

PROJECT MANUAL

**Gualtieri Manor HVAC Piping System
Replacements, AMP-47**

IFB Contract No. 600-24-19

MECHANICAL CONSTRUCTION

Bids Due

June 28, 2019

2:00 pm

Procurement Dept. 100
Ross St.
2nd FL. Suite 200
Pittsburgh, PA 15219

Attn:
Mr. Kim Detrick,
Director of
Procurement

CONSULTANT: D & D Engineering

Issued: June 3, 2019

Caster D. Binion
Executive Director

Housing Authority of the City of Pittsburgh

Point of Contact: Kim.Detrick@hacp.org
or 412-456-5116 Opt 1



Procurement Department
100 Ross Street, Suite 200
Pittsburgh, PA 15219
Phone: (412) 456-5116
Fax: (412) 456-5007
www.hacp.org

NOTICE TO PROSPECTIVE BIDDERS

June 3, 2019

INVITATION FOR BIDS (IFB)

Gualtieri Manor HVAC Piping System Replacements, AMP-47

The HOUSING AUTHORITY OF THE CITY OF PITTSBURGH will receive separate sealed bids for Gualtieri Manor HVAC Piping System Replacements, AMP-47 ; for the following contracts:

MECHANICAL CONSTRUCTION

MECHANICAL CONSTRUCTION

Bid documents will be available on **June 3, 2019** . A Pre-Bid Conference will be held on **June 14, 2019** at **10:00 am** , at 2125 Los Angeles Ave , Pittsburgh, PA 15216

A site visit of the property will be conducted thereafter. Bidders shall be prepared to review all aspects of the site necessary to prepare a bid. The last day for submission of written questions will be **June 21, 2019** until **2:00 pm** *Bids will be received at the HACP Procurement Department, 100 Ross Street – Suite 200 (2nd Floor), Pittsburgh, PA, 15219 until 2:00 pm on June 28, 2019 , at which time and place all bids will be publicly opened and read aloud.*

The work must be substantially complete within 90 calendar days of the Notice to Proceed.

Point of contact for the Housing Authority is Mr. Kim Detrick at (412) 456-5116 Opt 1.

TO VIEW AND OBTAIN DOCUMENTS

Bid Documents, including the Bid Forms, Project Manual, and Drawings, may be obtained from the Business Opportunities Section of the HACP website, www.hacp.org. Prospective Bidders may register as a vendor on the website and download the documents free of charge. Electronic versions of the Bid Documents may also be obtained in person, Monday through Friday 8:30 a.m. to 4:30 p.m. at the Housing Authority of the City of Pittsburgh's Procurement Department, located at 100 Ross Street, Suite 200, Pittsburgh, PA 15219.

AWARD OF CONTRACT (S):

It is the intention of the Authority to award a contract to the lowest responsive and responsible bidder.

All bids shall remain open for the period specified in the IFB, which in no case shall be less than sixty (60) calendar days from the bid opening.

All bids of \$10,000 or more must be accompanied by a negotiable bid guarantee that shall not be less than 5% of the amount of the bid. No bid guarantee is required for bids under \$10,000. In accordance with 2 CFR 200.318(h) formerly 24 CFR Section 85.36(b)(8), the Authority is permitted to make awards only to responsible bidders possessing the ability to perform successfully under the terms and conditions of the proposed contract. Prior to award of any contract, the Authority shall conduct a pre-contract survey. Consideration will be given to such matters as bidder integrity, compliance with public policy, record of past performance, and financial and technical resources.

All bids must include a completed and signed Form of Agreement (Form 00500) as part of the bid. If the bid is successful and approved by HACP Board of Commissioners (if applicable), HACP will also sign the Form of Agreement thus creating a binding contract.

The successful bidder will be required to furnish an assurance of completion (performance and payment bond) each equal to 100% of the contract price.

The Authority reserves the right to reject any or all bids or to waive any informality in the bidding.

EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS:

The Contractor will be required to comply with all applicable Equal Employment Opportunity requirements for Federally-Assisted Construction Contracts. The Contractor must insure that employees and applicants for employment are not discriminated against because of race, color, religion, sexual preference, handicap or national origin.

A. Section 3 Participation

The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C 1701u and with HUD's regulations set forth at 24 CFR Part 135 ("Section 3"). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance shall be directed to low and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

Please describe ways the Bidder will assist HACP to comply with HUD's Section 3 requirements for hiring HACP residents and/or local disadvantaged individuals and businesses by reviewing the Section 3 Clause and by completing **Document 00433 – Section 3 Form**.

Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701, et seq.) (the "Act") requires the Housing Authority of the City of Pittsburgh to ensure that employment and other economic and business opportunities generated by financial assistance from the Department of Housing and Urban Development ("HUD"), to the greatest extent feasible, are directed to public housing residents and other low income persons, particularly recipients of government housing assistance, and business concerns that provide economic opportunities to low and very low income persons.

To comply with the Act HACP requires its contractors to provide equal employment opportunity to all employees and applicants for employment without regard to race, color, religion, sex, national origin, disability, veteran's or marital status, or economic status and to take affirmative action to ensure that both job applicants and existing employees are given fair and equal treatment.

The goal of this policy is to obtain a reasonable level of success in the recruitment, employment, and utilization of HACP residents and other eligible persons and/or businesses by contractors working on contracts partially or wholly funded with HUD monies. HACP shall examine and consider a contractor's potential for success in providing employment and business opportunities to those covered under Section 3 prior to acting on any proposed contract award. In response to any RFP, RFQ or IFB HACP will require submission of the Section 3 Opportunities Plan and roster of current employees, and certification that the bidder will comply with the requirements of Section 3 either by hiring Section 3 employees to directly perform under the contract or by committing a dollar amount to HACP's Section 3 program in an amount consistent with the chart below. Below are the HACP Section 3 Guidelines as listed in the HACP Section 3 Program Manual:

RESIDENT HIRING REQUIREMENTS / RESIDENT HIRING SCALE

TOTAL LABOR DOLLARS USE TOTAL CONTRACT AMOUNT FOR SERVICE CONTRACTS	RESIDENT LABOR AS A % OF TOTAL LABOR A. DOLLARS
Labor dollars \$25,000 but less than \$100,000	10% of the labor dollars
\$100,000, but less than \$200,000	9% of the labor dollars
At least \$200,000, but less than \$300,000	8% of the labor dollars
At least \$300,000, but less than \$400,000	7% of the labor dollars
At least \$400,000, but less than \$500,000	6% of the labor dollars
At least \$500,000, but less than \$1 million	5% of the labor dollars
At least \$1 million, but less than \$2 million	4% of the labor dollars
At least \$2 million, but less than \$4 million	3% of the labor dollars
At least \$4 million, but less than \$7 million	2% of the labor dollars
\$7 million or more	½ to 1 % of the labor dollars

***A copy of HACP's Section 3 Program Manual is available for download at www.hacp.org*

A copy of HUD's Section 3 requirement is provided herein. If you have any questions regarding the Section 3 Requirements or would like to discuss goals and planning for Section 3 Requirements please contact Mr. Lloyd Wilson, Section 3 Coordinator, by e-mail at lloyd.wilson@hacp.org or by contacting him at the Housing Authority of the City of Pittsburgh, Resident Employment Program located at the Bedford Hope Center, 2305 Bedford Ave, Pittsburgh PA 15219, telephone (412) 395-3950, ext. 1048. Proposals must demonstrate how the Offeror intends to meet or exceed the Authority's Section 3 requirements. Proposals submitted without a Section 3 plan may be deemed nonresponsive. Also, please complete **Section 3 Opportunities Plan** and include with your proposal.

Any bid or proposal received from a contractor that does not contain a Section 3 Opportunities Plan or certification and back-up documentation acceptable to HACP shall be deemed non-responsive by HACP.

B. MBE/WBE Participation Plan

HACP MBE and WBE Goals. It is the policy of HACP to ensure that Minority Business Enterprises (MBEs) and Women-owned Businesses (WBEs) are provided maximum opportunity to participate in contracts let by HACP. In accordance with Executive Order 11625, HACP has established a minimum threshold of eighteen percent (18%) of the total dollar amount for MBE utilization in this contract. HACP has established a seven percent (7%) minimum threshold for participation of WBEs, and, HACP strongly encourages and affirmatively promotes the use of MBEs and WBEs in all HACP contracts. For these purposes, an MBE is defined as "any legal entity other than a joint venture, organized to engage in commercial transactions, that is at least fifty-one percent (51%) owned and controlled by one or more minority persons." Also, a minority person is defined as a member of a socially or economically disadvantaged minority group, which includes African-Americans, Hispanic-Americans, Native-Americans, and Asian-Americans. A WBE/MBE is defined as "any legal entity other than a joint venture, organized to engage in commercial transactions, that is at least fifty-one percent (51%) owned and controlled by a female.

Bids or proposals submitted in response to this solicitation MUST include an MBE/WBE participation plan which, at a minimum demonstrates "Best Efforts" have been taken to achieve compliance with MBE/WBE goals. HACP's Procurement Policy defines "Best Efforts" in compliance with MBE/WBE goals to mean that the contractor must certify and document with its bid or proposal that it has contacted in writing at least ten (10) certified MBE and ten (10) certified WBE subcontractors to participate in the proposed contract with or lesser number if the contractor provides documentation that ten (10) certified MBE/WBE contractors could not be identified. Each contractor shall certify as to same under penalty of perjury and shall submit the back-up documentation with its bid or proposal. Any bid or proposal received from a contractor that does not contain such certification and back-up documentation acceptable to HACP may be deemed non-responsive by HACP.

If you have any questions regarding the HACP MBE/WBE goals please contact Mr. Kim Detrick, Director of Procurement, by e-mail at kim.detrick@hacp.org or by contacting him at the Procurement Department, Housing Authority of the City of Pittsburgh, 100 Ross Street, Suite 200 Pittsburgh PA 15219, telephone (412) 456-5116 opt.1. Bids or proposals must demonstrate how the Offeror intends to meet or exceed these goals.

The Authority's Minority and Woman Business (MBE/WBE) participation goals are as follows:

- MBE Goal: 18%
- WBE Goal: 7%

Additionally, please be advised that participation credit will be applied in accordance with the following classifications, as follows:

- Broker: 10% of contract face value
- Supplier: 60% of contract face value
- Bona Fide Contractor: 100% of contract face value
- All Professional Service Firms: 100% of contract face value

Vendor definitions for the above classifications are to be referenced in either the respective vendor MBE/WBE certifications or as defined in 49 CFR Part 26.

Please describe ways the Bidder will utilize MBE/WBE businesses to meet the goals above by completing **Document 00434 – MBE/WBE Solicitation & Commitment Record**.

Caster D. Binion
Executive Director
Housing Authority of the City of Pittsburgh



Development & Modernization
100 Ross Street, Suite 200
Pittsburgh, PA 15219
(412) 456-5020
www.hacp.org

SPECIAL PROVISIONS

NOTICE TO ALL PROSPECTIVE BIDDERS

Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB CONTRACT NO. 600-24-19

Each successful bidder(s) shall be required to comply with the following special provisions:

A. Required Documents/Information

After bid opening and determination of the responsive and responsible bidder, but prior to Notice to Proceed each successful bidder for this project shall provide the following documents/information to HACP within ten (10) business days of receiving written notice thereof:

- (1) Insurance
- (2) Payment and Performance Bonds
- (3) Construction Schedule
- (4) Submittal Log and Corresponding Submittals

Please accept these special provisions by completing the information requested below:

Signature of Authorized Officer: _____ Date: _____

Name of Contractor: _____

Address: _____

Telephone Number: _____

**Gualtieri Manor HVAC Piping System Replacements,
AMP-47**

IFB CONTRACT NO. 600-24-19

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH
DEVELOPMENT & MODERNIZATION DEPARTMENT

100 Ross Street, Suite 200

Pittsburgh, PA 15219

Phone: (412) 456-5020

Fax: (412) 456-5591

Issued: June 3, 2019

HOUSING AUTHORITY OF THE CITY OF
PITTSBURGH
Gualtieri Manor HVAC Piping System Replacements, AMP-47

600-24-19

IFB Contract No. _____

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<i>Instructions To Bidders</i>	HUD 5369 Document 00130	Instructions to Bidders for Contracts Pre-Bid Conference
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PART TWO: CONTRACT FORMS

<i>Bid Forms</i>	Document 00340	Scope of Work for Mechanical Construction
	Document 00341	Form of Bid for Mechanical Construction

<i>Supplements To Bid Forms</i>	Document 00410	Bid Bond
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	Document 00433	Section 3 Opportunities Plan
	Document 00434	MBE/WBE Solicitation & Commitment Record
	Document 00435	Bidder Manpower
	Document 00436	Previous Related Experience
	HUD 5369-A	Representations, Certifications and Other Statements of Bidders
	HUD-2530	Previous Participation Certificate
	Document 00437	Special Provisions – Notice to All Prospective Bidders
	Document 00485	Non-Collusion Affidavit

<i>Agreement</i>	Document 00500	Form of Agreement
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HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB CONTRACT NO. 600-24-19

**INVITATION FOR BIDS
LIST OF DOCUMENTS**

The HOUSING AUTHORITY OF THE CITY OF PITTSBURGH will receive separate sealed bids for Gualtieri Manor HVAC Piping System Replacements, AMP-47, for the following contracts:

MECHANICAL CONSTRUCTION

A complete **Invitation for Bids (IFB)** consists of the following documents:

THE PROJECT MANUAL, dated June 3, 2019 consisting of:

Bidding Requirements, Contract Forms, Conditions of the Contract, Wage Determination, and the Specifications.

THE PROJECT DRAWINGS, as prepared by D & D Engineering, dated March 22, 2019

THE BID PACKAGE, dated June 3, 2019 consisting of a binder containing:

Blank bid document forms to be completed by the bidder;

ADDENDA will be issued as required.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

IDENTIFICATION OF OWNER

The Owner of this project is the Housing Authority of the City of Pittsburgh, a body corporate and politic and created pursuant to the "Housing Authorities Law," an Act passed by the 1937 session of the Legislature of the Commonwealth of Pennsylvania, P.L. 955, approved May 28, 1937, hereinafter variously called the "Housing Authority of the City of Pittsburgh" (HACP), "The Authority," the "Local Housing Authority" (LHA), the "Public Housing Authority" (PHA), or the "Public Housing Authority/Indian Housing Authority" (PHA/IHA).

Caster D. Binion
Executive Director
Housing Authority of the City of Pittsburgh

James D. Harris, Esquire
General Counsel
Housing Authority of the City of Pittsburgh

Kim Detrick
Director of Procurement
Housing Authority of the City of Pittsburgh

**U.S. Department of Housing and
Urban Development**

Office of Public and Indian Housing

**Instructions to Bidders for Contracts
Public and Indian Housing Programs**

Instructions to Bidders for Contracts

Public and Indian Housing Programs

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1. Bid Preparation and Submission

(a) Bidders are expected to examine the specifications, drawings, all instructions, and, if applicable, the construction site (see also the contract clause entitled **Site Investigation and Conditions Affecting the Work** of the *General Conditions of the Contract for Construction*). Failure to do so will be at the bidders' risk.

(b) All bids must be submitted on the forms provided by the Public Housing Agency/Indian Housing Authority (PHA/IHA). Bidders shall furnish all the information required by the solicitation. Bids must be signed and the bidder's name typed or printed on the bid sheet and each continuation sheet which requires the entry of information by the bidder. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority. (Bidders should retain a copy of their bid for their records.)

(c) Bidders must submit as part of their bid a completed form HUD-5369-A, "Representations, Certifications, and Other Statements of Bidders."

(d) All bid documents shall be sealed in an envelope which shall be clearly marked with the words "Bid Documents," the Invitation for Bids (IFB) number, any project or other identifying number, the bidder's name, and the date and time for receipt of bids.

(e) If this solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "No Bid" in the space provided for any item on which no price is submitted.

(f) Unless expressly authorized elsewhere in this solicitation, alternate bids will not be considered.

(g) Unless expressly authorized elsewhere in this solicitation, bids submitted by telegraph or facsimile (fax) machines will not be considered.

(h) If the proposed contract is for a Mutual Help project (as described in 24 CFR Part 905, Subpart E) that involves Mutual Help contributions of work, material, or equipment, supplemental information regarding the bid advertisement is provided as an attachment to this solicitation.

2. Explanations and Interpretations to Prospective Bidders

(a) Any prospective bidder desiring an explanation or interpretation of the solicitation, specifications, drawings, etc., must request it at least 7 days before the scheduled time for bid opening. Requests may be oral or written. Oral requests must be confirmed in writing. The only oral clarifications that will be provided will be those clearly related to solicitation procedures, i.e., not substantive technical information. No other oral explanation or interpretation will be provided. Any information given a prospective bidder concerning this solicitation will be furnished promptly to all other prospective bidders as a written amendment to the solicitation, if that information is necessary in submitting bids, or if the lack of it would be prejudicial to other prospective bidders.

