Campbell County Economic Progress Authority
1098 Monmouth Street, Newport, KY 41071

Invitation to Bid

I. Bid Information

a. Bid Request: Site
Southern Campbell County Industrial Park
Clearing & Mass Grading
Bid posted MARCH 16, 2026

b. Bid opening: MARCH 30, 2026, 1:00 PM

c. Location of Open: Campbell County Administration Building, 1st Floor Chambers,
1098 Monmouth Street, Newport, Kentucky

d. Bidder Information:

Bidders Name _____

Signature _____

Firm/Company _____

Firm/Co. Address _____

Firm/Co. Phone _____

Firm/Co. Email _____

II. Instructions to Bidders – Terms and Conditions

The Campbell County Economic Progress Authority will accept bids for the Southern Campbell County Industrial Complex until 1:00 PM on MARCH 30, 2026.

A. Authority

1. This Invitation for Bids is issued in accordance with applicable provisions of the Campbell County Administrative Code Chapter 4 Purchasing and Contracts.
2. This is not an order. Please read all instructions, terms, and conditions carefully.

B. Transmission

1. Bids should be submitted in a sealed envelope addressed to Campbell County Finance, 1098 Monmouth Street, Suite 322, Newport, KY 41071.
2. The envelope must be clearly marked with the bid title.
3. Bids will be received at the CCFC Finance department in Suite 322 until the date and time specified.
4. Late bids, those not clearly marked, or those that do not follow the instructions will not be accepted.
5. Campbell County Economic Progress Authority will not be held responsible for any premature opening or failure to open any bid not properly addressed and identified as stated above.

C. Instructions

1. Bid forms must be signed in **BLUE** ink.
2. One original and one copy of the bid must be submitted. Keep a copy of the bid for your records.
3. A list of qualifications and a minimum of three references are required. Please refer to Section VI.
4. Bidders should verify their bids before submission. Errors in preparing the submission confers no right of withdrawal or modification after open.
5. Bidders are responsible for all costs associated with the preparation of response to the invitation for bids. Campbell County is not liable for any costs incurred by bidders in their response to this request.
6. A pre-bid or pre-award visit to bidder may be required at the discretion of the Owner.

D. Pricing

1. Firm prices are required.
2. All prices quoted must be F.O.B. destination shown in shipping instructions on specification.
3. Insert time discounts, if any. Time discounts will not be a factor in award determination.
4. Quotations must be submitted on the bid price sheet indicating unit price, total extension of each item, and grand total of bid.
5. Unit prices should be based on the bid specification instructions. Please direct questions to the County at 859-547-1827 prior to submitting a bid.
6. Trade discounts must be deducted by the vendor in calculating the unit price. The unit price must be net.

E. Warranty

The selected Bidder shall provide warranty on any services and materials found to be defective or faulty due to imperfect or bad workmanship/materials within one year from the date of completion at no additional cost to the County. This warranty does not change or void any warranties expressed or implied to which the purchase is subject.

F. Regulatory Compliance

1. Pursuant to the provisions of KRS 45A.343, the contractor or vendor is required to reveal to Campbell County Economic Progress Authority any final determination of a violation of KRS Chapters 136, 139, 141, 337, 338 and 342 by the contractor or vendor within the previous five (5) years; and further that said contractor or vendor has been and is in continuous compliance with the provisions of KRS Chapters 136, 139, 141, 337, 341, and 342 for the duration of the contract. The failure of a contractor or vendor to reveal a final determination of a violation to a local government, or to comply with the statutory requirements, is considered grounds for cancellation of a contract and disqualification of the contractor or vendor from eligibility for any Campbell County Economic Progress Authority contracts for a period of two (2) years.
2. All bidders must possess all federal, state, and local qualifications licenses to provide products or services in Campbell County, the Commonwealth of Kentucky, and the United States. ***Please note: Insurance requirements, as indicated in the bid specifications must be met by the awarded bidder.***
    a. Including, but not limited to
        i. Business license issued by the Occupational License Department of Campbell County (see County website for application)
        ii. Hazardous Communication Program (OSHA)
        iii. Workers' Compensation Certificate

iv. Liability Insurance
v. Listed on current KYTC list of pre-approved bidders.
vi. **MUST be prequalified with Sanitation District No. 1 for applicable work.**

3. Successful bidder shall comply with the Kentucky Human Rights Act, HRA 344.150-344.270 as amended and any rules and regulations promulgated therewith, including, but not limited to the Equal Employment Opportunity EEO 45.550 – 45.640 which is incorporated herein by reference. Furthermore, the successful bidder shall comply with the Employment Discrimination Act, EDA 344.040, 344.050 as amended. Per Title VI of the Civil Rights Act of 1964, no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise be subjected to discrimination under any program or activity for which a project, contractor/vendor or the county may receive federal financial assistance.
4. The scoring of this bid is subject to reciprocal preference for Kentucky resident bidders. Bidders not claiming resident bidder status need not submit the corresponding affidavit.

G. Bonds

1. Bid bonds, performance bonds, and payment bonds as prescribed by KRS 45A.430, 435, 440 are required for any bids/proposals that exceed $99,999. Each bid, or the combination of submitted bids, over $99,999 must be accompanied by a 10% bid bond of the grand total of the bid. The bid bond of the successful bidder will be retained until a performance bond has been executed and approved, after which the bid bond will be returned. The successful bidder will be required to post a performance bond in the amount of 100% of the bid if awarded a contract over $99,999. Bonding and surety requirements may vary by project/commodity. Please contact Owner for more information.

H. Reserved Rights

1. Campbell County Economic Progress Authority reserves the right to reject any or all bids, including without limitations the right to reject any or all nonconforming, non-responsive, incomplete, unbalanced, or conditional bids, to waive formalities, and to reject the bid of any Bidder if CCEPA believes that it would not be in the best interest of Campbell County Economic Progress Authority to make an award to that Bidder. CCEPA also reserves the right to negotiate with the apparent qualified Bidder to such an extent as may be determined by Campbell County Economic Progress Authority.
2. In the event the successful bidder fails to commence substantial work on the project within thirty (30) days and the County does not waive this requirement, the County shall have the option to reject the bid and to void the contract, and in such event to either accept the next lowest and best bidder or to negotiate with the best qualified bidder
3. In the event the successful bidder fails to complete the project by the completion date and the County has not waived this requirement in writing, the County shall receive from the bidder (or withhold from the bidder, at its option) liquidated damages of 1% per project per calendar day.
4. Campbell County Economic Progress Authority reserves the right to negotiate with the successful bidder regarding other improvements related to, but not explicitly stated in the bid specifications.
5. All the terms and conditions of these instructions to bidders and the specifications for this project shall constitute, the part of, and incorporate into, the contract between the County and the successful bidder.

I. Award

It is the intent of Campbell County Economic Progress Authority to award a contract to the lowest responsible bidder meeting specifications. CCEPA reserves the right to determine the lowest responsible bid/offer in any way determined to be in the best interests of Campbell County. Award will be based on the following factors (where applicable): (a) adherence to all conditions and requirements of the bid/proposal specifications; (b) price; (c) qualifications of the bidder, including past performance, financial responsibility, general reputation, experience, service capabilities, and facilities; (d) delivery or completion date; (e) product appearance, workmanship, finish, taste, feel, overall quality, and results of product testing; (f) maintenance costs and warranty provisions; and (g) repurchase or residual value.

J. Schedule

Contract is anticipated to be awarded by the Campbell County Economic Progress Authority on March 31, 2026. Upon award a preconstruction meeting will be scheduled and contracts signed. At that time, shop drawings shall commence and review and approval can occur. Pending approval of shop drawings and permitting, construction can commence.

CAMPBELL COUNTY ECONOMIC PROGRESS AUTHORITY
LEGAL NOTICE

Sealed proposals will be received at the Finance Office, Campbell County Administration Building, 1098 Monmouth Street, Suite 322, Newport, Kentucky 41071, until 1:00 PM local time on MARCH 30, 2026, for furnishing all labor, materials, and equipment necessary to complete project known as:

SOUTHERN CAMPBELL COUNTY INDUSTRIAL PARK
CLEARING & MASS GRADING
COMPLETION DATE: JUNE 30, 2025

Bid opening will be held in the Campbell County Administration Building, 1st Floor Chambers at 1098 Monmouth Street, Newport, KY. Bid tabulation results will be available publicly on the Campbell County website.

Bids must be in accordance with drawings and specifications and on forms available from Verdantas, LLC, Inc. at a non-refundable cost of One Hundred Dollars ($100.00) for mailed hard copies and $45.00 for electronic files. Documents may be ordered by registering and paying for the documents online at https://bids.verdantas.com. Please contact planroom@verdantas.com or call 440-530-2351 if you encounter any problems registering or paying for the documents.

The bid specifications, drawings, planholders list, addenda, and other bid information, with exception of Bid Forms, may be viewed and/or downloaded for free via the internet at https://bids.verdantas.com. The bidder shall be responsible to check for Addenda and obtain same from the web site.

Each bidder is required to submit with his proposal a bid bond in the amount of ten percent (10%) of the base bid. The bidder to whom the contract is awarded will be required to furnish a surety bond in an amount equal to one-hundred percent (100%) of the contract amount. Bid security furnished in Bond form shall be issued by a Surety Company or Corporation licensed in the State of Kentucky to provide said surety.

The successful bidder will be required to have a current occupational license in Campbell County before the Contract will be awarded and must be prequalified with the Sanitation District No. 1 for all applicable work.

The Campbell County Economic Progress Authority (CCEPA) reserves the right to waive irregularities and to reject any or all bids.

The CCEPA shall authorize acceptance of the bid made by the responsible bidder who, in their judgment, offers the best and most responsive proposal, considering quality, service, performance record, and price; or CCEPA may direct the rejection of all bids. The CCEPA may award based on "functional equivalence" concerning specified work or products.

Publishing Date: **CAMPBELL COUNTY WEBSITE – MONDAY, MARCH 16, 2026**

III. Bid Specifications

In general, unless specifically set forth herein, the work, materials, and methods of measurement and payment shall conform to the applicable divisions and paragraphs (as noted on the Bid Proposal or in the plans) of the most current edition of the:

Commonwealth of Kentucky
Transportation Cabinet
Department of Highways, Frankfort

Standard Specifications
For Road and Bridge Construction

DEFINITIONS OF TERMS

Whenever the term "Bidder" occurs, it shall mean any person, firm or corporation as a Prime Contractor who submits a proposal/bid for the Project, either acting directly or through a duly authorized representative.

Whenever the term "Bid Packet" occurs, it shall mean all the documents contained herein and any addenda thereto.

Whenever the term "County" or "Owner" occurs, it shall mean Campbell County Economic Progress Authority. The County Economic Authority Administrator, or their designee, shall be the representative for the Owner.

Whenever the term "Contract" occurs, it shall mean the written agreement between the Owner and the Contractor covering the performance of the Work on the Project and the furnishing of labor and/or materials in the construction of the Work on the Project, including the Contract Documents.

"Contract Documents" shall mean these Instructions to Bidders and General Conditions, the Specifications, any Drawings and/or Plans, the Contract Bond and all other forms or certificates required by these Instructions, all forms included with the Contractor's Bid, all the material contained in this Bid Packet, any Change Orders, and all addenda to any of the aforementioned items. The Contract Documents shall be a part of the Contract as if fully rewritten therein.

Whenever the term "Contractor" occurs, it shall mean a person, firm or corporation contracting with the Owner as a Prime Contractor to supply labor, materials, or equipment or all for the Project.

Whenever the term "Construction Manager" or "Engineer" occurs, it shall mean VERDANTAS, LLC, or agent so designated by the Owner to act as the Owner's agent.

Whenever the term "Director" occurs, it shall mean the Owner, or the Owner's agent.

Whenever the term "Project" occurs, it shall mean the entire public improvement proposed by the Owner to be constructed in part or in whole pursuant to the Contract.

Whenever the term "Proposal or "Bid" occurs, it shall mean the offer of the Bidder to perform the Work on the Project, when said offer is made out and submitted on the prescribed forms, properly signed and guaranteed, and in the prescribed manner.

Whenever the term “Subcontractor” occurs, it shall mean a person, firm, or corporation other than the Prime Contractor supplying labor and materials for the Work to the Contractor and under the control of the Contractor.

Whenever the term “the Work” occurs, it shall mean the Work to be performed in constructing and completing the Project, including all labor, materials and equipment.

GENERAL PROVISIONS

The most current State of Kentucky, Transportation Cabinet, Department of Highways (KYTC) Standard Specifications for Road and Bridge Construction, as specifically set forth herein, are adopted and made part of these Contract Documents, unless specifically excluded herein.

All references to the Director, the Director of Highways, the First Assistant Director, and Chief Engineer, the Deputy Director of Design and Construction, the Deputy Director of Operations, the Engineer of Construction, the Engineer of Maintenance, the Engineer of Bridges, the Engineer of Tests, shall be considered to read the Engineer.

All references to the State, the State of Kentucky, the Cabinet, or the Transportation Cabinet shall be considered to read the Owner.

EXAMINATION OF PLANS, SPECIFICATIONS, GENERAL PROVISIONS AND SITE

The Bidder is expected to examine carefully the site of the proposed Work, the proposal, plans, specifications, contract documents, general provisions, and addenda, before submitting a proposal. The submission of a bid shall be considered evidence that the Bidder has made such examination and is satisfied as to the conditions to be encountered in performing the Work and as to the requirements of the plans, specifications, general conditions, special provisions, addenda and Contract.

Subject to public safety and convenience, prospective Bidders will be permitted to explore the site of the Work by boring or test pits, permits for which will be issued by the Engineer. Explorations shall be at the sole risk and expense to the Bidder and under conditions of safety, maintaining traffic, and restoring all areas disturbed by any and all explorations to conditions equal to, or better than, the condition prior to exploration.

The Owner does not make any representation of soil or foundation conditions or materials, nor does it represent that drawings may not be modified to meet changes in soil conditions encountered as the Work progresses. The Contractor must inspect the site of the proposed Work and must assume all risk as to the nature and behavior of the material which may be encountered in excavation, whether apparent on the surface or disclosed only in the course of the Work.

INTERPRETATION OF QUANTITIES IN PROPOSAL

The quantities appearing in the proposal are approximate only and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of Work performed and accepted or materials furnished and accepted in accordance with the Contract except for lump sum contracts and except for lump sum items in unit price contracts. The scheduled quantities of Work to be done and materials to be furnished may be increased, decreased, or omitted as hereinafter provided.

"OR APPROVED EQUAL" ITEMS

In the preparation of these documents and plans, several proprietary products may have been specified. In all such cases, it is to be understood that the Contractor may offer a substitute for the specified product, as indicated by "Or Approved Equal". However, the Contractor must be aware that, before commencement of construction, he must provide information to the Engineer concerning the substituted product , and that the Engineer must approve in writing the offered product as being equal to the specified product before use or incorporation in the Work.

Unless otherwise modified by the Engineer, proprietary products are to be installed and/or constructed in strict compliance with the pertinent manufacturer's specifications.

ADDENDA

The Contractor shall notify the Engineer promptly of any discrepancies in, or omissions from the Contract Documents. The Engineer will issue a clarifying addendum to each person on record as having received a set of Contract Documents. The Owner will not be responsible for oral instruction or information. Questions received less than five (5) days prior to bid date cannot be answered. Any Addenda issued during the bidding period are to be included in the Proposal and shall become a part thereof.

ALTERNATE BID

If applicable, it is the Owner's intent for the Contractor to bid on both the base and alternate bid items. Upon award of the Contract, the Owner will inform the Contractor, in writing, if the standard bid or alternate bid items will be included with the Project.

THE OWNER RESERVES THE RIGHT TO AWARD OR DELETE ANY OR ALL COMBINATIONS.

GENERAL CONDITIONS

The successful Bidder/Contractor shall be responsible for all site operations related to the Work as shown and described in the Specifications, Plans and related General Provisions, and shall meet all requirements of these Instructions, General Provisions, and Specifications. All Work shall be completed in compliance with these Instructions, the General Provisions, Specifications, Plans and other Contract Documents.

SUBCONTRACTS

The Bidder shall submit, with his bid, a complete list of the names and addresses of any subcontractors he contemplates for use on the Project. In addition, the Owner requires that the Bidder furnish a list of subcontractor references of all persons, corporations, political subdivisions or firms for whom the proposed subcontractor has done the type of Work proposed under contract between the Contractor and the subcontractor within the last two (2) years.
The subcontractor must be acceptable to the Owner and approved by the Owner, in writing, prior to the execution of the Contract. Although such approval shall not be arbitrarily withheld, subcontractors that have proven unsatisfactory in the past or do not have adequate manpower or resources to perform the Work will not be

accepted. Only subcontractors who have sufficient experience; ample equipment and personnel; adequate financial resources or the ability to obtain such resources; who are able to comply with the required performance schedule for the Work; who have a satisfactory record of integrity; who have a satisfactory record or performance (Bidders who are delinquent in current contract performance, when the number and the extent of the delinquencies of each are considered, shall presumed to be unable to fulfill this requirement, in the absence of evidence to the contrary or circumstances properly explained); and who are otherwise qualified and eligible to receive an award under applicable Kentucky laws and regulations, shall be considered.

The subcontractor must submit a non-collusion affidavit prior to the execution of the Contract.

Approval of the proposed subcontractor(s) will not be given by the Owner unless and until the above requirements are met. Although the Bidder is not required to submit the required Subcontractor forms, filled out by any proposed subcontractors, with its bid, the Bidder is hereby advised of these requirements so that appropriate action can be taken to prevent subsequent delays in subcontract awards and/or the execution of the Contract.

After the Subcontractors have been approved and the Contract signed, no changes in the subcontractors shall be made without the prior written approval of the Owner.

PREPARATION OF PROPOSAL

The Bidder shall submit their Proposal upon the forms furnished by the Owner. All blank spaces for bid prices must be filled in, in words or figures, and shall be written in ink or typewritten. The Bidder shall initialize any corrections or changes in the Proposal.

The Bidder's Proposal must be signed in ink by the individual, by one or more members of the partnership, or by one or more officers of a corporation, or by an agent of the Bidder legally qualified and acceptable to the Owner. If the Proposal is made by an individual, his name and business address must be shown; by a partnership, the name and business address of each partnership member must be shown; by a corporation, the name of the state under the laws of which the corporation is chartered and the name and title of the officer or officers having authority under the bylaws to sign contracts, the name of the corporation and the business address of its corporate officials must be shown.

A foreign corporation submitting a Proposal must comply with the laws of doing business in the State of Kentucky, if its Proposal or any part thereof is accepted.

To be considered responsive, each bid shall consist of the following, fully executed:

1. Bidder Information Sheet
2. Bid Proposal
3. Bid Guaranty and Contract Bond
4. Acknowledgement of Addenda, if applicable
5. Days for Completion
6. Certificate as to Interest
7. Statement of Bidder's Qualifications and References, if applicable
8. List of Subcontractors Names and Addresses, if applicable

The Bidder's attention is directed to all applicable Federal, State, and local laws, and the rules and regulations of all authorities and agencies having jurisdiction over the Work. All such laws, rules, and regulations shall apply to

the Contract and every aspect of the Work and shall be deemed included as a part of the Contract as if the same were fully written therein.

The attention of Bidders is especially directed to the following:

1. Federal and Civil Rights Law regulating Equal Opportunity Employment
2. Bid Guaranty and Contract Bond requirements
3. Statutory requirements of the State of Kentucky relative to licensing of corporations organized under the laws of any other state
4. Federal or State of Kentucky Prevailing Wage Law

The price or prices shown on the proposal shall include all costs associated with the Work (including labor), shall be the actual price(s) to be paid by the Owner, and shall include all discounts, allowances, etc. Each Bidder shall bid on each item listed in the Proposal

Where a discrepancy appears between the sum shown in the "Total" column and the correct product of the sums appearing in the "Estimated Quantity" and "Unit Price" columns, the correct product of the sums appearing in the "Estimated Quantity" and "Unit Price" columns shall control.

MATERIAL GUARANTY

Before the Contract is awarded, the Bidder may be required to furnish a complete statement of the origin, composition and manufacturer of any or all materials to be used in the construction of the Work together with samples, of which said samples may be subjected to any tests the Owner, in its sole discretion, deems appropriate to determine their quality and fitness for the Work.

