

**CITY OF FORT THOMAS
CAMPBELL COUNTY, KENTUCKY**

**CONTRACT DOCUMENTS
AND SPECIFICATIONS**

**HIGHLAND HILLS PARK
IMPROVEMENTS**

MARCH 2024

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Website: www.ctconsultants.com
Project # 210789--04



**SPECIFICATIONS
AND
CONTRACT DOCUMENTS**

HIGHLAND HILLS PARK IMPROVEMENTS

THE CITY OF FORT THOMAS, KENTUCKY

**CT CONSULTANTS, INC.
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PROJECT INFORMATION

PROJECT:

**HIGHLAND HILLS PARK
IMPROVEMENTS**

OWNER:

**CITY OF FORT THOMAS
130 NORTH FORT THOMAS AVENUE
FORT THOMAS, KENTUCKY 41075**

ENGINEER:

**CT CONSULTANTS, INC.
2161 CHAMBER CENTER DRIVE
FORT MITCHELL, KENTUCKY 41017**

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**CT CONSULTANTS, INC.
PROJECT #:**

210789-04

BID OPENING DATE:

THURSDAY, APRIL 18, 2024

ADVERTISING DATE:

THURSDAY, MARCH 28, 2024

CITY OF FORT THOMAS

MAYOR

ERIC HAAS

CITY ADMINISTRATIVE OFFICER

MATTHEW KREMER

GENERAL SERVICES DIRECTOR

KEVIN BARBIAN

CLERK

MELISSA BECKETT

CITY COUNCIL

JEFF BEZOLD

ADAM BLAU

ANDY ELLISON

LAUREN MCINTONSH

BENJAMIN PENDERY

ERIC STRANGE

CITY OF FORT THOMAS, KENTUCKY

CAMPBELL COUNTY

LEGAL NOTICE

Sealed proposals will be received at the office of the City Clerk, Municipal Building, 130 North Fort Thomas Avenue, Fort Thomas, Campbell County, Kentucky, 41075 until **1:00 PM** local time on **THURSDAY, APRIL 18, 2024**, for furnishing all labor, materials, and equipment necessary to complete project known as **HIGHLAND HILLS PARK IMPROVEMENTS**, and, at said time and place, publicly opened and read aloud.

Bids must be in accordance with drawings and specifications and on forms available from CT Consultants, Inc. at a non-refundable cost of Seventy Five Dollars (\$75.00) mailed. Documents may be ordered by registering and paying for the documents online at <https://bids.ctconsultants.com>. Please contact planroom@ctconsultants.com or call 440-530-2395 if you encounter any problems registering or paying for the documents.

The bid specifications, drawings, planholders list, addenda, and other bid information (**but not the bid forms**) may be viewed and/or downloaded for free via the internet at <https://bids.ctconsultants.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 or certified check equal in amount to 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.

Proposals must contain the full name of the party or parties submitting the same and all persons interested therein. It is the intent and requirements of the owner that this project be completed no later than **SEPTEMBER 27, 2024**.

The successful bidder will be required to have a current occupational license in the City of Fort Thomas before the Contract will be awarded.

The City Council of the City of Fort Thomas, reserve the right to waive irregularities and to reject any or all bids.

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

By the order of the City Council of the City of Fort Thomas.

Mayor Eric Haas, City of Fort Thomas

Publishing Date: **THURSDAY, MARCH 28, 2024**

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INSTRUCTIONS TO BIDDERS

GENERAL

In accordance with the Notice to Bidders, sealed bids will be received until **THURSDAY, APRIL 18, 2024 at 1:00 PM**, at the Armory Building, 950 South Fort Thomas Avenue, Fort Thomas, Campbell County, Kentucky 41075, for the furnishing of labor and materials required for the **HIGHLAND HILLS PARK IMPROVEMENTS**, all in accordance with these instructions, conditions, specifications, and on the enclosed forms. All shall be submitted in a sealed envelope addressed to the City of Fort Thomas, and shall be plainly marked on the outside of the envelope **HIGHLAND HILLS PARK IMPROVEMENTS**. No bid may be withdrawn, once the bid has been deposited with the Owner, except in accordance with Kentucky Standard Specifications for Road and Bridge Construction, Section 102.11. Proposals received after the time for the opening of bids will be returned to the Bidder unopened. All bids shall remain valid for a period of sixty (60) days from the date of Bid Opening.

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 “City” or “Owner” occurs, it shall mean the City of Fort Thomas. The Mayor, 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 CT Consultants, Inc., 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.

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.

BIDDERS QUALIFICATIONS

The Owner requires that the Bidder furnish satisfactory evidence that he has the necessary resources to fulfill the conditions of the Contract and the Specifications. Each Bidder shall submit on the form included in the Bid Packet, a statement of the Bidder's qualifications. Each Bidder must furnish satisfactory evidence that it is operating a business of a type that can meet the Specifications for the Work and that it has operated such business for at least the last two (2) years. Only Bidders who have sufficient experience; ample equipment and personnel; adequate financial resources or the ability to obtain such resources as required during the performance of the Contract; 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 of performance (Bidders who are delinquent in current contract performance, when the number and the extent of the delinquencies of each are considered, shall be 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 Owner shall have the right to take such steps as it deems necessary to determine the ability of the Bidder to perform his obligations under the Contract, and the Bidder shall furnish to the Owner all such information and data for this purpose as it may request. The right is reserved to reject any bid where an investigation of the available evidence or information does not satisfy the Owner that the Bidder is qualified to carry out properly the terms of the Contract.

The Owner requires that the Bidder furnish a list of references of **all** persons, corporations, political subdivisions or firms for whom the Bidder has done the type of Work required for this Project within the last two (2) years.

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 be 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.

BID GUARANTY

In accordance with Kentucky Transportation Cabinet Standard Specifications for Road and Bridge Construction Section 102.09, and in order to assure that if the Bidder's bid is accepted that it will enter into the Contract with the Owner, each bid must be accompanied by a Bid Guaranty in the form of either:

1. A Bond for 10% percent of the total bid (Part A and Part B), in the form of a Bid Guaranty Bond, acknowledged by the Bidder, as principal, and by a surety company qualified to do business in the State of Kentucky, and satisfactory to the Owner as surety; or
2. A cashier's check or certified check issued by a responsible bank or trust company, and made payable to the order of the Owner, in the sum of at least ten percent (10%) of the Bid.

The Bid Guaranty shall be enclosed in the sealed envelope containing the Bid.

If the bidder chooses to submit a Bid Guaranty Bond, the bond shall be in form prescribed by KYTC Standard Specifications for Road and Bridge Construction Section 103.05. The Bond must be signed by an authorized agent of an acceptable surety bonding company and by the Bidder. The 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 the bond.*** Bid Guaranty must be supported by credentials showing the Power of Attorney of the surety's agent.

Bid guaranties (cashier's check or certified check) will be returned to unsuccessful Bidders within fifteen (15) days of the execution of the Contract with the successful Bidder.

Once the bid is awarded pursuant to the Notice of Award, the Contractor will be required to execute the Contract with the Owner within ten (10) days of its receipt of said Notice. Execution of the Contract shall require the submittal of a Performance Bond (unless the Bidder has already submitted a Bid Guaranty Bond), proof of insurance, and other documents, as outlined below. Executed copies of the bond and insurance certificates are required for each set of Contract

Documents. If the Contractor fails to execute the Contract within the required time, the Contractor's Bid Guaranty may be forfeited to the Owner, not as a penalty, but as liquidated damages, in accordance with the terms of the Bid Guaranty. The Project may then be rebid or awarded to the next lowest and best bidder, as the Owner determines at its own discretion.

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 their 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.

DATE FOR COMPLETION

The Bidder shall state in his Proposal, in the space provided, the number of calendar days which he will require, after signing the Contract to complete all items of the construction as specified herein. In no instance shall the amount of time be longer than the maximum set by the Owner herein. The agreed time of completion shall be written into the Contract when it is executed.

It is the intent and requirements of the owner that the proposed Work shall be installed and operational no later than **FRIDAY, SEPTEMBER 27, 2024**.

DELIVERY OF PROPOSALS

The total Contract Documents and Specifications book shall be placed, together the required completed forms, in a sealed envelope addressed to the City of Fort Thomas. Proposals will be received until the hour and date set for the opening thereof and must be in the hands of the Owner's appointed representative by such time. Proposals received after the time indicated for the opening of bids will be returned to the Bidder unopened.

WITHDRAWAL OR MODIFICATION OF PROPOSALS

No bid may be withdrawn, once the bid has been deposited with the Owner, except in accordance with Kentucky Standard Specifications for Road and Bridge Construction, Section 102.11. Likewise, modifications to a bid, once submitted, shall not be accepted.

PUBLIC OPENING OF PROPOSALS

Proposals will be opened and read loud publicly at the time and place designated in the Legal Notice to Bidders. Bidders, their authorized agents, and other interested parties are invited to be present.

DISQUALIFICATION OF BIDS

Any bid submitted unsealed or unsigned, or any bid deemed unresponsive will be disqualified and returned to the Bidder. Bids submitted without a Bid Guaranty or an invalid Guaranty will be disqualified and will be returned to the Bidder.

NON-RESPONSIVE PROPOSALS

Proposals may be considered non-responsive and may be rejected for the following reasons:

1. If the Proposal is on a form other than that furnished by the Owner or if the form is altered or any part thereof is detached.
2. If there are unauthorized additions, conditional or alternate bids, conditions, or irregularities of any kind which may tend to make the Proposal incomplete, indefinite or ambiguous as to its meaning.
3. If the Bidder adds any provisions reserving the right to accept or reject the Award or to enter into the Contract pursuant to the Award. This does not exclude a bid limiting the maximum gross amount of awards acceptable to any one Bidder at any one bid letting, provided that any selection of awards will be made by the Owner.

RIGHTS RESERVED BY THE OWNER

The Owner reserves the right to review and evaluate all bids for a period of sixty (60) days.

The Owner reserves the right to reject any and all bids, to waive any discrepancies or irregularities in the bidding, and to determine, in its own discretion, which Proposal is the best bid. Lowest bid, while a major consideration, will not exclusively govern the Bid Award. The Bid Award shall be made from all considerations, including costs and the responsibility of the Bidder.

The Owner reserves the right to reject the bid of any Bidder who has previously failed to perform properly or complete on time contracts of similar nature; who is not in a position to perform the Contract; or who has habitually, and without just cause, neglected the payment of bills or otherwise disregarded his obligations to subcontractors, materialmen or employees.

In addition to the above-mentioned items, the Owner will also consider the following in determining the best bid: that the Bidder maintains a permanent place of business; has adequate equipment to do the Work properly and expeditiously; has suitable financial status to meet the obligations incidental to the Work; and has the necessary experience.

The Owner reserves the right to award or delete any or all items or combination of items.

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 KYTC 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 KYTC 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.

GENERAL PROVISIONS

QUANTITIES

The Owner reserves the right to delete quantities of either labor or materials or both, from the Contract, as deemed necessary by the Owner, to meet any funding restrictions for the Work.

SUBCONTRACTORS

The Contractor may utilize subcontractors, subject to the following:

1. The Contractor shall not assign, transfer, convey, sublet, or otherwise dispose of the Contract or his rights, title or interest in or to the same or any part thereof, without the written consent of the Owner. Such consent shall not release or relieve the Contractor or his Surety from any obligation or liability under the Contract. In no case will the Contractor be permitted to sublet more than fifty percent (50%) of the total Contract cost.
2. The Contractor shall not award subcontracts to any subcontractor without prior written approval of the Owner.
3. The Contractor shall be fully responsible for the acts or omissions of any of its subcontractors. Nothing contained in the Contract or the Contract Documents shall create any contractual relationship between the Owner and any subcontractors.
4. The Contractor shall cause appropriate provisions to be inserted in all subcontracts that bind the subcontractor to the Contractor under the same terms of any provisions of the Contract Documents that are applicable to the Work of the subcontractor, and that give the Contractor the right to terminate the subcontractor for any violation of those provisions by the subcontractor.

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.

ANTIDISCRIMINATION CLAUSE

The Contractor hereby agrees to the following:

1. That in the hiring of employees for the performance of the Work under this Contract or any subcontract, neither the Contractor nor any subcontractor, nor any persons acting on behalf of the same, will discriminate against any citizen in the employment of or laborers or workers who are qualified and available to perform the Work, for reasons of race, creed, color, national origin, religion, age, sex, handicap, or familial status; and
2. That neither the Contractor nor any subcontractors, nor any persons acting on behalf of the same, shall in any manner discriminate or intimidate any employee hired for the performance of the Work on account of race, creed, color, national origin, religion, age, sex, handicap, or familial status.