(b) Any information obtained by, or provided to, a bidder other than by formal amendment to the solicitation shall not constitute a change to the solicitation.

3. Amendments to Invitations for Bids

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date on the bid form, or (3) by letter, telegram, or facsimile, if those methods are authorized in the solicitation. The PHA/IHA must receive acknowledgement by the time and at the place specified for receipt of bids. Bids which fail to acknowledge the bidder's receipt of any amendment will result in the rejection of the bid if the amendment(s) contained information which substantively changed the PHA's/IHA's requirements.

(c) Amendments will be on file in the offices of the PHA/IHA and the Architect at least 7 days before bid opening.

4. Responsibility of Prospective Contractor

(a) The PHA/IHA will award contracts only to responsible prospective contractors who have the ability to perform successfully under the terms and conditions of the proposed contract. In determining the responsibility of a bidder, the PHA/IHA will consider such matters as the bidder's:

- (1) Integrity;
- (2) Compliance with public policy;
- (3) Record of past performance; and
- (4) Financial and technical resources (including construction and technical equipment).

(b) Before a bid is considered for award, the bidder may be requested by the PHA/IHA to submit a statement or other documentation regarding any of the items in paragraph (a) above. Failure by the bidder to provide such additional information shall render the bidder nonresponsible and ineligible for award.

5. Late Submissions, Modifications, and Withdrawal of Bids

(a) Any bid received at the place designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it:

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);

(2) Was sent by mail, or if authorized by the solicitation, was sent by telegram or via facsimile, and it is determined by the PHA/IHA that the late receipt was due solely to mishandling by the PHA/IHA after receipt at the PHA/IHA; or

(3) Was sent by U.S. Postal Service Express Mail Next Day Service - Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and observed holidays.

(b) Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a) of this provision.

(c) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerk to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(d) The only acceptable evidence to establish the time of receipt at the PHA/IHA is the time/date stamp of PHA/IHA on the proposal wrapper or other documentary evidence of receipt maintained by the PHA/IHA.

(e) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, bidders should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and Failure by a bidder to acknowledge receipt of the envelope or wrapper.

(f) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful bid that makes its terms more favorable to the PHA/IHA will be considered at any time it is received and may be accepted.

(g) Bids may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before the exact time set for opening of bids; provided that written confirmation of telegraphic or facsimile withdrawals over the signature of the bidder is mailed and postmarked prior to the specified bid opening time. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for opening of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

6. Bid Opening

All bids received by the date and time of receipt specified in the solicitation will be publicly opened and read. The time and place of opening will be as specified in the solicitation. Bidders and other interested persons may be present.

7. Service of Protest

(a) Definitions. As used in this provision:

"Interested party" means an actual or prospective bidder whose direct economic interest would be affected by the award of the contract.

"Protest" means a written objection by an interested party to this solicitation or to a proposed or actual award of a contract pursuant to this solicitation.

(b) Protests shall be served on the Contracting Officer by obtaining written and dated acknowledgement from —

Contracting Officer
Legal Department
Housing Authority of the City of Pittsburgh
200 Ross Street, 7th Floor
Pittsburgh, PA 15219

[Contracting Officer designate the official or location where a protest may be served on the Contracting Officer]

(c) All protests shall be resolved in accordance with the PHA's/IHA's protest policy and procedures, copies of which are maintained at the PHA/IHA.

8. Contract Award

(a) The PHA/IHA will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the PHA/IHA considering only price and any price-related factors specified in the solicitation.

(b) If the apparent low bid received in response to this solicitation exceeds the PHA's/IHA's available funding for the proposed contract work, the PHA/IHA may either accept separately priced items (see 8(e) below) or use the following procedure to determine contract award. The PHA/IHA shall apply in turn to each bid (proceeding in order from the apparent low bid to the high bid) each of the separately priced bid deductible items, if any, in their priority order set forth in this solicitation. If upon the application of the first deductible item to all initial bids, a new low bid is within the PHA's/IHA's available funding, then award shall be made to that bidder. If no bid is within the available funding amount, then the PHA/IHA shall apply the second deductible item. The PHA/IHA shall continue this process until an evaluated low bid, if any, is within the PHA's/IHA's available funding. If upon the application of all deductibles, no bid is within the PHA's/IHA's available funding, or if the solicitation does not request separately priced deductibles, the PHA/IHA shall follow its written policy and procedures in making any award under this solicitation.

(c) In the case of tie low bids, award shall be made in accordance with the PHA's/IHA's written policy and procedures.

(d) The PHA/IHA may reject any and all bids, accept other than the lowest bid (e.g., the apparent low bid is unreasonably low), and waive informalities or minor irregularities in bids received, in accordance with the PHA's/IHA's written policy and procedures.

(e) Unless precluded elsewhere in the solicitation, the PHA/IHA may accept any item or combination of items bid.

(f) The PHA/IHA may reject any bid as nonresponsive if it is materially unbalanced as to the prices for the various items of work to be performed. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

(g) A written award shall be furnished to the successful bidder within the period for acceptance specified in the bid and shall result in a binding contract without further action by either party.

9. Bid Guarantee (applicable to construction and equipment contracts exceeding \$25,000)

All bids must be accompanied by a negotiable bid guarantee which shall not be less than five percent (5%) of the amount of the bid. The bid guarantee may be a certified check, bank draft, U.S. Government Bonds at par value, or a bid bond secured by a surety company acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. In the case where the work under the contract will be performed on an Indian reservation area, the bid guarantee may also be an irrevocable Letter of Credit (see provision 10, Assurance of Completion, below). Certified checks and bank drafts must be made payable to the order of the PHA/IHA. The bid guarantee shall insure the execution of the contract and the furnishing of a method of assurance of completion by the successful bidder as required by the solicitation. Failure to submit a bid guarantee with the bid shall result in the rejection of the bid. Bid guarantees submitted by unsuccessful bidders will be returned as soon as practicable after bid opening.

10. Assurance of Completion

(a) Unless otherwise provided in State law, the successful bidder shall furnish an assurance of completion prior to the execution of any contract under this solicitation. This assurance may be [Contracting Officer check applicable items] —

☒ (1) a performance and payment bond in a penal sum of 100 percent of the contract price; or, as may be required or permitted by State law;

☐ (2) separate performance and payment bonds, each for 50 percent or more of the contract price;

☐ (3) a 20 percent cash escrow;

☐ (4) a 25 percent irrevocable letter of credit; or,

☐ (5) an irrevocable letter of credit for 10 percent of the total contract price with a monitoring and disbursements agreement with the IHA (applicable only to contracts awarded by an IHA under the Indian Housing Program).

(b) Bonds must be obtained from guarantee or surety companies acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. Individual sureties will not be considered. U.S. Treasury Circular Number 570, published annually in the Federal Register, lists companies approved to act as sureties on bonds securing Government contracts, the maximum underwriting limits on each contract bonded, and the States in which the company is licensed to do business. Use of companies listed in this circular is mandatory. Copies of the circular may be downloaded on the U.S. Department of Treasury website <http://www.fms.treas.gov/c570/index.html>, or ordered for a minimum fee by contacting the Government Printing Office at (202) 512-2168.

(c) Each bond shall clearly state the rate of premium and the total amount of premium charged. The current power of attorney for the person who signs for the surety company must be attached to the bond. The effective date of the power of attorney shall not precede the date of the bond. The effective date of the bond shall be on or after the execution date of the contract.

(d) Failure by the successful bidder to obtain the required assurance of completion within the time specified, or within such extended period as the PHA/IHA may grant based upon reasons determined adequate by the PHA/IHA, shall render the bidder ineligible for award. The PHA/IHA may then either award the contract to the next lowest responsible bidder or solicit new bids. The PHA/IHA may retain the ineligible bidder's bid guarantee.

11. Preconstruction Conference (applicable to construction contracts)

After award of a contract under this solicitation and prior to the start of work, the successful bidder will be required to attend a preconstruction conference with representatives of the PHA/IHA and its architect/engineer, and other interested parties convened by the PHA/IHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract (e.g., Equal Employment Opportunity, Labor Standards). The PHA/IHA will provide the successful bidder with the date, time, and place of the conference.

12. Indian Preference Requirements (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

(a) HUD has determined that the contract awarded under this solicitation is subject to the requirements of section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e(b)). Section 7(b) requires that any contract or subcontract entered into for the benefit of Indians shall require that, to the greatest extent feasible

(1) Preferences and opportunities for training and employment (other than core crew positions; see paragraph (h) below) in connection with the administration of such contracts or subcontracts be given to qualified "Indians." The Act defines "Indians" to mean persons who are members of an Indian tribe and defines "Indian tribe" to mean any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians; and,

(2) Preference in the award of contracts or subcontracts in connection with the administration of contracts be given to Indian organizations and to Indian-owned economic enterprises, as defined in section 3 of the Indian Financing Act of 1974 (25 U.S.C. 1452). That Act defines "economic enterprise" to mean any Indian-owned commercial, industrial, or business activity established or organized for the purpose of profit, except that the Indian ownership must constitute not less than 51 percent of the enterprise; "Indian organization" to mean the governing body of any Indian tribe or entity established or recognized by such governing body; "Indian" to mean any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act; and Indian "tribe" to mean any Indian tribe, band, group, pueblo, or community including Native villages and Native groups (including

corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

(b) (1) The successful Contractor under this solicitation shall comply with the requirements of this provision in awarding all subcontracts under the contract and in providing training and employment opportunities.

(2) A finding by the IHA that the contractor, either (i) awarded a subcontract without using the procedure required by the IHA, (ii) falsely represented that subcontracts would be awarded to Indian enterprises or organizations; or, (iii) failed to comply with the contractor's employment and training preference bid statement shall be grounds for termination of the contract or for the assessment of penalties or other remedies.

(c) If specified elsewhere in this solicitation, the IHA may restrict the solicitation to qualified Indian-owned enterprises and Indian organizations. If two or more (or a greater number as specified elsewhere in the solicitation) qualified Indian-owned enterprises or organizations submit responsive bids, award shall be made to the qualified enterprise or organization with the lowest responsive bid. If fewer than the minimum required number of qualified Indian-owned enterprises or organizations submit responsive bids, the IHA shall reject all bids and readvertise the solicitation in accordance with paragraph (d) below.

(d) If the IHA prefers not to restrict the solicitation as described in paragraph (c) above, or if after having restricted a solicitation an insufficient number of qualified Indian enterprises or organizations submit bids, the IHA may advertise for bids from non-Indian as well as Indian-owned enterprises and Indian organizations. Award shall be made to the qualified Indian enterprise or organization with the lowest responsive bid if that bid is -

(1) Within the maximum HUD-approved budget amount established for the specific project or activity for which bids are being solicited; and

(2) No more than the percentage specified in 24 CFR 905.175(c) higher than the total bid price of the lowest responsive bid from any qualified bidder. If no responsive bid by a qualified Indian-owned economic enterprise or organization is within the stated range of the total bid price of the lowest responsive bid from any qualified enterprise, award shall be made to the bidder with the lowest bid.

(e) Bidders seeking to qualify for preference in contracting or subcontracting shall submit proof of Indian ownership with their bids. Proof of Indian ownership shall include but not be limited to:

(1) Certification by a tribe or other evidence that the bidder is an Indian. The IHA shall accept the certification of a tribe that an individual is a member.

(2) Evidence such as stock ownership, structure, management, control, financing and salary or profit sharing arrangements of the enterprise.

(f) (1) All bidders must submit with their bids a statement describing how they will provide Indian preference in the award of subcontracts. The specific requirements of that statement and the factors to be used by the IHA in determining the statement's adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement shall be rejected as nonresponsive. The IHA may require that comparable statements be provided by subcontractors to the successful Contractor, and may require the Contractor to reject any bid or proposal by a subcontractor that fails to include the statement.

(2) Bidders and prospective subcontractors shall submit a certification (supported by credible evidence) to the IHA in any instance where the bidder or subcontractor believes it is infeasible to provide Indian preference in subcontracting. The acceptance or rejection by the IHA of the certification shall be final. Rejection shall disqualify the bid from further consideration.

(g) All bidders must submit with their bids a statement detailing their employment and training opportunities and their plans to provide preference to Indians in implementing the contract; and the number or percentage of Indians anticipated to be employed and trained. Comparable statements from all proposed subcontractors must be submitted. The criteria to be used by the IHA in determining the statement(s)'s adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement(s), or that includes a statement that does not meet minimum standards required by the IHA shall be rejected as nonresponsive.

(h) Core crew employees. A core crew employee is an individual who is a bona fide employee of the contractor at the time the bid is submitted; or an individual who was not employed by the bidder at the time the bid was submitted, but who is regularly employed by the bidder in a supervisory or other key skilled position when work is available. Bidders shall submit with their bids a list of all core crew employees.

(i) Preference in contracting, subcontracting, employment, and training shall apply not only on-site, on the reservation, or within the IHA's jurisdiction, but also to contracts with firms that operate outside these areas (e.g., employment in modular or manufactured housing construction facilities).

(j) Bidders should contact the IHA to determine if any additional local preference requirements are applicable to this solicitation.

(k) The IHA [] does [X] does not [Contracting Officer check applicable box] maintain lists of Indian-owned economic enterprises and Indian organizations by specialty (e.g., plumbing, electrical, foundations), which are available to bidders to assist them in meeting their responsibility to provide preference in connection with the administration of contracts and subcontracts.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB CONTRACT NO. 600-24-19

**NOTICE OF
PRE-BID CONFERENCE**

A Pre-Bid Conference will be held on June 14, 2019

- A Pre-Bid Conference will be held on June 14, 2019 at 10:00 am, at the 2125 Los Angeles Ave , Pittsburgh, PA 15216. A site visit of the property will be conducted thereafter. Bidders shall be prepared to review all aspects of the site necessary to prepare a bid.
- Representatives of the Authority, the engineer and other interested parties will be in attendance.

All bidders are urged to attend.

- Bidders are responsible for examining the construction site. (Refer to "Instructions to Bidders for Contracts," Document HUD 5369, Clause 1, "Bid Preparation and Submission.") Notwithstanding the above, lack of attendance will not be a basis for rejecting a bid.
- Bidders are urged to examine the drawings and specifications prior to the Pre-Bid Conference.
- Nothing at the Pre-Bid Conference will change the terms of the IFB unless a subsequent Addendum is issued. (Refer to "Instructions to Bidders for Contracts," Document HUD 5369, Clause 2, "Explanations and Interpretations to Prospective Bidders.")

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB CONTRACT NO. 600-24-19

PROJECT SCHEDULE

NO LATER THAN

June 3, 2019

Invitation for Bids issued

June 14, 2019

Pre-Bid Conference (at Gualtieri Manor)

10:00 am

June 21, 2019

Last day to submit written questions

2:00 pm

June 28, 2019

Bids due

2:00 pm

September 27, 2019

Notice of Award

(estimated)

October 11, 2019

Execution of Contracts

(estimated)

October 18, 2019

Pre-Construction Conference

(estimated)

October 25, 2019

Construction Start

(estimated)

90 calendar days
from effective date
of Notice to Proceed

All work required under this contract shall be complete

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Gualtieri Manor HVAC Piping System Replacements, AMP-47
IFB No. 600-24-19

**SCOPE OF WORK FOR
MECHANICAL CONSTRUCTION**

The Contract for Mechanical Construction shall consist of the following component parts:

1. THE AGREEMENT

(Bound in the Project Manual)

THE BID	Document 00340	- Scope of Work for Mechanical Construction
	Document 00341	- Form of Bid for Mechanical Construction
THE FORM OF	Document 00500	- Form of Agreement
AGREEMENT	Document 00590	- Contracting Officer Certification
CONDITIONS	Document HUD	- 5370 General Conditions
OF THE	HACP Document	- Supplemental General Conditions
CONTRACT	Document 00830	- Wage Determination Schedule

2. PRIMARY SPECIFICATIONS FOR THE MECHANICAL CONSTRUCTION CONTRACT

(Bound in the Project Manual)

All Work contained in the Primary Specifications listed below is the Work of the Contractor for this Mechanical Construction Contract unless specifically indicated otherwise.

Any Reference in the Primary Specifications to the "Contractor," the "Prime Contractor," or the "Mechanical Contractor" shall be interpreted as meaning the Contractor for this Mechanical Construction Contract.

The Mechanical Contractor shall coordinate the schedule and activities of work performed under this contract with that of those contracts identified as (G)-General, (E)-Electrical, and (P)-Plumbing.

It is the contractual responsibility of the Contractor for Mechanical Construction to familiarize himself with the work of the other prime contractors so that the Project as a whole can proceed in an orderly fashion. Failure to familiarize work by other trades would not be an excuse for corrective measures at no cost to the Owner.