NOTICE OF AWARD

The award of the Contract, if it be awarded, will be made to the best overall Bidder whose Proposal complies with all the requirements prescribed. In no case will an award be made until all necessary investigations are made as to the responsibility of the Bidder to whom it is proposed to award the Contract. The successful Bidder will be notified by letter, mailed to the address shown on his Proposal that his bid has been accepted and that he has been awarded the Contract.

DOCUMENTS REQUIRED PRIOR TO SIGNING OF CONTRACT

Immediately upon the award of the bid and prior to the signing of the Contract, the Contractor shall furnish to the Owner:

1. Kentucky Workers' Compensation Certificate.
2. Credentials showing the Power of Attorney of the Agent of the Surety
3. A Certificate of Compliance issued by the Division of Insurance showing the right of the bonding company to do business in the State of Kentucky.
4. A Certificate of Insurance with coverage as specified in these Instructions, covering the period of time the Work will be in progress.
5. Listing of selected subcontractor(s) for Owner approval, in accordance with the second paragraph under "Subcontracts" of these Instructions.

CONTRACT GUARANTY

If the Contractor submitted a Bid Guaranty Bond in the form prescribed by the KTC Standard Specifications for Road and Bridge Construction Section 102.09 for the full amount of its bid, the same shall be retained by the Owner as the Contractor's Performance Bond.

If the Contractor submitted a cashier's check, certified check or letter of credit, the Contractor, at the time the Contract is entered into, shall furnish a Performance Bond, in the form prescribed by KTC Standard Specifications for Road and Bridge Construction Section 102.09, payable to the Owner, for the total amount of the Contract. Said Bond shall be duly executed by the Contractor, as principal, and by a surety company qualified to do business under the laws of the State of Kentucky and satisfactory to the Owner, as surety, for the faithful performance of the Contract and payment for labor and materials. The Bond must be signed by an Authorized Agent of an acceptable surety bonding company and by the Contractor. The Performance Bond must be countersigned by a resident agent of the bonding company and its corporate seals must be affixed to all copies. The name and address of both the surety and surety's agent must appear on Bond, and it must be supported by credentials showing the Power of Attorney of the surety's agent.

The premiums of such Bonds shall be paid by the Contractor.

If the Contractor fails to perform under the Contract, the Performance Bond may be forfeited by the Contractor to the Owner, in accordance with the termination provisions contained herein.

INSURANCE

The Contractor shall not commence Work under the Contract until it has obtained all insurance required under this paragraph. The policies shall also protect the Owner, its officers, agents, and employees as additional insured, and shall be in a form approved by the Owner. Certified copies of the insurance policies, fully executed by officers of the insurance company, shall be submitted with the executed Contract and must be submitted before the Notice to Proceed will be sent. Coverage will be provided through insurance companies licensed to do business in the State of Kentucky.

During the term of the Contract, the Contractor will agree to provide evidence of insurance in the amounts stated below. The Contractor may also be required to submit the original insurance policies for inspection and approval of the Owner before Work is commenced. Said policies shall provide that they cannot be cancelled, permitted to expire, or be changed without fifteen (15) days advanced written notice to the Owner. The Contractor shall provide all insurance required by this Contract.

Required Insurance: The Contractor shall take out, and maintain during the life of the Contract, Comprehensive General Liability Insurance, Automobile Liability Insurance and an Excess Liability Umbrella Form. Such policies shall protect the Contractor and the Owner from any and all claims or damages for bodily injury, including accidental death, as well as any and all claims for property damage, during the performance of any and all Work under the Contract, whether such performance be by the Contractor, any subcontractor, or by anyone directly or indirectly employed by either of them or in any such manner as would impose liability on the Owner. The **minimum** required limits for each type of policy are as follows:

A.	Comprehensive General Liability:		
	(1)	General Aggregate	$1,000,000
	(2)	Bodily Injury/Wrongful Death	$1,000,000 per person
			$1,000,000 per occurrence

			$2,000,000 aggregate liability
	(3)	Property Damage*	$1,000,000 per occurrence
			$2,000,000 aggregate liability

B. Comprehensive Automobile Liability:

(1)	Bodily Injury/Wrongful Death	$1,000,000 per occurrence
		$1,000,000 aggregate liability
(2)	Property Damage*	$1,000,000 per occurrence
		$1,000,000 aggregate liability

*Including any damage caused by blasting or underground excavation.

C. Excess Liability Umbrella Form:

(1)	General Aggregate	$3,000,000
(2)	Each Occurrence	$1,000,000

Owner's Protective Liability Insurance: The Contractor shall take out, and maintain during the life of the Contract, an Owner's Protective Liability Insurance policy in the name of the Owner. The primary insurance policy shall not be less than a minimum combined single limit of $1,000,000. In addition, a $1,000,000 excess policy will be required. The policy shall protect the Owner from any claims or damages that may arise out of or result from the performance of any Work or from any operations, either directly or indirectly, by the Contractor or its subcontractors under the Contract.

Subcontractor's Insurance: The Contractor shall require subcontractors not protected under the Contractor's insurance policies to take out and maintain insurance of the same nature and kind and in the same amounts as required of the Contractor.

Workers' Compensation Insurance: Before any Work is commenced, the Contractor shall take out, and maintain during the life of the Contract, Workers' Compensation Insurance for all of its employees, in accordance with the laws of the State of Kentucky. In case any Work is subcontracted, the Contractor shall require the subcontractor similarly to provide Workers' Compensation Insurance for all of the latter's employees, unless such employees are covered by the protection afforded by the Contractor. In case any class of employees engaged in Work under this Contract is not protected under the Workers' Compensation statute, the Contractor shall provide Employee Liability Insurance for any such employees, and shall provide or cause each subcontractor to provide the same.

COORDINATION OF SPECIFICATIONS, PLANS, AND GENERAL PROVISIONS

The specifications, the supplemental specifications, the plans, general provisions, and all supplementary documents are essential parts of the Contract, and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary to each other and to describe and provide for a complete project. In case of discrepancy, calculated dimensions will govern over scaled dimensions, plans will govern over specifications, proposals and special provisions will govern over both specifications and plans.

The Contractor shall take no advantage of any apparent error or omission in the plans or specifications. In the event the Contractor discovers such an error or omission, he shall immediately notify the Engineer. The Engineer will then make such corrections and interpretations as may be deemed necessary for fulfilling the intent of the plans and specifications. See "Extra Work" and "Modification of Contract or Change Orders".

All items salvaged as part of this Contract shall be removed by the Contractor without damage as excavation and work progresses, and placed within the right-of-way where they may be conveniently picked up by the Owner's

forces. Old materials not reserved by the Owner and not being used in the work will become property of and must be disposed of by the Contractor.

PLANS

If applicable, the plans illustrate the general character and scope of the Work covered by the Specifications and Contract Documents. Additional detailed drawings and other information deemed necessary by the Engineer will be furnished to the Contractor when and as required by the Work. Shop drawings, when approved by the Engineer, shall govern all details of the Work and shall take precedence over all other drawings. Figured dimensions on drawings shall take precedence over general drawings and shall be considered as explanatory and not as indicating extra work.

NOTICE TO PROCEED

Once the Contract has been entered into and the preconstruction conference held, the Owner will provide the Contractor a Notice to Proceed. Said Notice shall state the beginning date the Contractor shall commence the Work and the date by which the Work is to be completed.

PUBLIC CONVENIENCE AND SAFETY

The Contractor shall at all times so conduct his work as to assure the least possible obstruction to traffic. The safety and convenience of the general public and the residents along the highway and the protection of persons and property shall be provided for by the Contractor as specified under subsection Maintenance of Traffic.

The Contractor shall provide and maintain safeguards, safety devices and protective equipment and take any other needed actions as may be necessary to protect the public and property in connection with the work. The Contractor shall notify the Chiefs of the Police Department and Fire Department of the temporary blocking of any street.

The presence of barricades, lights or other traffic control devices provided and maintained by any party other than the Contractor, shall not relieve the Contractor of this responsibility.

MAINTENANCE OF TRAFFIC

The Contractor shall maintain traffic at ALL times on US 27, Bud Pogue Way and Bob Huber Drive. Any deviation shall require approval from KTC, Campbell County Economic Progress Authority and Campbell County Fiscal Court. Cost incidental to the Contract.

PROTECTION AND RESTORATION OF PROPERTY

The Contractor shall be responsible for the preservation of all public and private property. The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any act, omission, neglect or misconduct in his manner or method of executing the work, or at any time due to defective work or materials, and said responsibility will not be released until the project shall have been completed and accepted.

Dust nuisance originating from any work shall be controlled by the Contractor at the sole expense of the Contractor.

When and where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the nonexecution thereof by the Contractor, he shall restore, at his own expense, such property to a condition equal or better to that existing before such damage or injury was done, by repairing, rebuilding or otherwise restoring as may be directed, or he shall make good such damage or injury in an acceptable manner.

When mailboxes, road or street name signs and supports interfere with construction, the Contractor shall remove and erect them in a temporary location during construction in a manner satisfactory to and as directed by the Engineer. After completion of the construction and before final acceptance of the project, the Contractor shall erect the mailboxes, road or street name signs and supports in a permanent location in accordance with the plans unless otherwise directed by the Engineer. This shall be considered a subsidiary obligation of the Contractor under the affected items. The Contractor shall cooperate with the Engineer in protecting and preserving cornerstones and monuments that are within the work area. Monuments, cornerstones and land markers unexpectedly encountered shall be protected, referenced and preserved in the same manner.

CLEAN-UP DURING CONSTRUCTION

The Contractor shall at all times maintain the job site and working areas in an orderly condition, reasonably clean and free of accumulations of dirt and debris. If the Contractor fails to maintain the job site and working area in a satisfactory condition, the Owner shall have the right to employ others to do so at the Contractor's expense, commencing 24 hours after the Contractor has been notified that the job site and/or working areas require clean-up.

FINAL CLEAN-UP

As soon as portions of the work are ready for use, they shall be thoroughly cleaned by the Contractor of all dirt and rubbish, and cleared of all materials, forms, falsework, temporary structures and equipment.

The Contractor shall also clean out all sewer drains, inlets, manholes, and other underground lines and structures affected by his work and restore all disturbed areas to their original or better condition.

FINAL INSPECTION

When the work has been entirely completed and final cleanup has been performed, the Engineer will inspect the improvement. If items remain which must be completed or remedied by the Contractor, he shall perform the work immediately upon being notified by the Engineer. When such items have been corrected by the Contractor, final inspection will be made. The work must pass final inspection before it will be accepted by the Owner.

UTILITIES

Any utility, such as telephone, electricity or water, required by the Contractor for the performance of the Work shall be the responsibility of the Contractor, who shall be responsible for the cost of the same.

SEWAGE, SURFACE, AND FLOOD FLOWS

The Contractor shall furnish all the necessary equipment, shall take all necessary precautions, and shall assume the entire cost of handling and properly disposing of any sewage, seepage, storm, surface, flood or underground flows which may be encountered at any time during the performance of the Work. The manner of providing for these flows shall meet with the approval of the Engineer, and the entire cost of same shall be included in the unit prices stipulated for the various items of the Work. As applicable, all work must comply with the municipality or County storm water regulations.

USE OF EXISTING FACILITIES

The Owner, upon written notice to and with the approval of the Contractor, shall have the right to connect any sewers, conduit, or pipeline with any existing similar facilities or appurtenances, or to grant permits to make connections therewith at any time before the Work is completed. The Contractor shall not interfere with any such connections and no extra compensation shall be made to the Contractor on account thereof. The performance of the Work shall be planned in such a manner as to allow the use of all existing facilities during the construction period.

UNDERGROUND UTILITY FACILITIES/COOPERATION WITH UTILITIES

The Owner will notify all utility companies, all pipeline owners, or other parties affected and endeavor to have all necessary adjustments of the public or private utility fixtures, pipelines, and other appurtenances within or adjacent to the limits of construction made as soon as practicable.

Within ten (10) days of the award of the Contract, the Owner shall notify all utilities of the name, address, and phone number of the Contractor. The Contractor shall notify the Registered Underground Utility Protection Service and nonmember owners of the starting date at least two (2) working days prior to starting the Work. The utility shall mark, stake, or otherwise designate the location of the underground facilities within 48 hours of receiving the Contractor's notice of the starting date. The marking or locating shall be coordinated to stay approximately two (2) days ahead of the planned construction.

The identification of underground facilities, any necessary relocation thereof, and the protection of the same shall be undertaken in conformance with KTC Standards and Specifications for Road and Bridge Construction Section 107.15. At least two (2) working days prior to commencing Work in an area that may involve underground utility facilities, as shown on the plans, the Contractor shall notify the Engineer, the registered utility protection service, and the owners of the underground utility facility who are not members of the registered utility service.

The existing underground utilities are shown as accurately as possible on the plans, based on the information available. The Owner and/or Engineer do not assume any liability for location of underground service lines. Any utility services damaged that were previously marked in the field shall be replaced at the Contractor's expense.

Where the plans provide for conduit to be connected to, or to cross either over or under, or close to an existing underground structure, it shall be the responsibility of the Contractor to locate the existing structure, both as to line and grade, before starting to lay the proposed conduit, in order to assure compatibility with line and grade of the conduit. Payment for all such operations shall be included in the unit price bid for the pertinent conduit item.

The Contractor shall make arrangements with the utility company if adjustments to proposed grade of existing facilities (e.g. manholes, catch basins, valves, boxes, etc.) are to be made prior to the commencement of any paving operations. This shall include utility facilities not shown on the plans but that are located within the

pavement area. Work performed on utility facilities shall be in strict accordance with the specifications of the applicable utility company and shall be performed under the direction, supervision and inspection of said company.

At points where the Contractor's operations are adjacent to properties of telephone and power companies, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

The Contractor shall cooperate with the owner of any underground or overhead utility lines in their removal and rearrangement operations in order that these operations may progress in a reasonable manner, that duplication of rearrangement work may be reduced to a minimum, and that services rendered by those parties will not be unnecessarily interrupted.

In the event of interruption to underground or overhead utility services as a result of accidental breakage or as a result of being exposed or unsupported, the Contractor shall immediately alert the occupants of nearby premises as to any emergency that the Contractor may create or discover at or near such premises. The Contractor shall then notify the Engineer and the owner or operator of the utility facility of the disruption and shall cooperate with said utility owner or operator in the restoration of service. If water service is interrupted, repair work shall be continuous until the service is restored. No work shall be undertaken around fire hydrants until the local fire authority has approved provisions for continued service.

MAINTENANCE DURING CONSTRUCTION

The Contractor shall maintain the work during construction and until the project is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces to the end that the roadway or structures are kept in satisfactory condition at all times.

In the case of a contract for the placing of a pavement course upon other pavement courses or a subgrade previously constructed, the Contractor shall maintain the previous pavement course or subgrade during all construction operations.

FAILURE TO MAINTAIN ROADWAY OR STRUCTURE

If the Contractor, at any time, fails to comply with the provisions of the above-reference section, the Engineer will immediately notify the Contractor of such non-compliance. If the Contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of such notice, the Engineer may immediately proceed to maintain the Project and the entire cost of this maintenance will be deducted from monies due or to become due to the Contractor on his Contract.

PROTECTION OF EXISTING STRUCTURES

It shall be the responsibility of the Contractor to perform the Work in such a manner as not to damage or destroy any existing feature which is not marked for replacement or removal. The Contractor shall, at its own expense, protect and maintain any bridges, curbs, gutters, sidewalks, roadways, or any other private or public structures that may be endangered in the prosecution of the Work. The Contractor shall also exercise due care during the Work so as not to destroy any trees, plants, shrubs, or structures not specifically marked for removal or relocation within the area of the Project site. The Contractor hereby agrees to repair and make good any damages caused to any such property by reason of its prosecution of the Work.

In some instances, the Contractor will be required to excavate under and around existing utilities. The Contractor shall exercise extreme care so as not to damage the utility during the Work.

The Contractor shall schedule his operations so that the improved areas have had sufficient time to cure, set and/or harden before the area is opened to traffic or other use. The Contractor shall be responsible for the immediate repair of all improved areas if damage is done by traffic or other use. The Contractor shall also be responsible for the immediate rectification of problems created in areas outside of the improved areas, which are attributable to the failure of the improved area, such as, but not limited to, the tracking of materials into unimproved areas.

The Contractor shall be responsible for the protection of areas outside of the limits of the designated Project site, but which are adjacent to those limits. This will include those areas used by construction traffic for access to and from the Project site. Where the Engineer and/or the Owner determine that he Contractor's operations have been responsible for damage to areas outside of the Project site limits, the Contractor shall be responsible for the repair of the area, subject to the approval of the Engineer. No additional compensation will be due the Contractor for any such repairs.

MONUMENTS AND LANDMARKS

The Contractor shall not remove, relocate or in any way damage any monuments, survey pins or landmarks without the approval of the Engineer. Any monument, survey pin or landmark so removed without approval of the Engineer may be replaced by the Owner and the expense of the survey and replacement charged to the Contractor.

The Contractor shall carefully preserve all base lines and benchmarks which have been set by the Owner or its agent. The Contractor shall be charged with the expense of resetting any base lines or benchmarks caused by the loss or disturbance of such by the Contractor.

RESTORATION OF DISTURBED AREAS

In all cases where the Work requires the restoration of areas with topsoil, seeding and mulching, the Contractor shall not seed and mulch until directed to do so by the Engineer. The Engineer shall not so direct the Contractor until he has assured that the site is properly graded and topsoiled.

Upon completion of the seeding and mulching, the Contractor shall immediately notify the Engineer of the same. Upon receipt of notice from the Engineer that the restoration is complete, the Owner shall notify the property owners of their maintenance duties.

In cases where the Engineer determines the seeding and mulching should not be performed until after the designated completion date for the Work, the Engineer shall notify the Contractor of the same, in writing. Suspension of the seeding and mulching at the direction of the Engineer shall not count against the Contractor as a delay.

SUPERVISION OF THE WORK

The Engineer or upon the authorization of the Engineer, the Owner's Public Works Director, shall in all cases, determine the amount, quality acceptability and fitness of the kinds of labor and material, which are to be paid for under the Contract. The Owner or the Owner's agent shall determine all questions related to the Work and the performance thereof, and decide every question which may arise relative to the fulfillment of the Contract on the part of the Contractor.

The Engineer will evaluate the materials furnished and the labor to be performed under the Contract, and is authorized by the Owner to reject all labor or materials, or any part thereof, that does not comply in kind, quality, quantity, time, place or manner with the Contract or Contract Documents. The approval or acceptance or any part of the Work, or any payment on account thereof, shall not prevent the rejection of said labor or materials at any time thereafter during the term of the Contract, if said labor or materials are found to not be in accordance with the requirements of the Contract or the Contract Documents.

DEFECTIVE OR UNACCEPTABLE WORK

All materials and each part or detail of the Work shall be subject to evaluation by the Engineer. The Engineer shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the Contractor, as is required to make a complete and detailed review.

Any work done or materials used without direct observation by an authorized representative may be ordered removed and replaced at the Contractor's expense.

All work, which does not conform to the requirements of the Contract, will be considered unacceptable unless otherwise determined acceptable.

Should defective or unacceptable labor or materials be suspected, and the Engineer so require, the Contractor shall uncover, take down or make openings in the finished work for the purpose of examination at such points as the Engineer designates.

If the Work so exposed or examined is satisfactory, the cost of uncovering, taking down or making openings shall be paid by the Owner to the Contractor as a change in Work; however, should the Work thus exposed or examined be unsatisfactory, the cost of uncovering, taking down or making openings shall be borne by the Contractor.

If the exposed or examined labor or materials are found to be unacceptable or defective by the Engineer, he shall serve on the Contractor written notice of his rejection of the unsatisfactory labor or materials, his instructions for remedying the same, and a time within which the defective material or labor is to be remedied. If the Contractor neglects or refuses to remove and/or replace the defective labor or materials within the time limit given, the Owner may remedy the situation and charge the expense thereof to the Contractor. The expense so charges shall be deducted out of the monies due to the Contractor under the Contract. If the amounts still due the Contractor under the Contract are insufficient to meet the expense, the additional monies shall be paid by the Contractor, and if the Contractor refuses or neglects to pay, the monies shall be paid by his Surety or shall be deducted from its Performance/Contract Bond.