PRECONSTRUCTION CONFERENCE AND PARTNERING

A preconstruction conference with the Owner will be required of the successful Bidder/Contractor. Said conference will be held for the purpose of reviewing the Specifications, Plans, and execution of the Work. The Engineer will arrange the meeting between the Contractor, the Owner, and representatives of the utility companies, and all parties shall be notified of the time, date, and location of the conference by the Engineer. The Agenda for the conference shall include, as a minimum, the following items:

1. Status of Contract and Notice to Proceed
2. Utility company requirements, BUD notification
3. Designation of emergency 24-hour Contractor contacts
4. Discussion of critical items
5. Required permits.
6. Notice to property owners
7. Maintenance of Traffic
8. Review of testing requirements and inspection procedures
9. Operations schedule and completion date
10. Listing of haul roads
11. Confirmation of subcontractors and suppliers
12. Review of the Change Order process
13. Payment Request submittal procedures
14. Payroll submittal procedure

HAUL ROADS

The Contractor shall also provide at the preconstruction conference, a list of the local roads to be used for the purpose of hauling equipment and/or material to or from the Project 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. Construction shall not commence until the Owner has reviewed the haul roads list and approved the same. The submission of the list and approval of the same do not relieve the Contractor the responsibility for conforming to and obeying all applicable height and weight restriction on the haul roads, nor from responsibility for any damages done to, on or along said haul roads. The Contractor is referred KYTC Standards and Specifications for Road and Bridge Construction Section 105.10 concerning restrictions.

PERMITS

The Contractor will be required to obtain all permits necessary in connection with the Work. All permits shall be subject to the inspection of the Owner.

OPERATIONS/PROGRESS SCHEDULE AND COORDINATION

At the preconstruction meeting, the Contractor shall submit to the Engineer a schedule showing the method and manner which the Contractor proposes to pursue so as to complete the proposed Work in such a manner that it will be ready for final acceptance within the time stated in the Proposal. Said schedule will show location, sequence, equipment, manpower, and estimated calendar days to complete each segment of Work required. Upon approval by the Engineer of the starting point of the various phases of the construction, the method and manner of performing the Work and the sequence of operations shall not be altered except with the approval of the Owner. Changes to said schedule are to be issued in writing and approved by the Engineer and Owner before operations are changed or rescheduled.

The Contractor shall use all practical means to make the progress of the Work conform to that shown on the progress schedule which is in effect. No payment will be made to the Contractor while he is delinquent in the submission of a progress schedule. Should the prosecution of the Work, for any reason, be discontinued, the Contractor shall notify the Owner at least twenty-four (24) hours in advance of resuming operations.

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.

CONSTRUCTION LAYOUT STAKES

Construction stake out shall be provided by the Owner. Owner shall provide one-time construction layout including:

- Corner of pickleball pads
- Pickleball centerlines
- Storm sewer catch basin
- Project benchmark for grading
 - No mass grading stakes provided
- Machine control
- Parking lot corners .

SAFETY STANDARD AND ACCIDENT PREVENTION

With respect to all Work performed under the Contract, the Contractor shall comply with all safety standard provisions of (1) all applicable building and construction codes; (2) the *Manual of Accident Prevention in Construction*, published by the Associated General Contractors of America; (3) the requirements of the Occupational Safety & Health Act, and the requirements of Title 29 of the Code of Federal Regulations, Chapter 15.

The Contractor shall maintain at the job site all medical items and equipment necessary for administering first aid to the injured, and shall make standing arrangements for the immediate removal to a hospital or doctor's care of all persons injured on the job site. In no case shall the Contractor permit any employee to work at the job site before it has made arrangements for the immediate removal of injured persons to a hospital or doctor's care.

The Contractor shall at all times exercise every precaution for the protection of persons, including its employees, and property, and shall guard against creating any unnecessarily hazardous conditions. This protection shall include, but is not limited to, sheeting and shoring, barricades, and warning lights as needed.

The Contractor shall be responsible for all accidents arising out of or connected with its performance under the Contract and Contract Documents, and shall indemnify and hold harmless the Owner and the Engineer from all liability, costs, suits, claims or actions brought against it for any injury or alleged injury to any person or property. All loss or damage to the Work arising from fire, floods, storms or other natural causes, or from any detention, obstruction or difficulties which may be encountered in the prosecution of the Work shall be borne by the Contractor.

No blasting of any kind will be permitted on this Project.

COOPERATION BY CONTRACTOR

The Contractor will be supplied with three (3) copies of the specifications and three (3) sets of approved plans and contract assemblies including special provisions, one (1) set of which the Contractor shall keep available on the Work site at all times.

The Contractor shall give the Work the constant attention necessary to facilitate the progress thereof. He shall cooperate with the Engineer, his inspectors, and all other Contractors of any agency in every way possible.

COOPERATION BETWEEN CONTRACTORS

The Contractor shall coordinate his work with other Contractors within or adjacent to the Project area. All completed Work shall meet the line and grade of other work in an acceptable manner.

WARRANTY

The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations, to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal

usage. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

CONTROL OF MATERIAL

The materials used on the Work shall meet all requirements of the Contract. In order to expedite the inspection and testing of materials, the Contractor shall notify the Engineer of his proposed sources prior to delivery. **All materials supplied shall meet KYTC requirements or as otherwise specified in these Contract Documents.**

Unless otherwise specified, all materials shall be new, and both workmanship and material shall be of proper quality and sufficient for the purpose contemplated. The Contractor shall furnish, if requested by the Owner or Engineer, 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 pre-approved by the Engineer, in writing, and shall be equal or superior to the items specified in the Contract Documents. If substitutions 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 or 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.

STORAGE OF MATERIALS

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

Private property shall not be used for storage purposed without written permission of the owner or lessee, and if requested by the Engineer, copies of such written permission shall be furnished him.

Any additional space required must be provided by the Contractor at their expense.

TESTING

In addition to material testing by the supplier, on-site material and soil testing will be required to insure the work meets the specifications established as part of this project. Contractor shall provide all materials and supplies to facilitate the testing and shall be responsible for coordinating all

testing with the selected testing agency. The Contractor shall bear the cost of all testing and provide all required materials, labor, apparatus, services and facilities in connection therewith.

All testing shall be done in the presence of the Engineer by an approved testing laboratory and one copy of the test shall be sent directly to him.

When questions arise as to whether the requirements of the Contract have been fulfilled, the Owner shall engage an independent testing laboratory to perform any tests necessary to establish the acceptability of the work.

Should such additional tests show in the judgment of the Owner the work or materials to be defective or otherwise not meeting the requirements of the Contract, the Contractor shall, immediately upon notification by the Owner, remove, replace or reconstruct same, as the case may require and shall if directed by the Owner, make such further tests as may be necessary to determine fulfillment of the Contract requirements. The cost of all re-tests shall be deducted from the Contractor's fee for said work.

All tests shall be made under the supervision and direction of the Owner or Engineer except those required by a public authority shall be under the supervision and direction of such authority.

TESTING REQUIREMENTS

Minimum testing requirements shall be as follows:

Soil Testing: Excavation and embankment construction shall be constructed in accordance with the Kentucky Standard Specification for Road and Bridge Construction Item 204, 205 206 and 207. The testing agency shall test all embankments per the Kentucky Standard Specification for Road and Bridge Construction Item 206.03.03.

Subgrade shall be prepared in accordance with the Kentucky Standard Specification for Road and Bridge Construction Item 207. A proof roll shall be done in the presence of the Engineer.

Flexible Pavement: The testing agency shall provide quality control testing of asphalt mixes per the Kentucky Standard Specification for Road and Bridge Construction Item 402.03. At the

Owner's request, field density testing may be required for asphalt courses in excess of 500 cubic yards.

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 100 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 Items 501, 502, 505, 506 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.

SANITARY MEASURES

The Contractor shall construct and maintain sanitary conveniences for use by its employees at the site of the Work. Such conveniences shall be of sufficient number and shall be placed in locations approved by the Engineer. The Contractor shall require all employees and persons connected with the Work to use said conveniences, and any employee or person who violates this rule shall not again be employed at the site of the Work by the Contractor. Such conveniences shall be in compliance with all State and local health department regulations, and the Contractor shall promptly and fully comply with all health department orders and regulations regarding said conveniences.

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

When construction interferes with the normal use of the highway, temporary traffic facilities shall be provided. For local traffic, vehicular ingress and egress shall be provided at all times for the property adjacent to the work. For through traffic, the traffic will be maintained through all portions of the project unless the Owner authorizes the closure of portions of the highway.

Temporary traffic control devices and facilities shall be furnished, erected, maintained in accordance with the provisions of Section 112 - Maintain and Control Traffic. All traffic control plans, signs, and devices shall conform to the requirements of the Manual of Uniform Traffic Control Devices. The provisions of these items and this section shall not in any way relieve the Contractor of any of his legal responsibilities or liabilities for the safety of the public. The cost shall be 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, pipe, 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 KYTC 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 pipe 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 pipe, in order to assure compatibility with line and grade of the pipe. Payment for all such operations shall be included in the unit price bid for the pertinent pipe 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 the 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.

CONSTRUCTION VIDEOS AND PHOTOGRAPHS

Contractor shall document existing site conditions, progress of the work and the completed project through the use of videos and photographs. Videos and photographs shall be taken along the length of the sewer alignment and all areas of egress to the site pre-construction, during construction and post-construction. Pictures shall be taken at all property affected by the Work and at least every 50 feet along the sewer alignment. All existing structures or facilities affected by the Work shall also have videos and photographs taken of their before and after conditions. The OWNER shall be present during the pre-construction and post construction videotaping and photograph work and shall determine the limits at each location. All photographs shall be in digital format with a time and date stamp. Photographs shall be a minimum of 2.1 mega pixels. All videos shall be provided on DVD.

Before starting construction, video and take photographs along the length of the sewer alignment and all areas of egress to the site as directed by Owner. Pictures shall be taken at all property affected by the Work and at least every 50 feet along the sewer alignment. All existing structures or facilities affected by the Work shall also have videos and photographs taken of their pre-construction conditions. The purpose of these videos and photographs is to document existing physical conditions at each site and its surrounding property.

- i. Before starting work, take a minimum of two photographs to show existing conditions at and adjacent to each driveway, landscaped area, fence and any other permanent structure that could potentially be affected by construction.
- ii. Provide one copy of the video and pictures to the Owner prior to construction.

- iii. Contractor shall audibly record a brief description of each video and the date and time of the recording.

E-mail digital files of each photograph to the Owner and Engineer as soon as they are available. Each digital file shall be labeled with the following information:

- i. Date photograph taken.
- ii. Title of Project.
- iii. Description of view shown in photograph.

- iv. Numbered identification of exposure.

Following substantial completion of the work and after final completion photographs have been taken, burn a CD with copies of all digital photographs taken for the Work. Submit two copies of CDs. Submit two copies of each video as soon as they are available. Each video shall be labeled with the following information:

- i. Date video was taken.
- ii. Title of Project.
- iii. Location of taping.

All work for the above shall be incidental to the Contract.

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.

BASE LINES AND BENCHMARKS

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 KYTC Standard and Specifications for Road and Bridge Construction. If, however, the character of the Work or 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.

EXTRA WORK

Items of work with unit prices included in the estimate of the original Contract, in an amount less than \$10,000 may be authorized as Extra Work by the Engineer.

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 **FRIDAY, SEPTEMBER 27, 2024**, 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 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 not be considered as the basis for an extension of time. The Engineer will not allow any extension of time for weather or resulting conditions, except for delays caused by earthquakes, tornadoes or other catastrophic forces per 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 uncompleted after the Contract completion date or dates, the sum specified in the Contract will be deducted from any money due the Contractor, not as a penalty but as liquidated damages provided, however, that due account shall be taken of 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 separately apply 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 Contract 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 the City of Fort Thomas for approval, and upon approval of the invoice by the Engineer and the City of Fort Thomas, 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 three (3) signed and notarized original copies of each Application for Payment to the Engineer. One copy shall include waivers of lien and similar attachments if required.

WAIVER OF MECHANIC'S LIEN

Upon reaching 75% 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 its 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 from 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
- C. Performance Bond will be forfeited and the Owner shall cause the Contract to be completed.
- D. 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 enforced 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 City of Fort Thomas income taxes due or payable under the provisions of the Codified Ordinances of the City of Fort Thomas 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 City of Fort Thomas 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.

UTILITY OWNERSHIP

The following utilities and owners are located within the work limits of this project:

Gas	Mr. Scott Pfefferman Duke Energy 617 Todhunter Rd. Monroe, Ohio 45050
Electric	Mr. Bill Hofstetter Duke Energy 2010 Dana Avenue, EF 324 Cincinnati, Ohio 45207
Water	Mr. Kyle Ryan Northern Kentucky Water District P.O. Box 18640 Erlanger, Kentucky 41018
Telephone	Mr. Tim Seestedt / Underground Ms. Jodi Wildeboer / Overhead Altafiber 221 E. Fourth St. M.L. 121-900 Cincinnati, Ohio 45201
Cable TV	Mr. Chuck McCarty Spectrum 10920 Kenwood Road Cincinnati, Ohio 45252
Sanitary & Storm Sewer:	Mr. Zach Atkerson Sanitation District No. 1 1045 Eaton Drive Ft. Wright, Kentucky 41017

SPECIFICATIONS FOR CONSTRUCTION

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

SPECIAL PROVISIONS

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 pipe 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 pipe, in order to assure compatibility with line and grade of the proposed pipe. Payment for all operations described above shall be included in the unit price bid for the pertinent pipe 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 105.06 - COOPERATION BETWEEN CONTRACTORS

The Contractor shall coordinate his work with other Contractors within or adjacent to the project limits. All improvements completed under this contract shall meet the line and grade of other work in an acceptable manner.

