
NEMAHA COUNTY, KANSAS EMS FACILITY REQUEST FOR PROPOSAL

Date Available: June 8, 2026
Closing Date: June 26, 2026 at 12:00 PM
Contact: Austin Parker, Nemaha County Administrator
Telephone: (316) 209-6591
E-Mail Address: austin@parkerparkerlawfirm.com

Item:

Occupancy-Ready Enclosed Freestanding Wood-Framed or Steel-Framed (approximately) 60' x 80' Steel-Sided Partially Climate-Controlled Facility, with Four Oversized Overhead Doors and a Concrete Slab Floor Designed to Accommodate Heavy Equipment, to be used as an EMS Garage/EMS Facility and Office with ADA-Accessible Restroom and to be Located on existing Nemaha County, Kansas Property ("EMS Facility")

Location: Intersection of 7th Street and Nemaha Street, Seneca, Kansas (location visually identified in Exhibit 1 to this Request for Proposal)

Scope: Nemaha County, Kansas ("County") is requesting proposals from entities ("bidders") to singularly or jointly design, engineer and construct the above-described EMS Facility. This Request for Proposals ("Request") is a formal invitation to bidders to submit bids in accordance with the specifications, and bid format instructions described herein.

READ THIS REQUEST CAREFULLY

Failure to abide by all of the conditions and requirements of this Request may result in the rejection of a bid.

REQUEST FOR PROPOSAL

TABLE OF CONTENTS	PAGE
I. Signature Sheet	3
II. Section I – Conditions to Bidding	4
III. Section II – Proposal Instructions	7
IV. Section III – General Provisions	9
V. Section IV –Specifications	14

SIGNATURE SHEET

Item: EMS Facility
County: Nemaha County, Kansas
Closing Date: June 26, 2026, 12:00 PM

We submit a proposal to furnish requirements during the contract period in accordance with the specifications. **I hereby certify that I (we) do not have any real or substantial conflict of interest sufficient to influence the bidding process on this bid. A conflict of substantial interest, or the appearance thereof, is defined as any circumstance which would lead a reasonable person to believe a compromise of an open competitive bid process has occurred.**

Legal Name of Person, Firm or Corporation_____

Toll Free Telephone_____Local_____Fax_____

E-Mail_____

Mailing Address_____

County & State_____Zip Code_____

FEIN Number_____

Signature_____Date_____

Typed Name of Signature_____Title_____

If awarded a contract and the primary contact will be other than above, indicate name, mailing address and telephone number below.

Name_____

Address_____

County & State_____Zip Code_____

Toll Free Telephone_____Local_____Fax_____

E-Mail_____

Website_____

SECTION I CONDITIONS TO BIDDING

1.1 **Inquiries:** All inquiries shall be directed by telephone or email to the County Administrator at Nemaha County, Kansas. The County Administrator's contact information is as follows:

Austin Parker
County Administrator
Nemaha County, Kansas
607 Nemaha St.
Seneca, Kansas 66538
Telephone: 316-209-6591
E-Mail Address: austin@parkerparkerlawfirm.com

Communication is prohibited between the bidders, their employees, representatives, or agents, and any County employee, representative, or agent, other than as stated above, regarding this Request except with designated participants in attendance **ONLY DURING:**

The Pre-Proposal Conference
Negotiations
Contract Signing
As otherwise specified in this Request.

Violations of this provision by a bidder or County personnel may result in the rejection of the proposal.

1.2 **Negotiated Procurement:** Final evaluation and award is made by the County.

1.3 **Questions to Bidders:** Any, all, or no bidders may be required to explain their understanding and approach to the project and/or respond to questions from the County concerning the proposal; or, the County may award to the low bidder without conducting negotiations. The County reserves the right to request information from bidders as needed. If information is requested, the County is not required to request the information of all bidders.

Bidders selected to participate in negotiations may be given an opportunity to submit a best and final offer to the County. Prior to a specified cut-off time for best and final offers, bidders may submit revisions to their technical and cost proposals. Meetings with representatives of the County are generally not subject to the Open Meetings Act. Bidders are prohibited from electronically recording these meetings. All information received prior to the cut-off time will be considered part of the best and final offer.

No additional revisions shall be made after the specified cut-off time unless requested by the County.

1.4 **Pre-proposal Conference** - A pre-proposal conference will be held at 10:00 a.m. on Monday, June 22, 2026 at the Nemaha County Courthouse, Commissioner Room, 607 Nemaha St. Seneca, Kansas 66538. **ATTENDANCE IS NOT REQUIRED AT THE PRE-PROPOSAL CONFERENCE. ALL QUESTIONS REQUESTING CLARIFICATION OF THIS REQUEST TO BE ADDRESSED AT THE PRE-PROPOSAL CONFERENCE MUST BE SUBMITTED IN WRITING BY E-MAIL TO THE COUNTY ADMINISTRATOR AT AUSTIN@PARKERPARKERLAWFIRM.COM PRIOR TO 12:00 P.M. ON FRIDAY, JUNE 19, 2026.** Impromptu questions will be permitted and spontaneous unofficial answers provided, however bidders should clearly understand that the only official answer or position of the County will be in writing.

Failure to notify the County of any conflicts or ambiguities in the Request may result in items being resolved in the best interest of the County. Any modification to this Request as a result of a written question requesting clarification, as well as written answers to written questions not resulting in a modification to this Request, shall be made in writing by addendum and mailed to all bidders who received the original request from the County. Only written communications are binding.

Austin Parker
County Administrator
Nemaha County, Kansas
607 Nemaha St.
Seneca, Kansas 66538
Telephone: 316-209-6591
E-Mail Address: austin@parkerparkerlawfirm.com

- 1.5 **Cost of Preparing Proposal:** The cost of developing and submitting the proposal is entirely the responsibility of the bidder. This includes costs to determine the nature of the engagement, preparation of the proposal, submitting the proposal, negotiating for the contract and other costs associated with this Request. All Responses will become the property of the County and will be a matter of public record subsequent to signing of the contract or rejection of all bids.

- 1.6 **Criteria for Evaluating Bid Proposals:** The County shall make Award in the best interest of the County.

General: The bidder should develop a proposal through a process that considers the mission and involvement of the County. All proposals submitted in response to this Request will be evaluated by the County using the following criteria and factors (listed in no particular order of importance):

- 1.6.1 **TIMING OF DELIVERY.** Services are requested as soon as possible. The project is desired to be fully completed and functional by December 31, 2026.

- 1.6.2 **TECHNICAL RESPONSE.** This includes the extent to which the bidder effectively demonstrates an understanding of the needs of the County as described in this Request, and offers appropriate solutions to meet those needs. The quality of the technical Response is measured by the extent to which the specifications are adequately addressed within the bidder's proposal, and the extent to which the bidder may suggest recommendations for improvements.

- 1.6.3 **RESPONSE Format and Completeness.** Adequacy and completeness of the proposal is required and carries an important weighting in the evaluation of all proposals. Especially in joint bidder proposals, it is important to specify the exact delegation of duties, including who is ultimately responsible for the overall completion of the project and obtaining a Certificate of Occupancy for the EMS Facility. It is also important to explain how joint bidder conflict will be resolved and project deficiencies will be addressed. The proposal is to be complete, clear, and understandable. Pages are to be consecutively numbered.

- 1.6.4 **Financial Ability.** The bidder's demonstrated financial ability to implement, manage and maintain the proposed offering.

- 1.6.5 **Experience and Qualifications.** The bidder's general experience and qualifications, and the County's assessment of bidder's ability to perform the work in a timely and professional manner. The experience and professionalism of the bidder in securing the worksite and materials is also a consideration.

- 1.7 **Acceptance or Rejection:** The County reserves the right to accept or reject any or all proposals or part of a proposal; to waive any informalities or technicalities; clarify any ambiguities in proposals; modify any criteria in this Request; and unless otherwise specified, to accept any item in a proposal.

- 1.8 **Agreement:** The successful bidder will be required to enter into a formal contract that is acceptable to the County. Special Provisions within the agreement allow for the addition of attachments, amendments, and special conditions that may be negotiated by the successful bidder and the County. The bidder's Response to this Request shall be included as a legal part of the agreement. In the absence of any language to the contrary, this Request will be the determining document in questions of compliance with the specifications for this project.
- 1.9 **Contract Formation:** No contract shall be considered to have been entered into by the County until all statutorily required signatures, bonds and certifications have been rendered; and a written contract has been signed by the successful bidder.
- 1.10 **Open Records Act (K.S.A. 45-205 et seq.):** All proposals become the property of the County. All information contained in proposals will become open for public review once a contract is signed or all proposals are rejected.
- 1.11 **Federal, State and Local Taxes and Permit Fees-Government Entity:** Unless otherwise specified, the proposal price shall include all applicable federal, state and local taxes and permit fees. The successful bidder shall pay all taxes and permit fees lawfully imposed on it with respect to any product or service delivered in accordance with this Request. However, before embarking on this project, the successful bidder shall ascertain from the County which taxes and permit fees this project may be exempted from based upon the County's status as a government entity, including ascertaining any necessary processes and/or documentation in regard to any exemption.
- 1.12 **Debarment of Contractors:** Any bidder who defaults on delivery as defined in this Request may be barred after reasonable notice to the person involved and reasonable opportunity for that person to be heard. The Mayor, after consultation with the attorney of record for the County, may debar a person for cause from consideration for award of contracts. The debarment shall not be for a period exceeding three years. The Mayor, after consultation with the attorney, shall have authority to suspend a person from consideration for award of contracts if there is probable cause to believe that the person has engaged in any activity, which might lead to debarment. The suspension shall not be for a period exceeding three years unless a criminal indictment, information or complaint has been issued for an offense which would be a cause for debarment, in which case the suspension shall, at the request of the attorney, remain in effect until after the trial of the suspended person.
- 1.13 **Insurance:** The County shall not be required to purchase any insurance against loss or damage to any personal property prior to installation nor shall the County establish a "self-insurance" fund to protect against any such loss or damage. Subject to the provisions of the Kansas Tort Claims Act, the bidder shall bear the risk of any loss or damage to any personal property prior to installation.
- 1.14 **Standard of Care:** Each Contractor shall exercise the same degree of care, skill, and diligence in the performance of all duties for the County in fulfillment of this Request that is ordinarily possessed and exercised by reasonable, prudent, and experienced like professionals under similar circumstances. At the County's request, each Contractor shall re-perform any task which fails to satisfy this standard of care. If any Contractor fails to possess and exercise such care, skill, and diligence in fulfilling its duties pursuant to this Request, that Contractor shall be responsible to the County for any resulting losses or damages.
- 1.15 **Qualifications:** Each Contractor represents it has all necessary licenses, permits, and certifications required to perform its proposed duties for the County in fulfillment of this Request.
- 1.16 **Permits, Inspection, Legal Compliance:** Each Contractor shall obtain and comply with all necessary licenses for its functions in the design, engineering and construction of the EMS Facility, including but not limited to final inspection and a certificate of occupancy by the appropriate governmental entity. In this regard, each Contractor shall comply and cause its sub-contractors to

comply with all applicable federal, state, and local laws, orders, rules, and regulations relating to the fulfillment of this Request.

SECTION II PROPOSALS INSTRUCTIONS

- 2.1 **Preparation of Proposals.** The County has the right to rely on any price quotes provided by bidders. The bidder shall be responsible for any mathematical error in price quotes. The County reserves the right to reject proposals, which contain errors.

A proposal shall not be considered for award if the price in the proposal was not arrived at independently and without collusion, consultation, communication or agreement as to any matter related to price with any other bidder, competitor, or County employee.

Proposals shall contain a concise description of bidder's capabilities to satisfy the requirements of this Request For Proposal with emphasis on completeness and clarity of content. Repetition of terms and conditions of the Request For Proposal without additional clarification shall not be considered responsive.

- 2.2 **Deadline for Submission of Proposals:**

Proposals shall be submitted in sealed envelopes and the outside envelopes shall be clearly identified with this Request and the bid closing date. The sealed bid shall be delivered either by mail or hand-delivery to the Nemaha County Clerk's Office by 12:00 PM CDT on Friday, June 26, 2026. The County is relieved of any responsibility if the bidder fails to comply with this requirement. **Bids will be opened during the June 29, 2026 public meeting of the Nemaha County Board of County Commissioners. This meeting is scheduled to commence at 9:00 AM that morning.**

- 2.3 **Signature of Proposals:** Each proposal shall give the complete email and mailing address of the bidder(s) and be signed by an authorized representative of each separate bidder by original signature with his or her name and legal title typed below the signature line. Each proposal shall include each bidder's social security number or Federal Employer's Identification Number. A Signature Sheet has been provided as part of this Request. It should be completed and returned by each bidder as part of the Proposal.
- 2.4 **Acknowledgment of Addenda:** The County reserves the right to change the acquisition schedule and amend this Request prior to the due date of Responses. If it becomes necessary to revise any part of this Request, an Addendum shall be provided to all potential bidders who have requested a copy of this Request. All bidders shall include acknowledgment of all Addenda as part of their proposal. Failure to acknowledge Addenda may be grounds for disqualification of the proposal.
- 2.5 **Modification of Proposals:** A bidder may modify a proposal by email at any time prior to the closing date and time for receipt of proposals.
- 2.6 **Withdrawal of Proposals:** A proposal may be withdrawn on written request from the bidder to the County's contact person prior to the closing date.
- 2.7 **Proposal Disclosures:** At the time of closing, only the names of those who submitted proposals shall be made public information. No price information will be released. Interested bidders or their representatives may be present at the announcement at the following location:

Nemaha County, Kansas
607 Nemaha St.
Seneca, Kansas 66538

Proposal results will not be given to individuals over the telephone. Results may be obtained after contract finalization by obtaining a proposal tabulation from the County. Bid results can be obtained by sending (do not include with bid): A self-addressed, stamped envelope;

Send to:

Nemaha County, Kansas
Attn: County Administrator
RE: Bid Results/Copies
Nemaha County, Kansas
607 Nemaha St.
Seneca, Kansas 66538

Copies of individual proposals may be obtained under the Kansas Open Records Act by contacting the County Clerk of Nemaha County, Kansas to request an estimate of the cost to reproduce and post the documents and remitting that amount with a written request to the above address, or a bidder may make an appointment by with the County Clerk to view the proposal file. Upon receipt of the funds, the documents will be mailed. Information in proposal files shall not be released until a contract has been executed or all proposals have been rejected.

