



**CONTRACT DOCUMENTS
AND
SPECIFICATIONS**

DIVISION OF COMMUNITY CORRECTIONS

FOR

**DOMESTIC HOT WATER MAIN
REPLACEMENT**

Bid No. 32-2019

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PART 1

ADVERTISEMENT FOR BIDS

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ADVERTISEMENT FOR BIDS

1. INVITATION

Sealed proposals for the following work will be received by the Lexington-Fayette Urban County Government (LFUCG) until 2:00 p.m., local time, April 4, 2019, for furnishing all labor and/or materials and performing all work as set forth by this advertisement, conditions (general and special), IonWave Q&A, specifications, and/or the drawings prepared for Lexington-Fayette Urban County Government, Division of Community Corrections. Immediately following the scheduled closing time for reception of bids, all proposals which have been submitted in accordance with the above will be publicly opened and read aloud.

2. DESCRIPTION OF WORK

Consisting of the construction and/or furnishing of items as listed in the Bid Schedule beginning on page P-6, Part III, Form of Proposal, of this document, for the Domestic Hot Water Main Replacement, Lexington-Fayette County, Kentucky, as follows:

This project involves the installation of new piping, hangers, valves, mixing station, pipe insulation, support steel, hangers, balancing valves and fire stopping as required. The Contractor is to install the new hot water main, disinfect, drain, make the necessary tie-ins to put it into operations while the Detention Center is still operating on the old main, except for the most outer areas that has been put on to the new main and can be recirculated. Then come back to each branch line and make the new tie-ins required to change the area from the old main to the new main. When all branches have been removed from the old main then it will be shut down. Contractor to then re-pipe the old mixing station into the new main for back-up. Then cut and cap all old branch feeds, drain and cap off so it can be abandoned in-place at the LFUCG Detention Center, Lexington-Fayette County, Kentucky.

3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS

Specifications, Plans, and Bid Documents may be examined at the following places:

LFUCG
Division of Central Purchasing
200 East Main Street, Third Floor, Rm 338
Lexington, Kentucky 40507
(859) 258-3320

4. METHOD OF RECEIVING BIDS

Bids will be received from Prime Contracting firms on a **Lump Sum** for total Project. The Bidder must include a price for all bid items to be considered. Bids shall be submitted in the manner and subject to the conditions as set forth and described in the Instruction to Bidders and Special Conditions.

Sealed bids shall be clearly marked on the outside of the container as follows: Company Name and Address, Bid Invitation Number, and the Project Name. Bids are to remain sealed until official Bid closure time.

Mailed bids/proposals should be sent to the Director, Division of Central Purchasing, 200 East Main Street, Lexington, KY 40507.

5. METHOD OF AWARD

The Contract, if awarded, will be to the lowest, qualified responsible bidder for the total project whose qualifications indicate the award will be in the best interest of the OWNER and whose bid/proposal complies with all the prescribed requirements. No Notice of Award will be given until the OWNER has concluded such investigation as deemed necessary to establish the responsibility, qualifications and financial ability of Bidders to do the work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the Bid of any Bidder who does not pass such investigation to the OWNER's satisfaction. In analyzing Bids, the OWNER may take into consideration alternate and unit prices, if requested by the Bid forms.

6. BID WITHDRAWAL

No bidder may withdraw his bid for a period of sixty (60) calendar days after the closing date for receipt of bids. Errors and omissions will not be cause for withdrawal of bid without forfeit of bid bond. Bids may be withdrawn in person prior to the closing date of receipt of bids.

7. BID SECURITY

If the bid is \$50,000 or greater, bid shall be accompanied by a certified /cashier's check or bid bond payable to the Lexington-Fayette Urban County Government in an amount not less than Five Percent (5%) of the base bid. Bid bond shall be executed by a Surety Company authorized to do business in the Commonwealth of Kentucky and countersigned by a licensed Kentucky Resident Agent, representing the Surety Company. Bid Bonds are not required for bids under \$50,000. A certified check or cashier's check is also acceptable forms of bid security.

8. SUBMISSION OF BIDS

CONTRACTORS shall submit their bids to the Lexington-Fayette Urban County Government, Division of Purchasing, Third Floor, 200 East Main Street, Lexington,

Kentucky 40507. Bids shall be submitted in a sealed envelope not later than 2:00 p.m. local time, **April 4, 2019**. Sealed proposals shall be clearly marked on the outside of the container as follows: Company Name and Address, Bid Invitation Number, and Project Name to be opened at 2:00 p.m. local time **April 4, 2019**. Bids are to remain sealed until official Bid closure time. Bids received after the scheduled closing time for receipt of bids will not be considered and will be returned unopened.

9. RIGHT TO REJECT

The Lexington-Fayette Urban County Government reserves the right to reject any and all bids and to waive all informalities and/or technicalities where the best interest of the Lexington-Fayette Urban County Government may be served.

10. NOTIFICATION TO THE LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT FOR AFFIRMATIVE ACTION PLAN AND CURRENT WORKFORCE

The successful bidder must submit with their bid the following items to the Lexington-Fayette Urban County Government:

1. Affirmative Action Plan for his/her firm.
2. Current Workforce Analysis Form.

Failure to submit these items as required herein may result in disqualification of the Bidder from the award of the contract.

All submissions should be directed to:

Lexington-Fayette Urban County Government
Division of Purchasing
200 East Main Street, 3rd Floor, Room 338
Lexington, Kentucky 40507

11. NOTICE CONCERNING MWDBE and Veteran Goals

Notice of requirement for Affirmative Action to ensure Equal Employment Opportunities and Disadvantaged Business Enterprises (DBE) Contract participation. Disadvantaged Business Enterprises (DBE) consists of Minority-Owned Business Enterprises (MBE) and Woman-Owned Business Enterprises (WBE).

The Lexington-Fayette Urban County Government has set a goal that not less than ten percent (10%) of the total value of this Contract be subcontracted to Disadvantaged Business Enterprises, which is made up of MBEs and WBEs, and set a goal that not less than three percent (3%) of the total value of this Contract be subcontracted to Veteran-Owned Small Businesses. The goals for the utilization of Disadvantaged Business Enterprises and Veteran-Owned Small Businesses as subcontractors are recommended goals. Contractor(s) who fail to meet such goals will be expected to provide written

explanations to the Director of the Division of Purchasing of efforts they have made to accomplish the recommended goal, and the extent to which they are successful in accomplishing the recommended goal will be a consideration in the procurement process. Depending on the funding source, other DBE goals may apply.

For assistance in locating Disadvantaged Business Enterprise and Veteran-Owned Small Businesses as Subcontractors contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, 3rd Floor, Room 338
Lexington, Kentucky 40507
859-258-3323
smiller@lexingtonky.gov

12. PRE-BID MEETING

A non-mandatory pre-bid meeting will be held at 10:00 AM local time on March 27, 2019, at 600 Old Frankfort Circle, Lexington, KY.

END OF SECTION

PART II
INFORMATION FOR BIDDERS

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PART II
INFORMATION FOR BIDDERS

1. RECEIPT AND OPENING OF BIDS

The Lexington-Fayette Urban County Government (herein called the OWNER) invites bids from firms on the project described in the Advertisement for Bids. The OWNER will receive bids at the Division of Purchasing, at the time and in the manner set forth in the Advertisement for Bids, and the Bids will then be publicly opened and read aloud. The OWNER may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 60 days after the actual time and date of the bid opening, but OWNER may, in its sole discretion, release any bid and return the Bid Security prior to that date.

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not addressed and delivered as indicated above. Bids that are not delivered to the Division of Central Purchasing by the stated time and date will be rejected.

2. PREPARATION OF BID

Each bid must be submitted on the prescribed Form of Proposal. All blank spaces for the bid prices must be filled in, either in ink or typewritten, for both unit prices and extensions. Totals for each bid item must be added to show the total amount of the bid. Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, their address, the name of the project, the invitation number and time and date for which the bid is submitted. Bids must be addressed to the Director of Purchasing, Lexington-Fayette Urban County Government, Third Floor, 200 East Main Street, Lexington, Kentucky 40507. If forwarded by mail, the sealed envelope containing the bid must be enclosed in another envelope addressed as specified above.

3. SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the OWNER. All proposed subcontractors must be identified on the Form of Proposal. Prior to the award of Contract, the OWNER or the OWNER'S representative will advise the CONTRACTOR of the acceptance and approval thereof or of any action necessary to be taken. Should any Subcontractor be rejected by the OWNER, the CONTRACTOR shall present a new name and/or firm to the OWNER at no change in the Contract Price.

4. QUALIFICATION OF BIDDER

The OWNER may make such investigations as the OWNER deems necessary to determine the ability of the bidder to perform the Work, and the bidder shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the OWNER that such bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein. Conditional bids will not be accepted.

In evaluating Bids, OWNER shall consider the qualifications of the BIDDERS, whether or not the Bids comply with the prescribed requirements, and alternatives and unit prices, as requested. OWNER may consider maintenance requirements, performance data, and disruption or damage to private property. It is OWNER'S intent to accept alternatives, if requested by the bid forms, in the order in which they are listed in the Bid Form but OWNER may accept or decline them in any order or combination. The contract, if awarded, will be awarded to the lowest, qualified, responsible BIDDER based upon OWNER'S evaluation which indicates that the award will be in the best interest of OWNER and the general public.

In the event there is any question as to the bidder's qualifications and ability to complete the work, a final determination will be made in accordance with a fair evaluation by the Urban County Government of the above listed elements.

- A. If the OWNER requires filling out a detailed financial statement, the bidder may provide its current certified financial statement(s) for the required time interval.
- B. Corporate firms are required to be registered and in good standing with the requirements and provisions of the Office of the Secretary of State, Commonwealth of Kentucky.
- C. Documents Required of CONTRACTOR - (1) A sworn statement signed by the President or owner of the Company regarding all current work in progress anywhere; (2) A document showing the percent of completion of each project and the total worth of each project; and (3) Documentation showing the percentage of the DBE employment levels on each project of the Bidder's current work force, and DBE participation levels for Subcontractors.
- D. Optional OWNER Requirements - The OWNER, at its discretion, may require the BIDDER/CONTRACTOR to provide: (1) a current detailed financial statement for a period including up to 3 prior years; (2) financial security or insurance in amounts and kinds acceptable to the OWNER to meet the financial responsibility requirements for the CONTRACTOR to indemnify the OWNER. (3) Additional information and/or DBE work force data, as well as DBE participation data.

Each bidder agrees to waive any claim it has or may have against the Owner, the Consultant, and their respective employees, arising out of or in connection with the administration, evaluation, or recommendation of any bid.

5. BID SECURITY

- A. Each bid must be accompanied by a bid bond prepared on a Form of Bid Bond and attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the OWNER, in the amount of 5% of the bid. Such bid bond will be returned to the unsuccessful bidder(s) only upon written request to the Director of Central Purchasing within seven (7) days of opening of bids. Bid bond shall be made payable to the Lexington-Fayette Urban County Government. Bid security is not required for projects under \$50,000.
- B. Bonds shall be placed with an agent licensed in Kentucky with surety authorized to do business within the state. When the premium is paid for such coverage, the full commission payable shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within ten (10) days after he has received notice of the acceptance of his bid, shall forfeit to the OWNER, as liquidated damages for such failure or refusal, the security deposited with his bid.

7. TIME OF COMPLETION AND LIQUIDATED DAMAGES

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" from the OWNER and to fully complete the Project within the time as specified in the Contract. Bidder must agree also to pay \$800.00 per day as liquidated damages, or the sum as specified in the Contract for each consecutive calendar day thereafter as hereinafter provided in the General Conditions.

8. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site(s) to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work, (c) consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the work, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify Consultant of all conflicts, errors or discrepancies in the Contract Documents.
- B. Bidders should examine the requirements of section 4 of the General Conditions for information pertaining to subsurface conditions, underground structures, underground facilities, and availability of lands, easements, and rights-of-way. The completeness of data, presented in the Contract Documents, pertaining to subsurface conditions, underground structures, and underground facilities for the purposes of bidding or construction is not assured. The Bidder will, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and

studies and obtain any additional information and data which pertain to the physical conditions (surface and subsurface) which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine its Bid for performing and furnishing the Work in accordance with the time, price, and other terms and conditions of the Contract Documents. On request in advance, OWNER will provide access to the site to conduct such explorations and tests as each Bidder deems necessary for submission of a bid. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations.

- C. The submission of a Bid will constitute an incontrovertible representation by the Bidder that Bidder has complied with every requirement of this paragraph 8; that without exception the Bid is premised upon furnishing and performing the Work required by the Contract Documents and such means, methods, techniques, sequences or procedures of construction as may be indicated in or required by the Contract Documents; and that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

9. ADDENDA AND INTERPRETATIONS

No interpretation of the meaning of the Contract Documents will be made to any bidder orally. Every request for such interpretation should be in writing addressed to Central Purchasing, who in turn will have an Addendum issued for the Lexington-Fayette Urban County Government, and to be given consideration must be received prior to the Q&A deadline. Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the specifications. Acknowledgement of the receipt of addenda must be included with all submitted bids. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

10. SECURITY FOR FAITHFUL PERFORMANCE

- A. Simultaneously with his delivery of the executed Contracts, the CONTRACTOR shall furnish a surety bond or bonds as security for the faithful performance of this Contract and for payment of all persons performing labor on the Project under this Contract and furnishing materials in connection with this Contract, as specified in the General Conditions. The surety on such bond or bonds shall be a duly authorized surety company satisfactory to the OWNER and authorized to do business in the Commonwealth of Kentucky.
- B. All bonds required by this Contract and laws of this State shall be placed with agents licensed in the State of Kentucky. When the premium is paid for such coverage's, the full commission shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.

- C. **Contractor shall use standard Performance and Payment Bond forms such as documents provided with this contract book or AIA form A312-1984 (or later). Each document will be for 100% of the Contract Bid Amount.**

11. POWER OF ATTORNEY

Attorney-in-fact who signs bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

12. TAXES AND WORKMEN'S COMPENSATION

The CONTRACTOR and subcontractor will be required to accept liability for payment of all payroll taxes, sales and use tax, and all other taxes or deductions required by local, state or federal law, such as old age pension, social security, or annuities measured by wages. Each shall carry Workmen's Compensation Insurance to the full amounts as required by Statutes and shall include the cost of all foregoing items in the proposal. The CONTRACTOR will not otherwise be reimbursed or compensated for such tax payments. The CONTRACTOR is urged to ascertain at his own risk his actual tax liability in connection with the execution or performance of his Contract.

13. LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the contract, the same as though herein written out in full.

14. EROSION AND SEDIMENT CONTROL AND PERMITS

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall also comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits as described in Part 4 General Conditions Paragraph 5.17.

15. PREVAILING WAGE LAW AND MINIMUM HOURLY RATES

Federal wage rates and regulations, if required for this Project, will be as described in the Special Conditions and appendices.

16. AFFIRMATIVE ACTION PLAN

The successful Bidder must submit with their bid, the following items to the Urban County Government:

1. Affirmative Action Plan of the firm

2. Current Work Force Analysis Form
3. Good Faith Effort Documentation
4. List of Disadvantaged Business Enterprise Subcontractors and the Dollar Value of each Subcontract

A Work Force Analysis Form shall be submitted for each Contract. Failure to submit these items as required herein may result in disqualification of the Bidder from award of the Contract.

All submissions should be directed to:

Director, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Third Floor
Lexington, KY 40507

17. CONTRACT TIME

The number of calendar days within which the Work is to be substantially completed and ready for final payment (the Contract Time) is set forth in the Form of Proposal and the Agreement.

18. SUBSTITUTE OR "OR-EQUAL" ITEMS

The Contract, if awarded, will be on the basis of materials and equipment described in the Drawings or specified in the Specifications without consideration of possible substitute or "or-equal" items. Whenever it is indicated in the Drawings or specified in the Specifications that a substitute or "or-equal" item of material or equipment may be furnished or used by the CONTRACTOR if acceptable to the CONSULTANT and OWNER, application for such acceptance will not be considered by the CONSULTANT and OWNER until after the effective date of the Agreement. The procedure for submission of any such application by the CONTRACTOR and consideration by the CONSULTANT and OWNER is set forth in the General Conditions.

19. ALTERNATE BIDS

Bidders shall submit alternate bids/proposals only if and when such alternate bids/proposals have been specifically requested in an Invitation for Bids. If alternate bids/proposals are requested in an Invitation for Bids, the form of submission of such alternate bid and the conditions under which such alternate bids will be considered for award of a contract will be established in the Invitation.

Any Bidder who submits a bid incorporating an alternate proposal when alternate bids/proposals have not been requested in the Invitation for Bids shall have his/her bid rejected as non-responsive.

Any Bidder who submits a bid incorporating two (2) or more prices for an item or groups of items (unless such method of pricing is requested in the Invitation for Bids), or which imposes conditions for acceptance other than those established in the Invitation for Bids, shall have their bid rejected as non-responsive.

20. SIGNING OF AGREEMENT

When OWNER gives a Notice of Award to the successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within ten days thereafter, CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds, Certificate of Insurance, and Power of Attorney. The OWNER will deliver one fully signed counterpart to CONTRACTOR at such time as it has been signed by the Mayor.

21. ASSISTANCE TO BE OFFERED TO DISADVANTAGED BUSINESS ENTERPRISE (MWDBE) CONTRACTORS AND VETERAN OWNED SMALL BUSINESSES

A. Outreach for MWDBE(s) and Veteran Owned Small Businesses (VOSB)

The Lexington-Fayette Urban County Government (LFUCG) maintains a database of MWDBE contractors and Veteran Owned Small Businesses. When a LFUCG construction project is advertised for bidding, notices are sent to companies registered at <https://lexingtonky.ionwave.net>. The notices describe the project and indicate the deadline for submitting bids.

If you wish to be added to the LFUCG MWDBE contractor database, please contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

B. Bid Bond Assistance for MWDBE(s)

For those MWDBE contractors who wish to bid on LFUCG project, bid bond assistance is available. This bid bond assistance is in the form of a “Letter of Certification” which is accepted by the LFUCG’s Division of Purchasing, in lieu of a bid bond. The “Letter of Certification” must be included in the bid package when it is submitted to the Division of Purchasing. The “Letter of Certification” will reference the specific project for which the bid is being submitted, and the time and date on which the bid is due. Bid bond assistance must be requested from the Lexington-Fayette Urban County Government’s Division of Central Purchasing.

C. Eligibility for Bid Bond Assistance for MWDBE(s)

In order to be eligible for any Bid bonding assistance, a MWDBE construction company must be owned or controlled at the level of 51% or more by a member or members of a minority group or females. Prior to receiving assistance, a statement providing evidence of ownership and control of the company by a member or members of a minority group or females must be signed by the Owner or corporate officer and by an attorney or accountant submitted to:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

D. MWDBE and Veteran Subcontractors

The LFUCG will, upon request, assist prime contractors in the procurement of eligible DBE subcontractors in an effort to achieve a 10% minimum MWDBE and a 3% minimum Veteran goal.

For a list of eligible subcontractors, please contact:

Sherita Miller, Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

22. LFUCG NON-APPROPRIATION CLAUSE

Contractor acknowledges that the LFUCG is a governmental entity, and the contract validity is based upon the availability of public funding under the authority of its statutory mandate.

In the event that public funds are unavailable and not appropriated for the performance of the LFUCG's obligations under this contract, then this contract shall automatically expire without penalty to the LFUCG thirty (30) days after written notice to Contractor of the unavailability and non-appropriation of public funds. It is expressly agreed that the LFUCG shall not activate this non-appropriation provision for its convenience or to circumvent the requirements of this contract, but only as an emergency fiscal measure during a substantial fiscal crisis, which affects generally its governmental operations.

In the event of a change in the LFUCG's statutory authority, mandate and mandated functions, by state and federal legislative or regulatory action, which adversely affects the LFUCG's authority to continue its obligations under this contract, then this contract shall automatically terminate without penalty to the LFUCG upon written notice to Contractor of such limitation or change in the LFUCG's legal authority.

END OF SECTION

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PART III

Invitation to Bid No. 32-2019

Lighting Upgrade for Material Recovery Facility

1. FORM OF PROPOSAL

Place: Lexington, Kentucky

Date: _____

The following Form of Proposal shall be followed exactly in submitting a proposal for this Work.

This Proposal Submitted by _____

(Name and Address of Bidding Contractor)

(Hereinafter called "Bidder"), organized and existing under the laws of the State of _____, doing business as _____
_____ "a corporation," "a partnership", or an "individual" as applicable.

To: Lexington-Fayette Urban County Government
(Hereinafter called "OWNER")
Office of the Director of Purchasing
200 East Main Street, 3rd Floor
Lexington, KY 40507

Gentlemen:

The Bidder, in compliance with your Invitation for Bids for **Domestic Hot Water Main Replacement** having examined the Plans and Specifications with related documents, having examined the site for proposed Work, and being familiar with all of the conditions surrounding the construction of the proposed Project, including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the lump sum and/or unit prices stated hereinafter. These prices are to cover all expenses incurred in performing the Work required under the Contract Documents, of which this proposal is a part. The OWNER will issue work orders for work to be performed under this Contract.

The Bidder hereby acknowledges receipt of the following addenda:

Addendum No. ____ Date _____

Addendum No. ____ Date _____

Addendum No. ____ Date _____

Addendum No. ____ Date _____

Addendum No. ____ Date _____

Addendum No. ____ Date _____

Addendum No. ____ Date _____

Addendum No. ____ Date _____

Insert above the number and the date of any Addendum issued and received. If none has been issued and received, the word "NONE" should be inserted.

2. **LEGAL STATUS OF BIDDER**

Bidder _____

Date _____

* 1. A corporation duly organized and doing business under the laws of the State of _____, for whom _____, bearing the official title of _____, whose signature is affixed to this Bid/Proposal, is duly authorized to execute contracts.

* 2. A Partnership, all of the members of which, with addresses are: (Designate general partners as such)

* 3. An individual, whose signature is affixed to this Bid/Proposal (please print name)

*(The Bidder shall fill out the appropriate form and strike out the other two.)

3. **BIDDERS AFFIDAVIT**

Comes the Affiant, _____, and after being first duly sworn, states under penalty of perjury as follows:

1. His/her name is _____ and he/she is the individual submitting the bid or is the authorized representative of _____, the entity submitting the bid (hereinafter referred to as "Bidder").
 2. Bidder will pay all taxes and fees, which are owed to the Lexington-Fayette Urban County Government at the time the bid is submitted, prior to award of the contract and will maintain a "current" status in regard to those taxes and fees during the life of the contract.
 3. Bidder will obtain a Lexington-Fayette Urban County Government business license, if applicable, prior to award of the contract.
 4. Bidder has authorized the Division of Central Purchasing to verify the above-mentioned information with the Division of Revenue and to disclose to the Urban County Council that taxes and/or fees are delinquent or that a business license has not been obtained.
 5. Bidder has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky within the past five (5) years and the award of a contract to the Bidder will not violate any provision of the campaign finance laws of the Commonwealth.
 6. Bidder has not knowingly violated any provision of Chapter 25 of the Lexington-Fayette Urban County Government Code of Ordinances, known as the "Ethics Act."
 7. Bidder acknowledges that "knowingly" for purposes of this Affidavit means, with respect to conduct or to circumstances described by a statute or ordinance defining an offense, that a person is aware or should have been aware that his conduct is of that nature or that the circumstance exists.
- Further, Affiant sayeth naught.

(Affiant)

STATE OF _____

COUNTY OF _____

The foregoing instrument was subscribed, sworn to and acknowledged before me by

_____ on this the _____ day of _____, 20_____.

My Commission expires: _____

NOTARY PUBLIC, STATE AT LARGE

4. BID SCHEDULE – SCHEDULE OF VALUES

The Bidder agrees to perform all the Work described in the Specifications and shown on the Plans for the following proposed lump sum and/or unit prices, if applicable, which shall include the furnishing of all labor, materials, supplies, equipment and/or vehicle usage, services, all items of cost, overhead, taxes (federal, state, local), and profit for the Contractor and any Subcontractor involved, within the time set forth herein. If unit prices are applicable, Bidder must make the extensions and additions showing the total amount of bid.

Form of proposal must include unit bid prices written in words, unit price written in numbers and total amount bid (unit price x quantity) per line item OR bid may be considered non-responsive. In case of price discrepancy, unit bid price written in words will prevail followed by unit price written in numbers then total amount bid per line item.

If a discrepancy between the unit price and the item total exists, the unit price prevails except:

If the unit price is illegible, omitted, or the same as the item total, item total prevails and the unit price is the quotient of the item total and the quantity.

If the unit price and the item total are illegible or are omitted, the bid may be determined nonresponsive. If a lump sum total price is illegible or is omitted, the bid may be determined nonresponsive.

For a lump sum based bid, the item total is the bid amount the Division uses for bid comparison.

For a unit price based bid, the sum of the item totals is the bid amount the Division uses for bid comparison.

The LFUCG's decision on the bid amount is final.

Item No.	Description w/Unit Bid Price Written in Words	Unit	Total Bid Amount
1.	Domestic Hot Water Main Replacement as per specs for _____ Dollars _____ Cents	LS	\$ _____

Submitted by:

_____ *Firm*

_____ *Address*

_____ *City, State & Zip*

***Bid must be signed:
(original signature)***

_____ *Signature of Authorized Company Representative – Title*

_____ *Representative/s Name (Typed or Printed)*

_____ *Area Code – Phone – Extension* *Fax #*

_____ *E-Mail Address*

OFFICIAL ADDRESS:

_____ (Seal if Bid is by Corporation)

By signing this form you agree to ALL terms, conditions, and associated forms in this bid package

5. STATEMENT OF BIDDER'S QUALIFICATIONS

The following statement of the Bidder's qualifications is required to be filled in, executed, and submitted with the Proposal:

- 1. Name of Bidder: _____
- 2. Permanent Place of Business: _____
- 3. When Organized: _____
- 4. Where Incorporated: _____
- 5. Construction Plant and Equipment Available for this Project:

(Attach Separate Sheet If Necessary)

6. Financial Condition:

If specifically requested by the OWNER, the apparent low Bidder is required to submit its latest three (3) years audited financial statements to the OWNER'S Division of Central Purchasing within seven (7) calendar days following the bid opening.

7. In the event the Contract is awarded to the undersigned, surety bonds will be furnished by:

(Surety)

Signed: _____ (Representative of Surety)

8. The following is a list of similar projects performed by the Bidder: (Attach separate sheet if necessary).

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>

9. The Bidder has now under contract and bonded the following projects:

<u>NAME</u>	<u>LOCATION</u>	<u>CONTRACT SUM</u>

10. List Key Bidder Personnel who will work on this Project.

<u>NAME</u>	<u>POSITION DESCRIPTION</u>	<u>NO. OF YEARS WITH BIDDER</u>

11. DBE Participation on current bonded projects under contract:

<u>SUBCONTRACTORS</u> <u>(LIST)</u>	<u>PROJECT</u> <u>(SPECIFIC TYPE)</u>	<u>DBE</u>	<u>% of WORK</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

(USE ADDITIONAL SHEETS IF NECESSARY)

12. We acknowledge that, if we are the apparent low Bidder, we may be required to submit to the OWNER within 7 calendar days following the Bid Opening, a sworn statement regarding all current work on hand and under contract, and a statement on the OWNER'S form of the experience of our officers, office management and field management personnel. Additionally, if requested by the OWNER, we will within 7 days following the request submit audited financial statements and loss history for insurance claims for the 3 most recent years (or a lesser period stipulated by the OWNER).

6. LIST OF PROPOSED SUBCONTRACTORS

The following list of proposed subcontractors is required by the OWNER to be executed, completed and submitted with the BIDDER'S FORM OF PROPOSAL. All subcontractors are subject to approval of the Lexington-Fayette Urban County Government. Failure to submit this list completely filled out may be cause for rejection of bid.

<p><u>BRANCH OF WORK - LIST EACH MAJOR ITEM</u> Such as: Grading, bituminous paving, concrete, seeding and protection, construction staking, etc.</p>	<p><u>SUBCONTRACTOR</u></p>	<p><u>DBE</u> % of Work <u>Yes/No</u></p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------	-------------------------------------------------------------

<p>1. Mechanical</p> <hr/>	<p>Name: _____</p> <p>Address: _____</p> <p>_____</p>	<p>_____</p> <p>_____</p>
<p>2. Electrical</p> <hr/>	<p>Name: _____</p> <p>Address: _____</p> <p>_____</p>	<p>_____</p> <p>_____</p>
<p>3. Plumbing</p> <hr/>	<p>Name: _____</p> <p>Address: _____</p> <p>_____</p>	<p>_____</p> <p>_____</p>
<p>4.</p> <hr/>	<p>Name: _____</p> <p>Address: _____</p> <p>_____</p>	<p>_____</p> <p>_____</p>
<p>5.</p> <hr/>	<p>Name: _____</p> <p>Address: _____</p> <p>_____</p>	<p>_____</p> <p>_____</p>
<p>6.</p> <hr/>	<p>Name: _____</p> <p>Address: _____</p> <p>_____</p>	<p>_____</p> <p>_____</p>

(Attach additional sheet(s) if necessary.)

7. **Lexington-Fayette Urban County Government**
MWDBE PARTICIPATION GOALS

A. GENERAL

- 1) The LFUCG request all potential contractors to make a concerted effort to include Minority-Owned (MBE), Woman-Owned (WBE), Disadvantaged (DBE) Business Enterprises and Veteran-Owned Small Businesses (VOSB) as subcontractors or suppliers in their bids.
- 2) Toward that end, the LFUCG has established 10% of total procurement costs as a Goal for participation of Minority-Owned, Woman-Owned and Disadvantaged Businesses on this contract.
- 3) **It is therefore a request of each Bidder to include in its bid, the same goal (10%) for MWDBE participation and other requirements as outlined in this section.**
- 4) The LFUCG has also established a 3% of total procurement costs as a Goal for participation for of Veteran-Owned Businesses.
- 5) **It is therefore a request of each Bidder to include in its bid, the same goal (3%) for Veteran-Owned participation and other requirements as outlined in this section.**

B. PROCEDURES

- 1) The successful bidder will be required to report to the LFUCG, the dollar amounts of all payments submitted to Minority-Owned, Woman-Owned or Veteran-Owned subcontractors and suppliers for work done or materials purchased for this contract. (See Subcontractor Monthly Payment Report)
- 2) Replacement of a Minority-Owned, Woman-Owned or Veteran-Owned subcontractor or supplier listed in the original submittal must be requested in writing and must be accompanied by documentation of Good Faith Efforts to replace the subcontractor / supplier with another MWDBE Firm; this is subject to approval by the LFUCG. (See LFUCG MWDBE Substitution Form)
- 3) For assistance in identifying qualified, certified businesses to solicit for potential contracting opportunities, bidders may contact:
 - a) The Lexington-Fayette Urban County Government, Division of Central Purchasing (859-258-3320)
- 4) The LFUCG will make every effort to notify interested MWDBE and Veteran-Owned subcontractors and suppliers of each Bid Package, including information on the scope of work, the pre-bid meeting time and location, the bid date, and all other pertinent information regarding the project.