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, pipes, 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.

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.

UTILITY ADJUSTMENTS

Sanitary manhole adjustments to grade shall be paid each as per Sanitation District No. 1 Specifications. Contractor shall notify Sanitation District No. 1 prior to adjustment and coordinate to have SD1 Inspector present. The other adjustments shall be considered incidental to the contract.

ITEM 701 – REVIEW OF DRAINAGE FACILITIES

Before any work is started on the project and again before final acceptance by the Owner, the Contractor, with the Engineer, shall make an inspection of the existing sewers within the work limits, which are to remain in service and which may be affected by the work. The condition of the existing pipes and their appurtenances shall be determined from field observations. Written records of the inspection and/or photographic documentation shall be kept by the Engineer.

All existing sewers inspected initially by the above-mentioned parties shall be maintained and left in a condition reasonably comparable to that determined by the original inspection. Any change in the condition resulting from the Contractor's operations shall be corrected by the Contractor to the satisfaction of the Engineer. All existing and/or new pipes, inlets, catch basins, and manholes constructed and/or cleaned as a part of the project shall be free of all foreign matter and in a clean condition before the project will be accepted by the Owner. Payment for all operations described above shall be included in the unit prices bid for the pertinent item.

ITEM 201 – STAKING

On this project, the Owner shall be responsible for 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.

ITEMS 204/205 – EXCAVATION & EMBANKMENT

Grading Plan includes the excavation and embankment of on site material needed to bring the existing grade to the proposed finished grade as indicated on the plan. Payment shall per the CY quantity as provided in the bid set for the contractor to place materials as determined by the contractor, in order to bring the site to finished grade. This may include bringing in material from off site or hauling excess material off site, in addition to moving around material on site. Contractor to confirm CY quantities prior to bidding. No adjustments shall be made to CY quantity.

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 Contractor. 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 207 – SUBGRADE RESHAPING AND COMPACTING

This shall include all work under Item 207 Subgrade with exception that any yielding or unsuitable material encountered shall be removed and replaced with approved stable material. No additional compensation will be paid for removing, undercutting, or recompacting any yielding or unsuitable material. At the completion of the subgrade reshaping and compacting, the Contractor will be required to proofroll the subgrade to allow the engineer to inspect the subgrade for acceptable

compliance with Item 207. Any yielding areas shall be undercut and recompact at the Contractor's expense. All work described above will be paid for under Item 207 Subgrade Reshaping and Compacting.

ITEM SPL - YARD RESTORATION (4' TOPSOIL, SEED AND MULCH)

The Contractor shall provide all labor, materials, tools, and equipment required to grade, fertilize, seed, and mulch in good, workmanlike manner the areas where shown on the plans or where directed by the Engineer and as specified herein.

A. Materials

1. Topsoil – Topsoil shall be per ASTM D5268 with a pH range of 5.5 to 7. Topsoil shall not contain more than 40% clay in that portion passing a No.10 sieve, shall contain not less than 5% or more than 20% organic matter as determined by loss on ignition of samples oven dried to constant weight at 212 degrees Fahrenheit, and shall be free of rock and other foreign material greater than 1 inch in any dimension and other extraneous materials harmful to plant growth.
2. Fertilizer –
 - a. Fertilizer shall be lawn or turf grade 12-12-12
 - b. Agricultural ground limestone when used shall have a minimum total neutralizing power of 90 and at least 40 percent passing a No. 100 sieve, and at least 95% passing a No. 8 sieve.

3. Seed – All areas to be seeded shall be seeded with the following mixture:

By:

Weight	Name of Grass	Purity	Germination
40%	Fine Lawn Turf-Type Fescue	95%	90%
40%	Creeping Red Fescue (<i>Festuca rubra</i>)	95%	90%
20%	Annual Ryegrass (<i>Lolium multiflorum</i>)	95%	90%

Weed seed content not over 0.25 percent and free of noxious weeds.

4. Mulch – Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats or barley.
5. Asphalt Emulsion – ASTM D977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

B. Installation

1. Preparation of Seed Bed

- a. Topsoil - If suitable topsoil is available as part of the excavated material it shall be removed, stored and used to backfill the top 4 inches of the excavation. If sufficient material is not available on site it shall be imported on site at no additional cost to the Owner. All grass, weeds, roots, sticks, stones, and other debris are to be removed and the topsoil carefully brought to the finish grade by **hand raking**. The topsoil shall be sufficiently compacted, by tracking in the material, to prevent significant settlement. Promptly and thoroughly remove topsoil and other materials dropped on pavement surfaces before being compacted by traffic. Before any fertilizer or seed is placed the topsoil shall be inspected and approved by the Engineer.
2. Fertilizing - Fertilizing shall be uniformly applied to all areas to be seeded at the rate of 1 pound per 100 square. The fertilizer shall be thoroughly disked, harrowed or raked into the soil to a depth of not less than 2 inches. Immediately before sowing the seed, the Contractor shall rework the surface until it is a fine, pulverized, smooth seed bed, varying not more than 1 inch in 10 feet. A second application of fertilizer shall be applied at the same rate once the grass has been established or within 6 weeks of seeding.
3. Seeding - Immediately after the preparation and fertilization of the seed bed the Engineer shall inspect and approve the site prior to seeding. The seed shall be thoroughly mixed and then evenly sown over the prepared areas at the rate of 3 to 4 pounds per 1000 square feet. Seed shall be sown dry or hydraulically. After sowing, the area shall be raked, dragged, or otherwise treated to cover the seed to a depth of approximately 1/4 inch.
4. Mulching - Within 24 hours after any given area is seeded, mulching material shall be evenly placed over all seeded areas at the rate of approximately 2 tons per acre, when seeding is performed between the dates of March 15 and October 15, and at the approximate rate of 3 tons per acre when seeding is performed between the dates of October 15 and March 15 of the succeeding year. Mulching material shall be removed once a good turf has been established.
 - a. Emulsion - Mulching materials shall be kept in place with asphalt emulsion applied at a minimum rate of 10 to 13 gallons per 1000 square feet of mulch or by methods as approved or may be otherwise required to prevent displacement of material. Mulching which is displaced shall be replaced at once but only after the seeding or other work which preceded the mulching and which work was damaged as a result of displacement of mulching material has been acceptably repaired.
5. Maintenance – Contractor shall water, mow, weed and otherwise maintain all seeded areas as necessary to secure a good turf. Settled areas shall be filled, graded, and re-seeded. Seeded areas shall be free of weeds and other debris. The Contractor shall be responsible for the condition of the seeded areas for a period of 1 year from the date of Final Acceptance. A satisfactory lawn shall consist of a healthy uniform, close stand of grass, free of weeds, rocks and surface irregularities, with coverage exceeding 95%

over any 10 square feet, and bare spots not exceeding 2 by 2 inches.

ITEM 212 / 213 - EROSION CONTROL AND WATER POLLUTION CONTROL

The Contractor shall take extreme care to prevent unnecessary erosion, water pollution and siltation at all points of the project. Temporary seeding and mulching, straw bales, slope drains, etc., shall be used as necessary or as directed by the Engineer. The cost of all temporary erosion control measures shall be included in the lump sum bid for Item 212/213 Erosion Control As Per Plan.

FULL-DEPTH PAVEMENT SAWING

All existing pavement to be widened and/or removed shall be sawed full depth at the limits of removal, using a diamond saw blade to provide a uniform edge and prevent damage to pavement that is to remain in place. The cost of the sawing shall be incidental to the applicable pavement removal item.

ITEM 403 - SEALING EDGES

All edges of the asphalt concrete surface course constructed under this Contract shall be sealed with asphalt cement as directed by the Engineer and meeting the same specifications as used in Item 403, the cost of same to be included in the unit price bid for Item 403, Asphalt Concrete. After completion of the surface course, gutters shall be sealed with asphalt cement as directed by the Engineer. The material shall be applied at a uniform width of approximately 4 inches and at a rate just sufficient to fill surface voids. Sealing edges at building walls, foundations, existing curbs or other visible surfaces shall be done neatly and without more than one-half (1/2) inch of the sealant being visible on the surface. Any extra sealant applied to visible surfaces shall be carefully and thoroughly removed by the Contractor at no additional cost to the Owner.

ITEM 403 - MEETING EXISTING PAVEMENT

Where an asphalt concrete resurfacing project begins or ends, the 403 surface course shall meet the existing on a neat, straight line. Unless otherwise directed by the plans, the Contractor shall construct a ten- foot (10') long butt joint.

ITEM 403 - BROOMING AND CLEANING

The existing surface shall be cleaned and prepared in accordance with Item 403.03. The cost for such work is to be included in the unit price bid for Item 403, Asphalt Concrete.

ITEM 406 - TACK COAT

A tack coat shall be applied to the area to be surfaced in accordance with Item 406, Tack Coat. The residual asphalt content of the tack coat shall be 0.04 to 0.06 gallons per square yard. SS-1, SS-1h, CSS-1, or CSS-1h materials used shall be diluted 50 percent with potable water. Over-spray on curbs, adjoining pavements, and other roadside facilities shall not be tolerated, and the Contractor shall be responsible for clean up of any areas or facilities receiving over-spray. The cost of tack coat shall be included in the unit price bid for Item 403 Asphalt Concrete.

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 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 601 - CONCRETE - GENERAL

All concrete for roadway paving, curbs, sidewalks, drive aprons, steps and headwalls shall have a minimum of 5 percent entrained air and a maximum of 8 percent entrained air. For each sample, the average strength of the 7-day and the two 28-day tests shall equal or exceed 4000 psi, and no individual strength test shall fall below 3500 psi.

If the averages of all sets of three consecutive strength test results meet the following strengths, an extended guarantee will be required on all concrete work.

- a) 3500 psi to 3799 psi - 3 year guarantee
- b) 3800 psi to 3999 psi - 2 year guarantee

ITEM 701 – GRADING AT INLETS AND OUTFALLS OF PROPOSED CONDUITS

The cost of the necessary reconstruction and/or regrading of swales or disturbed areas at the inlets and outfalls of all proposed conduits shall be included in the price bid for the pertinent conduit and inlet items.

EXISTING PIPE

The location, size, type and depth of all existing pipes are shown as nearly exact as available information will permit. The Engineer will not be responsible for any variations found during construction.

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 of line and grade of the proposed conduit.

Payment for all operation described above shall be included in the unit price bid for the pertinent conduit item.

ITEM SPL - TRENCH FOR SEWER CONSTRUCTION

Per Sanitation District No. 1 Specifications Section 02630.

Trench excavation for sewer construction shall be adequately maintained and protected with barricades at all times.

Placement of proposed sewer pipe and backfill material shall follow as closely as possible behind excavation operations. The length of sewer trench, which is open at any one time, shall be held to a minimum and shall, at all times, be subject to the approval of the Engineer.

ITEM SPL - STORM SEWER PIPE MATERIAL

As per Sanitation District No. 1 Specifications Section 02630.

Accepted material: PVC, PE, or Non-Reinforced Concrete

ITEM SPL – CONDUIT, DRAINAGE AND UTILITY ITEMS

Unless otherwise specified on the plans, the unit price bid for the pertinent conduit, drainage and/or utility item shall include the cost of all necessary appurtenances, connections, fittings, plugs, tees, collars, etc.

Unless otherwise noted on the plans, the unit price for the pertinent conduit, drainage and/or utility item is to include the costs involved in the excavation of the trench in unclassified material, the supplying and placing of the required bedding material and the backfilling of the trench with the specified material to the appropriate subgrade elevations.

Any additional fill required due to the relocation of storm sewer shall be included in the storm sewer unit price. All backfill in pavement areas shall consist of flowable fill.

ITEM 701 - PIPE CUT-OFFS

When bell-and-spigot pipe is used, any necessary pipe cut-offs shall be made at the spigot end of the length of pipe adjacent to the end length. When tongue-and-groove pipe is used, the length of pipe next to the end length shall be cut and a butt joint formed with a collar.

ITEM SPL - PIPE BEDDING AND BACKFILL

Pipe Bedding

As per Sanitation District No. 1 Specifications Section 02220.

Low-Strength Mortar Backfill Material

As per Sanitation District No. 1 Specifications Section 02220.

Excavation Material for Compacted Backfill

As per Sanitation District No. 1 Specifications Section 02220.

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 610 / 710 - CONDUIT END TREATMENT

Immediately after placement of any conduits, the Contractor shall construct the end treatments required by the plans at both the outlet and inlet ends. This shall include headwalls, concrete riprap, rock channel protection, sodding, etc. The cost of the necessary reconstruction and/or regrading of swales or disturbed areas at the inlets and outfalls of all proposed conduits shall be included in the price bid for the pertinent conduit and inlet items.

ITEM SPL - STORM SEWER, MANHOLES, INLETS, CATCH BASINS AND HEADWALLS

Storm sewer manholes, inlets and catch basins shall be constructed as per the details on the construction drawings and conforming to the requirements of SD1 Specifications Section 02630. All castings for manholes, catch basins and inlets shall conform to those specified in the standard construction drawings. Grated inlet tops shall be placed as specified on the plans. Tops of casting elevations are subject to final adjustments as approved by the Engineer. All castings used shall be subject to the final approval of the Engineer. Payment for these items shall include connection to proposed or existing storm sewer conduit.