For example, the Mechanical Contractor shall coordinate installation of mechanical construction work with the requirements of the Electrical, Plumbing, and General Contractors.

Reference Standard for Incidental Work: Incidental work, as used in this paragraph, is work which is not a basic part of other Prime Contracts but which is required by reference.

For example, the General Contractor is required by his Primary Specifications to install and repair all general work. In the event that the Mechanical Contractor disturbs the general work, the

patching, repair shall be done and follow the same Specification requirements of the appropriate Specification Section by the Mechanical Contractor even if that specification section may not be part of the Mechanical Contractor's Primary Specification. The same applies to all trades where incidental work occurs.

TECHNICAL SPECIFICATIONS MAY BE FOUND AT PART FOUR
OF THE PROJECT MANUAL

PLEASE ALSO REFER TO DRAWINGS

DIVISION	SECTION TITLE
01010	Summary of Work
01039	Coordination and Meeting
01045	Cutting and Patching
01060	Regulatory Requirements
01300	Submittals
01310	Construction Progress Schedules
01500	Construction Facilities and Temporary Controls
01501	Temporary Utilities
01570	Traffic Regulations
01600	Material and Equipment
01700	Project Close-out
09910	Painting
15010	Common Work Results for HVAC
15140	Hangers and Supports for HVAC piping and Equipment
15190	Identification for HVAC Piping and Equipment
15260	HVAC Insulation
15510	Hydronic Piping
15990	Testing, Adjusting and Balancing for HVAC

END OF TABLE OF CONTENTS

3. **PRIMARY DRAWINGS FOR THE MECHANICAL CONSTRUCTION CONTRACT**
(Contained in the set of Project Drawings issued simultaneously with this Project Manual)

All Work contained in the Primary Drawings listed below is the Work of this Contractor unless specifically indicated otherwise.

Any Reference to the "Contractor," the "Prime Contractor," or the "Mechanical Contractor" shall be interpreted as meaning the Contractor for this Mechanical Construction Contract.

The Primary Drawings for this contract consist of all D&D Engineering construction documents drawings, and specifications **dated March 22, 2019.**

In case of drawing conflict with specifications, it is understood that the specification shall supersede the drawings.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB Contract No. 600-24-19

FORM OF BID

MECHANICAL CONSTRUCTION

Contract No.: 600-24-19

TO: HOUSING AUTHORITY
CITY OF PITTSBURGH
(Hereinafter called the "Authority")
100 Ross Street, Suite 200
Pittsburgh, PA 15219

BIDDER:

(Bidder Name)

(Business Address)

(Telephone)

1. The undersigned Bidder, having visited the site, having become familiar with local conditions affecting the cost of the work, **including all City of Pittsburgh current code requirements**, and having become familiar with the Invitation for Bids (the IFB) issued by the Authority, which consists of the following:

- Project Manual, dated June 3, 2019 containing Bidding Requirements, Contract Forms, Conditions of the Contract, and Specifications
- Project Drawings, dated March 22, 2019
- Addenda (if any) as enumerated in this Form of Bid

hereby proposes to provide all supervision, technical personnel, labor, materials, machinery, tools, appurtenances, equipment and services required to construct and complete the Mechanical Construction Work as described in Document 00310 "Scope of Work for Mechanical Construction" and as indicated in the Drawings and Specifications, for the following Firm Fixed Price:

(Insert Bid Price in words) Dollars (\$ _____)
(Insert Bid Price in Figures)

2. Bid security [☐] is [☐] is not submitted with this bid.
(Check one)

Bid Security is in amount of:

_____ % of the bid OR _____ Dollars (\$ _____)

Bid Security is in the form of:

<input type="checkbox"/>	Certified Check	<input type="checkbox"/>	Bank Draft
<input type="checkbox"/>	U.S. Govt. Bond	<input type="checkbox"/>	Bid Bond (Document 00410)

3. The Bidder hereby acknowledges receipt of the following Addenda, if any, as issued by the Authority:

Total number of Addenda _____ (if none, so state)

Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____
Addendum No. _____ dated _____	Addendum No. _____ dated _____

4. The Bidder attaches hereto the Special Provisions (Document 00021);
5. The Bidder attaches hereto the Statement of Bidder's Qualifications (Document 00420);
6. The Bidder attaches hereto the Section 3 Opportunities Plan (Document 00433), MBE/WBE Solicitation and Commitment Record (Document 00434), Bidder Manpower Plan (Document 00435), and Previous Related Experience (Document 00436);
7. The Bidder attaches hereto the Bidder's Representations, Certifications and Other Statements of Bidders (Document HUD 5369-A), Previous Participation Certificate (Document HUD-2530);
8. The Bidder attaches hereto the Bidder's Special Provisions – Notice to All Prospective Bidders (Document 00437), Non-Collusion Affidavit (Document 00485);
9. The Bidder attaches hereto the completed Form of Agreement (Document 00500);
10. The Bidder attaches hereto the Supplemental General Conditions (HACP Document).

PROPRIETORSHIP SIGNATURE PAGE

(To be used when the Bidder is an individual doing business as a Sole Proprietorship.)

SHEET - FB-I

THE BIDDER CERTIFIES THAT THE BIDDER IS:

- ☐ An individual doing business in his/her own name
☐ An individual doing business under a fictitious or assumed name
(Complete Proprietorship Fictitious Name Disclosure below)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

<i>Witness</i>	_____ (Printed or Typed Name)	<i>Principal</i>	_____ (Printed or Typed Name)
{	_____	{	_____
	(Signature and Date)		(Signature and Date)

PROPRIETORSHIP FICTITIOUS NAME DISCLOSURE

(To be used when the Bidder is an individual doing business under a fictitious or assumed name.)

_____ is an individual trading under a fictitious or
(Proprietor's Name)

assumed name of _____ and ☐ has ☐ has not registered under
(Fictitious or Assumed Name Used as Bidder's Name) (Check one)

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945, P.L.967, as amended, 54 P.S. sec.281.1 et seq.

<i>Witness</i>	_____ (Printed or Typed Name)	<i>Principal</i>	_____ (Printed or Typed Name)
{	_____	{	_____
	(Signature and Date)		(Signature and Date)

PARTNERSHIP SIGNATURE PAGE

(To be used when the Bidder is an individual doing business as a Partnership.)

SHEET - FB-P-1

THE BIDDER CERTIFIES THAT THE BIDDER IS:

- ☐ A General Partnership (Attach completed Sheet FB-P-3)
 - ☐ Doing business under Partnership Name
 - ☐ Doing business under a fictitious or assumed name
(Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)
- ☐ A Limited Partnership (Attach completed Sheet FB-P-3)
 - ☐ Doing business under Partnership Name
 - ☐ Doing business under a fictitious or assumed name
(Complete Partnership Fictitious Name Disclosure Sheet FB-P-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

<i>Witness</i>	_____ (Printed or Typed Name)	<i>Partner *</i>	_____ (Printed or Typed Name)
{	_____	{	_____
	_____ (Signature and Date)		_____ (Signature and Date)
<i>Witness</i>	_____ (Printed or Typed Name)	<i>Partner *</i>	_____ (Printed or Typed Name)
{	_____	{	_____
	_____ (Signature and Date)		_____ (Signature and Date)

* If the Bidder is a partnership, the Bid and Contract must be signed in the name of the partnership by at least two general partners, and the names and addresses of all the partners must be listed on the certificate on Sheet FB-P-3.

PARTNERSHIP FICTITIOUS NAME DISCLOSURE
(To be used when the Bidder is a partnership doing business under a fictitious or assumed name.)

SHEET FB-P-2

_____ is a partnership trading under a fictitious or
(Partnership's Name)

assumed name of _____ and ☐ has ☐ has not registered under
(Fictitious or Assumed Name Used as Bidder's Name) (Check one)

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945, P.L. 967, as amended, 54 P.S. sec. 281.1 et seq.

Witness _____
 {

 (Signature and Date)

*Partner**

(Printed or Typed Name)

{

(Signature and Date)

PARTNERSHIP CERTIFICATE
(To be used when the Bidder is a partnership.)

SHEET FB-P-3

I, as partner of _____,
(Name of Partnership)
certify that the following are the names and addresses of all the partners of said partnership.

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

Name: _____ Name: _____

Address: _____ Address: _____

City: _____ City: _____

(Use additional sheets as required.)

<i>Witness</i>	{	_____	<i>Partner*</i>	{	_____
		(Printed or Typed Name)			(Printed or Typed Name)
		_____			_____
		(Signature and Date)			(Signature and Date)

CORPORATION SIGNATURE PAGE
(To be used when the bidder is a corporation.)

SHEET FB-C-1

THE BIDDER CERTIFIES THAT THE BIDDER IS:

- ☐ A corporation doing business in its own name
- ☐ A corporation doing business under a fictitious or assumed name
(Complete Corporation Fictitious Name Disclosure FB-C-2)

SIGNED, SEALED AND DELIVERED

this _____ day of _____ 20 _____.

(CORPORATE
SEAL)

(Corporate Name)

(Printed or Typed Name)

(Printed or Typed Name)

Witness

{

President

V.P. **

{

(Signature and Date)

(Signature and Date)

(Corporate Title)

(Corporate Title)

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION FICTITIOUS NAME DISCLOSURE
(To be used when the Bidder is a corporation doing business under a fictitious or assumed name.)

SHEET FB-C-2

_____ is a corporation trading under a fictitious or
(Corporation's Name)

assumed name of _____ and ☐ has ☐ has not registered under
(Fictitious or Assumed Name Used as Bidder's Name) (Check one)

the Fictitious Names Act of Pennsylvania, namely the Act of May 24, 1945, P.L. 967, as amended, 54 P.S. sec. 281.1 et seq.

<i>Witness</i>	<div>_____ <i>(Printed or Typed Name)</i></div> <div>{</div> <div>_____ <i>(Signature and Date)</i></div>	<div><i>President</i></div> <div><i>V.P. **</i></div> <div>{</div>	<div>_____ <i>(Printed or Typed Name)</i></div> <div>_____ <i>(Signature and Date)</i></div>
----------------	---	--	--

** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CORPORATION CERTIFICATE

(To be used when the bidder is a corporation)

SHEET FB-C-3

_____ is a corporation organized and existing
(Corporate name used as Bidder name)

under the laws of the state of _____ with its principal place of business at:

(Street Address) (City) (State)

and, if a non-Pennsylvania corporation ☐ **has** ☐ **has not** *(check one)* been granted a certificate of authority to do business in Pennsylvania as required by the Pennsylvania Business Corporation Law, approved May 5, 1933, P.L. 364, as amended, 15 P.S. sec.2005 et seq.

I, _____, certify that I am the ☐ **Secretary** ☐ **Assistant Secretary** of the
(check one)
Corporation named a Bidder herein; that _____ who signed
this Bid on behalf of the Corporation was then _____ of said Corporation that
*(President/V.P.) ***

I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

*(CORPORATE
SEAL)*

(Signature and Date)

****** If the bidder is a corporation, the Bid and the Contract must be executed in the Corporation's correct corporate name by its President or Vice President and its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the above Certificate must be executed by the Secretary or Assistant Secretary

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we,

_____, as Principal, and
(Insert name and address of Bidder exactly as it appears on Form of Bid)

_____, as Sureties, are
held and firmly bound unto the Housing Authority of the City of Pittsburgh, its certain attorney, successors, or assigns
(the Obligee, hereinafter called the "Authority") in the penal sum of

_____ Dollars (\$_____)

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our
heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents:

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas, the Principal simultaneously submits to
the Authority the accompanying bid, dated

_____, 20_____ (the "Bid"), for construction of
(Insert date of bid)

(Insert name of project exactly as it appears on Form of Bid)
pursuant to specifications, drawings and other related documents constituting the Invitation for Bids (the "IFB").

NOW, THEREFORE, if the Principal shall not withdraw said bid within the period specified therein after the
opening of the same, or, if no period be specified, within sixty (60) days after the said opening, and shall within the
period specified therefore, or, if no period be specified within ten (10) days after the prescribed forms are presented to
him for signature, enter into a written contract with the Authority in accordance with the bid as accepted, and give
bonds with good and sufficient surety or sureties, as may be required for the faithful performance and proper
fulfillment of such contract and for the payment of labor and materialmen or in the event of the withdrawal of said bid
within the period specified, or the failure to enter into such contract and give such bonds within the time specified, if
the Principal shall pay the Authority the difference between the amount specified in said bid and the amount for which
the Authority may procure the required work or supplies or both, if the latter amount be in excess of the former, then
the above obligation shall be void and of no effect, otherwise to remain in full force and virtue.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS

this _____ day of _____, 20_____.

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

_____ <i>(Printed or Typed Name)</i>	_____ <i>(Printed or Typed Name)</i>
<i>Witness</i>	<i>Principal</i>
{	{
_____ <i>(Signature and Date)</i>	_____ <i>(Signature and Date)</i>

SURETY SIGN HERE

<i>(SURETY SEAL)</i>	
_____ <i>(Printed or Typed Name)</i>	_____ <i>(Printed or Typed Name)</i>
<i>Attest</i>	<i>Surety***</i>
{	{
_____ <i>(Signature and Date)</i>	_____ <i>(Signature and Date)</i>

*** Power of attorney must be attached to this Bid Bond.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS

this _____ day of _____ 20_____.

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

	_____ (Printed or Typed Name)		_____ (Printed or Typed Name)
Witness	{	Partner*	{
	_____ (Signature and Date)		_____ (Signature and Date)

	_____ (Printed or Typed Name)		_____ (Printed or Typed Name)
Witness	{	Partner*	{
	_____ (Signature and Date)		_____ (Signature and Date)

* If the Bidder is a partnership, the Bond must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

SURETY SIGN HERE

(SURETY
SEAL)

	_____ (Printed or Typed Name)		_____ (Printed or Typed Name)
Attest	{	Surety***	{
	_____ (Signature and Date)		_____ (Signature and Date)

*** Power of attorney must be attached to this Bid Bond.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS

this _____ day of _____ 20_____.

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

(CORPORATE
SEAL)

(Corporate Name)

Attest

(Printed or Typed Name)

(Printed or Typed Name)

{

President
V.P. **

{

(Signature and Date)

(Signature and Date)

(Corporate Title)

(Corporate Title)

** If the bidder is a corporation, the Bond must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal below must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the
[] Secretary [] Assistant Secretary of the Corporation named a Bidder herein; that
(check one)

_____ who signed this Bid on behalf of the

Corporation was then _____ of said Corporation that I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

(CORPORATE
SEAL)

(Signature and Date)

SURETY SIGN HERE

(SURETY
SEAL)

(Printed or Typed Name)

(Printed or Typed Name)

Attest

{

Surety***

{

(Signature and Date)

(Signature and Date)

*** Power of attorney must be attached to this Bid Bond.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

STATEMENT OF BIDDER'S QUALIFICATIONS

_____ <i>(Bidder's Name)</i>	Gualtieri Manor HVAC Piping System Replacements, AMP-47 _____ <i>(Project Name)</i>
_____ <i>(Address)</i>	600-24-19 _____ <i>(HACP Project No.)</i>

Names of not more than two principals to contact:

Name: _____	Name: _____
Title: _____	Title: _____
Telephone: _____	Telephone: _____

AUTHORIZATION:

Excerpt from HUD 7460.8-REV-1 AND 24 CFR 85.36(b)(8) & 24 CFR 905.160(a)(3):

"The evaluation of a contractor's ability to perform a contract is known as determining the contractor's responsibility. Has **shall** make awards only to **responsible** contractors possessing the ability to perform successfully under the terms and conditions of a proposed contract. Consideration **shall** be given to such matters as **contractor integrity, compliance with public policy, record of past performance, and financial and technical resources**.

"The award of a contract to an offeror **shall** not be made solely on the basis of the lowest evaluated price without considering the firm's ability to perform the required work. Some of the specific factors to consider include (1) whether the contractor performed satisfactorily on other HA Contracts, (2) is the contractor suspended or debarred from Federal Contracts, and (3) have other HAs has satisfactory performance from this contractor.

"A pre-award survey may entail an on-site inspection of the offeror's facilities, including a review of financial statements, record keeping, production capacity, or similar factors that impact on the ability to perform the contract.

"Recent unsatisfactory performance regarding either quality or timeliness of delivery is an example of a problem which the Contracting Officer **shall** consider and resolve as to its impact on the current procurement prior to making an affirmative determination of responsibility.

ORGANIZATION

THE BIDDER IS:

- ☐ An individual doing business in his/her own name
- ☐ An individual doing business under a fictitious or assumed name

- ☐ A General Partnership
 - ☐ Doing business under Partnership Name
 - ☐ Doing business under a fictitious or assumed name

- ☐ A Limited Partnership
 - ☐ Doing business under Partnership Name
 - ☐ Doing business under a fictitious or assumed name

- ☐ A corporation doing business in its own name
- ☐ A corporation doing business under a fictitious or assumed name

How many years has the bidder been in business as a Contractor? _____

How many years has the bidder been in business under its present business name? _____

Under what other or former names has the bidder operated?