2.8 **Notice of Award:** An award is made on execution of the written contract by all parties. Only the County is authorized to issue news releases relating to this Request, its evaluation, award and/or performance of the contract.

2.9 **Additional Proposals:** Bidders may submit more than one proposal; however, the proposals for each site shall be in accordance with the provisions of this Request. Bidders should submit complete specifications, descriptive materials and indicate any deviation from the specifications of this proposal.

A clear, well-organized and complete proposal will facilitate the review and selection process. Please follow the proposal format described, as failure to do so may result in disqualification.

A completed proposal submission package from respondents consists of the following elements:

-Preparation of a narrative section for the proposal, as described below.

2.10 **Proposal Format:** No paperwork or form is provided by the County for the proposal. Instead, bidders are asked to prepare their proposals in a format that they believe best conveys the details of their plan for the provision of the goods and services described in Section IV of this Request. The proposal should also fully describe the work and materials being proposed, including costs, prices, and warranties.

As a general guideline in preparing the narrative, bidders should also be careful to thoroughly identify themselves, both individually and/or corporately. At minimum, all bidders shall provide the following identifying information in the narrative portion of their proposals:

- **Bidder Identification** - Name, address, phone number, and authorized signature of bidder.
- **Corporate identification** - If applicable, bidder's corporate or other business information, date established, structure (trust, partnership, corporation, non-profit, etc.), and federal tax identification number.
- **As part of the bid, each bidder should present:**
 - A thorough explanation of the proposed approach and process to be utilized in the design, engineering and construction of the EMS Facility
 - A proposed scope of materials and services to be provided by each bidder for the design, engineering and/or construction of the EMS Facility, including specific

descriptions, samples and/or explanations of materials, services, processes, costs and prices.

- Identification of each bidder's key personnel involved in the proposed scope of materials and services, including experience, qualifications and an explanation of the services to be provided.
- A preliminary project schedule indicating all major activities, project milestones, and the critical path to completion.

2.11 **Other proposal completion instructions:**

The bidder should submit a transmittal letter as part of the narrative proposal which affirmatively states that the bidder has read this entire Request for Proposal and agrees to comply with all of the provisions contained within this Request for Proposal.

The bidder shall file with its proposal a bid bond, a cashier's check or a certified check drawn on any acceptable bank, made payable to Nemaha County, Kansas, in an amount of not less than five percent (5%) of the total bid, which shall be retained by the County until a Contract for the project has been executed.

A description of the bidder's qualifications and experience providing the requested or similar services should be included part of the narrative proposal. The bidder must be an established firm recognized for its capacity to perform. The bidder must be capable of meeting the deadlines specified in the Request.

Beyond these general guidelines, bidders are invited to submit additional information in the narrative section that they may consider important in fully explaining their proposal and the advantages for its selection.

Narrative section should be typed with double line spacing and using a font of size 11 or larger. This section should be published on 8 ½ X 11 plain paper stock printed on one side only.

Proposal should not be stapled or fastened in any permanent manner. Temporary removable clips may be used to keep the proposal assembled.

SECTION III GENERAL PROVISIONS

3.1 **Termination for Cause:** Nemaha County, Kansas reserves the right to terminate any contract, or any part of a contract, awarded in Response to this Request for cause under any one of the following circumstances:

3.1.1 the Contractor fails to make delivery of goods or services as specified in the contract; or

3.1.2 the Contractor fails to perform any of the provisions of the contract.

3.2 **Termination for Convenience:** Nemaha County, Kansas reserves the right to terminate performance of work under any contract awarded in Response to this Request in whole or in part whenever, for any reason, the County shall determine that the termination is in the best interest of and/or for the convenience of the County. In the event that the County elects to terminate such a contract in the best interest of and/or for the convenience of the County, it shall provide the Bidder/Contractor written notice at least ten (10) days prior to the termination date. The termination shall be effective as of the date specified in the notice.

- 3.3 **Notices:** All notices, demands, requests, approvals, reports, instructions, consents or other communications (collectively "notices") which may be required or desired to be given to the County shall be **IN WRITING**, sent by email and addressed as follows:

Austin Parker
County Administrator
Nemaha County, Kansas
607 Nemaha St.
Seneca, Kansas 66538
Telephone: 316-209-6591
E-Mail Address: austin@parkerparkerlawfirm.com

- 3.4 **Rights and Remedies:** The County shall be obligated under any contract awarded in Response to this Request only for those services rendered and the work and materials delivered and accepted prior to the date of termination, subject to any offset by the County for actual damages.

If it is determined, after notice of termination for cause, that Bidder/Contractor's failure was due to causes beyond the control of or negligence of the Bidder/Contractor, the termination shall be a termination for convenience.

The rights and remedies of the County provided for in this Request shall not be exclusive and are in addition to any other rights and remedies provided by law.

- 3.5 **Force Majeure:** Bidders/Contractors shall not be held liable if the failure to perform under any contract awarded in Response to this Request arises out of causes beyond the control of the Bidders/Contractors. Causes may include, but are not limited to, acts of nature, fires, tornadoes, quarantine, strikes other than by Bidders'/Contractors' employees, and freight embargoes, etc.

- 3.6 **Waiver:** Waiver of any breach of any provision in this contract shall not be a waiver of any prior or subsequent breach. Any waiver shall be in writing and any forbearance or indulgence in any other form or manner by the County shall not constitute a waiver. Furthermore, the County Commission is hereby empowered to waive any and all formal and informal requirements associated with this RFP in its decision to select and/or award a contract hereunder.

- 3.7 **Independent Contractor:** All Bidders/Contractors, in the performance under any contract awarded in Response to this Request, shall be acting in their individual capacities and not as agents, employees, partners, joint ventures or associates of the County.

The employees or agents of the Bidders/ Contractors shall not be construed to be the employees or agents of the County for any purpose whatsoever.

The Bidders/Contractors accept full responsibility for payment of unemployment insurance, workers compensation and social security as well as all income tax deductions and any other taxes or payroll deductions required by law for their employees engaged in work authorized by this contract.

- 3.8 **Staff Qualifications:** The Bidders/Contractors shall warrant that all persons assigned to perform work under any contract awarded in Response to this Request shall be fully qualified to perform the work required and, when necessary, possess the proper licenses, certifications and credentials to legally perform the designated work.

Failure of the Contractors to provide qualified staffing at the level required by the proposal specifications may result in contract termination and/or damages.

- 3.9 **Conflict of Interest:** No Bidder/Contractor shall knowingly employ, during the period of any contract awarded in Response to this Request, any personnel who are also an official with or in the employ of the County.

- 3.10 **Confidentiality:** If the Bidders/Contractors needs access to private or confidential data maintained by the County in order carry out its responsibilities under any contract awarded in Response to this Request, the Bidders/Contractors may be required to execute a Confidentiality Agreement as part of that contract.
- 3.11 **Nondiscrimination and Workplace Safety:** In carry out its responsibilities under any contract awarded in Response to this Request, the Bidders/Contractors shall abide by all federal, state and local laws, rules and regulations prohibiting discrimination in employment and controlling workplace safety. Any violations of applicable laws, rules and regulations may result in contract termination.
- 3.12 **Environmental Protection:** In carrying out its responsibilities under any contract awarded in Response to this Request, each Bidder/Contractor shall abide by all federal, state and local laws, rules and regulations regarding the protection of the environment. Each Contractor shall report any violations to the applicable governmental agency. A violation of applicable laws, rule or regulations may result in termination of this contract.
- 3.13 **Hold Harmless:** In carrying out its responsibilities under any contract awarded in Response to this Request, each Bidder/Contractor shall indemnify the County against any and all claims for injury to or death of any persons; for loss or damage to any property; and for infringement of any copyright or patent occurring in connection with or in any way incidental to or arising out of the occupancy, use, service, operations or performance of contractual work, caused by the Bidder/Contractor. The County shall not be precluded from receiving the benefits of any insurance each Bidder/Contractor may carry which provides for indemnification for any loss or damage to property in the Bidder's/Contractor's custody and control, where such loss or destruction is to County property. Each Bidder/Contractor shall do nothing to prejudice the County's right to recover against third parties for any loss, destruction or damage to County property.
- 3.14 **Care of County Property:** Each Bidder/Contractor shall be responsible for the proper care and custody of any County-owned personal tangible property and real property furnished for its use in connection with the performance of its responsibilities under any contract awarded in Response to this Request.
- 3.15 **Prohibition of Gratuities:** Neither a Bidder nor any person, firm or corporation employed by a bidder in the performance of this contract shall offer or give any gift, money or anything of value or any promise for future reward or compensation to any County officer or employee at any time.
- 3.16 **Federal, State and Local Taxes Contractor:** The County makes no representation as to the exemption from liability of any tax imposed by any governmental entity except those separately disclosed in accordance with Section 1.11 of this Request
- 3.17 **Governing Law:** This Request and any contract awarded in Response to this Request shall be governed by the laws of the State of Kansas and shall be deemed executed at the Nemaha County Courthouse, Seneca, Nemaha County, Kansas.
- 3.18 **Jurisdiction:** The parties shall bring any and all legal proceedings arising hereunder or under any contract awarded in Response to this Request in the State of Kansas, District Court of Nemaha County.
- 3.19 **Criminal Or Civil Offense Of An Individual Or Entity That Controls A Company Or Organization Or Will Perform Work Under This Contract:** Any conviction for a criminal or civil offense that indicates a lack of business integrity or business honesty must be disclosed. This includes (1) conviction of a criminal offense as an incident to obtaining or attempting to obtain a public or private contract or subcontract or in the performance of such contract or subcontract; (2) conviction under state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property; (3) conviction under state or federal antitrust

statutes; and (4) any other offense to be so serious and compelling as to affect responsibility as a contractor. For the purpose of this section, an individual or entity shall be presumed to have control of a company or organization if the individual or entity directly or indirectly, or acting in concert with one or more individuals or entities, owns or controls 25 percent or more of its equity, or otherwise controls its management or policies. Failure to disclose an offense may result in disqualification of the bid or termination of the contract.

- 3.20 **Competition:** The purpose of this Request is to seek free and open competition. The bidder shall advise the County when any specification, language or other requirement inadvertently restricts or limits bidding to a single source. Notification shall be in writing and must be received by the County no later than seven (7) business days prior to the bid closing date. The County reserves the right to waive minor deviations in the specifications, which do not hinder the intent of this Request.
- 3.21 **Injunctions:** Should the County be prevented or enjoined from proceeding with the acquisition before or after contract execution by reason of any litigation or other reason beyond the control of the County, bidder shall not be entitled to make or assert claim for damage by reason of said delay.
- 3.22 **Acceptance:** No contract provision or use of items by the County shall constitute acceptance or relieve the bidder of liability in respect to any expressed or implied warranties.
- 3.23 **Disclosure of Proposal Content:** The laws of the State of Kansas require public information be placed in the public domain at the conclusion of the selection process, and be available for examination by all interested parties. No proposals shall be disclosed until after a Contract Award has been issued.

Trade secrets or proprietary information legally recognized as such and protected by law may be withheld if they are clearly labeled "Proprietary" in the margin of each individual page where they appear in the proposal Response package. Pricing information is normally not considered proprietary. The Bidder's entire proposal Response package shall not be considered proprietary.