Any additional backfill required due to the removal of an existing storm structure and relocation of the proposed storm structure shall be incidental to the manhole, inlet or catch basin. All backfill in pavement areas shall consist of flowable fill.

SHORING AND TRENCH BOX

Trenches and excavations for appurtenances shall be adequately shored and braced or a trench box utilized whenever the trenches and excavations cannot be opened up to a sufficient width to maintain natural soil stability and sloped per current OSHA regulations. All shoring shall meet safety codes in effect at the time of the work; and, if none are in effect, they shall meet the requirements of Employers Mutual, Factory Mutual, Associated General Contractors safety manuals or OSHA guidelines.

The Contractor is fully responsible at all times for the safety of their excavators and total compliance with OSHA regulations.

Shoring and sheeting, when used, that does not extend below the top of the sewer pipes may be removed at the Contractor's option after the trench backfill has been placed and compacted to a point one foot above the top of the pipes. Following removal of the shoring and sheeting, the space left shall be filled immediately with backfill material and compacted.

Shoring and sheeting that extends below the top of the sewer pipes shall be left in place below a point one foot above the top of the pipes and not be disturbed. The Contractor may remove the portion of shoring and sheeting above this point at his option.

When shoring and sheeting is not removed, the portion to a point two feet (2') below finished grade shall be removed. Bracing shall not be removed until after the trench backfill has been placed and compacted to a point one foot (1') above the top of the sewer pipes.

ITEM SPL - SHEETING AND SHORING

The Contractor shall furnish, put in place, and maintain such piling, sheeting, bracing, etc., as is required by the State of Kentucky. The Contractor shall furnish, put in place, and maintain and remove such sheeting, shoring, planking and bracing as may be required to support the sides of the excavations and to prevent any movement which could in any way injure the work, human life, or adjacent structures and property, obstruct surface drainage channels or waterways, or otherwise injure or delay the work. If required at any time by the Engineer, the Contractor shall furnish and install such additional sheeting, shoring and bracing as may be necessary to protect the work, but compliance with such orders or failure on the part of the Engineer to give such orders shall in no case release the Contractor from liability for any damages or injuries caused by weak or insufficient sheeting, shoring and bracing, nor from his responsibility to protect the work or adjacent property.

Except when ordered left in place, all wood sheeting above the top of the pipe, steel sheet piling, braces, shorer, walers or stringers, shall not be withdrawn until the backfill is practically complete. As the backfill progresses to the elevation of a set of walers and braces, such bracing shall be removed. All sheeting and bracing specified, shown on the plans, or directed by the Engineer to

be left in place shall not be removed. All sheeting left in place shall be cut off at least two (2) feet below final finish grade. During the removal of sheeting, care must be taken to prevent movement of the sides of the excavation. All voids left by the withdrawal of sheeting shall immediately be carefully refilled by ramming with tools adapted to the purpose, pneumatic or other approved type, or by flushing sand into the voids.

Whenever the Engineer, in writing, orders any type sheeting, shoring, bracing or foundation material left in place, or when so shown on the plans or specified, the Contractor will be paid for the actual amount so left in place at prices stipulated for the applicable items. Sheeting, shoring and bracing left in place by the Contractor for his own convenience will not be paid for under any item.

ITEM SPL - CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Chain-link fences.
 - 2. Swing gates.
- B. Related Requirements:
 - 1. Section 033053 "Miscellaneous Cast-in-Place Concrete" for cast-in-place concrete and post footings.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
 - a. Fence and gate posts, rails, and fittings.
 - b. Chain-link fabric, reinforcements, and attachments.
 - c. Gates and hardware.

- B. Shop Drawings: For each type of fence and gate assembly.
 - 1. Include plans, elevations, sections, details, and attachments to other work.
 - 2. Include accessories, hardware, gate operation, and operational clearances.
- C. Samples for Verification: For each type of component with factory-applied finish, prepared on Samples of size indicated below:
 - 1. Polymer-Coated Components: In 6-inch lengths for components and on full-sized units for accessories.
- D. Delegated-Design Submittal: For structural performance of chain-link fence and gate frameworks, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For professional engineer.
- B. Product Certificates: For each type of chain-link fence and gate.
- C. Product Test Reports: For framework strength according to ASTM F 1043, for tests performed by manufacturer and witnessed by a qualified testing agency.
- D. Sample Warranty: For special warranty.

1.5 FIELD CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.6 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to comply with performance requirements.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design chain-link fence and gate frameworks.
- B. Structural Performance: Chain-link fence and gate frameworks shall withstand the design wind loads and stresses for fence height(s) and under exposure conditions indicated according to ASCE/SEI 7.
 - 1. Design Wind Load: As indicated on Drawings.
 - a. Minimum Post Size: Determine according to ASTM F 1043 for post spacing not to exceed 10 feet for Material Group IA, ASTM F 1043, Schedule 40 steel pipe.

2.2 CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:
 - 1. Fabric Height: 6'0".
 - 2. Steel Wire for Fabric: Wire diameter of 0.120 inch.
 - a. Mesh Size: 2 inches.
 - b. Polymer-Coated Fabric: ASTM F 668, Class 1 over zinc-coated steel wire.
 - 1) Color: Black, according to ASTM F 934.
 - 3. Selvage: Twisted top and knuckled bottom.

2.3 FENCE FRAMEWORK

- A. Posts and Rails: ASTM F 1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F 1043 or ASTM F 1083 based on the following:
 - 1. Fence Height: 6'0".
 - 2. Horizontal Framework Members: Top rails according to ASTM F 1043.
 - a. Top Rail: 1.66 inches in diameter.
 - 3. Metallic Coating for Steel Framework:

- a. Type A: Not less than minimum 2.0-oz./sq. ft. average zinc coating according to ASTM A 123/A 123M or 4.0-oz./sq. ft. zinc coating according to ASTM A 653/A 653M.
4. Polymer coating over metallic coating.
 - a. Color: Match chain-link fabric, according to ASTM F 934.

2.4 TENSION WIRE

- A. Polymer-Coated Steel Wire: 0.148-inch-diameter, tension wire according to ASTM F 1664, Class 1 over zinc-coated steel wire.
 1. Color: Match chain-link fabric, according to ASTM F 934.

2.5 SWING GATES

- A. General: ASTM F 900 for gate posts and single swing gate types.
 1. Gate Leaf Width: 36 inches.
 2. Framework Member Sizes and Strength: Based on gate fabric height of more than 72 inches.
- B. Pipe and Tubing:
 1. Zinc-Coated Steel: ASTM F 1043 and ASTM F 1083; protective coating and finish to match fence framework.
 2. Gate Posts: Round tubular steel.
 3. Gate Frames and Bracing: Round tubular steel.
- C. Frame Corner Construction: Welded or assembled with corner fittings.
- D. Hardware:
 1. Hinges: 180-degree inward or outward swing.
 2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.

2.6 FITTINGS

- A. Provide fittings according to ASTM F 626.
- B. Post Caps: Provide for each post.
 1. Provide line post caps with loop to receive top rail.
- C. Rail and Brace Ends: For each gate, corner, pull, and end post.

- D. Rail Fittings: Provide the following:
 - 1. Top Rail Sleeves: Pressed-steel or round-steel tubing not less than 6 inches long.
- E. Tension and Brace Bands: Pressed steel.
- F. Tension Bars: Steel, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
- G. Truss Rod Assemblies: Steel, hot-dip galvanized after threading rod and turnbuckle or other means of adjustment.
- H. Tie Wires, Clips, and Fasteners: According to ASTM F 626.
 - 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:
 - a. Hot-Dip Galvanized Steel: 0.148-inch-diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.
- I. Finish:
 - 1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz./sq. ft. of zinc.
 - a. Polymer coating over metallic coating.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
 - 1. Do not begin installation before final grading is completed unless otherwise permitted by Engineer.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

- A. Install chain-link fencing according to ASTM F 567 and more stringent requirements specified.
 - 1. Install fencing on established boundary lines inside property line.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- C. Post Setting: Set posts in concrete, with mechanical anchors, or by mechanically driving into soil at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.
 - 3. Mechanically Driven Posts: Drive into soil to depth of 36 inches. Protect post top to prevent distortion.
- D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment as indicated on Drawings. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.
- E. Line Posts: Space line posts uniformly at 10 feet o.c.
- F. Post Bracing and Intermediate Rails: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
 - 1. Locate horizontal braces at midheight of fabric 72 inches or higher, on fences with top rail, and at two-third fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
- G. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch- diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire before stretching fabric.
- H. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail

at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.

- I. Chain-Link Fabric: Apply fabric to inside of enclosing framework. Leave 1-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- J. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than 15 inches o.c.
- K. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
 - 1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.
- L. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

3.4 GATE INSTALLATION

- A. Install gates according to manufacturer's written instructions, level, plumb, and secure for full opening without interference. Attach fabric as for fencing. Attach hardware using tamper-resistant or concealed means. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation.

3.5 ADJUSTING

- A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches and locks engage accurately and securely without forcing or binding.
- B. Lubricate hardware and other moving parts.

END OF SECTION CHAIN LINK FENCE

ITEM SPL – ACRYLIC COLOR COATING FOR PICKLEBALL COURT

- 1. Let asphalt base cure for 30 days.
- 2. Flood courts to inspect for ponding.

3. Should ponding occur, apply Dynabinder, Quick Patch Binder, Spec. 261.6, or approved equal in low spots.
4. Dynaflex Acrylic Resurfacer, Spec. 203.6, or approved equal (1 coat).
5. Dynaflex Color Coating, Concentrate, Spec. 201.6, or approved equal (3 coats). Two (2) coats with sand, surface coat without sand. Color per plans.
6. Stripe Aid, Line Striping Tape Gap filler, Spec. 272.6, or approved equal (1 coat).
7. Dynastripe, Textured Line Paint Spec 271.6, or approved equal (1 coat).

REMOVAL OF SURFACE DEPRESSIONS AND SURFACE SEALING

Description: This work shall consist of all work necessary to remove any surface irregularities from the new court surfaces and to install one coat of a surface sealer over the new court pavement.

Work: After the 403 asphalt concrete has cured for a minimum of 30 days, the court surface shall be broomed, washed and flooded to test for "no water break". When clean water is sheeted out on the surface, if ribboning, crawling or oil spotting occurs, allow longer curing before applying additional coats of playing surface.

After it is determined that the 403 surface has cured adequately, any areas ponding water deeper than the thickness of a nickel when flooded shall be marked and subsequently leveled with Dynabinder Quick Patch Binder, Spec 261.2, or approved equal.

Following removal of the surface irregularities, the entire court shall be sealed by applying one coat of Dynaflex Acrylic Resurfacer, Spec 203.6 or approved equal.

All materials used for filling depressions and for sealing the court surface shall be applied in strict accordance with the manufacturer's specifications for that product. Dilution water, when required by the manufacturer, shall be potable. Wet material on the surface shall not be allowed to dry in the windrow.

Manufacturer's temperature and weather restrictions for the application of these materials shall be strictly adhered to.

All cost for the above described work shall be incidental to the lump sum bid for "Acrylic Color Coating For Court Surface". No additional payment will be made for removal of surface depression and surface leveling.

ITEM SPL – PICKLEBALL COURT STRIPING

Description: This item shall consist of the work necessary to install a smooth, in-depth colored playing surface on the new PICKLEBALL court surface.

Work: After proper curing of the tennis court surface sealer, the tennis courts shall receive three (3) applications of Dynaflex Color coating, Concentrate, Spec. 201.6, or approved equal. The first two (2) coats shall include sand in the mixture. The final surface coat shall not include sand.

Following the application of the colored coats, lines shall then be applied to USA Pickleball Standard court dimensions using one (1) coat of Dynaflex Stripe Aid, Line Striping Tape Gap Filler, Spec. 272.6, or approved equal and then one (1) coat of Dynastripe Textured Line Paint, Spec. 271.6, or approved equal. All finish coating materials shall be maintenance-free, non-fade, non-scuff, and guaranteed not to chalk, crack, peel or flake.

Application - All materials used shall be applied in strict accordance with the particular manufacturer's instructions. Any system proposed by the Contractor is subject to Owner approval prior to application. When water is required by the manufacturer for dilution, it shall be potable.

Wet material on the surface shall not be allowed to dry in the windrow.

Colors:

See plans for colors and locations

Payment: All work described above shall be included in the lump sum bid for the project.

MATERIALS LIST

In the preparation of these documents and plans, several proprietary products have been specified. In all such cases, it is to be understood that the Contractor may offer a substitute for the specified product. Contractors shall base their bids on the specified product; however, if the Contractor chooses to propose a substitute, the substitution shall be indicated on the substitution sheet included with the bid form.

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

1. Dynaflex Materials:
Neyra Industries, Inc.
10700 Evendale Drive
Evendale, Ohio 45241
(513) 733-1000

CONTROL OF WORK

Construction work shall take place between the hours of 7:00 A.M. to 7:00 P.M., Monday through Saturday.