PAST PERFORMANCE

CLAIMS AND SUITS. (If the answer to any of the questions below is yes, please attach explanation.)

☐ Yes ☐ No Has the Bidder ever failed to complete any work awarded to it?

☐ Yes ☐ No Are there any judgments, claims, arbitration proceedings or suits pending or outstanding against the bidder or its officers?

☐ Yes ☐ No Has the bidder filed any law suits or requested arbitration with regard to construction contracts within the last five years?

☐ Yes ☐ No Within the last five years, has any officer or principal of the bidder ever been an officer or principal of another organization when it failed to complete a construction contract? (If answer is yes, please attach details.)

State average annual amount of construction work performed during the past five years:
\$ _____

State total worth of work in progress and under contract: \$ _____

On a separate sheet, list major construction projects the bidder has in progress, giving the name of project, owner, architect, contract amount, percent complete and scheduled completion date.

On a separate sheet, list the major projects the bidder has completed in the past five years, giving the name of project, owner, architect, contract amount, date of completion and percentage of the cost of the work performed with your own forces.

FINANCIAL RESOURCES

Financial Statement.

Attach a financial statement (audited if available), including the bidder's latest balance sheet and income statement showing the following items:

Current Assets (e.g. cash, joint venture accounts, accounts receivable, notes receivable, accrued income, deposits, materials inventory and prepaid expenses);
Net Fixed Assets;
Other Assets;
Current Liabilities (e.g. accounts payable, notes payable, accrued expenses, provision for income taxes, advances, accrued salaries and accrued payroll taxes);
Other Liabilities (e.g. capital, capital stock, authorized and outstanding shares par values, earned surplus and retained earnings).

Name and address of firm preparing attached financial statement, and date thereof:

☐ **Yes** ☐ **No** Is the attached financial statement for the identical organization named on page one?

If not, explain the relationship and financial responsibility of the organization whose financial statement is provided (e.g., parent-subsidiary).

☐ **Yes** ☐ **No** Will the organization whose financial statement is attached act as guarantor of the contract for construction?

TECHNICAL RESOURCES

Licensing:

List jurisdictions and trade categories in which the bidder is legally qualified to do business, and indicate registration or license numbers, if applicable.

Experiences:

List the categories of work that the bidder normally performs with its own forces.

On a separate sheet, list the construction experience and present commitments of the key individuals of the bidder.

REFERENCES

List Trade References (use separate sheet if necessary):

List Bank References (use separate sheet if necessary):

List previous HUD/USDA-FmHA projects and Section 8 Contracts (formerly Schedule A on HUD-2530). Applicable to construction contracts exceeding \$50,000. List each principals name, previous project, principal's participation role and interest, and disclose defaults, mortgage relief, assignments and foreclosures. **Note that having a Master Schedule on file with HUD will not meet this requirement.**

Certifications: I (meaning the individual who signs as well as the corporations, partnerships or other parties listed above who certify) hereby apply to HUD or USDA-FmHA, as the case may be, for approval to participate as a principal in the role and project listed above based upon my following previous participation record of this Certification.

I certify that all the statements made by me are true, complete and correct to the best of my knowledge and belief and are made in good faith, including the data contained in Schedule A and Exhibits, signed by me and attached to this form.

Warning: HUD and/or the Authority will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1012; 31 U.S.C. 3729, 3802)

I further certify that:

1. The list of previous HUD/USDA-FmHA projects and Section 8 Contracts contains a listing of every assisted or insured project of HUD, which I have been or am now a principal.
2. For the period beginning 10 years prior to the date of this certification, and except as shown by me on the certification.
 - a. No mortgage on a project listed by me has ever been in default, assigned to the Government or foreclosed, nor has mortgage relief by the mortgagee been given;
 - b. I have not experienced default or noncompliance under any Conventional Contract or Turnkey Contract of Sale in connection with a public housing project;
 - c. To the best of my knowledge, there are no unresolved findings raised as a result of HUD audits, management reviews or other Governmental investigations concerning me or my projects;
 - d. There has not been a suspension or termination of payments under any HUD assistance contract in which I have had a legal or beneficial interest;
 - e. I have not been convicted of a felony and am not presently, to my knowledge, the subject of a complaint or indictment charging a felony. (A felony is defined as any offense punishable by imprisonment for a term exceeding one year, but does not include any offense classified as a misdemeanor under the laws of a State and punishable by imprisonment of two years or less);
 - f. I have not been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency.

- g. I have not defaulted on an obligation covered by a surety or performance bond and have not been the subject of a claim under an employee fidelity bond.
3. All the names of the parties, known to me to be principals in this project(s) in which I propose to participate, are listed above.
4. I am not a HUD/FmHA employee or a member of a HUD/FmHA employee's immediate household as defined in Standards of Ethical Conduct for Employees of the Executive Branch in 5 C.F.R. Part 2635 (57 FR 35006) and HUD's Standard of Conduct in 24 C.F.R. Part O and USDA's Standard of Conduct in 7 C.F.R. Part 9 Subpart B.
5. I am not a Housing Authority of the City of Pittsburgh employee or a member of an Authority employee's immediate family.
6. I am not a principal participant in an assisted or insured project as of this date on which construction has stopped for a period in excess of 20 days or which has been substantially completed for more than 90 days and documents for closing, including final cost certification have not been filed with HUD or FmHA.
7. To my knowledge I have not been found by HUD or FmHA to be in noncompliance with any applicable civil rights law.
8. I am not a Member of Congress or a Resident Commissioner nor otherwise prohibited or limited by law from contracting with the Government of the United States of America.
9. Statements above (if any) to which I cannot certify have been deleted by striking through the words with a pen. I have initialed each deletion (if any) and have attached a true and accurate signed statement (if applicable) to explain the facts and circumstances which I think helps to qualify me as a responsible principal for participation in this project.

(Signature and Date)

(Typed or Printed Name)

(Title)

(Company Name)

Subscribed and sworn to before me

this _____ day of _____, 20

My Commission expires _____, 20

All section 3 covered contracts shall include the following clause (referred to as the section 3 clause):

- A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.
- C. The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
- D. The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.
- E. The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 135.
- F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.
- G. With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self- Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

Housing Authority City of Pittsburgh
Development and Modernization Department
Bidder's Section 3 Participation Form

A. Bidder's Section 3 Hiring Plan

Job Category	Total Estimated Positions Needed for Project	No. Positions Occupied by Permanent Employees*	Number of Positions Not Occupied	Number of Positions Available for Section 3 Residents
Trade:				
Journeyman				
Helper				
Apprentices				
Trainees				
Laborer				
Others				

* Please submit a list of current employees to be assigned to this project including Dates of Hire

B. Bidder's Section 3 Subcontracting Plan

SUB - CONTRACTOR'S NAME**	SUB - CONTRACTORS ADDRESS	PHONE NUMBER	FEDERAL TAX ID NO./ SS#	DESCRIPTION OF WORK	Sub - Contract Amount

** If the Bidder has not identified a Section 3 subcontractor, please indicate if there will be any Section 3 subcontracting opportunity and describe scope of work _____

Company Name

Project Name

Project Number

Name and Title of Person Completing this Form

Signature and Date

PLACE HOLDER FOR
ROSTER OF CURRENT EMPLOYEES

**Pursuant to Housing Authority of the City of Pittsburgh Section 3 Program Manual, Part I,
Section A - Section 3 Policy Statement (in part):**

"HACP shall examine and consider a contractor's potential for success in providing employment and business opportunities to those covered under Section 3 prior to acting on any proposed contract award. In response to any RFP, RFQ or IFB HACP will require submission of the Section 3 Opportunities Plan and roster of current employees, and certification that the bidder will comply with the requirements of Section 3."

Section 3 Participation

With respect to work performed in connection with Section 3 covered Indian housing assistance, Section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of Section 3 and Section 7(b) agree to comply with Section 3 to the maximum extent feasible, but not in derogation of compliance with Section 7(b).

RESIDENT HIRING REQUIREMENTS / RESIDENT HIRING SCALE

TOTAL LABOR DOLLARS USE TOTAL CONTRACT AMOUNT FOR SERVICE CONTRACTS	RESIDENT LABOR AS A % OF TOTAL LABOR DOLLARS
Labor dollars \$25,000 but less than \$100,000	10% of the labor dollars
\$100,000, but less than \$200,000	9% of the labor dollars
At least \$200,000, but less than \$300,000	8% of the labor dollars
At least \$300,000, but less than \$400,000	7% of the labor dollars
At least \$400,000, but less than \$500,000	6% of the labor dollars
At least \$500,000, but less than \$1 million	5% of the labor dollars
At least \$1 million, but less than \$2 million	4% of the labor dollars
At least \$2 million, but less than \$4 million	3% of the labor dollars
At least \$4 million, but less than \$7 million	2% of the labor dollars
\$7 million or more	½ to 1 % of the labor dollars

A copy of HACP's Section 3 Program Manual is available for download at www.HACP.org.



SECTION 3 OPPORTUNITIES PLAN

Business Opportunities and Employment Training for Housing Authority of the City of Pittsburgh Low Income Public Housing Residents (LIPH) and Area Residents of Low and Very Low Income Status (ARLIS)

PRIME CONTRACTOR'S NAME: _____
SPECIFICATION OR RFP/IFB/RFQ NUMBER: _____
SPECIFICATION OR RFP/IFB/RFQ TITLE: _____

The Contractor hereby agrees to comply with all the provisions of Section 3 as set forth in 24 CFR 135.1 et seq. and the HACP Section 3 Policy and Program requirements. The Contractor hereby submits this document to identify employment opportunities for HACP residents (LIPH) and **Area Residents of Low and Very Low Income Status (ARLIS)** during the term of the contract between the Contractor and the HACP.

The preference of HACP is to ensure that as many HACP residents as possible are employed. In an effort to further that requirement, HACP has created a preference tier structure as outlined in the HACP Section 3 Policy and Program Manual which can be reviewed by visiting the "Vendor Services" section of www.hacp.org. Contractors are required to comply with Section 3 by first considering Tier I -- Hiring. If the Contractor cannot meet its Section 3 requirement in Tier I and needs to move to Tier II or Tier III, that Contractor must document this inability to comply with the preference and the need to move to a lower tier. (Such inability **must** be documented for moves within tiers). The Contractor agrees to meet its Section 3 requirement following the Preferential Tier Structure as indicated by the selection below (check one or more tiers below):

☐ Tier I -- **HIRING**

The Contractor affirms that the jobs identified shall be for meaningful employment that may or may not be related to the scope of services covered under Contract/Purchase Order # _____. The Contractor has committed to employ _____ resident(s) in order to comply with its Section 3 requirements. A prime contractor may satisfy the HACP Resident Hiring Requirements through his/her subcontractors. **Contact the HACP Resident Employment Program for resident referrals at 412-395-3950, Ext 1048.**

When Tier I is selected, the Contractor shall complete the following table as instructed below:

- (1) Indicate each job title for all phases of this contract
- (2) The number of positions that will be needed in each category
- (3) How many of those positions are currently filled
- (4) The number currently filled by low and very low-income HACP residents
- (5) The number currently filled by City of Pittsburgh neighborhood area residents
- (6) How many positions need to be filled

Indicate your requirement for the number of positions you intend to fill with:

- (7) Low income HACP Residents (LIPH) and/or
- (8) Low and very low income City of Pittsburgh Neighborhood Area Residents (ARLIS)



SECTION 3 OPPORTUNITIES PLAN

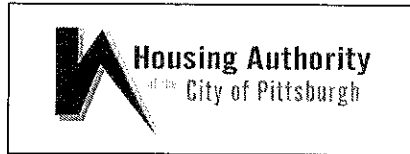
Section 3 Labor Utilization Assessment and Plan							
SPEC or RFP TITLE:					SPEC or RFP NUMBER:		
JOB TITLE (1)	NUMBER OF POSITIONS				HIRING REQUIREMENT		
	# NEEDED (2)	CURRENTLY FILLED			TO BE FILLED (6)	LIPH (7)	ARLIS (8)
		TOTAL (3)	LIPH (4)	ARLIS (5)			

LIPH – HACP low income public housing resident

ARLIS - Area Residents of Low/Very Low Income Status – (Area is the Pittsburgh metropolitan area)

In the event the value of Section 3 resident hiring is less than the amount identified in the Resident Hiring Scale, vendors must contribute to the HACP Education Fund an amount not less than the difference between the value of Section 3 hiring and the amount identified in the Resident Hiring Scale, which funds shall be used to provide other economic opportunities.

Therefore, if it is anticipated that any position listed above shall be for less than the full term of the contract period, you must indicate on the lines below, the anticipated term for each position:



SECTION 3 OPPORTUNITIES PLAN

[] Tier II – CONTRACTING

The contractor has identified _____ HACP resident-owned business(es) or _____ Section 3 business(es) which is/are 51 percent or more owned by Section 3 residents or 30 percent or more of their permanent full-time workforce are Section 3 residents. This will satisfy the contractor's Section 3 requirement covered under Contract/Purchase Order # _____.

In a one (1) page letter on your firm's letterhead:

- 1) Indicate the requirements, expressed in terms of percentage, of planned contracting dollars for the use of Section 3 business concerns as subcontractors.
- 2) A statement of the total dollar amount to be contracted, total dollar amount to be contracted to Section 3 business concerns for building trades, and total dollar amount to be contracted to Section 3 business concerns for other than building trades work (maintenance, repair, modernization, and development).
- 3) A description of the method used to develop the requirements above and the efforts to be undertaken by the contractor to meet those requirements.

[] Tier III - OTHER ECONOMIC OPPORTUNITIES

Firms may provide other economic opportunities to train and employ Section 3 residents or make a direct cash contribution to the HACP Education Fund. HACP has established the following minimum threshold requirements for provision of training or contribution to the HACP fund that provides other economic opportunities:

- a) Contractor incurs the cost of providing skilled training for residents in an amount commensurate with the sliding scale set forth in the Resident Hiring Scale; or,
- b) Contractor makes a contribution to the HACP Education Fund at Clean Slate E3 to provide assistance to residents to obtain training. The level of contribution would be commensurate with the sliding scale set forth in the Resident Hiring Scale.

Contractor shall provide, in a letter on firm letterhead:

- 1) Indication of the skilled training to be provided, the number of persons to be trained, the training provider, the cost of training, and the trainee recruitment plan; or,
- 2) Provide the amount of planned contribution to be made in relation to percentage of the contract labor hours costs. (Contribution checks should be made payable to: Clean Slate E3 Education Fund and mailed to Clean Slate E3, C/O Housing Authority of the City of Pittsburgh, Finance Department, 200 Ross Street, 9th Floor, Pittsburgh, PA 15219.

[] Tier IV – No New Hire Opportunity

If awarded this contract, the contractor will be able to fulfill the requirements of the IFB/RFP/RFQ with the existing work force. No new hires will be employed as a result of this award. If this position changes and hiring opportunities become necessary, the HACP Resident Employment Program will be notified.



SECTION 3 OPPORTUNITIES PLAN

By signing below, the Contractor hereby agrees to comply with the selected Section 3 requirements indicated above. To the extent that the completion of this form is contingent upon future information, for example price negotiations, request for specific services, etc., the undersigned hereby affirms and agrees to fully adhere to the spirit and intent of the HACP Section 3 Policy.

Furthermore, the undersigned acknowledges and affirms responsibility for completion and submission of this form as part of the response documentation for this Invitation for Bid or Request for Proposal. Failure to submit this form may jeopardize the responsiveness of your submission.

Company Name: _____

Name: _____

Title: _____

Signature: _____ Date: _____

Witness Name: _____

Witness Signature: _____ Date: _____

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH
MBE/WBE SOLICITATION AND COMMITMENT RECORD

SOLICITATION AND COMMITMENT STATEMENT					
BID NUMBER	NAME OF BIDDER	ADDRESS	PHONE		
List below All MBE/WBE's that were solicited - whether or not a commitment was obtained -- Copy this form as necessary					
____ MBE ____ WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED BY PHONE BY MAIL	COMMITMENT MADE YES (IF YES, GIVE DATE) NO	GIVE REASON(S) IF NO COMMITMENT MADE	
COMPANY NAME		QUOTE RECEIVED	AMOUNT COMMITTED		
ADDRESS		YES NO	DOLLAR AMOUNT \$		
CONTACT PERSON PHONE			PERCENT OF TOTAL BID %		
____ MBE ____ WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED BY PHONE BY MAIL	COMMITMENT MADE YES (IF YES, GIVE DATE) NO	GIVE REASON(S) IF NO COMMITMENT MADE	
COMPANY NAME		QUOTE RECEIVED	AMOUNT COMMITTED		
ADDRESS		YES NO	DOLLAR AMOUNT \$		
CONTACT PERSON PHONE			PERCENT OF TOTAL BID %		
____ MBE ____ WBE	TYPE OF SUBCONTRACT WORK OR MATERIALS	DATE SOLICITED BY PHONE BY MAIL	COMMITMENT MADE YES (IF YES, GIVE DATE) NO	GIVE REASON(S) IF NO COMMITMENT MADE	
COMPANY NAME		QUOTE RECEIVED	AMOUNT COMMITTED		
ADDRESS		YES NO	DOLLAR AMOUNT \$		
CONTACT PERSON PHONE			PERCENT OF TOTAL BID %		

Prepared by:

Title:

Phone:

NOTE: Certification and letters of intent for each MBE/WBE commitment must accompany this document.