- 3.24 **Submission of the Bid:** Submission of the bid will be considered presumptive evidence that the bidder is conversant with local facilities and difficulties, the requirements of the documents and of pertinent State and/or local codes, state of labor and material markets, and has made due allowances in the proposal for all contingencies.
- 3.25 **Insurance:** Each successful bidder or combination of bidders will be required to present to the County an affidavit of current Commercial General Liability with limits of insurance of not less than \$1,000,000 each occurrence and \$2,000,000 Annual Aggregate and a specific "all risk" rider for this project in the amount of the total cost of the project, with the County as an additional named insured; Automobile Liability with limits of at least \$1,000,000 each accident; Workers Compensation and Employers Liability with limits of at least \$500,000 each accident, \$500,000 for bodily injury by accident, and \$500,000 each employee for injury by disease; and Professional Liability Insurance with an annual limit of \$1,000,000 for each claim and in the aggregate.
- 3.26 **Implied Requirements:** All products and services not specifically mentioned in this solicitation, but which are necessary to provide the functional capabilities described by the specifications, shall be included. All materials not otherwise specifically indicated shall be furnished by the Contractor.
- 3.27 **Industry Standards:** If not otherwise provided, materials or work called for in this Request shall meet or exceed all descriptions, samples and/or explanations provided in the proposed scope of materials and services provided by each bidder and shall be furnished and performed in accordance with best established practice and standards recognized by the contracted industry and comply with all codes and regulations, which shall apply.
- 3.28 **Prices:** Prices shall remain firm for the entire contract period. Prices quoted shall be net delivered, including all trade, quantity and cash discounts. Any price reductions available during the contract

period shall be offered to the County. Failure to provide available price reductions may result in contract termination.

- 3.29 **Payments:** Contractors may submit periodically, but not more than once each month, a request for payment for work done and materials delivered and stored on the site. Payment for materials stored on the site will be conditioned upon evidence submitted to establish the County's title to such materials. Each request for payment shall be computed from the work completed, less previous payments and ten percent (10%), to be retained until final completion and acceptance by the County of the work. Payments shall not be made for costs or items not listed in the bidder's bid. All payments shall be made in compliance with the Kansas Cash Basis Laws and Budget Laws applicable to cities.
- 3.30 **References:** Provide three (3) references. References shall have purchased similar services and/or items from the bidder in the past five years. References shall show firm name, contact person, address, and phone number. Bidder employees and the buying agency shall not be shown as references.
- 3.31 **Certification of Specifications Compliance:** By submission of a bid and the signatures affixed thereto, the bidder certifies all products and services proposed in the bid meet or exceed all requirements of this specification as set forth in this Request.
- 3.32 **Award:** Awards will be made by the County based upon the best interest of the County. The successful bidder will be notified in writing by the County. Neither the bidder nor the County is obligated in any way until a Contract has been approved and signed by all parties.
- 3.33 **Performance Bond:** The successful bidder will be required to provide a Performance Bond for the full amount of the Contract. The Performance Bond, in the amount of 100% of the Contract amount, must be submitted upon execution of the Contract. Incorporated in the Performance Bond shall be the condition that the Contractors shall, at their own expense and free of charge to the County, maintain and make any and all repairs to the EMS Facility which may become necessary within the period of one (1) year after the date of acceptance of said work by the County by reason of imperfection of the material used, any defective workmanship or any improper, imperfect or defective preparation of the site.
- 3.34 **Performance:** Goods and services to be provided under this Request are as outlined in the Description of Project as well as each successful Bidder's/Contractor's proposal and may only be modified by the written Contract. Any deviation during the Contract period must be approved in a signed writing by the County. Deviation, unless approved in writing by the County, may result in termination of the Contract. Satisfactory performance in response to this Request is essential. In the event the County determines performance to be unsatisfactory, the County may act in its own best interest including but not limited to: requiring corrective action; withholding payments; disallowing inappropriate claims, payments or costs; and/or suspending or terminating the Contract.

SECTION IV SPECIFICATIONS FOR PROJECT

4.1 DESCRIPTION OF PROJECT

The successful bidder shall be responsible for all aspects of the following project, including, but not limited to: obtaining required licensing, engineering, drawings for permit approval, slab on grade site preparation, dealing with sub-contractors, and the purchase, installation and/or erection of building materials and systems. The successful bidder will be responsible for adhering to all applicable safety codes on this project and will provide all necessary safety measures to protect Nemaha County, Kansas employees, patrons, and the general public during this project. The project consists of:

1. An approximately 4,800 square foot (60' x 80') pre-engineered wood or steel building, with clear span in its EMS Ambulance Bay described below, with exterior wall heights of 14 feet incorporating 4 12-feet tall x 12 feet wide insulated overhead doors with steel on both interior and exterior faces, four windows per door, power door openers and all required tracks, hardware and seals for each door included. Said building shall incorporate a standard commercial grade roof with not less than 1:12 pitch and not greater than 4:12 pitch dual slope wood or steel (gable) roof with 24 inch overhangs and covered soffits on all sides not requiring interior floor support that meets applicable IBC code requirements. Said building shall have up to or greater than a 15-foot setback from all streets, and said building, roof and all doors and components thereof shall be compliant with the currently adopted version of the International Building Code (IBC) for projects within Seneca, Kansas and all other applicable governmental code requirements, including but not limited to all codes required to be complied with by the Kansas State Fire Marshall's Office. Furthermore, all windows, doors and skylights shall be installed to meet the eligibility requirements ENERGY STAR® Product Specification for Residential Windows, Doors, and Skylights Version 6.0, a copy of which is incorporated as Exhibit 5 to this RFP.
2. The entire building shall be set back at a minimum of 25 feet from the sidewalk along Nemaha Street and shall include a 6-inch concrete apron to the south of the building. The building dimensions may be slightly changed to accommodate manufacturer's standards, and any steel building shall be enlarged sufficiently to accommodate the interior dimensions referenced herein and depicted on the building layout that is attached as Exhibit 1 to this RFP. No changes will be made without prior written approval from Nemaha County, Kansas. The building layout that is attached as Exhibit 1 to this RFP is representative of the approximate building layout that the Commission intends to be constructed. However, final dimensions and placement of all items to be included in a proposal is subject to final adjustment after award by the Commission in consultation with the successful proposer.
3. A 6 inches thick concrete floor foundation with half inch rebar reinforcement, 24 inches on center each way, column piers and anchor bolts shall be installed as required consistent with the dimensions for the EMS Ambulance Bay portion of the building layout, with the remaining concrete floor foundation being built to the same specifications except that it shall be 4 inches thick. Additionally, a six (6) inch continuous stem wall shall be constructed around the entire building perimeter, and a six (6) inch stem wall shall be built separating the Ambulance Bay, Living Quarters and Offices/Training areas of the building. A 48 foot long, 11-inch-wide formed trench drain shall be installed within the concrete floor foundation of the EMS Ambulance Bay. Said formed trench drain shall be properly sloped and shall be discharged to daylight away from the building towards city storm drainage. Of course, the concrete floor foundation for the EMS Ambulance Bay portion of the building shall be pitched and sloped to drain water into the formed trench drain.
4. A rodent guard along all exterior walls of the building shall be included in the construction of the project.
5. The new building will need to be built on a foundation with a ledge and with an extra girt at 4 feet (for support) to accommodate a steel wainscot on all four sides of the building, with construction of this steel wainscot included in the bid. Brick and/or stone veneers may be incorporated as an add-on option with separately identified costs for incorporation into the walls of the new building. The metal siding for this building shall be constructed to meet all IBC requirements. The building will need to be built at an elevation that allows for drainage from the building to 7th Street to the west, a minimum of 2% from the finished surface of its slab/floor for the first 10' then a minimum of 1% from that point to the center of the exit point from the building and a maximum of 2.5%. An add-on bid request will be for the successful bidder to evaluate existing water drainage from the Pioneer Building adjacent to the building that integrates with drainage being installed for the building. This is to be an additional bid that may be negotiated with the successful bidder after bid award and should not be included in this bid.
6. The building shall incorporate metal roof panels that meet IBC code requirements as referenced above, and shall also incorporate 26-gauge interior and exterior colored sidewall panels of a color

and type complimentary to the steel wainscot on the exterior walls and that also meet IBC code requirements as referenced above.

7. All exterior doors in this RFP shall be Plyco Series 20 Steel Insulated Doors or an equivalent commercial grade steel insulated external doors equipped with Commercial-Grade Closers, hardware and Keypad (push-button) entry systems. There are also the following special Requirements for specific exterior doors
 - a. The exterior door near the shelter room must be ADA-compliant with panic bar hardware.
 - b. The exterior door near the Training Room shall be half-glass, with panic bar hardware and must be ADA compliant.
8. The entire building must be insulated to at least an R-19 value in accordance with all applicable Code requirements, with blown insulation incorporated above the office/living areas and a full liner panel system (floor to ceiling) incorporated in the EMS Ambulance Bay. Additionally, an optional add-on bid may be proposed to incorporate spray foam insulation where deemed appropriate by the bidder with a separately identified price.
9. The separating wall between the EMS Ambulance Bay and the living/working/meeting spaces shall be full height to ceiling, and all bedroom walls shall include soundboard and insulation between rooms. Additionally, all internal walls in the living/working/meeting spaces, including the ceilings, shall be fully drywalled, taped, mudded, painted and finished to an acceptable standard level 4 grade of finish unless otherwise specifically specified in this proposal. All internal paints shall be a standard off-white semi-gloss cleanable paint, with the owner to select all interior finish colors after award of bid.
10. The flooring in the bedrooms and the training room in the building shall be carpet tile (carpet squares). The remaining flooring shall be sealed concrete. As an optional add-on bid, epoxy flooring solutions installed in accordance with commercial practices may be included as a substitute for just basic sealed concrete flooring options.
11. All concrete proposed to be poured in this project shall be supported by 4-inch aggregate consisting of either $\frac{3}{4}$ inch clean rock or $\frac{1}{2}$ inch clean rock, with six mill plastic covering on top of the rock prior to pouring. Additionally, the concrete floor foundation shall incorporate a 4-inch schedule 40 PVC pipe installation under the building for Radon. All vegetation shall be removed prior to installation of the clean rock aggregate and the concrete floor foundation. Appropriate compaction to support the EMS Ambulance Building and approaches anticipating the weight of EMS Ambulances and other occupancy of the EMS Building shall be incorporated at the direction and responsibility of the bidder.
12. The entire building complex shall be fenced with chain link fence not less than five (5) feet in height throughout the course of construction.
13. The EMS Ambulance Bay shall incorporate a 36-inch louvered exhaust fan controlled by a programmable auto/manual timer to circulate air and/or assist in removing exhaust fumes.
14. An interior EMS office, vehicle storage and temporary residence complex incorporating the following elements:
 - a. There shall be 1 window per bedroom, 1 window above the kitchen, 1 window in the TV room and 3 windows in the training room, with final sizing of each window to meet code and design requirements.
 - b. LED wall pack lighting shall be incorporated to illuminate every exterior walk door as well as the entire front of the building above the four (4) ambulance bay doors.

- c. 1 ADA-accessible restroom incorporating water-resistant walls in a material other than tin (a kemlite material or similar), incorporating grab bars and proper clearances. (Please Note: it is the successful bidder's responsibility to ensure that all necessary utilities are included and integrated within the site.)
- d. A storage area, TV Room, Kitchen and Training Room. Please note that conduit for an internet and radio antenna shall be provided to the roof within the TV Room. Conduit for an internet and radio antenna shall be provided to the roof within the TV Room.
- e. A concrete pad site adjacent to the west wall of the building to provide adequate facilities for connection of a backup generator to service just the EMS building.
- f. Four (4) Retractable Draw-Down 110-V Power Outlets sufficient to service up to four (4) ambulances shall be provided in the EMS Ambulance Bay. At least two (2) 220-Volt Power Outlets shall be incorporated into the EMS Ambulance Bay in addition to all regular standard electrical outlets that shall be incorporated into the EMS Ambulance Bay. Conduit should also be added in the northeast corner of the building to accommodate external antenna wiring.
- g. A Decontamination Room with Laundry Facilities incorporating water-resistant walls in material other than tin (a kemlite material or similar).
- h. An F-5 tornado-rated above-ground shelter-in-place safe room that is ADA-Accessible
- i. Four (4) ambulance bays that are appropriately spaced and integrated with the four (4) overhead doors using three inch door tracks for the building referenced above. Pipe bollards shall be installed on both sides of all overhead doors.
- j. A medical storage room that is heated and air conditioned.
- k. All interior finish walls that are for interior areas within the building that are not the EMS Ambulance Bay shall have an internal finished height of nine (9) feet.
- l. All interior EMS Ambulance Bay doors shall be steel insulated walk-in weathertight exterior doors.
- m. All other interior doors shall be hollow core with wood casing trim around all doors and windows.
- n. Vinal base trim shall be used throughout all finished spaces except for the EMS Ambulance Bay.
- o. Gutters and downspouts shall be integrated into the building design and shall be piped underground with discharge sized to adequately drain water away from building to daylight towards city storm drainage at the south curb. Furthermore, all drainage shall be designed to flow away from the building and the adjacent Pioneer building
- p. The ceiling shall be metal in appearance, and the ceiling and all interior walls EMS Ambulance Bay shall be of a design that is waterproof, and all internal insulation shall be behind waterproof interior walls in the EMS Ambulance Bay.
- q. At least 4-inch thick concrete pad entryways shall be provided for each pedestrian door and 6 inch thick concrete heavy vehicle approaches shall be provided for each overhead door. A front (east) six-inch thick concrete approach apron shall be constructed that is 25 feet wide by 80 feet long. A 30 feet wide six-inch thick concrete approach to the street to the south of the building. A 50 foot long by 4-foot-wide four-inch thick concrete sidewalk with ½ inch thick rebar, 24 inches on center placement, shall be constructed along the north side of the EMS building. A 16 foot long by 4-foot-wide four-inch thick concrete

sidewalk with ½ inch thick rebar, 24 inches on center placement, shall be constructed along the south side of the EMS building, starting on the west side of the concrete approach and extending west to the walk-in door. Additionally, concrete appropriately sized to provide adequate concrete surface and thickness for the generator and any AC condensing units shall be provided along the west side of the building.