TRAFFIC CONTROL

Prior to starting application, contractor shall notify the proper agency at least 24 hours in advance. Contractor shall erect all necessary "No Parking" signs on streets intended for treatment. The signs shall be maintained until the initial sweeping is completed. Traffic shall be controlled throughout the construction phase. This shall be accomplished using barricades, lights, signs, and flagmen.

The contractor is responsible to maintain traffic at or below 25 mph on the uncured surface. The cost shall be incidental to the contract.

FINAL CLEAN-UP

Sweeping shall be completed within six (6) hours of material application. Initial sweeping shall remove all loose or unbounded material. All debris shall be removed from the job site. A second sweeping shall be accomplished immediately prior to asphalt paving.

INSPECTION

The contractor shall complete one street at a time, which shall be inspected and accepted by the Engineer. This provision shall not include sweeping. Should the engineer determine that any section of work is unsatisfactory, the contractor shall immediately take steps to insure that proper repairs are made.

VERIFICATION OF QUANTITIES

Scale tickets on liquid binder shall be provided to inspection personnel on a daily basis.

Scale tickets shall include:

1. Date and time of loading.
2. List streets where material will be placed.

METHOD OF MEASUREMENT

The method of measurement shall be the actual number of square yards of pavement treated in accordance with specifications and as accepted by the engineer.

“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 the words “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 into 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.

PAYMENT

No adjustments to unit prices shall be due to the Owner or the Contractor for increases or decreases in the Engineer's approximate unit quantities shown in the proposal resulting from changes in the amount of work performed.

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

DUKE ENERGY ELECTRIC UTILITY NOTES

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.

DUKE ENERGY GAS FACILITY NOTES

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.
- III. 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.

**GAS FACILITY NOTES
DUKE ENERGY COMPANY****Page Two**

- 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.

NORTHERN KENTUCKY WATER DISTRICT NOTES

All work pertaining to water district items shall be done in strict accordance with the specifications of the Northern Kentucky Water Service District here within, and under the direction, supervision and inspection of the Water District. Water main items are to be constructed in accordance with the provisions of the Kentucky Transportation Cabinet / Department of Highways, Standard Specifications for Road and Bridge Construction, latest edition, and the Part B Specifications.

A cushion of 12" shall be maintained between the proposed water mains and the existing sewers, inlet connections, and drains. If a greater clearance is desired, it will be so designated. Building sewer laterals are not to be disturbed or trapped. Existing drains, sewers and culverts are not be disturbed. If the water main is to be under culverts or pipe sewers, they shall be tunneled and backfilled with Class "T" concrete.

It shall be the Contractor's responsibility to arrange for removal and replacement of any poles and guys necessary for the installation of the proposed water mains, and any cost connected thereto shall be his expense.

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 Transportation Cabinet / Department of Highways, Standard Specifications for Road and Bridge Construction, (latest edition).

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.

**Proposed Highland
Hills Pickleball Courts**

**Fort Thomas,
Kentucky**

Geotechnical Subsurface Investigation

**City of Fort Thomas
130 N. Ft. Thomas
Avenue**

**Fort Thomas,
Kentucky 41075**

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October 13, 2023

CT Project No. 210789

**CT Consultants, Inc.
1915 North 12th Street
Toledo, OH 43604-5305
419-324-2222**



October 13, 2023

CT Project No. 210789

Mr. Matthew Kremer
City Administrative Officer
130 North Fort Thomas Avenue
Fort Thomas, Kentucky 41075

Re: Geotechnical Subsurface Investigation
Proposed Highland Hills Pickleball Courts
Fort Thomas, Kentucky

Dear Mr. Kremer:

Following is the final report of the geotechnical subsurface investigation performed by CT Consultants, Inc. (CT) for the referenced project conducted for the City of Fort Thomas. This study was performed in accordance with CT Proposal No. 210789, dated August 17, 2023, and verbally authorized by city administrator Matt Kremer on August 28, 2023; work will be performed under the terms and conditions of the CT's Master contract with the city.

This report contains the results of our study, our engineering interpretation of the results with respect to the project characteristics, and our recommendations for the design and construction of pavements. Soil samples collected during this investigation will be stored at our laboratory for 90 days from the date of this report. The samples will be discarded after this time unless you request that they be saved or delivered to you.

Should you have any questions regarding this report or require additional information, please contact our office.

Respectfully,

CT Consultants, Inc.

Negoslav Tosanovic, P.E.
Geotechnical Project Manager



Curtis E. Roupe, P.E.
Vice President

GEOTECHNICAL SUBSURFACE INVESTIGATION
PROPOSED HIGHLAND HILLS PICKLEBALL COURTS
FORT THOMAS, KENTUCKY

FOR

CITY OF FORT THOMAS
130 NORTH FORT THOMAS AVENUE
FORT THOMAS, KENTUCKY 41075

SUBMITTED

OCTOBER 13, 2023
CT PROJECT NO. 210789

CT CONSULTANTS, INC.
1915 NORTH 12TH STREET
TOLEDO, OHIO 43604
(419) 324-2222
(419) 321-6257 FAX



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PLATES

- Plate 1.0 Site Location Map
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FIGURES

- Logs of Test Borings
- Legend Key
- Tabulation of Test Data
- Grain Size Distribution

1.0 INTRODUCTION

This geotechnical subsurface investigation report has been prepared for the new construction of the three dual pickleball courts and a parking lot; a 60-foot-wide area located between the courts and the existing pavement is reserved for the future parking lot. The new improvement is planned at Highland Hills Park, located southwest of Mayfield Avenue, approximately 750 feet northwest of Highland Avenue, in Fort Thomas Kentucky. The general project area is shown on the attached Site Location Map (Plate 1.0).

This report summarizes our understanding of the proposed construction, describes the investigative and testing procedures, presents the findings, discusses our evaluations and conclusions, and provides our soils-related design and construction recommendations for pavements.

This study was performed in general accordance with CT Proposal No. 210789, dated August 17, 2023, and verbally authorized by city administrator Matt Kremer on August 28, 2023; work will be performed under the terms and conditions of CT's Master contract with the city.

The purpose of this investigation was to evaluate the subsurface conditions and laboratory data relative to the design and construction of new pickleball courts and a parking lot as well as construction of the future parking lot at the above referenced site. To accomplish this, CT performed four test borings, field and laboratory soil testing, and a geotechnical engineering evaluation of the test results.

This report includes:

- > A description of the existing pavement materials, as well as subsurface soil and groundwater conditions encountered in the borings.
- > Design recommendations for pavements related to the proposed project.
- > Recommendations concerning soil- and groundwater-related construction procedures such as site preparation, earthwork, pavement construction, and related field testing.

The scope of this study did not include an environmental assessment of the surface or subsurface materials.

2.0 INVESTIGATIVE PROCEDURES

This subsurface investigation included four test borings, designated as Borings B-1 through B-4, drilled within the future construction area by CT's drilling subconsultant on September 14, 2023. Borings B-1 and B-2 are drilled at the existing pavement and future parking lot, respectively and B-3 and B-4 are drilled at the Pickleball Courts. All borings are field located by the drillers on the drilling date per site plan provided by the city and Test Boring Location Plan generated by the CT engineers. The approximate locations of the borings are shown on the attached Test Boring Location Plan (Plate 2.0).

The test borings were performed in general accordance with geotechnical investigative procedures outlined in ASTM Standard D 1452 and D 5434. The test borings performed during this investigation were drilled with CME-55 Track Rig with drilling capabilities utilizing 2¼-inch inside diameter hollow-stem augers. Borings B-1 and B-2 were terminated at the target completion depth of 25 feet below existing grade while borings B-3 and B-4 were terminated shallower, at respective depths of 24.7 and 20 feet due to auger refusal.

During auger advancement, samples were obtained continuously using a split-spoon sampler driven at 24-inch intervals to a depth of 16 feet, then additional, two 18-inch samples are collected one at each of 18.5 and 23.5 feet of depth. Split-spoon (SS) samples were obtained by the Standard Penetration Test (SPT) Method (ASTM D 1586), which consists of driving a 2-inch outside diameter split-barrel sampler into the soil with a 140-pound weight falling freely through a distance of 30 inches. The sampler was driven in three successive 6-inch increments with the number of blows per increment being recorded. The sum of the number of blows required to advance the sampler the second and third 6-inch increments is termed the Standard Penetration Resistance (N-value) and is presented on the Logs of Test Borings attached to this report. The samples were sealed in jars and transported to our laboratory for further classification and testing.

The soil conditions encountered in the test borings are presented in the Logs of Test Borings, along with information related to sample data, SPT results, water conditions observed in the borings, and laboratory test data. It should be noted that these logs have been prepared on the basis of laboratory classification and testing as well as field logs of the encountered soils.

All of the recovered samples of the subsoils were visually or manually classified in accordance with the Unified Soil Classification System (USCS) (ASTM D 2487 and D 2488). All recovered samples were tested in our laboratory for moisture content (ASTM D 2216). Unconfined compressive strength estimates were obtained for the representative portion of the intact cohesive samples using a calibrated hand penetrometer. Additionally, organic content determinations by the loss-on-ignition (LOI) method (ASTM D 2974) were performed on selected samples. An Atterberg Limits test (ASTM D 4318) and particle size analysis with Hydrometer (ASTM D 422) was performed on soils from Borings B-1(SS-1) and B-4 (SS-1) to determine soil classification and soil index properties. The test results are

presented on the Logs of Test Borings, Tabulation of Test Data sheets, and Grain Size Distribution sheet attached to this report.

Experience indicates that the actual subsoil conditions at a site could vary from those generalized on the basis of test borings made at specific locations, especially at previously developed sites such as this site. Therefore, it is essential that a geotechnical engineer be retained to provide soil engineering services during the site preparation, excavation, and foundation phases of the proposed project. This is to observe compliance with the design concepts, specifications, and recommendations, and to allow design changes in the event subsurface conditions differ from those anticipated prior to the start of construction.

3.0 PROPOSED CONSTRUCTION

It is our understanding that the project consists of reconstruction /expansion of the existing pavement at the entrance to the site and construction of the three dual pickleball courts located in the Highland Hills Park in Fort Thomas, Kentucky. There is a 60-foot wide area reserved for the construction of the future parking lot. The main concern for the construction is the existence of an anticipated 10+ feet thick layer of undocumented fill placed across the future construction area and its capability to successfully support the new pavements and associated structures. The Test borings detected fill between 7.5- and 19.5-foot thick across the future construction site. Parking and pickleball courts' pavements are planned to consist of flexible (asphalt) sections. Final top of the future pavements is anticipated to approximate existing site grading.

Historical aerials obtained by Google Earth software recognize an existence of the three tennis courts that were in place at least from the year 1993 and being demolished or covered with the new fill between March and October 2019.

4.0 GENERAL SITE AND SUBSURFACE CONDITIONS

4.1 General Site Conditions

At the surface at borings B-2, B-3 and B-4, topsoil was encountered with depths on the order of 1 to 2 inches in thickness; at location of boring B-1 a 4-inch-thick layer of crushed stone was penetrated at the surface.

Underlying the surfacing materials all borings encountered cohesive fine-grain soils extending to the termination depths. An exception is boring B-2 which is terminated in shale bedrock. The upper, 7.5 to 19.5 feet thick portion of this material is classified as a fill.

4.2 General Soil Conditions

Stratum I: Underlying the surfacing crushed stone at location B-1 and topsoil at the other three boring locations, cohesive existing **fill** materials were encountered to a depth of 7.5 to 19.5 feet below existing grade. The cohesive fill materials consisted of lean clay with varying amounts of sand, gravel, and crushed stone. Non-soil materials within the cohesive fill included in “with to trace” quantities of asphalt, brick, and slag fragments throughout the fill stratum in all borings. No organics impurities are detected in the fill except boring B-4 where trace of organics is detected at the top and the bottom of the 7.5-foot-thick fill stratum. Organic content tested on a sample at the B-4 location (SS-1) was 5.09 percent. SPT N-values ranged from 3 to 24 blows per foot (bpf), indicating **soft** to very stiff consistency. The isolated N-values of 50+, 58+, and 47 bpf encountered at B-1, B-2, and B-3, respectively, are likely due to the presences of larger pieces of non-soil materials and not necessarily indicative of the consistency of the fill. Moisture contents varied from approximately 6 to 23 percent. A liquid limit of 45 and 46 percent and a plasticity index of 20 and 20 percent, were determined for the sample obtained from Borings B-1 (SS-1) and B-4 (SS-1), respectively. These values, along with the associated particle size gradations, are indicative of lean clay (CL) as classified in accordance with the Unified Soil Classification System (USCS) and A-7-6 soils per ODOT and AASHTO Classification System.

Stratum II: Based on the results of our field and laboratory tests, the subsoils encountered underlying the existing fill materials consisted of predominantly medium stiff to stiff cohesive soils to termination at depths between 20 to 25 feet below existing grade. Exceptions of the above descriptions are as follow:

1. Borings B-1, B-3 and B-4 are terminated in hard silty clay or sandy silt mixed with shale or sandstone fragments (hardpan) indicative of approaching the surface of bedrock.
2. Boring B-2 is terminated in shale bedrock encountered at depth of 23 feet.
3. In borings B-3 and B-4 cohesive soils encountered immediately above the hard cohesive soils and bedrock exhibited soft consistency with N-value of 2.

