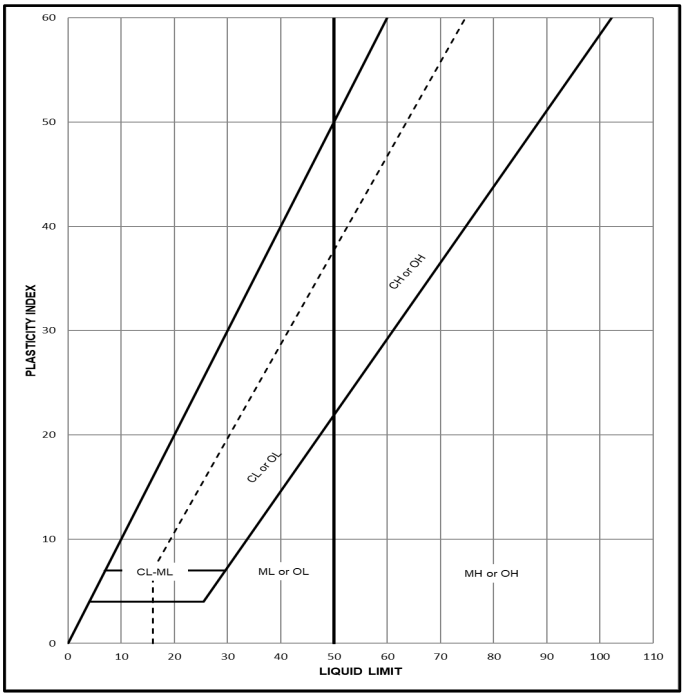
6. **Limitations** - The lines between materials shown on the boring logs represent approximate boundaries between material types and the changes may be gradual. Water level readings shown on the logs were made at the time and under the conditions indicated. Fluctuations in the water levels may occur with time. The boring logs in this report are subject to the limitations, explanations and conclusions of this report.

UNIFIED SOIL CLASSIFICATION SYSTEM

GROUP NAME	GROUP SYMBOL	SOIL DESCRIPTION	COMMENTS
Peat	Pt	Highly Organic Soils	50% or More Is Smaller than No. 200 Sieve
Fat Clay	CH	Clay - Liquid Limit => 50*	
Elastic Silt	MH	Silt - Liquid Limit => 50*	
Lean Clay	CL	Clay - Liquid Limit < 50*	
Silt	ML	Silt - Liquid Limit < 50*	
Silty Clay	CL-ML	Silty Clay*	
Clayey Sand	SC	Sands with 12 to 50 Percent Smaller than No. 200 Sieve	More than 50% Is Larger than No. 200 Sieve and % Sand > % Gravel
Silty Sand	SM		
Poorly-Graded Sand with Clay	SP-SC	Sands with 5 to 12 Percent Smaller than No. 200 Sieve	
Poorly-Graded Sand with Silt	SP-SM		
Well-Graded Sand with Clay**	SW-SC		
Well-Graded Sand with Silt**	SW-SM		
Poorly-Graded Sand	SP	Sands with Less than 5 Percent Smaller than No. 200	
Well-Graded Sand**	SW		
Clayey Gravel	GC	Gravels with 12 to 50 Percent Smaller than No. 200 Sieve	More than 50% Is Larger than No. 200 Sieve and % Gravel > % Sand
Silty Gravel	GM		
Poorly-Graded Gravel with Clay	GP-GC	Gravels with 5 to 12 Percent Smaller than No. 200 Sieve	
Poorly-Graded Gravel with Silt	GP-GM		
Well-Graded Gravel with Clay**	GW-GC		
Well-Graded Gravel with Silt**	GW-GP		
Poorly-Graded Gravel	GP	Gravels with Less than 5 Percent Smaller than No. 200	
Well-Graded Gravel**	GW		

*See Plasticity Chart for definition of silts and clays. If organic, use OL or OH.
**See definition of well-graded

PLASTICITY CHART



LEGEND OF TERMS

MOISTURE CONDITIONS
Dry, Slightly Moist, Moist, Very Moist, Wet (Saturated)

SOIL CONSISTENCY

Fine-Grained Soils

Description	SPT (N)	UCS (q_u, tsf)
Very Soft	0-2	0-0.25
Soft	2-4	0.25-0.50
Medium Stiff	4-8	0.50-1.0
Stiff	8-16	1.0-2.0
Very Stiff	16-32	2.0-4.0
Hard	>32	>4.0

Coarse-Grained Soils

Description	SPT (N)
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	>50

CLASSIFICATION OF SANDS & GRAVELS

Boulders	Cobbles	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	Fines (Silt or Clay)
	10"	3"	3/4"	#4	#10	#40	#200

Well-Graded Sands (SW): $C_u \geq 6$ and $1 \leq C_c \leq 3$
Well-Graded Gravels (GW): $C_u \geq 4$ and $1 \leq C_c \leq 3$

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APPENDIX C

Field & Laboratory Test Results

SUMMARY OF FIELD AND LABORATORY TESTS

BORING NO.	SAMPLE NO.	SAMPLE DEPTH (ft.)	DIA. (in.)	MOISTURE CONTENT (%)	UNIT WEIGHT WET (pcf)	UNIT WEIGHT DRY (pcf)	VOID RATIO (e)	SAT. (%)	UNCONF. COMPR. STR. (ksf)	ATTERBERG LIMITS LL	ATTERBERG LIMITS PL	ATTERBERG LIMITS PI	PASS NO. 200 (%)	SPT "N" (blows /ft)	USCS SOIL CLASS.
B-1	S-1	0.5-2.0		7.1									43.6	20	SC
	S-2	2.5-4.0		7.7						31	16	15		14	Sandy CL
	S-3	5.0-6.5		17.7										16	Sandy CL
	S-4	8.5-10.0		19.1										16	CL
	S-5	13.5-15.0		4.8										20	SP
	S-6	18.5-20.0												20	SP
B-2	S-1	0.5-2.0		10.3										11	SC
	S-2	2.5-4.0		6.7									41.1	13	SC
	S-3	5.0-6.5		14.1										14	CL
	S-4	8.5-10.0		21.9										16	CL
	S-5	13.5-15.0												25	SP
	S-6	18.5-20.0		5.2										23	SP
B-3	S-1	0.5-2.0		9.5										7	SC
	S-2	2.5-4.0		7.8						33	15	18		15	Sandy CL
	S-3	5.0-6.5		14.1										10	CL w/ Sand
	S-4	8.5-10.0		25.1										11	CL
	S-5	13.5-15.0		10.0										21	SC
	S-6	18.5-20.0												15	SP
B-4	S-1	0.5-2.0		11.1									40.9	9	SC
	S-2	2.5-4.0		15.1						40	16	24		11	CL w/ Sand
	S-3	5.0-6.5		14.3										7	CL
	S-4	8.5-10.0		15.2										23	CL
	S-5	13.5-15.0												21	SP
	S-6	18.5-20.0		2.3										19	SP

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www.gsinetwork.com

PROJECT
Sedgwick County EMS Post 1

LOCATION
Wichita, Kansas

PROJECT NUMBER
A24125.00762

DATE
October 1, 2024