MBE/WBE Participation Plan

I. SMALL BUSINESS PARTICIPATION
Is the Bidder a Small Business as defined by the size and standards in 13 CFR 121?

Yes _____ No _____

II. MINORITY BUSINESS PARTICIPATION
Is the Bidder classified as a Minority Business Enterprise?

Yes _____ No _____

If “No”, are any Subcontractors classified as Minority Business enterprises?

Yes _____ No _____

If “Yes”, please fill in the following chart:

Consulting Firm(s) (MBE)	\$ Value Contract	% of Fee

III. WOMEN-OWNED BUSINESS PARTICIPATION
Is the Bidder classified as a Woman-Owned Business Enterprise?

Yes _____ No _____

If “No”, are any Subcontractors classified as Women-Owned Business Enterprises?

Yes _____ No _____

If “Yes”, please fill in the following chart:

Consulting Firm(s) (WBE)	\$ Value Contract	% of Fee

****All MBE/WBE firms must be certified.**
In order for the MBE/WBE participation plan to be complete, copies of MBE/WBE certification must be included for all firms listed.

BIDDERS NAME: _____
 ADDRESS: _____
 TELEPHONE: _____
 CONTACT PERSON: _____
 PROPOSAL AND BID FOR: _____

[illegible]

Phone:

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH
MBE/WBE SOLICITATION AND COMMITMENT STATEMENT
ADDITIONAL INFORMATION SHEET

The bidder presents the following as additional and supplemental
information to its MBE/WBE Solicitation and
Commitment Statement.

Prepared by:

Title:

Phone:

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH
MBE/WBE EXHIBIT

MBE/WBE COMMITMENT WAIVER REQUEST FORM

BIDDER'S FIRM: _____
ADDRESS: _____
TELEPHONE: _____
CONTACT PERSON: _____
PROPOSAL AND BID FOR: _____

Waiver of the MBE/WBE participation requirement is requested for the following reasons:

Prepared by: _____ Title: _____ Phone: _____

NOTE: The fully completed MBE/WBE Solicitation and Commitment Statement must accompany this waiver request.

**Notice of Requirement for Affirmative Action
to Ensure Equal Employment Opportunity
(Executive Order 11625)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals for minority and female participation at the Housing Authority of the City of Pittsburgh are pursuant to the Mayor's promulgated Executive Order, and the action of the Housing Authority Board. Expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, these goals are seventeen percent (18%) of the total cost of the contract to be expended for minority participation and six percent (7%) for women participation. These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in Section 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in Section 41 CFR Part 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in Section 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification, within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation, to:

LaVaris Ross, Labor Relations Specialist
U.S. Department of Housing and Urban Development
Office of Labor Relations
City Crescent Building
10 S. Howard Street, 5th Floor
Baltimore, MD 21201

The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is within the Commonwealth of Pennsylvania, County of Allegheny, City of Pittsburgh.



Development & Modernization
100 Ross Street, Suite 200
Pittsburgh, PA 15219
(412) 456-5020
www.hacp.org

NOTICE TO ALL PROSPECTIVE BIDDERS

REQUEST FOR MANPOWER PLAN
Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB CONTRACT No. 600-24-19

Each bid must include a separate Manpower Plan and Major Equipment List for this Invitation for Bids. The Manpower Plan must include (1) the names of the bidder's personnel to be assigned to the Project, (2) trade/position, (3) Social Security Number or Driver's License Number and (4) Employee Date of Hire.

In the event you are bidding on multiple HACP construction work, each bid must include a separate Manpower Plan and Major Equipment List that clearly demonstrates that the bidder has the capacity and will not use the same personnel and equipment on more than one HACP construction work that are being executed simultaneously within the next 180 days.

HACP will use this information to determine whether the bidder has the capacity to perform the work.

Please acknowledge receipt of this Notice by completing the information below and the attached and including copies in your bid.

Bidder's Name: _____

Name of the Person Signing the Bid: _____

Signature of the Person Signing the Bid: _____

Bid Due Date: _____



Development & Modernization
100 Ross Street, Suite 200
Pittsburgh, PA 15219
(412) 456-5020
www.hacp.org

Bidder's Planned Manpower

Provide Employee Name, Trade/Position, Social Security Number or Driver's License Number and Date of Hire for each employee:
(use additional sheets if necessary).

Name	Position	Social Security No. or Driver's License No.		Date of Hire



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**SPECIAL PROVISIONS
FOR INVITATION FOR BIDS (IFB)**

REQUEST FOR INFORMATION

Each bidder must submit the following information to assist the Owner to determine if the Bidder has the capacity to perform the required work under this **Project Name:**_____ **IFB No.** _____.

Bidder's Capacity

Provide information demonstrating the Bidder's ability to provide the resources necessary for the timely and efficient implementation of the construction work. Due to the nature of this procurement, capacity will also be evaluated based on the Bidder's ability to complete the work on time and within budget, therefore, please describe the Bidder's Capacity as follows:

1. Manpower Plan and Major Equipment List (Please complete **Form 00435-1 & 2**).
2. List a maximum of three-(3) current or completed *Housing Authority of the City of Pittsburgh* related projects, the **Initial Contract Value, Change Orders, if any, and Final Contract Value**. If the project was not completed within budget and on time, please explain the circumstances and/or justification for the change order(s): Please attach a separate sheet if you do not have sufficient space.

<u>Project #</u>	<u>Initial Contract Value</u>	<u>Change Order(s)</u>	<u>Final Contract Value</u>
a.			
b.			
c.			

Justification for Change Orders/Schedule: _____

3. List at least three-(3) other Owners including one current or completed project plus the following information:

<u>Vendor's Name & Contact #</u>	<u>Initial Contract Value</u>	<u>Change Order(s)</u>	<u>Final Contract Value</u>
a.			
b.			
c.			

Justification for Change Orders/Schedule: _____

The Bidder hereby certifies that the information provided above is accurate/correct and provision of false information can be a basis for the rejection of this bid:

Bidder's Name: _____ Bidder's Signature: _____
Date: _____



Development & Modernization
100 Ross Street, Suite 200
Pittsburgh, PA 15219
(412) 456-5020
www.hacp.org

NOTICE TO ALL PROSPECTIVE BIDDERS
Previous Related Experience
for
Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB CONTRACT NO. 600-24-19

The bidder shall list three (3) firms, governmental units, or persons for whom the bidder has previously performed work of the nature requested under this IFB. Bidder shall list as references all housing authorities, including HACP, for whom the bidder has previously performed work of the nature requested under this IFB. HACP reserves the right to contact such persons at anytime prior to award and the bidder agrees that HACP may rely on information provided by such persons to determine the bidder's responsibility.

In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recent HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 1			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
1			
2			
3			
4			
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In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recent HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 2			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
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In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recent HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 3			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
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In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recent HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 4			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
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In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recent HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 5			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
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In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recent HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 6			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
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In addition to the references, all bidders will provide the last three jobs they performed, contact information from the job and all change orders related to the job and the reason for each.

All bidders will provide information on the most recent HACP job to include all change order information and the reason for each. The most recent HACP job can be one of the 3 last jobs performed if that is the case.

Reference 7			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
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***All contractors MUST submit 3 references and most recent HACP Job if applicable.**

**U.S. Department of Housing
and Urban Development**
Office of Public and Indian Housing

**Representations, Certifications,
and Other Statements of Bidders**
Public and Indian Housing Programs

Representations, Certifications, and Other Statements of Bidders

Public and Indian Housing Programs

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1. Certificate of Independent Price Determination

(a) The bidder certifies that--

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to (i) those prices, (ii) the intention to submit a bid, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a competitive proposal solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit a bid for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory--

(1) Is the person in the bidder's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

[Insert full name of person(s) in the bidder's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder's organization];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the bidder deletes or modifies subparagraph (a)(2) above, the bidder must furnish with its bid a signed statement setting forth in detail the circumstances of the disclosure.

☒ [Contracting Officer check if following paragraph is applicable]

(d) Non-collusive affidavit. (applicable to contracts for construction and equipment exceeding \$50,000)

(1) Each bidder shall execute, in the form provided by the PHA/IHA, an affidavit to the effect that he/she has not colluded with any other person, firm or corporation in regard to any bid submitted in response to this solicitation. If the successful bidder did not submit the affidavit with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the affidavit by that date may render the bid nonresponsive. No contract award will be made without a properly executed affidavit.

(2) A fully executed "Non-collusive Affidavit" [] is, [] is not included with the bid.

2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

"Bona fide employee" means a person, employed by a bidder and subject to the bidder's supervision and control as to time, place, and manner of performance, who neither exerts, nor proposes to exert improper influence to solicit or obtain contracts nor holds out as being able to obtain any contract(s) through improper influence.

"Improper influence" means any influence that induces or tends to induce a PHA/IHA employee or officer to give consideration or to act regarding a PHA/IHA contract on any basis other than the merits of the matter.

(b) The bidder represents and certifies as part of its bid that, except for full-time bona fide employees working solely for the bidder, the bidder:

(1) [] has, [] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [] has, [] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(c) If the answer to either (a)(1) or (a)(2) above is affirmative, the bidder shall make an immediate and full written disclosure to the PHA/IHA Contracting Officer.

(d) Any misrepresentation by the bidder shall give the PHA/IHA the right to (1) terminate the contract; (2) at its discretion, deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

3. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (applicable to contracts exceeding \$100,000)

(a) The definitions and prohibitions contained in Section 1352 of title 31, United States Code, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The bidder, by signing its bid, hereby certifies to the best of his or her knowledge and belief as of December 23, 1989 that:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of a contract resulting from this solicitation;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the bidder shall complete and submit, with its bid, OMB standard form LLL, "Disclosure of Lobbying Activities;" and

(3) He or she will include the language of this certification in all subcontracts at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(d) Indian tribes (except those chartered by States) and Indian organizations as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) are exempt from the requirements of this provision.

4. Organizational Conflicts of Interest Certification

The bidder certifies that to the best of its knowledge and belief and except as otherwise disclosed, he or she does not have any organizational conflict of interest which is defined as a situation in which the nature of work to be performed under this proposed contract and the bidder's organizational, financial, contractual, or other interests may, without some restriction on future activities:

(a) Result in an unfair competitive advantage to the bidder; or,
(b) Impair the bidder's objectivity in performing the contract work.
[] In the absence of any actual or apparent conflict, I hereby certify that to the best of my knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement.

5. Bidder's Certification of Eligibility

(a) By the submission of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person or firm which has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

(1) Be awarded contracts by any agency of the United States Government, HUD, or the State in which this contract is to be performed; or,

(2) Participate in HUD programs pursuant to 24 CFR Part 24.

(b) The certification in paragraph (a) above is a material representation of fact upon which reliance was placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in HUD programs and other Federal contract programs.

6. Minimum Bid Acceptance Period

(a) "Acceptance period," as used in this provision, means the number of calendar days available to the PHA/IHA for awarding a contract from the date specified in this solicitation for receipt of bids.

(b) This provision supersedes any language pertaining to the acceptance period that may appear elsewhere in this solicitation.

(c) The PHA/IHA requires a minimum acceptance period of [Contracting Officer insert time period] calendar days.

(d) In the space provided immediately below, bidders may specify a longer acceptance period than the PHA's/IHA's minimum requirement. The bidder allows the following acceptance period: calendar days.

(e) A bid allowing less than the PHA's/IHA's minimum acceptance period will be rejected.

(f) The bidder agrees to execute all that it has undertaken to do, in compliance with its bid, if that bid is accepted in writing within (1) the acceptance period stated in paragraph (c) above or (2) any longer acceptance period stated in paragraph (d) above.

7. Small, Minority, Women-Owned Business Concern Representation

The bidder represents and certifies as part of its bid/ offer that it --

(a) [] is, [] is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) [] is, [] is not a women-owned business enterprise. "Women-owned business enterprise," as used in this provision, means a business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) [] is, [] is not a minority business enterprise. "Minority business enterprise," as used in this provision, means a business which is at least 51 percent owned or controlled by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are:

(Check the block applicable to you)

[] Black Americans	[] Asian Pacific Americans
[] Hispanic Americans	[] Asian Indian Americans
[] Native Americans	[] Hasidic Jewish Americans

8. Indian-Owned Economic Enterprise and Indian Organization Representation (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

The bidder represents and certifies that it:

(a) [] is, [] is not an Indian-owned economic enterprise. "Economic enterprise," as used in this provision, means any commercial, industrial, or business activity established or organized for the purpose of profit, which is at least 51 percent Indian owned. "Indian," as used in this provision, means any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act.

(b) [] is, [] is not an Indian organization. "Indian organization," as used in this provision, means the governing body of any Indian tribe or entity established or recognized by such governing body. Indian "tribe" means any Indian tribe, band, group, pueblo, or

community including Native villages and Native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

9. Certification of Eligibility Under the Davis-Bacon Act (applicable to construction contracts exceeding \$2,000)

(a) By the submission of this bid, the bidder certifies that neither it nor any person or firm who has an interest in the bidder's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of the contract resulting from this solicitation shall be subcontracted to any person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

10. Certification of Nonsegregated Facilities (applicable to contracts exceeding \$10,000)

(a) The bidder's attention is called to the clause entitled **Equal Employment Opportunity** of the General Conditions of the Contract for Construction.

(b) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or otherwise.

(c) By the submission of this bid, the bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The bidder agrees that a breach of this certification is a violation of the Equal Employment Opportunity clause in the contract.

(d) The bidder further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) prior to entering into subcontracts which exceed \$10,000 and are not exempt from the requirements of the Equal Employment Opportunity clause, it will:

(1) Obtain identical certifications from the proposed subcontractors;

(2) Retain the certifications in its files; and

(3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Employment Opportunity clause of the prime contract. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

Note: The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

11. Clean Air and Water Certification (applicable to contracts exceeding \$100,000)

The bidder certifies that:

(a) Any facility to be used in the performance of this contract [] is, [] is not listed on the Environmental Protection Agency List of Violating Facilities:

(b) The bidder will immediately notify the PHA/IHA Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the bidder proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and,

(c) The bidder will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

12. Previous Participation Certificate (applicable to construction and equipment contracts exceeding \$50,000)

(a) The bidder shall complete and submit with his/her bid the Form HUD-2530, "Previous Participation Certificate." If the successful bidder does not submit the certificate with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the certificate by that date may render the bid nonresponsive. No contract award will be made without a properly executed certificate.

(b) A fully executed "Previous Participation Certificate" [] is, [] is not included with the bid.

13. Bidder's Signature

The bidder hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

(Signature and Date)

(Typed or Printed Name)

(Title)

(Company Name)

(Company Address)

Previous Participation Certification

OMB Approval No. 2502-0118
(Exp. 05/31/2019)US Department of Housing and Urban Development
Office of Housing/Federal Housing CommissionerUS Department of Agriculture
Farmers Home Administration**Part I to be completed by Controlling Participant of Covered Projects**

(See instructions)

Reason for submission:

1. Agency name and City where the application is filed

3. Loan or Contract amount \$

4. Number of Units or Beds

5. Section of Act

6. Type of Project (check one)
☐ Existing ☐ Rehabilitation ☐ Proposed (New)

2. Project Name, Project Number, City and Zip Code

For HUD HQ/FmHA use only**7. List all proposed Controlling Participants and attach organization chart for all organizations**

Name and address of Principals and Affiliates (Name: Last, First, Middle Initial) proposing to participate

8 Role of Each Principal in Project

9. SSN or IRS Employer Number

Certifications: The controlling participant(s) listed above hereby apply to HUD or USDA FmHA, as the case maybe, for approval to participate as controlling participant(s) in the role(s) and project listed above. The controlling participant(s) each certify that all the statements made on this form are true, complete and correct to the best of their knowledge and belief and are made in good faith, including any Exhibits attached to this form.

Warning: HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. The controlling participant(s) further certify that to the best of their knowledge and belief:

1. Schedule A contains a listing, for the last ten years, of every project assisted or insured by HUD, USDA FmHA and/or State and local government housing finance agencies in which the controlling participant(s) have participated or are now participating.