4. Boring B-2, B-3 and B-4 detected Peat, usually highly organic soil within the cohesive soil stratum immediately above the hard cohesive soils and bedrock. Peat existence in this soil might at least partially contribute to soft soil consistency and low N-value.

These naturally deposited cohesive soils underlying the fill consisted of lean/silty clay (CL) with sand and varying amounts of gravel or sandy silt (ML). Shale or sandstone fragments were detected in the last soil samples close to the termination depths. Below or slightly above 5 percent of organics were observed in occasional samples, with organic contents ranging from approximately 2.9 to 5.7 percent. SPT N-values generally ranged from 6 to 9 blows per foot (bpf). An SPT N-value of 2 bpf, indicating soft consistency, was determined for the sample obtained from soil underlying the fill at a depth of 18.5 and 12 feet in Borings B-3 and B-4 (see note No. 3 above); an elevated N-value of 50+ indicating hard consistency are encountered in the soils close to termination depth in borings B-1, B-3 and B-4, see note No. 1 above. Unconfined compressive strengths generally ranged from 0.25 to 4.5 tons per square foot (tsf), with higher unconfined compressive strengths determined for the soils in the lower portions of Borings B-1, B-3, and B-4. Moisture contents ranged from approximately 14 to 39 percent; moisture content of shale material encountered in boring B-2 was 5 percent. These values, along with the associated particle size gradations, are indicative of lean clay (CL) as classified in accordance with the Unified Soil Classification System (USCS).

Additional descriptions of the stratigraphy encountered in the borings are presented on the Logs of Test Borings.

4.3 Groundwater Conditions

Groundwater was encountered during drilling operations in borings B-3 and B-4 at respective depths of 23.5 feet (El. 773.3) and 18.9 feet (El. 780.1); water level was also observed upon completion of drilling operations in the same two borings at respective depths of 23.2 (El. 773.8) and 18.1 (El. 780.9). It should also be noted that the borings were drilled and backfilled within the same day. As such, stabilized water levels may not have occurred over this limited time period. Instrumentation was not installed to observe long-term groundwater levels.

Based on the limited data collected during this investigation, including the soil characteristics and the moisture conditions encountered in the borings, it is our opinion that the “normal”, static groundwater level will generally be encountered at depths greater than the extent of the borings performed for this investigation. The water encountered in the borings noted above is likely a result of perched water in the fill soils above the hard cohesive soils. However, it should be noted that groundwater elevations can fluctuate with seasonal and climatic influences. Therefore, the groundwater conditions may vary at different times of the year from those encountered during this investigation.

5.0 DESIGN RECOMMENDATIONS

The following conclusions and recommendations are based on our understanding of the proposed construction and on the data obtained during the field investigation. If the project information or location as previously described is incorrect or should change significantly, a review of these recommendations should be made by CT. These recommendations are subject to the satisfactory completion of the recommended site and subgrade preparation and fill placement operations described in Section 6.0, "Construction Recommendations".

5.1 Subgrades

We are not certain if the existing entry drive pavement will be incorporated into the new parking lot or completely removed and reconstructed within the new parking lot and entry driveway construction. The new and future parking lots as well as the pickleball courts will be constructed with flexible asphalt pavement.

5.1.1 Existing Subgrade

Subgrades should be prepared as described in Section 6.0 of this report.

The existing fill soils encountered in all borings within the future construction area, generally exhibited medium stiff to very stiff consistency which would generally be considered suitable for subgrade support. However, there were some indications such as variable SPT N Values, non-soil materials in variable quantities, and variable organic contents (some noted as peat) which indicate that the fill was not uniformly placed and compacted. While the existing fills at the boring locations are generally suitable for support of the proposed courts and pavements, for existing fills there is always a risk that less favorable conditions may be encountered between boring locations that could result in undesirable settlements. This risk can only be fully mitigated through by full depth removal and replacement or significant subgrade modifications or ground improvements.

Based upon the conditions encountered and the time that the existing fills have been in place, in our opinion a practical solution is to use a partial undercut of the existing material to improve the uniformity of the near surface soils which should provide suitable support for the proposed pavements. The partial undercut and replacement should be performed as described below.

The area should be graded to an elevation that will allow for a 1-foot-thick layer of pavement aggregate stone base material below the designed pavement sections. The subgrade should be proof rolled at this elevation to evaluate stability. A visual evaluation should also be performed for the presence of non-soil material, organic soils, or other detrimental conditions. If soft soils are encountered at this elevation or large debris greater than 6 inches, they should be removed and replaced with properly compacted

stone base material. Some of this additional removal should be anticipated. The entire subgrade should then be compacted as described in Section 6.

Upon completion of the proof rolling and modifications as required noted above, a geogrid should be placed on the subgrade. We recommend the use of a Tensar Triaxial Geogrid (TX-140 or TX-160) or equivalent. Then, the 1-foot-thick layer of pavement stone base material should be placed and properly compacted.

5.1.2 Modified Subgrade

The subgrade modification method was generally described above, but some additional discussion on subgrade preparation at the planned undercut depth is provided in this section. Although not anticipated to be prevalent, if moisture contents are lower than optimum, water should be uniformly mixed into the subgrade. More likely to be encountered at the site are soils with moisture contents that are higher than optimum. Where this is the case, modification may consist of scarification and aeration (discing and exposure to sun and wind). However, this method may not be feasible if construction occurs during wet seasonal conditions or if the construction schedule must be expedited. Very moist to wet soils will “pump” under the operation of heavy equipment, resulting in deep rutting and perhaps rendering the operation of grading and paving equipment difficult or impossible. If at the time of construction it is determined that more than an additional 1 foot of undercut is required to stabilize the subgrade, the geotechnical engineer should be consulted.

5.2 Flexible (Asphalt) Pavement

Based on the results of the laboratory testing and visual classifications and modifications noted above, we recommend a design CBR value of 5 percent for flexible pavement design for the Group A-7-6 or better soils. This CBR value is based on subgrade compacted to at least 100 percent of the maximum dry density as determined by ASTM D 698 (Standard Proctor) or verified as stable through proof rolling.

The subgrade support recommendations indicated herein should be reviewed by the site engineer in conjunction with the design criteria to determine the required pavement sections. In any case, we recommend light-duty pavement cross-sections consist of at least 3 inches of asphalt underlain by 6 inches of aggregate base based on our experience regarding environmental exposure and reasonable serviceability. The recommended stone base on top of the geogrid should not be considered as part of the pavement section.

All paving operations should conform to (Kentucky Transportation Cabinet (KTC) specifications. The pavement and subgrade preparation procedures outlined in this report should result in a reasonably workable and satisfactory pavement. It should be recognized, however, that all flexible pavements need repairs or overlays from time to time as a result

of exposure to weather conditions. Additional repairs may also be required due to the risks associated with the existing fill soils noted earlier in the report.

It is recommended that proof rolling/compaction, placement of the geogrid aggregate base undercut replacement, the designed pavement stone base and placement of asphalt be performed within as short a time period as possible. Exposure of the aggregate base or subgrade to rain, snow, or freezing conditions may lead to deterioration of the subgrade and/or base due to excessive moisture conditions and associated difficulties in achieving the required compaction.

5.3 Pavement Drainage

Based on the poorly-drained nature of the clayey subgrade soils at this site, it is anticipated that surface water infiltration may collect in the aggregate base course. Without adequate drainage, water will remain in the base for extended periods of time, creating localized wet, soft pockets. The presence of these pockets will increase the likelihood that pavement distress (cracking, potholes, etc.) will develop. Drainage features may include grading the subgrade surface to slope downward to the outside edge of pavements and/or providing longitudinal edge drains connected to storm sewers or other outlets.

5.4 Groundwater Control

Encountered groundwater conditions were discussed in Section 4.3. Based on the soil characteristics and moisture conditions encountered during this investigation, it is our opinion that the “normal” groundwater level will generally be encountered at depths greater than the extent of the borings performed for this investigation.

It is our experience that adequate control of groundwater seepage, “perched” water, or surface water run-off into shallow excavations should be achievable by minor dewatering systems, such as pumping from prepared sumps. In the event excessive seepage is encountered during construction, CT may be notified to evaluate whether other dewatering methods are required.

5.5 Excavations and Slopes

The sides of temporary excavations for construction should be adequately sloped to provide stable sides and safe working conditions. Otherwise, the excavation must be properly braced against lateral movements. In any case, applicable Occupational Safety and Health Administration (OSHA) safety standards must be followed.

Based on the test borings, it is likely that excavations will predominately encounter Type C soils (cohesive soils with unconfined compressive strengths less than 1,000 psf and fill materials). For temporary excavations in Type C soils, side slopes must be no steeper than

1½ horizontal to 1 vertical (1½H:1V). Flatter slopes may be required if lower strength soils or adverse seepage conditions are encountered during construction.

For permanent excavations and slopes, we recommend that grades be no steeper than 3H:1V without a more extensive geotechnical evaluation of the proposed construction plans and site conditions.

6.0 CONSTRUCTION RECOMMENDATIONS

6.1 Site and Subgrade Preparation

Prior to proceeding with construction operations, topsoil, root mat, vegetation, and other deleterious non-soil materials should be removed from the proposed construction areas. Suitable topsoil may be stockpiled for later use in landscape areas. The actual amount of required stripping should be determined in the field by a geotechnical engineer or qualified representative.

Upon completion of stripping and clearing and the grading to allow for the placement of the grid and stone base material the areas intended to support new fill and parking lot and pickleball courts' pavements should be carefully inspected by a geotechnical engineer.

For the cohesive subgrade soils, proof rolling should be completed utilizing a 20- to 30-ton loaded truck or other pneumatic-tired vehicle of similar size and weight. The truck should make a minimum of two passes covering the proposed development area, with additional passes as necessary to achieve required compaction and/or subgrade stabilization.

The purpose of proof rolling the cohesive subgrades is to locate any weak, soft, or excessively wet soils that may be present at the time of construction. Any unsuitable materials observed during the inspection and proof-rolling operations should be undercut and replaced with compacted fill or stabilized in place utilizing conventional remedial measures such as discing, aeration, and recompaction. Once the site has been proof rolled, inspected, and stabilized, the proof-rolled or inspected subgrades should not be exposed to wet conditions. It should be recognized that during periods of wet weather, the silty/clayey soils that will be exposed at design subgrades will tend to pond water for short periods of time, with the potential to deteriorate the prepared subgrade.

The results of the inspection and proof-rolling operations will be partially dependent on construction operations, the moisture content of the soil, and the weather conditions prevalent at the time. If pumping or rutting is encountered and difficulty is experienced in the operation of construction equipment, CT may be notified in order to determine which method of subgrade modification may be best suited for the encountered conditions. Should such conditions be experienced, we may recommend that a small test area be used to determine the necessary depth of undercutting and stone replacement or other remedial action necessary to achieve a stable subgrade condition.

6.2 Fill

Material for engineered fill or backfill required to achieve design grades may consist of any non-organic soils similar to or better than existing subgrade soils, and have a maximum dry density as determined by the Standard Proctor (ASTM D 698) of 90 pounds per cubic foot (pcf) or greater. On-site soils may be used as engineered fill materials provided that they

are free of organic matter, debris, excessive moisture, and rock or stone fragments larger than 3 inches in diameter. Depending on seasonal conditions, the on-site soils may be wet of optimum and may require scarification and aeration to achieve satisfactory compaction. If the allotted construction schedule does not allow for scarification and aeration activities, it may be more practical or economical to utilize imported granular fill.

Fill should be placed in uniform layers not more than 8 inches thick (loose measure) and adequately keyed into stripped and scarified soils. The subgrade at the bottom of the recommended geogrid and all fill within pavement subgrades should be compacted to a density of not less than 100 percent of the maximum dry density as determined by ASTM D 698 (Standard Proctor). The upper soil profile at the site consists of cohesive soils. The contractor should be prepared to use a sheepsfoot roller to provide effective compaction of the cohesive soils. In narrow utility excavations, the on-site cohesive soils may be difficult to compact; therefore, a clean granular material may be required in these areas.

Scarified subgrade soils and all fill material should be within 3 percent of the optimum moisture content to facilitate compaction. Furthermore, fill material should not be frozen or placed on a frozen base. It is recommended that all earthwork and site preparation activities be conducted under adequate specifications and properly monitored in the field by a qualified geotechnical testing firm.

7.0 QUALIFICATION OF RECOMMENDATIONS

Our evaluation of soils-related tennis court pavement design and construction conditions has been based on our understanding of the site and project information, and the data obtained during our field investigation. The general surface and subsurface conditions used were based on interpretation of the pavement materials and subsurface data obtained at specific boring locations. Regardless of the thoroughness of a subsurface investigation, there is the possibility that conditions between borings will differ from those at boring locations, that conditions are not as anticipated by the designers, or that the construction process has altered the soil conditions. This potential is increased for previously developed sites. Therefore, experienced geotechnical engineers should observe earthwork to confirm that the conditions anticipated in design are noted. Otherwise, CT assumes no responsibility for construction compliance with the design concepts, specifications, or recommendations.

The design recommendations in this report have been developed on the basis of the previously described project characteristics and subsurface conditions. If project criteria or locations change, a qualified geotechnical engineer should be permitted to determine whether the recommendations must be modified. The findings of such a review will be presented in a supplemental report.