- r. Additionally, a patio space that is 10 feet wide, 20 feet long and four-inches thick, with ½ inch thick rebar, 24 inches on center placement, shall be proposed to be placed along the south side of the EMS building with an entry/exit door access point consistent with all other external doors installed elsewhere in this EMS Building. This patio space is to be located adjacent to the Kitchen area incorporating external lighting consistent with all external lighting described elsewhere in this RFP. Finally, a 20AMP service outlet shall be provided along the patio space. This patio space is only to be bid as an optional add-on at the discretion of the County, with separate line-item costing identified for this optional add-on.
- s. This building shall include Kansas stamped engineered drawings for the EMS building.
- t. The proposal shall include the attachment of a sewer line into the City of Seneca's sewer system. This shall consist of a 4" sewer drainpipe with cleanouts every 75 feet from the EMS Building to the City's sewer main located in the middle of Pioneer Street. Incorporated as Exhibit 2 is a visual representation of the location of the City's main sewer line infrastructure for reference in determining where connection points could be located.
- u. A geotechnical survey is available from Nemaha County, Kansas. A copy of this survey is included as Exhibit 3 to this RFP.
- v. Please include one (1) standard external water hose connection along the exterior of the building in close proximity to the external air conditioner condensing units for the EMS Building that incorporates an internal shut-off value, as well as at least two (2) internal water hose connections within the EMS Ambulance Bay.
- w. Not less than twelve (12) LED overhead efficient light sources spaced appropriately within the EMS Ambulance Bay
- x. Integration of Energy-Efficient modern electrical, lighting, plumbing, heating and air conditioning technologies throughout the building. Additionally, while the EMS Ambulance Bay will not be air conditioned, it shall have not less than three (3) separate overhead ventilation fans of appropriate size to adequately circulate air flow within the EMS Ambulance Bay, and the EMS Ambulance Bay shall incorporate energy efficient options for heating, which may include infrared overhead heating, infrared forced air and/or integrated concrete radiant floor heating options. All types of referenced heating and air conditioning options may be proposed as alternate proposals within a proposal.
- y. Battery back-up combination exit, emergency lights to be installed at all exit walk in doors and at the door connecting the bay to the living area.
- z. Install one battery back-up emergency wall pack light in each of the following locations: the Training Room, TV Room, Main Living Hallway, Storm Shelter, and both bathrooms.
- aa. The ½ bath that is to be installed must be 100% ADA Compliant.
- bb. Install a residential ducted range hood with light in the kitchen area of the Training Room.
- cc. Install a 1/2hp or larger residential garbage disposal in the kitchen area of the Training Room.

- dd. Install a speaker to each bedroom and wire them in a series to the Living Area radio location, with a 110-V outlet receptacle placed in proximity to the Living Area radio location.
- ee. Provide a water connection to serve the refrigerator that is to be located in the kitchen area of the Training Room. This connection shall be separate from the soft water system.
- ff. Provide a residential-grade soft water treatment system for the EMS Building capable of supporting 3-5 people, and all soft water connections shall exclude service to the refrigerator and both of the internal and the external water hose connection points.
- gg. Provide adequate ducted exhaust fans in both bathrooms that achieve an "80 CFM Minimum".
- hh. Provide one 20AMP circuit to the kitchen island outlets that services "Two outlets" and install two outlets in the Kitchen Island within the kitchen area of the Training Room.
- ii. Provide a 20AMP service outlet to the outdoor air conditioning location of the building.
- jj. Install floor drains with 2" drain line access points in the laundry room, both bathrooms, the mechanical room, and the storm shelter that integrate into the building's sewer line discharge.
- kk. Install a radon pump in the mechanical room.
- ll. Install the natural gas service entrance incorporating directional underground boring that is located in consultation with Kansas Gas Service. It is the bidder's responsibility to coordinate the natural gas entry point into the building. However, the County will not accept location of a gas meter entry point along the east side of the building.
- mm. Install combination CO/Smoke Detectors in each bedroom, the main living hallway, mechanical room, storage room, laundry room, both bathrooms, living room, office, training room, and EMS Ambulance bay area. All CO/Smoke Detectors shall be hardwired and interconnected with adequate battery backup power supplies included.
- nn. The HVAC system or systems for the building need to be 96% efficient, operating based upon natural gas, with a minimum of 16 SEER Air Conditioning sized and installed to adequately climate control the entire living area and the training room.
- oo. Install a 40-Gallon high efficiency natural gas or electric water heater to service the EMS building.
- pp. Install a 1" whole house canister style sediment water filter to service the EMS building.
- qq. All lighting installed throughout the EMS building shall be LED lighting.
- rr. Provide a 1" water service line to the EMS building that is to be fed from the Pioneer Building service line.
- ss. Provide a 200AMP single phase, 3-wire underground electrical service that is to be serviced from the 600AMP MDP in the Pioneer Building.
- tt. Provide a natural gas standby generator with a 200AMP automatic transfer switch sized to adequately service the EMS building during an emergency power outage, and include all cold weather kits necessary to charge and heat the generator during such weather.
- uu. All additional mechanical, electrical, plumbing and ADA components that are necessary to meet all applicable code minimums throughout the EMS building shall be included and incorporated into all bids submitted in response to this RFP.

vv. Notwithstanding any other term, condition or provision of this RFP, please feel free to integrate all electrical, water and stormwater designs with the existing capacity of the adjacent Pioneer building.

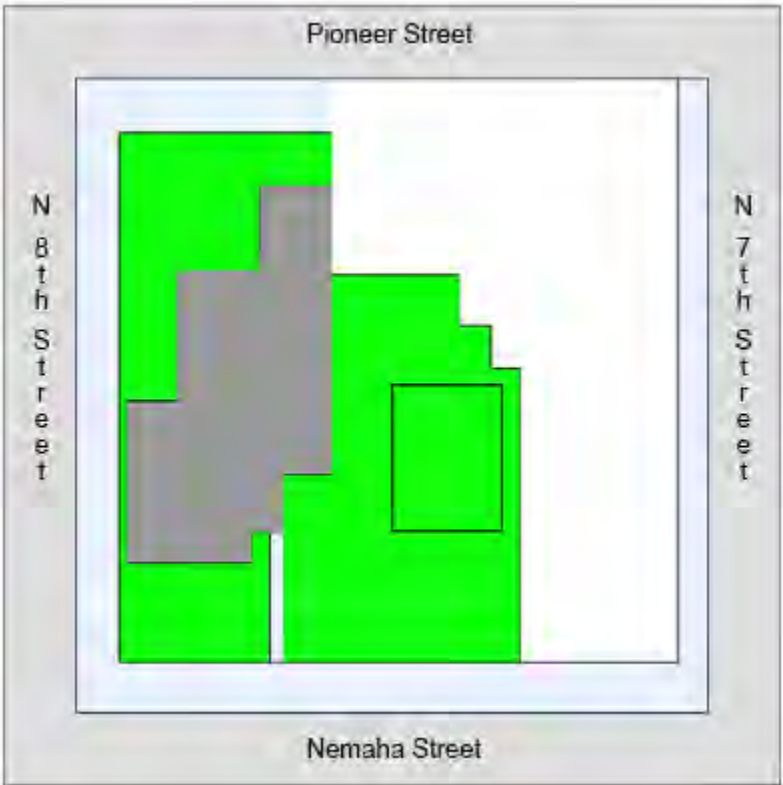
ww. **PLEASE NOTE: A VISUAL REPRESENTATION OF A POTENTIAL FLOORPLAN FOR THIS BUILDING IS BEING PROVIDED WITH THIS RFP. THIS IS NOT A FINAL PLAN FOR THE BUILDING STRUCTURE AND IT IS MEANT TO PROVIDE GUIDANCE TO ALL PROPOSERS. OF COURSE, THE FINAL LOCATION, SCOPE AND SPECIFICATIONS OF A SUCCESSFUL PROPOSAL SHALL BE NEGOTIATED WITH A SUCCESSFUL PROPOSER**

15. The building is to be constructed to a turn-key status. As such, all necessary site prep, foundation work, and mechanical, electrical, plumbing and preparation for site grass seeding work shall be itemized and included in the bid. The implied warranties of merchantability and fitness for a particular purpose shall be included.
16. **PLEASE NOTE THAT THE COUNTY WELCOMES PROPOSALS TO BE SUBMITTED FOR ALL OR A PORTION OF THE OUTLINED SCOPE OF WORK HEREUNDER. ADDITIONALLY, THE COUNTY WELCOMES PROPOSALS FROM A GROUP OF BIDDERS THAT PROPOSE TO COORDINATE COMPLETION OF ALL ACTIVITIES HEREUNDER. HOWEVER, ANY GROUP OF BIDDERS SHALL IDENTIFY A SINGLE COORDINATING ENTITY THAT IS IDENTIFIED AS THE RESPONSIBLE CONTRACTOR FOR THE COORDINATION AND COMPLETION OF THE PROJECT. FINALLY, THE COUNTY RESERVES THE RIGHT TO SELECT ALL OR A PORTION OF PROPOSALS SUBMITTED HEREUNDER.**
17. **PLEASE NOTE THAT ALL SUBMITTED PROPOSALS MUST REMAIN VALID FOR AT LEAST THIRTY (30) DAYS FROM THE DATE OF BID OPENING.**
18. In addition to the implied warranties of merchantability and fitness for a particular purpose, the metal building, including its slab, approaches and all goods and services furnished in furtherance of and pursuant to the bid, shall be specifically warranted to Nemaha County, Kansas by the successful proposer, in that the successful proposer agrees, at its own expense, to make or cause to be made, all repairs or replacements, including all inspections, labor and materials necessary to maintain the metal building systems, including its slab and approaches, for the time periods specified below following completion of this project, as follows:
 - a. A one-year warranty on materials and workmanship for the building, including its slab, approaches and all goods and services furnished in furtherance of and pursuant to the proposal.
 - b. An extended ten-year weathertightness warrant for the following provided parts of the metal building:
 - i. Metal or composite flashings.
 - ii. Standing seam steel roofing.
 - iii. Metal wall panel system, including any insulated metal wall panel system.
 - iv. Roof openings, including ventilators.
 - c. A warranty on the metal finish of the roof and wall panels of the metal building for twenty (20) years from date of installation on fluoropolymer resin paint, or metallurgic coatings, against perforation, peeling, flaking, blistering or color change in excess of the manufacturer's published amount.

- d. As such, the successful proposer shall respond within fifteen (15) days of written notification by Nemaha County, Kansas of warranted leaks or other defects. Replacement and/or repair of defective components or systems covered under this warranty shall commence within thirty (30) days of the notification date and shall be made at no cost to Nemaha County, Kansas.

EXHIBIT 1 – APPROXIMATE BUILDING LAYOUT AND EXISTING SITE AERIAL VIEW

Approximate Building Layout



Existing Aerial View (Google Maps)



New EMS Station

Preliminary Geotechnical Engineering Report

Seneca, Kansas

September 16, 2025 | Terracon Project No. 14255042

Prepared for:

Nemaha County KS
Seneca, KS



Nationwide
Terracon.com

- Facilities
- Environmental
- Geotechnical
- Materials



2016 SW 37th Street
Topeka, KS 66611
(785) 267-3310
Terracon.com

September 16, 2025

Nemaha County KS
607 Nemaha St
Seneca, KS 66538

Attn.: Robert Reece
P: (785) 334-0100
E: administrator@nmcoks.com

Re: Preliminary Geotechnical Engineering Report
New EMS Station
203 N 8th St
Seneca, Kansas
Terracon Project No. 14255042

Dear Mr. Reece:

We have completed a subsurface exploration and geotechnical engineering evaluation for the referenced project in general accordance with Terracon Proposal No. P14255042 dated July 25, 2025. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations and floor slabs for the project. However, as final site development plans for this project are not available, the recommendations presented in this report should be considered preliminary until Terracon has the opportunity to evaluate final plans and perform any necessary additional design-level exploration and laboratory testing.