C. DEFINITIONS

- 1) A Minority-Owned Business Enterprise (MBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by persons of African American, Hispanic, Asian, Pacific Islander, American Indian or Alaskan Native Heritage.
- 2) A Woman-Owned Business Enterprise (WBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by one or more women.

- 3) A Disadvantaged Business (DBE) is defined as a business which is certified as being at least 51% owned, managed and controlled by a person(s) that are economically and socially disadvantaged.
- 4) A Veteran-Owned Small Business (VOSB) is defined as a business which is certified as being at least 51% owned, managed and controlled by a veteran and/or a service disabled veteran.
- 5) Good Faith Efforts are efforts that, given all relevant circumstances, a bidder or proposer actively and aggressively seeking to meet the goals, can reasonably be expected to make. In evaluating good faith efforts made toward achieving the goals, whether the bidder or proposer has performed the efforts outlined in the Obligations of Bidder for Good Faith Efforts outlined in this document will be considered, along with any other relevant factors.

D. OBLIGATION OF BIDDER FOR GOOD FAITH EFFORTS

- 1) **The bidder shall make a Good Faith Effort to achieve the Participation Goal for MWDBE and Veteran-Owned subcontractors/suppliers. The failure to meet the goal shall not necessarily be cause for disqualification of the bidder; however, bidders not meeting the goal are required to furnish with their bids written documentation of their Good Faith Efforts to do so.**
- 2) Award of Contract shall be conditioned upon satisfaction of the requirements set forth herein.
- 3) The Form of Proposal includes a section entitled "MWDBE Participation Form". The applicable information must be completed and submitted as outlined below.
- 4) **Failure to submit this information as requested may be cause for rejection of bid or delay in contract award.**

E. DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS

- 1) Bidders reaching the Goal are required to submit only the MWDBE Participation Form." The form must be fully completed including names and telephone number of participating MWDBE firm(s); type of work to be performed; estimated value of the contract and value expressed as a percentage of the total Lump Sum Bid Price. The form must be signed and dated, and is to be submitted with the bid.
- 2) Bidders not reaching the Goal must submit the "MWDBE Participation Form", the "Quote Summary Form" and a written statement documenting their Good Faith Effort to do so. If bid includes no MWDBE and/or Veteran participation, bidder shall enter "None" on the subcontractor / supplier form). In addition, the bidder must submit written proof of their Good Faith Efforts to meet the Participation Goal:
 - a. Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.
 - b. Included documentation of advertising in the above publications with the bidders good faith efforts package

- c. Attended LFUCG Central Purchasing Economic Inclusion Outreach event
- d. Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned businesses of subcontracting opportunities
- e. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses.
- f. Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).
- g. Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.
- h. Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs and/or Veteran-Owned businesses soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.
- i. Followed up initial solicitations by contacting MWDBEs and Veteran-Owned Businesses to determine their level of interest.
- j. Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.
- k. Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce
- l. Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.
- m. Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.
- n. Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

o. Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

p. Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

q. Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

Note: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to review by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.



MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA
Minority Business Enterprise Liaison
Division of Central Purchasing
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507
smiller@lexingtonky.gov
859-258-3323

OUR MISSION: The mission of the Minority Business Enterprise Program is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long term economic viability of Lexington-Fayette Urban County Government.

To that end the city council adopted and implemented Resolution 484-2017 – A Certified Minority, Women and Disadvantaged Business Enterprise ten percent (10%) minimum goal and a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and Certified Service Disabled Veteran – Owned Businesses for government contracts.

The resolution states the following definitions shall be used for the purposes of reaching these goals (a full copy is available in Central Purchasing):

Certified Disadvantaged Business Enterprise (DBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a person(s) who is socially and economically disadvantaged as define by 49 CFR subpart 26.

Certified Minority Business Enterprise (MBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by an ethnic minority (i.e. African American, Asian American/Pacific Islander, Hispanic Islander, Native American/Native Alaskan Indian) as defined in federal law or regulation as it may be amended from time-to-time.

Certified Women Business Enterprise (WBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a woman.

Certified Veteran-Owned Small Business (VOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

Certified Service Disabled Veteran Owned Small Business (SDVOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a disabled veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

The term “Certified” shall mean the business is appropriately certified, licensed, verified, or validated by an organization or entity recognized by the Division of Purchasing as having the appropriate credentials to make a determination as to the status of the business.

To comply with Resolution 484-2017, prime contractors and minority, women and veteran owned businesses must enroll in the new Diverse Business Management Compliance system, <https://lexingtonky.diversitycompliance.com/>

We have compiled the list below to help you locate certified MBE, WBE and DBE certified businesses. Below is a listing of contacts for LFUCG Certified MWDBEs and Veteran-Owned Small Businesses in (<https://lexingtonky.ionwave.net>)

Business	Contact	Email Address	Phone
LFUCG	Sherita Miller	smiller@lexingtonky.gov	859-258-3323
Commerce Lexington – Minority Business Development	Tyrone Tyra	ttyra@commercelexington.com	859-226-1625
Tri-State Minority Supplier Diversity Council	Susan Marston	smarston@tsmsdc.com	502-365-9762
Small Business Development Council	Shawn Rogers UK SBDC	shawn.rogers@uky.edu	859-257-7666
Community Ventures Corporation	Phyllis Alcorn	palcorn@cvky.org	859-231-0054
KY Transportation Cabinet (KYTC)	Melvin Bynes	Melvin.bynes2@ky.gov	502-564-3601
KYTC Pre-Qualification	Shella Eagle	Shella.Eagle@ky.gov	502-782-4815
Ohio River Valley Women’s Business Council (WBENC)	Sheila Mixon	smixon@orvwbc.org	513-487-6537
Kentucky MWBE Certification Program	Yvette Smith, Kentucky Finance Cabinet	Yvette.Smith@ky.gov	502-564-8099
National Women Business Owner’s Council (NWBOC)	Janet Harris-Lange	janet@nwbo.org	800-675-5066
Small Business Administration	Robert Coffey	robertcoffey@sba.gov	502-582-5971
LaVoz de Kentucky	Andres Cruz	lavozdeky@yahoo.com	859-621-2106
The Key News Journal	Patrice Muhammad	production@keynewsjournal.com	859-685-8488



LFUCG MWDBE PARTICIPATION FORM
 Bid/RFP/Quote Reference # _____

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to Central Purchasing for approval immediately. **Failure to submit a completed form may cause rejection of the bid.**

MWDBE Company, Name, Address, Phone, Email	MBE WBE or DBE	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.				
3.				
4.				

The undersigned company representative submits the above list of MWDBE firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

 Company

 Company Representative

 Date

 Title



LFUCG MWDBE SUBSTITUTION FORM

Bid/RFP/Quote Reference # _____

The substituted MWDBE and/or veteran subcontractors listed below have agreed to participate on this Bid/RFP/Quote. These substitutions were made prior to or after the job was in progress. These substitutions were made for reasons stated below and are now being submitted to Central Purchasing for approval. By the authorized signature of a representative of our company, we understand that this information will be entered into our file for this project.

SUBSTITUTED MWDBE Company Name, Address, Phone, Email	MWDBE Formally Contracted/ Name, Address, Phone, Email	Work to Be Performed	Reason for the Substitution	Total Dollar Value of the Work	% Value of Total Contract
1.					
2.					
3.					
4.					

The undersigned acknowledges that any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Company

Company Representative

Date

Title



MWDBE QUOTE SUMMARY FORM
 Bid/RFP/Quote Reference # _____

The undersigned acknowledges that the minority and/or veteran subcontractors listed on this form did submit a quote to participate on this project. Failure to submit this form may cause rejection of the bid.

Company Name	Contact Person
Address/Phone/Email	Bid Package / Bid Date

MWDBE Company Address	Contact Person	Contact Information (work phone, Email, cell)	Date Contacted	Services to be performed	Method of Communication (email, phone meeting, ad, event etc)	Total dollars \$\$ Do Not Leave Blank (Attach Documentation)	MBE * AA HA AS NA Female	Veteran

(MBE designation / AA=African American / HA= Hispanic American/AS = Asian American/Pacific Islander/ NA= Native American)

The undersigned acknowledges that all information is accurate. Any misrepresentation may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

 Company

 Company Representative

 Date

 Title



LFUCG SUBCONTRACTOR MONTHLY PAYMENT REPORT

The LFUCG has a 10% goal plan adopted by city council to increase the participation of minority and women owned businesses in the procurement process. The LFUCG also has a 3% goal plan adopted by cited council to increase the participation of veteran owned businesses in the procurement process. In order to measure that goal LFUCG will track spending with MWDBE and Veteran contractors on a monthly basis. By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentation may result in termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims. Please submit this form monthly to the Division of Central Purchasing/ 200 East Main Street / Room 338 / Lexington, KY 40507.

Bid/RFP/Quote # _____

Total Contract Amount Awarded to Prime Contractor for this Project _____

Project Name/ Contract #	Work Period/ From: _____ To: _____
Company Name:	Address:
Federal Tax ID:	Contact Person:

Subcontractor Vendor ID (name, address, phone, email)	Description of Work	Total Subcontract Amount	% of Total Contract Awarded to Prime for this Project	Total Amount Paid for this Period	Purchase Order number for subcontractor work (please attach PO)	Scheduled Project Start Date	Scheduled Project End Date

By the signature below of an authorized company representative, you certify that the information is correct, and that each of the representations set forth below is true. Any misrepresentations may result in the termination of the contract and/or prosecution under applicable Federal and State laws concerning false statements and false claims.

Company

Company Representative

Date

Title

LFUCG STATEMENT OF GOOD FAITH EFFORTS

Bid/RFP/Quote # _____

By the signature below of an authorized company representative, we certify that we have utilized the following Good Faith Efforts to obtain the maximum participation by MWDBE and Veteran-Owned business enterprises on the project and can supply the appropriate documentation.

_____ Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow MWDBE firms and Veteran-Owned businesses to participate.

_____ Included documentation of advertising in the above publications with the bidders good faith efforts package

_____ Attended LFUCG Central Purchasing Economic Inclusion Outreach event

_____ Attended pre-bid meetings that were scheduled by LFUCG to inform MWDBEs and/or Veteran-Owned Businesses of subcontracting opportunities

_____ Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and MWDBE firms and Veteran-Owned businesses

_____ Requested a list of MWDBE and/or Veteran subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).

_____ Contacted organizations that work with MWDBE companies for assistance in finding certified MWDBE firms and Veteran-Owned businesses to work on this project. Those contacted and their responses should be a part of the bidder's good faith efforts documentation.

_____ Sent written notices, by certified mail, email or facsimile, to qualified, certified MWDBEs soliciting their participation in the contract not less than seven (7) days prior to the deadline for submission of bids to allow them to participate effectively.

_____ Followed up initial solicitations by contacting MWDBEs and Veteran-Owned businesses to determine their level of interest.

_____ Provided the interested MWDBE firm and/or Veteran-Owned business with adequate and timely information about the plans, specifications, and requirements of the contract.

_____ Selected portions of the work to be performed by MWDBE firms and/or Veteran-Owned businesses in order to increase the likelihood of meeting the contract goals. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate MWDBE and Veteran participation, even when the prime contractor may otherwise perform these work items with its own workforce

_____ Negotiated in good faith with interested MWDBE firms and Veteran-Owned businesses not rejecting them as unqualified without sound reasons based on a thorough investigation of their capabilities. Any rejection should be so noted in writing with a description as to why an agreement could not be reached.

_____ Included documentation of quotations received from interested MWDBE firms and Veteran-Owned businesses which were not used due to uncompetitive pricing or were rejected as unacceptable and/or copies of responses from firms indicating that they would not be submitting a bid.

_____ Bidder has to submit sound reasons why the quotations were considered unacceptable. The fact that the bidder has the ability and/or desire to perform the contract work with its own forces will not be considered a sound reason for rejecting a MWDBE and/or Veteran-Owned business's quote. Nothing in this provision shall be construed to require the bidder to accept unreasonable quotes in order to satisfy MWDBE and Veteran goals.

_____ Made an effort to offer assistance to or refer interested MWDBE firms and Veteran-Owned businesses to obtain the necessary equipment, supplies, materials, insurance and/or bonding to satisfy the work requirements of the bid proposal

_____ Made efforts to expand the search for MWBE firms and Veteran-Owned businesses beyond the usual geographic boundaries.

_____ Other--any other evidence that the bidder submits which may show that the bidder has made reasonable good faith efforts to include MWDBE and Veteran participation.

NOTE: Failure to submit any of the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to approval by the MBE Liaison. Documentation of Good Faith Efforts must be submitted with the Bid, if the participation Goal is not met.

The undersigned acknowledges that all information is accurate. Any misrepresentations may result in termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and claims.

Company

Company Representative

Date

Title

8. **AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION, NON-CONFLICT OF INTEREST**

I hereby swear (or affirm) under the penalty for false swearing:

1. That I am the Bidder (if the Bidder is an individual), a partner of the Bidder (if the Bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the Bidder is a corporation);
2. That the attached bid has been arrived at by the Bidder independently, and has been submitted without collusion with, and without any agreement, understanding or planned common course of action, with any other contractor, vendor of materials, supplies, equipment or services described in the Invitation to Bid, designed to limit independent bidding or competition;
3. That the contents of the bid or bids have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished, with the bid or bids, and will not be communicated to any such person, prior to the official opening of the bid or bids;
4. That the Bidder is legally entitled to enter into the contracts with the Lexington-Fayette Urban County Government, and is not in violation of any prohibited conflict of interest;
5. (Applicable to corporation only) That as a foreign corporation, we are registered with the Secretary of State, Commonwealth of Kentucky, and authorized to do business in the State _____ or, that as a domestic corporation, we are in good standing with the Secretary of State, Commonwealth of Kentucky _____. Check the statement applicable.
6. This offer is for 60 calendar days from the date this bid is opened. In submitting the above, it is expressly agreed that, upon proper acceptance by the Lexington-Fayette Urban County Government of any or all items bid above, a contract shall thereby be created with respect to the items accepted.
7. That I have fully informed myself regarding the accuracy of the statements made in this statement.
8. That I certify that Subcontractors have not and will not be awarded to any firm(s) that have been debarred from noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

9. **STATEMENT OF EXPERIENCE**

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

NAME OF INDIVIDUAL: _____

POSITION/TITLE: _____

STATEMENT OF EXPERIENCE: _____

* Include all officers, office management's, Affirmative Action officials, and field management personnel. (Attach separate sheets if necessary.)

10. EQUAL OPPORTUNITY AGREEMENT

Standard Title VI Assurance

The Lexington Fayette-Urban County Government, (hereinafter referred to as the "Recipient") hereby agrees that as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation, it will comply with Title VI of the Civil Rights Act of 1964, 78Stat.252, 42 U.S.C. 2000d-4 (hereinafter referred to as the "Act"), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, (49 CFR, Part 21) Nondiscrimination in Federally Assisted Program of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the "Regulations") and other pertinent directives, no person in the United States shall, on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Recipient receives Federal financial assistance from the U.S. Department of Transportation, including the Federal Highway Administration, and hereby gives assurance that will promptly take any necessary measures to effectuate this agreement. This assurance is required by subsection 21.7(a) (1) of the Regulations.

The Law

- * Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- * Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and subcontractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- * Section 503 of the Rehabilitation Act of 1973 States:
The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.
- * Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal Contracts.
- * Section 206 (A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:

The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors, and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is

the benefactor of the Federal funds, it is both against the Urban County Government policy and illegal for the Government to let contracts to companies which knowingly or unknowingly practice discrimination in their employment practices. Violation of the above mentioned ordinances may cause a contract to be canceled and the contractor may be declared ineligible for future consideration.

Please sign this statement in the appropriate space acknowledging that you have read and understand the provisions contained herein. Return this document as part of your application packet.

Bidders

I/We agree to comply with the Civil Rights Laws listed above that govern employment rights of minorities, women, Vietnam veterans, handicapped, and aged persons.

Signature

Name of Business

The Entity (regardless of whether construction contractor, non-construction contractor or supplier) agrees to provide equal opportunity in employment for all qualified persons, to prohibit discrimination in employment because of race, color, creed, national origin, sex or age, and to promote equal employment through a positive, continuing program from itself and each of its sub-contracting agents. This program of equal employment opportunity shall apply to every aspect of its employment policies and practices.

The Kentucky equal Employment Opportunity Act of 1978 (KRS 45.560-45.640) requires that any count, city, town, school district, water district, hospital district, or other political subdivision of the state shall include in directly or indirectly publicly funded contracts for supplies, materials, services, or equipment hereinafter entered into the following provisions:

During the performance of this contract, the contractor agrees as follows:

- (1) *The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, age or national origin;*
- (2) *The contractor will state in all solicitations or advertisements for employees placed by or on behalf of the contractors that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, age or national origin;*
- (3) *The contract will post notices in conspicuous places, available to employees and applicants for employment, setting forth the provisions of the non-discrimination clauses required by this section; and*
- (4) *The contractor will send a notice to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding advising*

the labor union or workers' representative of the contractor's commitments under the nondiscrimination clauses.

The Act further provides:

KRS 45.610. Hiring minorities – Information required

- (1) *For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.*
- (2) *Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.*

KRS 45.620. Action against contractor – Hiring of minority contractor or subcontractor

- (1) *If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.*
- (2) *If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 – 45.640.*
- (3) *The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.*

KRS 45.630 Termination of existing employee not required, when

Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.

KRS 45.640 Minimum skills

Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.

It is recommended that all of the provisions quoted above to be included as special conditions in each contract. In the case of a contract exceeding \$250,000, the contractor is required to furnish evidence that his work-force in Kentucky is representative of the available work-force in the area from which he draws employees, or to supply an Affirmative Action plan which will achieve such representation during the life of the contract.

11. EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY

It is the policy of _____

to assure that all applicants for employment and all employees are treated on a fair and equitable basis without regard to their race, religion, sex, color, handicap, natural origin or age.

Such action shall include employment, promotion, demotion, recruitment or recruitment advertising, layoff or termination, rates of pay and other forms of compensation, and selection for training, whether apprenticeship and/or on-the-job-training.

Furthermore, this company agrees to make special recruitment efforts to hire the protected class whenever feasible. This company also agrees to adhere to all applicable federal, state, and local laws relating to Equal Employment Opportunity for all individuals.

12. WORKFORCE ANALYSIS FORM

Name of Organization: _____

Categories	Total	White (Not Hispanic or Latino)		Hispanic or Latino		Black or African-American (Not Hispanic or Latino)		Native Hawaiian and Other Pacific Islander (Not Hispanic or Latino)		Asian (Not Hispanic or Latino)		American Indian or Alaskan Native (not Hispanic or Latino)		Two or more races (Not Hispanic or Latino)		Total	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Administrators																	
Professionals																	
Superintendents																	
Supervisors																	
Foremen																	
Technicians																	
Protective Service																	
Para-Professionals																	
Office/Clerical																	
Skilled Craft																	
Service/Maintenance																	
Total:																	

Prepared by: _____

(Name and Title)

Date: ____/____/____

Revised 2015-Dec-15

13. EVIDENCE OF INSURABILITY

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT CONSTRUCTION PROJECT
(Use separate form for each Agency or Brokerage agreeing to provide coverage)

Names Insured: _____

Employee ID: _____

Address: _____

Phone: _____

Project to be insured: _____

In lieu of obtaining certificates of insurance at this time, the undersigned agrees to provide the above Named Insured with the minimum coverage listed below. These are outlined in the Insurance and Risk Management of Part V (Special Conditions), including all requirements, and conditions:

Section Items	Coverage	Minimum Limits and Policy Requirements	Limits Provided To Insured	Name of Insurer	A.M. Best's	
					Code	Rating
SC-3, Section 2, Part 4.1 – see provisions	CGL	\$1,000,000 per occ. And \$2,000,000 aggregate	\$			
SC-3, Section 2, Part 4.1 – see provisions	̄AUTO	\$1,000,000/per occ.	\$			
SC-3, Section 2, Part 4.1 – see provisions	WC	Statutory w /endorsement as noted	\$			

Section 2 includes required provisions, statements regarding insurance requirements, and the undersigned agrees to abide by all provisions for the coverage's checked above unless stated otherwise when submitting.

Agency or Brokerage

Name of Authorized Representative

Street Address

Title

City State Zip

Authorized Signature

Telephone Number

Date

NOTE: Authorized signatures may be the agent's if agent has placed insurance through an agency agreement with the insurer. If insurance is brokered, authorized signature must be that of authorized representative of insurer.

IMPORTANT: Contract may not be awarded if a completed and signed copy of this form for all coverage's listed above is not provided with the bid.

14. DEBARRED FIRMS

PROJECT NAME: _____

BID NUMBER: _____

**LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
LEXINGTON, KY**

All prime Contractors shall certify that Subcontractors have not and will not be awarded to any firms that has been debarred for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 As Amended, Executive Order 11246 As Amended or any other Federal Law.

All bidders shall complete the attached certification in duplicate and submit both copies to the Owner with the bid proposal. The Owner (grantee) shall transmit one copy to the Lexington-Fayette Urban County Government, Division of Community Development, within fourteen (14) days after bid opening.

The undersigned hereby certifies that the firm of _____ has not and will not award a subcontract, in connection with any contract award to it as the result of this bid, to any firm that has been debarred for noncompliance with the Federal labor Standards, Title VI of the civil Rights Act of 1964, Executive Order 11246 as amended or any Federal Law.

Name of Firm Submitting Bid

Signature of Authorized Official

Title

Date

15. DEBARMENT CERTIFICATION

All contractors/subcontractors shall complete the following certification and submit it with the bid proposal.

The contractor/subcontractor certifies in accordance with Executive Order 12549 (Debarment and Suspension 2/18/86) that to the best of its knowledge and belief, that it and its principals:

- 1) Are not presently debarred, suspended, proposed for debarment, declared negligible, or voluntarily excluded from covered transactions or contract by any Federal department or agency for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 as amended, Executive Order 11246 as amended or any other Federal law;
 - a) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - b) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(a) of this certification; and
 - c) Have not within a three year period preceding this bid has one or more public (Federal, State or local) transactions or contracts terminated for cause or default.

- 2) Where the contractor is unable to certify to any of the statements in this certification, such prospective contractors shall attach an explanation to this certification form.

Firm Name: _____

Project: _____

Printed Name and Title of Authorized Representative: _____

Signature: _____

Date: _____

END OF SECTION

PART IV
GENERAL CONDITIONS
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END OF SECTION

PART IV
GENERAL CONDITIONS

1. DEFINITIONS

Wherever used in these General Conditions or the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

- 1.1 Addenda**
Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bid Documents or the Contract Documents.
- 1.2 Agreement**
The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.
- 1.3 Application for Payment**
The form accepted by CONSULTANT which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.
- 1.4 Bid**
The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
- 1.5 Bidder**
An individual, partnership, or corporation, who submit a Bid for a prime contract with the OWNER, for the Work described in the proposed Contract Documents.
- 1.6 Bonds**
Bid, performance and payment bonds and other instruments of security.
- 1.7 Calendar Day**
A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.
- 1.8 Change Order**
A document recommended by CONSULTANT, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

1.9 Contract Documents

The Advertisement for Bidders, Information for Bidders, Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR'S Bid (including documentation accompanying the Bid and any post-bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Bonds, these General Conditions, the Special Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all amendments, modifications and supplements.

1.10 Contract Unit Price

The monies payable by OWNER to CONTRACTOR under the Contract Documents as stated in the Agreement. Unit Prices are to be firm for the term of this Contract.

1.11 Contract Time

The number of consecutive calendar days between the date of issuance of the Notice to Proceed and the contract completion date.

1.12 CONTRACTOR

The person, firm or corporation with whom OWNER has entered into the Agreement.

1.13 Defective

An adjective which when modifying the word Work refers to Work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the Contract Documents, or has been damaged prior to CONSULTANT'S recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER).

1.14 Drawings

The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by CONSULTANT and are referred to in the Contract Documents.

1.15 Effective Date of the Agreement

The date indicated in the Agreement on which it becomes effective.

1.16 CONSULTANT

The Lexington-Fayette Urban County Government or its authorized representative.

1.17 Field Order

A documented order issued by CONSULTANT which orders minor changes in the Work, but which does not involve a change in the Contract Price or the Contract Time.

- 1.18 Giving Notice**
Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.
- 1.19 Laws and Regulations**
Laws, rules, regulations, ordinances, codes and/or orders.
- 1.20 Notice of Award**
The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.
- 1.21 Notice to Proceed**
A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.
- 1.22 OWNER**
The Lexington-Fayette Urban County Government.
- 1.23 Partial Utilization**
Placing a portion of the Work in service for the purpose for which it is intended (or related purpose) before reaching Completion for all the Work.
- 1.24 Project**
The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.
- 1.25 Inspector**
The authorized representative who is assigned to the site or any part thereof.
- 1.26 Shop Drawings**
All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.
- 1.27 Specifications**
Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and

workmanship as applied to the Work and certain administrative details applicable thereto.

1.28 Standard Specifications

The "Standard Specifications for Road and Bridge Construction", Transportation Cabinet, Department of Highways, Commonwealth of Kentucky, current edition. MUTCD shall refer to the "Manual of Uniform Traffic Control Devices.

1.29 Subcontractor

An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

1.30 Special Conditions

The part of the Contract Documents which amends or supplements these General Conditions.

1.31 Supplier

A manufacturer, fabricator, supplier, distributor, materialman or vendor.

1.32 Underground Facilities

All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

1.33 Unit Price Work

An amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

1.34 Work

The entire completed construction or the various separately identifiable parts thereof required to be furnished under the Contract Documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the Contract Documents.

1.35 Time Period

When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

2. PRELIMINARY MATTERS

2.1 Delivery of Bonds

When the CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER, such Bonds, Insurance Certificate, and Power of Attorney as CONTRACTOR may be required to furnish.

2.2 Copies of Documents

Owner shall furnish to CONTRACTOR up to three copies (unless otherwise specified in the Special Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.3 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence to run on the day specified in the Notice to Proceed.

2.4 Starting the Project

CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run.

2.5 Before Starting Construction

Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to CONSULTANT any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from CONSULTANT before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.6 Submittal of Schedules

Within ten days after the effective date of the Agreement (unless otherwise specified) CONTRACTOR shall submit to CONSULTANT for review:

2.6.1 an estimated progress schedule indicating the starting and completion dates of the various stages of the Work;

2.6.2 a preliminary schedule of Shop Drawing submissions; and

2.6.3 a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work, into costs per labor and materials by specification

section to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work which will be confirmed in writing by CONTRACTOR at the time of submission. Schedule of values shall be submitted on AIA G702/703 forms, or approved equal.

2.7 Preconstruction Conference

Before CONTRACTOR starts the Work at the proposed site, a conference attended by CONTRACTOR, CONSULTANT, EEO-Affirmative Action Officer, and other appropriate parties will be held to discuss the following issues: (1) The scheduling of the Work to be completed; (2) The procedures for handling shop drawings and other submittals; (3) The processing of applications for payment; (4) The establishment of an understanding among the involved parties in regard to the proposed project; (5) The establishment of procedures for effectively implementing the LFUCG's 10% minimum DBE goals; and (6) Requirement for Mechanic's Lien on Partial Applications for Payment.

2.8 Finalizing Schedules

At least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, CONSULTANT and others as appropriate will be held to finalize the schedules submitted in accordance with paragraph 2.6. The finalized progress schedule will be acceptable to CONSULTANT as providing orderly progression of the Work to completion within the Contract Time, but such acceptance will neither impose on CONSULTANT responsibility for the progress or scheduling of the Work nor relieve CONTRACTOR from full responsibility thereof. The finalized schedule of Shop Drawing submissions will be acceptable to CONSULTANT as providing a workable arrangement for processing the submissions. The finalized schedule of values will be acceptable to CONSULTANT as to form and substance.

3. CONTRACT DOCUMENTS: INTENT, CONFLICTS, AMENDING AND REUSE

3.1 General

The Contract Documents comprise the entire agreement between OWNER and CONTRACTOR concerning the Work. The Contract Documents are complementary; what is called for by one is as binding as if called for by all. The Contract Documents will be construed in accordance with the law of the place of the Project.

3.2 Intent

It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used

to describe Work, materials or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or CONSULTANT, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to CONSULTANT, or any of CONSULTANT'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4. Clarifications and interpretations of the Contract Documents shall be issued by CONSULTANT as provided in paragraph 8.4.

3.3 Conflicts

If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to CONSULTANT in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from CONSULTANT; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

In resolving such conflicts, errors and discrepancies, the documents shall be given precedence in the following order:

1. Agreement
2. Field and Change Orders
3. Addenda
4. Special Conditions
5. Instruction to Bidders
6. General Conditions
7. Specifications and Drawings

Figure dimension on drawings shall govern over scale dimensions and detailed Drawings shall govern over general Drawings.

3.4 Amending and Supplementing Contract Documents

The Contract Documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof by means of a Change Order or a Field Order. Contract Price and Contract Time may only be changed by a Change Order.

3.5 Reuse of Documents

Neither CONTRACTOR nor any Subcontractor or Supplier or other person or organization performing or furnishing any of the Work under a direct or indirect contract with OWNER shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents (or copies of any thereof) prepared by or bearing the seal of CONSULTANT; and they shall not reuse any of them on extensions of the Project or any other project without written consent of OWNER and CONSULTANT and specific written verification or adaptation by CONSULTANT.

4. AVAILABILITY OF LANDS; PHYSICAL CONDITIONS, REFERENCE POINTS

4.1 Availability of Lands

OWNER shall furnish, as indicated in the Contract Documents, the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents. If CONTRACTOR believes that any delay in OWNER'S furnishing these lands, rights-of-way or easements entitles CONTRACTOR to an extension of the Contract Time, CONTRACTOR may make a claim therefor as provided in Article 11. CONSULTANT shall determine if the claim is legitimate or not. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 Physical Conditions

4.2.1 Explorations and Reports

Reference is made to the Special Conditions for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by CONSULTANT in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports, but not upon non-technical data, interpretations or opinions contained therein or for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.

4.2.2 Existing Structures

Reference is made to the Special Conditions for identification of those drawings of physical conditions in or relating to existing surface and

subsurface structures (except Underground Facilities referred to in paragraph 4.3 which are at or contiguous to the site that have been utilized by CONSULTANT in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for CONTRACTOR'S purposes. Except as indicated in the immediately preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions

If CONTRACTOR believes that:

4.2.3.1 any technical data on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or

4.2.3.2 any physical conditions uncovered or revealed at the site differ materially from that indicated, reflected or referred to in the Contract Documents,

CONTRACTOR shall, promptly after becoming aware thereof and before performing and WORK in connection therewith (except in an emergency) notify OWNER and CONSULTANT in writing about the inaccuracy or difference.

4.2.4 CONSULTANT'S Review

CONSULTANT will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise CONTRACTOR of CONSULTANT'S findings and conclusions.