If, in the opinion of the Owner, an emergency arises that jeopardizes the continuity of water service and/or the public health, safety or welfare of the residents of the Owner, the Owner shall give notice of the emergency to the Contractor by telephone or in person. If the Contractor is unable to remedy the situation at the time it exists, the Owner reserves the right to immediately take steps to have the situation remedied. If, in the opinion of the

Owner, the emergency was created through the carelessness or recklessness of the Contractor, then the Contractor and its Surety shall be liable to the Owner for all expenses incurred by the Owner in correcting the situation.

INTENT OF CONTRACT

The intent of the Contract is to provide for the construction and completion in every detail of the Work described. The Contractor shall perform all items of work covered and stipulated in the proposal and perform altered and extra work, furnish all labor, materials, equipment, tools, transportation and supplies required to complete the work in accordance with the plans, specifications and terms of the Contract. Should any misunderstanding arise as to the intent or meaning of the plans, specifications, special provisions or proposal, or any discrepancy appear, the decision of the Engineer shall be final and conclusive.

MEASUREMENT OF QUANTITIES

For all contracts, except lump sum contracts, after an item of the Work is completed and before final payment is made, the Engineer will determine the quantities of various items of work performed, as the basis for final settlement. The Contractor, in case of unit price items, will be paid for the actual amount of work performed in accordance with these specifications as provided under the various items.

PLANS AND ESTIMATED QUANTITIES

The Plans and Bid Proposal quantities prepared by the Owner are intended to outline the Work to be done by the Contractor. The estimated quantities shall be used in determining the total amount of the bid and for the purpose of determining the lowest and best bid. It is understood and agreed, however, that the Plan is subject to minor changes from time to time during the progress of the Work, that the estimated quantities listed in the Proposal are approximate only, that the Contractor has no claim for damage and is not entitled to extra pay above and beyond the agreed unit prices on account of increasing or decreasing the quantities, and that in measuring the work for payment to the Contractor, the Owner shall consider only the number, length, area and solid contents of the various items of Work incorporated in the improvement in accordance with the Plans or as ordered placed by the Owner.

PRICES

The Owner will pay to the Contractor the prices herein stipulated as full compensation for everything furnished and work completed by the Contractor under the Contract, including all incidental work required but not specifically mentioned, and for any work arising from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all risks of every description connected with the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work, as herein specified and for well and faithfully completing the work, together with remedying all defects developing during the guarantee period.

ALTERATION OF PLANS OR CHARACTER OF WORK

The Owner reserves the right to make, at any time during the progress of the Work, such increases or decreases in quantities and such alterations in details of construction as may be found to be necessary or desirable. Such

increases or decreases and alterations shall not invalidate the Contract nor release the Surety, and the Contractor agrees to perform the Work as altered, as if it had been a part of the original Contract.

Unless such alterations and increases or decreases materially change the character of the work to be performed or the cost thereof, the altered work shall be paid for at the same unit prices as other parts of the Work. No claim shall be made by the Contractor for any loss of anticipated quantities and the quantities of work as done. Payments shall be in accordance with Section 109 of the KTC Standard and Specifications for Road and Bridge Construction. If, however, the character of the Work of the unit costs thereof are materially changed, an allowance shall be made on such basis as may have been agreed to in advance of the performance of the Work, or in case no such basis has been previously agreed upon, then an allowance shall be made, either for or against the Contractor, in such amount as the Owner may determine to be fair and equitable.

Should the Contractor encounter or discover during the progress of Work, subsurface or latent physical conditions at the site differing materially from those indicated in this Contract, or unknown physical conditions at the site of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract, the Engineer shall be promptly notified in writing of such conditions before they are disturbed. The Engineer will thereupon promptly cause the investigation of said conditions, and if they are found to so materially differ and cause an increase or decrease in the cost of, or the time required for performance of the Contract, an equitable adjustment will be made.

Any adjustment in compensation because of a change or changes resulting from one or more of the conditions described in the previous paragraph will be made in accordance with the provisions of Extra Work. Any adjustments in Contract time because of changes will be made in accordance with the provisions in 108.07 of the Kentucky Standard Specification for Road and Bridge Construction.

MODIFICATION OF CONTRACT OR CHANGE ORDERS

Items of Work not included in the estimate of the original Contract and additional units of items included in the estimate of the original Contract in an amount in excess of $10,000, may be authorized as a Modification of the Contract or Change Order. Payment shall be in accordance with Sections 109.04 of the Kentucky Standard Specification for Road and Bridge Construction.
The Owner may, when necessary, by ordinance, authorize alterations or modifications in the Specifications and Plans for the Work, or omit from the Work covered by this Contract any portion thereof. Before any such alteration or modification shall be effective, the price to be paid for the Work or the material, or both, under the altered or modified Contract, shall have been agreed upon in writing and signed by the Contractor and by the Contractual Agent or Agents of the Owner. It is expressly agreed that such changes shall not, in any way, violate or annul the Contract, and the Contractor hereby agrees not to claim or bring suit for any damages, whether for loss of profits or otherwise, on account of these changes. Whenever, during the progress of the Work, any change or modification of the Work is agreed upon, such change shall be considered and treated as though originally contracted for, and shall be subject to all provisions of the original Contract.

The Contractor's Sureties will not be notified of changes in the work or cost thereof, except when by reason of any Change Orders, the total Contract price increases by more than twenty (20%) percent of the original price.

DISPUTES AND CONTRACTOR CLAIMS

In cases where there arises a dispute (whether over payment, claims, or quality of Work) between the Contractor and the Owner, the Contractor shall not cease Work on the Project because of said dispute, unless told to cease

work by the Owner. The Contractor shall continue Work on the Project and agrees that such a dispute shall not relieve him from the requirements under "Time of Completion and Damages for Delays".

In all cases, the Contractor shall submit to the Owner any claims for disputed amounts, in writing, within seven (7) calendar days of learning of said dispute. In submitting such claim, the Contractor shall include his actual original calculations and raw cost data, along with his job cost reports and field diaries.

If the Owner makes to the Contractor an offer on a claim which the Contractor refuses, and if the Contractor then gets an amount equal to or less than the Owner's last offer in court, the Contractor shall pay all legal costs, including attorney's fees and expert witness fees, that the Owner incurs from the date of the Owner's last offer until the day the Contractor is awarded judgment.

Any claims or disputes shall be limited by the requirements of "Modification of Contract or Change Order".

TIME OF COMPLETION AND DAMAGES FOR DELAYS

The Project construction time shall commence upon the date indicated in the Notice to Proceed, which shall be sent to the Contractor by the Owner. The Contractor shall agree to commence the Work on the date specified in the written Notice to Proceed, weather permitting, and to fully complete the Work by **June 30, 2026**, unless such time for completion is extended, in writing, by the Owner. However, neither the Contractor nor any subcontractors shall commence any part of the work under the Contract until it has obtained all insurance required, as listed in the General Conditions, and such insurance has been approved by the Owner.

The Contractor shall provide pricing based on an award date of April 1, 2026, along with options for the following completion schedules:

Base Bid: August 1, 2026 Completion Date with final invoice submitted by June 1, 2026. CCEPA will continue to make progress payments to the Contractor during the performance of the Work, on the basis of the value of work performed from June 1, 2026 until August 1, 2026

Alternate Bid: December 31, 2026 Completion Date, invoice upon progress.

The Contractor agrees that time is of the essence, and therefore, if the Contractor neglects, fails, or refuses to complete the Work within the allotted time, or fails to secure an extension of time for delays, the Contractor does hereby agree to pay to the Owner, as liquidated damages and not as a penalty, the amount as stated in the Contract for each calendar day beyond the completion date stated in the Notice to Proceed, unless the time for completion has been extended in writing by the Owner. Such damages shall be deducted from any monies due and owing to the Contractor under the Contract. If the amounts still due the Contractor under the Contract are insufficient to meet the expense, the additional monies shall be paid by the Contractor, and if the Contractor refuses or neglects to pay, the monies shall be paid by his Surety or shall be deducted from its Performance/Contract Bond.

If the Contract is revised in any material respect and it is determined that said revision will cause delay in the completion of the work, the Engineer will postpone the completion date by the number of calendar days he determines to be equitable.

If the Contractor finds it impossible for reasons beyond his control to complete the work by the date as specified or as extended in accordance with the provisions of this subsection, he may make a written request to the Engineer for an extension of time setting forth therein the reasons which he believes will justify the granting of his request. Requests for extensions of time shall be filed in writing by the Contractor to the Engineer not later

than thirty (30) days following the termination of the delay. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion in such amount as the conditions justify.

Delays caused by weather or seasonal conditions should be anticipated and will be considered as the basis for an extension of time only when the actual work days lost exceed the number of working days lost each month due to the inclement weather as determined in Section 108 of the Kentucky Standard Specification for Road and Bridge Construction

The extended time for completion shall then be in full force and affect the same as though it were the original time for completion.

If the Owner should suspend the Work in whole or in part, the date for completion shall be extended by the number of days that the suspension directly or indirectly delays the completion of the Work.

If the Work is delayed for unforeseeable causes beyond the control and without the fault of negligence of the Contractor, such as severe or unusual climatic conditions, acts of God, acts of the Owner or interference by other contractors, extensions of time may be granted by the Owner, upon the Contractor's written request for an extension. The Contractor shall, within five (5) days from the beginning of such delay, notify the Owner in writing of the causes of the delay and request an extension. In no case shall such an extension of time exceed the time actually lost to the Contractor by reason of such delay or interference.

The Owner, reserves the right to suspend the whole or any part of the Work, when in the best interest of the Owner, in its sole discretion. Without any additional compensation to the Contractor for such suspension; however, the Contractor shall be granted an extension of time for completing the Work in the same amount of time that it was delayed by such suspension, unless said suspension was necessitated by the actions or inactions of the Contractor.

FAILURE TO COMPLETE ON TIME

If the Contractor fails to complete the Work within the time or times allowed by the Contract, the Owner, if satisfied that the Contractor is carrying the Work forward with reasonable progress and deems it to be in the best interest of the Public, may allow him to continue in control of the Work. It shall be necessary for the Contractor to make written application to the Owner in order to warrant such continuance. Payments to the Contractor for work performed and materials furnished will be made.

When the work is not completed within the time or times allowed by the Contract, and the Contractor is permitted to remain in control, the Work shall be prosecuted at as many different places, at such times, and with such forces as the Owner may request.

For each calendar day that any work shall remain incomplete after the Contract completion date or dates, the amount set forth in the Schedule, in Section 108 of the Kentucky Standard Specification for Road and Bridge Construction, will be deducted from any money due the Contractor, not as a penalty but as liquidated damages provided. However, that due amount shall be taken off any adjustment of the completion date or dates granted under the provision of "Time of Completion and Damages for Delays". In the event one or more interim completion dates are specified without specific separate liquidated damages, the amount set forth in the Schedule in Section 108 of the Kentucky Standard Specification for Road and Bridge Construction will apply separately to

each interim date. In the event a period of liquidated damages for an interim completion date overlaps a subsequent completion date, the liquidated damages will be cumulative.

Permitting the Contractor to continue and finish the Work or any part of it after the date or dates fixed for its completion, or after the date or dates to which completion may have been extended, will in no way operate as a waiver on the part of the Owner of any of its right under the Contract.
The Owner may waive such portions of the liquidated damages as may accrue after the work is in condition for safe and convenient use by the public.

UNSATISFACTORY PROGRESS AND TERMINATION OF THE CONTRACT

In case the Contractor or any Subcontractor fails to furnish materials or to execute the Work in accordance with the Plans and Specifications, or if the provisions of the Contract are otherwise violated, then in any such case, upon ten days written notice to the Contractor and his Surety, the Owner shall have the right to declare the Contractor in default on the Contract. Said notice shall contain the reason for the Owner's intention to declare the Contractor in default on the Contract and, unless within ten days after service of said notice the violation shall cease or satisfactory arrangements shall have been made for its correction, the Contractor, upon the expiration of said ten days, shall be in default on the Contract and his right to proceed under the Contract shall be terminated.

In the event the Contract is thus declared to be defaulted, the Owner will immediately notify the Contractor and his Surety of such action, and will at once cause the work already done to be measured and computed. The action of the Owner in the declaration of the default of the Contact shall be final and conclusive, and the Contractor shall not be entitled to claim or receive any damages for not being allowed to continue. After the default of the Contract, the Surety shall have the right to take over and complete the Work, provided, however, that the Surety shall notify the Owner in writing of its intent to do so within twenty (20) days after the notice of the default of the Contract. Such completion of the Work by the Surety shall be done in strict accordance with all the provisions of the original Contract. However, if the Surety does not take over the Contract as stated above, then the Owner shall cause the Work to be completed under a second contract. If the cost of the Work done under the second contract exceeds what it would have cost under the original Contract, the increased cost shall be paid from any money due the Contractor under the Contract, and if that is not sufficient, then the increased cost shall be paid by the Contractor and/or his Surety.

The Contractor and/or his Surety shall also pay all cost and expense of reletting the Work and all damages resulting from noncompletion of the Work within the Contract time. If, when the Work is completed, it is found that there is any money due the Contractor, it will be paid to him; but no money shall be paid to the Contractor under the Contract after it has been declared in default, until the Work has been completed and accepted and all claims and suits resulting therefrom shall have been settled.

PAYMENTS

The Owner shall pay to the Contractor the price stipulated in the Contract, by making progress payments to the Contractor during the performance of the Work, on the basis of the value of work performed.

The Contractor shall submit an invoice to the Engineer of the quantity of work performed for approval. Requests for payment shall not be made more frequently than every thirty (30) days. The Engineer shall forward the invoice to Campbell County Economic Progress Authority for approval, and upon approval of the invoice by the Engineer and the County Economic Progress Authority, the Owner shall pay the Contractor within thirty (30) days.

Partial payment may be reduced or withheld entirely if, in the opinion of the Owner, construction is not proceeding according to the Contract, or if for any other violation, or for failure of the Contractor to comply with the orders of the Owner, or pending settlement of claims of liens filed against the Contractor.

The Owner shall make partial payments to the Contractor for work performed and materials delivered to the site at 95% of the value of work.

The Contractor shall submit signed and notarized original copies of each Application for Payment to both Campbell County Economic Progress Authority via Justin Otto and to Verdantas, LLC via Frank Twehues. Payment requests shall include waivers of lien and similar attachments if required.

WAIVER OF MECHANIC'S LIEN

Upon reaching 100% completion and again prior to Final Application for Payment, the Contractor shall submit waivers of mechanic's liens from subcontractors, materialmen, and suppliers for all construction to date.

1. Owner reserves the right to designate which entities involved in the Work must submit waivers.
2. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
3. Waiver Forms: Submit waivers of lien on forms provided.

ACCEPTANCE OF FINAL PAYMENT

After the final inspection has been made and the Owner has accepted the Work, the final estimate and Final Statement of Cost will be prepared. If any items were erroneously overestimated in any partial estimate, such errors will be corrected in any subsequent partial estimate or in the final estimate, and the Contractor shall have no right to any such excess and shall not be entitled to any damage on account of such corrections in the final estimate.

The following paperwork is necessary from the Contractor to close-out the Project:

1. Final invoice for payment.
2. Final affidavit listing all subcontractors/suppliers used on the Project and indicating the amount paid in full.
3. Final Release of Liens from all subcontractors indicating the amount paid in full.
4. Prevailing Wage Affidavit, if applicable.
5. Guarantee.
6. Final Release of Lien.
7. Concrete Test Reports, if applicable.
8. Asphalt tickets stamped with the Inspector’s seal, if applicable.
9. Any additional testing reports as required by the Contract.

After the final estimate and Final Statement of Cost have been prepared and after the Contractor has fulfilled all of his obligations under the Contract and all the above paperwork has been accepted, the Owner will pay the

entire sum found to be due the Contractor after deducting all previous payments and any liquidated damages, if applicable.

After the final estimate and Final Statement of Cost have been prepared and after the Contractor has fulfilled all of his obligations under the Contract, the Owner will pay the entire sum found to be due the Contractor after deducting all previous payments and any liquidated damages, if applicable.

The date of acceptance of the Work by the Owner shall be the date of approval of the Final Statement of Cost.

If, after physical completion of the work and acceptance of the Owner's final measurements by the Contractor, the Owner finds that the Final Statement of Cost or final estimate or both may be unavoidably delayed, he may allow a payment on one-hundred percent (100%) of the final measurements, less such estimated amount of money as the Owner may deem necessary to withhold to take care of any contingencies which may arise.

Should the Contractor have any claim against the Owner because of a variance with the Owner's final measurement, the Owner may allow payment based on the Owner's measurement pending adjustments of the disputed item or items. Acceptance of payment on such basis shall not stop the Contractor's claim nor prevent its satisfactory adjustment.

Retainage shall be paid to the Contractor within thirty (30) days from the date of the Owner's final acceptance of the Work and the completion of the Contract. Upon the Contractor's acceptance of this final payment, the Owner and the Engineer shall be released from any and all claims and any liability to the Contractor for anything further under or relating to the Contract or the Contract Documents, including any act or omission by the Owner or any of its employees or agents, including the Engineer; however, no payments, final or otherwise, shall operate as a release on the Contractor or it Sureties from any obligations under the Contract or the Contract Documents.

TERMINATION OF THE OWNER'S LIABILITY

No person, partnership, firm, or company other than the Contractor shall have any interest in the Contract and no claims shall be made or held valid and neither the Owner nor its agents shall be held liable for, nor shall be held to pay any money except as herein provided. The acceptance by the Contractor of the final payment made as aforesaid shall operate as, and shall constitute, a release to the Owner and its agents form any claim or liability to the Contractor for anything done or furnished for, or relating to the Work or for any act or neglect of the Owner or any person related to or connected with the Work.

TERMINATION FOR CAUSE

A. In the event that any of the provisions of the Contract are violated by the Contractor, or by any of its subcontractors, the Owner may serve written notice upon the Contractor and its surety of its intention to terminate the Contract. Such notice shall list the act or omission causing the breach, upon the service of such notice, the Contractor shall have ten (10) business days to correct the breach or to make arrangements for correction that is satisfactory to the Owner.

B. If no such correction or arrangements are made within the allotted time, the Owner may, in its sole discretion, terminate the Contract on a date solely determined by the Owner. In the event of such termination, the Owner shall immediately serve notice thereof to the Contractor and its surety. The surety shall then have the right to take over and perform the Contract provided, however, if the surety

does not elect to continue performance, the Performance Bond will be forfeited and the Owner shall cause the Contract to be completed.

C. Upon termination for cause, the payment to the Contractor of compensation earned for Work performed to the date of such termination shall be in full satisfaction of all claims against the owner under this Contract, however the Owner shall have the right to deduct from any amounts due and owing to the Contractor, including retainage, any costs, both direct and incidental, incurred by the Owner in completing the Project. The Contractor and/or surety shall be liable for any excess costs the Owner may so incur, and the Owner shall have the right to pursue any legal remedies necessary to affect the same.

TERMINATION FOR CONVENIENCE

A. The Contractor hereby acknowledges that as the Owner is a public entity, due to unforeseen circumstances, funding restraints, or changes in the nature of the Work, it may become necessary for the Owner to terminate the Contract for convenience.

B. In the event the owner finds it necessary to terminate the Contract for convenience, the Owner shall serve notice upon the Contractor and its surety of its intention to terminate the Contract ten (10) business days prior to the termination date.

C. Upon termination for convenience, the Owner shall pay to the Contractor all compensation due for Work performed to the date of termination, including all costs for materials that were to be incorporated into the Project that cannot be returned; all restocking fees for materials that were to be incorporated into the Project that can be returned only upon the payment of a restocking fee. The Contractor shall submit to the Owner detailed invoices and proof of restocking fees, if any, within ten (10) business days of his receipt of notice of termination from the Owner. In addition, the Owner will negotiate compensation with the Contractor for actual costs incurred as a result of the termination.

CONTRACTOR'S RIGHT TO TERMINATE CONTRACT

The Contractor may terminate the Contract, upon ten (10) days written notice to the Owner if any public authority should stop the work for three (3) months, or if the Owner should fail to issue a Certificate of Payment, or if the Owner should fail to pay in accordance with this agreement.