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

Sincerely,
Terracon

Ruchi Bhakta
Staff Engineer

Jamie M. Klein, PE
Senior Engineer
Kansas PE: 22112



September 16, 2025

Table of Contents

Introduction.....	1
Project Description.....	1
Site Conditions	2
Geotechnical Characterization	3
Seismic Site Class.....	4
Preliminary Geotechnical Overview	5
Existing Fill	5
Swell Potential	5
General	6
Preliminary Earthwork.....	6
Demolition and Existing Utilities	6
Site Preparation.....	7
Excavation.....	7
Subgrade Stabilization	8
Fill Material Types	8
Fill Placement and Compaction Requirements	10
Utility Trench Backfill	11
Grading and Drainage.....	12
Earthwork Construction Considerations	12
Construction Observation and Testing	13
Preliminary Shallow Foundations	14
Shallow Foundation Design Parameters	14
Shallow Foundation Overturning and Uplift Loads	15
Shallow Foundation Construction Considerations.....	15
Preliminary Floor Slab design	17
Floor Slab Design Parameters	17
Floor Slab Construction Considerations.....	18
Preliminary Pavements.....	19
Pavement Subgrade Preparation	19
Pavement Section Thicknesses	19
Pavement Maintenance	21
General Comments	22

Attachments

Exploration and Testing Procedures

Site Location and Exploration Plans

Exploration and Laboratory Results

- Boring Logs with Laboratory Data

■ GeoModel

Supporting Information

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

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration and Preliminary Geotechnical Engineering services performed for the proposed EMS building to be located in the lot east of the Nemaha County Health Department building at 203 N 8th St in Seneca, Kansas. The purpose of these services was to provide information and preliminary geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- IBC seismic site class
- Site preparation and earthwork
- Foundations
- Floor slabs
- Pavements

Drawings showing the site and boring locations are shown on the attached [Site Location](#) and [Exploration Plan](#). The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring logs in [Exploration Results](#).

Project Description

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

Item	Description
Information Provided	Our understanding of the project is from email correspondence with the Client and provided project location file.
Project Description	The project will include the construction of a new single-story EMS building in the open lot to the east of the Nemaha County Health Department. The general location and plan area for the building is not defined at this time. We anticipate the project will also include associated paved parking and apron areas around the building, but the locations have not been established.
Proposed Structure	We anticipate the building will include a combination of steel framing and masonry construction with a slab-on-grade (no basement) and will likely be supported by shallow foundations.

Item	Description
Finished Floor Elevation (FFE)	The FFE of the building was not provided. We anticipate the FFE will be within 3 feet of existing grades.
Maximum Loads	Anticipated structural loads were not provided. We have assumed the following maximum loads based on our experience with similar projects. ■ Columns: 75 kips ■ Walls: 3 kips per linear foot (klf) ■ Slabs: 125 pounds per square foot (psf)
Grading/Slopes	A site grading plan was not provided. Based on our understanding of existing and proposed grades, we have considered no more than 3 feet of cut and/or fill will be required to develop final grades, and that final slopes would have a maximum inclination of 3H:1V (Horizontal: Vertical).
Below-Grade Structures	No basement level or other below-grade areas are planned.
Free-Standing Retaining Walls	No free-standing retaining walls are planned.
Pavements	No information regarding anticipated vehicle types, axle loads, or traffic volumes was provided. We anticipate the pavements will be used primarily by passenger vehicles (cars, pickup trucks, SUV's) with occasional 2-axle delivery trucks and 3-axle trash collection trucks.

Terracon should be notified if any of the above information is inconsistent with the planned construction, especially the grading limits, as modifications to our recommendations may be necessary.

Site Conditions

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

Item	Description
Parcel Information	The project is located in the lot east of the Nemaha County Health Department building at 203 N 8th St in Seneca, Kansas Latitude/Longitude: 39.8366, -96.0660 (approximate) See Site Location

Item	Description
Existing Improvements	The planned project area is currently undeveloped. However, we understand a former elementary school occupied the site but was burned down in 2007 and subsequently removed from the site. The client was interested in evaluating if debris from the former building was buried on the property.
Historical Image (2006)	
Current Ground Cover	Short grass, asphalt or concrete paved parking lot

Geotechnical Characterization

We have developed a general characterization of the subsurface conditions based on the subsurface exploration, laboratory data, geologic setting, and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical evaluation. Conditions observed at each boring location are indicated on the individual logs. The individual logs and GeoModel are in the [Exploration Results](#) section of this report.

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

Model Layer	Layer Name	General Description
1	Surface	Topsoil
2	Fill	Fat Clay, varying amount of silt, gravel, and brick and concrete fragments
3	Cohesive Soil	Fat Clay, varying amount of silt, stiff to very stiff

The borings were observed during drilling and shortly after completion of drilling for the presence and level of water. Groundwater was not encountered in the borings at these times. However, this does not necessarily mean the borings were terminated above groundwater. A longer period of time may be required for groundwater to develop and stabilize in a borehole. Longer term observations in piezometers or observation wells, sealed from the influence of surface water, are often required to define groundwater levels.

Groundwater levels may fluctuate due to seasonal variations for rainfall, runoff, and other factors not evident at the time the borings were performed. "Perched" water could occur above lower permeability soil layers and "trapped" water could be present within existing fill materials. Therefore, groundwater conditions at other times may be different from the conditions encountered in our exploratory borings. The potential for water level fluctuations and perched water should be considered when developing design and construction plans and specifications for the project.

Seismic Site Class

The seismic design requirements for buildings and other structures are based on Seismic Design Category. The Site Class is required to identify the Seismic Design Category for a structure. The Site Class is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC). Based on the geotechnical characterization of the site, **Seismic Site Class D** can be considered for design of the project. The subsurface exploration at this site extended to a maximum depth of 20 feet. The site properties below the maximum boring depth were estimated based on our experience and knowledge of geologic conditions of the general area. Upon request, we could perform deeper borings or geophysical testing to confirm the conditions below the current maximum boring depth.

Preliminary Geotechnical Overview

The future development plans have not been finalized and the recommendations in this report should be considered preliminary. We request Terracon be given the opportunity to review plans once they are available as additional field exploration, laboratory testing, and analyses may be required to provide design-level geotechnical recommendations. Until these services are completed, the geotechnical recommendations presented within this report should be considered preliminary.

Based upon geotechnical conditions encountered in the test boring locations, the site generally appears suitable for the proposed construction, provided the recommendations. Additional considerations are provided below.

Existing Fill

Existing fill was encountered at 4 of the 5 boring locations to depths ranging from approximately 5 to 10 feet. While the test results on the recovered samples of fill materials suggest the fill may have been placed with compactive effort and moisture control, variable soil conditions could be encountered during construction which may not be suitable for support of structures or pavements. As such, we recommend foundation, floor slab and pavement subgrade conditions be further evaluated by Terracon during construction as described in the [Earthwork](#) section of this report.

Existing fill should be anticipated in unexplored areas of the site, possibly to greater extents. The depth and composition of the existing fill materials can vary greatly over relatively small lateral and vertical distances. Caution should be exercised when using the depth and composition of the fill observed at the discrete boring locations for estimating purposes. Therefore, unit rates should be requested, and a contingency budget considered, to provide for additional earthwork items such as uncontrolled existing fill remediation including export of unsuitable soils and import of engineered fill, moisture conditioning subgrade soils, and repairing soft subgrade or foundation soils.

Swell Potential

Expansive fat clay soils were encountered at the site. These materials have the potential to shrink and swell with seasonal fluctuations in the soil moisture content. We recommend the floor slabs be supported on at least 24 inches of low volume change (LVC) material. In areas that are currently above or less than 2 feet below the planned bottom-of-floor-slab level, native fat clay soils should be undercut to accommodate placement of LVC material. In areas where more than 2 feet of fill will be placed below the bottom-of-floor-slab level, at least the upper 24 inches of new engineered fill should consist of LVC material. Details regarding the LVC zone are provided in [Earthwork](#) and [Floor Slabs](#).

This report provides preliminary recommendations to help mitigate the effects of soil shrinkage and expansion. However, even if these procedures are followed, some movement and at least minor cracking in the structure could still occur. The severity of cracking and other cosmetic damage such as uneven floor slabs on grade could increase if any modification of the site results in excessive wetting or drying of the expansive soils. Eliminating the risk of movement and cosmetic distress may not be feasible, but it may be possible to further reduce the risk of movement if significantly more expensive measures are used during construction. We would be pleased to discuss other construction alternatives with you upon request.

General

The preliminary recommendations contained in this report are based upon the results of field and laboratory testing (presented in the [Exploration Results](#)), engineering analyses, and our current understanding of the proposed project. The [General Comments](#) section provides an understanding of the report limitations.

Preliminary Earthwork

Site preparation, excavation, subgrade preparation, and placement of engineered fill should follow the recommendations presented in this section. The recommendations presented for design and construction of earth-supported elements including foundations and slabs are contingent upon the recommendations outlined in this section being followed. We recommend earthwork on this project be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of subgrade preparation, engineered fill, foundation bearing soils, and other geotechnical conditions exposed during the construction of the project.

Demolition and Existing Utilities

The proposed building will be constructed within the footprint of a former school building. We recommend any existing foundations, slabs, and utilities, if remaining, be removed from within the proposed building footprint and at least 5 feet beyond the outer edge of foundations.

For areas outside the proposed building footprints and foundation bearing zones, existing foundations, floor slabs, and utilities should be removed where they conflict with proposed utilities, retaining walls, and pavements. In such cases, existing foundations, floor slabs, and utilities should be removed to a depth of at least 2 feet below the affected utility or design pavement subgrade elevation.

Underground utilities are present within the project site. If any utilities are to remain in place, we recommend the associated backfill be tested by a representative of Terracon at the time of construction. For utilities which are being relocated, the resulting trenches should be over excavated and backfilled properly and tested in accordance with the recommendations in this report in section **Earthwork** or be backfilled with lean concrete or flowable fill. If lean concrete is used as backfill, the contractor should refer to all of the new build Mechanical-Electrical-Plumbing (MEP) and foundation drawings to confirm that the concrete backfill materials will not conflict with any new item installations or construction. Any abandoned underground pipes, left in place, should be fully grouted.

Site Preparation

Vegetation, topsoil, and any loose, soft, or otherwise unsuitable soils present within the proposed construction areas should be stripped. Based on information obtained at the boring locations, stripping depths on the order of 6 inches should be anticipated to remove the root zone materials. However, greater stripping depths may be required in areas not explored by the borings. Organic soils removed during site preparation should not be used as fill beneath the proposed new building and pavement areas.

Mature trees are located near the project site. Tree root systems can remove substantial moisture from surrounding soils. Where trees are removed, the full root ball and all associated dry and desiccated soils should be removed. The soil materials which contain less than 5 percent organics can be reused as engineered fill provided the material is moisture conditioned and properly compacted.

Where existing fill materials are present following initial site stripping and initial grading cuts, the existing fill should then be further evaluated by a representative of Terracon using hand equipment, test pits, field density tests, and possibly obtaining additional samples for further laboratory testing. If unsuitable materials are encountered at this time, these materials should be removed and replaced with controlled engineered fill.

After completing these operations, the exposed soils should be proofrolled. A Terracon representative should observe the proofrolling. Proofrolling can be accomplished using a loaded tandem-axle dump truck with a gross weight of at least 20 tons, or similarly loaded equipment. Areas that display excessive deflection (pumping) or rutting during proofroll operations should be improved by scarification and compaction, removal and replacement with engineered fill, or stabilization.

Excavation

We anticipate that excavations for the proposed construction can be accomplished with conventional earthmoving equipment. The bottom of excavations should be thoroughly

cleaned of loose soils and disturbed materials before placing new backfill or proceeding with new construction.

Subgrade Stabilization

Although not encountered during our exploration, it is possible for soils with high moisture and relatively low strength to be present within existing fill and within/near previous structures and utilities. Therefore, some means of subgrade stabilization may be required to facilitate construction, especially if wet soils are encountered during site preparation or if the subgrade becomes saturated by precipitation during site preparation/earthwork operations.

In general (weather permitting), scarifying, drying and compacting the exposed subgrades is expected to be the most economical means of improving these soils before placing new fill. However, this option is typically less effective where soft/wet soils are more than about one foot thick. Alternatives for subgrade stabilization could include undercutting unsuitable soils (wet, low strength, or disturbed), incorporating crushed limestone aggregate (typically on the order of 12 to 30 inches thick) to improve subgrade stability, and the incorporation of a chemical additive such as portland cement or Class C fly ash. The need for stabilization, and the most appropriate type of stabilization, will be dependent upon soil, groundwater, and weather conditions at the time of construction. The proposed grading plan, the construction schedule, and construction methods will also affect the selection of stabilization method. Terracon should be retained during construction to help provide recommendations as needed.

Fill Material Types

Fill required to achieve design grades below, or within 10 feet of structures, pavements or constructed slopes should be classified as engineered fill. General fill is material used to achieve grade outside of these areas.

Reuse of On-Site Soil: Excavated on-site native soil may be selectively reused as engineered fill. Based on our subsurface characterization it appears the existing native soils are suitable for reuse as engineered fill below the recommended LVC zone. Material property requirements for on-site soil for use as general fill and engineered fill are noted in the table below:

Fill Type ¹	USCS Classification	Acceptable Location for Placement
Existing fill	CH	Pavement areas and at depths greater than 24 inches below building finished grade Existing fill should be observed, tested and approved by Terracon. Organics, rock/rubble fragments larger than 3 inches, debris, or other unsuitable materials should be removed before reuse of the existing fill in engineered fill sections.
Native fat clays	CH	Pavement areas and at depths greater than 24 inches below building finished grade.

Imported Fill Materials: Imported fill materials should meet the following material property requirements. Regardless of its source, engineered fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade.