2. For the period beginning 10 years prior to the date of this certification, and except as shown on the certification:

a. No mortgage on a project listed has ever been in default, assigned to the Government or foreclosed, nor has it received mortgage relief from the mortgagee;

b. The controlling participants have no defaults or noncompliance under any Conventional Contract or Turnkey Contract of Sale in connection with a public housing project;

c. There are no known unresolved findings as a result of HUD audits, management reviews or other Governmental investigations concerning the controlling participants or their projects;

d. There has not been a suspension or termination of payments under any HUD assistance contract due to the controlling participant's fault or negligence;

e. The controlling participants have not been convicted of a felony and are not presently the subject of a complaint or indictment charging a felony. (A felony is defined as any offense punishable by imprisonment for a term exceeding one year, but does not include any offense classified as a misdemeanor under the laws of a State and punishable by imprisonment of two years or less);

f. The controlling participants have not been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency;

g. The controlling participants have not defaulted on an obligation covered by a surety or performance bond and have not been the subject of a claim under an employee fidelity bond;

3. All the names of the controlling participants who propose to participate in this project are listed above.

4. None of the controlling participants is a HUD/FmHA employee or a member of a HUD/FmHA employee's immediate household as defined in Standards of Ethical Conduct for Employees of the Executive Branch in 5 C.F.R. Part 2635 (57 FR 35006) and HUD's Standard of Conduct in 24 C.F.R. Part 0 and USDA's Standard of Conduct in 7 C.F.R. Part 0 Subpart B.

5. None of the controlling participants is a participant in an assisted or insured project as of this date on which construction has stopped for a period in excess of 20 days or which has been substantially completed for more than 90 days and documents for closing, including final cost certification, have not been filed with HUD or FmHA.

6. None of the controlling participants have been found by HUD or FmHA to be in noncompliance with any applicable fair housing and civil rights requirements in 24 CFR 5.105(a). (If any controlling participants have been found to be in noncompliance with any requirements, attach a signed statement explaining the relevant facts, circumstances, and resolution, if any).

7. None of the controlling participants is a Member of Congress or a Resident Commissioner nor otherwise prohibited or limited by law from contracting with the Government of the United States of America.

8. Statements above (if any) to which the controlling participant(s) cannot certify have been deleted by striking through the words with a pen, and the controlling participant(s) have initialed each deletion (if any) and have attached a true and accurate signed statement (if applicable) to explain the facts and circumstances.

Name of Controlling Participant

Signature of Controlling Participant

Certification Date (mm/dd/yyyy)

Area Code and Tel. No.

This form prepared by (print name)

Area Code and Tel. No.

Previous editions are obsolete

OMB Approval No. 2502-0118
(Exp. 05/31/2019)

1. Controlling Participants' Name (Last, First)	2. List of previous projects (Project name, project ID and, Govt. agency involved)	3. List Participants' Role(s) (indicate dates participated, and if fee or identity of interest participant)	4. Status of loan (current, defaulted, assigned, foreclosed)	5. Was the Project ever in default during your participation Yes No If yes, explain	6. Last MOR rating and Physical Insp. Score and date

Received and checked by me for accuracy and completeness; recommend approval or refer to Headquarters after checking appropriate box.

Date (mm/dd/yyyy)		Tel No. and area code		<input type="checkbox"/> A. No adverse information; form HUD-2530 approval recommended.		<input type="checkbox"/> C. Disclosure or Certification problem	
Staff		Processing and Control		<input type="checkbox"/> B. Name match in system		<input type="checkbox"/> D. Other (attach memorandum)	
Signature of authorized reviewer		Signature of authorized reviewer		Approved		Date (mm/dd/yyyy)	
				<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	

Previous editions are obsolete

Carefully read these instructions and the applicable regulations. A copy of those regulations published at 24 C.F.R. part 200, subpart H, can be obtained on-line at www.gpo.gov and from the Account Executive at any HUD Office. Type or print neatly in ink when filling out this form. Mark answers in all blocks of the form. If the form is not filled completely, it will delay approval of your application.

Attach extra sheets as you need them. Be sure to indicate "Continued on Attachments" wherever appropriate. Sign each additional page that you attach if it refers to you or your record. **Carefully read the certification before you sign it.** Any questions regarding the form or how to complete it can be answered by your HUD Account Executive.

Purpose: This form provides HUD with a certified report of all previous participation in HUD programs by those parties making application. The information requested in this form is used by HUD to determine if you meet the standards established to ensure that all controlling participants in HUD projects will honor their legal, financial and contractual obligations and are acceptable risks from the underwriting standpoint of an insurer, lender or governmental agency. HUD requires that you certify your record of previous participation in HUD/USDA-FmHA, State and Local Housing Finance Agency projects by completing and signing this form, before your project application or participation can be approved.

HUD approval of your certification is a necessary precondition for your participation in the project and in the capacity that you propose. If you do not file this certification, do not furnish the information requested accurately, or do not meet established standards, HUD will not approve your certification.

Note that approval of your certification does not obligate HUD to approve your project application, and it does not satisfy all other HUD program requirements relative to your qualifications.

Who Must Sign and File Form HUD-2530: Form HUD-2530 must be completed and signed by all Controlling Participants of Covered Projects, as such terms are defined in 24 CFR 200.212, and as further clarified by the Processing Guide referenced in 24 CFR 200.210(b) and made available on the HUD website at:
http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/mfl/prevparticipation.

Where and When Form HUD-2530 Must Be Filed: The original of this form must be submitted to the HUD Office where your project application will be processed at the same time you file your initial project application. This form must be filed with applications for projects listed in 24 CFR 200.214 and for the Triggering Events listed at 24 CFR 200.218.

Review of Adverse Determination: If approval of your participation in a HUD project is denied, withheld, or conditionally granted on the basis of your record of previous participation, you will be notified by the HUD Office. You may request reconsideration in accordance with 24 CFR 200.222 and further clarified by the Processing Guide. Request must be made in writing within 30 days from your receipt of the notice of determination.

Specific Line Instructions are set forth in the Processing Guide.

The Department of Housing and Urban Development (HUD) is authorized to collect this information by law (42 U.S.C. 3535(d) and 24 C.F.R. 200.217) and by regulation at 24 CFR 200.210. This information is needed so that principals applying to participate in multifamily programs can become HUD-approved controlling participants. The information you provide will enable HUD to evaluate your record with respect to established standards of performance, responsibility and eligibility. Without prior approval, a controlling participant may not participate in a proposed or existing multifamily or healthcare project. HUD uses this information to evaluate whether or not controlling participants pose an unsatisfactory underwriting risk. The information is used to evaluate the potential controlling participants and approve only individuals and organizations that will honor their legal, financial and contractual obligations.

Privacy Act Statement: The Housing and Community Development Act of 1987, 42 U.S.C. 3543 requires persons applying for a Federally-insured or guaranteed loan to furnish his/her Social Security Number (SSN). HUD must have your SSN for identification of your records. HUD may use your SSN for automated processing of your records and to make requests for information about you and your previous records with other public agencies and private sector sources. HUD may disclose certain information to Federal, State and local agencies when relevant to civil, criminal, or regulatory investigations and prosecutions. It will not be otherwise disclosed or released outside of HUD, except as required and permitted by law. You must provide all of the information requested in this application, including your SSN.

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB control number.

A response is mandatory. Failure to provide any of the information will result in your disapproval of participation in this HUD program.



Development & Modernization
100 Ross Street, Suite 200
Pittsburgh, PA 15219
(412) 456-5020
www.hacp.org

SPECIAL PROVISIONS

NOTICE TO ALL PROSPECTIVE BIDDERS

Gualtieri Manor HVAC Piping System Replacements, AMP-47

Documents Required for Payment

IFB Contract No.: 600-24-19

Pursuant to Sections 27, 38, 40 and 46 of the General Conditions for this Contract, each contractor must submit the following required documents with each Payment Estimate ("PE") in order for HACP to process a PE as follows:

A. Periodic Estimate – HUD 51001

B. Schedule of Stored Materials – HUD 51003 (if applicable)

C. Summary of Stored Materials – HUD 51004 (if applicable)

D. Schedule of Change Orders – HUD 51002 (if applicable)

E. Progress Payment Certification

F. Current/Approved Certified Payrolls (submitted to HACP's Davis-Bacon Wage Clerk).

G. MBE/WBE Utilization Report

H. Section 3 Summary Report

Signature of Authorized Officer: _____

Date: _____

THIS DOCUMENT MUST BE SIGNED.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

**NON-COLLUSION
AFFIDAVIT**

State of _____

County of _____

_____, being first duly sworn, deposes and says:
(Printed or Typed Name)

That he/she is
(Proprietor, General Partner, President or Vice President)

of _____; and having submitted the foregoing Bid for
(Bidder Name)

Gualtieri Manor HVAC Piping System
Replacements, AMP-47

(Project Name)

600-24-19

(HACP Contract No.)

and is the party making the foregoing Bid, and that such Bid is genuine and not collusive or sham; that said Bidder has not colluded, conspired, connived or agreed, directly or indirectly, with any Bidder or person, to put in a sham bid, or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price of affiant or of any bidder, or to fix any overhead, profit or cost element of said bid price, or of that of any bidder, or to secure any advantage against the Housing Authority of the City of Pittsburgh or any person interested in the proposed contract; and that all statements in said Bid are true.

(Signature and Date)

Subscribed and sworn to before me

this _____ day of _____, 20__

My Commission expires _____, 20__

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

FORM OF AGREEMENT

THIS AGREEMENT, made this ____ day of _____ in the year Two Thousand ____ (20) by and between:

- ☐ An individual doing business in his/her own name
☐ An individual doing business under a fictitious or assumed name
☐ A partnership
☐ A Corporation

(Hereinafter called the Contractor)

AND

The Housing Authority of the City of Pittsburgh (hereinafter called the Authority)
200 Ross Street
Pittsburgh, PA 15219

WITNESSETH: That the Contractor and the Authority, for the consideration stated herein, mutually agree as follows:

ARTICLE 1, STATEMENT OF WORK

The Contractor shall provide all labor, materials and equipment, and services necessary to perform and complete all work required in accordance with D & D Engineering drawings for Gualtieri Manor HVAC Piping System Replacements, AMP-47 dated March 22, 2019 and Project Manual dated June 3, 2019 regarding:

600-24-19

IFB NO. _____
and addenda thereto numbered _____, all as prepared by _____, which said specifications, drawings, and addenda are incorporated herein by reference and are a part hereof.

The work shall begin at the time stipulated in the NOTICE TO PROCEED and in no event exceeding 90 consecutive calendar days from notice to proceed.

ARTICLE 2, THE CONTRACT PRICE

The Authority shall pay the contractor for the performance of the Contract in current fund, subject to additions and deductions as provided in the specifications.

_____ (\$ _____)

ARTICLE 3, CONTRACT DOCUMENTS

The Contract shall consist of the following component parts:

- a. This Agreement
- b. Project Manual (including all component parts) dated June 3, 2019.
- c. Project Drawings issued by D & D Engineering dated March 22, 2019.

This Agreement, together with the other documents enumerated in this Article 3 which said other documents are as fully a part of the Contract as if hereto attached or herein repeated, form the Contract. In the event that any provision in any component part of this Contract conflicts with any provision of any other component part, the provision of the component part first enumerated in this ARTICLE 3, shall govern, except as subsequent parts may establish more specific criteria or language in which case these criteria and language shall govern. The various provisions in Addenda shall be construed in the order of preference of the component part of the Contract which each modified.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS

this _____ day of _____ 20____.

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

By signing this Form of Agreement, if the Housing Authority accepts and signs Contract No. 600-24-19 this contract shall be binding on both parties.

(Printed or Typed Name)

(Printed or Typed Name)

Witness

{

(Signature and Date)

Principal

{

(Signature and Date)

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

By signing this Form of Agreement, if the Housing Authority accepts and signs Contract No. 600-24-19 this contract shall be binding on both parties.

	<hr/>		<hr/>
	<i>(Printed or Typed Name)</i>		<i>(Printed or Typed Name)</i>
<i>Witness</i>	{	<i>Partner*</i>	{
	<hr/>		<hr/>
	<i>(Signature and Date)</i>		<i>(Signature and Date)</i>

	<hr/>		<hr/>
	<i>(Printed or Typed Name)</i>		<i>(Printed or Typed Name)</i>
<i>Witness</i>	{	<i>Partner*</i>	{
	<hr/>		<hr/>
	<i>(Signature and Date)</i>		<i>(Signature and Date)</i>

* If the Bidder is a partnership, the Form of Agreement must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

By signing this Form of Agreement, if the Housing Authority accepts and signs Contract No. 600-24-19 this contract shall be binding on both parties.

(CORPORATE
SEAL)

(Corporate Name)

(Printed or Typed Name)

(Printed or Typed Name)

Witness

{

President

V.P. **

{

(Signature and Date)

(Signature and Date)

(Corporate Title)

(Corporate Title)

** If the bidder is a corporation, the Form of Agreement must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the
Secretary/Assistant Secretary of the Corporation named a Bidder herein; that
(Circle one)

_____ who signed this Bid on behalf of the

Corporation was then _____ of said Corporation that I know his
signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and
attested in behalf of said Corporation by authority of its governing body.

(CORPORATE
SEAL)

(Signature and Date)

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Secretary

Kim Detrick, Chief Contracting Officer

Attest

Principal

{

{

(Signature and Date)

(Signature and Date)

Manikandan Muthiah, Director of Construction and Modernization

Approved as to

Contents and Costs

{

(Signature and Date)

Associate Counsel

Approved as to

Form

{

(Signature and Date)

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

CONTRACTING OFFICER CERTIFICATION

I _____ certify that I am the Recording Secretary of the Housing Authority of the City of Pittsburgh; that _____, who signed this Contract on behalf of the Housing Authority, was then Contracting Officer of said Authority; that the said Contract was duly signed for and on behalf of the Housing Authority of the City of Pittsburgh.

_____(SEAL)
Secretary

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

PERFORMANCE BOND

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PAYMENT BOND IN FAVOR OF THE
AUTHORITY CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT.

KNOW ALL MEN BY THESE PRESENTS, that we,

_____, as Principal, and
(Insert name and address of contractor exactly as it appears on Form of Agreement)

_____, as Sureties, are
held and firmly bound unto the **Housing Authority of the City of Pittsburgh**, its certain attorney, successors, or assigns
(the Obligee, hereinafter called the "Authority") in the penal sum of

_____ Dollars (\$_____)

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our
heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal heretofore has submitted to the said Authority a certain bid, dated

_____, 20_____ (the "Bid"), for construction of
(Insert date of bid)

(Insert name of project exactly as it appears on Form of Agreement)

pursuant to specifications, drawings and other related documents constituting the Invitation for Bids (the "IFB"); and

WHEREAS, the said Authority is a "Contracting body" under provisions of Act No. 385 of the General Assembly
of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known and cited as the
"Public Works Contractors' Bond Law of 1967" (8 P.S. 191-202) (the "Act"); and

WHEREAS, the Act, in Section 3 (a), requires that, before an award shall be made to the Principal shall furnish this
Bond to the said Authority, with this Bond to become binding upon the award of a Contract to the Principal by the said
Authority in accordance with the Bid; and

WHEREAS, it also is a condition of the IFB that this Bond shall be furnished by the Principal to the said Authority;
and

WHEREAS, Under the Invitation for Bids, it is provided, inter alia, that if the Principal shall furnish this Bond to
the said Authority, and if the said Authority shall make an award to the Principal in accordance with the Bid, then the
Principal and the said Authority shall enter into a contract with respect to performance of such work (the "Contract"), the
Form of Agreement for which is set forth in the IFB.

NOW, therefore, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the principal shall faithfully perform the Contract on his part as of the time and in the manner therein provided and satisfy all claims and demands incurred in or for the same, or growing out of the same, or for injury or damages to persons or property in the performance thereof, and shall fully indemnify and save harmless the said Authority from any and all cost and damage which the said Authority may suffer by reason of the principal's failure to do so, and shall fully reimburse and repay the said Authority any and all outlay and expense which it incurs by reason of any such default, then this obligation shall be null and void, otherwise it shall remain in full force and virtue.

It is further understood and agreed that the principal shall guarantee for a period of one (1) year from completion date of the contract against defects in workmanship or materials in accordance with the terms of the Contract.

The said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS
(2 required by Authority)

this _____ day of _____ 20 _____.