GUARANTEE OF WORK

The Contractor hereby guarantees all work performed for a period of one (1) year from the date of completion, against all defects resulting from the use of inferior materials or equipment (unless said materials or equipment were provided by the Owner) or inferior workmanship. The Contractor hereby agrees that during the guarantee period, it shall make all repairs, corrections, replacements or changes that, in the opinion of the Engineer, are necessary due to the use of materials, equipment or workmanship which are inferior, defective or not in accordance with the Contract or Contract Documents. The Contractor shall, promptly upon receipt of written notice from the Owner, remove and replace all unsatisfactory work with suitable materials, equipment or workmanship, without additional expense to the Owner.

If the Contractor fails to proceed with these terms of the guarantee in a timely manner, the Owner shall have the right to have the defects corrected, and the Contractor and its sureties shall be liable to the Owner for all expenses incurred by the corrections.

Any or all special guarantees applicable to any definite parts of the Work, including the materials or equipment, shall also be subject to the terms of this section during the first year of the life of such special guarantees.

Customary manufacturer's guarantees in excess of one year shall be turned over to the Owner. If the terms and conditions as set forth are met to the satisfaction of the Owner and Contractor, the Owner may reduce the Performance Bond to ten percent (10%) of the total amount paid the Contractor in the performance of this Contract as a Guarantee bond.

NOTICE

Any written notice required to be served under the Contract or the Contract Documents shall be served by certified mail, or by personal service at the parties' places of business.

NO ESTOPPEL

At no time shall the Owner be precluded or estopped by any provisions of the Contract, from demanding and recovering from the Contractor any damages sustained because of the Contractor's failure to comply with the Contract or the Contract Documents. The final inspection of the Work shall not be binding or conclusive upon the owner if it subsequently appears that the Contractor willfully, fraudulently, or through collusion with an agent of the Owner, supplied inferior materials or workmanship, or departed from the terms of the Contract or Contract Documents, notwithstanding the acceptance of the Work and payment for the same by the Owner.

ASSIGNMENT

Neither the Contract or any part thereof, nor any funds to be received there under, by the Contractor shall be assigned, except upon the prior written permission of the Owner, upon any conditions that may be imposed by the Owner, and upon the prior written permission of any sureties who executed the Performance Contract Bond on behalf on the Contractor.

INDEPENDENT CONTRACTOR STATUS

At all times during the term of the Contract, the Contractor shall be and remain as an Independent Contractor with respect to all services performed under the Contract, The Contractor agrees that all income reporting requirements to the U.S. government, the State of Kentucky, and any local governments are its responsibility and not that of the Owner. The Contractor shall be responsible for the payment of all taxes including, but not limited to, Federal, state, and local taxes, Social Security taxes, unemployment insurance taxes, and other taxes or license fees required by law, for its officers, agents, and employees. The Contractor agrees that neither it, nor any of its officers, agents, nor employees is entitled to receive workers' compensation, unemployment compensation, vacation leave, sick leave, or any other fringe benefits provided to the employees of the Owner or any other Owner agency, under this Contract. Contractor acknowledges that under this Contract, the Owner is not required to contribute to the Kentucky Public Employees Retirement System on behalf of the Contractor, its officers, agents, or employees, nor is the Contractor eligible to contribute to or receive benefits from said system.

OTHER CONTRACTS

The Owner reserves the right to allow other work or to enter into other contracts for work or materials to be constructed or placed in or about the Work to be performed under this Contract, and to order the starting and progress of such other contracts at any time prior to the completion of this Contract. The Contractor hereby agrees to allow the construction or progress of other such work, under such arrangements for the joint occupation for the site of the Work as the Engineer may establish. The Contractor hereby waives any claim for damages or extra compensation by reason of any real or supposed interference with his performance of the Work; however, if in the judgment of the Engineer, the joint occupation of the site has unreasonably impeded the progress of the Contractor's work under the Contract, then the time for completion of the Work may be extended by the Owner.

PATENTS

The Contractor shall indemnify and hold harmless the Owner, its officers, employees, and agents from all liabilities, judgments, costs, damages, or claims arising from the infringement of any patent, patent rights or royalty rights by reason of the use of any patented materials, machinery, devices, and equipment furnished or used in the performance of the Work, or by reason of the use of patented designs furnished and incorporated into the Work by the Contractor and accepted by the Owner, excepting any materials or equipment furnished by the Owner. In the event that any claim, suit, or action in law or equity of any kind whatsoever is made or brought against the Owner involving any such patents, then the Owner shall have the right to retain, from the money due and owing to the Contractor, an amount the Owner deems sufficient to protect the Owner against loss until such claim, suit, or action has been settled and evidence of such settlement has been satisfactorily presented to the Owner's Law Director.

LAWS, ORDINANCES, AND REGULATIONS

The intent of the Contract and the Contract Documents is to include each and every provision and clause required by law to be inserted herein, and they shall be read and enforces as though there were included herein.

The Contractor shall keep itself fully informed of, and shall strictly observe and comply with, all applicable Federal State, County, and local laws, rules, regulations, and ordinances; building code requirements; permit requirements; licensing requirements; inspection requirements; all laws, rules, and regulations regarding the employment of and payment of all laborers, the legal rights of all laborers employed under the Contract; all orders or decrees that exist or that may be enacted by anybody or tribunal having jurisdiction or authority over any aspect of the Work. The Contractor shall also insure that its subcontractors are also informed of and strictly comply with and observe all applicable laws, rules, regulations, and ordinances.

The Contract shall be required to give all notices and pay all fees for any required permits, licenses, or inspection, unless the Owner assumes the responsibility for giving such notices or paying such fees. The Engineer will discuss any special permits that may be required for the Project at the preconstruction conference.

The Contractor shall indemnify and hold harmless the Owner, the Owner's officers, employees and agents, including the Engineer, against any claim or liability arising from or based upon any violation of any such law, rule, regulations, ordinance, order, decree or requirement, whether by the Contractor itself, its employees or agents, or any of its subcontractors.

Should the Contractor at any time find that any requirement of the Contract of the Contract Documents is at variance with any applicable law, rule, regulation, requirement, order or decree, it shall promptly notify the Engineer.

ENVIRONMENTAL PROTECTION

The Contractor shall observe and comply with all Federal, State, and local laws and regulations controlling pollution of the environment and shall comply with provisions of Section 107 of the Kentucky Standard Specification for Road and Bridge Construction.

TAXES

The Contractor will be required to pay, without additional expense to the Owner, all Federal, State, local and other taxes which may be applicable to the Work, excepting any taxes and assessments on the real property comprising the site of the Work.

The Contractor hereby agrees to withhold all Campbell Co. income taxes due or payable under the provisions of the Codified Ordinances of Campbell County for wages, salaries, and commission paid to its employees who will work within the City limits for more than 12 workdays and further agrees that any of its subcontractors shall be required to withhold any such Campbell Co. income taxes due under said Code for services performed under this Contract. The Contractors is advised to get full information from the Tax Office prior to bidding.

ITEMS 105.07 / 107.15 - COOPERATION WITH UTILITIES

All portions of Item 105.07 and Item 107.15 of the Kentucky Department of Highways Standard Specifications for Road and Bridge Construction shall apply.

At least two (2) working days prior to commencing construction operations in an area which may involve underground utility facilities as shown on the plans, the Contractor shall notify the Engineer, the registered utility protection service, and the owners of each underground utility facility not members of the registered utility protection service.

The existing underground utilities are shown as accurately as possible on the plans, based on information available. The owner and/or the Engineer do not assume any liability for location of these underground utility service lines. Any utility services damaged that were previously marked in the field shall be replaced at the Contractor's expense.

Where the plans provide for conduit to be connected to, or to cross either over or under, or close to an existing underground structure, it shall be the responsibility of the Contractor to locate the existing structure, both as to line and grade, before he starts to lay the proposed conduit, in order to assure compatibility with line and grade of the proposed conduit. Payment for all operations described above shall be included in the unit price bid for the pertinent conduit item.

The Contractor shall adjust or arrange with utility company to adjust to proposed grade all existing utility facilities, i.e., manholes, catch basins, valves, boxes, etc., prior to the commencement of paving operations. This shall include utility facilities not shown on the plans, which may be found to be located within the pavement area. Work performed on the utility facilities shall be in strict accordance with the specifications of the applicable utility company and shall be performed under the direction, supervision, and inspection of said company.

COORDINATION WITH UTILITIES

Coordination of work schedules with affected utilities will be required. Upon the contract award, the coordination of all necessary relocations or adjustment of all utility facilities become the responsibility of the Contractor.

ITEM 106 - CONTROL OF MATERIAL

Unless otherwise specified, all materials shall be new, and both workmanship and materials shall be of proper quality and sufficient for the purpose contemplated. The Contractor shall furnish, if so required, satisfactory evidence as to type and quality of materials and workmanship.

All items of equipment and/or material proposed by the Contractor for substitutions must be approved by the Engineer in writing and shall be equal or superior to the items specified in the contract documents. If said substitution proposed by the Contractor for a specified item requires engineering revisions, the total expense of said revisions shall be paid by the Contractor.

Any items of labor and materials required, but not shown as a separate pay item in the proposal, shall be furnished and installed as incidental to the contract, except as noted in the plans and specifications.

ITEM 106.08 - STORAGE OF MATERIALS

The Contractor shall obtain prior approval in writing from the Owner for the locations to be used for the temporary storage of construction materials, tools, and/or machinery. All such materials, tools, and machinery shall be neatly and compactly piled in such a manner as to cause the least inconvenience to the property owners and to traffic. Under no circumstances shall existing drainage courses be blocked or water hydrants, valves, or meter pits covered. All materials, tools, machinery, etc., stored upon public thoroughfares must be provided with warning lights and reflective sheeting at nighttime and weekends to alert traffic of such obstructions.

ITEM 108.02 - PRECONSTRUCTION CONFERENCE

Prior to the commencement of construction activities, the Engineer will arrange a meeting between the Contractor, the representatives of the Owner, and the representatives of each of the utility companies. The time, date, and location of said meeting will be determined after the awarding of the contract, and the parties will be notified by the Engineer.

The agenda for the preconstruction meeting shall include the following items:

1. Announcement of Award
2. Utility Company Requirements
3. Designation of Emergency 24-hour Contractor Contacts
4. Discussion of Critical Plan Items
5. Review of Testing and Inspection Procedures
6. Operations Schedule

7. Listing of Haul Roads
8. Identification of Subcontractors
9. Review of Change Order Process
10. Payment Request Submittal Procedure

The Contractor shall coordinate all work with the Engineer. A detailed schedule of operations shall be furnished by the Contractor to the Engineer at the preconstruction meeting and shall list the order of operations and the time frame for the completion of each item of work. The schedule of operations shall be approved by the Engineer and the Owner in writing prior to the beginning of the work. Changes to said schedule are to be issued in writing and approved by the Engineer and the Owner before operations are changed or rescheduled. No payment will be made to the Contractor while he is delinquent in the submission of a progress schedule.

The Contractor shall supply to the Engineer at the preconstruction meeting, a list of the local roads to be used for the purpose of hauling equipment and/or material to or from the job site. Only the local roads in the vicinity of the project have to be listed; state and/or federal roads do not have to be included. Where necessary, the list shall include the extent of the roads to be affected and any special restrictions, such as height or weight restrictions, which may be applicable along said roads. Construction shall not commence until the Engineer and/or Owner has reviewed the haul road list and approved the haul roads in writing.

The submission of the list to and the review and approval of the list by the Engineer do not relieve the Contractor of the responsibility for the conforming to and the obeying of all applicable height and weight restrictions on the haul roads and of the responsibility for any damage done to and/or along said haul roads. The Contractor is referred to Item 105.10 concerning load restrictions.

ITEM 107.04 - PERMITS, LICENSES AND TAXES

The Contractor shall insure that all required notices are given and all permits acquired before the commencement of work. The Engineer will discuss any special permits required for this project at the preconstruction meeting.

ITEM 107.14 - CONTRACTOR'S RESPONSIBILITY FOR WORK

It shall be the responsibility of the Contractor to perform his work in such a manner as not to damage or destroy any existing feature (i.e., existing inlets, conduits, etc.), which is not marked for replacement or removal. The Contractor shall exercise due care during construction so as not to destroy any trees, plants, shrubs or structures not specifically marked for removal or relocation within the work limits. In some instances, the Contractor will be required to excavate under and around the existing utilities. Extreme care should be used not to damage the utility during this operation. The Contractor shall schedule his operations so that the improved areas have had sufficient time to cure, set and/or harden before the area is opened to traffic or use. The Contractor shall be responsible for the immediate repair of the improved area if any damage is done by traffic. The Contractor shall also be responsible for the immediate rectification of problems created in areas outside of the improved areas which are attributable to the failure of the improved area, i.e., the tracking of materials into unimproved areas. The Contractor shall be responsible for the protection of areas outside of the designated work limits, but which may be adjacent to those work limits. This will include those areas used by construction traffic for access to and from the work areas. Where the Engineer and/or the Owner determine that the Contractor's operations have been responsible for damage to areas outside of the work limits, the Contractor shall be responsible for the repair of the area subject to the approval of the Engineer. No additional compensation will be due to the Contractor for any such repairs as described above.

ITEM 201 – STAKING

On this project, the Contractor Construction layout for the improvements indicated in the plans.

ITEMS 202 / 203 REMOVALS

When a bid item is to include the cost of removal of a classified or unclassified material, it shall be the responsibility of the Contractor to verify in the field the type of material and the thickness of the material to be removed prior to submitting his bid. No additional allowance will be due the Contractor for added expense of removals due to unknown materials or thickness.

ITEMS 202 / 203 - DEBRIS REMOVAL

The Contractor will be responsible for removal of all construction debris from the site. All debris shall be disposed of in a proper manner and shall be as directed by all applicable local, state, or federal regulations.

ITEM 206 / 207 / 302 / 701 - TESTING OF COMPACTED MATERIALS

Compaction testing of embankment, granular backfill, and/or subgrade shall be done by an independent qualified testing laboratory under a contract with the Owner. Testing shall be done in the presence of the Engineer at locations specified by the Engineer and shall meet standards as specified in Items 206, 207, 302 and 701.

ITEM 212 - SEEDING AND PROTECTION

All grass areas disturbed by construction shall be restored by seeding and mulching as per Item 212.03. The cost of this work shall be incidental to the Contract.

The Engineer shall determine all areas requiring seeding, mulching and fertilizer pertinent to this contract.

ITEM 212 - COMMERCIAL FERTILIZING

All areas to be seeded and mulched under Item 212.03 shall have commercial fertilizer (12-12-12) applied to the rate of 20 pounds per 1000 square feet, the cost of which shall be incidental to the contract.

TESTING OF CONSTRUCTION MATERIALS

Portland Cement Concrete: All portland cement concrete work shall be tested by an independent testing laboratory. The independent testing laboratory shall secure a random sample from each 50 yards of concrete delivered to the job site. A minimum of one sample shall be made each day that concrete work is performed. One sample consists of four specimens. Four specimens shall be molded by the testing laboratory and cured from each sample, in accordance with ASTM C 172. Cylinders shall then be tested in accordance with ASTM C39.

One (1) specimen shall be tested at 7 days for information, and two (2) specimens shall be tested at 28 days for acceptance. The acceptance test results shall be the average strength of the two specimens tested at 28 days. The fourth cylinder shall be tested at 56 days only if the 28-day test results do not meet specifications.

Using ASTM C 143, the testing agency shall determine the slump of the concrete for each sample, and also whenever the consistency of the concrete appears to vary. The agency shall also determine the air content of the concrete for each sample, in accordance with either ASTM C 231, ASTM C 173, or ASTM C 138.

The agency shall report all test and inspection results to the Engineer, Contractor, and concrete supplier in writing one working day after the work is performed. All test reports shall include the exact location in the work at which the batch represented by a sample was deposited. Reports of strength tests shall include detailed information on storage and curing of specimens prior to testing.

All concrete work not meeting the specifications as listed in Item 501 and 601 shall be removed immediately and replaced in an acceptable manner with no additional compensation to the Contractor, unless provisions for an extended guarantee are provided herein.

Asphalt Concrete: Item 403 Asphalt Materials shall be plant inspected by an independent testing company; and tickets shall be stamped with the inspector's seal, indicating that material shipped to the job site meets the requirements of the specifications.

Seven (7) days prior to commencement of construction, the Contractor shall submit to the Engineer a list of two (2) or three (3) proposed, accredited testing firms. The Engineer shall then select from the submitted list the name of the firm which is to be responsible for all of the required testing.

The Contractor is responsible for notifying the testing agency 24 hours prior to starting work requiring material testing. If the Contractor fails to provide testing as per any of the above requirements, he will be required to stop work until proper arrangements have been made with the testing agency.

The testing agency and its representatives are not authorized to revoke, alter, relax, enlarge or release any requirement of the contract documents, nor to approve or accept any portion of the work.

The Contractor shall include the cost of all required tests in the unit price bid for the pertinent item and no separate compensation is to be made for said testing.

ITEM 701 - RESTORATION OF AREAS DISTURBED BY DRAINAGE FACILITIES

Soil areas disturbed by construction of underdrains, trench drains, conduits, catch basins or other drainage facilities shall be regraded to drain properly and then restored with top soil, seeding and mulching. The cost of restoration of these soil areas is to be included in the unit price bid for the pertinent drainage item.

Pavement areas (including walks, drives, curbs, etc.) disturbed by the construction of the drainage facilities will be restored as per the applicable asphalt pavement repair detail or the concrete pavement detail. Payment for the restoration of these areas will be at the unit price bid for the pertinent pavement item.

ITEM 701 REMOVAL OF WATER

The Contractor shall keep all excavations free from water while the excavation for or the construction of conduits is in progress; shall build all dams, bulkheads, underdrains, sumps, and other work necessary for this purpose; and shall provide and keep the excavation dry and free from water at all times.

The Contractor shall provide for the disposal of all water removed from the excavations in such manner as to prevent injury to the public, the public health, public or private property, or to any portion of the work completed or in progress, or the surface of the streets, and to prevent any inconvenience to the public. No ground and/or surface water shall be diverted into existing sanitary sewers.
No conduits shall be laid or built in water, and waste shall not be allowed to flow over to rise upon any concrete, brick masonry or conduit until the work has been observed and has set for at least twenty-four (24) hours.

The flow of water in all existing sewers, drains, gutters, or watercourses encountered during the construction period shall be adequately maintained by the Contractor at his expense.

ITEM 701 - TESTS

Materials

The Contractor shall submit to the Engineer test reports for materials supplied to be used in the construction whenever the Engineer has not received certified letters from material suppliers that materials meet the specifications called for, or there is visible evidence on the work site that the materials do not conform to the visual inspection section of the specifications called for.

The test reports shall be based upon standard methods of testing as called for in the materials specifications and as set forth by the American Society for Testing Materials (ASTM). The testing shall be done at a laboratory approved by the Engineer.

All materials shall conform to SD1 Specifications; Sections 15051, 15061 and 15067.

SPECIAL NOTE

FOR SEDIMENT PREVENTION AND EROSION CONTROL

FOR IMPACT REGARDLESS OF SIZE OF THE DISTRUBED AREA

Potential impacts to gray bat foraging habitat and habitat for federally listed fish and mussel species will be minimized by implementing erosion prevention and sediment control measures.

As required under Section 213 of the KYTC Standard Specifications, prior to onsite activities a **site-specific *Erosion Control Plan* including BMPs** to ensure continuous erosion control throughout the construction and post construction period. The plan will identify individual Disturbed Drainage Areas (DDA) where storm water from the construction area will be discharged off site or into waters of the Commonwealth.

Should the Contractor fail to create a BMP Plan or provide and maintain the necessary erosion control, Liquidated Damages will apply at the rate specified in the contract. If no rate is specified, Liquidated Damages will be applied at the rate specified in Section 108 of the Standard Specifications.

The erosion prevention and sediment controls proposed are presented below.