4.2.5 Possible Document Change

If CONSULTANT concludes that there is a material error in the Contract Documents or that because of newly discovered conditions a change in the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the inaccuracy or difference.

4.2.6 Possible Price and Time Adjustments

In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such inaccuracy or difference.

4.3 Physical Conditions-Underground Facilities

4.3.1 Shown or Indicated

The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is

based on information and data furnished to OWNER or CONSULTANT by the owners of such underground facilities or by others. Unless it is otherwise expressly provided in the Special Conditions:

4.3.1.1 OWNER and CONSULTANT shall not be responsible for the accuracy or completeness of any such information or data; and,

4.2.1.2 CONTRACTOR shall have full responsibility for reviewing and checking all such information and data; for locating all underground facilities shown or indicated in the Contract Documents; for coordination of the Work with the owners of such underground facilities during construction; and for the safety and protection thereof and repairing any damage thereto resulting from the Work, the cost of all of which will be considered as having been included in the Contract Price.

4.3.2 Not Shown or Indicated

If an underground facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any Work affected thereby (except in an emergency), identify the owner of such Underground Facility and give written notice thereof to that owner and to OWNER and CONSULTANT. CONSULTANT will promptly review the underground facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the Underground Facility, and the Contract Documents will be amended or supplemented to the extent necessary. During such time, CONTRACTOR shall be responsible for the safety and protection of such underground facility. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any underground facility that was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of.

4.4 Reference Points

OWNER shall provide engineering surveys to establish reference points for construction which in CONSULTANT'S judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work (unless otherwise specified), shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to CONSULTANT whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by a Registered Land Surveyor.

5. CONTRACTOR'S RESPONSIBILITIES

5.1 Supervision

CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall assure that all CONTRACTOR personnel (including subcontractors, etc.) conduct themselves in a courteous and respectful manner toward the CONSULTANT and the general public. CONTRACTOR shall keep at the Project Site during the progress of the Work a competent project manager/superintendent and all necessary assistants, all of whom shall be satisfactory to OWNER. OWNER reserves the right to reject CONTRACTOR'S construction superintendent and project management personnel if they are unsatisfactory to OWNER and upon such rejection CONTRACTOR shall designate and provide competent successors. Failure to comply with this condition of the Contract will result in immediate suspension of the Work. Following a review by the Commissioner of Public Works, the Contract may be terminated (see GC section 14). CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

5.2 Superintendence

CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and CONSULTANT except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

5.3 Labor

CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. OWNER reserves the right to require CONTRACTOR to remove from the Project any of its personnel, or subcontractor's personnel for violating LFUCG Policies, Rules or Regulations. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER'S written consent given after prior written notice to CONSULTANT.

5.4 Start-Up and Completion of Work

Unless otherwise specified, CONTRACTOR shall furnish and assume full responsibility for all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

5.5 Materials and Equipment

All materials and equipment shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by CONSULTANT, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable supplier except as otherwise provided in the Contract Documents; but no provision of any such instructions will be effective to assign to CONSULTANT, or any of CONSULTANT'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

5.5.1 Not Clearly Specified or Indicated

In all instances where materials specified are obtainable in different sizes, weights, trade grades, qualities or finishes, etc., whose weights, trade grades, qualities or finishes, etc., are not clearly specified or indicated on the Drawings, the CONTRACTOR shall notify the CONSULTANT of all such instances at least five (5) days in advance of receiving the proposals. The CONSULTANT will then determine which size, weight, trade grade, quality, finish, etc., is required.

5.5.2 Coordination of Work

The CONTRACTOR shall see that for his own Work and for the work of each subcontractor, proper templates and patterns necessary for the coordination of the various parts of the Work are prepared. The CONTRACTOR shall furnish or require the Subcontractor to furnish such duplicates as will enable the Subcontractors to fit together and execute fully their respective portions of the Work.

5.6 Adjusting Progress Schedule

CONTRACTOR shall submit to CONSULTANT for acceptance (to the extent indicated in paragraph 2.8) adjustments in the progress schedule to reflect the impact thereon of new developments; these will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the Contract Documents applicable thereto.

5.7 Substitutes or "Or-Equal" Items

5.7.1 General

Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by OWNER/CONSULTANT if sufficient information is submitted by CONTRACTOR to allow OWNER/CONSULTANT to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by OWNER/CONSULTANT will include the following. Requests for review of substitute items of material and equipment will not be accepted by OWNER/CONSULTANT from anyone, other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or equipment, CONTRACTOR shall make written application to OWNER/CONSULTANT for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR'S achievement of completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by OWNER/CONSULTANT in evaluating the proposed substitute. OWNER/CONSULTANT may require CONTRACTOR to furnish at CONTRACTOR'S expense additional data about the proposed substitute.

5.7.2 Substitutes

If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to OWNER/CONSULTANT, if CONTRACTOR submits sufficient information to allow OWNER/CONSULTANT to determine that the substitute proposed is equivalent to that indicated or required by the Contract

Documents. The procedure for review by OWNER/CONSULTANT will be similar to that provided in paragraph 5.7.1 as applied by OWNER/CONSULTANT.

5.7.3 OWNER/CONSULTANT'S Approval

OWNER/CONSULTANT will be allowed a reasonable time within which to evaluate each proposed substitute. OWNER/CONSULTANT will be the sole judge of acceptability, and no substitute will be ordered, installed or utilized without OWNER/CONSULTANT'S prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing. OWNER may require CONTRACTOR to furnish at CONTRACTOR'S expense a special performance guarantee or other surety with respect to any substitute. OWNER/CONSULTANT will record time required by OWNER/CONSULTANT and OWNER/CONSULTANT'S consultants in evaluating substitutions proposed by CONTRACTOR and in making changes in the Contract Documents occasioned thereby. Whether or not OWNER/CONSULTANT accepts a proposed substitute, CONTRACTOR shall reimburse OWNER for the charges of OWNER/CONSULTANT and OWNER/CONSULTANT'S consultants for evaluating each proposed substitute.

5.8 Subcontractors, Suppliers, and Others

5.8.1 Acceptable to CONSULTANT

CONTRACTOR shall not employ any Subcontractor, Supplier or other person or organization (including those acceptable to OWNER and CONSULTANT as indicated in paragraph 5.8.2), whether initially or as a substitute, against whom OWNER or CONSULTANT may have reasonable objection. CONTRACTOR shall not be required to employ any Subcontractor, Supplier or other person or organization to furnish or perform any of the Work against whom CONTRACTOR has reasonable objection.

5.8.2 Objection After Due Investigation

If the Contract Documents require the identity of certain Subcontractors, Suppliers or other persons or organizations (including those who are to furnish the principal items of materials and equipment) to be submitted to OWNER in advance of the specified date prior to the Effective Date of the Agreement for acceptance by OWNER and CONSULTANT and if CONTRACTOR has submitted a list thereof, OWNER'S or CONSULTANT'S acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the bidding documents or the Contract Documents) of any such Subcontractor, Supplier or other person or organization so identified may be revoked on the basis of reasonable objection after due investigation, in which case CONTRACTOR shall submit an acceptable substitute. No acceptance by

OWNER or CONSULTANT of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or CONSULTANT to reject defective Work.

5.8.3 Contractor Responsible for Acts of Subcontractors

The CONTRACTOR shall perform on the site, and with its own organization, work equivalent to at least fifty (50) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the Urban County project manager determines that the reduction would be to the advantage of the Urban County Government.

The CONTRACTOR shall, at the time he submits his proposal for the Contract, notify the OWNER in writing of the names of Subcontractors proposed for the Work. He shall not employ any Subcontractor without the prior written approval of the OWNER.

CONTRACTOR shall be fully responsible to OWNER and CONSULTANT for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR'S own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or CONSULTANT and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or CONSULTANT to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

5.8.4 Division of Specifications

The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

5.8.5 Agreement Between Contractor and Subcontractors

All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and CONSULTANT.

5.8.6 Statements and Comments by CONTRACTOR

Neither the CONTRACTOR, his employees, nor his subcontractors shall at any time make any statement or comment as

to the project scope, nature, intention, design, or construction method to any third party or parties without the explicit written consent of the OWNER.

Any third party requesting such information shall be referred to the OWNER or his representative.

Should there be any change from the original intent of the project as a result of any statement or comment by the contractor, his employees or subcontractors, contractor shall be held liable for any change in the scope, nature, design, or construction method and shall bear the full cost for the previously mentioned changes.

5.9 Patent Fees and Royalties

CONTRACTOR shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others.

5.10 Permits

Unless otherwise provided in the Special conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of opening of Bids, or if there are no Bids on the Effective Date of the Agreement. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto such as plant investment fees.

5.11 Laws and Regulations

5.11.1 CONTRACTOR to Comply

CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor CONSULTANT shall be responsible for monitoring CONTRACTOR'S compliance with any Laws and Regulations.

5.11.2 Specifications and Drawings at Variance

If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give CONSULTANT prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws, or Regulations, and without such notice to CONSULTANT, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR'S primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.12 Taxes

CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.13 Use of Premises

5.13.1 Project Site

CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the staging areas or work site areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such

land or area, or to the owner or occupant thereof or of any land or areas contiguous thereto, resulting from the performance of the Work. Should any claim be made against OWNER or CONSULTANT by any such owner or occupant because of the performance of the Work, CONTRACTOR shall promptly attempt to settle with such other party by agreement or otherwise resolve the claim by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER and CONSULTANT harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any such other party against OWNER or CONSULTANT to the extent based on a claim arising out of CONTRACTOR'S performance of the Work.

5.13.2 Clean UP

During the progress of the Work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the Work. At the completion of the Work, CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER. CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents.

5.13.1 Loading of Structures

CONTRACTOR shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall CONTRACTOR subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

5.14 Record Drawings

CONTRACTOR shall maintain in a safe place at the site one record copy of all Drawings, Specifications, Addenda, Change Orders, Field Orders and written interpretations and clarifications (issued pursuant to paragraph 9.4) in good order and annotated to show all changes made during construction. These record documents together with all approved samples and a counterpart of all approved Shop Drawings will be available to CONSULTANT for reference. Upon completion of the Work, these record documents, samples and Shop Drawings will be delivered to CONSULTANT for OWNER.

5.15 Shop Drawings and Samples

5.15.1 Shop Drawing Submittals

After checking and verifying all field measurements and after complying

with applicable procedures specified, CONTRACTOR shall submit to CONSULTANT for review and approval in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.8), or for other appropriate action if so indicated in the Special Conditions, five copies (unless otherwise specified) of all Shop Drawings, which will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as CONSULTANT may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable CONSULTANT to review the information as required.

5.15.2 Sample Submittals

CONTRACTOR shall also submit to CONSULTANT for review and approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

5.15.3 Review by CONTRACTOR

Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

5.15.4 Notice of Variation

At the time of each submission, CONTRACTOR shall give CONSULTANT specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to CONSULTANT for review and approval of each such variation.

5.15.5 CONSULTANT'S Approval

CONSULTANT will review and approve with reasonable promptness Shop Drawings and samples, but CONSULTANT'S review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or

procedure of construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions. CONTRACTOR shall make corrections required by CONSULTANT, and shall return the required number of corrected copies of Shop Drawings and submit, as required, new samples for review and approval. CONTRACTOR shall direct specific attention in writing to revisions other than the corrections called for by CONSULTANT on previous submittals.

5.15.6 Responsibility for Errors and Omissions

CONSULTANT'S review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called CONSULTANT'S attention to each such variation at the time of submission as required by paragraph 5.15.4 and CONSULTANT has given written approval of each such variation by a specific written notation thereof incorporated in or accompanying the Shop Drawing or sample approval; nor will any approval by CONSULTANT relieve CONTRACTOR from responsibility for errors or omissions in the Shop Drawings or from responsibility for having complied with the provisions of paragraph 5.15.3.

5.15.7 Cost of Related Work

Where a Shop or sample is required by the Specifications, any related Work performed prior to CONSULTANT'S review and approval of the pertinent submission will be the sole expense and responsibility of CONTRACTOR.

5.16 Continuing the Work

CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolutions of any disputes or disagreements, except as permitted by paragraph 14.5 or as CONTRACTOR and OWNER may otherwise agree in writing.

5.17 Erosion and Sediment Control

5.17.1 General Environmental Requirements

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits.

Any fines or penalties resulting from the failure to comply with the terms of the federal, state or local permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

5.17.2 Stormwater Pollution Prevention

A. The CONTRACTOR shall exercise due care to prevent or minimize any damage to any stream or wetland from pollution by debris, sediment or other material. The operation of equipment and/or materials in a jurisdictional wetland is expressly prohibited. Water that has been used for washing or processing, or that contains oils, sediments or other pollutants shall not be discharged from the job site. Such waters shall be collected and properly disposed of by the CONTRACTOR in accordance with applicable local, state and federal law.

B. The CONTRACTOR is solely responsible for securing all required state and local permits associated with stormwater discharges from the project including, but not necessarily limited to the KY Notice of Intent to Disturb (NOI) for Coverage of Storm Water Discharges Associated with Construction Activities under the KPDES Storm Water General Permit KYR100000 and the LFUCG, Land Disturbance Permit. Permit application preparation and all required documentation are the responsibility of the CONTRACTOR. The CONTRACTOR is solely responsible for maintaining compliance with the stormwater pollution prevention plan or erosion and sediment control plan and ensuring the following:

- a. That the Stormwater Pollution Prevention Plan (SWPPP) or erosion control plan is current and available for review on site;
- b. That any and all stormwater inspection reports required by the permit are conducted by qualified personnel and are available for review onsite; and
- c. That all best management practices (BMPs) are adequately maintained and effective at controlling erosion and preventing sediment from leaving the site.

C. The CONTRACTOR shall provide the necessary equipment and personnel to perform any and all emergency measures that may be required to contain any spillage or leakage and to remove materials, soils or liquids that become contaminated. The collected spill material shall be properly disposed at the CONTRACTOR's expense.

D. Upon completion of the work and with the concurrence of the OWNER, the CONTRACTOR must file a Notice of Termination (NOT) of Coverage Under the KPDES General Permit for Storm Water Discharges Associated with Construction Activity with the appropriate local and state authorities.

E. Any fines or penalties resulting from the failure to comply with the terms of the state or local stormwater permits or perform necessary corrective action are solely the obligation of the CONTRACTOR.

6. OTHER WORK

6.1 Related Work at Site

OWNER may perform other work related to the Project at the site by OWNER'S own forces, have other work performed by utility owners or let other direct contracts therefor which shall contain General Conditions similar to these. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work; and, if such performance will involve additional expense to CONTRACTOR or requires additional time, a Change Order to the Contract will be negotiated.

6.2 Other Contractors or Utility Owners

CONTRACTOR shall afford each utility owner and other contractor who is a party to such a direct contract (or OWNER, if OWNER is performing the additional work with OWNER'S employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the Work with theirs. CONTRACTOR shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of CONSULTANT and the others whose work will be affected. The duties and responsibilities of CONTRACTOR under this paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of CONTRACTOR in said direct contracts between OWNER and such utility owners and other contractors.

6.3 Delays Caused by Others

If any part of CONTRACTOR'S Work depends for proper execution or results upon the work of any such other contractor or utility owner (or OWNER), CONTRACTOR shall inspect and promptly report to CONSULTANT in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR'S failure so to report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR'S Work except for latent or non-apparent defects and deficiencies in the other work.

6.4 Coordination

If OWNER contracts with others for the performance of other work on the Project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime contractors will be identified in the Special Conditions, and the specific matters to be covered by such authority and

responsibility will be itemized, and the extent of such authority and responsibilities will be provided, in the Special Conditions.

7. OWNER'S RESPONSIBILITIES

7.1 Communications

OWNER shall issue all communications to CONTRACTOR through CONSULTANT.

7.2 Data and Payments

OWNER shall furnish the data required of OWNER under the Contract Documents promptly after they are due.

7.3 Lands, Easements, and Surveys

OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER'S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by CONSULTANT in preparing the Drawings and Specifications.

7.4 Change Orders

OWNER is obligated to execute Change Orders as indicated in paragraph 9.4.

7.5 Inspections, Tests and Approvals

OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.3.

7.6 Stop or Suspend Work

In connection with OWNER'S right to stop Work or suspend Work, see paragraph 12.4 and 14.1 Paragraph 14.2 deals with OWNER'S rights to terminate services of CONTRACTOR under certain circumstances.

8. CONSULTANT'S STATUS DURING CONSTRUCTION

8.1 OWNER'S Representative

CONSULTANT will be OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of CONSULTANT as OWNER'S representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and CONSULTANT.

8.2 Visits to Site

CONSULTANT will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. CONSULTANT will not be required to make exhaustive or

continuous on-site inspections to check the quality or quantity of the Work. CONSULTANT'S efforts will be directed toward providing for OWNER a greater degree of confidence that the completed Work will conform to the Contract Documents. On the basis of such visits and on-site observations, CONSULTANT will keep OWNER informed of the progress of the Work and will endeavor to guard OWNER against defects and deficiencies in the Work.

8.3 Project Representation

CONSULTANT will provide an Inspector to assist CONSULTANT in observing the performance of the Work. If OWNER designates another agent to represent OWNER at the site who is not CONSULTANT'S agent or employee, the duties, responsibilities and limitations of authority of such other person will be as provided in the Special Conditions.

8.4 Clarifications and Interpretations

CONSULTANT will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as CONSULTANT may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents.

8.5 Authorized Variations in Work

CONSULTANT may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order.

8.6 Rejecting Defective Work

CONSULTANT will have authority to disapprove or reject Work which CONSULTANT believes to be defective, and will also have authority to require special inspection or testing of the Work as provided in paragraph 12.3, whether or not the Work is fabricated, installed or completed.

8.7 Shop Drawings

In connection with CONSULTANT'S responsibility for Shop Drawings and samples, see paragraphs 5.15.1 through 5.16 inclusive.

8.8 Change Orders

In connection with CONSULTANT'S responsibilities as to Change Orders, see Articles 10, 11 and 12.

8.9 Payments

In connection with CONSULTANT'S responsibilities with respect to Applications for Payment, etc., see Article 13.

8.10 Determinations for Unit Prices

CONSULTANT will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR.

CONSULTANT will review with CONTRACTOR CONSULTANT'S preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise).

8.11 Decision on Disputes

CONSULTANT will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 10 and 11 in respect of changes in the Contract Price or Contract Time will be referred initially to CONSULTANT in writing with a request for a formal decision in accordance with this paragraph, which CONSULTANT will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered to CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to CONSULTANT within sixty days after such occurrence unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim.

8.12 Limitations on CONSULTANT's Responsibilities

8.12.1 CONTRACTOR, Supplier, or Surety

Neither CONSULTANT'S authority to act under this Article 8 or elsewhere in the Contract Documents nor any decision made by CONSULTANT in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of CONSULTANT to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

8.12.2 To Evaluate the Work

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory" or adjectives or like "effect" or "import" are used to describe a requirement, direction, review or judgment of CONSULTANT as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign CONSULTANT any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

8.12.3 CONTRACTOR'S Means, Methods, Etc.

CONSULTANT will not be responsible for CONTRACTOR'S means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto, and CONSULTANT will not be responsible for CONTRACTOR'S failure to perform or furnish the Work in accordance with the Contract Documents.

8.12.4 Acts of Omissions of CONTRACTOR

CONSULTANT will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other person or organization performing or furnishing any of the Work.

9. CHANGES IN THE WORK

9.1 OWNER May Order Change

Without invalidating the Agreement and without notice to any surety, OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by a Change Order. Upon receipt of such notice, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

9.2 Claims

Claims for an increase or decrease in the Contract Price or an extension or shortening of the Contract Time that should be allowed as a result of a Change Order will be settled as provided for in Article 10 or Article 11.

9.3 Work Not in Contract Documents

CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time with respect to any Work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in paragraph 3.4, except in the case of an emergency and except in the case of uncovering Work as provided in paragraph 12.3.4.

9.4 Change Orders

OWNER and CONTRACTOR shall execute appropriate Change Orders covering:

9.4.1 changes in the Work which are ordered by OWNER pursuant to paragraph 9.1, are required because of acceptance of defective Work under paragraph 12.7 or corrective defective Work under paragraph 12.8, or are agreed to by the parties;

9.4.2 changes in the Contract Price or Contract Time which are agreed to by the parties; and

9.4.3 changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by CONSULTANT pursuant to paragraph 8.11; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and REGULATIONS, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 5.16.

9.5 Notice of Change

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR'S responsibility, and the amount of each applicable Bond will be adjusted accordingly.

10. CHANGE OF CONTRACT PRICE

10.1 Total Compensation

The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

10.2 Claim for Increase or Decrease in Price

The Contract Price may only be changed by a Change Order. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by CONTRACTOR'S written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence of said event.

10.3 Value of Work

The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

10.3.1 Unit Prices

Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of

the items involved (subject to the provisions of paragraphs 10.9.1. through 10.9.3, inclusive).

10.3.2 Lump Sum

By mutual acceptance of a lump sum (which may include an allowance for overhead and profit not necessarily in accordance with paragraph 10.6.2.1).

10.3.3 Cost Plus Fee

On the basis of the Cost of the Work (determined as provided in paragraphs 10.4 and 10.5) plus a CONTRACTOR'S fee for overhead and profit (determined as provided in paragraphs 10.6 and 10.7).

10.4 Cost of the Work

The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project; shall include only the following items; and shall not include any of the costs itemized in paragraph 10.5:

10.4.1 Payroll Costs

Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' or workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing Work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above to the extent authorized by OWNER.

10.4.2 Materials and Equipment Costs

Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

10.4.3 Subcontractor Costs

Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of CONSULTANT, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR'S Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

10.4.4 Special Consultant Costs

Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

10.4.5 Supplemental Costs

10.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

10.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

10.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of CONSULTANT, and the costs of transportation, loading, unloading, installation, dismantling and removal shall be in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

10.4.5.4 Sales, consumer, use or similar taxes related to the Work, and for which CONTRACTOR is liable, imposed by Laws and Regulations.

10.4.5.5 Deposits lost for causes other than negligence of CONTRACTOR, any Subcontractor or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

10.4.5.6 Losses and damages (and related expenses), not compensated by insurance or otherwise, to the Work or otherwise sustained by CONTRACTOR in connection with the performance and furnishing of the Work (except losses and damages within the deductible amounts of property insurance established by OWNER), provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of the Work for the purpose of determining CONTRACTOR'S fee. If, however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, CONTRACTOR shall be paid a fee proportionate to that stated in paragraph 10.6.2 for services.

10.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

10.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

10.4.5.9 Cost of premiums for additional Bonds and insurance required because of changes in the Work and premiums for property insurance coverage within the limits of the deductible amounts established by OWNER.

10.5 Not to Be Included in Cost of the Work

The term Cost of the Work shall not include any of the following:

10.5.1 Costs of Officers and Executives

Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals (of partnership and sole proprietorships), general

managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR'S principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 10.4.1 or specifically covered by paragraph 10.4.4 - all of which are to be considered administrative costs covered by the CONTRACTOR'S fee.

10.5.2 Principal Office

Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the site.

10.5.3 Capital Expense

Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR for delinquent payments.

10.5.4 Bonds and Insurance

Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 10.4.5.9 above).

10.5.5 Costs Due to Negligence

Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

10.5.6 Other Costs

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 10.4.

10.6 Contractor's Fee

The CONTRACTOR'S Fee allowed to CONTRACTOR for overhead and profit shall be determined as follows:

10.6.1 a mutually acceptable fixed fee; or if none can be agreed upon,

10.6.2 a fee based on the following percentages of the various portions of the Cost of the Work:

10.6.2.1 for costs incurred under paragraphs 10.4.1 and 10.4.2, the CONTRACTOR'S fee shall be fifteen percent;

10.6.2.2 for costs incurred under paragraph 10.4.3, the CONTRACTOR'S fee shall be five percent; and if a subcontract is on the basis of Cost of the Work Plus a fee, the maximum allowable to CONTRACTOR on account of overhead and profit of all Subcontractors shall be fifteen percent;

10.6.2.3 no fee shall be payable on the basis of costs itemized under paragraphs 10.4.4, 10.4.5 and 10.5;

10.6.2.4 the amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease plus a deduction in CONTRACTOR'S Fee by an amount equal to ten percent of the net decrease; and

10.6.2.5 when both additions and credits are involved in any one change, the adjustment in CONTRACTOR'S fee shall be computed on the basis of the net change in accordance with paragraphs 10.6.2.1 through 10.6.2.4, inclusive.

10.7 Itemized Cost Breakdown

Whenever the cost of any Work is to be determined pursuant to paragraph 10.4 or 10.5, CONTRACTOR will submit in form acceptable to CONSULTANT an itemized cost breakdown together with supporting data.

10.8 Cash Allowances

It is understood that CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such Subcontractors or Suppliers and for such sums within the limit of the allowances as may be acceptable to CONSULTANT, CONTRACTOR agrees that:

10.8.1 Materials and Equipment

The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

10.8.2 Other Costs

CONTRACTOR'S costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

10.8.3 Change Order

Prior to final payment, an appropriate Change Order will be issued as recommended by CONSULTANT to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

10.9 Unit Price Work

10.9.1 General

Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by CONSULTANT in accordance with Paragraph 8.10.

10.9.2 Overhead and Profit

Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

10.9.3 Claim for Increase in Unit Price

Where the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of Work and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 10.

11. CHANGE OF CONTRACT TIME

11.1 Change Order

The Contract Time may only be changed by a Change Order. Any claim for an extension or shortening of the Contract Time shall be based on written notice delivered to CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the extent of the claim with supporting data shall be delivered within sixty days after such occurrence (unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event. All claims for adjustment in the Contract Time shall be determined by CONSULTANT in accordance with paragraph 8.11. No claim for an adjustment in the Contract Time will be valid if not submitted in accordance with the requirements of this paragraph 11.1.

11.2 Justification for Time Extensions

The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if a claim is made therefore as provided in paragraph 11.1. Such delays shall include, but not be limited to, acts or neglect by OWNER or others performing additional work as contemplated by Article 6, or to fires, floods, labor disputes, epidemics, abnormal weather conditions or acts of God.

11.3 Time Limits

All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 11 shall not exclude recovery for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court costs) for delay by either party.

12. WARRANTY AND GUARANTEE; TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

12.1 Warranty and Guarantee

CONTRACTOR warrants and guarantees to OWNER and CONSULTANT that all Work will be in accordance with the Contract Documents and will not be defective. All defective Work, whether or not in place, may be rejected, corrected or accepted as provided in this Article 12.

12.2 Access to Work

CONSULTANT and CONSULTANT'S representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the Work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access.

12.3 Tests and Inspections

12.3.1 Timely Notice

CONTRACTOR shall give CONSULTANT timely notice of readiness of the Work for all required inspections, tests or approvals.

12.3.2 Requirements and Responsibilities

The CONSULTANT may require such inspection and testing during the course of the Work as he/she deems necessary to ascertain and assure the integrity and acceptable quality of the materials incorporated and the work performed. Inspection presence may be either full-time or intermittent, and neither the presence nor absence at any time of the CONSULTANT or the INSPECTOR shall relieve the CONTRACTOR of sole responsibility for the acceptability and integrity of the Work or any part thereof.

The costs of sampling, testing, and inspection on-site to ascertain acceptability of the Work and materials will be borne by the OWNER except as otherwise provided. The OWNER will select a testing laboratory to perform such sampling and testing. Sampling and/or testing required by the CONTRACTOR or necessitated by failure of Work or materials to meet the above acceptability test shall be at the expense of the CONTRACTOR.

Inspection services may be performed by the employees of the OWNER or by others selected or designated by the OWNER or the CONSULTANT.

Sampling and/or testing required for manufacturing quality and/or process control, for certification that raw mineral materials or manufactured products are the quality specified in the contract, or to assure the acceptability for incorporation into the Work shall be borne by the CONTRACTOR or the material supplier.

Cost for inspection, sampling, testing, and approvals required by the laws or regulations of any public body having competent jurisdiction shall be borne by the CONTRACTOR or the material supplier.

Sampling and testing will be in accord with pertinent codes and regulations and with appropriate standards of the American Society of Testing Materials or other specified standards.

12.3.3 On-Site Construction Test and Other Testing

All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR (or by CONSULTANT if so specified).

12.3.4 Covered Work

If any Work (including the work of others) that is to be inspected, tested or approved is covered without written concurrence of CONSULTANT, it must, if requested by CONSULTANT, be uncovered for observation. Such uncovering shall be at CONTRACTOR'S expense unless CONTRACTOR has given CONSULTANT timely notice of CONTRACTOR'S intention to cover the same and CONSULTANT has not acted with reasonable promptness in response to such notice.

12.3.5 CONTRACTOR'S Obligation

Neither observations by CONSULTANT nor inspections, tests or approvals by others shall relieve CONTRACTOR from CONTRACTOR'S obligations to perform the Work in accordance with the Contract Documents.

12.4 OWNER May Stop the Work

If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to furnish or perform the Work in such a way that the completed Work will conform to the Contract Documents, OWNER may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of OWNER to stop the Work shall not give rise to any duty on the part of OWNER to exercise this right for the benefit of CONTRACTOR or any other party.

12.5 Correction or Removal of Defective Work

If required by CONSULTANT, CONTRACTOR shall promptly, as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the Work has been rejected by CONSULTANT, remove it from the site and replace it with non-defective Work. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby.

12.6 One Year Correction Period

If within one year after the date of Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, CONTRACTOR shall promptly, without cost to OWNER and in accordance with OWNER'S written instructions, either correct such defective Work, or, if it has been rejected by OWNER, remove it from the site and replace it with non-defective Work. If CONTRACTOR does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, OWNER may have the defective Work corrected or the rejected Work removed and replaced, and all direct, indirect and consequential costs of such removal and replacement

(including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service before Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Change Order.

12.7 Acceptance of Defective Work

If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER'S evaluation of and determination to accept such defective Work (such costs to be approved by CONSULTANT as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals).

12.8 OWNER May Correct Defective Work

If CONTRACTOR fails within a reasonable time after written notice of CONSULTANT to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by CONSULTANT in accordance with paragraph 12.5, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER'S representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by CONSULTANT, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR'S defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER'S rights and remedies hereunder.

13. PAYMENTS TO CONTRACTOR AND COMPLETION

13.1 Schedule of Values

The schedule of values established as provided in paragraph 2.8 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to CONSULTANT. Progress payments on account of Unit Price Work will be based on the number of units completed.

13.2 Application for Progress Payment

At least ten days before each progress payment is scheduled (but not more often than once a month), CONTRACTOR shall submit to CONSULTANT for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that OWNER has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances (which are hereinafter in these General Conditions referred to as "Liens") and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER'S interest therein, all of which will be satisfactory to OWNER. OWNER shall, within thirty (30) calendar days of presentation to him of an approved Application for Payment, pay CONTRACTOR the amount approved by CONSULTANT. Monthly progress payments shall be ninety (90) percent of the sum obtained by applying the respective bid unit prices to the approved estimated quantities of work completed by the Contractor during the preceding month. The remaining ten (10) percent will be held by the Owner, as retainage. At such time as the CONSULTANT deems appropriate - based on the quality of work performed, progress of cleanup, and other pertinent factors - the rate of retainage, or the total amount retained, may be reduced; although, any reduction in retainage, below the ten (10) percent level, is made solely at the CONSULTANT's discretion. All remaining retainage held will be included in the final payment to the Contractor.