Fill Type ¹	USCS Classification	Acceptable Location for Placement
Fat clays and lean to fat clays (LL $\geq$ 45 or PI $\geq$ 22)	CH, CL/CH ²	Pavement areas and at depths greater than 24 inches below building finished grade
LVC material	GM ³ or CL (LL<45 and 5<PI<22)	All locations and elevations, except where baserock or free-draining materials are required
Free-draining granular ⁴	GW, GP, SW, SP	All locations free-draining material is required

Fill Type ¹	USCS Classification	Acceptable Location for Placement
- Engineered fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. - By our definition, cohesive soils with a liquid limit of 46 to 49 or plastic index of 22 or greater are classified as lean to fat clay (with the borderline symbol CL/CH) to alert of the expansive potential of moderate plasticity clay soils (see ASTM D2487, Section 1.1, Note 1). - KDOT Type AB-3 or an approved alternate gradation of crushed limestone aggregate - Granular materials with less than 5 percent fines (material passing the #200 sieve), such as ASTM C 33, Size No. 57 aggregate or an approved alternate gradation.		

Fill Placement and Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Engineered Fill	General Fill
Maximum Lift Thickness	9 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e., a jumping jack or plate compactor) is used	Same as engineered fill
Minimum Compaction Requirements ^{1,2,3}	95% of maximum for cohesive soils	92% of maximum
Water Content Range ¹	Low plasticity cohesive (LL<45): -2% to +2% of optimum High plasticity cohesive (LL≥45): 0 to +4% of optimum Granular: -3% to +3% of optimum	As required to achieve minimum compaction requirements ⁴

Item	Engineered Fill	General Fill
	1. Maximum density and optimum water content as determined by the standard Proctor test (ASTM D 698). 2. High plasticity cohesive fill should not be compacted to more than 100% of standard Proctor maximum dry density. 3. If the granular material is a coarse sand or gravel, or of a uniform size, or has a low fines content, compaction comparison to relative density may be more appropriate. In this case, granular materials should be compacted to at least 70% relative density (ASTM D 4253 and D 4254). Materials not amenable to density testing should be placed and compacted to a stable condition observed by the Geotechnical Engineer or representative. 4. Typically -3% to +3% of optimum	

Utility Trench Backfill

Any soft or unsuitable materials encountered at the bottom of utility trench excavations should be removed and replaced with engineered fill or bedding material in accordance with project and utility owner's specifications. This recommendation is particularly applicable to utility work requiring grade control and in areas where subsequent grade raising could cause settlement in the subgrade supporting the utility. Trench excavation should not be conducted below a downward 1:1 projection from existing foundations without engineering review of shoring requirements and geotechnical observation during construction.

Trench backfill should be mechanically placed and compacted as discussed earlier in this report. Compaction of initial lifts should be accomplished with hand-operated tampers or other lightweight compactors. Where trenches are placed beneath slabs or footings, the backfill should satisfy the material requirements of engineered fill discussed in this report. Flooding or jetting for placement and compaction of backfill is not recommended without further evaluation.

Utility trenches are a common source of water infiltration and migration. Utility trenches that penetrate beneath the building should be effectively sealed to restrict water intrusion and flow through the trenches, which could migrate below the building. Each trench should be provided with an effective trench plug that extends at least 5 feet from the face of the building exterior. The plug material should consist of cementitious flowable fill or low permeability clay. The trench plug material should be placed to surround the utility line. If clay is used to construct the trench plug, the clay should be placed and compacted in accordance with the water content and compaction recommendations for engineered fill provided in this report.

Grading and Drainage

The site should be graded to provide effective drainage away from the building during and after construction, and these conditions should be maintained throughout the life of the structure. Accumulation of water adjacent to the structure could contribute to significant moisture increases in the subgrade soils and subsequent softening/settlement or expansion/heave, which could result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential floor slab and/or foundation movements, cracked slabs and walls, and roof leaks.

After building construction and landscaping have been completed, final grades should be verified to document effective drainage has been achieved. Grades around the structure should also be periodically checked and adjusted, as necessary, as part of the structure's maintenance program. Where paving or flatwork abuts the structure, a maintenance program should be established to effectively seal and maintain joints and limit surface water infiltration.

Planters located within 10 feet of the building should be self-contained to prevent water accessing the building subgrade soils. Trees or other vegetation whose root systems have the ability to remove excessive moisture from the subgrade and foundation soils should not be planted next to structures. Trees and shrubbery should be kept away from the exterior edges of the foundation element a distance of least equal 1.5 times their expected mature height. Sprinkler mains and spray heads should be located a minimum of 5 feet away from the building lines. Low-volume, drip style landscape irrigation should not be used near the building. Roof runoff should be collected in drains or gutters. Roof drains and downspouts should be discharged onto pavements which slope away from the buildings or downspouts should be extended a minimum of 10 feet away from the structure.

Earthwork Construction Considerations

Care should be taken to avoid disturbance of prepared subgrades. Unstable subgrade conditions can develop during general construction operations, particularly if the soils are wetted or subjected to repetitive construction traffic. If unstable subgrade conditions develop, stabilization measures will need to be employed. Construction traffic over the completed subgrade should be avoided to the extent practical. If the subgrade becomes frozen, desiccated, saturated, or disturbed, the affected materials should be removed or these materials should be scarified, moisture conditioned, and compacted before floor slab construction.

Based on conditions encountered in the borings, significant seepage is generally not expected in excavations for this project (e.g., for foundation construction and utility installation). If seepage is encountered in excavations during construction, the contractor is responsible for designing, implementing, and maintaining appropriate

dewatering methods to control seepage and facilitate construction. In our experience, dewatering of excavations in clay soils can typically be accomplished using sump pits and pumps. If seepage occurs where sand seams or sand layers are encountered in excavations, a more extensive dewatering system may be required.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, state, and federal safety regulations. The contractor should be aware that slope height, slope inclination, and excavation depth should in no instance exceed those specified by these safety regulations. Flatter slopes than those dictated by these regulations may be required depending upon the soil conditions encountered and other external factors. These regulations are strictly enforced and if they are not followed, the owner, contractor, and/or earthwork and utility subcontractor could be liable and subject to substantial penalties. Under no circumstances should the information provided in this report be interpreted to mean that Terracon is responsible for construction site safety or the contractor's activities. Construction site safety is the sole responsibility of the contractor who shall also be solely responsible for the means, methods, and sequencing of the construction operations.

Construction Observation and Testing

The earthwork efforts should be observed by the Geotechnical Engineer (or others under their direction). Observation should include documentation of adequate removal of surficial materials (vegetation and topsoil), evaluation and remediation of existing fill materials, as well as proofrolling and mitigation of unsuitable areas delineated by the proofroll.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, as recommended by the Geotechnical Engineer before placing additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas. Where not specified by local ordinance, one density and water content test should be performed for every 100 linear feet of compacted utility trench backfill and at least one test performed for every 12 vertical inches of compacted backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated by the Geotechnical Engineer. If unanticipated conditions are observed, the Geotechnical Engineer should be contacted to discuss mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

Preliminary Shallow Foundations

Final recommendations for foundation design purposes can be provided once final site grading and building plans are available and after additional exploration and analysis has occurred. The following values are provided for preliminary design purposes only.

Shallow Foundation Design Parameters

Item	Description
Suitable Bearing Material ¹	Suitable native soils or engineered fill extending to suitable native materials
Maximum Net Allowable Bearing Pressure ^{2, 3}	2,500 psf
Minimum Foundation Dimensions	Per IBC 1809.7
Minimum Embedment Below Finished Grade ⁴	3 feet
Estimated Total Settlement from Structural Loads ⁵	Less than 1 inch
Estimated Differential Settlement ^{5, 6}	About 1/2 to 2/3 of total settlement
Ultimate Passive Pressure ⁷	280 pcf, equivalent fluid density
Ultimate Coefficient of Sliding Friction ⁸	0.32

1. Unsuitable or soft soils should be overexcavated and replaced per the recommendations presented in [Earthwork](#).
2. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. Values assume exterior grades are no steeper than 20% within 10 feet of structure.
3. Values provided are for maximum loads noted in [Project Description](#). Additional geotechnical consultation will be necessary if higher loads are anticipated.
4. Embedment necessary to minimize the effects of frost and seasonal water content variations
5. Foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of compacted fill, and the quality of the earthwork operations. Additional foundation movements could occur if foundation soils are wetted or dried.

Item	Description
6.	Differential settlements are noted for equivalent-loaded foundations and bearing elevation as measured over a span of 50 feet.
7.	Use of the passive earth pressure requires the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted engineered fill be placed against the vertical footing face. Regardless of depth, the passive pressure should not exceed 2,000 psf . Passive resistance in the upper 3 feet of the soil profile should be neglected. Some movement of the footing will be required to mobilize resistance from passive pressure.
8.	If uplift loads will accompany horizontal loads, the contribution of sliding friction to the horizontal load capacity should be neglected.

Shallow Foundation Overturning and Uplift Loads

Foundations with significant overturning moments (such as canopy foundations) should be proportioned to maintain resultant eccentricity within the center third of the foundation when subject to overturning loads (e.g., eccentricity $< b/6$, where b is the foundation width). This requirement will maintain the foundation in compression against the soil bearing surface.

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils with consideration to the IBC basic load combinations.

Item	Description
Soil Moist Unit Weight	110 pcf
Soil Effective Unit Weight¹	50 pcf
Soil weight included in uplift resistance	Soil included within the prism extending up from the top perimeter of the footing at an angle of 20 degrees from vertical to ground surface

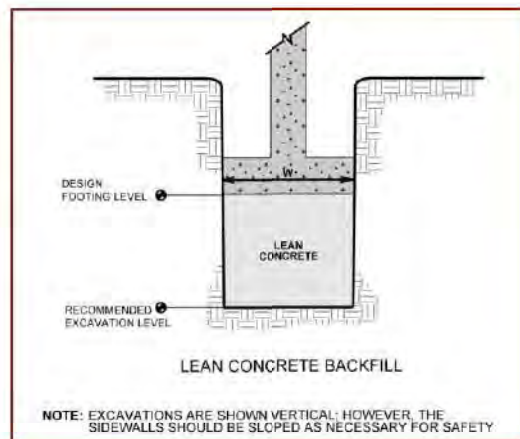
1. Effective (or buoyant) unit weight should be used for soil above the foundation level and below a water level. The high groundwater level should be used in uplift design as applicable.

Shallow Foundation Construction Considerations

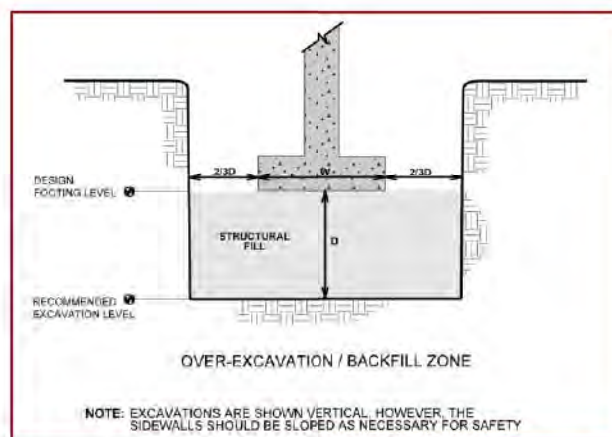
The base of all foundation excavations should be free of water and loose soil before placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials

during construction. If the soils at the bearing level become excessively dry, disturbed, saturated, or frozen, the affected soil should be removed before placing concrete. If the excavations must remain open overnight or for an extended period of time, placement of a lean concrete mud mat over the bearing soils should be considered.

The bearing materials at the base of each footing excavation should be evaluated by a representative of the Geotechnical Engineer. If unsuitable bearing materials are observed, the excavation should be extended deeper to suitable soils. The footings could bear directly on suitable soils at the lower level or on lean concrete backfill as shown on the following figure.



The footings could also bear on properly compacted engineered fill extending down to suitable soils as shown in the following figure. Over-excavation for engineered fill placement below footings should extend laterally beyond all edges of the footings at least 8 inches per foot of over-excavation depth below footing elevation. The over-excavation should then be backfilled up to the footing base elevation with well-graded granular material (e.g., KDOT AB-3) aggregate or an approved alternate gradation) placed and compacted as recommended in [Earthwork](#).



Preliminary Floor Slab design

Grade-supported floor slabs appear feasible for the proposed building. Existing fill materials were encountered at the site to depths of 5 to 10 feet below existing grade. As previously described, any existing fill present beneath floor slabs should be further evaluated by Terracon.

Due to the presence of moderate to high plasticity clay soils, we recommend the upper 24 inches of materials below the floor slab area consist of LVC materials as described in [Earthwork](#).

Design parameters for floor slabs assume the requirements in [Earthwork](#) have been followed. Specific attention should be given to positive drainage away from the structure and positive drainage of the aggregate base beneath the floor slab.