- The location of the individual erosion prevention/sediment control measures will be identified by the Resident Engineer and Contractor. The Contractor will place erosion control devices as identified in the site-specific BMP Plan prior to beginning work.
- Mulch will be placed, during grade and drain activities, across all areas where no work will be conducted for a period of 14 consecutive days.
- Tree clearing within the riparian zone will be minimized. Trees to be removed will be determined by the resident engineer and the contractor prior to disturbance. (Note: Any "Special Note for Tree Clearing Restrictions" must be adhered to.)
- Silt fence, or other approved method as appropriate, will be installed at the edge of waters within the project corridors to eliminate the deposition of rock and debris in the streams during construction activities. In the unforeseen event that unintended debris does enter the streams, the resident engineer will halt the contributing activity until appropriate remedial actions have been implemented.
- To the maximum extent plausible, construction activities will take place during low-flow periods.
- Equipment staging and cleaning areas will be located to eliminate direct inputs to waters of the Commonwealth. These areas will be located such that effluent will be filtered through vegetated areas and appropriate sediment controls prior to discharge offsite.
- Concrete will be poured in a manner to avoid spills into the streams. In the unforeseen event that a spill does occur, the USFWS will be notified, and the resident engineer will immediately halt the activity until remedial measures have been implemented.
- KYTC proposes to stabilize areas disturbed during construction activities through vegetation establishment and placement of riprap and geotextile fabric. Re-vegetation of the disturbed areas will allow thermoregulation of water within the streams, establish long-term, regenerative stabilization of the stream banks, and provide nutrients to the aquatic macroinvertebrate community through inputs of organic material.
- Areas disturbed during construction and not stabilized with rip rap and erosion blanket will be seeded using a standard seed mix. Depending on project slope and project location, application rates and seed mix types will vary. The Contractor shall perform all final seeding and protection, in accordance with the plans and Section 212 of KYTC Standard Specifications.
- Contrary to Section 213.03.03, paragraph 2, the Engineer shall conduct inspections as needed to verify compliance with Section 221 of KYTC Standard Specifications. The Engineer's inspections shall be performed a minimum of once per month and within seven (7) days after a storm of ½ inch or greater. Copies of the Engineer's inspections shall not be provided to the Contractor unless improvements to the BMPs are required. The Contractor shall initiate corrective action within 24 hours of any reported deficiency and complete the work within five (5) days. The Engineer shall use Form TC 63-61 A for this report. Inspections performed by the Engineer do not relieve the Contractor of any responsibility for compliance. If corrections are not made within the five (5) days specified, the liquidated damages will apply at the rate specified in the Liquidated Damages note in the contract.
- Contrary to Sections 212.05 and 213.05, unless listed in the proposal, bid items for temporary BMPs and items for permanent erosion control will not be measured for payment and will be replaced with one lump sum item for the services. Payment will be pro-rated based on the Project Schedule as submitted by the Contractor and as agreed to by the Engineer.
- The Contractor shall be responsible for applying "good engineering practices." The Contractor may use any temporary BMPs and permanent BMPs that fall within the guidance of the current

Standard Specifications, KYTC's Best Management Practices manual, and with the approval of the KYTC Engineer.

FOR IMPACT GREATER THAN 1.0 ACRE

When the total disturbed area for a project, including laydown and waste/borrow areas, is greater than 1.0 acre, the Contractor shall be responsible for filing the Kentucky Pollution discharge Elimination System (KPDES) KYR10 permit Notice of Intent (NOI) with the Kentucky Division of Water (DOW). The Contractor will be responsible for following the KPDES requirements of local Municipal Separate Storm Sewer System (MS4) programs with jurisdiction. Required NOI shall name the Contractor as the Facility Operator and include the KYTC Contract ID Number (CID) for reference. For grouped contracts with more than one structure, each structure will be treated independently in regard to disturbed area unless another structure is within 0.25 mile of the structure. For structures within 0.25 mile of each other, the total disturbed area will be the sum of the combined disturbed areas. The Contractor shall be responsible for filing the KPDES permit Notice of Termination (NOT) with the Kentucky DOW and any local MS4 Program that has jurisdiction. The NOT shall be filed after the Engineer agrees the project is stabilized or the project has been formally accepted.

The Contractor shall perform all temporary erosion/sediment control functions including providing a Best Management Practice (BMP) Plan, conducting required inspections, modifying the BMP Plan documents as construction progresses, and documenting the installation and maintenance of BMPs in conformance with the KPDES KYR10 permit effective on August 1, 2009, or a permit re-issued to replace that KYR10 permit. This work shall be conducted in conformance with the requirements of Section 213 of the KYTC current Department of Highways, Standard Specifications for Road and Bridge Construction (Standard Specifications).

The Contractor shall be responsible for the examination of the soils to be encountered and make his own independent determination of the temporary BMPs that will be required to accomplish effective erosion prevention and sediment control. The Contractor shall provide the Engineer copies of all documents required by the KPDES permit at the time they are prepared.

They KYR10 web page, which includes the General Permit and eNOI application is here:
https://eec.ky.gov/Environmental-Protection/Water/PermitCert/KPDES/Documents/KYR10PermitPage.pdf

If there are any questions regarding this note, please contact Danny Peake, Director, Division of Environmental Analysis, 200 Mero Street, Frankfort, KY 40601, Phone (502) 564-7250.

ELECTRIC UTILITY NOTES
DUKE ENERGY

1. **DANGER** - Contractor shall contact the company prior to excavation in vicinity of electric underground facilities (approximate plan location shown) or when working near overhead electric facilities.

   (A) For Field Inspector to locate underground electric line, in Ohio call "Ohio Utilities Protection Service" at 1-800-362-2764, and in Kentucky call "Kentucky Underground Protection Service (KUPS)" at 1-800-752-6007 (at least 48 hours in advance), excluding hours Sat., Sun., and State Legal Holidays.

   (B) For notification of construction activity near energized electric facilities, call Mr. Bob Schroeder, 287-3426.

   (C) For additional underground electric record information, call 287-2454.

   (D) For electric engineering notification, agreements and correspondence, address to Mr. James Dugan, Central Accounting Marketing Section, Duke Energy, P. O. Box 960, Cincinnati, Ohio 45202-0960.

2. Contractor shall be responsible for all damages to electric facilities during construction.

3. Electric facilities to be kept in service at all times.

4. Contractor shall be responsible for supporting existing electric facilities affected by the proposed construction.

   A. Where high pressure oil filled pipe type cable installations are exposed or otherwise interfered with by the Contractor, protection by the Contractor will be required against damage to the coating or surrounding thermal sand envelope.

   B. Where concrete encased conduit systems or direct buried cable systems are exposed or otherwise interfered with, the Contractor shall protect the system as necessary against damage. As soon as feasible, the Contractor shall take additional appropriate steps to provide permanent measures to restore support. The methods used shall be based on conditions to be determined by the utility.

   C. Where poles or anchors that support overhead electric facilities are exposed or otherwise interfered with, the Contractor shall protect them from damage and provide temporary support to insure the integrity of the system. As soon as feasible, the Contractor shall take additional appropriate steps to provide permanent measures to restore support. The methods used shall be based on conditions to be determined by the utility.

   D. Where the depth of excavation for the proposed work is greater than five (5) feet, the Contractor shall sheet and shore the trench to continuously maintain the support of electric facilities at locations where the electric facilities are within the zone of influence adjacent to the excavation as determined by the natural angle of repose of the soil.

   E. All damage to electric facilities and services requiring adjustments, relocations and/or repairs will be made at the Contractor's cost.

5. Contractor shall not backfill exposed electric facilities until the company has inspected its facility or performed any adjustments and/or maintenance that may be required.

NOTE: Should Contractor damage electric facilities, Contractor shall immediately notify the Electric Service Desk through the Company Operator (381-2000). Contractor shall keep everyone clear of damaged electric facilities until company personnel arrive at the work site.

GAS FACILITY NOTES
DUKE ENERGY COMPANY

Gas Facility Notes

I. For Gas Engineering Notification, agreements, and official correspondence, address to:

Duke Energy
139 East Fourth Street
P.O. Box 960, Room 460-A
Cincinnati, Ohio 45202

II. The gas main information provided shows the approximate locations and depths of cover and is provided to comply with statutory regulations. This information should be used only for planning, not construction.

III. All gas main depths of cover noted are approximate depths of cover recorded at the time of installation. Any resulting grade changes since the time of the main installation will cause the existing depth of cover to be different. Extreme care must be taken to ensure safe excavation when approaching known or suspected gas facilities.

IV. All gas services were installed at a minimum of 1'-6" of cover. See item III above.

V. For additional gas facility record information, call 1-800-372-7612.

VI. To comply with federal and state regulations concerning damage prevention programs, the utility companies must be contacted at least 48 hours (two working days) prior to excavation by calling the OHIO UTILITIES PROTECTION SERVICE (OUPS), toll free, at 1-800-362-2764.

Construction Notes

I. Gas facilities are to be kept in service at all times.

II. The Contractor shall be responsible for all damages to gas facilities during or as a result of the Contractor's construction. All damage to gas facilities requiring adjustments, relocations and/or repairs will be made at the Contractor's cost.

The Contractor shall sheet and shore all excavations as required to continuously support gas facilities within the zone of influence (as determined by the natural angle of repose of the soil).

IV. Crossing buried gas facilities with heavy construction equipment may cause damage to the gas facilities. Contact the Duke Energy Gas Engineering Department for details on how to protect the gas facilities from damage.

V. The Contractor shall not backfill exposed gas facilities until the utility has inspected its facilities and performed any maintenance and/or adjustments that may be required.

VI. The Contractor is responsible for preventing any damage to our gas facilities. This includes protection of coatings and wrappings on steel gas mains. It also includes any damage with may have occurred to plastic gas mains, such as crimps or gouges.

VII. When cast iron or similar gas facilities are exposed or interfered with by the Contractor, replacement or reinforcement by Duke Energy may be required at the Contractor's expense. Backfill with control low strength material will be required.

VIII. Blasting or other construction procedures which may transmit loads or vibrations in the vicinity of gas facilities must be approved by Duke Energy Gas Engineering Department. A blasting plan, identifying all pertinent information, must be submitted in writing by a blasting expert prior to any work.

Proposed Developments at Gas R/W & Easements (If Applicable)

I. Proposed development plans around and near gas facilities within private easements must be submitted to Duke Energy Gas Engineering Dept. for review. These plans must be approved before any work may begin within our easements.

II. Specified easement widths must be maintained in order for Duke Energy to protect its facilities.

III. No permanent structures may be built within the easements.

IV. Cuts and fills are generally not permitted within the easements. Some fills may be allowed, and will be reviewed on an individual basis. Any permitted fills will be limited to an amount which will allow Duke Energy to properly maintain its facilities.

V. Perpendicular utility crossings of gas easements are acceptable, provided proper clearances are maintained. Parallel installations are normally not allowed.

SANITARY SEWER NOTES

Sanitary sewer and/or combination sewer items are to be constructed in accordance with the provisions of the Sanitation District No. 1, and under the direction, supervision and inspection of the Sanitation District No. 1. Sanitation sewer items are to be constructed in accordance with the provisions of the Kentucky 2000 Transportation Cabinet / Department of Highways, Standard Specifications for Road and Bridge Construction, dated January 1, 2000, and any supplements or changes thereto.

The Contractor shall supply separate bid items for raising manholes using manhole adjustment rings and for using brick and mortar. If only one bid item is received, the Contractor shall raise all manholes with brick and mortar. Sewer manhole adjustment prior to machine paving shall be done in accordance with the Sanitation District No. 1 Rules and Regulations.

In the event that manhole adjusting rings cannot be used on sanitary and/or storm sewer manholes, the Contractor shall be required to use brick masonry and to adjust manholes to grade. Stacking of adjusting rings shall not be permitted. Substandard or damaged manhole casting shall be replaced with standard casting.

BID FORMS

The bid forms are not available online. The bid forms are available only by purchasing a set of plans and specifications at the location indicated in the Legal Notice.

GEOTECHNOLOGY

A UES Company

PRELIMINARY GEOTECHNICAL EXPLORATION SOUTHERN CAMPBELL COUNTY INDUSTRIAL PARK CLARYVILLE, KENTUCKY

Prepared for:

CAMPBELL COUNTY ECONOMIC PROGRESS AUTHORITY
NEWPORT, KENTUCKY

Prepared by:

GEOTECHNOLOGY, LLC
ERLANGER, KENTUCKY

Date:

MARCH 28, 2023

Geotechnology Project No.:

J034993.01

SAFETY
QUALITY
INTEGRITY
PARTNERSHIP
OPPORTUNITY
RESPONSIVENESS

GEOTECHNOLOGY
A UES Company

March 28, 2023

Mr. Justin Otto
Campbell County Economic Progress Authority
1098 Monmouth Street
P.O. Box 72340
Newport, Kentucky 41072-0340

Re: Preliminary Geotechnical Exploration
Southern Campbell County Industrial Park
Claryville, Kentucky
Geotechnology Project No. J034993.01

Dear Mr. Otto:

Presented in this report are the results of our preliminary geotechnical exploration completed for the Southern Campbell County Industrial Park project to be located on the 41.6-acre parcel on the east side of US Highway 27 near its intersection with Bud Pogue Way in Claryville, Kentucky. Our services were performed in general accordance with our Proposal P034993.01R, which was dated December 15, 2022, and authorization with our Agreement executed with the Campbell County Economic Progress Authority (CCEPA) on January 23, 2023.

We appreciate the opportunity to provide the preliminary geotechnical services for this project. If you have any questions regarding this report, or if we may be of any additional service to you, please do not hesitate to contact us.

Respectfully submitted,
GEOTECHNOLOGY, LLC

John S. Nealon, PhD, PE, PG
Senior Consultant

Andrew C. Casto, PE
Senior Project Manager

STATE OF KENTUCKY
ANDREW C. CASTO 21997
LICENSED PROFESSIONAL ENGINEER

JSN/ACC:jsn/tmk

Emailed Copy: Campbell County Economic Progress Authority

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A UES Company

PRELIMINARY GEOTECHNICAL EXPLORATION
SOUTHERN CAMPBELL COUNTY INDUSTRIAL PARK
CLARYVILLE, KENTUCKY
March 28, 2023 | Geotechnology Project No. J034993.01

1.0 INTRODUCTION

Geotechnology, LLC (Geotechnology) prepared this preliminary geotechnical exploration report for the Campbell County Economic Progress Authority (CCEPA) for the Southern Campbell County Industrial Park project to be located on the 41.6-acre parcel on the east side of US Highway 27 near its intersection with Bud Pogue Way in Claryville, Kentucky.

The purposes of the preliminary geotechnical exploration were: to evaluate the general subsurface profile at the site; to evaluate the engineering properties of the soils and bedrock; to develop recommendations for site grading; and to comment on the feasibility of the site for its intended use, as discussed in our proposal. Our scope of services included a site reconnaissance, geotechnical borings, laboratory testing, engineering analyses, and preparation of this preliminary report.

2.0 PROJECT INFORMATION

The following project information was derived from:

- The *Industrial Development Concept Plan* prepared by Cardinal Engineering Corporation (Cardinal) and dated March 25, 2019;
- *Geologic Map of the Alexandria Quadrangle, Campbell and Kenton Counties, Kentucky, Map GQ-926*, prepared by A.B. Gibbons of the United States Geologic Survey (USGS) in 1971; and
- Correspondence with CCEPA.

The project will involve grading of a 41.6-acre parcel to be subdivided into four building pad parcels ranging in area from 5 to 19.5 acres in size as per the *Industrial Development Concept Plan*. Site grading will include cuts up to 26 feet on the existing ridges, and fills up to 30 feet thick in the existing valleys. Given that the development is to be an industrial park, we are assuming that the new development will include lightly- to heavily-loaded structures, as well as pavements that will need to be designed for heavy semi-trailer loads. However, because CCEPA will be selling the graded parcels to developers, information regarding the sizes, locations, floor elevations, and structural loads of buildings to be constructed within the new development is unavailable at this time. For this reason, geotechnical design recommendations for future individual parcel development are not in the scope of this preliminary geotechnical report. We are

also assuming that site grading by CCEPA will include installation of some site utilities, and perhaps some pavements.

The geologic map cited above indicates that the project site is within the limits of the ancestral Licking River valley, in which the pre-Illinoian, highly-plastic, Claryville Clays are typically encountered. The site location relative to the limits of the ancestral Licking River is shown on the Site Location Plan, Sheet No. 1 in Appendix A.

3.0 SITE CONDITIONS

For purposes of this report, the site is bounded to the west by US Highway 27, which is oriented north-south. The site is currently occupied by grasses, trees, two ponds, and the Bud Pogue Way pavement.

The existing topography and proposed final grades are included on our Exploration Plan, Sheet No. 2 in Appendix A, which is based on the *Industrial Development Concept Plan* prepared by Cardinal. Existing site grades range from El. 773[1] along the south border of the property to El. 712 at the northwest corner of the property. Approximately 61 feet of relief currently exists across the site. Most of the property drains to three west-flowing swales; the northeastern portion of the property is occupied by two ponds, which receive drainage from the areas immediately adjacent. Existing gradients range from 1 horizontal to 1 vertical (1H:1V) on the steeper swale valley slopes to as much as 45H:1V in the central portion of the property that is between the two west-flowing swales. Following completion of site grading, the property to be developed will still have 55 feet of relief between the south border and the northwest corner, but the west-flowing swales and the smaller pond will be filled; the developable space within the property interior will exhibit grades of 28H:1V or flatter. The maximum post-grading slope angle will be 3H:1V, along the property perimeter and between the four resulting parcels. The pond in the northeast corner, including its immediate topography, will not be altered by site grading.

4.0 SUBSURFACE EXPLORATION

The subsurface exploration consisted of 11 borings (numbered B-1 through B-11). The boring locations were selected and staked in the field by us using a handheld Trimble Geo7X GPS unit. The boring locations are shown on our Exploration Plan, Sheet No. 2 in Appendix A.

The borings were drilled between January 24 and 26, 2023 with a CME-55 track-mounted drill rig advancing hollow-stem augers, as indicated on the boring logs presented in Appendix B. Sampling of the overburden soils and bedrock was accomplished ahead of the augers at the depths indicated on the boring logs, using 2-inch-outside-diameter (O.D.) split-spoon samplers in general accordance with the procedures outlined by ASTM D1586. Standard Penetration Tests

[1] The elevations in this report are referenced to North American Vertical Datum of 1988 (NAVD 88) in units of feet, unless noted otherwise.

(SPTs) were performed with the split-spoon samplers to obtain the standard penetration resistance or N-value[2] of the sampled materials.

Observations for groundwater were made in the borings during and at the completion of drilling. As each boring was advanced, the Drilling Foreman kept a field log of the subsurface profile noting the soil and bedrock types and stratifications, groundwater, SPT results, and other pertinent data.

Representative portions of the split-spoon samples were placed in glass jars with lids to preserve the in-situ moisture contents of the samples. The glass jars were marked and labeled in the field for identification prior to their return to our laboratory.

5.0 LABORATORY REVIEW AND TESTING

Upon completion of the fieldwork, the samples recovered from the borings were transported to our Soil Mechanics Laboratory, where they were visually reviewed and classified by the Project Geotechnical Engineer.

Laboratory testing was performed on selected soil and rock samples to estimate engineering and index properties. Laboratory testing included moisture content and Atterberg limits tests. The results of these tests are summarized in the Tabulation of Laboratory Tests in Appendix C, along with the corresponding laboratory test forms.

The boring logs, which are included in Appendix B, were prepared by the Project Geotechnical Engineer on the basis of the field logs, the visual classification of the soil and bedrock samples in the laboratory, and the laboratory test results. Soil and Rock Classification Sheets are also included in Appendix B, which describe the terms and symbols used on the boring logs. The dashed lines on the boring logs indicate an approximate change in strata as estimated between samples, whereas a solid line indicates that the change in strata occurred within a sample where a more precise measurement could be made. Furthermore, the transition between strata can be abrupt or gradual.

6.0 SUBSURFACE CONDITIONS

6.1 Stratification

Generally, the borings encountered discontinuous layers of topsoil and alluvium underlain by B-horizon topsoil, glacial clays, lacustrine clays, and the shale and limestone bedrock. More specific

[2] The standard penetration resistance, or N-value, is defined as the number of blows required to drive the split-spoon sampler 12 inches with a 140-pound hammer falling 30 inches. Since the split-spoon sampler is driven 18 inches or until refusal, the blows for the first 6 inches are for seating the sampler, and the number of blows for the final 12 inches is the N-value, which is reported as blows per foot (or bpf). Additionally, “refusal” of the split-spoon sampler occurs when the sampler is driven less than 6 inches with 50 blows of the hammer.

descriptions of the subsurface strata are provided below, and the boring logs containing detailed material descriptions are located in Appendix B.