13.2.1 Waivers of Mechanic's Lien

With each Application for Payment OWNER may require CONTRACTOR to submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

13.2.1.1 Requirement for waivers of Mechanic's Lien on Partial Applications for Payment will be determined and communicated at the Preconstruction Conference.

13.2.1.2 Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.

13.2.1.3 When an application shows completion of an item, submit conditional final or full waivers.

13.2.1.4 Owner reserves the right to designate which entities involved in the Work must submit waivers.

13.2.1.5 Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

13.3 CONTRACTOR'S Warranty of Title

CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

13.4 Review of Applications for Progress Payment

13.4.1 Submission of Application for Payment

CONSULTANT will, after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing CONSULTANT'S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

13.4.2 CONSULTANT'S Recommendation

CONSULTANT may refuse to recommend the whole or any part of any payment, if, in CONSULTANT'S opinion, it would be incorrect to make such representations to OWNER. CONSULTANT may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in CONSULTANT'S opinion to protect OWNER from loss because:

13.4.2.1 the Work is defective, or completed Work has been damaged requiring correction or replacement;

13.4.2.2 the Contract Price has been reduced by Written Amendment or Change Order;

13.4.2.3 OWNER has been required to correct defective Work or complete Work in accordance with paragraph 12.8; or

13.4.2.4 of CONSULTANT's actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.2.1 through 14.2.9 inclusive.

13.5 Partial Utilization

OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and has been completed. If CONTRACTOR agrees, CONTRACTOR will certify to OWNER that said part of the Work is complete and request that a Certificate of Completion be issued for that part of the Work.

13.6 Final Inspection

Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, CONSULTANT will make a final inspection with CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to remedy such deficiencies.

13.7 Final Application for Payment

After CONTRACTOR has completed all such corrections to the satisfaction of CONSULTANT and delivered all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, marked-up record documents (as provided in paragraph 5.14) and other documents - all as required by the Contract Documents, and after CONSULTANT has indicated that the Work is acceptable (subject to the provisions of paragraph 13.10), CONTRACTOR may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by all documentation called for in the Contract Documents, together with complete and legally effective releases or waivers (satisfactory to OWNER) of all Liens arising out of or filed in connection with the Work. In lieu thereof and as approved by OWNER, CONTRACTOR may furnish receipts or releases in full; an affidavit of CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which OWNER or OWNER'S property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or Supplier fails to

furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

13.8 Final Payment and Acceptance

13.8.1 CONSULTANT'S Approval

If, on the basis of CONSULTANT'S observation of the Work during construction and final inspection, and CONSULTANT'S review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, CONSULTANT is satisfied that the Work has been completed and CONTRACTOR'S other obligations under the Contract Documents have been fulfilled, CONSULTANT will, after receipt of the final Application for Payment, indicate in writing CONSULTANT'S recommendation of payment and present the Application to OWNER for payment. Thereupon CONSULTANT will give written notice to OWNER and CONTRACTOR that the Work is acceptable, subject to the provisions of paragraph 13.10. Otherwise, CONSULTANT will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.

13.8.2 Delay in Completion of Work

If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, OWNER shall, upon receipt of CONTRACTOR'S final Application for Payment and recommendation of CONSULTANT, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 10 of Part II, Information for Bidders, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to CONSULTANT with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

13.9 CONTRACTOR'S Continuing Obligation

CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by CONSULTANT, nor the issuance of a certificate of Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor any correction of defective Work by OWNER will constitute an acceptance of Work not in accordance with the Contract Documents or a release of CONTRACTOR'S obligation to perform the

Work in accordance with the Contract Documents (except as provided in paragraph 13.10).

13.10 Waiver of Claims

The making and acceptance of final payment will constitute:

13.10.1 a waiver of all claims by OWNER against CONTRACTOR, except claims arising from unsettled Liens, from defective Work appearing after final inspection or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein; however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR'S continuing obligations under the Contract Documents; and

13.10.2 a waiver of all claims by CONTRACTOR against OWNER other than those previously made in writing and still unsettled.

14. SUSPENSION OF WORK AND TERMINATION

14.1 OWNER May Suspend Work

OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to CONTRACTOR and CONSULTANT which will fix the date on which Work will be resumed. CONTRACTOR shall resume the Work on the date so fixed. CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if CONTRACTOR makes an approved claim therefor as provided in Articles 10 and 11.

14.2 OWNER May Terminate

The OWNER may terminate the Work upon the occurrence of any one or more of the following events:

14.2.1 if CONTRACTOR commences a voluntary case under any chapter of the Bankruptcy Code (Title 11, United States Code), as now or hereafter in effect, or if CONTRACTOR takes any equivalent or similar action by filing a petition or otherwise under any other federal or state law in effect at such time relating to the bankruptcy or insolvency;

14.2.2 if a petition is filed against CONTRACTOR under any chapter of the Bankruptcy Code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

14.2.3 if CONTRACTOR makes a general assignment for the benefit of creditors;

14.2.4 if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors;

14.2.5 if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;

14.2.6 if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.8 as revised from time to time);

14.2.7 if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;

14.2.8 if CONTRACTOR disregards the authority of CONSULTANT, or

14.2.9 if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such costs incurred by OWNER will be approved as to reasonableness by CONSULTANT and incorporated in a Change Order,

but when exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

14.2.10 If safety violations are observed and brought to the Contractors attention and Contractor fails to take immediate corrective measures any repeat of similar safety violations, Owner will order an immediate termination of contract. Note: it is the Contractor's responsibility to know proper safety measures as they pertain to construction and OSHA.

14.2.11 This contract may be canceled by either party thirty (30) days after delivery by canceling party of written notice of intent to cancel to the other contracting party.

14.2.12 This contract may be canceled by the Lexington-Fayette Urban County Government if it is determined that the Bidder has failed to perform under the terms of this agreement, such cancellation to be effective upon receipt of written notice of cancellation by the Bidder.

14.3 CONTRACTOR'S Services Terminated

Where CONTRACTOR'S services have been so terminated by OWNER, the termination will not affect any rights or remedies of OWNER against CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.

14.4 Payment After Termination

Upon seven days' written notice to CONTRACTOR, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, CONTRACTOR shall be paid for all Work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs).

14.5 CONTRACTOR May Stop Work or Terminate

If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety days by OWNER or under an order of court or other public authority, or CONSULTANT fails to act on any Application for Payment within sixty days after it is submitted, or OWNER fails for sixty days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days' written notice to OWNER and CONSULTANT, terminate the Agreement and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In addition and in lieu of terminating the Agreement, if CONSULTANT has failed to act on an Application for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' written notice to OWNER and

CONSULTANT stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 5.16 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

15. MISCELLANEOUS

15.1 Claims for Injury or Damage

Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 15.1 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

15.2 Non-Discrimination in Employment

The CONTRACTOR shall comply with the following requirements prohibiting discrimination:

15.2.1 That no person (as defined in KRS 344.010) shall bid on Lexington-Fayette Urban County Government construction projects, or bid to furnish materials or supplies to the Lexington-Fayette Urban County Government, if, within six months prior to the time of opening of bids, said person shall have been found, by declaratory judgment action in Fayette Circuit Court, to be presently engaging in an unlawful practice, as hereinafter defined. Such declaratory judgment action may be brought by an aggrieved individual or upon an allegation that an effort at conciliation pursuant to KRS 344.200 has been attempted and failed, by the Lexington-Fayette County Human Rights Commission.

15.2.2 That it is an unlawful practice for an employer:

15.2.2.1 to fail or refuse to hire, or to discharge any individual or otherwise to discriminate against an individual, with respect to his compensation, terms, conditions, or privileges of employment, because of such individual's race, color, religion, sex, age, or national origin; or

15.2.2.2 to limit, segregate or classify his employees in any way which would deprive or tend to deprive an individual of employment opportunities or otherwise adversely affect his status as an employee because of such individual's sex, race, color, religion, age, or national origin.

15.2.3 That it is an unlawful practice for an employer, labor organization, or joint-labor management committee controlling apprenticeship or other training or retraining, including on-the-job training programs to discriminate against an individual because of his race, color, religion, sex, age, or national origin in admission to, or employment in, any program established to provide apprenticeship or other training.

15.2.4 That a copy of this Ordinance shall be furnished all suppliers and made a part of all bid specifications.

15.2.5 This Ordinance shall take effect after it is signed, published and recorded, as required by law.

15.3 Temporary Street Closing or Blockage

The CONTRACTOR will notify the CONSULTANT at least 72 hours prior to making any temporary street closing or blockage. This will permit orderly notification to all concerned public agencies. Specific details and restrictions on street closure or blockage are contained in the Special Conditions.

15.4 Percentage of Work Performed by prime CONTRACTOR

The CONTRACTOR shall perform on site, and with its own organization, Work equivalent to at least fifty (50%) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the CONSULTANT determines that the reduction would be to the advantage of the OWNER.

15.5 Clean-up

Cleanup shall progress, to the greatest degree practicable, throughout the course of the Work. The Work will not be considered as completed, and final payment will not be made, until the right-of-way and all ground occupied or affected by the Contractor in connection with the Work has been cleared of all rubbish, equipment, excess materials, temporary structures, and weeds. Rubbish and all waste materials of whatever nature shall be disposed of, off of the project site, in an acceptable manner. All property, both public and private, which has been damaged in the prosecution of the Work, shall be restored in an acceptable manner. All areas shall be draining, and all drainage ways shall be left unobstructed, and in such a condition that drift will not collect or scour be induced.

15.6 General

The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 12.1, 12.3.5, 13.3, and 15.2 and all of the rights and remedies available to OWNER and CONSULTANT thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies

available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

15.7 Debris Disposal

For all LFUCG projects any trash, construction demolition debris, yard waste, dirt or debris of any kind that is removed from the project site must be disposed of in accordance with local, state, and federal regulations. The disposal site or facility must be approved in advance by the LFUCG and disposal documentation is required. The Contractor will be responsible for payment of any fines associated with improper disposal of material removed from the project site.

END OF SECTION

PART V
SPECIAL CONDITIONS
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I RISK MANAGEMENT PROVISIONS – INSURANCE AND INDEMNIFICATION

1. **RISK MANAGEMENT PROVISIONS**
INSURANCE AND INDEMNIFICATION

INDEMNIFICATION AND HOLD HARMLESS PROVISION

(1) It is understood and agreed by the parties that Contractor hereby assumes the entire responsibility and liability for any and all damages to persons or property caused by or resulting from or arising out of any act or omission on the part of Contractor or its employees, agents, servants, owners, principals, licensees, assigns or subcontractors of any tier (hereinafter "CONTRACTOR") under or in connection with this agreement and/or the provision of goods or services and the performance or failure to perform any work required thereby.

(2) CONTRACTOR shall indemnify, save, hold harmless and defend the Lexington-Fayette Urban County Government and its elected and appointed officials, employees, agents, volunteers, and successors in interest (hereinafter "LFUCG") from and against all liability, damages, and losses, including but not limited to, demands, claims, obligations, causes of action, judgments, penalties, fines, liens, costs, expenses, interest, defense costs and reasonable attorney's fees that are in any way incidental to or connected with, or that arise or are alleged to have arisen, directly or indirectly, from or by CONTRACTOR's performance or breach of the agreement and/or the provision of goods or services provided that: (a) it is attributable to personal injury, bodily injury, sickness, or death, or to injury to or destruction of property (including the loss of use resulting therefrom), or to or from the negligent acts, errors or omissions or willful misconduct of the CONTRACTOR; and (b) not caused solely by the active negligence or willful misconduct of LFUCG.

(3) In the event LFUCG is alleged to be liable based upon the above, CONTRACTOR shall defend such allegations and shall bear all costs, fees and expenses of such defense, including but not limited to, all reasonable attorneys' fees and expenses, court costs, and expert witness fees and expenses, using attorneys approved in writing by LFUCG, which approval shall not be unreasonably withheld.

(4) These provisions shall in no way be limited by any financial responsibility or insurance requirements, and shall survive the termination of this agreement.

(5) LFUCG is a political subdivision of the Commonwealth of Kentucky. CONTRACTOR acknowledges and agrees that LFUCG is unable to provide indemnity or otherwise save, hold harmless, or defend the CONTRACTOR in any manner.

FINANCIAL RESPONSIBILITY

BIDDER/CONTRACTOR understands and agrees that it shall, prior to final acceptance of its bid and the commencement of any work, demonstrate the ability to assure compliance with the above Indemnity provisions and these other risk management provisions.

INSURANCE REQUIREMENTS

YOUR ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW, AAND YOU MAY NEED TO CONFER WITH YOUR INSURANCE AGENTS, BROKERS, OR CARRIERS TO DETERMINE IN ADVANCE OF SUBMISSION OF A RESPONSE THE AVAILABILITY OF THE INSURANCE COVERAGES AND ENDORSEMENTS REQUIRED HEREIN. IF YOU FAIL TO COMPLY WITH THE INSURANCE REQUIREMENTS BELOW, YOU MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Required Insurance Coverage

BIDDER/CONTRACTOR shall procure and maintain for the duration of this contract the following or equivalent insurance policies at no less than the limits shown below and cause its subcontractors to maintain similar insurance with limits acceptable to LFUCG in order to protect LFUCG against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by CONTRACTOR. The cost of such insurance shall be included in any bid:

<u>Coverage</u>	<u>Limits</u>
General Liability aggregate (Insurance Services Office Form CG 00 01)	\$1 million per occurrence, \$2 million or \$2 million combined single limit
Commercial Automobile Liability occurrence (Insurance Services Office Form CA 0001)	combined single, \$1 million per
Worker's Compensation	Statutory
Employer's Liability	\$100,000.00
Excess/Umbrella Liability	\$1 million per occurrence

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky (DOI). LFUCG shall be named as an additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by LFUCG.

- c. The General Liability Policy shall include a Products and Completed Operations endorsement or Premises and Operations Liability endorsement unless it is deemed not to apply by LFUCG.
- d. LFUCG shall be provided at least 30 days advance written notice via certified mail, return receipt requested, in the event any of the required policies are canceled or non-renewed.
- e. Said coverage shall be written by insurers acceptable to LFUCG and shall be in a form acceptable to LFUCG. Insurance placed with insurers with a rating classification of no less than Excellent (A or A-) and a financial size category of no less than VIII, as defined by the most current Best's Key Rating Guide shall be deemed automatically acceptable.

Renewals

After insurance has been approved by LFUCG, evidence of renewal of an expiring policy must be submitted to LFUCG, and may be submitted on a manually signed renewal endorsement form. If the policy or carrier has changed, however, new evidence of coverage must be submitted in accordance with these Insurance Requirements.

Deductibles and Self-Insured Programs

IF YOU INTEND TO SUBMIT A SELF-INSURANCE PLAN IT MUST BE FORWARDED TO LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT, DIVISION OF RISK MANAGEMENT, 200 EAST MAIN STREET, LEXINGTON, KENTUCKY 40507 NO LATER THAN A MINIMUM OF FIVE (5) WORKING DAYS PRIOR TO THE RESPONSE DATE. Self-insurance programs, deductibles, and self-insured retentions in insurance policies are subject to separate approval by Lexington-Fayette Urban County Government's Division of Risk Management, upon review of evidence of BIDDER/CONTRACTOR's financial capacity to respond to claims. Any such programs or retentions must provide LFUCG with at least the same protection from liability and defense of suits as would be afforded by first-dollar insurance coverage. If BIDDER/CONTRACTOR satisfies any portion of the insurance requirements through deductibles, self-insurance programs, or self-insured retentions, BIDDER/CONTRACTOR agrees to provide Lexington-Fayette Urban County Government, Division of Risk Management, the following data prior to the final acceptance of bid and the commencement of any work:

- a. Latest audited financial statement, including auditor's notes.
- b. Any records of any self-insured trust fund plan or policy and related accounting statements.
- c. Actuarial funding reports or retained losses.

- d. Risk Management Manual or a description of the self-insurance and risk management program.
- e. A claim loss run summary for the previous five (5) years.
- f. Self-Insured Associations will be considered.

Safety and Loss Control

CONTRACTOR shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

Verification of Coverage

BIDDER/CONTRACTOR agrees to furnish LFUCG with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf prior to final award, and if requested, shall provide LFUCG copies of all insurance policies, including all endorsements.

Right to Review, Audit and Inspect

CONTRACTOR understands and agrees that LFUCG may review, audit and inspect any and all of its records and operations to insure compliance with these Insurance Requirements.

DEFAULT

BIDDER/CONTRACTOR understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default and that LFUCG may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging BIDDER/CONTRACTOR for any such insurance premiums purchased, or suspending or terminating the work.

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END OF SECTION

PART VI

CONTRACT AGREEMENT

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PART VI

CONTRACT AGREEMENT

THIS AGREEMENT, made on the 28 day of May, 2019, by and between **Lexington-Fayette Urban County Government**, acting herein called "OWNER" and **Blau Mechanical, Inc.** doing business as *(an individual) (a partnership) (a corporation) located in the City of Lexington, County of Fayette, and State of Kentucky, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of One Hundred Seventy-two Thousand Dollars and Zero Cents (\$172,000.00) quoted in the proposal by the CONTRACTOR, dated 04/04/19, hereby agree to commence and complete the construction described as follows:

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, the General Conditions, and the Special Conditions of the Contract, the Specifications, IonWave Q&A and Contract Documents therefore as prepared for LFUCG for Domestic Hot Water Main Replacement project.

2. TIME OF COMPLETION

The time period estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as one hundred twenty (120) calendar days. The time shall begin in accordance with the Notice to Proceed provided by OWNER.

3. ISSUANCE OF WORK ORDERS

Notice to begin Work will be given in whole or for part of the Work as determined by the OWNER pending the availability of funds. The order of construction will be as determined by the Engineer after consultation with the CONTRACTOR and the OWNER.

4. THE CONTRACT SUM

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the Contract, as quoted in the proposal, subject to any additions and deductions, as provided therein.

5. PROGRESS PAYMENTS

The OWNER shall make payments on account of the Contract, as provided in accordance with the General Conditions, as estimated by the Engineer, less the aggregate of previous payments.

6. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due within ninety (90) days after completion of the Work, provided the Work be then fully completed and the Contract fully accepted.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the Engineer that all payrolls, material bills, and other indebtedness connected with the Work has been paid.

If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, and the ENGINEER so certifies, the OWNER shall upon certificate of the ENGINEER, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

7. THE CONTRACT DOCUMENTS

The Advertisement for Bids, Information for Bidders, the General Conditions, Performance and Payment Bonds, Contract Agreement, Special Conditions, Technical Specifications, any and all Addenda, IonWave Q&A, and Proposal, and Plan Drawings form the Contract, and they are fully a part of the Contract as if hereto attached or herein repeated.

8. EXTRA WORK

The OWNER, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the Work, the Contract Sum being adjusted accordingly. All such Work shall be executed and paid for in accordance with the General Conditions, which is a part of this Contract.

9. THE FOLLOWING IS AN ENUMERATION OF THE SPECIFICATIONS AND DRAWINGS (CONTRACT DOCUMENTS):

SPECIFICATIONS

SECTION NO.	TITLE	PAGES
I	Advertisement for Bids	AB 1 thru 5
II	Information for Bidders	IB 1 thru 10
III	Form of Proposal	P 1 thru 34
IV	General Conditions	GC 1 thru 52
V	Special Conditions	SC 1 thru 5
VI	Contract Agreement	CA 1 thru 6
VII	Performance and Payment Bonds	PB 1 thru 7
VIII	Addenda	AD 1 thru 1
IX	Technical Specifications	

Division 1 - General Requirements

00900	Summary of Work	1 thru 3
01000	Special Conditions	1 thru 7
01045	Cutting and Patching	1 thru 5
01700	Project Closeout	1 thru 3
01710	Final Cleaning	1 thru 3
01720	Project Record Documents	1 thru 1
01740	Warranties	1 thru 1

Division 2 – Not Used

Division 3 – Not Used

Division 4 – Not Used

Division 5 – Not Used

Division 6 – Not Used

Division 7 – Not Used

Division 8 – Not Used

Division 9 – Not Used

Division 10 – Not Used

Division 11 – Not Used

Division 12 – Not Used

Division 13 – Not Used

Division 14 – Not Used

Division 15 – Mechanical

15010	General Provisions for Mechanical Work	1 thru 12
15025	Sleeving, Cutting, Patching and Repair	1 thru 3
15050	Basic Materials and Methods	1 thru 10
15140	Supports and Anchors	1 thru 5
15190	Mechanical Identification	1 thru 4
15260	Pipe Insulation	1 thru 7
15410	Plumbing Piping	1 thru 7
15420	Hot Water Mixing/Tempering Valve	1 thru 4
15430	Plumbing Specialties	1 thru 8

Division 16 – Electrical

16100	General Provisions	1 thru 6
16200	General Materials and Installation	1 thru 5

Division 17 – Not Used

APPENDIX A Standard Drawings

DRAWINGS

- CS – Cover Sheet
- P-1 Plumbing Plan
- P-1.1 Plumbing Plan without Floor Plan
- P-1A Enlarged Plumbing Plan Units A-DD
- P-1B Enlarged Plumbing Plan Units C-FF
- P-1C Enlarged Plumbing Plan Units E-HH
- P-1D Enlarged Plumbing Plan Units G-LL
- PE-2 Plumbing & Electrical Plan for Boiler Room
- P-3 Mixing Valve Riser
- P-4 Details

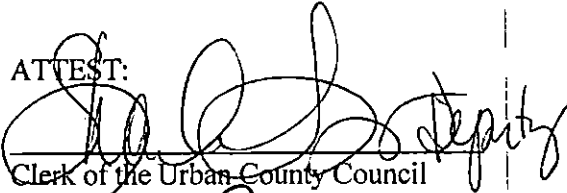
IN WITNESSETH WHEREOF, the parties hereto have executed this Contract as of the date and year above written.

(Seal)

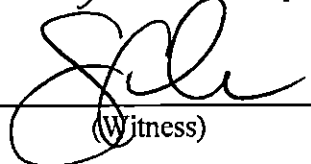
Lexington-Fayette Urban County Government.
Lexington, Kentucky

(Owner)

ATTEST:


Clerk of the Urban County Council

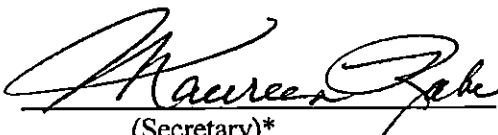
BY: 
MAYOR

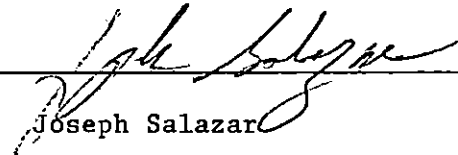

(Witness)


(Title)

(Seal)

Blau Mechanical Inc
(Contractor)


(Secretary)*
Maureen Rabe, Corporate Sec

BY: 
Joseph Salazar
Vice President


(Witness)

(Title)

1532 Russell Street
Covington, Kentucky 41011-3359
(Address and Zip Code)

IMPORTANT: *Strike out any non-applicable terms.

Secretary of the Owner should attest. If the CONTRACTOR is corporation,
Secretary should attest. Give proper title of each person-executing Contract.



AIA Document A312™ – 2010

Performance Bond

Bond No. 09119244

CONTRACTOR:

(Name, legal status and address)
BLAU MECHANICAL, INC.
1532 Russell Street
Covington, KY 41011

SURETY:

(Name, legal status and principal place of business)
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
1299 Zurich Way, 5th Floor
Schaumburg, IL 60196-1056

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

OWNER:

(Name, legal status and address)
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
200 East Main Street
Lexington, KY 40507

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONSTRUCTION CONTRACT

Date: 4/5/19

AIA Document A312-2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

Amount: One Hundred Seventy Two Thousand and 00/100 Dollars
(\$ 172,000.00)

Description:

(Name and location)
Lexington-Fayette Urban County Government, Division of Community Corrections, Domestic Hot Water Main Replacement, Lexington, KY - Bid Number#32-2019

BOND

Date: 4/8/19

(Not earlier than Construction Contract Date)

Amount: One Hundred Seventy Two Thousand and 00/100 Dollars
(\$ 172,000.00)

Modifications to this Bond: None See Section 16

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*
BLAU MECHANICAL, INC.

SURETY

Company: *(Corporate Seal)*
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

Signature:
Name: Joseph Salazar
and Title: Vice President

Signature:
Name: Michelle D. Krebs, Attorney-in-Fact
and Title:

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:
Aon Risk Services Northeast, Inc.
8044 Montgomery Road, Suite 405
Cincinnati, OH 45236
(513) 621-0130

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company:

(Corporate Seal)

Company:

(Corporate Seal)

Signature: _____

Name and Title: _____

Address: _____

Signature: _____

Name and Title: _____, Attorney-in-Fact

Address: _____



AIA Document A312™ – 2010

Payment Bond

Bond No. 09119244

CONTRACTOR:

(Name, legal status and address)
BLAU MECHANICAL, INC.
1532 Russell Street
Covington, KY 41011

SURETY:

(Name, legal status and principal place of business)

FIDELITY AND DEPOSIT COMPANY OF MARYLAND
1299 Zurich Way, 5th Floor
Schaumburg, IL 60196-1056

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

OWNER:

(Name, legal status and address)
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT
200 East Main Street
Lexington, KY 40507

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONSTRUCTION CONTRACT

Date: 4/5/19

AIA Document A312-2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

Amount: One Hundred Seventy Two Thousand and 00/100 Dollars
(\$ 172,000.00)

Description:

(Name and location)

Lexington-Fayette Urban County Government, Division of Community Corrections, Domestic Hot Water Main Replacement, Lexington, KY - Bid Number#32-2019

BOND

Date: 4/8/19

(Not earlier than Construction Contract Date)

Amount: One Hundred Seventy Two Thousand and 00/100 Dollars
(\$ 172,000.00)

Modifications to this Bond: None See Section 18

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*
BLAU MECHANICAL, INC.

SURETY

Company: *(Corporate Seal)*
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

Signature:
Name: Joseph Salazar
and Title: Vice President

Signature:
Name: Michelle D. Krebs, Attorney-in-Fact
and Title:

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

Aon Risk Services Northeast, Inc.
8044 Montgomery Road, Suite 405
Cincinnati, OH 45236
(513) 621-0130

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy, to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

3.

§ 10 The Surety shall not be liable to the Owner; Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company:

(Corporate Seal)

SURETY

Company:

(Corporate Seal)

Signature: _____

Name and Title: ,

Address:

Signature: _____

Name and Title: , Attorney-in-Fact

Address:

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **MICHAEL BOND, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Michelle D. KREBS, Thomas E. PURTELL and Elaine HARMON**, all of Cincinnati, Ohio, **EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings**, and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 1st day of September, A.D. 2016.

ATTEST:

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



By: *Eric D. Barnes*
Secretary
Eric D. Barnes

Michael Bond
Vice President
Michael Bond

State of Maryland
County of Baltimore

On this 1st day of September, A.D. 2016, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **MICHAEL BOND, Vice President**, and **ERIC D. BARNES, Secretary**, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, depose and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Constance A. Dunn



Constance A. Dunn, Notary Public
My Commission Expires: July 9, 2019

EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

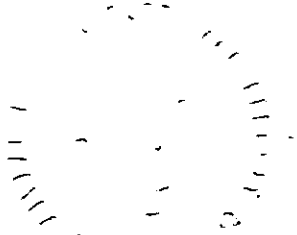
This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 8 day of April, 2019.



Gerald F. Haley

Gerald F. Haley, Vice President

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, each one of
(number)

which shall be deemed an original, this the _____ day of _____, 20_____.

ATTEST:

(Principal) Secretary

(SEAL)

(Witness to Principal)

(Address)

ATTEST:

(Surety) Secretary

(SEAL)

Witness as to Surety

(Address)

(Principal)

BY: _____ (s)

(Address)

(Surety)

BY: _____

(Attorney-in-Fact)

(Address)

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Contract.

END OF SECTION

PART VIII

ADDENDA

All addenda issued during the bidding of the Project will be reproduced in the signed Contract Documents, on the pages following this heading sheet.

<u>Addendum Number</u>	<u>Title</u>	<u>Date</u>
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____

IX. TECHNICAL SPECIFICATIONS

Domestic Water Main Replacement
LFUCG-Detention Center
Lexington, Kentucky
Bid No.# 32-2019

<u>TITLE</u>	<u>INDEX</u>	<u>PAGE</u>
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SECTION 00900 – SUMMARY OF WORK

This project involves the following

1. Provide and install copper type L water pipe and fittings to replace the existing domestic hot water main serving the detention center.
2. Provide and install all fittings, valves, support steel, hangers, pipe insulation, check valves, balancing valves where shown on drawings.
3. Provide and install fire stopping as required at all wall and floor penetrations.
4. Provide and install new electronic hot water mixing station

PART 1 – GENERAL

RELATED DOCUMENTS

Specifications and general provisions of Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to this Section.

PROJECT DESCRIPTION

This project involves the installation of new piping, hangers, valves, mixing station, pipe insulation, support steel, hangers, balancing valves and fire stopping as required. The Contractor is to install the new hot water main, disinfect, drain, make the necessary tie-ins to put it into operations while the Detention Center is still operating on the old main, except for the most outer areas that has been put on to the new main and can be recirculated. Then come back to each branch line and make the new tie-ins required to change the area from the old main to the new main. When all branches have been removed from the old main then it will be shut down. Contractor to then re-pipe the old mixing station into the new main for back-up. Then cut and cap all old branch feeds, drain and cap off so it can be abandoned in-place.

END OF SECTION 00900

SECTION 01000 – SPECIAL CONDITIONS

PART 1 – INDEX TO SPECIAL CONDITIONS

1. Scope
2. Time for Completion
3. Liquidated Damages
4. Ordering Material
5. Use of Premises – Contract Limit
6. Storage of Materials
7. Damaged Facilities
8. Inspection Certificates
9. As-Built Drawings
10. Brand Names
11. Access to Site
12. Access to Buildings
13. Parking Facilities
14. Progress Meetings
15. Contractor Coordination
16. Contractor's Responsibilities for Deviations
17. Interruption of Utilities

PART 2- SPECIAL CONDITIONS

2.1 SCOPE

2.1.1 These Special Conditions shall apply to all the various parts divisions and sections of the specifications. In the event of conflict, the General Conditions shall govern.

2.1 TIME OF COMPLETION:

The time of completion for total contract is 120 days.

2.2 PROSECUTION OF WORK AND LIQUIDATED DAMAGES:

2.3.1 As actual damages for any delay in completion are impossible to determine, the contractors and their sureties shall be liable for and shall pay to the owner the sum of eight hundred dollars (\$800.00) as fixed, agreed and liquidated damages for each calendar day of delay, beyond the date of substantial and final completion as defined above, until such time the contract work is determined to be substantially and final complete.