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

	_____ (Printed or Typed Name)		_____ (Printed or Typed Name)
Witness		Principal	
{		{	
	_____ (Signature and Date)		_____ (Signature and Date)

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

	<hr/>		<hr/>
	<i>(Printed or Typed Name)</i>		<i>(Printed or Typed Name)</i>
<i>Witness</i>		<i>Partner*</i>	
	{		{
	<hr/>		<hr/>
	<i>(Signature and Date)</i>		<i>(Signature and Date)</i>

	<hr/>		<hr/>
	<i>(Printed or Typed Name)</i>		<i>(Printed or Typed Name)</i>
<i>Witness</i>		<i>Partner*</i>	
	{		{
	<hr/>		<hr/>
	<i>(Signature and Date)</i>		<i>(Signature and Date)</i>

* If the Bidder is a partnership, the Bond must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

(CORPORATE
SEAL)

(Corporate Name)

(Printed or Typed Name)

(Printed or Typed Name)

Witness

President

{

V.P. **

{

(Signature and Date)

(Signature and Date)

(Corporate Title)

(Corporate Title)

** If the bidder is a corporation, the Bond must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal below must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the
Secretary/Assistant Secretary of the Corporation named a Bidder herein; that
(Circle one)

_____ who signed this Bid on behalf of the

Corporation was then _____ of said Corporation that I know his signature and his
signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by
authority of its governing body.

*(CORPORATE
SEAL)*

(Signature and Date)

SURETY SIGN HERE

(SURETY
SEAL)

(Printed or Typed Name)

(Printed or Typed Name)

Attest
{

Surety ***
{

(Signature and Date)

(Signature and Date)

***Power of attorney must be attached to this Bid Bond.

The rate of premium charged is \$ _____ per thousand.
(To be filled in by Surety)

The total amount of premium charged is \$ _____
(To be filled in by Surety)

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

PAYMENT BOND
(Labor and Materialmen's Bond)

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PERFORMANCE BOND IN FAVOR OF THE
AUTHORITY CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT.

KNOW ALL MEN BY THESE PRESENTS, that we,

_____, as Principal, and
(Insert name and address of Contractor exactly as it appears on Form of Agreement)

_____, as Sureties, are
held and firmly bound unto the **Housing Authority of the City of Pittsburgh**, its certain attorney, successors, or assigns
(the Obligee, hereinafter called the "Authority") in the penal sum of

_____ Dollars (\$_____)

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our
heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal heretofore has submitted to the said Obligee a certain bid, dated

_____, 20_____ (the "Bid"), for construction of
(Insert date of bid)

(Insert name of project exactly as it appears on Form of Agreement)
pursuant to specifications, drawings and other related documents constituting the Invitation for Bids (the "IFB"); and

WHEREAS, the said Authority is a "Contracting body" under provisions of Act No. 385 of the General Assembly
of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known and cited as the
"Public Works Contractors' Bond Law of 1967" (8 P.S. 191-202) (the "Act"); and

WHEREAS, the Act, in Section 3 (a), requires that, before an award shall be made to the Principal shall furnish this
Bond to the said Authority, with this Bond to become binding upon the award of a Contract to the Principal by the said
Authority in accordance with the Bid; and

WHEREAS, it also is a condition of the IFB that this Bond shall be furnished by the Principal to the said Authority;
and

WHEREAS, Under the Invitation for Bids, it is provided, inter alia, that if the Principal shall furnish this Bond to the said Authority, and if the said Authority shall make an award to the Principal in accordance with the Bid, then the Principal and the said Authority shall enter into a contract with respect to performance of such work (the "Contract"), the Form of Agreement for which is set forth in the IFB.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if said principal and all subcontractors to whom any portion of the work provided for in said contract is sublet and all assignees of said principal and of such subcontractors shall promptly make payment for all material furnished, labor supplied or performed, rental for equipment employed, and services rendered by public utilities in or in connection with the prosecution of the work, whether or not the said material, labor, equipment or services enter into and become component parts of the work or improvement contemplated in said contract, or in any amendment or extension of or addition to said Contract, then the above obligation shall be void; otherwise to remain in full force and effect. PROVIDED, however, that this bond is subject to the following conditions and limitations.

(a) All persons who have performed labor, rendered services or furnished materials or machinery, shall have direct right of action against the principal and surety on this bond, which right of action shall be asserted in proceedings instituted in the State in which such labor was performed, services rendered or materials furnished (or where labor has been performed, services rendered or materials furnished under said Contract is more than one State, then in any such State). Insofar as permitted by the laws of such State, such right of action shall be asserted in a proceeding instituting such action and any or all other persons having claims hereunder, and any other person having a claim hereunder shall have the right to be made a party to such proceeding (but not later than one year after the complete performance of said Contract and final settlement thereof) and to have such claim adjudicated in such action and judgment rendered thereon.

(b) The surety shall not be liable hereunder for any damages or compensation recoverable under any workmen's compensation or employer's liability statute.

(c) In no event shall the surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later than one year after the complete performance of said contract and final settlement thereof.

(d) As used herein: The term "person" refers to any individual, firm or corporation who have furnished materials or machinery or public utility services to be used on or incorporated in the work or the prosecution thereof provided for in said Contract or in any amendment or extension of or addition to said Contract, and/or to any person engaged in the prosecution of the work provided for in said Contract or in any amendment or extension of or addition to said Contract, who is an agent, servant or employee of the principal, or of any subcontractor, or of any assignee of said principal or of any subcontractor and also anyone so engaged who performs the work of a laborer or of a mechanic regardless of any contractual relationship between the principal, or any sub-contractor, or any assignee of said principal or of said subcontractor, and such laborer or mechanic, but shall not include office employees not regularly stationed at the site of the work.

The said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder or the Specifications accompanying the same, shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS
(2 required by Authority)

this _____ day of _____ 20 _____.

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

	_____ (Printed or Typed Name)		_____ (Printed or Typed Name)
<i>Witness</i>		<i>Principal</i>	
	{		{
	_____ (Signature and Date)		_____ (Signature and Date)

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

	<hr/>		<hr/>
	(Printed or Typed Name)		(Printed or Typed Name)
Witness		Partner*	
	{		{
	<hr/>		<hr/>
	(Signature and Date)		(Signature and Date)
	<hr/>		<hr/>
	(Printed or Typed Name)		(Printed or Typed Name)
Witness		Partner*	
	{		{
	<hr/>		<hr/>
	(Signature and Date)		(Signature and Date)

* If the Bidder is a partnership, the Bond must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

(CORPORATE
SEAL)

(Corporate Name)

(Printed or Typed Name)

(Printed or Typed Name)

Witness

President

{

V.P. **

{

(Signature and Date)

(Signature and Date)

(Corporate Title)

(Corporate Title)

** If the bidder is a corporation, the Bond must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the
Secretary/Assistant Secretary of the Corporation named a Bidder herein; that
(Circle one)

_____ who signed this Bid on behalf of the

Corporation was then _____ of said Corporation that I know his
signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and
attested in behalf of said Corporation by authority of its governing body.

(CORPORATE
SEAL)

(Signature and Date)

SURETY SIGN HERE

(SURETY
SEAL)

(Printed or Typed Name)

(Printed or Typed Name)

Attest

Surety

{

{

(Signature and Date)

(Signature and Date)

The rate of premium charged is \$ _____ per thousand.
(To be filled in by Surety)

The total amount of premium charged is \$ _____
(To be filled in by Surety)

General Conditions for Construction Contracts - Public Housing Programs

U.S. Department of Housing and Urban Development
Office of Public and Indian Housing
OMB Approval No. 2577-0157 (exp. 3/31/2020)

Applicability. This form is applicable to any construction/development contract greater than \$150,000.

This form includes those clauses required by OMB's common rule on grantee procurement, implemented at HUD in 2 CFR 200, and those requirements set forth in Section 3 of the Housing and Urban Development Act of 1968 and its amendment by the Housing and Community Development Act of 1992, implemented by HUD at 24 CFR Part 135. The form is required for construction contracts awarded by Public Housing Agencies (PHAs).

The form is used by Housing Authorities in solicitations to provide necessary contract clauses. If the form were not used, HAs would be unable to enforce their contracts.

Public reporting burden for this collection of information is estimated to average 1.0 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Responses to the collection of information are required to obtain a benefit or to retain a benefit.

The information requested does not lend itself to confidentiality.

HUD may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB number.

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1. Definitions

- (a) "Architect" means the person or other entity engaged by the PHA to perform architectural, engineering, design, and other services related to the work as provided for in the contract. When a PHA uses an engineer to act in this capacity, the terms "architect" and "engineer" shall be synonymous. The Architect shall serve as a technical representative of the Contracting Officer. The Architect's authority is as set forth elsewhere in this contract.
- (b) "Contract" means the contract entered into between the PHA and the Contractor. It includes the forms of Bid, the Bid Bond, the Performance and Payment Bond or Bonds or other assurance of completion, the Certifications, Representations, and Other Statements of Bidders (form HUD-5370), these General Conditions of the Contract for Construction (form HUD-5370), the applicable wage rate determinations from the U.S. Department of Labor, any special conditions included elsewhere in the contract, the specifications, and drawings. It includes all formal changes to any of those documents by addendum, change order, or other modification.
- (c) "Contracting Officer" means the person delegated the authority by the PHA to enter into, administer, and/or terminate this contract and designated as such in writing to the Contractor. The term includes any successor Contracting Officer and any duly authorized representative of the Contracting Officer also designated in writing. The Contracting Officer shall be deemed the authorized agent of the PHA in all dealings with the Contractor.
- (d) "Contractor" means the person or other entity entering into the contract with the PHA to perform all of the work required under the contract.
- (e) "Drawings" means the drawings enumerated in the schedule of drawings contained in the Specifications and as described in the contract clause entitled Specifications and Drawings for Construction herein.
- (f) "HUD" means the United States of America acting through the Department of Housing and Urban Development including the Secretary, or any other person designated to act on its behalf. HUD has agreed, subject to the provisions of an Annual Contributions Contract (ACC), to provide financial assistance to the PHA, which includes assistance in financing the work to be performed under this contract. As defined elsewhere in these General Conditions or the contract documents, the determination of HUD may be required to authorize changes in the work or for release of funds to the PHA for payment to the Contractor. Notwithstanding HUD's role, nothing in this contract shall be construed to create any contractual relationship between the Contractor and HUD.
- (g) "Project" means the entire project, whether construction or rehabilitation, the work for which is provided for in whole or in part under this contract.
- (h) "PHA" means the Public Housing Agency organized under applicable state laws which is a party to this contract.
- (i) "Specifications" means the written description of the technical requirements for construction and includes the criteria and tests for determining whether the requirements are met.
- (l) "Work" means materials, workmanship, and manufacture and fabrication of components.
- (a) The Contractor shall furnish all necessary labor, materials, tools, equipment, and transportation necessary for performance of the work. The Contractor shall also furnish all necessary water, heat, light, and power not made available to the Contractor by the PHA pursuant to the clause entitled Availability and Use of Utility Services herein.
- (b) The Contractor shall perform on the site, and with its own organization, work equivalent to at least ☒ (12 percent unless otherwise indicated) of the total amount of work to be performed under the order. This percentage may be reduced by a supplemental agreement to this order if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the PHA.
- (c) At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.
- (d) The Contractor shall be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall hold and save the PHA, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.
- (e) The Contractor shall lay out the work from base lines and bench marks indicated on the drawings and be responsible for all lines, levels, and measurements of all work executed under the contract. The Contractor shall verify the figures before laying out the work and will be held responsible for any error resulting from its failure to do so.
- (f) The Contractor shall confine all operations (including storage of materials) on PHA premises to areas authorized or approved by the Contracting Officer.
- (g) The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. After completing the work and before final inspection, the Contractor shall (1) remove from the premises all scaffolding, equipment, tools, and materials (including rejected materials) that are not the property of the PHA and all rubbish caused by its work; (2) leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer; (3) perform all specified tests; and, (4) deliver the installation in complete and operating condition.
- (h) The Contractor's responsibility will terminate when all work has been completed, the final inspection made, and the work accepted by the Contracting Officer. The Contractor will then be released from further obligation except as required by the warranties specified elsewhere in the contract.

3. Architect's Duties, Responsibilities, and Authority

- (a) The Architect for this contract, and any successor, shall be designated in writing by the Contracting Officer.

2. Contractor's Responsibility for Work

- (b) The Architect shall serve as the Contracting Officer's technical representative with respect to architectural, engineering, and design matters related to the work performed under the contract. The Architect may provide direction on contract performance. Such direction shall be within the scope of the contract and may not be of a nature which: (1) institutes additional work outside the scope of the contract; (2) constitutes a change as defined in the Changes clause herein; (3) causes an increase or decrease in the cost of the contract; (4) alters the Construction Progress Schedule; or (5) changes any of the other express terms or conditions of the contract.
- (c) The Architect's duties and responsibilities may include but shall not be limited to:
- (1) Making periodic visits to the work site, and on the basis of his/her on-site inspections, issuing written reports to the PHA which shall include all observed deficiencies. The Architect shall file a copy of the report with the Contractor's designated representative at the site;
 - (2) Making modifications in drawings and technical specifications and assisting the Contracting Officer in the preparation of change orders and other contract modifications for issuance by the Contracting Officer;
 - (3) Reviewing and making recommendations with respect to - (i) the Contractor's construction progress schedules; (ii) the Contractor's shop and detailed drawings; (iii) the machinery, mechanical and other equipment and materials or other articles proposed for use by the Contractor; and, (iv) the Contractor's price breakdown and progress payment estimates; and,
 - (4) Assisting in inspections, signing Certificates of Completion, and making recommendations with respect to acceptance of work completed under the contract.

4. Other Contracts

The PHA may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with PHA employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by PHA employees

Construction Requirements

5. Pre-construction Conference and Notice to Proceed

- (a) Within ten calendar days of contract execution, and prior to the commencement of work, the Contractor shall attend a preconstruction conference with representatives of the PHA, its Architect, and other interested parties convened by the PHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract. The PHA will provide the Contractor with the date, time, and place of the conference.
- (b) The contractor shall begin work upon receipt of a written Notice to Proceed from the Contracting Officer or designee. The Contractor shall not begin work prior to receiving such notice.

6. Construction Progress Schedule

- (a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring labor, materials, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments or take other remedies under the contract until the Contractor submits the required schedule.
- (b) The Contractor shall enter the actual progress on the chart as required by the Contracting Officer, and immediately deliver three copies of the annotated schedule to the Contracting Officer. If the Contracting Officer determines, upon the basis of inspection conducted pursuant to the clause entitled Inspection and Acceptance of Construction, herein that the Contractor is not meeting the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the PHA. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.
- (c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the Contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the Default clause of this contract.

7. Site Investigation and Conditions Affecting the Work

- (a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to, (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is

reasonably ascertainable from an inspection of the site, including all exploratory work done by the PHA, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the PHA.

- (b) The PHA assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the PHA. Nor does the PHA assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

8. Differing Site Conditions

- (a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site(s), of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.
- (b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. Work shall not proceed at the affected site, except at the Contractor's risk, until the Contracting Officer has provided written instructions to the Contractor. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, the Contractor shall file a claim in writing to the PHA within ten days after receipt of such instructions and, in any event, before proceeding with the work. An equitable adjustment in the contract price, the delivery schedule, or both shall be made under this clause and the contract modified in writing accordingly.
- (c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.
- (d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

9. Specifications and Drawings for Construction

- (a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be

promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

- (b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by", or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.
- (c) Where "as shown" "as indicated", "as detailed", or of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place" that is "furnished and installed".
- (d) "Shop drawings" means drawings, submitted to the PHA by the Contractor, subcontractor, or any lower tier subcontractor, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (i.e., form, fit, and attachment details) of materials of equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. The PHA may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.
- (e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with other contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the PHA's reasons therefore. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.
- (f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Architect approves any such variation and the Contracting Officer concurs, the Contracting Officer shall issue an appropriate modification to the contract, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.
- (g) It shall be the responsibility of the Contractor to make timely requests of the PHA for such large scale and full size drawings, color schemes, and other additional information, not already in his possession, which shall be

required in the planning and production of the work. Such requests may be submitted as the need arises, but each such request shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay.

- (h) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the PHA and one set will be returned to the Contractor. As required by the Contracting Officer, the Contractor, upon completing the work under this contract, shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the work is completed and accepted.
- (i) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all shop drawings prepared by subcontractors are submitted to the Contracting Officer.

10. As-Built Drawings

- (a) "As-built drawings," as used in this clause, means drawings submitted by the Contractor or subcontractor at any tier to show the construction of a particular structure or work as actually completed under the contract. "As-built drawings" shall be synonymous with "Record drawings."
- (b) As required by the Contracting Officer, the Contractor shall provide the Contracting Officer accurate information to be used in the preparation of permanent as-built drawings. For this purpose, the Contractor shall record on one set of contract drawings all changes from the installations originally indicated, and record final locations of underground lines by depth from finish grade and by accurate horizontal offset distances to permanent surface improvements such as buildings, curbs, or edges of walks.
- (c) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all as-built drawings prepared by subcontractors are submitted to the Contracting Officer.