Floor Slab Design Parameters

Item	Description
Floor Slab Support¹	At least 24 inches of LVC material
Granular Leveling Course Layer Thickness^{2, 3}	4 inches (minimum)
Estimated Modulus of Subgrade Reaction⁴	125 pounds per square inch per inch (psi/in) for point loads

1. Floor slabs should be structurally independent of building footings or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation.
2. Well-graded crushed stone (e.g., KDOT AB-3) or open-graded crushed stone (e.g., ASTM C33, Size No. 57 aggregate) can be used as the leveling course.
3. These granular materials can be considered part of the LVC zone.
4. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in [Earthwork](#), and the floor slab support as noted in this table. It is provided for point loads. For large area loads the modulus of subgrade reaction would be lower.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, when the project includes humidity-controlled areas, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Joints should be placed in slabs at regular intervals as recommended by ACI to help control the locations of cracks. Joints or any cracks that develop in the floor slab should be sealed with a waterproof, non-extruding compressible compound.

If floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The structural engineer should account for potential differential settlement through use of sufficient control joints, appropriate reinforcing, or other means.

Settlement of floor slabs supported on existing fill materials cannot be accurately predicted but could be larger than normal and result in some cracking. Mitigation measures, as noted in [Earthwork](#), are critical to the performance of floor slabs. In addition to the mitigation measures, the floor slab can be stiffened by adding steel reinforcement, grade beams and/or post-tensioned elements.

Floor Slab Construction Considerations

The subgrade should be maintained within the moisture content range recommended for engineered fill until the floor slab is constructed. If the subgrade becomes desiccated before construction of the floor slab, the affected material should be removed or the materials should be scarified, moistened, and compacted. Upon completion of grading operations in the building area, care should be taken to maintain the subgrade within the moisture content and density ranges recommended for engineered fill before construction of the building floor slab.

On most project sites, the site grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrade may be disturbed due to utility excavations, construction traffic, desiccation, rainfall etc. As a result, the floor slab subgrade soils may not be suitable for placement of the granular course or concrete at the time of building construction, and corrective action may be required.

The Geotechnical Engineer should observe the condition of the floor slab subgrades immediately before placement of the floor slab support course, reinforcing steel, and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

Preliminary Pavements

Pavement Subgrade Preparation

Pavement subgrades are expected to consist of on-site native clay soils, new engineered fill composed from similar materials, or existing fill that is further evaluated by Terracon during construction. The pavement subgrades should be evaluated and proofrolled as recommended in [Earthwork](#). If soft or otherwise unsuitable areas are observed, additional over-excavation and replacement will be needed.

Grading and paving are commonly performed by separate contractors and there is often a time lapse between the end of grading operations and the commencement of paving. Subgrades prepared early in the construction process may become disturbed by construction traffic. Non-uniform subgrades often result in poor pavement performance and local failures relatively soon after pavements are constructed. Depending on the paving equipment used by the contractor, measures may be required to improve subgrade strength to greater depths for support of heavily loaded concrete/asphalt trucks.

We recommend the moisture content and density of the subgrade be evaluated and the pavement subgrades be proofrolled (using a loaded tandem-axle dump truck with a minimum gross weight of 20 tons or similarly loaded rubber-tire equipment) within two days before commencement of actual paving operations. Areas not in accordance with the required ranges of moisture or density should be scarified, moisture conditioned, and compacted. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas where backfilled trenches are located. Areas where unsuitable conditions are located should be repaired by removing and replacing the materials with properly compacted fills. The subgrade should be in its finished form at the time of the final review.

Pavement Section Thicknesses

Pavement thickness depends upon many factors including but not limited to:

- Applied wheel/axle loads and number of repetitions
- Subgrade and pavement material characteristics
- Climate conditions
- Site and pavement drainage

Specific information regarding anticipated vehicle types, axle loads and traffic volumes was not provided at the time of this report. The "Parking Lots" pavement section considers 4-tire, 2-axle personal vehicle traffic only (cars, vans, pickups and SUVs). The "Drives" pavement section considers personal vehicle traffic and a maximum of ten

delivery trucks/trash collection trucks per week. Our recommendations for ACC pavement over aggregate base, and portland cement concrete (PCC) pavement sections are outlined in the following table.

Typical Minimum Pavement Section Thicknesses

Pavement Type	Parking Lots	Drives
ACC ¹ Over Aggregate Base	2 inches ACC surface 2 inches ACC base 6 inches aggregate base (KDOT AB-3 or similar)	2 inches ACC surface 4 inches ACC base 6 inches aggregate base (KDOT AB-3 or similar)
PCC ^{2,3}	5 inches PCC 4 inches aggregate base (KDOT AB-3 or similar)	6 inches PCC 4 inches aggregate base (KDOT AB-3 or similar)

1. The pavement thicknesses provided herein are based on all asphaltic concrete surface and base course materials conforming to KDOT Specifications, Section 602 Hot Mix Asphalt (HMA) Construction. Lower quality/cost commercial mixes could also be considered, but increased maintenance costs and a reduced service life should be expected.
2. Minimum 4,000 psi at 28 days and 5 to 7 percent air entrained
3. For trash container pads, we recommend a minimum 7-inch PCC pavement section over a minimum of 4 inches of aggregate base (KDOT AB-3 or similar) on a compacted soil subgrade. The trash container pad should be large enough to support the container and the tipping axle of the collection truck.

PCC pavements will perform better than ACC in areas where short radius turning and braking are expected (i.e., entrance/exit aprons) due to better resistance to rutting and shoving. In addition, PCC pavement will perform better in areas subject to heavy static loads.

Construction traffic on the pavements was not considered in developing our opinions of minimum pavement thickness. If the pavements will be subject to construction equipment/vehicles, the pavement sections should be revised to consider the additional loading.

Pavements and subgrades will be subject to freeze-thaw cycles and seasonal fluctuations in moisture content. Pavement thickness design methods are intended to provide adequate thickness of structural materials over a particular subgrade such that wheel loads are reduced to a level that the subgrade can support. The subgrade support parameters for pavement thickness design do not account for shrink/swell movements of a subgrade constructed of expansive clay soils. Therefore, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to shrink/swell related movement of the subgrade.

The pavement sections provided above consider that the subgrade soils will not experience significant changes in moisture content. Paved areas should be sloped to provide rapid drainage of surface water and to drain water away from the pavement edges. Pavements should be designed so water does not accumulate on or adjacent to the pavement, since this could saturate and soften the subgrade soils and subsequently accelerate pavement deterioration.

Post-construction performance of pavements supported on existing fill materials cannot be accurately predicted but could be larger than normal and result in some cracking. Mitigation measures, as noted in **Earthwork**, are critical to the performance of pavements. In addition to the mitigation measures, aggregate base and/or pavement thicknesses could be increased to further reduce risks associated with existing fill.

Pavement Maintenance

The pavement sections provided above are minimum recommended thicknesses, and periodic maintenance and repairs should be anticipated. Preventive maintenance should be planned and provided for through an ongoing pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Pavement care includes both localized (e.g., crack sealing, joint sealing, and patching) and global maintenance (e.g., surface sealing). Additional engineering consultation is recommended to identify the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur, and repairs may be required.

Pavement performance is affected by the pavement's surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.
- Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
- Install pavement drainage systems surrounding areas anticipated for frequent wetting.
- Install joint sealant and seal cracks immediately.
- Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to pavement base and subgrade soils.
- Place curb, gutter, and sidewalk directly on clay subgrade soils rather than on unbound granular base materials and backfill curbs with low permeability backfill against exterior side of curb and gutter to reduce moisture migration to pavement base and subgrade soils.

General Comments

Our preliminary analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Support of foundation and floor slabs above existing fill is discussed in this report. Even with the construction observation/testing recommended in this report, the owner must accept the risk that unsuitable materials within or buried by the fill will not be discovered. This may result in larger than normal settlement and damage to structures and slabs supported above existing fill, requiring additional maintenance. This risk cannot be eliminated without removing the existing fill from below the building and pavement areas, but it can be reduced by thorough observation and testing as discussed herein.

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

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, cost estimating,

excavation support, and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Attachments

Exploration and Testing Procedures

Field Exploration

Number of Borings	Approximate Boring Depth (feet)	Location
5	20	Planned project area

Boring Layout and Elevations: Terracon personnel provided the boring layout using handheld GPS equipment (estimated horizontal accuracy of about ±10 feet) and referencing existing site features. Approximate ground surface elevations at each boring were estimated using Google Earth. If more precise elevations or boring layout are desired, we recommend the borings be surveyed.

Subsurface Exploration Procedures: We advanced the borings with a track-mounted rotary drill rig using continuous flight solid stem augers. Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge was pushed hydraulically into the soil to obtain a relatively undisturbed sample. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths.

We also observed the boreholes while drilling and at the completion of drilling for the presence of groundwater. Groundwater was not encountered at these times in the boreholes.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a geotechnical engineer or geologist. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials observed during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

All borings were backfilled with auger cuttings after their completion. Because backfill material often settles below the surface after a period, we recommend boreholes be checked periodically and backfilled, if necessary.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following tests on selected samples:

- Moisture Content
- Dry Unit Weight
- Unconfined Compression
- Atterberg Limits

The laboratory testing program included examination of soil samples by an engineer or geologist. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

Site Location and Exploration Plans

Contents:

Site Location Plan
Exploration Plan

Note: All attachments are one page unless noted above.

Site Location



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

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration Plan on Historic Aerial Photo



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

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration Plan on Current Aerial Photo

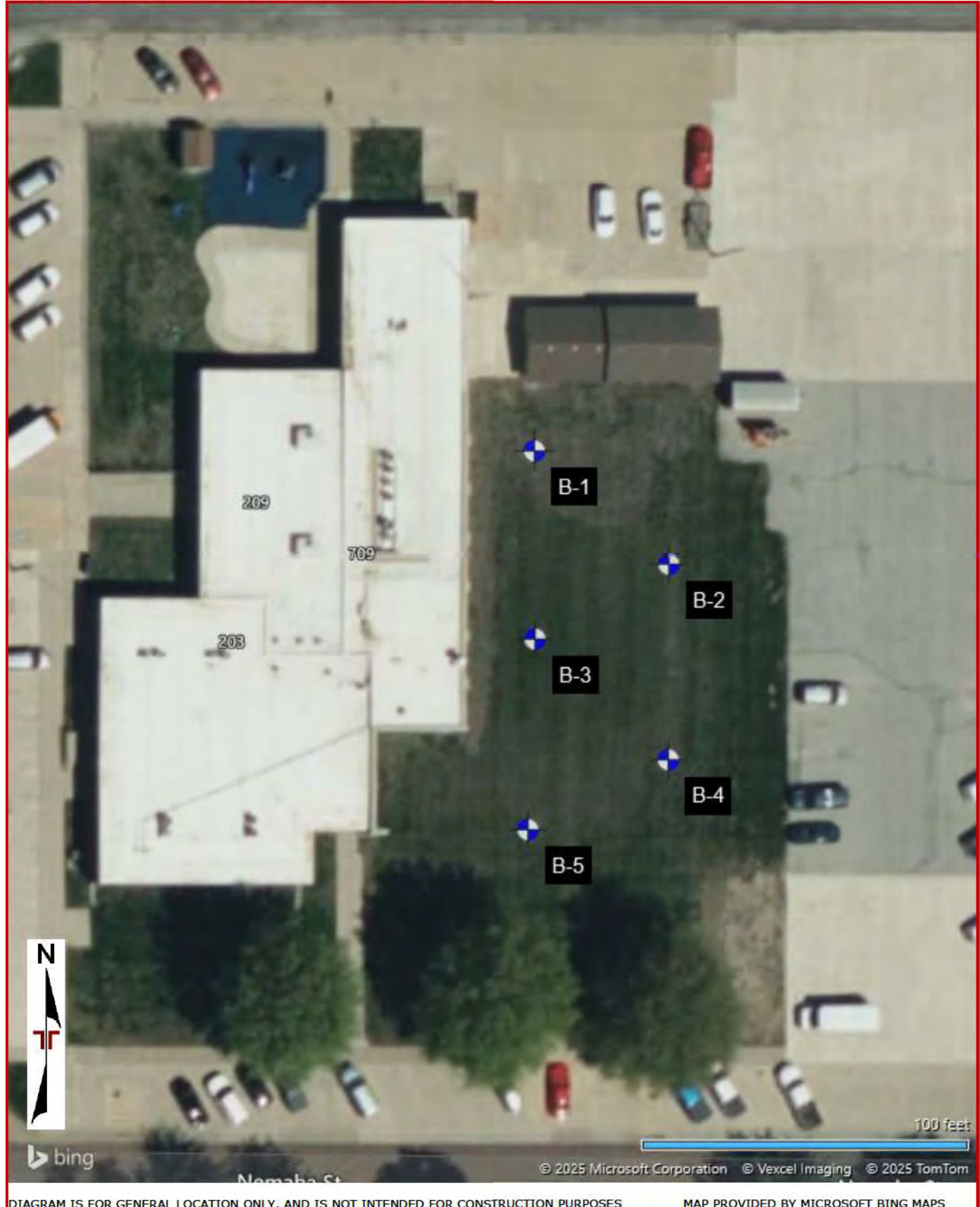


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration and Laboratory Results

Contents:

Boring Logs (B-1 through B-5)
GeoModel

Note: All attachments are one page unless noted above.