2.3 ORDERING MATERIALS

2.4.1 Immediately following the award of contract for this work contractor shall determine source of supply for all materials and length of time required for their delivery, including materials of subcontractors and order shall be placed for such materials promptly.

2.4.2 If, for any reason, any item specified will not be available when needed and contractor can show that he has made a reasonably persistent effort to obtain item in question, the Engineer is to be notified in writing within thirty (30) days after contract is signed, otherwise, the contractor will not be excused for delays in securing material specified and will be held accountable if completion of building is thereby delayed.

2.5 USE OF THE PREMISES – CONTRACT LIMIT

2.5.1 The Contractor shall confine his operations, including delivery and unloading of materials and equipment, to the areas within the designated contract limits to those areas directly relating to his work. The contract

limits shall be defined as only those areas within the building and surrounding area that actual work is being required.

- 2.5.2 The contractor shall consult with the Owner and agree on a general "Plan of Operations". The plan of operations shall show concisely the manner in which the contractor proposes to carry out the work, shall indicate the areas where work will be first carried on, the course the Contractor intends to pursue, the sequence of operations, the traffic pattern for delivery of material and equipment, etc. Once this plan of operation in writing is agreed upon, the contractor shall not deviate from the plan unless approval is secured from the owner in writing (see 2.2 this section).
- 2.5.3 The bidders are to examine the site and accept the conditions as they exist on the bid date.
- 2.5.4 The contractor is to have personnel at the job site to accept any and all deliveries. The owner will not accept any deliveries for the contractor.
- 2.5.5 A contractor's field office is optional but a cell phone or beeper and a 24 hour emergency number shall be provided by the contractor.
- 2.5.6 The existing facility will be occupied by the owner during this project and the contractor will coordinate with the Owner all his scheduled work.
- 2.5.7 All of the contractor's employees shall maintain proper conduct while on job site. No alcohol, recreational drugs or weapons be allowed on job site. Proper dress shall be required while on job site.
- 2.5.8 The contractor is to have a competent superintendent on the job site any time work is being conducted to supervise his employees and subcontractor.
- 2.5.9 The contractor's employees will be allowed to use the facilities restrooms and the contractor shall be responsible for cleaning these facilities each day or as directed by the Owner.
- 2.5.10 The contractor shall take 35 mm pictures of existing conditions prior to starting work on this project. He shall turn one set of the pictures over to the Engineer prior to starting work.

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- 2.5.11 Provide documented 35 mm pictures of all concealed work to the Engineer.
- 2.5.12 The Contractor and all Sub-contractor will be required to submit a list of the employees that will be working on the project site so they can be vetted.
- 2.5.13 The Contractor and all sub-contractors and their employees will be required to attend a meeting at the LFUCG Detention Center on how they are to inter Act with the inmates and conduct themselves while on the premises.

2.6 STORAGE MATERIALS:

- 2.6.1 Each contractor providing materials and equipment shall be responsible for the proper and adequate storage of his materials and equipment and for the removal of same upon completion of this work. Storage of materials at the site shall be confined to areas within contract limits or where otherwise designated by the owner.

2.7 DAMAGED FACILITIES

- 2.7.1 The contractor shall repair and/or replace, at no expense to the owner, any sections of existing roads, drives, street, sidewalks, curbs, utilities, controls, building and other structures damaged by reason of work performed under this contract or incidental thereto, whether by his own forces or by his subcontractors or by his materials suppliers.

2.8 INSPECTION CERTIFICATES:

- 2.8.1 The contractor shall furnish the Owner with a Certificate of Inspection and Approval from the Kentucky State Department of Housing, Buildings and Construction for Occupancy and State Boiler Inspection unless this done City of Lexington.
- 2.8.2 Electrical inspection will be performed throughout the course of construction by a certified electrical inspector. This inspection cost will be paid by coordinated, scheduled and paid for by the electrical contractor. Upon project completion and when wiring equipment and fixtures have

been installed, inspected and found to be in compliance with the latest NEC, the inspector shall issue a Certificate of Compliance to the owner.

- 2.8.3 This Contractor shall be responsible for submitting the required drawings and form to the State Boiler inspector to install the new boiler and other piping work. Also, will pay any and all permit/review fees incurred.

2.9 AS-BUILT DRAWINGS

- 2.9.1 The owner will furnish one (1) set of blue line prints which the contractor shall keep on file in the field office. The contractor shall record on these prints, from day to day as the work progresses, all changes and deviations from the contract drawings, with special emphasis on the exact locations of all underground facilities by the offset distances to surface improvements such as building corners, curbs, etc. Entries and notations shall be neat, legible and permanent. These prints shall be delivered to the Engineer upon completion of this project. Approval of final payment will be contingent upon compliance with these provisions.

2.10 BRAND NAMES

- 2.10.1 Whenever manufactured products, devices or materials are specified under particular brand name or name of manufacturer it shall not be construed to mean that these are closed specifications, whether the clause "or approved equal" is included or not. Other products comparable to type, quality, utility and price, are acceptable if approved by the engineer and the owner. The burden of proof of quality shall, in all cases, rest with the contractor. The owner shall be the final judge of parallel equality and reserves the right to require that the product or material specified by name be furnished at no increase in contract amount. If the materials listed with in the proposal form are accepted by the owner, then no deviations from those listings will be permitted except at the discretion of the owner in the interest of expediting construction or overall standardization.

2.11 ACCESS TO SITE

- 2.11.1 Access to the site shall only be as permitted by arrangement with the Owner.

2.12 ACCESS TO BUILDINGS

2.12.1 The contractor will be required to coordinate the accessibility and use of the building with the Owner.

2.13 PARKING FACILITIES

2.13.1 The contractor will use public parking areas as assigned by the Owner.

2.14 PROGRESS MEETING

2.14.1 With the express purpose of expediting construction and providing the opportunity for cooperation of affected parties, meetings may be called which shall be attended by representatives of (a) Owner, (b) the Engineers, (c) the Contractor, (d) all Subcontractors. A location on or near the site will be designated where such meetings will be held. The frequency of meeting shall be at the discretion of the Engineer and owner.

2.15 CONTRACTOR COORDINATION

2.15.1 The contractor and all subcontractors shall cooperate and coordinate their work to expedite the progress of the project. All subcontractors shall review and refer to the drawings and specifications of other trades involved with their particular work before proceeding. Any work installed which conflicts with another trade, and had not been brought to the attention of the Engineer prior to installation, shall be removed at no additional expense to the owner.

2.16 CONTRACTOR'S RESPONSIBILITY FOR DEVIATIONS

The mention of acceptable supplier does not necessarily imply that their particular "standard" product is totally adaptable to details shown. Therefore, the cost of deviations, extensions or adjustments required for the low bidder's product must be included in the contractor's bid.

2.17 INTERRUPTION OF UTILITIES

2.17.1 The contractor will be required to coordinate any interruptions of utilities with the Owner/Engineer. Short interruption will require prior approval at least 48 hours in advance.

2.17.2 All power interruptions should be planned to occur at time resulting in the least disruption to normal operation of the facilities.

2.18 ALLOWANCE

2.18.1 None

END OF SECTION 01000

SECTION 01045 – CUTTING AND PATCHING

PART 1 – GENERAL

- 1.1 The General Conditions, Special Conditions, and the applicable portions of other sections of the Specifications are a part of this section.

PART 2 – DESCRIPTION OF REQUIREMENTS

- 2.1 **Definition:** “Cutting and Patching” includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original conditions.
- 2.1.1 “Cutting and Patching” is performed for coordination of the work, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed or for other similar purposes.
- 2.1.2 Cutting and patching performed during the manufacture of products, or during the initial fabrication, erection or installation processes is not considered to be “cutting and patching” under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be “cutting and patching”.
- 2.1.3 “Demolition” is recognized as a related-but-separate category of work, which may or may not require cutting and patching as defined in this section; refer to the “Demolition” section.

PART 3 – STANDARDS

- 3.1 **Requirements for Structural Work:** Do not cut and patch structural work in a manner that would result in a reduction of load-carrying capacity or of load-deflection ratios.
- 3.2 Before cutting and patching the following categories of work, obtain the Engineer’s approval. Approval by the Engineer to proceed with cutting and patching work does not waive the Engineer’s right to later

require complete removal and replacement of work found to be cut and patched in an unsatisfactory manner.

- 3.2.1 Structural steel.
- 3.2.2 Miscellaneous structural metals, including lintels, equipment supports, and similar categories of work.
- 3.2.3 Structural concrete.
- 3.2.4 Foundation construction.
- 3.2.5 Bearing walls.
- 3.2.6 Structural decking.
- 3.2.7 Piping, ductwork, vessels and equipment.
- 3.3 Operational and Safety Limitations: Do not cut and patch operational elements or safety related components in a manner that would result in a reduction of their capacity to perform in the manner intended, including energy performance, or that would result in increased maintenance, or decreased operational life or decreased safety.
- 3.4 Visual Requirements: Do not cut and patch work exposed on the building's exterior or in its occupied spaces, in a manner that would, in the Engineer's opinion, result in lessening the building's aesthetic qualities. Do not cut and patch work in a manner that would result in substantial visual evidence of cut and patch work. Remove and replace work judged by the Engineer to be cut and patched in a visually unsatisfactory manner.
- 3.5 If possible retain the original installer for fabricator, or another recognized experienced and specialized firm to cut and patch roofing.

PART 4 – MATERIALS

- 4.1 General: Except as otherwise indicated, or as directed by the Engineer, use materials for cutting and patching that are identical to existing materials. If identical materials are not available, or cannot

be used, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials for cutting and patching that will result in equal-or-better performance characteristics.

PART 5 – INSPECTION

- 5.1 Before cutting, examine the surfaces to be cut and patched and the conditions under which the work is to be performed. If unsafe or otherwise unsatisfactory conditions are encountered, take corrective action before proceeding with the work..

PART 6 – PREPARATION

- 6.1 Temporary Support: To prevent failure provide temporary support of work to be cut.
- 6.2 Protection: Protect other work doing cutting and patching to prevent damage. Provide protection from adverse weather conditions for that part of the project that may be exposed during cutting and patching operations.
- 6.3 Avoid interference with the use of adjoining areas or interruption of free passage to adjoining areas.

PART 7 – PERFORMANCE

- 7.1 General: Employ skilled workman to perform cutting and patching work. Except as otherwise indicated or as approved by the Engineer, proceed with cutting and patching at the earliest feasible time and complete work without delay.
- 7.2 Cutting: Cut the work using methods that are least likely to damage work to be retained or adjoining work..
- 7.3 In general, where cutting is required use hand or small power tools

designed for sawing or grinding, not hammering and chopping. Cut through concrete and masonry using a cutting machine such as a fiboriumdum saw or core drill to insure a neat hole. Cut holes and slots neatly to size required with minimum disturbance of adjacent work. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

Temporarily cover all openings when not in use.

- 7.4 By-pass utility services such as pipe and conduit, before cutting, where such utility services are shown or required to be removed, relocated or abandoned. After by-pass and cutting, cap, valve or plug and seal tight remaining portion of pipe and conduit to prevent entrance of moisture or other foreign matter.
- 7.5 Patching: Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.
- 7.6 Where removal of walls or partitions extends one finished area into another finished area, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. If necessary to achieve uniform color and appearance, remove existing floor and wall coverings and replace with new materials.
- 7.7 Restore exposed finishes of patched areas and where necessary extend finish restoration into retained adjoining work in a manner which will eliminate evidence of patching and refinishing.
 - 7.7.1 Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch (i.e., wall to wall, corner to corner), after patched area has received prime and base painting will be allowed.

PART 8 – CLEANING

- 8.1 Thoroughly clean areas and spaces where work is performed or used as access to work.
- 8.2 Extra care shall be taken in areas where computer equipment, phone equipment, and other equipment is permanently installed and cannot be removed to avoid generation of dust. When cutting methods generating dust

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can to be avoided, temporary devices such as curtains and exhaust fans shall be used to protect equipment from dust.

END OF SECTION 01045

SECTION 01700 – Project Closeout

Part 1 General

Part 2 Summary

1. Complete Substantial Inspection
2. Complete Final Cleaning
3. Complete Final Inspection
4. Submit Project Operating manuals and Record red line Drawings
5. Complete Demonstration and Training

SECTION 01710 – CLEANING

PART 1 – GENERAL

1.1 Description

1.1.1 Work included: Throughout the construction period, maintain the buildings and site in a standard of cleanliness as described in this Section.

1.1.2 Related work described elsewhere: In addition to standards described in this Section, comply with all requirements for cleaning up as described in various other Sections of these Specifications.

1.2 Quality Assurance

1.2.1 Inspection: Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.

1.2.2 Codes and standards: In addition to the standards described in this Section, comply with all pertinent requirements of government agencies having jurisdiction.

PART 2 – PRODUCTS

2.1 Cleaning Materials and Equipment

2.1.1 Provide all required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.2 Compatibility

2.2.1 Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Architect.

PART 3 – EXECUTION

3.1 Progress Cleaning

3.1.1 General

3.1.1.1 Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.

3.1.1.2 Do not allow the accumulation of scrap, debris, waste material, and other items not required for the construction of this work.

3.1.1.3 At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the job site.

3.1.1.4 Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the ecology.

3.1.2 Site

3.1.2.1 Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.

3.1.2.2 Weekly, and more often if necessary, inspect all arrangements of materials stored on the site; restack, tidy, or otherwise service all arrangements to meet the requirements of subparagraph 3.1.1.1 above.

3.1.2.3 Maintain the site in a neat and orderly condition at all times.

3.1.3 Structures:

3.1.3.1 Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.

3.1.3.2 Weekly, and more often if necessary, sweep all interior spaces clean. "Clean", for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and handheld broom.

CLEANING

- 3.1.3.3 As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using all equipment and materials required to achieve the required cleanliness.
- 3.1.3.4 Following the installation of finish floor materials, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials have been installed.
- 3.2 Final Cleaning
- 3.2.1 Definition: Except as otherwise specifically provided, "clean" (for the purpose of the Article) shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.
- 3.2.2 General: Prior to completion of the work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.1 above.
- 3.2.3 Site: Unless otherwise specifically directed by the Architect, broom clean all paved areas on the site and all public paved areas directly adjacent to the site. Completely remove all resultant debris.
- 3.2.4 Structures:
- 3.2.4.1 Exterior: Visually inspect all exterior surfaces and remove all traces of soil, waste material, smudges, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. If necessary to achieve a uniform degree of exterior cleanliness, hose down the exterior of the structure. In the even of stubborn stains not removable with water, the Architect may require light sandblasting or other cleaning at no additional cost to the Owner.
- 3.2.4.2 Interior: Visually inspect all interior surfaces and remove all traces of splashed materials from adjacent surfaces. Remove all paint droppings, spots, stains, and dirt from finished surfaces. Use only the specified cleaning materials and equipment.

END OF SECTION 01710

SECTION 01720 – Project Record Documents

Part 1 General

Part 2 Summary

1. Maintain a set of project record drawings on job site
2. Maintain a complete set of project specifications on the job set
3. Submit project record drawings to Engineer
4. Prepare three (3) set of O and M manuals
 - Include Letter of Warranty in the O & M manuals
5. Submit O & M manuals to Engineer
6. Submit a copy of all lab reports and inspection certifies to Engineer

SECTION 01740 – Project Warranties

Part 1 General

1. Contractor to prepare a letter of warranty on their letter head stating that the contractor will cover any warranty item for a period of one(1) year.

Part 2 Summary

1. All materials, equipment, and labor is to be covered by a full one(1) warranty
2. Other warranties that may be longer provided by the Mfg. will not be forfeited or limited by the Contractor's one year warranty.

SECTION 15010 - GENERAL PROVISIONS FOR MECHANICAL WORK

PART 1 - GENERAL

- 1.1 This section covers the general arrangement of the mechanical systems and related items to complete the work as shown on the drawings and as specified herein. All applicable provisions of the LFUCG's General Conditions, Supplemental General Conditions and Special Conditions are hereby made a part of this Section.
- 1.2 The Contractor shall familiarize himself with the work of all other trades, general type construction and the relationship of his work to other sections. He shall examine all working drawings, specifications and conditions affecting his work. The Contractor shall visit the premises and thoroughly familiarize himself with all details of the work and working conditions, verify all dimensions in the field and advise the Engineer of any discrepancy before performing any work.
- 1.3 The work shall include complete testing of all equipment and piping at the completion of the work and making any minor connection changes or adjustments necessary for the proper functioning of the system and equipment.
- 1.4 The Contractor shall perform all necessary temporary work during construction.
- 1.5 Work under this section shall conform to all governing codes, ordinances and regulations of the City, County and State.
- 1.6 The Contractor shall be responsible for all errors in fabrication, for the correct fitting, installation and erection of the various mechanical systems as shown on the drawings.

PART 2 - DRAWINGS AND SPECIFICATIONS

- 2.1 Contract drawings for work under this section are in part diagrammatic, intended to convey the scope of work and indicate the general arrangement of equipment, ducts, piping and the approximate size and location of equipment and outlets. The Contractor shall follow these drawings in laying out his work and shall verify spaces in which his work will be installed, indicating to the Engineer where any conflicts or overlapping of systems occur.
- 2.2 Where job conditions require reasonable changes in indicated locations and arrangement, proposed departures shall be submitted with detailed drawings to the Engineer for approval before any of the proposed work is commenced. All approved departures shall be made at no additional cost to the Owner.

- 2.3 The drawings and the specifications are intended to indicate complete and working systems, unless specifically indicated to the contrary. The work includes the furnishing, installing and connecting of a complete working installation in each case to the full extent set forth in the drawings and herein specified. The Contractor shall be responsible for the complete functioning system, unless specifically noted otherwise.
- 2.4 The drawings and specifications shall be considered as cooperative, work and material included in either, though not mentioned in both, shall be a part of the work to be accomplished and shall be carried out completely in as thorough manner as if covered by both.
- 2.5 Because of the small scale of the drawings, it is not possible to indicate all offsets, fittings and accessories that may be required. The Contractor shall carefully investigate the structural and finish conditions affecting all his work and shall arrange such work accordingly, furnishing such fittings, pipe, traps, valves and accessories as may be required to make a functional installation at no additional cost to the Owner.

PART 3 - EQUIPMENT DESIGN AND INSTALLATION

- 3.1 The design, manufacture, testing and method of installation of all apparatus and materials furnished under the requirements of these specifications shall conform to the applicable standard rules of the following. Where materials are not specifically referred to, but are required, they shall meet the requirements of the applicable code.

NEMA	-National Electrical Manufacturer's Assoc.
UL	-Underwriter's Laboratories, Inc.
ASME	-American Society of Mechanical Engineers
ASTM	-American Society of Testing Materials
ASHRAE	-American Society of Heating, Refrigerating and Air Conditioning Engineers
BOCA	-Building Officials & Code Administrators International, Inc.
NFPA	-National Fire Protection Association
AWWA	-American Water Works Association
AWS	-American Welding Society
AMCA	-Air Moving and Conditioning Assoc.
ANSI	-American National Standards Institute
NEC	-National Electrical Code
AIEE	-American Institute of Electrical Eng.
ARI	-Air Conditioning & Refrigeration Institute
SMACNA	-Sheet Metal and Air Conditioning Contractors National Assoc.
LSDHBC	-Local and/or State Division of Housing, Building and Construction
SPC	-State Plumbing Code

NPC -National Plumbing Code
OSHA -Occupational Safety and Health Adm.
EPA -Environmental Protection Agency
DOE -U.S. Department of Energy
IMC -International Mechanical Code

- 3.2 Unless otherwise specified, equipment and materials of the same type and used for the same purpose, shall be products of the same manufacturer.

PART 4 - CAPACITIES AND OPERATING CONDITIONS

- 4.1 Capacities, sizes and conditions specified or shown on drawings shall be regarded as minimum allowable. If the Contractor proposes to furnish any equipment which would have to operate at other than specified conditions to produce final effects, all other directly or indirectly related components of the entire systems (as well as of the structure, finish and other systems in the building) must be properly coordinated to the satisfaction of the Engineer. That is: Operating conditions through the entire system must be such that no motor is overloaded, no equipment operates noisier, faster, or hotter than manufacturer's publication recommends and that no excess stress or demand is imposed on any component of any system or the structure; also that no quality, architectural feature, function or "end result" is affected adversely, in the opinion of the Architect..

PART 5 - LAYOUT

- 5.1 The Contractor's work lines and established heights shall be in strict accordance with drawings and specifications insofar as these drawings and specifications extend. The Contractor shall verify all dimensions shown and establish all elevations and detail dimensions not shown. He shall also correlate the time so that the work will proceed to the best advantage of the complete job as a unit. The Contractor shall be responsible for furnishing in ample time, any information required to revise footing elevations, build all chases and openings in floors, walls, partitions, openings in floors, walls, partitions, ceilings, roof and to provide clearance which may be required to accommodate the work. The contractor shall set all sleeves, anchor bolts and inserts required to accommodate his equipment before masonry is constructed.
- 5.2 The Contractor shall layout his work well enough in advance to foresee any conflicts or interferences with work of other sections so that in case of interference, his layout may be altered to suit the conditions, prior to the installation of any work. This procedure will require constant coordination with all sections of the work.

PART 6 - CUTTING AND PATCHING

- 6.1 All cutting and patching required in connection with the installation of this work, and work due to errors, defective work, ill-timed work or tardiness in properly

designating size and location in sufficient time or by failure to notify other trades, shall be done under this section, but only in the manner directed by the Engineer so as to prevent or minimize damage to installed work. Damage as a result of cutting for installation, shall be repaired by mechanics skilled in the trade involved, at no additional expense to the Owner.

- 6.2 No cutting of structural members will be permitted, except when prior permission of the Engineer has been obtained. This work must conform in every respect to the surrounding finish and to the quality of workmanship and materials used.
- 6.3 Piercing of any waterproofing or roofing shall be done only by the trade involved. After the part piercing the waterproofing has been set in place, the opening made for this purpose shall be filled and made absolutely watertight to the satisfaction of the Engineer.
- 6.4 See Section: CUTTING AND PATCHING 01045

PART 7 - OPERATING INSTRUCTIONS

- 7.1 After all tests have been completed and work accepted by the Owner, a competent representative shall, at a time determined by the Engineer, present verbal and visual instructions to the Owner's personnel in the proper operation of his respective system. For this purpose, each section of work shall be demonstrated and explained to the Owner's personnel and sufficient time allotted for instructions.
- 7.2 The Contractor shall provide, mounted under framed glass, a copy of the master valve chart and a copy of the master control diagram for the entire building.

PART 8 - SAFETY

- 8.1 The contractor and his subcontractors for the project shall comply with all applicable Federal, State, and local laws governing safeguards, safety devices, and protective equipment and shall take all other needed actions which they may determine or which the Department may determine to be reasonably necessary to protect the life and health of all employees and personnel on the project, provide for the safety of the public and protect all property affected by the performance of the work covered by the contract.
- 8.2 As provided in KRS Chapter 338 in the Kentucky Occupational safety and Health Act and in subsequent regulations and standards promulgated by the Kentucky Occupational Safety and Health Standards Board, neither the Contractor nor his subcontractors shall require any laborer or mechanic employed in performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety.

PART 9 - TESTS - GENERAL

- 9.1 All tests required to establish the adequacy, quality, safety, completed status and suitable operation of each system and all components thereof shall be made in the presence of and to the satisfaction of the Engineer or his authorized representative and other representatives of State and local Government. All instruments, labor and expert service necessary to conduct these tests shall be supplied by the Contractor; power and fuel will be furnished by the Owner.
- 9.2 The final inspection and tests are to be made only after the Engineer is satisfied that the work described in these specifications has been completely installed in accordance with the true spirit and intent of these specifications and that complete preliminary tests were made which indicate adequacy, quality, completion and satisfactory operation. The acceptance of the work herein specified, shall not in any way prejudice the Owner's right to demand replacement of defective material and/or workmanship.

PART 10 - WARRANTY

- 10.1 All equipment shall be warranted for a period of at least one (1) years from the date of acceptance, as evidenced by date of substantial completion for the entire project against defective materials, design, and workmanship. In addition to the equipment warranty, the Contractor shall provide all repair and adjustment service necessary for the proper operation of the entire system for a period of one (1) years after the date of acceptance, as evidenced by the date of substantial completion for the entire project. Upon receipt of notice from the Owner's representative of failure of any part of the warranted system or equipment during the warranty period, the affected part shall be replaced promptly with a new part without cost to the Owner. Upon failure to take action within 24 hours after being notified, the work will be accomplished by the Engineer at the expense of the Contractor. See General Conditions and individual equipment specifications. Note that the warranty period of time specified in this section represents the minimum warranty period required for work performed under specification Division 15000. Where the General Conditions and/or individual equipment/system specifications require a warranty period of longer duration or earlier start date than specified in this paragraph, the longer duration/earlier start date shall supercede for those portions of work covered by that specification. In the event the contractor is notified of warranty issues but does not correct or address the warranty issues prior to the end of the specified warranty period, the contractor will not be relieved of the responsibility to correct the deficient items after the warranty end date has passed.

PART 11 - ELECTRIC MOTORS

- 11.1 All motors shall be designed, tested and applied in accordance with the applicable standards listed hereinbefore. Motors shall be of sufficient size for the duty to be performed and shall not exceed the full load rating when the driven equipment is operating at specified capacity. Unless otherwise specified, all motors shall be high efficiency type and shall have open frames and continuous-duty classification based on 50 degrees C. ambient temperature. Polyphase motors shall be squirrel-cage type, having normal-starting-torque and low-starting-current characteristics. Motors shall meet NEMA high efficiency standards MGI - 1.41.2 for energy efficient polyphase squirrel-cage motor. Efficiency shall be in accordance with MGI - 1.2.55. When motor horse powers required differ from those indicated on the drawings, the Contractor shall make the necessary adjustments to the wiring, disconnect devices, starters and branch-circuit protection at no additional cost to the Owner.
- 11.2 Motors shall be rated for continuous duty capable of driving the connected loads without exceeding temperature limitations of the motor insulation. Special Class A moisture-resisting insulation (designed to operate in a 50 degree C. ambient without exceeding a temperature rise rating designated by NEMA for the type of enclosure used) shall be utilized in each motor.
- 11.3 Unless otherwise indicated or specified, the electrical components required to operate mechanical equipment, such as, motors, float and pressure switches, solenoid valves, and other devices functioning to control the mechanical equipment, shall be furnished as part of the mechanical equipment, shall be complete and operable, and shall be included under this section of the specifications. All motor starters not part of a motor control center shall be included under this Section and shall be the hand off auto type with 3 over-loads on 3 phase units and 120V control transformer. Conduit and wires required for external electrical connections shall be furnished and are specified under DIVISION 16000 - ELECTRICAL. Install phase failure relay equal to Square D Class 8430 on line side of all three phase motor starters. Relay shall shut motor down on phase loss or phase unbalance and automatically reset when normal phasing is restored.

PART 12 - FEES, PERMITS AND INSPECTION

- 12.1 The Contractor shall secure and pay for all tap fees, permits, licenses, insurance and inspections required for the execution of the work on the project and deliver to the Engineer all certificates related to and issued by the authorities having jurisdiction. These include a certificate of final approval from the Underwriters' Inspection Bureau having jurisdiction, pursuant to all electrical work, a certificate of inspection and approval from the State Division of Plumbing and/or local authorities pursuant to all plumbing work and the State Boiler Inspector.

PART 13 - AS-BUILT DRAWINGS

- 13.1 The Contractor shall deliver to the Engineer at the completion of the work, one (1)

print of "As-Built" drawings, showing legibly and accurately, plumbing, heating, ventilating and piping systems with equipment locations shown as actually installed. Changes in original plans shall be neatly shown in red pencil. Each print shall be signed by the sub-contractor who has done the work.

- 13.2 During construction the Contractor shall retain a set of blue line drawings on the site for recording all changes. These drawings shall be available for inspection by the Engineer.

PART 14 - FINAL TEST, OPERATION AND ACCEPTANCE

- 14.1 In addition to any other testing specified, the Contractor shall perform the following tests and place the system(s) in operation to demonstrate that all features of the system(s) including instrumentation, controls and equipment function as specified for final acceptance.

14.1.1 Heating, Ventilating, and Cooling System

- 14.1.1.1 At such time as the Engineer determines that the new heating, ventilating and cooling system is ready to be placed into service, the Contractor shall place the new equipment in operation and demonstrate that the safety devices are in proper working order to the satisfaction of the Engineer.

- 14.1.1.2 The Contractor shall then maintain operation and demonstrate each system's capability of producing at full load capacity. Within 24 hours after the systems have been satisfactorily tested, Owner operating personnel will relieve the Contractor of the operations and the Contractor shall continue his work on a joint occupation basis.

- 14.1.1.3 Depending on the status of the work, the Contractor may at his option conduct other required tests concurrent with, prior to, or following the system testing, providing the Engineer is satisfied the installation is in conformance with the specifications. However, all features of the system(s) shall be tested individually for proper operation at partial and full load conditions and collectively where normal operations require the several components to operate concurrently to constitute an acceptable system.

- 14.2 Where a specific test period is not stipulated in the specifications, the equipment shall operate at full load until normal operating temperatures are reached and continue to operate for a minimum of one (1) hour at full load to confirm that the equipment conforms to all specification requirements such as capacity, overload, overheating, vibration, noise, etc.

- 14.3 Where ambient conditions preclude attaining full load in normal operation, the

Contractor shall provide induced conditions which will allow achieving full load.

- 14.4 Final acceptance of the entire installation will be based on an acceptable demonstration that all components, local and remote, respond to safety manual and Automatic System controls. During this test the Contractor shall cause simulated perturbations for which the control system is designed to respond. All control, monitor and readout points in the system shall function properly before final acceptance is made.
- 14.5 Filters: On all HVAC equipment using air filters, the contractor shall be responsible for changing the air filters once the equipment has been started until substantial completion of the entire project. During this time period, filters shall be changed every 30 days with dated 30% efficient filters. New dated filters shall be installed when the systems are balanced. One complete set of filters shall be turned over to the owner at substantial completion of the entire project as a spare set.