6.1.1 Topsoil and B-Horizon

Topsoil was encountered at the ground surface in Borings B-5, B-7, and B-8, where it was 3 to 5 inches thick. A B-horizon topsoil was encountered at the surface or beneath the topsoil in Borings B-3, B-6, B-7, and B-8, where it was logged as reddish or orangish brown to dark brown and gray, moist to very moist, soft to stiff, lean clay with traces of roots and organic odors. Measured moisture contents in the B-horizon soils ranged from 24.5 to 28.3 percent. The B-horizon thickness was 1.6 to 2.0 feet thick where encountered in the borings.

6.1.2 Alluvium

Alluvial soils were encountered at the ground surface in Borings B-4 and B-10. The alluvial soils were deposited by moving water, and were generally logged as brown to dark brown and brownish gray, moist to very moist, soft to stiff, lean clay with traces of sand, gravel, and roots. Measured moisture contents in the alluvium ranged from 23.7 to 26.8 percent. The alluvium thickness was 4.5 feet in Boring B-4, and 7.0 feet in Boring B-10.

6.1.3 Glacial Soils

Glacial soils are those that have been deposited, transported, or reworked in place by the advancement or retreat of a glacier across the area.

Glacial soils were encountered at the ground surface in Borings B-1, B-2, and B-9, beneath the topsoil or B-horizon topsoil in Borings B-5 through B-8, and beneath the alluvium in Boring B-4. A deep layer of glacial soils was also encountered beneath the lacustrine soils in Boring B-7. The glacial soils in these borings were described as light brown to reddish and orangish brown and gray, moist, medium stiff to very stiff, lean and fat clay, with traces of roots and organic matter where occurring near the ground surface, and with traces of limestone fragments where occurring above the bedrock.

Measured moisture contents in the glacial soils ranged from 20.0 to 29.7 percent. Measured liquid limits of 29 to 55 percent corresponded to plasticity indices of 9 to 31 percent, classifying the tested materials as CL and CH soils under the Unified Soil Classification System (USCS), and confirming their low to high plasticity. The glacial soils were 2.0 to 12.0 feet thick where penetrated in the borings. Borings B-4 and B-7 were terminated in the glacial soils at respective depths of 9.0 and 26.5 feet.

6.1.4 Lacustrine Soils

Lacustrine (or lakebed) soils are sedimentary soils that are deposited in relatively quiescent lakes, which produce fine horizontal laminations that are characteristic of these soils. The *1971 Geologic Map of the Alexandria Quadrangle, Campbell and Kenton Counties, Kentucky* indicates that the project site is within the limits of the pre-Illinoian, ancestral Licking River valley. Prior to the start of pre-Illinoian glaciation, the Licking River flowed northward in a channel located a few miles east of the current Licking River alignment. The arrival of glacial ice in southwest Ohio blocked the

northward-flowing Licking River and caused the channel to fill with the clays and silts that were suspended in the river water. Following retreat of the glacial ice, the Licking River reestablished its northward regional drainage in its current alignment, a few miles to the west. The geologic map describes the infill deposits as follows: “Clay, silt, gravel, and sand of ancestral Licking River system…predominantly slightly silty clay…In fresh exposures, clay is plastic and thinly bedded to laminated and includes thin beds of limonitized siltstone (the Claryville Clay of Durrell, 1961…); clay leached to observed depths of more than 7 feet.”

Lacustrine soils were encountered at the ground surface in Boring B-11, below the glacial soils in Borings B-1, B-2, and B-5 through B-8, below the B-horizon soils in Borings B-3, and below the alluvium in Boring B-10. The lacustrine soils were described as brown, moist, partially or fully laminated, very stiff, lean and fat clay with undisturbed to heavily distorted bedding. The lacustrine clays in Borings B-1 through B-3 were found to include silt seams and lenses, and Boring B-3 included a 7.5-foot-thick layer of light brown, slightly moist, dense silt (N = 25 to 32 blows/foot) with occasional fat clay interbeds.

Measured moisture contents in the lacustrine soils on the CCEPA site ranged from 21.1 to 33.6 percent. Measured liquid limits of 37 to 59 percent corresponded to plasticity indices of 18 to 32 percent, classifying the tested materials as CL and CH soils under the USCS, and confirming their low to high plasticity. The lacustrine soils were 18.5 feet thick where penetrated in Boring B-7. Borings B-1 through B-6, B-8, B-10, and B-11 were terminated in the lacustrine soils at depths of 11.5 to 31.5 feet, after penetrating up to 29.5 feet of lacustrine soils.

Lacustrine clays encountered on project sites west of US Highway 27 have exhibited liquid limits of over 70 percent, and an absence of silt interbeds. It is likely that the *overall* plasticity of the lacustrine clays encountered in the CCEPA borings has been reduced by the presence of the silt interbeds, resulting in the measured liquid limits ranging from only 37 to 59 percent; however, we note that the *clay* component of the lacustrine clays may still be plastic and expansive.

6.1.5 Bedrock

The overburden soils at the site are underlain by bedrock consisting of interbedded shale and limestone layers. The bedrock was encountered only in Boring B-9, at a depth of 12.0 feet (El. 738.7). The *1971 Geologic Map of the Alexandria Quadrangle, Campbell and Kenton Counties, Kentucky* indicates that the shale and limestone bedrock encountered in Boring B-9 is part of the Ordovician Kope Formation, which the referenced USGS map describes as consisting of interbedded shale and limestone with shale comprising approximately 75 to 80 percent of the formation, with limestone comprising the balance. The upper contact of the Kope Formation with the overlying Fairview Formation is around El. 800 at the project site.

Bedrock in the Northern Kentucky Area is typically categorized as highly weathered, weathered, or unweathered, based on the degree of weathering of the shale component. The highly weathered zone is typically the uppermost zone, wherein the shale is brown to olive brown in color and has almost weathered to a clay. In the intermediate weathered zone, the shale is typically olive brown with occasional gray and is stronger than the shale in the highly weathered

zone. In the unweathered parent zone, the shale is gray and is stronger than the shale in the weathered zones. Each zone is interbedded with limestone. It is not uncommon for one or both of the weathered bedrock zones to be absent due to differential weathering, erosion, or prior excavation. The Rock Classification Sheet, which is included in Appendix B, describes the varying degrees of weathering along with the rock strength descriptions that are used on the appended boring logs.

Regarding the limestone, these layers are predominantly unweathered, and their strengths are estimated to range from medium strong to very strong (i.e., uniaxial compressive strengths ranging from 4,000 psi to upwards of 30,000 psi). Occasionally, layers are encountered within the bedrock profile where groundwater seepage is concentrated, and weathering of the limestone layers is more advanced.

Only the highly weathered zone of the interbedded, highly weathered, shale and limestone bedrock was encountered in Boring B-9. The strength of the highly weathered shale was described as extremely weak. A measured moisture content of a sample of the highly weathered shale was 11.5 percent.

6.2 Groundwater Conditions

As mentioned in Section 4.0, groundwater observations were made in the borings during and at the completion of drilling. No groundwater was encountered in the borings during or at completion of drilling; these measurements are documented on the boring logs in Appendix B.

Based on our local experience, groundwater seepage is anticipated along the overburden soil/bedrock interface, along limestone layers within the bedrock, and in any saturated zones of native soils that may occur below the groundwater table. Locally concentrated flow may occur along fractures in the bedrock. Additionally, groundwater levels, seepage amounts, and flow rates are expected to vary with time, location, season of the year, and amounts of precipitation.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on our engineering reconnaissance of the site, the borings, visual examination of the recovered samples, the laboratory test results, our understanding of the proposed project, our engineering analyses, and our experience as Geotechnical Engineers in the Northern Kentucky Area, the following preliminary conclusions and recommendations are presented.

7.1 Subsurface Conditions

The project site is within the limits of the now-buried, ancestral Licking River valley, which is known to be filled with the highly-plastic, lacustrine Claryville Clays. Lacustrine Claryville Clays encountered on project sites west of US Highway 27 have exhibited liquid limits of over 70 percent, and an absence of silt interbeds. It is likely that the *overall* plasticity of the lacustrine clays encountered in the CCEPA borings has been reduced by the presence of the silt interbeds, resulting in the measured liquid limits ranging from only 37 to 59 percent; however, we note that the *clay* component of the lacustrine clays may still be plastic and expansive.

The borings also encountered lean to fat, glacial clays above and below the lacustrine clays. The glacial clays exhibited liquid limits ranging from 29 to 55 percent.

The lacustrine and glacial clays were capped by lean, B-horizon clays in four of the borings. The glacial clays in Boring B-9 were underlain by the interbedded shale and limestone bedrock.

7.2 Excavation Support

Excavation support should be the responsibility of the Contractor. Excavation support should be designed and implemented such that excavations are adequately ventilated and braced, shored, and/or sloped in order to protect and ensure the safety of workers within and near the excavations and to protect adjacent ground, slopes, structures, and infrastructure. Federal, state, and local safety regulations should be satisfied. The analyses, discussions, conclusions, and recommendations throughout this report are not to be interpreted as pre-engineering compliance with any safety regulation.

7.3 Site Preparation and Earthwork

As stated in Section 2.0, earthwork for this project will involve cuts and fills up to 26 and 30 feet, respectively.

7.3.1 Site Preparation

The initial preparation of the site for grading should include the removal of vegetation, heavy root systems, and topsoil (not to include any stiff, B-horizon soils) from the proposed cut and fill areas. The topsoil may be stockpiled for future use on the completed cut and fill slopes or in landscaped areas, if permitted by specification, whereas the vegetation, including the heavy root systems, should be disposed of off site in accordance with applicable regulations.

We are not aware of any existing structures, pavements, or foundation remnants on the property. However, if encountered during grading, existing structures and pavements within the grading limits should be demolished, and the foundations and abandoned utilities removed. Concrete, asphalt, rubble, and debris associated with those structures and pavements should be disposed of off site.

7.3.2 Undercutting and Subgrade Preparation

Following clearing the site of the existing vegetation and topsoil, we recommend that any undocumented fill and surficial low-density, very soft to medium stiff, native soils that exist within the proposed fill areas, and along the transitions between cut and fill areas, be undercut to expose stiff to very stiff, native clayey soils. Undocumented fill and low-density soils are considered to be compressible and unsuitable to support compacted and tested fills, pavements, or foundations. Where undocumented fill and surficial low-density native soils exist at the toes of the proposed fill slopes, the undercuts should continue outside the limits of the proposed fill at a 3H:1V, outward and downward projection until stiff native soils are encountered. Based on the boring information, the surficial low-density native soils are estimated to be approximately 2 feet thick outside of the drainage valley bottoms and swales. In the drainage valleys and swales, the sediments are estimated to be on the order of up to 5 feet thick.

After the above operations are completed, and after the required excavations in the cut areas have been made, the exposed subgrade should be thoroughly proofrolled using a heavily loaded piece of equipment under the review of the Project Geotechnical Engineer or his/her representative. Soft or yielding soils observed during the proofrolling should be undercut to stiff, non-yielding, cohesive soils.

Where undercuts are performed, the excavations should be backfilled with new compacted and tested fill satisfying the material and compaction requirements presented in Section 7.3.4. The undercut soils may be reused provided that they conform to the recommendations contained in this report regarding acceptable fill materials. We recommend that the Contract Documents include a bid item for the recommended undercutting, as deemed necessary, and the replacement with new compacted and tested fill on a “per cubic yard of in-place compacted fill” basis. Where undocumented fill and/or low-density soils are along slopes where continuous benching is recommended for the placement of new compacted fill slopes, the removal of these soils should not be considered as undercut for payment, but rather should be considered incidental with the bulk earthwork.

7.3.3 Excavatability

Experience indicates that the overburden soils can be excavated with conventional earthwork construction equipment (i.e., dozers, hoes, loaders, scrapers, etc.). The bedrock was only encountered in Boring B-9, and at a depth that is not expected to cause any issues with site grading. If the highly weathered bedrock is encountered during grading, ripping may be necessary to loosen limestone layers in the bedrock so that it can be picked up. The borings suggest that the weathered and gray, unweathered bedrock zones will not be encountered during bulk site grading.

7.3.4 Fill Materials, Placement, and Compaction

Fill materials should consist of approved on-site, non-organic, clayey soils or approved borrow materials that are relatively free of topsoil, vegetation, trash, construction or demolition debris, frozen materials, particles over 6 inches in maximum dimension, or other deleterious materials.

The fill should be placed in shallow level lifts (or layers), 6 to 8 inches in loose thickness. Each lift should be moisture-conditioned to within the acceptable moisture content range provided in Table 1, and compacted with a sheepsfoot roller or self-propelled compactor to at least the minimum percent compaction indicated in the same table. Moisture-conditioning may include: aeration and drying of wetter soils; wetting of drier soils; and/or thoroughly mixing wetter and drier soils into a uniform mixture.

Table 1. Percent compaction and moisture-conditioning recommendations for fill and backfill.

Area	Minimum Percent Compaction[a,b]	Acceptable Moisture Content Range[c]
Structural ≤ 20 feet below proposed grades[d]	98% of SPMDD	-2% to +3% of OMC
Structural > 20 feet below proposed grades[d]	95% of MPMDD	-2% to +3% of OMC

Notes:
[a] SPMDD = standard Proctor maximum dry density determined from ASTM D698.
MPMDD = modified Proctor maximum dry density determined from ASTM D1557.
[b] For granular soils that do not exhibit a well-defined moisture-density relationship, refer to Table 2 for minimum relative density requirements.
[c] OMC = optimum moisture content determined from ASTM D698 or ASTM D1557.
[d] Structural fill is defined as fill and backfill located within the zones of influence of structures. Because the future building and pavement locations have not yet been determined, all fill placed for site grading should be considered structural.

Where fill is placed on sloping terrain that is steeper than 6H:1V, the fill should be placed on continuous horizontal benches up the sloping terrain with the initial bench having a minimum width of 15 feet and each subsequent bench being at least 5 feet wide. The initial 15-foot-wide bench should be located at the toe of the proposed fill, unless noted otherwise. The benching operations should remove surficial medium stiff or softer soils and expose stiff native soils or undisturbed, intact bedrock on the surfaces of the benches. The benches should not be made until the fill is ready to be placed. If groundwater seepage is noted on the benches, the Project Geotechnical Engineer should be contacted for underdrainage recommendations before the soils are replaced and compacted.

7.3.5 Expansive Soils

A wide variety of clay soils were encountered in the borings, ranging from lean clays with a predominantly low to moderate expansion (shrink/swell) potential to fat clays with moderate to high expansion potential. The highly weathered to weathered shale portion of the bedrock (if encountered), in our opinion, has low to moderate expansion potential. Upon exposure to subsurface moisture, the swell/expansion potential of the fat clays can lead to heave of floor slabs and lightly loaded building foundations, and shrinkage of fat clays can lead to settlement.

For building and pavement construction, it is desirable to have footing, floor slabs, and pavements supported by at least a few feet of stiff, non-expansive, lean clay or lean, compacted and tested fill. On sites where mass grading includes deep cuts and thick fills, this can be provided for by selective grading if zones of lean and fat clays are easily identifiable in cut areas, and can be easily segregated such that the fat clays can be placed in the deeper portions of the thick fills, and lean clays can be placed at and near the surface of the thick fills. Where final grades in cut areas expose fat, expansive clays, they can be overexcavated and replaced with lean, non-expansive fills within the limits of future buildings and pavements.

A second technique commonly employed involves lime or chemical stabilization of fat, expansive clays within specific areas and depths in order to mitigate the expansion potential of the soils directly supporting pavements, floor slabs, and foundations.

Two issues will make selective grading and/or lime or chemical stabilization difficult at the CCEPA site. The first is that the lean and fat clays within the cut areas appear to be interbedded, and their boundaries cannot be reliably predicted within the cut areas across the site on the basis of depth or elevation. The second is that the actual building and pavement locations, and the actual foundation bearing elevations, are unknown at this time.

In our opinion, CCEPA has two options for mass grading of the subject property. Option 1 would involve establishing final grades across the site without regard for soil plasticity and expansion potential. It would then be the responsibility of the individual parcel developers to evaluate the plasticity and expansion potential of the near-surface soils in building and pavement areas, and to mitigate the risks of expansion and heave either by selective overexcavation of the expansive soils and replacement with imported, lean clay soils, or by overexcavation and lime or chemical treatment of some portion of the expansive soils.

Option 2 would involve overexcavating cut areas by an additional 4 feet below final grades, grading the fill areas with the on-site, cut soils to within 4 feet of final grades, and then performing lime or chemical treatment of the upper 4 feet of soils across the site as they are placed and compacted. Where chemical stabilization is performed, the resulting treated clay soils should have a liquid limit not greater than 45 percent and a plasticity index not greater than 24 percent. Based on our experience as geotechnical engineers in the Northern Kentucky Area and on previous project experience in the area, chemical stabilization of high plasticity fat clay soils using lime kiln dust (LKD) may be considered; however, additional testing would need to be completed to determine the application rate of LKD required to modify the on-site fat clay soils to satisfy the above criteria prior to beginning earthwork operations. A specialty contractor may also be consulted regarding lime stabilization methods.

In our opinion, the cost of Option 2 would be prohibitively expensive, and would still carry a risk of being ineffective or moot if a potential developer intended to construct a new building either with a basement or set into a hillside on a given parcel, or otherwise significantly change grades to accommodate their desired site layout. In our opinion, the most viable economic option for CCEPA would be to use Option 1, i.e., to establish final grades across the property by mass grading without regard for soil plasticity and expansion potential. In this case, we recommend that CCEPA provide potential developers with a copy of this report in order to notify them of the subsurface conditions, and of the responsibility they would assume to evaluate the plasticity and expansion potential of the near-surface soils in proposed building and pavement areas, and to mitigate the risks of expansion and heave within their developments.

7.3.6 Earthwork Design and Construction Considerations

We recommend that permanent cut and fill slopes for this project be designed not steeper than 3H:1V. Gentler slopes should be used whenever possible for ease of maintenance. Additionally,

we recommend that the fill slopes be slightly overbuilt and then trimmed back to the design slope to achieve a well-compacted surface. Silt and/or sand soils should also be excluded from the surficial 5 feet of the fill slopes, as these materials are more susceptible to erosion.

Topsoil should be track-compacted on the proposed cut and fill slopes. We recommend that a maximum of 6 inches of topsoil be placed on the slopes.

For the purposes of estimating earthwork, we recommend that a shrinkage factor be applied to the clayey fill soils. In our opinion, a 10-percent shrinkage factor should be used for the overburden clayey soils. We note that this value is approximate, as conditions across the site may vary.

Groundwater is not expected to have a significant adverse effect on the proposed earthwork construction; however, the Contractor must be prepared to remove seepage that accumulates in excavations, on fill surfaces, or at subgrade levels.

Due to the moisture-sensitivity of placing clay soils as fill, we recommend that the earthwork operations be carried out during the drier season of the year and that a sufficient gradient be maintained at the ground surface to prevent ponding of surface water. In our experience, the weather conditions are historically more favorable for earthwork during the months of May through October in the Northern Kentucky Area. Regardless of the time of year, asphalt, concrete, or fill should not be placed over frozen or saturated soils, and frozen or saturated soils should not be used as compacted fill or utility backfill.

Best management practices (BMPs) should be implemented to reduce the effects of erosion and the siltation of adjacent properties. Upon completion of earthwork, disturbed areas should be stabilized. It is also recommended that riprap and/or suitable armoring be used at the outlets of storm sewers and headwalls to reduce flow velocities and protect against erosion.

7.4 Settlement

A detailed settlement analysis was beyond the scope of this report. We recommend that settlement analyses be run to estimate the settlement of the deep fills under their own weight, and settlement of the deep underlying native soils that would be surcharged by the weight of new fill. The combined settlement from the new fill and the underlying soils could exceed a couple to several inches, and may take multiple years to occur. This amount of settlement is generally not acceptable for structures. There are strategies to accelerate the settlement prior to construction, such as wick drains in the native soils, and/or blanket drains in the new fill soils, that could be considered. However, the need for such settlement mitigation would depend on the location of structures at the site. It is possible that no mitigation would be necessary, depending on the elapsed time from completion of bulk filling to building construction, and depending on building locations. At a minimum, we recommend that settlement plates be included in the deep fill areas, so that settlement can be monitored during and following earthwork. This monitoring would be very beneficial for future development.