Boring Log No. B-1

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 39.8369° Longitude: -96.0661° Depth (Ft.) Approximate Elevation: 1147 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Sample Number	HP (psf)	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI
1		0.5 6 INCHES TOPSOIL 1146.5 FAT CLAY (CH) , dark brown, stiff to very stiff											
					X	10	3-4-6 N=10	1	6500		21.6		56-23-33
			5			15		2	4500	5060	24.0	101	
					X	14	2-6-7 N=13	3	9000+		20.6		
			10		X	16	3-3-6 N=9	4	3000		27.6		
		reddish brown	15		X	15	5-6-11 N=17	5	8500		20.2		
					X	14	6-7-11 N=18	6	5500		21.1		
		20.0 1127	20										
		Boring Terminated at 20 Feet											

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

See **Supporting Information** for explanation of symbols and abbreviations.

Elevation Reference: Elevations were estimated from Google Earth.

Notes

Water Level Observations
Groundwater not encountered

Drill Rig
D-50

Hammer Type
Automatic

Driller
MR

Logged by
TC

Boring Started
08-29-2025

Boring Completed
08-29-2025

Advancement Method
Solid Stem Auger

Abandonment Method
Boring backfilled with Auger Cuttings and/or Bentonite

Boring Log No. B-2

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 39.8368° Longitude: -96.0660° Depth (Ft.) Approximate Elevation: 1148 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Sample Number	HP (psf)	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI
1		0.5 6 INCHES TOPSOIL 1147.5											
2		FILL - FAT CLAY , trace gravel and brick fragments, reddish brown and gray											
			5			13	3-4-6 N=10	1	9000+		21.7		
						6	3-3-5 N=8	2	7500		25.2		
						19		3	3000	3820	28.2	94	
			10			14	3-4-7 N=11	4	5500		23.7		
3		FAT CLAY (CH) , gray and brown, stiff											
			15			18	5-6-8 N=14	5	7000		23.7		
		trace silt, reddish brown				9	4-4-5 N=9	6	2000		23.7		
		20.0 1128	20										
		Boring Terminated at 20 Feet											

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

See **Supporting Information** for explanation of symbols and abbreviations.

Elevation Reference: Elevations were estimated from Google Earth.

Notes

Water Level Observations
Groundwater not encountered

Drill Rig
D-50

Hammer Type
Automatic

Driller
MR

Logged by
TC

Boring Started
08-29-2025

Boring Completed
08-29-2025

Advancement Method
Solid Stem Auger

Abandonment Method
Boring backfilled with Auger Cuttings and/or Bentonite

Boring Log No. B-3

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 39.8368° Longitude: -96.0661° Depth (Ft.) Approximate Elevation: 1148 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Sample Number	HP (psf)	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits LL-PL-PI
1		0.5 6 INCHES TOPSOIL 1147.5											
		FILL - FAT CLAY , with silt and brick fragments, dark brown and black											
						16		1	7500	4430	22.4	102	
2			5		X	12	3-5-6 N=11	2	8000		23.7		
					X	9	3-5-8 N=13	3	9000+		20.4		
					X	11	3-2-3 N=5	4	8000		21.9		
		10.0 FAT CLAY (CH) , reddish brown, stiff to very stiff 1138	10										
					X	12	5-6-6 N=12	5	7500		23.2		
3			15										
		trace silt			X	9	5-8-9 N=17	6	3000		22.5		
		20.0 1128	20										
		Boring Terminated at 20 Feet											

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

See **Supporting Information** for explanation of symbols and abbreviations.

Elevation Reference: Elevations were estimated from Google Earth.

Notes

Water Level Observations
Groundwater not encountered

Drill Rig
D-50

Hammer Type
Automatic

Driller
MR

Logged by
TC

Advancement Method
Hollow Stem Auger

Abandonment Method
Boring backfilled with Auger Cuttings and/or Bentonite

Boring Started
08-29-2025

Boring Completed
08-29-2025

[illegible]Facilities | Environmental | **Geotechnical** | Materials

Boring Log No. B-5

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 39.8366° Longitude: -96.0661° Depth (Ft.) Approximate Elevation: 1147 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Recovery (In.)	Field Test Results	Sample Number	HP (psf)	Unconfined Compressive Strength (psf)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits
													LL-PL-PI
1		0.5 6 INCHES TOPSOIL 1146.5											
2		FILL - FAT CLAY , with brick fragments, dark brown											
					X	10	3-4-5 N=9	1	9000+		25.9		
					X	3	3-3-5 N=8	2	9000+		20.6		
		5.0 FAT CLAY (CH) , dark brown, stiff to very stiff 1142	5										
						16		3	3000	3980	25.0	97	
					X	14	3-4-6 N=10	4	4500		22.2		
3		reddish brown											
					X	15	5-6-8 N=14	5	8000		21.0		
		trace silt											
		20.0 1127	20		X	12	4-8-9 N=17	6	7000		19.7		
		Boring Terminated at 20 Feet											

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

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

Elevation Reference: Elevations were estimated from Google Earth.

Notes

Water Level Observations
Groundwater not encountered

Drill Rig
D-50

Hammer Type
Automatic

Driller
MR

Logged by
TC

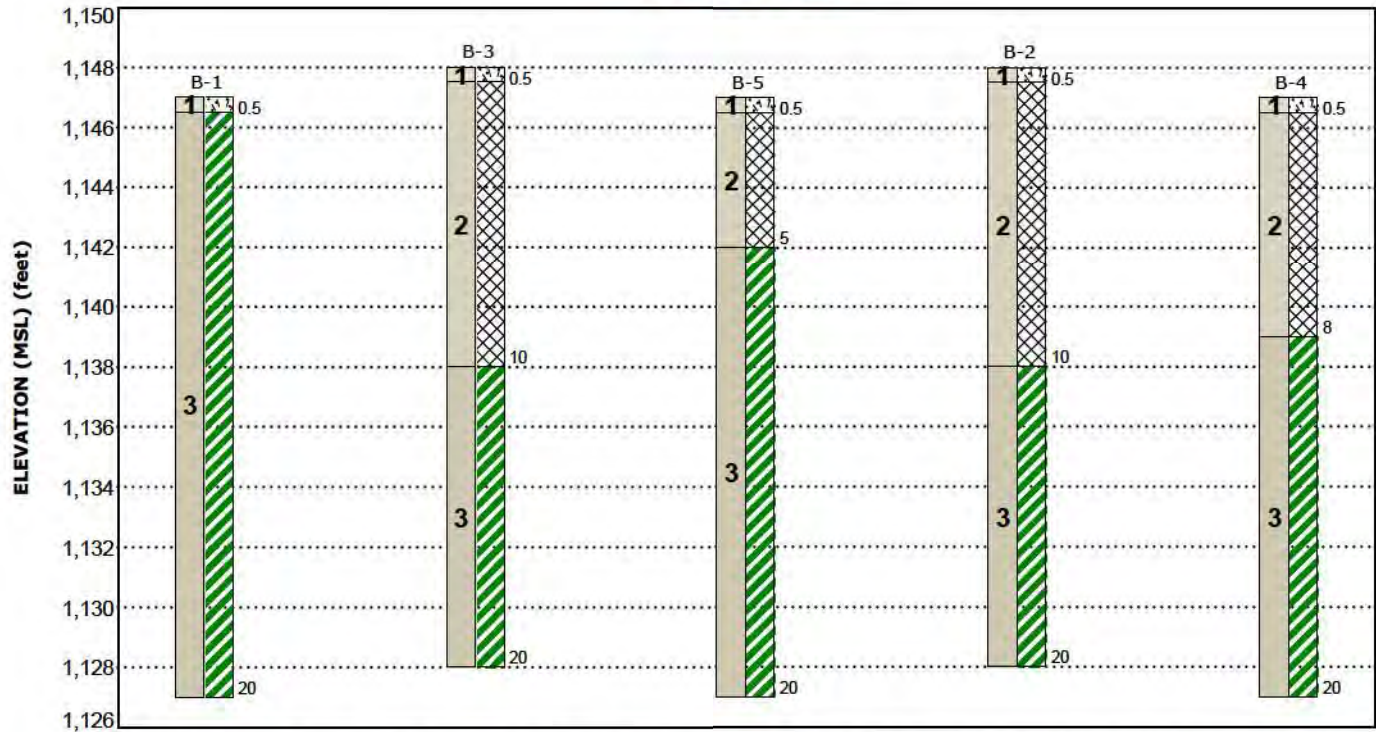
Advancement Method
Solid Stem Auger

Boring Started
08-29-2025

Abandonment Method
Boring backfilled with Auger Cuttings and/or Bentonite

Boring Completed
08-29-2025

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description	Legend	
1	Surface	Topsoil	 Topsoil	 Fat Clay
2	Fill	Fat Clay, varying amount of silt, gravel, and brick and concrete fragments	 Fill	
3	Cohesive Soil	Fat Clay, varying amount of silt, stiff to very stiff		

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.
Numbers adjacent to soil column indicate depth below ground surface.

Supporting Information

Contents:

General Notes

Unified Soil Classification System

Note: All attachments are one page unless noted above.

General Notes

Sampling	Water Level	Field Tests
 Rock Core  Grab Sample  Shelby Tube  Split Spoon	 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time  Cave In Encountered	N Standard Penetration Test Resistance (Blows/Ft.) (HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer UC Unconfined Compressive Strength

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse-grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location and Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Relative Density	Standard Penetration or N-Value (Blows/Ft.)	Consistency	Unconfined Compressive Strength Qu (psf)	Standard Penetration or N-Value (Blows/Ft.)
Very Loose	0 – 3	Very Soft	less than 500	0 – 1
Loose	4 – 9	Soft	500 – 1,000	2 – 4
Medium Dense	10 – 29	Medium Stiff	1,000 – 2000	4 – 8
Dense	30 – 50	Stiff	2000 – 4,000	8 – 15
Very Dense	> 50	Very Stiff	4,000 – 8,000	15 – 30
		Hard	> 8,000	> 30

Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification	
				Group Symbol	Group Name ^B
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3$ ^E	GW	Well-graded gravel ^F
		Gravels with Fines: More than 12% fines ^C	$Cu < 4$ and/or $[Cc < 1 \text{ or } Cc > 3.0]$ ^E	GP	Poorly graded gravel ^F
			Fines classify as ML or MH	GM	Silty gravel ^{F, G, H}
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	Fines classify as CL or CH	GC	Clayey gravel ^{F, G, H}
			$Cu \geq 6$ and $1 \leq Cc \leq 3$ ^E	SW	Well-graded sand ^I
		Sands with Fines: More than 12% fines ^D	$Cu < 6$ and/or $[Cc < 1 \text{ or } Cc > 3.0]$ ^E	SP	Poorly graded sand ^I
Fines classify as ML or MH	SM		Silty sand ^{G, H, I}		
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}
			PI > 7 and plots above "A" line ^J	CL	Lean clay ^{K, L, M}
		PI < 4 or plots below "A" line ^J	ML	Silt ^{K, L, M}	
	Silts and Clays: Liquid limit 50 or more	Organic:	$\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$	OL	Organic clay ^{K, L, M, N} Organic silt ^{K, L, M, O}
		Inorganic:	PI plots on or above "A" line	CH	Fat clay ^{K, L, M}
			PI plots below "A" line	MH	Elastic silt ^{K, L, M}
Highly organic soils:	Primarily organic matter, dark in color, and organic odor	Organic:	$\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$	OH	Organic clay ^{K, L, M, P} Organic silt ^{K, L, M, Q}
				PT	Peat

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

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

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

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

$$^E Cu = D_{60}/D_{10} \quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$$

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

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

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

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

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

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

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

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

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

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

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

^Q PI plots below "A" line.

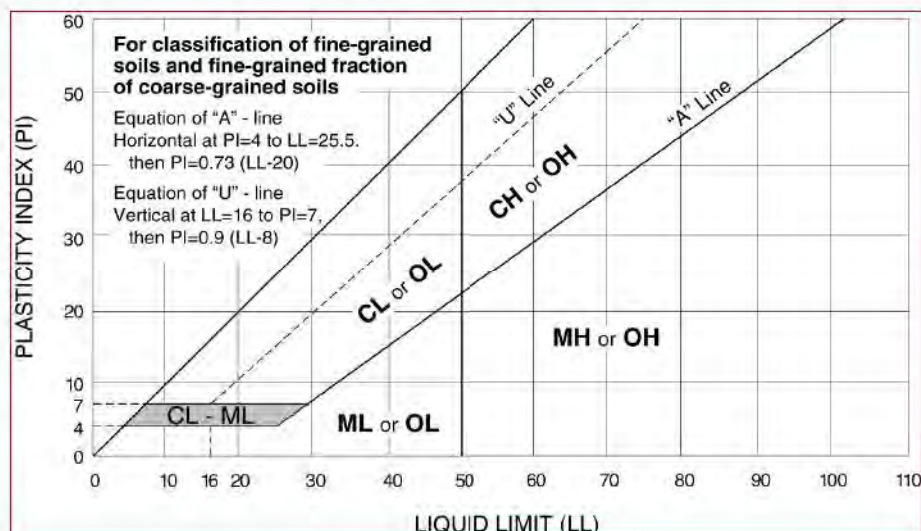


EXHIBIT 3 – CITY SEWER LINE REPORT