PART 15 - CONTRACTOR FURNISHED DRAWINGS, DESCRIPTIVE DATA AND MANUALS

- 15.1 Approval of Materials and Equipment: Within 30 days of receipt of notice to proceed, and before starting installation, the Contractor shall submit to the Architect for approval, in triplicate, lists of materials, fixtures and equipment to be incorporated in the work. If departures from the contract drawings are deemed necessary by the Contractor, details of such departures, including changes in related portions of the project and the reasons therefore shall be submitted with drawings. Where such departures require piping or equipment to be supported otherwise than shown, the details submitted shall include loadings and type and kinds of frames, brackets, stanchions, or other supports necessary. Approved departures shall be made at no additional cost to the Owner. The lists of materials and equipment shall be supported by sufficient descriptive material, such as catalog cuts, diagrams, and other data published by the manufacturer, as well as evidence of compliance with safety and performance standards, to demonstrate conformance to the specification requirements; catalog numbers alone will not be acceptable.
- 15.2 Conformance to Agency Requirements: Where materials or equipment are specified to be constructed and/or tested in accordance with the standards of the American Society of Mechanical Engineers, the Air Moving and Conditioning Association, or the American Society of Heating, Refrigerating and Air Conditioning Engineers, or to be approved by the Underwriters' Laboratories, Inc., the Contractor shall submit proof that the items furnished under this specification conform to such requirements. A certificate or published statement by the manufacturer will be sufficient evidence that the item conforms to the requirements of ASHRAE. In lieu of such stamp, certificate, or statement, the Contractor may submit written certificate from any nationally recognized testing agency adequately equipped and competent to perform such services, stating that the items have been tested and that the units conform to the

requirements listed hereinbefore, including methods of testing, of the specified agencies.

15.3 SHOP DRAWINGS

15.3.1 In accordance with the General Conditions, shop drawings shall be submitted on all units of prefabricated materials. Shop drawings shall show, in detail, all parts of the work, fully dimensioned and shall also indicate construction, concealed and other jointing, thickness of materials, method of anchoring and attachment to other materials. Where required for certain work, submit setting and bending diagrams and mark same to correspond with the design drawings, identifying locations of various items. Show types, sizes and locations of sleeves and inserts.

15.3.2 The Contractor shall check all shop drawings for completeness and for correctness before submitting the drawings. If major corrections are required on the drawings, the Contractor shall return the drawings to the originator and have the changes made. The Contractor shall indicate his corrections on the prints in green pencil and sign all prints and other material sent to the Engineer.

15.4 Detail and Erection Drawings: Detail and erection drawings for equipment, piping and other items of this nature shall be carefully prepared in accord with standard practice and shall show erection plans and member details with all individual parts identified on both the detail sheets and erection plans. All identification markings shall be carefully preserved until after the erection process is completed.

15.5 DESCRIPTIVE DATA

15.5.1 Material Data: The Contractor shall submit descriptive data, as required, on pipe, fittings and valves to be incorporated into the work. This data shall be in sufficient detail to allow the Engineer to determine that the pipe, fittings and valves meet the requirements of the contract drawings and specifications or that they are an acceptable equal to that specified. All data shall be in the form of manufacturer's or supplier's literature concerning the product and shall indicate catalog number, conditions of use, application instructions, and/or other information as applicable.

15.5.2 Equipment Data: The Contractor shall submit descriptive data on all items of equipment to be furnished and installed under this contract. These submittals shall consist of manufacturer's published catalog information which completely describes component materials, configuration and rough-in data for mechanical and electrical equipment shall also include cuts, diagrams, characteristic curves and capacity information as applicable. Where more than one item of equipment is employed in the same system, the submittal of equipment data will include special diagrams

showing the electrical wiring, interconnecting piping, related controls and relation and operation of the various items of equipment for the entire system.

15.6 Operating and Maintenance Manuals, Spare Parts Lists and Special Tests: The Contractor shall furnish for each item of installed equipment three (3) copies of brochures consisting of operating and maintenance instructions, recommended spare parts list for a period of one (1) year and a list of any special tools required to maintain the equipment. Above items shall be bound into suitable binders. Where special tools are required, the Contractor shall furnish two (2) of each such tools to the Owner at no additional contract cost.

15.7 MATERIALS, EQUIPMENT AND APPLIANCES

15.7.1 Materials: All materials, equipment, products and incidentals to be furnished by the Contractor shall be new, unless otherwise specified, undamaged and the first line quality product of the manufacturer and/or supplier, except when competitive grades fully meet the standards specified in the various technical sections of these specifications.

15.7.2 Standard Products: Except as otherwise approved by the Engineer, the equipment and appliances to be furnished under these specifications shall be the standard products of manufacturers regularly engaged in the production of such equipment and shall be the manufacturer's latest standard design. Where two or more units of the same type and class of equipment are required, the units shall be the product of the same manufacturer and shall be identical insofar as possible. The component parts of the products need not be products of one manufacturer.

15.7.3 Manufacturer's Directions: Where manufacturer's instructions or recommendations are applicable to the installation or application of materials, the Contractor shall adhere to strict conformance with such instructions or recommendations unless specifically noted to the contrary in these specifications. Where such directions are in conflict with the drawings and specifications, the Contractor shall inform the Engineer of such conflict and request instructions.

15.7.4 Samples: The Contractor shall furnish, for approval, samples of materials, profiles, designs, finishes, etc., which are either required by the various sections of specifications or which the Engineer may request from time to time. Samples shall be clearly identified with adequate information for the Engineer's evaluation.

15.7.5 Materials and Equipment Delivered to Jobsite: All items of materials, equipment, supplies and miscellaneous items to be incorporated into the work shall be delivered to the jobsite with labels, tags, nameplates and/or containers which clearly indicate the manufacturer's item or catalog number or conformance with the applicable standards stipulated in the technical sections of the specifications. Any item which

cannot be verified in the field shall not be included in the work until its identity can be established by the Engineer.

15.8 EQUIPMENT AND MATERIAL SUBSTITUTIONS

15.8.1 Should the Contractor elect to use and install materials which have been approved for use other than specified, he shall be required to make any necessary changes, perform all work and furnish any additional materials and ancillary equipment required to make such substituted materials or equipment function or perform as that specified, at no cost to the Owner. This includes structural, electrical and/or other affected trades.

PART 16 - DEFINITIONS

16.1 Mechanical Contractor: Any contractor whether bidding or working independently or under the supervision of a general contractor and/or construction manager and who installs any type of mechanical work (controls, plumbing, HVAC, sprinkler, gas systems, etc.).

16.2 Mechanical Sub-Contractor: Any contractor contracted to or employed by the mechanical contractor for any work required by the mechanical contractor.

16.3 Engineer: The consulting mechanical/electrical engineers either consulting to the owners, architects, other engineers, etc. In this case Cunningham's Consulting Service, LLC.

16.4 A-E: Shall construe architect and/or engineer. In all situations that involve an architect, it shall construe architect, in all others, engineer.

16.5 Furnish: Deliver to the site in good condition and turn over to contractor responsible for installation.

16.6 Provide: Furnish and install in complete working order.

16.7 Install: Install equipment furnished by others.

16.8 Indicated: Shown on the drawings or addenda thereto.

16.9 Contract Documents: All documents pertinent to the quality and quantity of work to be performed on the project. Includes but not limited to: plans, specifications, instructions to bidders, general and special conditions, addenda, alternates, list of materials, list of sub-contractors, unit prices, shop drawings, field orders, change orders, cost breakdown, periodical payment requests, etc.

16.10 INTENT

Domestic Hot Water Main Replacement
LFUCG-Detention Center
Lexington, Kentucky
Bid No.# 32-2019

- 16.10.1 It is the intention of these specifications and all associated drawings to call for finished work, tested and ready for operation. Wherever the word "provide" is used, it shall mean "furnish and install complete and ready for use".
- 16.10.2 Details not usually shown or specified, but necessary for the proper installation and operation of systems, equipment, materials, etc., shall be included in the work, the same as if herein specified or indicated.

END OF SECTION 15010

SECTION 15025 - SLEEVING, CUTTING, PATCHING AND REPAIRING

PART 1 - GENERAL

- 1.1 The Contractor's attention is directed to the General and Special Conditions, General Conditions-Mechanical and to all other Contract Documents as they apply to this branch of the work. Attention is also directed to all other sections of the Contract Documents which affect the work of this section and which are hereby made a part of the work specified in this section.
- 1.2 The Contractor shall be responsible for all openings, sleeves, trenches, etc., that he may require or create by demolition in floors, roofs, ceilings, walls, etc., and shall coordinate all such work with the General Contractor and all other trades. Coordinate with the General Contractor, any openings which he is to provide before submitting a bid proposal in order to avoid conflict and disagreement during construction. Improperly located openings shall be reworked at the expense of the Contractor.
 - 1.3.1 The Contractor shall plan his work ahead and shall place sleeves, frames or forms through the walls, floors and ceilings during the initial construction, where it is necessary for piping, ductwork, conduit, etc., to go throughout; however, when this is not done, the Contractor shall do all cutting and patching required for the installation of his work, or he shall pay other trades for doing this work when so directed by the Engineer. Any damage caused to the buildings by the workmen of the responsible Contractor must be corrected or rectified by him at his own expense.
- 1.4 The Contractor shall notify other trades in due time where he will require openings or chases in new concrete or masonry. He shall set all concrete inserts and sleeves for his work. Failing to do this, he shall cut openings for his work and patch same as required at his own expense.
- 1.5 The Contractor shall be responsible for properly shoring, bracing, supporting, etc., any existing and/or new construction to guard against cracking, settling, collapsing, displacing or weakening while openings are being made. Any damage occurring to the existing and/or new structures, due to failure to exercise proper precautions or due to action of the elements shall be promptly and properly made good to the satisfaction of the Engineer.
- 1.6 All work improperly done or not done at all as required by the Mechanical Trades in this section, will be performed by the Contractor at the direction of the trade whose work is affected.

PART 2 - SLEEVES

- 2.1 Cast iron or Schedule 40 (minimum) steel sleeves shall be installed through all walls where pipe enters the building below grade. Sleeves shall be flush with each face of

the wall and shall be sufficiently larger than the entering pipe to permit thorough caulking with lead and oakum or other approved sealant between pipe and sleeve for water proofing.

- 2.2 In all cases, sleeves shall be least two pipe sizes larger than nominal pipe diameter plus insulation.
- 2.3 Horizontal sleeves passing through exterior walls or where there is a possibility of water leakage and damage shall be caulked watertight. Vertical sleeves in roofs shall be flashed and counter-flashed with lead (4 lb.) or 16 oz. copper and welded or soldered to piping, lapped over sleeve and properly weather sealed.
- 2.4 Where sleeves pass through roof construction, sleeves shall extend minimum of 8" above the roof. Sleeves through walls and floors shall be cut off flush with inside surface unless otherwise indicated.
- 2.5 Openings thru structural slabs shall be accomplished by means of sleeves. (No drilling will be allowed in structural slabs). In waffle, pre-cast or pan joist construction, openings may be made by means of diamond (core) drilling or as otherwise approved by the Engineers.

PART 3 - CUTTING

- 3.1 All rectangular or special shaped openings in plaster, stucco or similar materials, including gypsum board, shall be framed by means of plaster frames, casing beads, wood or metal angle members as required. The intent of this requirement is to provide smooth even termination of wall, floor and ceiling finishes as well as to provide a fastening means for grilles, diffusers, lighting fixtures, etc.
- 3.2 All trades shall coordinate all openings in masonry walls with the General Contractor, and, unless otherwise indicated on the Architectural drawings, shall provide lintels for all openings required for the mechanical work (louvers, wall boxes, exhaust fans, etc.). Lintels shall be sized as follows:
 - 3.2.1 New openings under 48" in width: Provide one 3 1/2" x 3 1/2" x 1/4" steel angle for each 4" of masonry width. Lintel shall have 8" bearing on either side.
 - 3.2.2 New openings 48" to 96" in width: Provide one 3 1/2" x 6" x 3/8" steel angle for each 4" of masonry width. Lintel shall have 8" bearing on either side.
 - 3.2.3 New openings over 96" in width: Consult the project structural engineer.
- 3.3 No cutting is to be done at points or in a manner that will weaken the structure and unnecessary cutting must be avoided. If in doubt, contact the engineer.

- 3.4 Pipe openings in slabs and walls shall be cut with core drill. Hammer devices will not be permitted. Edges of trenches and large openings shall be scribe cut with a masonry saw.
- 3.5 Openings in metal building walls shall be made in strict accord with building suppliers recommendations.

PART 4 - PATCHING AND REPAIRING

- 4.1 Patching and repairing made necessary by work performed under this division shall be included as part of the work and shall be done by skilled mechanics of the trade or trades for work cut or damaged, in strict accordance with the provisions herein before specified for work of like type to match adjacent surfaces and in a manner acceptable to the engineer.
- 4.2 Where portions of existing lawns, shrubs, paving, etc. are disturbed for installation or work of this Division, such items shall be repaired and/or replaced to the satisfaction of the engineer.
- 4.3 Where the installation or removal of conduit, ducts, piping, etc. requires or creates the penetration of fire or smoked rated walls, ceilings or floors, the space around such conduit, duct, pipe, etc., shall be tightly filled with an approved non-combustible fire insulating material satisfactory to maintain the rating integrity of the wall, floor or ceilings affected.
- 4.4 Where ducts penetrate fire rated assemblies, fire dampers shall be provided with an appropriate access door.
- 4.5 Piping passing through floors, ceilings and walls in finished areas, unless otherwise specified, shall be fitted with chrome plated brass escutcheons of sufficient outside diameter to amply cover the sleeved openings and an inside diameter to closely fit the pipe around which it is installed.
- 4.6 Stainless steel collars shall be provided around all ducts, flues, breeching, large pipes, etc., at all wall penetrations; both sides.
- 4.7 Where ducts, pipes, and conduits pass through interior or exterior walls, the wall openings shall be sealed air tight. This shall include sealing on both sides of the wall to insure air does not enter or exit the wall cavity. This is especially critical on exterior walls where the wall cavity may be vented to the exterior.

END OF SECTION 15025

SECTION 15050 - BASIC MATERIALS AND METHODS

PART 1 - GENERAL

- 1.1 General Requirements: All equipment shall be properly aligned, leveled and adjusted for satisfactory operation. Equipment shall be installed so that the connecting and disconnecting of piping and accessories can be done readily and so that all parts are easily accessible for inspection, operation, maintenance and repair. Items of equipment shall essentially duplicate equipment that has been in satisfactory use at least 2 years prior to bid opening and shall be supported by a service organization that is, in the opinion of the Architect reasonably convenient to the site.
- 1.2 Identification: Permanent and legible engraved tags, brass or laminated plastic, shall be installed on all switches, pumps, main valves, and controls, using the same nomenclature as appears on record drawings, diagrams and typewritten or printed operating instructions. A permanent index thereto shall be provided in triplicate, one copy of which shall be mounted under framed glass. Each major component of equipment shall have the manufacturer's name, address and catalog number on a metal plate securely attached to the item of equipment. The nameplate shall be easily readable and not obscured during the period of construction by painting, plastering, insulating or other work.
- 1.3 Prevention of Rust: Surfaces of ferrous metal shall be given a rust inhibiting coating where specified. Coal-tar or asphalt-type coating will not be acceptable unless so stated for a specific item. Where steel is specified to be hot dip galvanized after fabrication, mill galvanized sheet steel may be used, provided all raw edges are painted.
- 1.4 Protection from Moving Parts: Belts, pulleys, chains, gears, couplings, projecting setscrews, keys and other rotating parts located so that any person can come in close proximity thereto shall be fully enclosed or properly guarded.
- 1.5 PROTECTION OF EQUIPMENT AND MATERIALS
- 1.5.1 After delivery, before and after installation, equipment and materials shall be protected against theft, injury or damage from all causes.
- 1.5.2 Plumbing fixtures and other equipment with enameled or glazed surfaces shall be protected from damage by covering and/or coating, as recommended in bulletin Handling and Care of Enameled Cast Iron Plumbing Fixtures, issued by Plumbing Fixtures Manufacturers' Association.

- 1.5.3 Where marring or disfigurement has occurred, the Contractor shall replace or refinish the damaged surfaces as directed and to the satisfaction of the Architect.
- 1.5.4 Pipe and duct openings shall be closed with caps or plugs during installation.

PART 2 - MATERIALS

- 2.1 General: Materials specified herein shall conform to the respective publications and other requirements specified in the following paragraphs and as shown on the drawings. Other materials shall be the products of manufacturers regularly engaged in the manufacture of such products. Types, grades, schedules and pressure and temperature ratings for a particular service shall be as specified hereinafter and other sections of these specifications.
- 2.2 Unless specifically noted to the contrary, all valves, strainers and accessories listed in these specifications shall be "rated" devices (i.e. 125 lb. steam - 200 lb. water, oil or gas), selected for the proper use and conditions of the system for which they are to be installed. Under no circumstances shall the contractor be relieved of the responsibility of the valve rating by the installation of valves of lesser quality. All valves shall have rising stems, except that ball valves, plug valves, butterfly valves and other similar types shall have clear indicators for valve positions. Non-rising stem valves, and non-rated valves shall not be used.

PART 3 - INSTALLATION

3.1 GENERAL

- 3.1.1 Pipe shall be cut accurately to measurements established at the jobsite and worked into place without springing or forcing, properly clearing all windows, doors, and other openings. Cutting or other weakening of the building structure to facilitate piping installation will not be permitted without written approval. Piping and equipment supports shall be provided. Supports shall be attached only to structural framing members and concrete beams or slabs at approved locations with approved connections. Where supports are required between structural framing members, suitable intermediate metal framing shall be provided and detailed. Pipes shall have burrs removed by reaming and shall be installed to permit free expansion and contraction without damage to joints or hangers. Changes in direction shall be made with fittings. All piping shall be installed with sufficient pitch to insure adequate drainage and venting. Piping connections to equipment shall be provided with unions or flanges. Ferrous piping and copper piping shall be electrically isolated from each other with dielectric couplings or fittings.

3.2 WORKMANSHIP

3.2.1 General: All materials and equipment shall be installed in accordance with the approved recommendations of the manufacturer to conform with the contract documents. The installation shall be accomplished by workmen skilled in this type of work

3.2.2 Screw joints shall be made with tapered threads properly cut. Joints shall be made tight with a stiff mixture of litharge and glycerin, or polytetrafluorethylene tape, or other approved thread joint compound applied to the male threads only. Not more than three threads shall show after the joint is made up.

3.2.3 Victaulic (mechanical bolted) type joints shall be grooved accurately and ends buffed flush before retainer band is put in place. Retainer bands shall be malleable iron or forged steel and shall be properly fitted to each joint.

3.3 EXCAVATION AND BACKFILL

3.3.1 As part of the work under these sections, provide all excavating and backfilling, including dewatering and shoring required for the introduction and completion of the work. The work performed under this heading must conform to surrounding grounds or finished grade and must be approved by the Engineer.

3.3.2 All excavation shall be classified in accordance with the General Conditions of these specifications.

3.3.3 Surplus material and materials unsuitable for use as fill or backfill of foundation or trench excavations shall be disposed of off the Owner's property at the Contractor's expense.

3.3.4 Borrow material, if required, may not be available on Owner's property and shall be the responsibility of the Contractor to import any required material at his expense.

3.3.5 Explosives and blasting shall not be permitted except by written permission of the Engineer.

3.3.6 Where adjacent surface areas are disturbed as a result of construction operations or the storage of materials, they shall be cleaned of all debris and restored to original conditions.

- 3.3.7 The Contractor shall be responsible for location in the field the excavation lines shown on the drawings. The location shall be approved by the Engineer before excavation is begun. The Contractor shall use reference points as shown on the drawings for locating control points for earthwork and construction. In the absence of reference points, the Contractor shall locate control points in accordance with the Engineer's instructions.
- 3.3.8 Active utilities shown on the drawings shall be adequately protected from damage and removed or relocated only as indicated or specified. Where active utilities are encountered but are not shown on the drawings, the Engineer shall be advised; the work shall be adequately protected, supported or relocated as directed by the Architect. In-active and abandoned utilities encountered in excavating and grading operations shall be reported to the Architect; they shall be removed, plugged or capped as directed by the Architect.
- 3.3.9 Trench Excavation: The bottom of the trenches shall be accurately graded to provide uniform bearing and support for the pipe or concrete trench as shown on the drawings. Pipe shall be supported at every point along its entire length. Unless otherwise indicated, excavation shall be by open cut and trench sides shall be vertical. The trench bottom shall follow a uniform grade as shown on the drawings in the direction of flow insofar as possible. Where the trench has been excavated below grade, either inadvertently or purposely, the trench shall be backfilled and thoroughly tamped so as to provide full length bearing for the pipe barrel.
- 3.3.10 Laying Pipe: Laying of pipe on blocks, brick or wood to bring the pipe to a uniform invert shall not be permitted. Drainage lines shall be layed to conform to the drawings. All pipe joints shall be inspected and approved prior to backfilling.
- 3.3.11 General Backfilling
- 3.3.11.1 Backfilling Trenches: The trenches shall not be backfilled until all required pressure tests are performed and until the system as installed conforms to the requirements specified, except that pipe may be covered between joints to maintain alignment during testing. Except as otherwise specified for special conditions of overdepths, trenches shall be backfilled to the ground surface with selected excavated material or other material that is suitable for the specified compaction and as hereinafter specified. Four (4) inches of crushed stone (#9 gravel), chips, or sand shall be placed in the bottom of the ditch and properly graded to assure firm bedding. After pipe is in place, tests and required inspections completed, the ditch shall be backfilled with crushed stone (#9 gravel), chips, or sand to a depth of elevation no less than 4 inches above the pipe. Commencing above the pipe, the backfill shall be loose earth placed and thoroughly tamped (in layers not to exceed six (6) inches in depth) to finished grade. Trenches under paved surfaces shall be backfilled to the surface with crushed

stone, chips or dense grade. See the drawings for any special requirements noted or shown in details.

3.3.11.2 Backfilling Drain Lines: Compacted earth shall be placed around and over the drain lines to the elevation shown on the drawings.

3.4 WELDING AND BRAZING

3.4.1 Welders Qualification

3.4.1.1 Welder's qualifications shall specify results of test, or retest, positions qualified and type of welding in which qualified.

3.4.2 All welds shall be of sound metal thoroughly fused to the base metal at all points, free from cracks; and reasonably free from oxidation, blow holes, and non-metallic inclusions. No fins or weld metal shall project within the pipe; and should they occur shall be removed. All pipe beveling shall be done by machine. The surface of all parts to be welded shall be thoroughly cleaned free from paint, oil, rust or scale, at the time of welding except that a light coat of oil may be used to preserve the beveled surfaces from rust.

3.4.3 All pipe and fittings shall be carefully aligned with adjacent parts and this alignment must be preserved in a rigid manner during the process of welding.

3.4.4 It is required that all welding of piping covered by this specification, regardless of conditions of service, be installed as follows:

3.4.4.1 Pipe welding shall comply with the provision of the latest revisions of the applicable code whether ASME "Boiler Construction Code", ANSI "Code for Pressure Piping", AWS and/or Kentucky KRS-236 "Boiler Safety Law". The contractor shall make arrangements for inspection visits by the state boiler inspector as required by KRS-236.

3.4.4.2 The Contractor's welding procedure shall clearly set forth P-numbers of parent metal to be welded, rod or filler metal to be used and positions required.

3.4.4.3 Before any pipe welding is performed, the Contractor shall submit to the Architect a copy of his welding procedure specifications together with proof of its qualification as outlined and required by the most recent issue of the code having jurisdiction.

- 3.4.4.4 Before any operator shall perform any pipe welding, the Contractor shall also submit to the Architect, the operator's qualification record in conformance with provisions of the Code having jurisdiction, showing that the operator was tested under the approved procedure specification submitted by the Contractor.
- 3.4.4.5 Welding work shall not be performed by welders who are not approved by the Architect and any such work performed shall be summarily removed and replaced without further recourse by the Contractor.
- 3.4.4.6 Standard Procedure Specifications and operators qualified by the National Certified Pipe Welding Bureau shall be considered as conforming to the requirements of the specifications.
- 3.4.4.7 Each manufacturer or Contractor shall be responsible for the quality of welding done by his organization and shall repair any work not in accordance with these specifications.
- 3.4.4.8 Brazing, when specified or indicated on the contract drawings, shall be in accordance with Part UB of Section VIII of the ASME Code. Filler metal shall conform to AWS B260, Class B AG-1 or B AG-2. Procedure and performance qualification requirements for brazing shall be the same as for welding, as required above.
- 3.5 Flanges and Unions shall be faced true. Flanges shall be provided with 1/16 inch composition gasket, unless otherwise specified, and made square and tight. Union or flange joints shall be provided in each line immediately preceding the connection to each piece of equipment or material requiring maintenance such as coils, pumps, control valves, and other similar items. Gaskets shall conform to ANSI Standard B16.21.
- 3.6 Valves in horizontal lines shall be installed with stems horizontal or above. Isolation valves shall be installed on each side of each piece of equipment such as pumps, and other similar items; and at any other points indicated or required for draining, isolation, or sectionalizing purposes.
- 3.7 PIPE SLEEVES
- 3.7.1 General: Pipes passing through concrete or masonry walls or concrete floor or roofs shall be provided with pipe sleeves fitted into place with epoxy sealing grout at the time of construction. Sleeves shall not be installed in structural members except where indicated or approved. Each sleeve shall extend through its respective wall, floor or roof, and shall be cut flush with each surface, except sleeves through floor where not in chase shall extend 1/4 inch above finished floor. Unless otherwise indicated, sleeves shall be of such size as to provide a minimum of 1/4 inch all

around clearance between bare pipe and sleeves or between jacket over insulation and sleeves. Sleeves in bearing walls, floors, or ceilings may be steel pipe or cast iron pipe. Except in pipe chases or interior walls, the annular space between pipe and sleeve or between jacket over insulation and sleeve shall be sealed as specified.

- 3.7.2 Pipes Passing Through Waterproofing Membranes: Pipes passing through floor waterproofing membrane shall be installed through a 4-pound lead-flashing sleeve, or a 0.032-inch thick aluminum sleeve, each with an integral skirt or flange. Flashing sleeve shall be suitably formed, and the skirt of flange shall extend not less than 8 inches from the pipe and shall set over the floor membrane in a troweled coating of bituminous cement. The flashing sleeve shall extend up the pipe a minimum of 1 inch above the floor. The annular space between the flashing sleeve and the metal-jacket-covered insulation shall be sealed. At the Contractor's option, pipes passing through floor waterproofing membrane may be installed through a cast iron sleeve with caulking recess, anchor lugs, flashing clamp device, and a pressure ring with brass bolts. Waterproofing membrane shall be clamped into space and sealant shall be placed in the caulking recess.
- 3.7.3 Pipes Passing Through Roof: Pipes passing through the roof shall be installed where shown on the drawings. Any penetration in roof shall be approved by the Roofing Manufacturer.
- 3.8 Escutcheons: Escutcheons shall be provided at all finished surfaces where exposed piping, bare or insulated, passes through floors, walls, or ceilings. Escutcheons shall be fastened securely to pipe sleeves or to extensions of sleeves without any part of sleeves being visible. Where sleeves project slightly from floors, special deep-type escutcheons shall be used. Escutcheons shall be chromium-plated iron or chromium-plated brass, either one-piece or split-pattern, held in place by internal spring tension or setscrew.
- 3.9 Protective Coating for Pipe and Fittings: Metallic pipe and fittings, except cast iron and copper, that are installed underground shall be provided with a field- or shop-applied coal-tar coating and wrapping or a shop-applied extruded polyethylene sheath. The coating shall consist of a coat of coal-tar primer, a coat of coal-tar enamel, a second coat of coal-tar enamel, a second wrapper of coal-tar saturated felt, and a wrapper of kraft paper applied in the order named and conforming to the requirements of AWWA Standard C203 for materials, thicknesses, methods of application, tests, and handling, except that interior lining will not be required. Upon completion of satisfactory tests hereinafter specified, the joints shall be hand-wrapped with hot-applied preformed coal-tar tape. Preparation of surface and hand-applied wrapping shall be done in such a manner that a covering equal in effectiveness to that of the shop-applied coating will be produced. When extruded polyethylene sheath is used for the protective coating, fittings and joints shall be

covered in the manner and with the materials recommended by the manufacturer of the sheath.

PART 4 - TESTS

- 4.1 General: All tests shall be conducted in the presence of the Engineer who shall be given 2 days notice before any test is to be conducted. Any utilities, materials, equipment, instruments, and personnel required for the tests shall be provided by the Contractor.
- 4.2 Piping: After cleaning, all piping (except soil, waste and vent piping) shall be hydrostatically tested at a pressure equal to 150 percent of the total system operating pressure but not less than 100 psi for a period of time sufficient to inspect every joint in the system and in no case less than 2 hours. No loss of pressure will be allowed. Leaks found during tests shall be repaired by re-welding or replacing pipe or fittings. Caulking or peening of joints or fittings will not be permitted. Concealed and insulated piping shall be tested in place before covering or concealing.

PART 5 - CLEANING

- 5.1 General: Clean all piping and equipment systems as required to leave the piping and equipment clean and free from scale, silt, contamination, etc., as normally required and as specified herein.
- 5.2 Utilities and Equipment: The Contractor shall provide all necessary temporary materials and equipment to clean the piping and equipment installed under this specification. No permanent equipment shall be used for storage, mixing, settling, compressing, pumping, etc., without the approval of the Architect. The Contractor shall supply a separate and independent source of clean, dry, oil-free air for the blowdown of systems requiring this method of cleaning.
- 5.3 Use of Chemicals: No chemicals, wetting or drying agents shall be used to clean systems or equipment where the materials of the system undergo any changes in their physical or structural characteristics. In case of any doubt as to the compatibility of any materials to the cleaning solution used, the Contractor shall obtain prior written approval for the use of the solution from the manufacturer of the equipment. Piping systems, equipment and sub-assemblies shall be cleaned after completion of welding, machining, threading, testing and any other operations capable of contaminating the system piping or equipment. After cleaning, the permanent strainers shall be removed, cleaned and replaced. Temporary strainers shall be periodically removed, cleaned and replaced during cleaning in lines ahead of equipment to protect against particles becoming lodged in the equipment.

PART 6 - DRIVES

- 6.1 Each belt-connected motor-driven unit or fan shall be provided with a variable pitch V-belt drive.
- 6.2 Sheaves shall be of cast iron or of steel, statically and dynamically balanced, bored to fit properly on the shafts and secured with key of proper size. Sheaves having set screws alone will not be permitted. Sheaves shall be variable pitched and shall be designed to give the required rpm at approximately the mid-position of adjustment. Pitch diameters of sheaves shall be not less than 3.0 inches for "A" section belts; 5.4 inches for "B" section belts; 9.0 inches for "C" section belts; and 13.0 inches for "D" section belts.
- 6.3 Belts shall be selected for a minimum service factor of 1.5 (based on motor nameplate horsepower), and selected and matched in sets for equal tension.
- 6.4 All other drives shall be as described under the respective equipment paragraph of these Specifications, as applicable.

PART 7 - FIRESTOPPING

- 7.1 Fire stopping shall be provided around all pipe, duct and chimney penetrations of floors, masonry walls and other fire rated walls and ceilings.
- 7.2 MATERIALS
 - 7.2.1 Provide materials classified by UL to provide Fire Barrier equal to time rating of construction being penetrated.
 - 7.2.2 Provide asbestos free materials that comply with applicable codes and have been tested in accordance with UL 1479 or ASTM E-814.
- 7.3 EXECUTION
 - 7.3.1 Clean surfaces to be in contact with penetration seal materials, of dirt, grease, oil, loose materials, rust or other substances that may affect proper fitting, adhesion, or the required fire resistance.
 - 7.3.2 Install penetration seal materials in accordance with manufacturer's instruction.
 - 7.3.3 Seal holes or voids may be penetrations to ensure an effective smoke barrier.
 - 7.3.4 Protect materials from damage on surfaces subject to traffic.