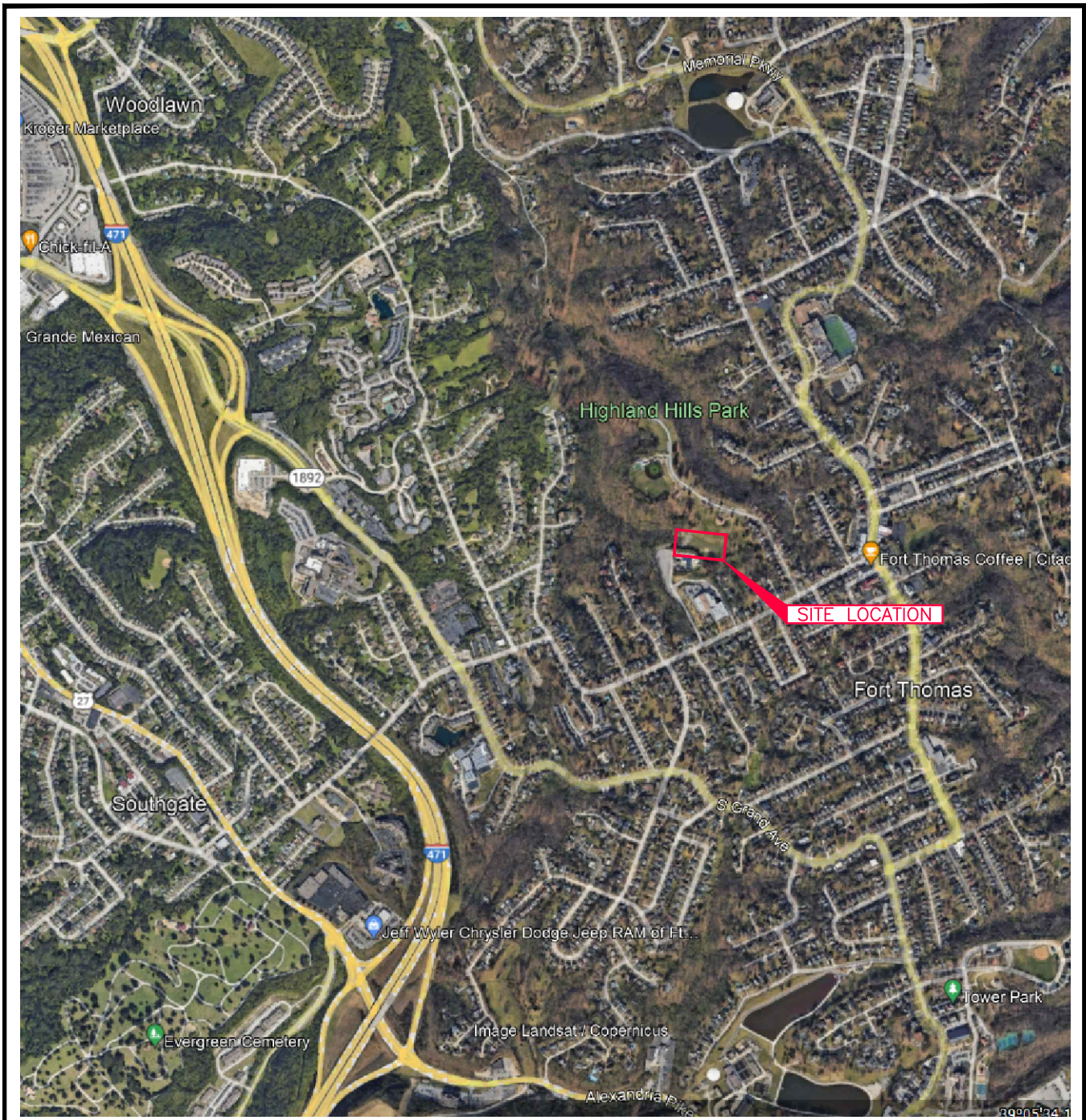
The nature and extent of variations between the borings may not become evident until the course of construction. If such variations are encountered, it will be necessary to reevaluate the recommendations of this report after on-site observations of the conditions.

Our professional services have been performed, our findings derived, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied. CT is not responsible for the conclusions, opinions, or recommendations of others based on this data.

Plates

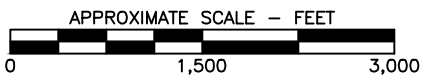
- Plate 1.0** **Site Location Map**
Plate 2.0 **Test Boring Location Plan**





LEGEND

— APPROXIMATE SITE LOCATION



**PLATE 1.0
SITE LOCATION MAP**
PROPOSED HIGHLAND HILLS PICKLEBALL COURTS
FORT THOMAS, KENTUCKY

PREPARED FOR
CITY OF FORT THOMAS
FORT THOMAS, KENTUCKY

DRAWN TRR/10-2-23 CHECKED KCH/10-3-23

REVISED APPROVED

JOB NO. 210789

DRAWING NUMBER

B_210789-06-PLATE 1 SM





LEGEND

B-1  APPROXIMATE TEST BORING LOCATION

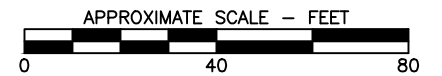



PLATE 2.0	
TEST BORING LOCATION PLAN	
PROPOSED HIGHLAND HILLS PICKLEBALL COURTS FORT THOMAS, KENTUCKY	
PREPARED FOR CITY OF FORT THOMAS FORT THOMAS, KENTUCKY	
DRAWN TRR/10-2-23	CHECKED KCH/10-3-23
REVISED	APPROVED
JOB NO. 210789	
DRAWING NUMBER B_210789-06-PLATE 2 BLP	

Figures

Logs of Test Borings

Legend Key

Tabulation of Test Data

Grain Size Distribution



APPENDIX A
Logs of Test Borings



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BORING NUMBER B-1

PAGE 1 OF 1

CLIENT City of Fort Thomas **PROJECT NAME** Proposed Highland Hills Pickleball Courts

PROJECT NUMBER 210789 **PROJECT LOCATION** Fort Thomas, KY

DRILLING CONTRACTOR Central Star Drilling M. Jamison J. Kerr **RIG NO.** CME-55 Track Rig **GROUND ELEVATION** 792 ft

DRILLING METHOD 2-1/4 in. HSA **GROUND WATER LEVELS:**

DATE STARTED 9/14/23 **COMPLETED** 9/14/23 **AT TIME OF DRILLING** None

LOGGED BY KKC **CHECKED BY** KCH **AT END OF DRILLING** None

NOTES _____ **0hrs AFTER DRILLING** Backfilled w/Cuttings

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	SPT N VALUE			
									PL	MC	LL	
	0								20	40	60	80
790	0.3'	[Cross-hatched]	CRUSHED STONE - 4 Inches	SS 1	33	3-6-4-2 (10)	4.00		22			
	2.0'	[Cross-hatched]	FILL - Moist Stiff Brown LEAN CLAY w/Sand and Trace Crushed Stone	SS 2	33	3-2-1-0 (3)	1.75		23			
5	4.0'	[Cross-hatched]	FILL - Moist Soft Brown LEAN CLAY w/Sand and Trace Crushed Stone	SS 3	58	17-10-7-8 (17)	3.25		12			
785	6.0'	[Cross-hatched]	FILL - Moist Very Stiff Gray/Brown SILTY CLAY w/Crushed Stone and Asphalt Fragments	SS 4	63	3-6-8-8 (14)	NI		21			
	8.0'	[Cross-hatched]	FILL - Moist Stiff Brown LEAN CLAY w/Sand and Trace Crushed Stone	SS 5	50	4-6-5-4 (11)	NI		9			
	10'	[Cross-hatched]	@10': Very Stiff, Black/Brown, w/Trace Crushed Stone	SS 6	88	6-12-5-11 (17)	4.00		15			
780	12.0'	[Cross-hatched]	FILL - Moist Stiff Brown/Black SANDY LEAN CLAY w/Asphalt Fragments and Crushed Stone	SS 7	80	12-50/4"	NI		12			>>
	14.0'	[Cross-hatched]	@12.9' to 13.2': (Auger Chatter Noted)									
15	14.0'	[Cross-hatched]	FILL - Moist Stiff Brown/Gray LEAN CLAY w/Crushed Stone and Sand	SS 8	42	7-4-7-6 (11)	NI		18			
775	19.5'	[Diagonal lines]	Moist Stiff Gray/Brown LEAN CLAY w/Sand and Trace Gravel (CL)	SS 9	78	6-5-4 (9)	2.25		27			
770	23.5'	[Diagonal lines]	Moist Hard Gray/Brown SILTY CLAY w/Sand and Sandstone Fragments (CL-ML)	SS 10	100	10-50/4"	4.50		17			>>
25	25.0'	[Diagonal lines]	Bottom of hole at 25.0 feet.									

TTL GEOTECH STANDARD 210789.GPJ GINT US LAB.GDT 10/5/23



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BORING NUMBER B-2

CLIENT City of Fort Thomas **PROJECT NAME** Proposed Highland Hills Pickleball Courts
PROJECT NUMBER 210789 **PROJECT LOCATION** Fort Thomas, KY
DRILLING CONTRACTOR Central Star Drilling M. Jamison J. Kerr **RIG NO.** CME-55 Track Rig **GROUND ELEVATION** 794 ft
DRILLING METHOD 2-1/4 in. HSA **GROUND WATER LEVELS:**
DATE STARTED 9/14/23 **COMPLETED** 9/14/23 **AT TIME OF DRILLING** None
LOGGED BY KKC **CHECKED BY** KCH **AT END OF DRILLING** None
NOTES Auger refusal encountered at a depth of 25.5 feet. **0hrs AFTER DRILLING** Backfilled w/Cuttings

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL			
									20	40	60	80
	0		TOSPOIL - 1 Inch									
	0.1'		FILL - Moist Medium Stiff Brown SILT w/Sand and Trace Crushed Stone	SS 1	79	3-3-3-3 (6)	3.75					20
	2.0'		FILL - Moist Medium Stiff Brown SILTY CLAY w/Sand and Trace Crushed Stone	SS 2	67	4-4-4-5 (8)	3.50					20
790	4.0'		FILL - Moist Very Stiff Gray/Brown SILTY CLAY w/Sand and Crushed Stone	SS 3	21	20-12-8-6 (20)	NI					13
	5		@6': Black/Brown, w/Asphalt Fragments	SS 4	46	12-7-9-10 (16)	NI					12
	8.0'		FILL - Moist Medium Stiff Gray/Brown LEAN CLAY w/Sand and Trace Crushed Stone	SS 5	58	2-3-4-4 (7)	1.50					22
785	10.0'		FILL - Moist Stiff Black/Gray LEAN CLAY w/Crushed Stone, Asphalt Fragments, Sand, and Trace Brick Fragments	SS 6	92	3-8-6-4 (14)	NI					17
	12'		@12': Very Stiff, w/Slag Fragments	SS 7	63	1-5-19-10 (24)	NI					15
780	14.5'		FILL - Moist Hard Gray/Brown LEAN CLAY w/Sand and Trace Crushed Stone	SS 8	100	7-8-50/2"	4.50					20
	15		@16' to 16.3': (Auger Chatter Noted)									
	18.0'		Moist Medium Stiff Gray LEAN CLAY w/Sand and Peat (CL) LOI = 3.6%	SS 9	89	2-3-3 (6)	1.00					31
775	20		Brown/Gray WEATHERED SHALE	SS 10	50	8-50/4"	NP					5
770	23.0'											
	25.5'		Bottom of hole at 25.5 feet.									

TTL GEOTECH STANDARD 210789.GPJ GINT US LAB.GDT 10/5/23



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BORING NUMBER B-3

PAGE 1 OF 1

CLIENT City of Fort Thomas	PROJECT NAME Proposed Highland Hills Pickleball Courts
PROJECT NUMBER 210789	PROJECT LOCATION Fort Thomas, KY
DRILLING CONTRACTOR Central Star Drilling M. Jamison J. Kerr	RIG NO. CME-55 Track Rig GROUND ELEVATION 797 ft
DRILLING METHOD 2-1/4 in. HSA	GROUND WATER LEVELS:
DATE STARTED 9/14/23 COMPLETED 9/14/23	▽ AT TIME OF DRILLING 23.5 ft / Elev 773.5 ft
LOGGED BY KKC CHECKED BY KCH	▼ AT END OF DRILLING 23.2 ft / Elev 773.8 ft
NOTES Auger refusal encountered at a depth of 24.7 feet.	0hrs AFTER DRILLING Backfilled w/Cuttings

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL			
									20	40	60	80
	0		TOPSOIL - 1 Inch									
795	0.1'		FILL - Moist Stiff Brown SILT w/Sand and Trace Crushed Stone	SS 1	46	7-7-8-8 (15)	NI			18		
	2.0'		FILL - Moist Stiff Gray/Brown LEAN CLAY w/Crushed Stone, Sand, and Trace Asphalt Fragments	SS 2	58	4-4-6-7 (10)	2.25			13		
5	4.0'		FILL - Moist Medium Stiff Gray/Brown LEAN CLAY w/Sand, Crushed Stone, and Trace Brick Fragments	SS 3	63	3-3-3-34 (6)	2.25			15		
790	6.0'		FILL - Moist Very Stiff Brown SILTY CLAY w/Sand and Crushed Stone	SS 4	100	20-15-6-11 (21)	3.00			15		
	8.0'		FILL - Moist Hard Black/Brown LEAN CLAY w/Sand, Asphalt Fragments, and Crushed Stone	SS 5	42	7-34-13-9 (47)	NI			13		
10	10.0'		FILL - Moist Stiff Brown SILTY CLAY w/Sand and Crushed Stone	SS 6	63	7-6-7-6 (13)	NI			16		
785	12.0'		Moist Medium Stiff Brown LEAN CLAY w/Sand and Trace Gravel (CL)	SS 7	63	3-3-3-4 (6)	3.50			24		
	14'		@14': LOI = 2.9%	SS 8	75	2-3-5-6 (8)	2.75			25		
	15.5'		@15.5': Gray, w/Trace Peat									
780	18.5'		Moist Soft Gray SILTY CLAY w/Sand and Peat (CL-ML) LOI = 5.7%	SS 9	100	1-1-1 (2)	0.75			38		
775	24.0'		Moist Hard Gray/Brown SILTY CLAY w/Sand and Shale Fragments (CL-ML)	SS 10	100	32-15-50/2"	NI			18		>>
	24.7'		Bottom of hole at 24.7 feet.									