7.5 Seismic Site Classification

Based on the borings and our interpretation of the 2018 Edition of the Kentucky Building Code (2018 KBC), it is our opinion that Site Class C is applicable for this project site.

7.6 Building Foundations

Detailed recommendations for building foundations cannot be made until final site grading details, building details and foundation loads are known. However, for preliminary planning purposes, it can be assumed that typical single-story high bay warehouse type structures, with column loads and wall loads on the order of 150 kips and 6 kips per lineal foot, respectively, can be supported on shallow spread footings bearing in the new compacted and tested fill, stiff to very stiff native soils or undisturbed intact bedrock. Net allowable bearing pressures on the order of 3,000 pounds per square foot are typical for these site conditions. Wherever fat clays are exposed at perimeter footing bearing levels, the footings should be deepened to 42 inches below adjacent exterior grades to reduce foundation movements due to seasonal shrinking and swelling of the fat clays.

7.7 Utility Construction

Excavation difficulty in utility trenches will vary with location, depth of utility, and depth of cuts made to development grades on the ridgetops and slopes. If the combined depths of bulk grading cuts and utility trenches extend into the weathered and unweathered bedrock, there will be excavation difficulties within the utility trenches. The difficulty of making the trench excavations in the highly weathered to weathered bedrock arises because of the need to shear limestone layers from the bottoms and sides of the trenches. Excavation difficulty will substantially increase in utility trenches that penetrate into the unweathered bedrock, and will necessitate the use of large trackhoes with ripping teeth and/or the use of rock saws or rock breakers/hoe rams.

We anticipate that select granular backfill will be used as pipe bedding and pipe zone backfill for the utilities. We recommend that the granular backfill be limited to the pipe bedding and minimum required pipe/utility cover. The remainder of the utility trenches should be backfilled with flowable fill or compacted clayey soils up to design subgrade elevation to reduce the potential for water collecting in these trenches and being absorbed by the surrounding clays, causing heave.

Granular bedding and backfill that exhibits a well-defined moisture-density relationship should be compacted and moisture-conditioned per the requirements presented in Table 1; otherwise, the granular material should be compacted to at least the minimum relative densities indicated in Table 2.

Table 2. Relative density compaction recommendations for granular fill and backfill.

Area	Minimum Relative Density[a,b]
Structural ≤ 20 feet below proposed grades[c]	80%
Structural > 20 feet below proposed grades[c]	85%

Notes:
[a] Relative density evaluated on the basis of the maximum and minimum index densities determined from ASTM D4253 and D4254, respectively.
[b] For granular soils that exhibit a well-defined moisture-density relationship, refer to Table 1 on page 9 for minimum percent compaction and moisture-conditioning requirements.
[c] Structural fill is defined as fill and backfill located within the zones of influence of structures. Because the future building and pavement locations have not yet been determined, all fill placed for site grading should be considered structural.

Prior to placing the bedding and utilities within the utility trench, soft, saturated, and compressible material should be removed from the bottom of the trench, exposing moist stiff soils or undisturbed bedrock. Utility trench backfill should be placed in 6- to 8-inch-thick lifts with each lift compacted to at least the specified degree of compaction. Under no circumstances should the backfill be flushed in an attempt to obtain compaction.

If flowable fill is used, it should have a design strength of at least 30 psi for stability and not greater than 100 psi for future excavatability.

7.8 Pavement Design and Construction

Pavements for this project should be designed in accordance with expected axle loads, frequency of loading, and the properties of the subgrade. The subgrade properties should be evaluated by field California Bearing Ratio (CBR) or plate load tests after final grading is completed, or by the correlation of field density tests to laboratory CBR tests.

Proposed pavement subgrades should be proofrolled with a heavily loaded piece of equipment under the review of the Project Geotechnical Engineer or his/her representative. Soft or yielding soils observed during the proofroll should be undercut to stiff, non-yielding soils; however, the depth of undercut below subgrade may be limited to 3 feet in light-duty traffic areas and 4 feet in heavy-duty traffic areas. The undercut should be backfilled with new compacted fill satisfying the material and compaction requirements presented in Section 7.3. We recommend that the Contract Documents include an item for undercutting unsuitable soils and replacing them with new compacted and tested fill on a “per cubic yard of compacted replacement fill” basis.

In lieu of undercutting soft or yielding soils to the maximum undercut depths specified above (i.e., 3 feet for light-duty traffic and 4 feet for heavy-duty traffic), the subgrade may be stabilized using a biaxial or triaxial geogrid (e.g., Tensar BX-1200 or TriAx TX160 or equivalent) and at least 12 inches of compacted crushed stone. We recommend that the thickness of undercut and compacted crushed stone be field-evaluated based on the conditions encountered during

construction and using a test section. This alternative should also be considered if weather, other site conditions, or the project schedule make earthwork activities with clayey soils impractical.

Prior to the placement of pavement or aggregate base, where provided, we recommend that the top 8 inches of clayey subgrade be scarified and recompacted per the requirements presented in Table 1.

If the proposed pavement section includes an aggregate base, we recommend that caution be exercised so that the proposed aggregate base does not become saturated during or after construction. Water trapped in the aggregate base is capable of freezing, causing it to expand within the voids it occupies. Consequently, ice lenses may form and potentially heave the pavement. Furthermore, the thawing process can soften underlying cohesive subgrades, which reduces the pavement support provided by the subgrade, giving rise to “pumping” of the pavements under loads. Preferably, the aggregate base should be a free-draining material with provisions for draining the base through a system of underdrains.

Surface drainage should be directed away from the edges of proposed or existing pavements so that water does not pond next to pavements or flow onto pavements from unpaved areas. Such ponding or flow can cause deterioration of pavement subgrades and premature failure of pavements. If drainage ditches are used to intercept surface water before it reaches the pavements, the ditches should have an invert at least 6 inches below the pavement subgrade, and have a sufficient longitudinal gradient to rapidly drain the ditches and prevent ponding of water. In those areas where exterior grades do not fully slope away from the edges of the proposed pavement, we recommend that edge drains be installed along the perimeter of the pavement.

7.9 Final Geotechnical Explorations

Following completion of mass grading, we recommend that a final geotechnical exploration be performed for any future improvements to be constructed on any of the four final parcels. This preliminary geotechnical report contains conclusions and recommendations applicable only for mass grading of the property and for installation of any utilities and pavement extensions necessary to prepare the individual parcels for development. This preliminary report does not include geotechnical conclusions and design recommendations necessary for specific structures, utilities, and pavements to be constructed on any of the four individual parcels following completion of mass grading. As discussed in Section 7.3.5, following the completion of mass grading, the plasticity and expansion potential of the near-surface soils in each parcel will need to be evaluated by a Kentucky-licensed Geotechnical Engineer in specific building and pavement areas so that recommendations can be made for mitigation of the risks of soil expansion and heave.

8.0 RECOMMENDED ADDITIONAL SERVICES

The conclusions and recommendations given in this preliminary geotechnical report are based on: Geotechnology’s understanding of the proposed mass grading, as outlined in this report; site

observations; interpretation of the exploration data; and our experience. Since actual subsurface conditions between boring locations may vary from those encountered in the borings, the recommendations made in this preliminary report are subject to adjustment in the field based on the subsurface conditions encountered during mass grading. Therefore, we recommend that Geotechnology be retained to provide construction observation services as a continuation of the design process to confirm the recommendations in this preliminary report and to revise them accordingly to accommodate differing subsurface conditions. Construction observation is intended to enhance compliance with project plans and specifications. It is not insurance, nor does it constitute a warranty or guarantee of any type. Regardless of construction observation, contractors, suppliers, and others are solely responsible for the quality of their work and for adhering to plans and specifications.

We also reiterate the recommendation made in Section 7.7 that following completion of mass grading, a final geotechnical exploration should be performed by a Kentucky-licensed Geotechnical Engineer for any future improvements to be constructed on any of the four final parcels. This preliminary geotechnical report contains conclusions and recommendations applicable only for mass grading of the property and for installation of any utilities and pavement extensions necessary to prepare the individual parcels for development, and does not include geotechnical conclusions and design recommendations necessary for structures, utilities, and pavements to be constructed on any of the four individual parcels following completion of mass grading.

9.0 LIMITATIONS

This preliminary geotechnical report has been prepared on behalf of, and for the exclusive use of, the Campbell County Economic Progress Authority for specific application to the named project as described herein. If this report is provided to other parties, it should be provided in its entirety with all supplementary information. In addition, Campbell County Economic Progress Authority should make it clear that the information is provided for factual data only, and not as a warranty of subsurface conditions presented in this report.

Geotechnology has attempted to conduct the services reported herein in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality and under similar conditions. The recommendations and conclusions contained in this report for mass grading of the subject site are professional opinions. The report is not a bidding document and should not be used for that purpose.

Our scope for this phase of the project did not include any environmental assessment or investigation for the presence or absence of wetlands or hazardous or toxic materials in the soil, surface water, groundwater, or air, on or below or around this site. Our scope did not include an assessment of the effects of flooding and erosion of creeks or rivers adjacent to or on the project site.

The analyses, conclusions, and recommendations contained in this preliminary report are based on the data obtained from the subsurface exploration. The field exploration methods used indicate subsurface conditions only at the specific locations where samples were obtained, only at the time they were obtained, and only to the depths penetrated. Consequently, subsurface conditions may vary gradually, abruptly, and/or nonlinearly between sample locations and/or intervals.

The conclusions or recommendations presented in this preliminary report should not be used without Geotechnology's review and assessment if the nature, design, or location of the facilities is changed, if there is a substantial lapse in time between the submittal of this report and the start of work at the site, or if there is a substantial interruption or delay during work at the site. If changes are contemplated or delays occur, Geotechnology must be allowed to review them to assess their impact on the findings, conclusions, and/or design recommendations given in this report. Geotechnology will not be responsible for any claims, damages, or liability associated with any other party's interpretations of the subsurface data, or with reuse of the subsurface data in this report.

The recommendations included in this report have been based in part on assumptions about variations in site stratigraphy that may be evaluated further during earthwork and foundation construction. Geotechnology should be retained to perform construction observation and continue its geotechnical engineering service using observational methods. Geotechnology cannot assume liability for the adequacy of its recommendations when they are used in the field without Geotechnology being retained to observe construction.

A copy of "Important Information about This Geotechnical-Engineering Report" that is published by the Geotechnical Business Council (GBC) of the Geoprofessional Business Association (GBA) is included in Appendix D for your review. The publication discusses some other limitations, as well as ways to manage risk associated with subsurface conditions.

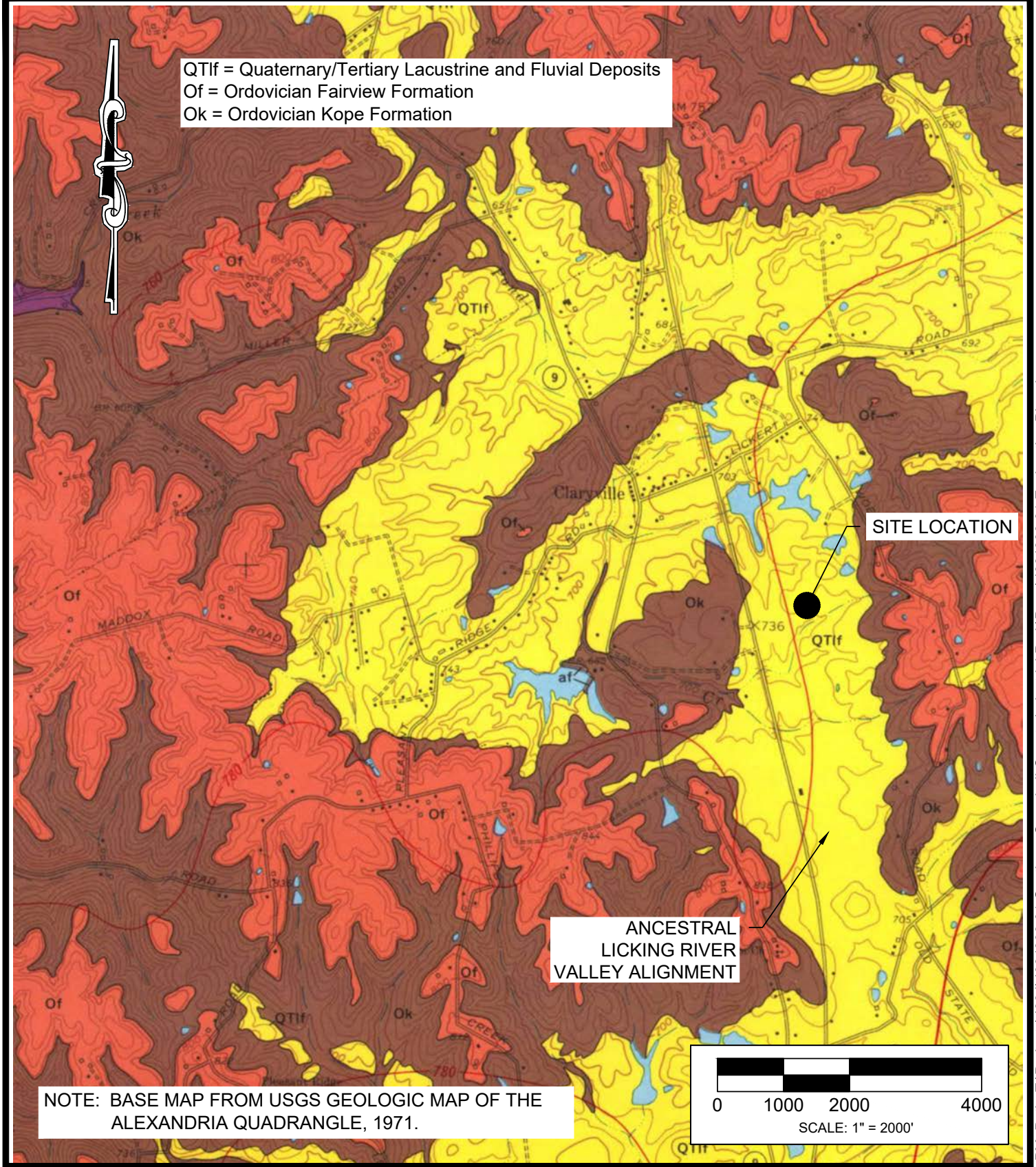
REFERENCES

Gibbons, A.B. (1971). “Geologic Map of the Alexandria Quadrangle, Campbell and Kenton Counties, Kentucky,” United States Geological Survey.

APPENDIX A – PLANS

Site Location Plan, Sheet No. 1

Exploration Plan, Sheet No. 2



NOTE: BASE MAP FROM USGS GEOLOGIC MAP OF THE ALEXANDRIA QUADRANGLE, 1971.

GEOTECHNOLOGY

SITE LOCATION PLAN

Client: CAMPBELL COUNTY ECONOMIC PROGRESS AUTHORITY

Project: SOUTH CAMPBELL COUNTY INDUSTRIAL PARK

Location: CLARYVILLE, KENTUCKY

Date: 3/28/2023 | Project No.: J034993.01 | Sheet No.: 1

Date Printed: 3/28/2023 7:14 PM Path: T:\Projects\J034\J034993.01-Southern Campbell County Industrial Park\Draw\J034993.01 Exploration Plan.dwg

Date Printed: 3/28/2023 6:49 PM Path: T:\Projects\J034\J034993.01-Southern Campbell County Industrial Park\Draw\J034993.01 Exploration Plan.dwg

PARCEL = 12.08 AC.
PAD = 9.00 AC.

PARCEL = 19.52 AC.
PAD = 15.04 AC.

PARCEL = 5.00 AC.
PAD = 4.56 AC.

PARCEL = 5.02 AC.
PAD = 3.30 AC.

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11

DIANA BARLOW
999-99-22-705.00
DB 307 PG 773
1.18 AC

RAYMOND W & MARY L HENZERLING
999-99-23-124.00
DB 101 PG 480
0.25 AC

GOSHORN DONALD L & CHARLOTTE M
999-99-23-073.00
DB 116 PG 642
0.37 AC

1.03 AC

NKY WATER DIST
999-99-35-778.01
DB 175 PG 228
1.43 AC

JAMES F KRAMER
999-99-23-236.00
DB 292 PG 430
20.8 AC

JAMES KRAMER
999-99-23-263.00
DB 292 PG 420
11.19 AC

JAMES F KRAMER
999-99-23-237.00
DB 292 PG 425
39.0 AC

50.0000' ACCESS & UTILITY EASEMENT

CAMPBELL CO INDUSTRIAL AUTHORITY
999-99-35-473.07
DB 192 PG 113
5.02 AC

THE HILLSHIRE BRANDS
999-99-35-473.09
DB 325 PG 331
2.58 AC

SARA LE
999-9
DB
4

KUER ADAM V TRUST
99-99-23-016.00
DB 265 PG 213
2.24 AC

LIMITS OF POTENTIAL 1.14 ACRE KYTC ROW ACQUISITION

US 27

BOB HUBER DR

CAMPBELL CO INDUSTRIAL AUTHORITY
999-99-35-473.08
DB 192 PG 113
0.16 AC

CAMPBELL CO INDUSTRIAL AUTHORITY
999-99-35-473.13
DB 192 PG 113
0.4 AC

CAMPBELL CO INDUSTRIAL AUTHORITY
999-99-35-473.06
DB 192 PG 113
2.36 AC

CROWLEY ENZWEILER PROFESSIONAL
999-99-23-415.00
DB 319 PG 477
6.73 AC

BUD POGUE WAY

CAMPBELL CO INDUSTRIAL AUTHORITY
999-99-35-473.00
DB 192 PG 113
2.13 AC

ALYNN INVESTMENTS SOUTH LLC
999-99-35-473.12
DB 17 PG 247
1.12 AC

INAUER V TRUST
99-23-016.04
265 PG 213
42 AC

DIANA L BARLOW
999-99-22-789.02
DB 307 PG 777
3.81 AC

WEDA INVESTMENTS LLC
999-99-23-782.00
DB 303 PG 118
2.84 AC

INDICATES TEST BORING LOCATIONS

0 50 100 200
SCALE: 1" = 100'

NOTE: BASE MAP RECEIVED FROM CARDINAL ENGINEERING ON JANUARY 17, 2023 AND AERIAL IMAGERY FROM LINKGIS.