- 7.3.5 . Stop insulation flush with wall on insulated pipe and seal edges.

PART 8 - ROOF CURBS

- 8.1 Roof curbs shall be fabricated for complete compatibility with roof panels and framing system. Size and design as required to support vent unit and to adequately divert storm drainage. Provide all sealants, closures, etc. as required for complete installation. Provide roof sub-framing and/or headers between roof bar joists to provide continuous rigid perimeter support for the curb.
- 8.2 Prefabricated roof curbs shall be constructed of galvanized sheet steel, 16 or 14 gauge as required with corners mitered and continuously welded. Provided integral water diverter with seams continuously welded. Provide internal reinforcing as required. Factory insulate curbs with 1 ½" thick 3 lb. density fiber glass insulation. Top of curb shall be level with pitch built into curbs.
- 8.3 Mechanical contractor shall coordinate with the roofing contractor to insure compatibility of the systems and for proper installation. Provide shop drawings to roofing contractor for review and coordination.

The mechanical contractor is responsible for installing the curb and framing. Roofing contractor is responsible for attaching roofing to the curb. Both contractors will be held responsible for leaks.

END OF SECTION 15050

SECTION 15140 - SUPPORTS AND ANCHORS

PART 1 - GENERAL

- 1.1 WORK INCLUDED
 - 1.1.1 Pipe and Equipment Hangers, Supports, and Associated Anchors
- 1.2 RELATED WORK
 - 1.2.1 Section 15050 - Methods and Materials
 - 1.2.2 Section 15260 - Piping Insulation
 - 1.2.3 Section 15410 - Plumbing Piping
 - 1.2.4 Section 15510 - Hydronic Piping
- 1.3 SEE DRAWINGS FOR FURTHER CONDITIONS AND REQUIREMENTS.
- 1.4 REFERENCES
 - 1.4.1 ANSI/ASME B31.1 - Power Piping
- 1.5 MANUFACTURERS
 - 1.5.1 Provide products as manufactured by Grinnell, Elcen, Mason Industries, Advanced Thermal, Fee & Mason, Piping Specialties or approved equal.

PART 2 - SCOPE

- 2.1 This specification shall apply for the design and fabrication of all hangers, supports, anchors and guides. Where piping design is such that exceptions to this specification are necessary, the particular system shall be identified, and the exceptions approved by Engineer prior to installation. See schedule on drawings.
- 2.2 STRUCTURE

This section is intended to cover the structural requirements of the piping and equipment. It is not intended to imply that the building structure will support the loads imposed. The contractor shall review the structural drawings for where loads can be applied, what load can be supported and what structural reinforcing is required. Specific questions can be directed to the structural engineer.

PART 3 - DESIGN

- 3.1 All supports and parts shall conform to the latest requirements of the ANSI Code for Pressure Piping B31.1.0, and MSS Standard Practice SP-58, except as supplemented or modified by the requirements of this specification.
- 3.2 Designs generally accepted as exemplifying good engineering practice, using stock or production parts, shall be utilized wherever possible.
- 3.3 Accurate weight balance calculations shall be made to determine the required supporting force at each hanger location and the pipe weight load at each equipment connection.
- 3.4 Pipe hangers shall be capable of supporting the pipe in all conditions of operation. They shall allow free expansion and contraction of the piping, and prevent excessive stress resulting from transferred weight being induced into the pipe or connected equipment.
- 3.5 Where possible, steel structural attachments shall be beam clamps. Other attachments shall be as scheduled.
- 3.6 All rigid hangers shall provide a means of vertical adjustment after erection.
- 3.7 Hanger rods shall be subject to tensile loading only. At hanger locations where lateral or axial movement is anticipated, suitable linkage shall be provided to permit swing.
- 3.8 Where horizontal piping movements are greater than ½ inch, or where the hanger load angularity from the vertical is greater than 4 degrees from the cold to hot position of the pipe, the hanger rod to structural attachment shall be by use of Grinnell Fig. 47 and Fig. 299 or the hanger rod and structural attachments shall be offset in such manner that the rod is vertical in the hot position.
- 3.9 Hangers shall be designed so that they cannot become disengaged by movements of the supported pipe.
- 3.10 Hangers shall be spaced in accordance with ANSI B31.1.0
- 3.11 Where practical, riser piping shall be supported independently of the connected horizontal piping.
- 3.11.1 Pipe support attachments to the riser piping shall be riser clamp lugs. Welded attachments shall be of material comparable to that of the pipe, and designed in

accordance with ANSI B31.1 codes.

- 3.12 Supports, guides and anchors shall be so designed that excessive heat will not be transmitted to the building steel. The temperature of support parts shall be based on a temperature gradient of 100 degrees F per inch distance from the outside surface of the pipe.

PART 4 - PRODUCTS

- 4.1 Shield for Insulated Piping 2 Inches and Smaller: galvanized steel shield over insulation in 180 degree segments, minimum 12 inches long at pipe support. See schedule for thickness.
- 4.2 Shield for Insulated Piping 2 ½ Inches and Larger: Pipe covering protective saddles.
- 4.3 Shields for Insulated Cold Water Piping 2 ½ Inches and Larger: Hard block non-conducting saddles in 90 degree segments, 12 inch minimum length, block thickness same as insulation thickness.
- 4.4 Shields for Vertical Copper Pipe Risers: Sheet lead.
- 4.5 HANGER RODS
- 4.5.1 Threaded one end, threaded both ends, threaded continuously.
- 4.6 INSERTS
- 4.6.1 Inserts: Malleable iron case or galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.
- 4.7 PIPE HANGERS, SUPPORTS AND ANCHORS
- 4.8 BEAM CLAMPS
- 4.8.1 Beam clamps shall have malleable iron jaws, steel bolt or tie rod, nuts and jamb nuts.
- 4.8.2 C-clamps will not be permitted unless retainer is provided.
- 4.9 FINISH
- 4.9.1 Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

PART 5 - EXECUTION

5.1 INSERTS

5.1.1 Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.

5.1.2 Where concrete slabs form finished ceiling, provide inserts to be flush with slab surface.

5.2 PIPE HANGERS AND SUPPORTS

5.2.1 Support horizontal piping indicated in schedule on drawings or using Unistrut supports

5.2.2 Install hangers to provide minimum ½ inch space between finished covering and adjacent work.

5.2.3 Place a hanger within 12 inches of each horizontal elbow.

5.2.4 Provide hangers with 1-1/2 inch minimum vertical adjustment.

5.2.5 Support riser piping independently of connected horizontal piping.

5.2.6 Support horizontal piping as follows:

<u>Nominal Pipe Size</u>	<u>Single Rod Diameter</u>	<u>Thickness of Insulation Shield</u>	<u>Ferrous Piping</u>	<u>Maximum Spacing Copper Tubing</u>
3/4" & Under	3/8"	16 gauge	6'	5'
1"	3/8"	16 gauge	7'	6'
1 1/4"	3/8"	16 gauge	8'	6'
1 ½" & 2"	3/8"	16 gauge	9'	8'
2 ½" & 3"	1/2"	12 gauge	12'	8'
4" & 5"	5/8"	12 gauge	14'	8'
6"	3/4"	10 gauge	14'	8'
8"	7/8"	8 gauge	14'	10'

END OF SECTION 15140

SUBMITTALS

In accordance with the requirements of the General Conditions and Supplementary General Conditions, the following information is required to be submitted for this Section. The Contractor shall submit 11 copies of the required information to Architect for approval within 30 days after notice to proceed.

ITEM DESCRIPTION	S H O P D R A W I N G S	C A T A L O G D A T A	P A R T S L I S T S	O P E R A T I N G M A N U A L	W I R I N G D I A G R A M	C E R T I F I C A T I O N	S A M P L E S	O T H E R
Pipe Hangers	X	X						
Supports	X	X						
Inserts		X						

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LFUCG-Detention Center
Lexington, Kentucky
Bid No.# 32-2019

SECTION 15190 - MECHANICAL IDENTIFICATION

PART 1 - GENERAL

- 1.1 GENERAL
 - 1.1.1 Identification of mechanical products installed under Division 15.
- 1.2 RELATED WORK
 - 1.2.1 PAINTING
- 1.3 REFERENCES
 - 1.3.1 ANSI/ASME A13.1 - Scheme for the Identification of Piping Systems.
- 1.4 SUBMITTALS
 - 1.4.1 Submit list of wording, symbols, letter size, and color coding for mechanical identification.
 - 1.4.2 Submit valve chart and schedule, including valve tag number, location, function, and valve manufacturer's name and model number.
 - 1.4.3 Submit manufacturer's installation instructions.

PART 2 - PRODUCTS

- 2.1 ACCEPTABLE MANUFACTURERS
 - 2.1.1 Seton
 - 2.1.2 Substitutions: Under provisions of Section 01600, 01630.
- 2.2 MATERIALS
 - 2.2.1 Color: Unless specified otherwise, conform with ANSI/ASME A13.1.
 - 2.2.2 Plastic Nameplates: Laminated three-layer plastic with engraved black letters on light contrasting background color.
 - 2.2.3 Plastic Tags: Laminated three-layer plastic with engraved black letters on light contrasting background color. Tag size minimum 1-1/2 inch square.

2.2.4 Metal Tags: Brass or aluminum with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.

2.2.5 Stencils: With clean cut symbols and letters of following size:

<u>OUTSIDE DIAMETER OF INSULATION OR PIPE</u>	<u>LENGTH OF COLOR FIELD</u>	<u>SIZE OF LETTERS</u>
3/4" - 1-1/4"	8"	1/2"
1-1/2" - 2"	8"	3/4"
2-1/2" - 6"	12"	1-1/4"
8" - 10"	24"	2-1/2"
Over 10"	32"	3-1/2"
Ductwork and Equipment	—	2-1/2"

2.2.6 Stencil Paint: In accordance with Section 09900, semi-gloss enamel.

2.2.7 Plastic Pipe Markers: Factory fabricated, flexible, semi-rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and fluid being conveyed.

2.2.8 Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

2.2.9 Underground Plastic Pipe Markers: Bright colored continuously printed plastic ribbon tape of not less than 6 inch wide by 4 mil thick, manufactured for direct burial service.

2.2.10 Underground plastic water piping to be installed with a tracer wire.

PART 3 - EXECUTION

3.1 PREPARATION

3.1.1 Degrease and clean surfaces to receive adhesive for identification materials.

3.1.2 Prepare surfaces free of dust oil and dirt

3.2 INSTALLATION

3.2.1 Plastic Nameplates: Install with corrosive-resistant mechanical fasteners, or adhesive.

- 3.2.2 Plastic or Metal Tags: Install with corrosive-resistant chain.
- 3.2.3 Stencil Painting: Apply in accordance with manufacturer's recommendations.
- 3.2.4 Plastic Pipe Markers: Install in accordance with manufacturer's instructions.
- 3.2.5 Plastic Tape Pipe Markers: Install complete around pipe in accordance with manufacturer's instructions.
- 3.2.6 Underground Plastic Pipe Markers: Install 6 to 8 inches below finished grade, directly above buried pipe.
- 3.2.7 Equipment: Identify air handling units, pumps, heat transfer equipment, tanks, and water treatment devices with plastic nameplates. Small devices, such as in-line pumps, may be identified with plastic or metal tags.
- 3.2.8 Controls: Identify control panels and major control components outside panels with plastic nameplates.
- 3.2.9 Valves: Identify valves in main and branch piping with tags.
- 3.2.10 Piping: Identify piping, concealed or exposed, with plastic pipe markers or plastic tape pipe markers. Stenciled painting may be used on insulation. Tags may be used on small diameter piping. Identify service, flow direction, and pressure. Install in clear view and align with axis of piping. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and "T", at each side of penetration of structure or enclosure, and at each obstruction.
- 3.2.11 Ductwork: Identify ductwork with stenciled painting. Identify as to air handling unit number, and area served. Locate identification at air handling unit, at each side of penetration of structure or enclosure, and at each obstruction.
- 3.3 VALVE CHART AND SCHEDULE
- 3.3.1 Provide valve chart and schedule in aluminum frame with clear plastic shield. Install at location as directed.

END OF SECTION 15190

Domestic Hot Water Main Replacement
LFUCG-Detention Center
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SUBMITTALS

In accordance with the requirements of the General Conditions and Supplementary General Conditions, the following information is required to be submitted for this Section. The Contractor shall submit 11 copies of the required information to Architect for approval within 30 days after notice to proceed.

	S H O P D R A W I N G S	C A T A L O G D A T A	P A R T S L I S T S	O P E R A T I N G M A N U A L	W I R I N G D I A G R A M	C E R T I F I C A T I O N	S A M P L E S	
ITEM DESCRIPTION								OTHER
Valve Chart	X							
Valve Tags	X	X						
Stencils		X						
Tape		X						
Pipe Markers		X						

SECTION 15260 - PIPING INSULATION

PART 1 - GENERAL

1.1 WORK INCLUDED

1.1.1 Piping Insulation

1.1.2 Jackets and Accessories

1.2 RELATED WORK

1.2.1 Section - Painting: Painting insulation jacket

1.2.2 Section - Mechanical Identification

1.3 QUALITY ASSURANCE

1.3.1 Materials: Flame spread smoke developed rating of 25/50 in accordance with ASTM E84.

1.3.1.1 All pipe insulation shall be installed by mechanics specializing in this type of work. The finished product shall present a neat and workmanlike appearance. Insulation shall not be applied until all tests except operating tests have been completed, all foreign material, such as rust, scale, or dirt, has been removed and the surfaces are clean and dry. Insulation shall be clean and dry when installed and during the application of any finish.

1.3.1.2 The insulation, insulating materials and related items shall be delivered to the jobsite in the manufacturer's unopened containers. The containers shall have labels stating the manufacturer's name, contents, quantity and other pertinent data.

PART 2 - PRODUCTS

2.1 INSULATION

2.1.1 Type A glass fiber insulation; ANSI/ASTM C547; 'k' value of 0.24 at 75 degrees F; noncombustible.

2.1.2 Type B cellular foam; flexible, plastic; 'k' value of 0.27 at 75 degrees F; ASTM C534. APArmaflex W (white) or APArmaflex SS (black) or equal.

2.1.3 Type C vinyl plastisol prefabricated assemblies with 1/8 minimum wall thickness. Trap wrap protective kit or equal by Brocar.

2.2 JACKETS

2.2.1 Vapor Barrier Jackets: Kraft reinforced foil vapor barrier with self-sealing adhesive joints.

2.2.2 PVC Jackets: One piece, premolded type.

2.2.3 Canvas Jackets: UL listed treated cotton fabric, 6 oz/sq yd.

2.3 ACCESSORIES

2.3.1 Insulation Bands: 3/4 inch wide; 0.015 inch thick galvanized steel, stainless steel. 0.007 inch 0.18 thick aluminum.

2.3.2 Metal Jacket Bands: 3/8 inch wide; 0.015 inch thick aluminum. 0.010 inch thick stainless steel.

2.3.3 Insulating Cement: ANSI/ASTM C195; hydraulic setting mineral wool.

2.3.4 Finishing Cement: ASTM C449.

2.3.5 Fibrous Glass Cloth: Untreated; 9 oz/sq yd weight.

2.3.6 Adhesives: Compatible with insulation.

2.3.7 Treated wooden blocks.

PART 3 - EXECUTION

3.1 PREPARATION

3.1.1 Install materials after piping has been tested and approved.

3.2 INSTALLATION

3.2.1 Install materials in accordance with manufacturer's instructions.

3.2.2 Continue insulation with vapor barrier through penetrations, except on fire rated walls.

3.2.3 In exposed piping, locate insulation and cover seams in least visible locations.

3.2.4 On insulated piping with vapor barrier, insulate fittings, valves, unions,

[Type here]

PIPING INSULATION

[Type here]

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[Type here]

flanges, strainers, flexible connections, and expansion joints.

3.2.5 Provide an insert, not less than 6 inches long, of same thickness and contour as adjoining insulation, between support shield and piping, but under the finish jacket, on piping 2 inches diameter or larger, to prevent insulation from sagging at support points. Inserts shall be cork or other heavy density insulating material suitable for the planned temperature range. Factory fabricated inserts may be used. Insert shall extend around bottom 120 degrees of pipe barrel and shall be included inside vapor barrier jacket where applied. See Section 15140 for shields and hangers.

3.2.6 Neatly finish insulation at supports, protrusions, and interruptions.

3.2.7 Jackets

3.2.7.1 Indoor, Concealed Applications: Insulated pipes shall have standard jackets, with vapor barrier, factory-applied or field-applied. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe, and finish with glass cloth and adhesive. PVC jackets may be used.

3.2.7.2 Indoor, Exposed Applications: For pipe exposed in mechanical equipment rooms or in finished spaces, insulate as for concealed applications. Finish with canvas jacket; size for finish painting. Do not use PVC jackets.

3.2.7.3 Flanges, Valves, Anchors and Fittings: Unless otherwise specified, all flanges, valves, anchors and fittings shall be insulated with factory pre-molded or field fabricated segments of insulation of the same materials and thickness as the adjoining pipe insulation. When segments of insulation are used, elbows shall be provided with not less than three segments. For other fittings and valves, segments shall be cut to required curvatures, or nesting size sectional insulation shall be used. The segments of the insulation shall be properly placed and jointed with fire-resistant adhesive. After the insulation segments are firmly in place, fire-resistant vapor barrier coating shall be applied over the insulation in two coats with glass tape embedded between coats. The coating shall be applied to a total dry film thickness of 1/16 inch minimum. All glass tape seams shall be terminated neatly at the ends of the unions with insulating cement troweled on the bevel. For piping operating below ambient temperature, the beveled ends shall receive a coat of vapor barrier coating. Where anchors are used and secured directly to low temperature piping, they shall be insulated for a distance to prevent condensation, but not less than 6 inches from the surface of the pipe insulation. For jacket facing to receive finish painting, the factory applied jacket shall be as specified herein, except that the kraft paper shall be light colored with the kraft paper exposed. Field applied vapor barrier jacket shall conform to the above conditions where finish painting is required.

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PIPING	INSULATION		PIPE SIZE	THICKNESS	
	TYPE			Inch	Inch
Domestic Hot Water Supply		A/B	all		1
Domestic Cold Water	A/B		all		1
Copper Water Piping Below Slab and Inside Walls	B		all	1/2	
Cold Condensate Drains	A/B		all		1/2
Above Grade Closed Circuit Hydronic Piping		A/B	all		1(A), 1/2 (B)
Chrome Plated Piping To Handicapped Lavatories		C	all		1/2
Chrome Plated Piping to Plumbing Fixtures				NONE	

Note: All insulation must meet or exceed ASHRAE 90.1 - 2012

END OF SECTION 15260

SUBMITTALS

In accordance with the requirements of the General Conditions and Supplementary General Conditions, the following information is required to be submitted for this Section. The Contractor shall submit 6 copies of the required information to Architect for approval within 30 days after notice to proceed.

	S H O P D R A W I N G S	C A T A L O G D A T A	P A R T S L I S T S	O P E R A T I N G M A N U A L	W I R I N G D I A G R A M	C E R T I F I C A T I O N	S A M P L E S	
ITEM DESCRIPTION								OTHER
Insulation	X	X					X	

SECTION 15410 - PLUMBING PIPING

PART 1 - GENERAL

- 1.1 WORK INCLUDED
 - 1.1.1 Pipe and Pipe Fittings
 - 1.1.2 Valves
 - 1.1.3 Sanitary Sewer Piping System
 - 1.1.4 Soft Water Water Piping System
 - 1.1.5 Domestic Water Piping System
 - 1.1.6 Domestic Hot Water Piping System
- 1.2 RELATED WORK
 - 1.2.1 Section 15050 - Basic Materials and Methods
 - 1.2.2 Section 15140 - Supports and Anchors
 - 1.2.3 Section 15190 - Mechanical Identification
 - 1.2.4 Section 15242 - Vibration Isolation
 - 1.2.5 Section 15260 - Piping Insulation
 - 1.2.6 Section 15430 - Plumbing Specialties
 - 1.2.7 Section 15440 - Plumbing Fixtures
- 1.3 QUALITY ASSURANCE
 - 1.3.1 Valves: Manufacturer's name and pressure rating marked on valve body.
 - 1.3.2 Welding Materials and Procedures: Conform to ASME Code.
 - 1.3.3 Welders Certification: In accordance with ANSI/ASME Section 9.

PART 2 - PRODUCTS

- 2.1 SANITARY SEWER PIPING, BURIED INSIDE AND OUTSIDE OF BUILDING.
- 2.1.1 Cast Iron Pipe: ASTM A74, extra heavy or service weight. Fittings: Cast iron. Joints: ASTM C564, neoprene gasketing system
- 2.1.2 PVC Pipe: ASTM D2665. Fittings: PVC. Joints: ASTM D2855, solvent weld. PVC Pipe: ASTM D3033 and D3034 SDR26 and SDR35 for sewer lines outside of building only, joints ASTM D 3212, elastomeric seal.
- Provide tracer wire for all non metallic piping.
- 2.1.3 Piping below slab in kitchen and extending from the kitchen to the exterior of the building shall be cast iron.
- 2.2.2 PVC Pipe: ASTM D1785, Schedule 40. Fittings: ANSI/ASTM D2466, PVC. Joints: ASTM D2855, solvent weld.
- 2.2.3 Provide clean out plug at all 90 degree turns in main pipe loop.
- 2.3 WATER PIPING, INTERIOR
- 2.3.1 Copper Tubing: ASTM B88, Type K below slab, Type L above slab. Fittings: ANSI/ASME B16.23, cast brass, or ANSI/ASME B16.29, wrought copper. Joints: ANSI/ASTM B32, solder, Grade 95TA on piping smaller than 2 1/2", use grooved fittings and couplings(CTS) on pipe and fittings larger than 2/12".
- 2.4 FLANGES, UNIONS, AND COUPLINGS
- 2.4.1 Pipe Size 2 Inches and Under: 150 psig, malleable iron unions for threaded ferrous piping; Schedule 40 250 psig malleable iron unions for threaded ferrous piping, Schedule 80 malleable unions for copper pipe, soldered joints.
- 2.4.2 Pipe Size Over 2 Inches: 150 and 300 psig as required by equipment , forged steel slip-on flanges for ferrous piping; bronze flanges for copper piping; neoprene gaskets for gas service; 1/16 inch thick preformed neoprene bonded.
- 2.4.3 Grooved and Shouldered Pipe End Couplings: Malleable iron housing clamps to engage and lock, designed to permit some angular deflection, contraction, and expansion; "C" shape composition sealing gasket; steel bolts, nuts, and washers; galvanized couplings for galvanized pipe and copper couplings and fittings for

copper pipe(CTS).

2.4.4 Dielectric Connections: Union with galvanized or plated steel threaded end, copper solder end, water impervious isolation barrier.

2.5 ACCEPTABLE MANUFACTURERS - GATE VALVES (150# WOG)

2.5.1 Lunkenheimer, Jenkins, Crane, Nibco and Grinnel.

2.6 GATE VALVES

2.6.1 Up to 2 Inches: Bronze body, rising stem and handwheel, inside screw, single wedge or disc, solder or threaded ends.

2.6.2 Over 2 Inches: Iron body, bronze trim, rising stem and handwheel, OS&Y, single wedge, flanged or grooved ends.

2.7 ACCEPTABLE MANUFACTURERS - BALL VALVES

2.7.1 Crane, Grinnel, Lunkenheimer, Nibco, and Jenkins.

2.7.2 BALL VALVES

2.7.3 Up to 2 Inches: Bronze body, stainless steel ball, teflon seats and stuffing box ring, ever handle and balancing stops, threaded ends with union.

2.7.4 Over 2 Inches: Cast steel body, chrome plated steel ball, teflon seat and stuffing box seals, lever handle or gear drive handwheel for sizes 10 inches and over, flanged.

2.8 ACCEPTABLE MANUFACTURERS - SWING CHECK VALVES (150# WOG)

2.8.1 Lunkenheimer, Crane, Jenkins, Nibco, and Grinnell.

2.9 SWING CHECK VALVES

2.9.1 Up to 2 Inches: Bronze 45 degree swing disc, solder or screwed ends.

2.9.2 Over 2 Inches: Iron body, bronze trim, 45 degree swing disc, renewable disc and seat, flanged ends.

2.10 ACCEPTABLE MANUFACTURERS - SPRING LOADED CHECK VALVES

2.10.1 Mueller and Durocheck.

- 2.10 SPRING LOADED CHECK VALVES
 - 2.10.1 Iron body, bronze trim, spring loaded, renewable composition disc, screwed, wafer, or flanged ends.
- 2.11 ACCEPTABLE MANUFACTURERS - WATER PRESSURE REDUCING VALVES
 - 2.11.1 Watts
- 2.12 ACCEPTABLE MANUFACTURERS - RELIEF VALVES
 - 2.12.1 Consolidated, Kunkel, Thrush, Watts.
- 2.13 RELIEF VALVES
 - 2.13.1 Bronze body, teflon seat, steel stem and springs, automatic, direct pressure actuated, capacities ASME certified and labeled.

PART 3 - EXECUTION

- 3.1 PREPARATION
 - 3.1.1 Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.
 - 3.1.2 Remove scale and dirt, on inside and outside, before assembly.
 - 3.1.3 Prepare piping connections to equipment with flanges or unions.
- 3.2 INSTALLATION
 - 3.2.1 Provide non-conducting dielectric connections wherever jointing dissimilar metals.
 - 3.2.2 Route piping in orderly manner and maintain gradient.
 - 3.2.3 Install piping to conserve building space and not interfere with use of space.
 - 3.2.4 Group piping whenever practical at common elevations.
 - 3.2.5 Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.
 - 3.2.6 Provide clearance for installation of insulation and access to valves and fittings.

- 3.2.7 Provide access where valves and fittings are not exposed.
- 3.2.8 Slope water piping and arrange to drain at low points.
- 3.2.9 Establish elevations of buried piping outside the building to ensure not less than 3 feet of cover.
- 3.2.10 Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welding.
- 3.2.11 Prepare pipe, fittings, supports, and accessories not prefinished, ready for finish painting.
- 3.2.12 Establish invert elevations, slopes for drainage to be 1/8 inch per foot one percent minimum. Maintain gradients.
- 3.2.13 Excavate in accordance with Section 15010 for work of this Section.
- 3.2.14 Backfill in accordance with Sections 15010 for work of this Section.
- 3.2.15 Install bell and spigot pipe with bell end upstream.
- 3.2.16 Install valves with stems upright or horizontal, not inverted.
- 3.3 APPLICATION
- 3.3.1 Use grooved mechanical couplings and fasteners only in accessible locations.
- 3.3.2 Install unions downstream of valves and at equipment or apparatus connections.
- 3.3.3 Install brass male adapters each side of valves in copper pipe system. Sweat solder adapters to pipe.
- 3.3.4 Install ball valves for shut-off and to isolate equipment, part of systems, or vertical risers. Install gate valves to isolate boilers.
- 3.3.5 Install ball valves for throttling, bypass, or manual flow control services.
- 3.3.6 Provide spring loaded check valves on discharge of water pumps.
- 3.3.7 Do not install above grade piping in areas subject to freezing. Where such area is encountered, notify the engineer for instruction.

DISINFECTION OF DOMESTIC WATER PIPING SYSTEM

- 3.4.1 Prior to starting work, verify system is complete tested, flushed and clean.
- 3.4.2 Ensure PH of water to be treated is between 7.4 and 7.6 by adding alkali (caustic soda or soda ash) or acid (hydrochloric).
- 3.4.3 Inject disinfectant, free chlorine in liquid, powder, tablet or gas form, throughout system to obtain 50 to 80 mg/L residual.
- 3.4.4 Bleed water from outlets to ensure distribution and test for disinfectant residual at minimum 15 percent of outlets.
- 3.4.5 Maintain disinfectant in system for 24 hours.
- 3.4.6 If final disinfectant residual test less than 25 mg/L, repeat treatment.
- 3.4.7 Flush disinfectant from system until residual equal to that of incoming water or 1.0 mg/L.
- 3.4.8 Take samples no sooner than 24 hours after flushing, from outlets and from water entry, and analyze in accordance with AWWA C601.

END OF SECTION 15410

SUBMITTALS

In accordance with the requirements of the General Conditions and Supplementary General Conditions, the following information is required to be submitted for this Section. The Contractor shall submit 11 copies of the required information to Architect for approval within 30 days after notice to proceed.

ITEM DESCRIPTION	S H O P D R A W I N G S	C A T A L O G D A T A	P A R T S L I S T S	O P E R A T I N G M A N U A L	W I R I N G D I A G R A M	C E R T I F I C A T I O N	S A M P L E S	O T H E R
Sewer Piping	X	X						
Domestic Water Piping	X	X						
Soft Water Piping	X	X						
Valves	X	X						

SECTION 15420 – HOT WATER MIXING/TEMPERING VALVE

PART 1 GENERAL

1.1 Summary

The bases for design is Heat-Timer ETV Platinum Plus mixing/tempering valve and controls.

A. Section Includes:

1. Domestic Hot Water Electronic Mixing/Tempering Valve and Controls.

B. Related Sections:

1. Conforms to applicable code requirements of all authorities having jurisdiction.

1.2 References

A. International Organization for Standardization (ISO)

1. Manufacturer shall be ISO 9001:2008 Quality Management Systems Certified.

B. Underwriters Laboratories, Inc. (UL):

1. Tested per standard 916, Temperature Indicating and Regulating Equipment.

C. CSA International

1. Tested and certified per standard NSF/ANSI 61.

D. California Domestic Water Lead-Free Law AB1953

1. Tested and certified per standard NSF/ANSI 61.

1.3 Quality Assurance

A. Manufacturer's Quality System:

1. Registered to ISO 9001:2008 Quality Standard.
2. The control must be UL tested and certified per standard 916, Temperature Indicating and regulating Equipment.
3. The control and valve shall be certified to comply with ASSE 1017.
4. The control and valve shall be certified to comply with NSF/ANSI 61.
5. The control and valves shall be certified to comply with California Lead-Free AB1953 code.
6. The control and valves shall be certified to be installed in Massachusetts.

1.4 Control Operation

A. Description: The control shall operate on 120VAC, with a maximum power of 48 VA. The control shall be pre-engineered and programmed for the direct valve actuator operation in a domestic hot water heating system or the regulation of system water temperature in domestic hot water heating applications. It shall incorporate the following components:

1. **Control:** A microprocessor Electronic Tempering Valve control with PID-type logic, built-in transformer, digital display of temperature and set point, and LED indicator. It shall be capable of controlling a set point range from 40°F to 200°F (4.5°C to 93.3°C). It shall display the valve opening percentage to match actuator percent. The control shall maintain set point temperature within $\pm 2^\circ$ during a domestic draw of 0.5 gpm to full flow capacity in accordance with ASSE 1017.
2. **Actuator:** An actuator/Motor and linkage capable of traveling the complete valve stroke from fully OPEN to fully CLOSE in less than 20 seconds. It shall calibrate to the actual valve stroke. The actuator is also capable of operating in the reverse direction, allowing the interchangeability of the HOT and COLD connections to the valve body.