TTL_GEOTECH_STANDARD 210789.GPJ GINT US LAB.GDT 10/5/23



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BORING NUMBER B-4

PAGE 1 OF 1

CLIENT City of Fort Thomas	PROJECT NAME Proposed Highland Hills Pickleball Courts
PROJECT NUMBER 210789	PROJECT LOCATION Fort Thomas, KY
DRILLING CONTRACTOR Central Star Drilling M. Jamison J. Kerr	RIG NO. CME-55 Track Rig GROUND ELEVATION 799 ft
DRILLING METHOD 2-1/4 in. HSA	GROUND WATER LEVELS:
DATE STARTED 9/14/23 COMPLETED 9/14/23	▽ AT TIME OF DRILLING 18.9 ft / Elev 780.1 ft
LOGGED BY KKC CHECKED BY KCH	▼ AT END OF DRILLING 18.1 ft / Elev 780.9 ft
NOTES Auger refusal encountered at a depth of 20.0 feet.	0hrs AFTER DRILLING Backfilled w/Cuttings

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	UNCONF. COMP. STR. (tsf)	DRY UNIT WT. (pcf)	PL MC LL			▲ SPT N VALUE ▲	
									20	40	80		
	0		TOPSOIL - 2 Inches										
			FILL - Moist Very Stiff Gray/Brown GRAVELLY (Crushed Stone) LEAN CLAY w/Sand and Trace Organics LOI = 5.1%	SS 1	21	9-9-8-11 (17)	NI					15	
795			FILL - Moist Stiff Brown LEAN CLAY w/Sand and Trace Crushed Stone @4': Brown/Red/Gray, w/Asphalt Fragments and Brick Fragments	SS 2	54	9-7-5-4 (12)	4.50					20	
5			@6': Red/Gray, w/Trace Organics	SS 3	67	2-5-5-6 (10)	NI					18	
			Moist Medium Dense Brown POORLY GRADED SAND w/Clay and Trace Gravel (SP-SC)	SS 4a	83	4-5-8 (13)	NI					20	
790			Moist Medium Stiff Brown LEAN CLAY w/Sand and Trace Gravel (CL)	SS 4b	83	9	NP					7	
				SS 5	79	2-4-4-4 (8)	2.50					27	
				SS 6	50	2-3-4-4 (7)	2.50					24	
785			Wet Soft Gray LEAN CLAY w/Sand, Trace Gravel, and Peat (CL) (Free Water Noted) LOI = 4.1%	SS 7	83	1-1-1-2 (2)	0.25					34	
			@14': Moist, Very Soft, LOI = 5.2%	SS 8	71	0-0-1-2 (1)	0.75					39	
780			▼ @18.3' to 18.5': (Auger Chatter Noted)									14	
			Moist Hard Brown SANDY SILT w/Sandstone Fragments (ML)	SS 9	89	16-50/3"	NI						>>
	20		Bottom of hole at 20.0 feet.										


























TTL_GEOTECH_STANDARD 210789.GPJ GINT US LAB.GDT 10/5/23

APPENDIX B







Legend Key

LEGEND KEY

Unified Soil Classification System Soil Symbols

	GW - WELL GRADED GRAVEL Includes Gravel-Sand mixtures, little or no fines.		GP - POORLY GRADED GRAVEL Includes Gravel-Sand mixtures, little or no fines.		GM - SILTY GRAVEL Includes Gravel-Sand-Silt mixtures.		GC - CLAYEY GRAVEL Includes Gravel-Sand-Clay mixtures.
	SW - WELL GRADED SAND Includes Gravelly Sands, little or no fines.		SP - POORLY GRADED SAND Includes Gravelly Sands, little or no fines.		SM - SILTY SAND Includes Sand-Silt mixtures.		SC - CLAYEY SAND Includes Sand-Clay mixtures.
	ML - SILT Includes Silt with Sand and Sandy Silt.		CL - LEAN CLAY Includes Sandy Lean Clay and Lean Clay with Sand and Gravel.		MH - ELASTIC SILT Includes Sandy Elastic Silt and Elastic Silt with Sand.		CH - FAT CLAY Includes Sandy Fat Clay and Fat Clay with Sand.
	CL-ML - SILTY CLAY Includes Clayey Silt of low plasticity.		OL - ORGANIC SILT and ORGANIC CLAY of low plasticity.		OH - ORGANIC SILT and ORGANIC CLAY of medium to high plasticity.		Pt - PEAT Includes humus, swamp and other soils with high organic content.
	FILL MATERIAL - Includes controlled and non-controlled soil and non-soil materials.		TOPSOIL		ASPHALT - Bituminous Asphalt		CONCRETE - Includes broken concrete rubble.
	Shale		Weathered Shale		Sandstone		Weathered Sandstone
	Coal						

Sample Symbols

	SS - Split Spoon		ST - Shelby Tube		RC - Rock Core		GS - Geoprobe Sleeve
			AU - Auger Cuttings		GB - Grab		

Notes:

1. Exploratory borings were drilled on September 14, 2023, using 2¼- inch inside diameter hollow-stem augers.
2. These logs are subject to the limitations, conclusions, and recommendations in the report and should not be interpreted separate from the report.
3. The borings were located in the field by CT Drilling Sub consultant ATLAS in accordance with boring location plans generated by CT Engineers.
4. Unconfined Compressive Strength (tsf):
NP = Non-Plastic
NI = Not Intact

APPENDIX C
Tabulation of Test Data



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SUMMARY OF LABORATORY RESULTS

CLIENT City of Fort Thomas **PROJECT NAME** Proposed Highland Hills Pickleball Courts
PROJECT NUMBER 210789 **PROJECT LOCATION** Fort Thomas, KY

Borehole	Depth	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Size (mm)	%<#200 Sieve	Class-ification	Water Content (%)	Dry Density (pcf)	Satur-ation (%)	Void Ratio
B-1	0.0	45	25	20	19	77	CL	21.7			
B-1	2.0							22.7			
B-1	4.0							12.1			
B-1	6.0							21.1			
B-1	8.0							9.3			
B-1	10.0							15.3			
B-1	12.0							12.3			
B-1	14.0							17.7			
B-1	19.8							26.7			
B-1	23.5							17.1			
B-2	0.0							19.7			
B-2	2.0							19.8			
B-2	4.0							13.2			
B-2	6.0							11.7			
B-2	8.0							21.6			
B-2	10.0							16.7			
B-2	12.0							14.5			
B-2	14.0							20.2			
B-2	18.5							31.2			
B-2	23.5							4.5			
B-3	0.0							18.0			
B-3	2.0							13.3			
B-3	4.0							14.9			
B-3	6.0							15.2			
B-3	8.0							13.3			
B-3	10.0							16.1			
B-3	12.0							24.0			
B-3	14.0							24.7			
B-3	18.5							37.9			
B-3	23.5							17.6			
B-4	0.0	46	26	20	37.5	51	CL	15.4			
B-4	2.0							20.2			
B-4	4.0							18.4			
B-4	6.0							20.4			
B-4	7.5							7.1			
B-4	8.0							26.9			
B-4	10.0							24.3			
B-4	12.0							34.2			
B-4	14.0							38.6			
B-4	18.5							13.5			

LAB SUMMARY 210789.GPJ GINT US LAB.GDT 10/5/23

APPENDIX D
Grain Size Distribution



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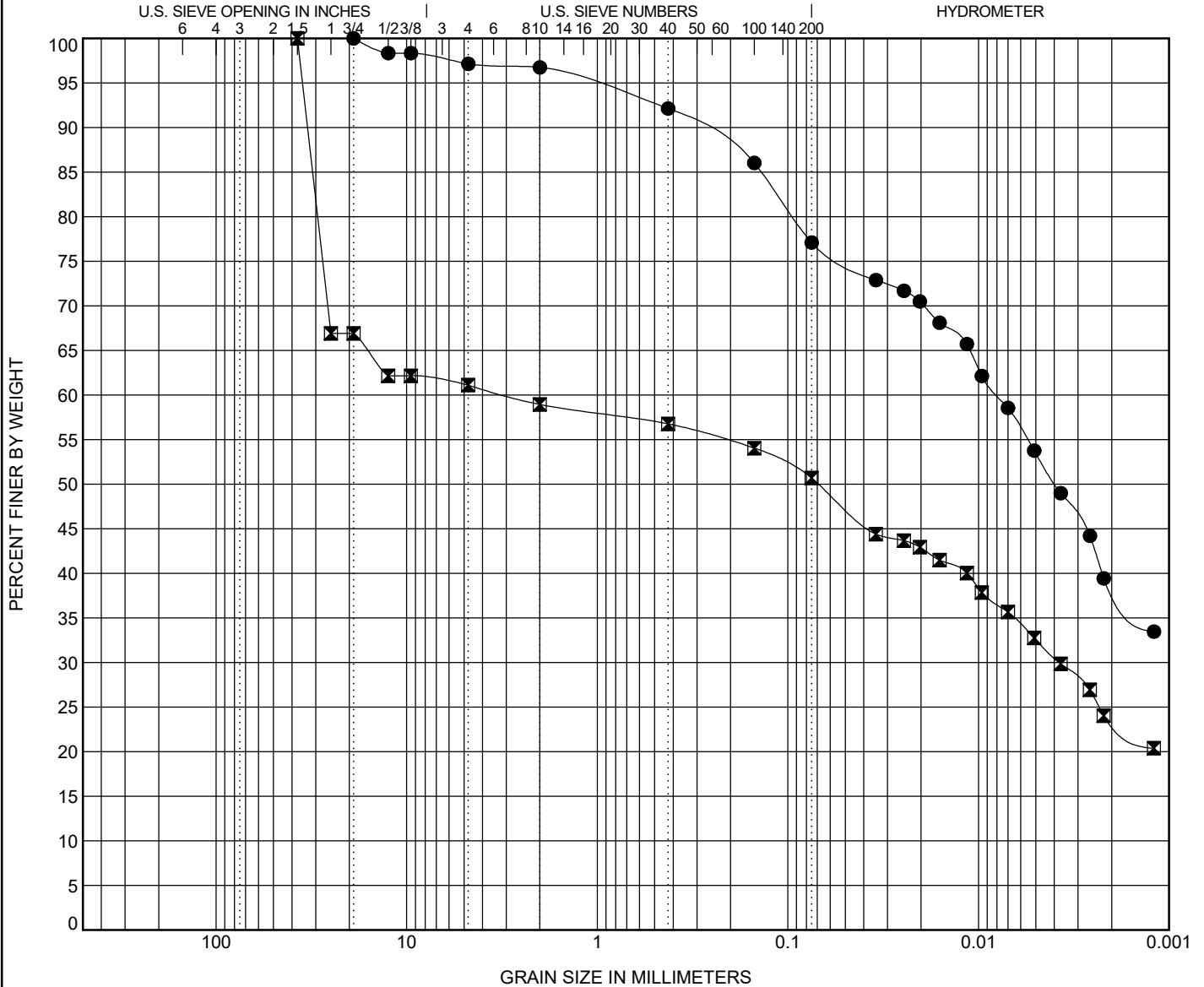
GRAIN SIZE DISTRIBUTION

CLIENT City of Fort Thomas

PROJECT NAME Proposed Highland Hills Pickleball Courts

PROJECT NUMBER 210789

PROJECT LOCATION Fort Thomas, KY



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	USCS Classification	LL	PL	PI	Cc	Cu
● B-1 0.0	LEAN CLAY with SAND (CL)	45	25	20		
■ B-4 0.0	GRAVELLY LEAN CLAY (CL)	46	26	20		

Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-1 0.0	19	0.008			2.9	20.0	23.6	53.5
■ B-4 0.0	37.5	3.051	0.004		38.9	10.4	18.1	32.6

GRAIN SIZE 210789.GPJ GINT US LAB.GDT 10/5/23

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.