GEOTECHNOLOGY

Drawn by: ACC
Checked by: JSN
Approved by: ACC

Revisions

Date:	Description:

EXPLORATION PLAN

SOUTHERN CAMPBELL COUNTY INDUSTRIAL PARK
CLARYVILLE, KENTUCKY

THIS DRAWING IS NOT TO THE INDICATED SCALE IF THIS BAR DOES NOT MEASURE 1 INCH

Scale: AS NOTED

Date: 3/28/2023

Project No.: J034993.01

Client:
CAMPBELL COUNTY ECONOMIC PROGRESS AUTHORITY

Sheet No.:
2

APPENDIX B – BORING INFORMATION

Boring Logs

Soil Classification Sheet

Rock Classification Sheet

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-1
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
719.3	Ground Surface	0.0	0							
717.3	Brown moist medium stiff to stiff LEAN CLAY, trace organics and organic odor (glacial).	2.0		I	1	SS	3-2-3	10	56	1.0
	Brown, trace light brown moist partially laminated very stiff FAT CLAY, trace organics (lacustrine).			I	2	SS	4-4-5	16	89	3.5
712.3		7.0	5	I	3	SS	7-8-8	14	78	3.0
	Brown, trace gray and light brown very stiff FAT CLAY with silt seams and distorted laminated bedding (lacustrine).			I	4	SS	5-5-6	16	89	4.5
			10	I	5	SS	5-5-5	18	100	3.0
				I	6	SS	5-5-7	18	100	4.25
			15	I	7	SS	6-7-7	18	100	2.5
				I	8	SS	5-6-8	18	100	3.0
			20	I	9	SS	6-7-9	18	100	2.5
697.8		21.5								
	Bottom of test boring at 21.5 feet.		25							
			30							

Datum: NAVD 88
Surface Elevation: 719.3 ft.
Date Started: 1/26/2023
Date Completed: 1/26/2023
Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.
Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25
Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-2
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
764.7	Ground Surface	0.0	0							
762.7	Reddish-brown moist very stiff LEAN CLAY, trace roots (glacial).	2.0		I	1	SS	3-4-4	16	89	2.5
760.2	Reddish-brown to light brown moist very stiff FAT CLAY, trace roots, oxide stains (glacial).	4.5		I	2	SS	6-7-9	8	44	3.0
	Brown moist very stiff LEAN CLAY with heavily distorted laminated bedding and silt seams (lacustrine) (CL).		5	I	3	SS	8-8-9	18	100	4.5
755.2		9.5		I	4	SS	6-6-9	18	100	4.5
752.7	Light brown moist stiff SILT with trace clay (lacustrine).	12.0	10	I	5	SS	8-8-9	18	100	2.5
	Brown moist very stiff FAT CLAY with distorted laminated bedding and silt lenses (lacustrine) (CH).			I	6	SS	8-8-7	18	100	3.5
			15	I	7	SS	6-8-7	18	100	4.5
				I	8	SS	9-9-8	18	100	4.0
			20	I	9	SS	5-6-7	18	100	2.75
				I	10	SS	5-5-5	14	78	2.5
			25							
734.7		30.0		I	11	SS	5-5-7	18	100	3.25
			30							
	Bottom of test boring at 30.0 feet.		35							

Datum: NAVD 88
Surface Elevation: 764.7 ft.
Date Started: 1/26/2023
Date Completed: 1/26/2023
Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.
Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25
Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-3
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
756.4	Ground Surface	0.0	0							
	Light brown and brown moist stiff LEAN CLAY with trace roots (B-horizon).			I	1	SS	3-3-5	8	44	
754.4		2.0								
	Brown and light brown moist very stiff FAT CLAY with laminated bedding and silt seams (lacustrine) (CH).			I	2	SS	5-5-8	12	67	3.0
			5	I	3	SS	12-11-11	14	78	4.5
749.4		7.0								
	Light brown slightly moist dense SILT with occasional laminated fat clay interbeds (lacustrine).			I	4	SS	11-13-17	16	89	
			10	I	5	SS	11-12-20	18	100	
				I	6	SS	23-18-7	4	22	4.5
741.9		14.5								
	Light brown and brown moist stiff to very stiff FAT CLAY with distorted laminated bedding and silt lenses (lacustrine).		15	I	7	SS	8-8-11	12	67	3.0
				I	8	SS	9-9-12	18	100	4.25
736.9		19.5								
	Light brown and brown moist stiff to very stiff LEAN CLAY with distorted laminated bedding (lacustrine) (CL).		20	I	9	SS	12-14-15	12	67	3.75
			25	I	10	SS	9-9-9	14	78	2.5
729.4		27.0								
	Brown moist very stiff FAT CLAY with heavily distorted bedding (lacustrine).		30	I	11	SS	10-10-11	14	78	3.5
724.9		31.5								
	Bottom of test boring at 31.5 feet.		35							

Datum: NAVD 88
Surface Elevation: 756.4 ft.
Date Started: 1/26/2023
Date Completed: 1/26/2023
Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.
Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25
Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-4
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
732.2	Ground Surface	0.0	0							
730.2	Dark brown moist medium stiff to stiff LEAN CLAY, trace roots (alluvium).	2.0		I	1	SS	3-3-4	10	56	
727.7	Brown moist to very moist soft LEAN CLAY, trace sand, gravel, and organics (alluvium).	4.5		I	2	SS	4-4-4	18	100	0.5
	Brown, trace gray moist very stiff FAT CLAY with oxide stains (glacial).		5	I	3	SS	7-9-9	18	100	3.75
723.2		9.0		I	4	SS	6-8-10	18	100	4.5
	Bottom of test boring at 9.0 feet.		10							
			15							
			20							
			25							
			30							

Datum: NAVD 88
Surface Elevation: 732.2 ft.
Date Started: 1/24/2023
Date Completed: 1/24/2023
Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.
Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25
Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-5
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
724.8	Ground Surface	0.0	0							
724.5	TOPSOIL (3 inches)	0.3		I	1	SS	3-3-4	8	44	2.0
	Brown to reddish brown and gray moist stiff to very stiff LEAN CLAY, trace organics (glacial).			I	2	SS	4-4-5	16	89	2.0
720.3		4.5	5							
	Reddish brown, trace gray moist very stiff FAT CLAY (glacial).			I	3	SS	4-5-6	16	89	1.5
717.8		7.0								
	Brown, trace gray moist very stiff FAT CLAY with laminated bedding (lacustrine).			I	4	SS	5-5-7	16	89	2.5
			10	I	5	SS	6-6-8	16	89	3.0
713.3		11.5								
	Bottom of test boring at 11.5 feet.		15							
			20							
			25							
			30							

Datum: NAVD 88
Surface Elevation: 724.8 ft.
Date Started: 1/24/2023
Date Completed: 1/24/2023

Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.

Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25

Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-6
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
716.5	Ground Surface	0.0	0							
714.5	Light brown and gray moist to very moist soft to stiff LEAN CLAY, trace organics and organic odor (B-horizon).	2.0		I	1	SS	1-1-1	16	89	0.25
712.0	Brown, gray, and dark brown moist very stiff FAT CLAY, trace organics (glacial).	4.5		I	2	SS	5-5-5	18	100	3.0
709.5	Brown moist very stiff FAT CLAY with heavily distorted bedding, trace sand and gravel (lacustrine).	7.0	5	I	3	SS	6-5-11	18	100	3.75
	Brown, trace gray moist very stiff FAT CLAY with laminated bedding (lacustrine).			I	4	SS	5-5-7	18	100	4.0
705.0		11.5	10	I	5	SS	9-8-9	18	100	3.0
	Bottom of test boring at 11.5 feet.		15							
			20							
			25							
			30							

Datum: NAVD 88
Surface Elevation: 716.5 ft.
Date Started: 1/26/2023
Date Completed: 1/26/2023
Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.
Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25
Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-7
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
764.0	Ground Surface	0.0	0							
763.6	TOPSOIL (5 inches)	0.4		I	1	SS	2-1-1	8	44	0.5
762.0	Reddish-brown to light orangish-brown moist medium stiff LEAN CLAY, trace roots (B-horizon).	2.0								
	Brown moist very stiff FAT CLAY (glacial).			I	2	SS	3-4-5	8	44	4.5
759.5		4.5	5							
	Brown, trace gray moist very stiff to hard FAT CLAY with laminated bedding (lacustrine) (CH).			I	3	SS	10-12-11	18	100	4.5
				I	4	SS	11-11-12	18	100	4.5
			10	I	5	SS	9-9-10	18	100	4.5
				I	6	SS	15-11-18	18	100	4.5
			15	I	7	SS	8-8-10	18	100	3.75
				I	8	SS	8-9-11	18	100	3.75
			20	I	9	SS	9-8-9	18	100	2.5
741.0		23.0								
	Light brown and gray moist very stiff LEAN CLAY, trace sand and limestone fragments (glacial) (CL).		25							
737.5		26.5		I	10	SS	18-14-12	14	78	3.5
	Bottom of test boring at 26.5 feet.		30							

Datum: NAVD 88
Surface Elevation: 764.0 ft.
Date Started: 1/26/2023
Date Completed: 1/26/2023
Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.
Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25
Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-8
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
741.5	Ground Surface	0.0							
741.1	TOPSOIL (5 inches)	0.4							
	Orangish-brown moist stiff LEAN CLAY, trace organics (B-horizon).		I	1	SS	3-4-4	18	100	1.25
739.5		2.0							
	Mottled light brown and gray moist very stiff LEAN CLAY, oxide stains (glacial).		I	2	SS	8-8-9	18	100	3.75
737.0		4.5							
	Light brown, trace gray moist stiff LEAN CLAY, trace sand (glacial) (CL).		I	3	SS	5-6-7	18	100	2.5
734.5		7.0							
	Brown to dark brown, trace gray moist very stiff FAT CLAY with laminated bedding (lacustrine) (CH).		I	4	SS	6-6-10	15	83	4.0
			I	5	SS	7-7-8	18	100	3.5
			I	6	SS	6-7-9	18	100	4.5
725.0		16.5	I	7	SS	5-5-8	10	56	2.0
	Bottom of test boring at 16.5 feet.								

Depth Scale (feet): 0, 5, 10, 15, 20, 25, 30

Datum: NAVD 88
Surface Elevation: 741.5 ft.
Date Started: 1/24/2023
Date Completed: 1/24/2023
Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.
Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25
Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-9
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
750.7	Ground Surface	0.0	0							
	Orangish-brown moist stiff LEAN CLAY, trace organics (glacial).			I	1	SS	2-3-3	12	67	1.75
748.7		2.0								
	Mottled orangish-brown and gray moist very stiff FAT CLAY, trace organics (glacial) (CH).			I	2	SS	5-5-7	14	78	3.0
746.2		4.5								
	Mottled reddish brown and gray moist very stiff FAT CLAY with oxide deposits (glacial).		5	I	3	SS	6-7-9	18	100	4.0
				I	4	SS	6-6-8	18	100	4.5
741.2		9.5								
	Mottled light brown and gray moist very stiff to hard FAT CLAY, trace limestone fragments, oxide stains, and concretions (glacial) (CH).		10	I	5	SS	6-10-9	18	100	4.25
738.7		12.0								
	Interbedded brown moist extremely weak highly weathered SHALE and light gray medium strong to very strong LIMESTONE (bedrock).			I	6	SS	13-16-22	8	44	
			15	I	7	SS	14-14-39	10	56	
733.7		17.0								
731.7	Interbedded olive brown moist extremely weak highly weathered SHALE and light gray medium strong to very strong LIMESTONE (bedrock).	19.0		I	8	SS	25-25-25	10	56	
	Bottom of test boring at 19.0 feet.		20							
			25							
			30							

Datum: NAVD 88
Surface Elevation: 750.7 ft.
Date Started: 1/26/2023
Date Completed: 1/26/2023
Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.
Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25
Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-10
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
723.0	Ground Surface	0.0	0							
	Dark brown moist stiff LEAN CLAY (alluvium).			I	1	SS	2-2-2	10	56	1.5
721.0		2.0								
	Dark brownish gray moist stiff LEAN CLAY, trace sand and gravel (alluvium) (CH).			I	2	SS	3-3-3	8	44	0.75
			5	I	3	SS	4-7-7	12	67	2.0
716.0		7.0								
	Brown moist very stiff FAT CLAY with laminated bedding (lacustrine).			I	4	SS	5-5-7	16	89	2.75
			10	I	5	SS	4-5-6	18	100	2.5
711.5		11.5								
	Bottom of test boring at 11.5 feet.		15							
			20							
			25							
			30							

Datum: NAVD 88
Surface Elevation: 723.0 ft.
Date Started: 1/26/2023
Date Completed: 1/26/2023

Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.

Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25

Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

LOG OF TEST BORING

CLIENT: Campbell County Economic Progress Authority
PROJECT: Southern Campbell County Industrial Park
Campbell County, Kentucky
LOCATION OF BORING: As shown on Exploration Plan.

BORING #: B-11
PROJECT #: J034993.01
PAGE #: 1 of 1

ELEV.	COLOR, MOISTURE, DENSITY, PLASTICITY, SIZE, PROPORTIONS DESCRIPTION	Strata Depth (feet)	Depth Scale (feet)	Sample Condition	Sample Number	Sample Type	SPT* Blows/6" / Rock Core RQD (%)	Recovery (in.)	Recovery (%)	HP (tsf)
759.0	Ground Surface	0.0	0							
757.0	Brown moist very stiff FAT CLAY with laminated bedding, trace roots (lacustrine).	2.0		I	1	SS	2-3-4	18	100	2.5
	Brown moist very stiff to hard FAT CLAY with distorted laminated bedding (lacustrine).			I	2	SS	3-6-11	12	67	4.5
			5	I	3	SS	8-10-12	18	100	4.5
				I	4	SS	11-11-14	16	89	4.5
			10	I	5	SS	9-9-11	14	78	4.5
744.5		14.5		I	6	SS	10-10-13	18	100	4.5
	Brown moist very stiff to hard FAT CLAY with laminated bedding (lacustrine).		15	I	7	SS	9-10-11	16	89	4.5
				I	8	SS	9-9-14	18	100	4.5
			20	I	9	SS	7-8-10	18	100	2.0
736.0		23.0								
	Brown to dark brown moist stiff to very stiff FAT CLAY with laminated bedding (lacustrine) (CH).		25							
732.5		26.5		I	10	SS	5-7-7	18	100	1.5
	Bottom of test boring at 26.5 feet.		30							

Datum: NAVD 88
Surface Elevation: 759.0 ft.
Date Started: 1/26/2023
Date Completed: 1/26/2023
Hammer Weight: 140 lb.
Hammer Drop: 30 in.
Pipe Size: 2 in. O.D.
Hole Diameter: 8 in.
Rock Core Diameter: --
Boring Method: HSA-3.25
Drill Rig: CME-55 TD-5
Foreman: L. Kemmeter
Engineer: J. Nealon

BORING METHOD
HSA = Hollow Stem Augers
CFA = Continuous Flight Augers
DC = Driving Casing
MD = Mud Drilling

SAMPLE TYPE
PC = Pavement Core
CA = Continuous Flight Auger
SS = Split-Spoon Sample
ST = Shelby Tube
RC = Rock Core

SAMPLE CONDITIONS
D = Disintegrated
I = Intact
U = Undisturbed
L = Lost

GROUNDWATER DEPTH
First Noted: None
At Completion: Dry
After: --
Backfilled: Immediately

* SPT = Standard Penetration Test - Driving 2" O.D. Sampler 18" with 140-Pound Hammer Falling 30"; Count Made at 6" Intervals

GEOTECHNOLOGY
A Universal Engineering Sciences Company

SOIL CLASSIFICATION SHEET

NON COHESIVE SOILS
(Silt, Sand, Gravel and Combinations)

Density

Very Loose	- 4 blows/ft. or less
Loose	- 5 to 10 blows/ft.
Medium Dense	- 11 to 30 blows/ft.
Dense	- 31 to 50 blows/ft.
Very Dense	- 51 blows/ft. or more

Relative Properties

Descriptive Term	Percent
Trace	1 – 10
Little	11 – 20
Some	21 – 35
And	36 – 50

Particle Size Identification

Boulders	- 8 inch diameter or more	
Cobbles	- 3 to 8 inch diameter	
Gravel	- Coarse	- 3/4 to 3 inches
	- Fine	- 3/16 to 3/4 inches
Sand	- Coarse	- 2mm to 5mm (dia. of pencil lead)
	- Medium	- 0.45mm to 2mm (dia. of broom straw)
	- Fine	- 0.075mm to 0.45mm (dia. of human hair)
Silt		- 0.005mm to 0.075mm (Cannot see particles)

COHESIVE SOILS
(Clay, Silt and Combinations)

Consistency	Field Identification	Unconfined Compressive Strength (tons/sq. ft.)
Very Soft	Easily penetrated several inches by fist	Less than 0.25
Soft	Easily penetrated several inches by thumb	0.25 – 0.5
Medium Stiff	Can be penetrated several inches by thumb with moderate effort	0.5 – 1.0
Stiff	Readily indented by thumb but penetrated only with great effort	1.0 – 2.0
Very Stiff	Readily indented by thumbnail	2.0 – 4.0
Hard	Indented with difficulty by thumbnail	Over 4.0

Classification on logs are made by visual inspection.

Standard Penetration Test – Driving a 2.0" O.D., 1 3/8" I.D., sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary to drive the spoon 6 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the tests are recorded for each 6 inches of penetration on the drill log (Example – 6/8/9). The standard penetration test results can be obtained by adding the last two figures (i.e. 8+9=17 blows/ft.). Refusal is defined as greater than 50 blows for 6 inches or less penetration.

Strata Changes – In the column "Soil Descriptions" on the drill log, the horizontal lines represent strata changes. A solid line (————) represents an actually observed change; a dashed line (— — — —) represents an estimated change.

Groundwater observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.

GEOTECHNOLOGY
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ROCK CLASSIFICATION SHEET

ROCK WEATHERING

Descriptions	Field Identification
Unweathered	No visible sign of rock material weathering, perhaps slight discoloration on major discontinuity surfaces.
Weathered	Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker externally than it its fresh condition.
Highly Weathered	Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a discontinuous framework or as corestones.
Residual Soil	All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact with bedding planes visible, and the soil has not been significantly transported.

ROCK STRENGTH

Descriptions	Field Identification	Uniaxial Compressive Strength (psi)
Extremely Weak	Indented by thumbnail	40-150
Very Weak	Crumbles under firm blows with point of geological hammer, can be peeled by a pocket knife.	150-700
Weak	Can be peeled by a pocket knife with difficulty, shallow indentations made by firm blow with point of geological hammer.	700-4,000
Medium Strong	Cannot be scraped or peeled with a pocket knife, specimen can be fractured with a single blow of a geological hammer.	4,000-7,000
Strong	Specimen requires more than one blow of a geological hammer to fracture.	7,000-15,000
Very Strong	Specimen requires many blows with a geological hammer to fracture.	15,000-36,000
Extremely Strong	Specimen can only be chipped with geological hammer.	>36,000

BEDDING

Descriptive Term	Bed Thickness
Massive	> 4 ft.
Thick	2 to 4 ft.
Medium	2 in. to 2 ft.
Thin	< 2 in.

APPENDIX C – LABORATORY TEST DATA

Tabulation of Laboratory Tests

TABULATION OF LABORATORY TESTS

Boring No.	Sample No.	Depth (ft.) From	Depth (ft.) To	Moisture Content (%)	Atterberg Limits (%) LL	Atterberg Limits (%) PL	Atterberg Limits (%) PI	USCS Classification
B-1	1	0.0	1.5	22.8				
B-2	2	2.5	4.0	23.8				
B-2	4	7.5	9.0	23.2	47	25	22	CL
B-2	6	12.5	14.0	26.3				
B-2	9	20.0	21.5	27.7	58	26	32	CH
B-2	10	23.5	25.0	30.2				
B-3	1	0.0	1.5	25.9				
B-3	3	5.0	6.5	22.2	55	23	32	CH
B-3	5	10.0	11.5	7.7				
B-3	7	15.0	16.5	26.8				
B-3	9	20.0	21.5	23.3	37	19	18	CL
B-3	10	25.0	26.5	27.0				
B-3	11	30.0	31.5	23.0				
B-4	1	0.0	1.5	26.7				
B-4	2	2.5	4.0	25.9				
B-5	1	0.3	1.5	27.9				
B-6	1	0.0	1.5	27.3				
B-7	1	0.0	1.5	28.3				
B-7	3	5.0	6.0	22.1				
B-7	5	10.0	11.5	21.1	59	27	32	CH
B-7	7	15.0	16.5	27.6				
B-7	9	20.0	21.5	33.6				
B-7	10	25.0	26.5	23.2	39	20	19	CL
B-8	1	0.4	1.5	24.5				
B-8	3	5.0	6.5	23.3	29	20	9	CL
B-8	5	10.0	11.5	28.1	54	25	29	CH
B-8	6	12.5	14.0	28.1				
B-8	7	15.0	16.5	29.0				
B-9	1	0.0	1.5	29.7				
B-9	2	2.5	4.0	21.9	50	24	26	CH
B-9	3	5.0	6.5	21.8				
B-9	5	10.0	11.5	20.0	55	24	31	CH
B-9	7	15.0	16.5	11.5				

TABULATION OF LABORATORY TESTS

Boring No.	Sample No.	Depth (ft.)		Moisture Content (%)	Atterberg Limits (%)			USCS Classification
		From	To		LL	PL	PI	
B-10	1	0.0	1.5	23.7				
B-10	2	2.5	4.0	26.8				
B-11	1	0.0	1.5	21.9				
B-11	3	5.0	6.5	22.4				
B-11	5	10.0	11.5	21.5	53	23	30	CH
B-11	7	15.0	16.5	25.1				
B-11	9	20.0	21.5	30.7				
B-11	10	25.0	26.5	31.9	53	25	28	CH

APPENDIX D – IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL-ENGINEERING REPORT

Important Information about This

Geotechnical-Engineering Report

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

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

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

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

Read the Full Report

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

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

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

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

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

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

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

Subsurface Conditions Can Change

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

Most Geotechnical Findings Are Professional Opinions

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

A Report's Recommendations Are Not Final

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

A Geotechnical-Engineering Report Is Subject to Misinterpretation

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

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

Do Not Redraw the Engineer's Logs

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

Give Constructors a Complete Report and Guidance

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

Read Responsibility Provisions Closely

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

Environmental Concerns Are Not Covered

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

Obtain Professional Assistance To Deal with Mold

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

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

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

GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

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