3. **Stainless Steel Valve:** An NPT threaded 3-way mixing valve with 304 stainless steel body and trim (*Meets California AB1953 and Massachusetts domestic water codes*). The maximum operating temperature of the valve shall be 300°F (149°C) with a maximum working pressure of 225 psi.
 4. **Sensor:** Temperature sensor of the thermistor type that can measure from -30°F to 250°F (-34.5°C to 121 °C).
- B. Sequence of Operation:** The control shall modulate the mixing valve to match the set point.
- C. Features:**
1. **Setpoint:** The control shall offer the user the ability to adjust the setpoint using a menu option and it shall display the setpoint at all times on the default screen.
 2. **Modes of Operation:** The control shall operate in one of three modes: as an electronic tempering valve, as a high temp alarm / safeguard.
 3. **Remote Setpoint:** The control shall offer a 4-20mA remote setpoint option to allow a BMS (Building Management System) to remotely change the setpoint.
 4. **Schedules:** The control shall offer the user the ability to set a schedule where the control overrides the setpoint and sets an absolute water temperature. The control shall offer schedules for each day, every day, weekdays only, and weekends only. Up to four periods can be configured per day.
 5. **Flow Switch:** The control shall offer an input that can accept a dry-contact flow switch to detect when no water flow is detected.
 6. **Auto Calibration:** After initial startup calibration, the actuator/motor shall automatically calibrate itself to the valve attached.
 7. **Multiple Actuator Connection:** The control shall be capable of operating multiple valves piped in parallel with a single 0-10Vdc output signal.
 8. **Display:** The control shall have an alphanumeric display. All control operation information shall be available for display.
 9. **Memory and Backup:** The control shall store all configuration and settings on EEPROM. In case of power failure, the control shall be able to retrieve all of its latest settings when power is restored.
 10. **Sensor Inputs:** The control shall be capable of supporting three standard sensor inputs. One sensor input shall be of the thermistor type. Thermistor operating temperature range shall be -30°F to 250°F (-34.5°C to 121 °C). Should the sensor show a fault condition, the control shall automatically close the hot port of the valve until the situation is rectified. Two sensor inputs shall be auxiliary inputs capable of being configured as temperature sensors or switch sensors. When configured as a switch sensor, the sensors detect open or close. When configured as a temperature sensor, the sensor monitors water or other system temperatures.
 11. **Alarm / Safeguard Option:** The control shall have a manual reset button that will exit the control from its alarm status. The reset function shall only work when the temperature has dropped below the alarm setpoint. When connected to a safety valve (motorized ball valve), the control will power the valve close, turn on an alarm indicator, and energize both alarm relays for optional external alarms. When the alarm is corrected and the control is reset, the control will power the valve open for normal operation.
 12. **Remote Communication Option:** The control shall be capable of communicating remotely, allowing the user the ability to view and change control settings. The control shall be capable of supporting the following communication options:
 - RINET / Internet
 - BACnet IP
 - BACnet MSTP
 - MODBUS (RTU)The control communication option can be installed directly from the factory or as a field upgrade option installed by a qualified Field Technician.

1.5 Regulatory Approvals

A. Underwriters Laboratories, Inc. (UL)

1. The control shall be tested per standard 916, Temperature Indicating and Regulating Equipment.

B. American Society of Sanitary Engineers (A.S.S.E.)

1. The control, valve, and actuator/motor shall be certified to comply with ASSE code 1017.

C. CSA International

1. The control and valve shall be certified to comply with NSF/ANSI 61.

D. California Domestic Water Lead-Free Law AB1953

1. The valve shall be certified to comply with California Lead-Free Fixture AB1953 (*applies to stainless steel valves only*).

SUBMITTALS

In accordance with the requirements of the General Conditions and Supplementary General Conditions, the following information is required to be submitted for this Section. The Contractor shall submit 9 copies of the required information to Architect for approval within 30 days after notice to proceed.

ITEM DESCRIPTION	S H O P D R A W I N G S	C A T A L O G D A T A	P A R T S L I S T S	O P E R A T I N G M A N U A L	W I R I N G D I A G R A M	C E R T I F I C A T I O N	S A M P L E S	OTHER
Hot Water Mixing/Tempering Valve	X	X	X	X	X	X		O & M Manual

SECTION 15430 - PLUMBING SPECIALTIES

PART 1 - GENERAL

- 1.1 WORK INCLUDED
 - 1.1.1 Manholes
 - 1.1.2 Grease Trap
 - 1.1.3 Backflow Preventors
 - 1.1.4 Water Hammer Arrestors
 - 1.1.5 Hose Bibbs Hydrants
- 1.2 SEE DRAWINGS FOR FURTHER CONDITIONS, REQUIREMENTS, AND SCHEDULES.
- 1.3 RELATED WORK
 - 1.3.1 Section 15140 - Supports and Anchors
 - 1.3.2 Section 15410 - Plumbing Piping
 - 1.3.3 Section 15440 - Plumbing Fixtures
- 1.4 REFERENCES
 - 1.4.1 ANSI/ASSE 1012 - Backflow Preventers with Immediate Atmospheric Vent
 - 1.4.2 ANSI/ASSE 1011 - Hose Connection Vacuum Breakers
 - 1.4.3 ANSI/ASSE 1013 - Backflow Preventers, Reduced Pressure Principle
 - 1.4.4 ANSI/ASSE 1019 - Wall Hydrants, Frost Proof Automatic Draining Anti-Backflow Types
 - 1.4.5 ANSI A112.26.1 - Water Hammer Arresters
 - 1.4.6 ASTM C478 - Precast Reinforced Concrete Manhole Sections
 - 1.4.7 PDI WH-201 Water Hammer Arresters

1.5 QUALITY ASSURANCE

1.5.1 Manufacturer: For each product specified, provide components by same manufacturer throughout.

PART 2 - PRODUCTS

2.1 MANHOLES

2.1.1 Concrete blocks or standard reinforced precast concrete sections in accordance with ASTM C 478 laid on cast-in-place reinforced concrete foundation pad.

Formed bottom manholes shall be 48 inch diameter with standard cast iron manhole cover, with minimum sized pickhole, and frame. Use heavy duty cover and frame in vehicular traffic areas. Provide 3/4 inch diameter galvanized steel steps on 16 inch centers.

2.2 BACKFLOW PREVENTERS

2.2.1 Reduced Pressure Backflow Preventers: ANSI/ASSE 1013; bronze body with bronze and plastic internal parts and stainless steel springs; two independently operating, spring loaded check valves; diaphragm type differential pressure relief valve located between check valves; third check valve which opens under back pressure in case of diaphragm failure; non-threaded vent outlet; assembled with two gate valves, strainer, and four test cocks.

2.2.2 Double Check Valve Assemblies: ANSI/ASSE 1012; Bronze body with corrosion resistant internal parts and stainless steel springs; two independently operating check valves with intermediate atmospheric vent.

2.3 WATER HAMMER ARRESTORS

2.3.1 ANSI A112.26.1; sized in accordance with PDI WH-201, precharged suitable for operation in temperature range -100 to 300 degrees F and maximum 250 psig working pressure.

2.4 HOSE BIBBS/HYDRANTS

2.4.1 Bronze or brass, replaceable hexagonal disc, hose thread spout, chrome plated where exposed with vacuum breaker in conformance with ANSI/ASSE 1011.

2.4.2 ANSI/ASSE 1019; non-freeze, self-draining type, chrome plated hose thread spout, removable key, and vacuum breaker.

2.5 GREASE TRAP

- 2.5.1 Provide a precast concrete Grease Trap as detailed on Drawings. Grease Trap shall be cast using 4500 psi concrete with required reinforcing.
- 2.5.2 Openings for manholes and pipe connections shall be cast into Grease Trap.
- 2.5.3 Cast iron frame and cover with 22-1/2 dia. opening and 7" high frame. Manufacturers offering products complying with requirements include:
Neenah; R-1786
Clow Co.
J.R. Hoe Co.
- 2.5.4 Install Grease Trap with bottom level.
- 2.5.5 Holding capacity shall be 1000 gallons minimum.

PART 3 - EXECUTION

- 3.1 Install specialties in accordance with manufacturer's instructions to permit intended performance.
- 3.2 Install water hammer arrestors complete with accessible isolation valve.

END OF SECTION 15430

SUBMITTALS

In accordance with the requirements of the General Conditions and Supplementary General Conditions, the following information is required to be submitted for this Section. The Contractor shall submit 11 copies of the required information to Architect for approval within 30 days after notice to proceed.

ITEM DESCRIPTION	S H O P D R A W I N G S	C A T A L O G D A T A	P A R T S L I S T S	O P E R A T I N G M A N U A L	W I R I N G D I A G R A M	C E R T I F I C A T I O N	S A M P L E S	OTHER
Backflow Preventors	X	X						
Water Hammer Arrestors	X	X						
Hose Bibbs/Hydrants	X	X						

SECTION 15950 - SYSTEMS BALANCING

PART 1 - GENERAL SPECIFICATIONS

1.1 DESCRIPTION OF WORK

The total system balance shall be performed by an independent test and balance firm that specializes in testing and balancing of HVAC building systems.

1.1.1 This specialty firm shall perform the following:

1. On-going job site inspections of equipment, controls and metering devices during construction to verify conformance with design specifications.
2. System Balance of all
 - a. Domestic Hot Water Return loop to main return piping

1.2 DEFINITIONS

1.2.1 ASHRAE: American Society of Heating, Refrigerating and Air Conditioning Engineers.

1.2.2 HVAC: Heating, Ventilating and Air Conditioning Systems.

1.2.4 TAB: Testing, Adjusting and Balancing of HVAC systems to meet design objectives and obtain optimum system performance.

1.2.5.1.1.1.1 TBE: Test and Balance Engineer is an individual certified by AABC or NEBB as having a degree in engineering and 3 years of test and balance experience, or, 5 years of background in the air conditioning field and 5 years continuous field experience in testing and balancing work.

PART 2 - REFERENCES

2.1 1999 ASHRAE Handbook, HVAC Applications, Chapter 36, Testing, Adjusting and Balancing.

PART 3 - AGENCY QUALIFICATIONS

3.1 Testing and Balancing (TAB) Agency shall be a member of the AABC or NEBB.

- 3.2 A certified Test-and-Balance Engineer (TBE) shall be responsible for certification of the total work of this section.
- 3.3 All work shall be performed in accordance with AABC National Standards. If these specifications set forth more stringent requirements than the AABC National Standards, these specifications shall prevail.

PART 4 - SUBMITTALS

- 4.1 Testing and Balancing (TAB) Agency shall submit a company resume listing personnel and project experience in the field of air and hydronic system balancing.
- 4.2 Within 30 days after acceptance of the contract, the TAB Agency shall submit to the Design Engineer a working agenda which will include procedures for testing and balancing each type of air and water flow system. The Test and Balance Report format will also be submitted indicating data to be recorded and format.

PART 5 - CONTRACT DOCUMENTS

- 5.1 Within 30 days after selection of the Test and Balance (TAB) Agency, the Architect/Engineer shall provide:
1. Construction Drawings
 2. Equipment Specifications
- 5.2 The TAB Agency shall be provided the following as issued or received:
1. Change Orders
 2. Equipment Manufacturer's Submittal Data
 3. Mechanical/Air Conditioning Contractor's Shop Drawings
 4. Temperature Control Drawings
 5. Project Schedule

PART 6 - NOTIFICATION AND SCHEDULING

- 6.1 A pre-balance conference shall be held prior to job starting as scheduled by the Owner or Engineer. Attendees at the meeting shall include representatives of the Test and Balance (TAB) Agency, General Contractor, Sub Contractor, Owner and Engineer.
- 6.2 The schedule for testing and balancing the Water systems shall be established by the Owner, or Engineer, in coordination with the TAB Agency on a critical path network.
- 6.3 The TAB Agency is responsible for initiating this continuing coordinating to

determine schedule for final testing and balancing services.

- 6.4 It will be necessary for the TAB Agency to perform its services in close coordination with the Mechanical Contractor, or others with all scheduling and deficiencies reported through the Owner and Engineer.
- 6.5 Before testing and balancing commences, the TAB Agency shall receive notification in writing from the Mechanical Contractor that the system is operational, complete and ready for balancing.
- 6.6 A completed system means more than just physical installation. The Mechanical Contractor shall certify that all prime movers; fans, pumps, refrigeration machines, boilers, etc., are installed in good working order, and that full load performance has been preliminarily tested.
- 6.7 The Mechanical Contractor shall certify in writing that all equipment has been checked, started and adjusted by the manufacturer and operated for the specified period of time.

PART 7 - COORDINATION WITH OTHER TRADES

- 7.1 To bring the Water systems into a state or readiness for testing adjusting and balancing, the Mechanical Contractor shall perform the following:
- 7.1.1 Water Systems
- 7.1.1.1 Ensure that all boilers, valves, pumps and control valves are properly located and functional. All equipment is ready to go on line when TAB is ready to complete the balance/test.
- 7.2 The temperature control subcontractor shall perform the following:
- 7.2.1 Verify that all control components are installed in accordance with project requirements and are functional, including all electrical interlocks, damper sequences, air and water resets, and fire and freeze stats.
- 7.3 The Owner, or owner's representative, Mechanical Contractor, Temperature Control Subcontractor, and the suppliers of the equipment shall all cooperate with the TAB Agency to provide all necessary data on the design and proper application of the system components. In addition, they shall furnish all labor and materials required to eliminate any system deficiencies.

PART 8 - INSTRUMENTATION

SYSTEMS BALANCING

- 8.1 The TAB Agency shall furnish all necessary calibrated instrumentation to adequately perform the specified services.

PART 9 - PROCEDURES

9.1 ON-GOING JOB SITE INSPECTIONS

- 9.1.1 During construction, the balancing agency shall inspect the installation of pipe systems, sheet metal work, temperature controls, and other component parts of the Water systems. Inspections shall be conducted a minimum of 3 times. (Typically this is performed when 60% of the duct work is installed and again when 90% of the total system is installed and prior to insulation of the piping.)

- 9.1.2 The balancing agency shall submit a written report of each inspection to the Owner, Engineer, and the Contractors responsible for correcting noted deficiencies.

- 9.1.3 Check for necessary balancing hardware (dampers, flow meters, valves, pressure taps, thermometer wells, etc.) to determine if they are installed properly and readily accessible.

- 9.1.4 Identify and evaluate any variations from system design.

9.2 WATER SYSTEM TEST AND BALANCE PROCEDURES

- 9.2.1 Hot Water Return Pump– Adjust the balance valve on each of the domestic hot water return piping so that it is with-in the total return of 42 GPM.

PART 10 - RECORD and REPORT DATA

- 10.1 The Test and Balance Report shall be complete with logs, data and records as required herein. All logs, data and records shall be typed on white bond paper and bound. The report shall be certified accurate and complete by the Testing and Balancing (TAB) Agency's certified Test and Balance Engineer.

- 10.2 Three (3)Copies of the Test and Balance Report are required and shall be submitted to the Owner, or Engineer.

- 10.3 The report shall contain the following general data in a format selected by the TAB Agency.

1. Project number.
2. Contract number.
3. Project title.

4. Project location.
5. Project architect.
6. Project mechanical engineer.
7. Test and Balance Engineer.
8. General contractor.
9. Mechanical subcontractor.
10. Date tests were performed.
11. Certification.

10.4 The Test and Balance Report shall be recorded on report forms conforming to the recommended forms in AABC National Standards. At a minimum, the report shall include:

10.4.1 Preface: a general discussion of the system, any abnormalities and problems encountered.

10.4.2 Instrumentation List: the list of instruments including type, model, manufacturer, serial number, and calibration dates.

10.4.3 Equipment

- Domestic Hot Water Pump
- Domestic Hot Return Balance Valves

10.4.4 The following shall be included for the equipment.

- a. Manufacturer, model number, and serial number.
- b. All design and manufacturer related data.
- c. Final adjustments

END OF SECTION 15950

SECTION 16100 - GENERAL PROVISIONS

PART 1 - GENERAL

- 1.1 The General and Special Conditions and all other Contract Documents are applicable to work under this section of the specifications. All the work under this section of the specifications shall be governed by any alternates and unit prices called for in the FORM OF PROPOSAL insofar as they affect this portion of the work.
- 1.2 Include furnishing of all labor, materials, equipment and other related items required to complete the work called for and indicated on the Contract Drawings and specified for a complete system, including excavation, backfilling and tamping. Classification of excavation and payment for same shall be in accordance with applicable provisions of these specifications.
- 1.3 Abbreviations of organizations and publications:
- NEC - National Electrical Code
 - UL - Underwriters Laboratories, Inc.
 - IPCEA - Insulated Power Cable Engineers Association
 - ANSI - American National Standards Institute
 - OSHA - Occupational Safety Health Act
 - IMC - International Mechanical Code
- 1.4 All materials shall be new and the best of their respective kinds unless otherwise specified and shall be listed by UL and shall be so labeled. All equipment shall conform to the latest approved standards of the IEEE, NEMA, ANSI and OSHA.

PART 2 - COOPERATION

- 2.1 Check with other trades on the scope of their work and coordinate on all locations of various items of equipment and outlets before they are finally placed and connected. Any relocation of material or equipment necessitated by failure to coordinate work shall be at no cost to the Owner.
- 2.2 Do not cut the work of any other trade without first consulting the Engineer's representative. Repair any work damaged employing the services of the trade whose work is damaged.

PART 3 - DRAWINGS AND SPECIFICATIONS

- 3.1 The contract drawings and specifications are intended to cover all work enumerated under the respective headings. Examine all contract drawings and specifications to determine any references to work of an electrical nature and be guided accordingly in

prosecuting the electrical work. The contract drawings are diagrammatic only, as far as final location is concerned. Any item of work not clearly included, specified or shown, and any errors or conflict between contract drawings, specifications, codes and field conditions shall be clarified by a written request to the architect prior to bidding; otherwise all labor and materials required to make good any damage or defect in finished work caused by such error, omission or conflict shall be provided at no additional cost to the Owner.

PART 4 - CODE COMPLIANCE, INSPECTION AND CERTIFICATES

- 4.1 The minimum standards for all electrical work shall be the 2012 revision of the NEC. Whenever and wherever OSHA and/or federal, state, and/or local laws or regulations and/or design require higher standards than the NEC, then these laws and/or regulations and/or design shall be followed.
- 4.2 Electrical Inspections will be performed throughout the course of construction by a certified electrical inspector. This Contractor is to pay for all permit and inspection fees. Upon project completion and when wiring, equipment and fixtures have been installed, inspected and found to be in compliance with the latest National Electrical Code, the inspector shall issue a certificate of compliance to the Owner.

PART 5 - CLEANING

- 5.1 At the completion of the work required under this contract and just prior to acceptance by the Owner, thoroughly clean all exposed equipment fittings, fixtures and accessories.

PART 6 - CONNECTIONS TO EQUIPMENT BY OTHERS

- 6.1 Provide all conduit, boxes and wire with required connections, including any disconnect switches called for by NEC to all electrically powered or controlled equipment furnished and set in place by others. Examine all divisions of the specifications and all contract drawings to determine location and size of all electrically powered or controlled equipment.
- 6.2 Install and provide required connections to phase failure relays in all three-phase equipment provided by others. Phase failure relays will also be provided by others. Coordinate with work detailed in the Division 15000 specifications.

PART 7 - PHASING

- 7.1 Verify the rotation of all three phase motors with the trade furnishing equipment.

These motors shall be "bumped" or run uncoupled in the presence of the trade furnishing the equipment to insure proper rotation.

PART 8 - SPECIAL NOTE

- 8.1 All openings in electrical equipment, enclosures, cabinets, outlets and junction boxes shall be by means of standard knockouts or shall be sawed or drilled. The use of a cutting torch is prohibited.

PART 9 - PIPE SLEEVES AND FIRE RATING OF OPENINGS

- 9.1 Holes through walls and ceilings, chases, shafts, etc., for the passage of cable or conduit shall be made so as to substantially preserve the integrity of the fire rating of such surfaces or passages in accordance with NEC 300-21.

PART 10 - LABELING

- 10.1 All lighting and power panels, and boxes, switches in distribution equipment, safety switches for remote equipment and all other items noted for labeling shall be properly identified in accordance with the designations shown on the drawings or the function they perform. Existing panels and distribution equipment shall be relabeled as indicated or noted on drawings.
- 10.2 Labels shall be 1/4" high, white letters on laminated phenolic engraving stock suitably cemented to the inside of the recessed panels and on the face of surface mounted panels and other equipment.

PART 11 - FISH WIRE

- 11.1 All conduit required under this contract which do not receive conductors, shall be provided with a 14 gauge galvanized steel fish wire or approved nylon wire.

PART 12 - "OR EQUAL" CLAUSE

- 12.1 The specifications covering this work are open; wherever a specific manufacturer's item is specified, it is intended as a standard to be met and items which are approved equal or superior will be accepted.

PART 13 - WARRANTY

- 13.1 All equipment shall be warranted for a period of at least one (1) year from the date of acceptance, as evidenced by date of substantial completion for the entire project of for the last phase of the project, whichever occurs later, against defective materials, design, and workmanship. In addition to the equipment warranty, the Contractor shall provide all repair and adjustment service necessary for the proper operation of the entire system for the length of the entire warranty period.. Upon receipt of notice from the Owner's representative of failure of any part of the warranted system or equipment during the warranty period, the affected part shall be replaced promptly with a new part without cost to the Owner. Upon failure to take action within 24 hours after being notified, the work will be accomplished by the Engineer at the expense of the Contractor. See General Conditions and individual equipment specifications. Note that the warranty period of time specified in this section represents the minimum warranty period required for work performed under specification Division 16000. Where the General Conditions and/or individual equipment/system specifications require a warranty period of longer duration or earlier start date than specified in this paragraph, the longer duration/earlier start date shall supercede for those portions of work covered by that specification. In the event the contractor is notified of warranty issues but does not correct or address the warranty issues prior to the end of the specified warranty period, the contractor will not be relieved of the responsibility to correct the deficient items after the warranty end date has passed.

END OF SECTION 16100

SECTION 16200 - GENERAL MATERIALS AND INSTALLATION

PART 1 - GENERAL

- 1.1 In general, conduit shall be zinc-coated, rigid steel conduit and shall meet in all respects, the UL Standards for Rigid Steel Conduit. The conduit shall be metallized, galvanized, sherardized, or approved equal.
- 1.2 Rigid thick wall conduit or IMC shall be installed underground, as required or noted and in all concrete construction. Schedule 40 PVC conduit may be used below grade on exterior and below slab on interior of building. Exterior below grade PVC shall be concrete encased. Interior below slab PVC shall have 3" of cover between slab and conduit. If rock is present, provide 4" pad of same material as backfill. All risers through slab shall be with rigid steel elbows and extensions. Electrical metallic tubing may be used in other places unless otherwise noted. All thick wall terminals shall be capped with insulating bushings. Electrical metallic tubing shall be terminated with connectors with insulated throat. Metallined terminating fittings will not be acceptable. All terminating fittings shall be secured to box or cabinet with double lock-nut type of construction. Couplings and connectors for electrical metallic tubing shall be steel and shall be of the compression type. Set screw and indentation type connectors will not be acceptable, except that approved type steel set screw connectors may be used on EMT 2-1/2" or larger on rigid conduit unless otherwise noted.
- 1.3 Refer to drawings for location and use of wiremold.
- 1.3.1 Refer to Drawings for support of conduits on existing roof deck.
- 1.3.2 Runs of conduit or tubing shall have supports spaced in accordance with the NEC, and exposed conduit shall be installed with runs parallel or perpendicular to walls, structural members or intersections of vertical planes and ceilings, with right angle turns consisting of cast metal fittings or symmetrical bends. Bends or offsets shall be avoided where possible but where necessary shall be made with an approved conduit bending machine. Conduit or tubing which has been crushed or deformed in any way shall not be installed. Expansion fittings or other approved devices shall be used to provide for expansion or contraction where conduit or tubing crosses expansion joints. Conduit and tubing shall be supported on an approved type of ceiling trapeze, beam clamps, strap hangers, or pipe straps, secured by means of toggle bolts on hollow masonry units, expansion shields in concrete or brick and machine screws on metal surfaces. The use of tie wire for suspending conduits or securing same to joists, purlins, beams, etc., will not be allowed. Conduit and tubing shall be installed in such manner as to insure against trouble from the collection of trapped condensation, and all runs shall be arranged so as to be devoid of traps wherever possible. All necessary precautions to prevent the lodgment of dirt, plaster, or trash

in conduit or tubing, fittings and boxes during construction shall be taken. A run of conduit or tubing which has become clogged shall be entirely freed of these accumulations or shall be replaced. Conduit shall be securely fastened to all sheet metal outlets, junction and pull boxes with double galvanized locknuts and insulating bushings. All conduit in floors or below grade shall be swabbed free of debris or moisture before wires are pulled.

- 1.4 All underground conduit and conduit below slab shall be protected with (2) heavy coats of asphaltum paint.
- 1.5 The final 18 inch section of conduit connecting each motor shall be liquid tight flexible type.
- 1.6 All conduit shall be installed concealed unless otherwise noted or shown on the drawings.
- 1.7 No conduit smaller than 3/4" shall be used except as noted.
- 1.8 All conduit required under this contract, which do not receive conductors, shall be provided with 14 gauge copper or galvanized steel pull wires for future installation of the conductors by others.
- 1.9 No flexible conduit smaller than 1/2" shall be used except as permitted by NEC 350-3.

PART 2 - OUTLET BOXES

- 2.1 Outlets shall be installed in the locations shown on the contract drawings. The general building plans shall be studied in relation to the spaces surrounding each outlet in order that work under this division of the specifications may fit the work required under other divisions. When necessary, outlets shall be relocated so that when fixtures or other fittings are installed they will be symmetrically located according to room layout and will not interfere with other work or equipment. Only zinc-coated or cadmium plated, sheet-steel boxes according to NEC, of a class to satisfy the conditions for each outlet shall be used in concealed work. Boxes shall be installed in a rigid and satisfactory manner either by wood screws on wood, expansion shields on masonry, or machine screws on steel. Fixture outlet boxes in concrete ceilings shall be four (4") inch octagonal, concrete type, set flush with finished surfaces. Fixture outlet boxes on ceilings shall not be less than 4 inch octagonal.
- 2.2 All supports required for outlet boxes in addition to that furnished under the general building construction, shall be furnished and installed under this division of the specifications. All supports shall be steel.

- 2.3 For masonry or drywall construction, square cornered boxes measuring 3-3/4" high by approximately 2" wide and having interior device mounting holes shall be used.
- 2.4 Single gang boxes for devices shall be not less than 2-1/2" deep unless limited by depth of construction and shall accommodate up to five #12 conductors. When construction depth permits, 3-1/2" deep boxes shall be used for devices where the number of conductors entering a single gang outlet is 6 to 8. Where more than 8 conductors enter an outlet housing a single device, boxes shall be 4" square by 2-1/8" deep to accommodate a maximum of 14 conductors and shall be provided with single device, square cornered tile wall covers of a suitable depth. Where construction depth is limited or to facilitate installation in cavity walls, 4" square boxes 1-1/2" deep may be used with single gang square cornered tile wallcovers in lieu of single gang, 2-1/2" or 3-1/2" deep boxes. Such installation shall be increased to conform with NEC requirements for conductors larger than #12 AWG.
- 2.5 Where two or more devices are to be ganged at one outlet, 3-3/4" high boxes as specified above and with the required number of gangs shall be used. Each gang shall be subject to the same "fill" limitations as for single gang installation.
- 2.6 Partitions shall be provided in ganged boxes as required for conformity with NEC 380-8.
- 2.7 Where tile covers are used they shall be of sufficient depth to bring the box opening within 1/4" of the finished wall surface.
- 2.8 Provide blank metal cover plates for all boxes which do not receive devices.

PART 3 - WIRES AND CABLES (CONDUCTORS)

- 3.1 LOW VOLTAGE (0 - 600V)
- 3.1.1 Branch circuit conductors shall be not smaller than No. 12 A.W.G. Branch circuits longer than 100' shall be run with minimum No. 10 A.W.G. Conductors for signal and pilot control circuits may be No. 14 A.W.G. Conductors shall be continuous from outlet to outlet and no splices shall be made except within outlet or junction boxes. Junction boxes may be utilized where required. Wire connectors of insulating materials or solderless pressure connectors properly insulated shall be utilized for all splices and wiring where possible. Rubber and friction tape shall conform to NEC and be UL approved. Vinyl plastic tape will be acceptable in lieu of rubber and friction tape. For branch circuit wires sizes #6 and smaller, and for fixture wiring, all splices shall be made with approved type crimp-on sleeves with separate outer insulating cap. In lieu of this, preinsulated, twist on torsion spring type connectors equal to "Scotchlok" may be utilized. The use of threaded connectors

with integral insulation of bakelite or other material will not be allowed.

- 3.1.2 Insulation unless otherwise noted shall be thermoplastic Type THHN-THWN. The color code shall be in accordance with the National Electric Code.
- 3.1.3 All building wires shall be as manufactured by Capital, General Electric, General Cable, American, Southwire, US Wire or approved equal.
- 3.1.4 All conductors shall be copper unless otherwise specified.

PART 4 - JUNCTION BOXES AND TERMINAL CABINETS

- 4.1 All junction and terminal cabinets used under this contract shall be constructed of code gauge, galvanized steel and shall be as manufactured by Steel City, Appleton, O-Z/Gedney, RACO, Killark, or approved equal.

PART 5 - WIRING DEVICES

5.1 SWITCHES

- 5.1.1 All switches shall be of the flush tumbler type. All wall switches shall be rated at 20 ampere, 120 volts.

- 5.1.2 Switches shall be as follows, or approved equal:

	Hubbell	Pass & Seymour	Leviton
20A Single Pole	1221	20AC1	1221-2
20A Three Way	1223	20AC3	1223-2

- 5.1.3 Provide key operated switches where indicated.

5.2 RECEPTACLES

- 5.2.1 Convenience outlets shall be 20 amp rated, Hubbell No. 5352, Leviton No. 5362-1 or Pass & Seymour No. 5362-A of the grounding type.

- 5.2.2 GFI weatherproof duplex outlets shall be fully UL 943 compliant with reset, equivalent to Hubbell No. GF 5352A with a Hubbell WP26M cast aluminum cover, or equal by Pass & Seymour, Leviton or Bryant. GFI receptacles with lockout technology will not be acceptable.

5.2.3 All wiring devices shall be one manufacturer and shall be ivory, except in kitchen, mechanical rooms and service platforms, where they will be grey.

5.3 PLATES

All plates for concealed devices shall be smooth ivory nylon, except in kitchen, mechanical rooms, and service platforms, where they shall be stainless steel.

END OF SECTION 16200