11. Material and Workmanship

- (a) All equipment, material, and articles furnished under this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the contract to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of, and as approved by the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.
- (b) Approval of equipment and materials.
 - (1) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the

machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

- (2) When required by the specifications or the Contracting Officer, the Contractor shall submit appropriately marked samples (and certificates related to them) for approval at the Contractor's expense, with all shipping charges prepaid. The Contractor shall label, or otherwise properly mark on the container, the material or product represented, its place of origin, the name of the producer, the Contractor's name, and the identification of the construction project for which the material or product is intended to be used.
- (3) Certificates shall be submitted in triplicate, describing each sample submitted for approval and certifying that the material, equipment or accessory complies with contract requirements. The certificates shall include the name and brand of the product, name of manufacturer, and the location where produced.
- (4) Approval of a sample shall not constitute a waiver of the PHA right to demand full compliance with contract requirements. Materials, equipment and accessories may be rejected for cause even though samples have been approved.
- (5) Wherever materials are required to comply with recognized standards or specifications, such specifications shall be accepted as establishing the technical qualities and testing methods, but shall not govern the number of tests required to be made nor modify other contract requirements. The Contracting Officer may require laboratory test reports on items submitted for approval or may approve materials on the basis of data submitted in certificates with samples. Check tests will be made on materials delivered for use only as frequently as the Contracting Officer determines necessary to insure compliance of materials with the specifications. The Contractor will assume all costs of retesting materials which fail to meet contract requirements and/or testing materials offered in substitution for those found deficient.
- (6) After approval, samples will be kept in the Project office until completion of work. They may be built into the work after a substantial quantity of the materials they represent has been built in and accepted.
- (c) Requirements concerning lead-based paint. The Contractor shall comply with the requirements concerning lead-based paint contained in the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846) as implemented by 24 CFR Part 35.

12. Permits and Codes

- (a) The Contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules and regulations. Notwithstanding the requirement of the Contractor to comply with the drawings and specifications in the contract, all work installed shall comply with all applicable codes and regulations as amended by any

waivers. Before installing the work, the Contractor shall examine the drawings and the specifications for compliance with applicable codes and regulations bearing on the work and shall immediately report any discrepancy it may discover to the Contracting Officer. Where the requirements of the drawings and specifications fail to comply with the applicable code or regulation, the Contracting Officer shall modify the contract by change order pursuant to the clause entitled Changes herein to conform to the code or regulation.

- (b) The Contractor shall secure and pay for all permits, fees, and licenses necessary for the proper execution and completion of the work. Where the PHA can arrange for the issuance of all or part of these permits, fees and licenses, without cost to the Contractor, the contract amount shall be reduced accordingly.

13. Health, Safety, and Accident Prevention

- (a) In performing this contract, the Contractor shall:
 - (1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
 - (2) Protect the lives, health, and safety of other persons;
 - (3) Prevent damage to property, materials, supplies, and equipment; and,
 - (4) Avoid work interruptions.
- (b) For these purposes, the Contractor shall:
 - (1) Comply with regulations and standards issued by the Secretary of Labor at 29 CFR Part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96), 40 U.S.C. 3701 et seq.; and
 - (2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.
- (c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 CFR Part 1904.
- (d) The Contracting Officer shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.
- (e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as the PHA, the Secretary of Housing and Urban Development, or the Secretary of Labor shall direct as a means of enforcing such provisions.

14. Temporary Heating

The Contractor shall provide and pay for temporary heating, covering, and enclosures necessary to properly protect all work and materials against damage by dampness and cold, to dry out the work, and to facilitate the completion of the work. Any permanent heating equipment used shall be turned over to the PHA in the condition and at the time required by the specifications.

15. Availability and Use of Utility Services

- (a) The PHA shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the PHA or, where the utility is produced by the PHA, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.
- (b) The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the PHA, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

16. Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements

- (a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed under this contract, and which do not unreasonably interfere with the work required under this contract.
- (b) The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during performance of this contract, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.
- (c) The Contractor shall protect from damage all existing improvements and utilities (1) at or near the work site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. Prior to disturbing the ground at the construction site, the Contractor shall ensure that all underground utility lines are clearly marked.
- (d) The Contractor shall shore up, brace, underpin, secure, and protect as necessary all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be affected by the excavations or other operations connected with the construction of the project.
- (e) Any equipment temporarily removed as a result of work under this contract shall be protected, cleaned, and replaced in the same condition as at the time of award of this contract.

- (f) New work which connects to existing work shall correspond in all respects with that to which it connects and/or be similar to existing work unless otherwise required by the specifications.
- (g) No structural members shall be altered or in any way weakened without the written authorization of the Contracting Officer, unless such work is clearly specified in the plans or specifications.
- (h) If the removal of the existing work exposes discolored or unfinished surfaces, or work out of alignment, such surfaces shall be refinished, or the material replaced as necessary to make the continuous work uniform and harmonious. This, however, shall not be construed to require the refinishing or reconstruction of dissimilar finishes previously exposed, or finished surfaces in good condition, but in different planes or on different levels when brought together by the removal of intervening work, unless such refinishing or reconstruction is specified in the plans or specifications.
- (i) The Contractor shall give all required notices to any adjoining or adjacent property owner or other party before the commencement of any work.
- (j) The Contractor shall indemnify and save harmless the PHA from any damages on account of settlement or the loss of lateral support of adjoining property, any damages from changes in topography affecting drainage, and from all loss or expense and all damages for which the PHA may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.
- (k) The Contractor shall repair any damage to vegetation, structures, equipment, utilities, or improvements, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

17. Temporary Buildings and Transportation of Materials

- (a) Temporary buildings (e.g., storage sheds, shops, offices, sanitary facilities) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the PHA. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.
- (b) The Contractor shall, as directed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

18. Clean Air and Water

The contractor shall comply with the Clean Air Act, as amended, 42 USC 7401 et seq., the Federal Water Pollution Control Water Act, as amended, 33 U.S.C. 1251 et seq., and standards issued pursuant thereto in the facilities in which this contract is to be performed.

19. Energy Efficiency

The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under the contract is performed.

20. Inspection and Acceptance of Construction

- (a) Definitions. As used in this clause -
 - (1) "Acceptance" means the act of an authorized representative of the PHA by which the PHA approves and assumes ownership of the work performed under this contract. Acceptance may be partial or complete.
 - (2) "Inspection" means examining and testing the work performed under the contract (including, when appropriate, raw materials, equipment, components, and intermediate assemblies) to determine whether it conforms to contract requirements.
 - (3) "Testing" means that element of inspection that determines the properties or elements, including functional operation of materials, equipment, or their components, by the application of established scientific principles and procedures.
- (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. All work is subject to PHA inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.
- (c) PHA inspections and tests are for the sole benefit of the PHA and do not: (1) relieve the Contractor of responsibility for providing adequate quality control measures; (2) relieve the Contractor of responsibility for loss or damage of the material before acceptance; (3) constitute or imply acceptance; or, (4) affect the continuing rights of the PHA after acceptance of the completed work under paragraph (j) below.
- (d) The presence or absence of the PHA inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specifications without the Contracting Officer's written authorization. All instructions and approvals with respect to the work shall be given to the Contractor by the Contracting Officer.
- (e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The PHA may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The PHA shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

- (f) The PHA may conduct routine inspections of the construction site on a daily basis.
- (g) The Contractor shall, without charge, replace or correct work found by the PHA not to conform to contract requirements, unless the PHA decides that it is in its interest to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.
- (h) If the Contractor does not promptly replace or correct rejected work, the PHA may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor, or (2) terminate for default the Contractor's right to proceed.
- (i) If any work requiring inspection is covered up without approval of the PHA, it must, if requested by the Contracting Officer, be uncovered at the expense of the Contractor. If at any time before final acceptance of the entire work, the PHA considers it necessary or advisable, to examine work already completed by removing or tearing it out, the Contractor, shall on request, promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray all the expenses of the examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the Contracting Officer shall make an equitable adjustment to cover the cost of the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.
- (j) The Contractor shall notify the Contracting Officer, in writing, as to the date when in its opinion all or a designated portion of the work will be substantially completed and ready for inspection. If the Architect determines that the state of preparedness is as represented, the PHA will promptly arrange for the inspection. Unless otherwise specified in the contract, the PHA shall accept, as soon as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines and designates can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the PHA's right under any warranty or guarantee.

21. Use and Possession Prior to Completion

- (a) The PHA shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the PHA intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The PHA's possession or use shall not be deemed an acceptance of any work under the contract.
- (b) While the PHA has such possession or use, the Contractor shall be relieved of the responsibility for (1) the loss of or damage to the work resulting from the PHA's possession or use, notwithstanding the terms of the clause entitled Permits and Codes herein; (2) all maintenance costs on the areas occupied; and, (3) furnishing heat, light, power, and water used in the areas

occupied without proper remuneration therefore. If prior possession or use by the PHA delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

22. Warranty of Title

The Contractor warrants good title to all materials, supplies, and equipment incorporated in the work and agrees to deliver the premises together with all improvements thereon free from any claims, liens or charges, and agrees further that neither it nor any other person, firm or corporation shall have any right to a lien upon the premises or anything appurtenant thereto.

23. Warranty of Construction

- (a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (j) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier. This warranty shall continue for a period of (one year unless otherwise indicated) from the date of final acceptance of the work. If the PHA takes possession of any part of the work before final acceptance, this warranty shall continue for a period of (one year unless otherwise indicated) from the date that the PHA takes possession.
- (b) The Contractor shall remedy, at the Contractor's expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damage to PHA-owned or controlled real or personal property when the damage is the result of—
 - (1) The Contractor's failure to conform to contract requirements; or
 - (2) Any defects of equipment, material, workmanship or design furnished by the Contractor.
- (c) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for (one year unless otherwise indicated) from the date of repair or replacement.
- (d) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect or damage.
- (e) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the PHA shall have the right to replace, repair or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- (f) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall:
 - (1) Obtain all warranties that would be given in normal commercial practice;
 - (2) Require all warranties to be executed in writing, for the benefit of the PHA; and,
 - (3) Enforce all warranties for the benefit of the PHA.
- (g) In the event the Contractor's warranty under paragraph (a) of this clause has expired, the PHA may bring suit at its own expense to enforce a subcontractor's, manufacturer's or supplier's warranty.

- (h) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defect of material or design furnished by the PHA nor for the repair of any damage that results from any defect in PHA furnished material or design.
- (i) Notwithstanding any provisions herein to the contrary, the establishment of the time periods in paragraphs (a) and (c) above relate only to the specific obligation of the Contractor to correct the work, and have no relationship to the time within which its obligation to comply with the contract may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to its obligation other than specifically to correct the work.
- (j) This warranty shall not limit the PHA's rights under the Inspection and Acceptance of Construction clause of this contract with respect to latent defects, gross mistakes or fraud.

24. Prohibition Against Liens

The Contractor is prohibited from placing a lien on the PHA's property. This prohibition shall apply to all subcontractors at any tier and all materials suppliers.

Administrative Requirements

25. Contract Period

this contract within 90 calendar days of the effective date of the contract, or within the time schedule established in the notice to proceed issued by the Contracting Officer.

26. Order of Provisions

In the event of a conflict between these General Conditions and the Specifications, the General Conditions shall prevail. In the event of a conflict between the contract and any applicable state or local law or regulation, the state or local law or regulation shall prevail; provided that such state or local law or regulation does not conflict with, or is less restrictive than applicable federal law, regulation, or Executive Order. In the event of such a conflict, applicable federal law, regulation, and Executive Order shall prevail.

27. Payments

- (a) The PHA shall pay the Contractor the price as provided in this contract.
- (b) The PHA shall make progress payments approximately every 30 days as the work proceeds, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer. The PHA may, subject to written determination and approval of the Contracting Officer, make more frequent payments to contractors which are qualified small businesses.
- (c) Before the first progress payment under this contract, the Contractor shall furnish, in such detail as requested by the Contracting Officer, a breakdown of the total contract price showing the amount included therein for each principal category of the work, which shall substantiate the payment amount requested in order to provide a

basis for determining progress payments. The breakdown shall be approved by the Contracting Officer and must be acceptable to HUD. If the contract covers more than one project, the Contractor shall furnish a separate breakdown for each. The values and quantities employed in making up this breakdown are for determining the amount of progress payments and shall not be construed as a basis for additions to or deductions from the contract price. The Contractor shall prorate its overhead and profit over the construction period of the contract.

- (d) The Contractor shall submit, on forms provided by the PHA, periodic estimates showing the value of the work performed during each period based upon the approved

submitted not later than 45 days in advance of the date set for payment and are subject to correction and revision as required. The estimates must be approved by the Contracting Officer with the concurrence of the Architect prior to payment. If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each.

- (e) Along with each request for progress payments and the required estimates, the Contractor shall furnish the following certification, or payment shall not be made: I hereby certify, to the best of my knowledge and belief, that:

- (1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;
- (2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements; and,
- (3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

Name: _____

Title: _____

Date: _____

- (f) Except as otherwise provided in State law, the PHA shall retain ten (10) percent of the amount of progress payments until completion and acceptance of all work under the contract; except, that if upon completion of 50 percent of the work, the Contracting Officer, after consulting with the Architect, determines that the Contractor's performance and progress are satisfactory, the PHA may make the remaining payments in full for the work subsequently completed. If the Contracting Officer subsequently determines that the Contractor's performance and progress are unsatisfactory, the PHA shall reinstate the ten (10) percent (or other percentage as provided in State law) retainage until such time as the Contracting Officer determines that performance and progress are satisfactory.
- (g) The Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration when computing progress payments.

Material delivered to the Contractor at locations other than the site may also be taken into consideration if the Contractor furnishes satisfactory evidence that (1) it has acquired title to such material; (2) the material is properly stored in a bonded warehouse, storage yard, or similar suitable place as may be approved by the Contracting Officer; (3) the material is insured to cover its full value; and (4) the material will be used to perform this contract. Before any progress payment which includes delivered material is made, the Contractor shall furnish such documentation as the Contracting Officer may require to assure the protection of the PHA's interest in such materials. The Contractor shall remain responsible for such stored material notwithstanding the transfer of title to the PHA.

- (h) All material and work covered by progress payments made shall, at the time of payment become the sole property of the PHA, but this shall not be construed as (1) relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or, (2) waiving the right of the PHA to require the fulfillment of all of the terms of the contract. In the event the work of the Contractor has been damaged by other contractors or persons other than employees of the PHA in the course of their employment, the Contractor shall restore such damaged work without cost to the PHA and to seek redress for its damage only from those who directly caused it.
- (i) The PHA shall make the final payment due the Contractor under this contract after (1) completion and final acceptance of all work; and (2) presentation of release of all claims against the PHA arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. Each such exception shall embrace no more than one claim, the basis and scope of which shall be clearly defined. The amounts for such excepted claims shall not be included in the request for final payment. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned.
- (j) Prior to making any payment, the Contracting Officer may require the Contractor to furnish receipts or other evidence of payment from all persons performing work and supplying material to the Contractor, if the Contracting Officer determines such evidence is necessary to substantiate claimed costs.
- (k) The PHA shall not; (1) determine or adjust any claims for payment or disputes arising there under between the Contractor and its subcontractors or material suppliers; or, (2) withhold any moneys for the protection of the subcontractors or material suppliers. The failure or refusal of the PHA to withhold moneys from the Contractor shall in no wise impair the obligations of any surety or sureties under any bonds furnished under this contract.

28. Contract Modifications

- (a) Only the Contracting Officer has authority to modify any term or condition of this contract. Any contract modification shall be authorized in writing.
- (b) The Contracting Officer may modify the contract unilaterally (1) pursuant to a specific authorization stated in a contract clause (e.g., Changes); or (2) for administrative matters which do not change the rights or

responsibilities of the parties (e.g., change in the PHA address). All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and the Contracting Officer.

- (c) When a proposed modification requires the approval of HUD prior to its issuance (e.g., a change order that exceeds the PHA's approved threshold), such modification shall not be effective until the required approval is received by the PHA.

29. Changes

- (a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract including changes:
 - (1) In the specifications (including drawings and designs);
 - (2) In the method or manner of performance of the work;
 - (3) PHA-furnished facilities, equipment, materials, services, or site; or,
 - (4) Directing the acceleration in the performance of the work.
- (b) Any other written order or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances and source of the order and (2) that the Contractor regards the order as a change order.
- (c) Except as provided in this clause, no order, statement or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.
- (d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for a adjustment based on defective specifications, no proposal for any change under paragraph (b) above shall be allowed for any costs incurred more than 20 days (5 days for oral orders) before the Contractor gives written notice as required. In the case of defective specifications for which the PHA is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.
- (e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written change order under paragraph (a) of this clause, or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting a written statement describing the general nature and the amount of the proposal. If the facts justify it, the Contracting Officer may extend the period for submission. The proposal may be included in the notice required under paragraph (b) above. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.
- (f) The Contractor's written proposal for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract in at least the following details:

- (1) Direct Costs. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost); Transportation and delivery costs associated with materials; Labor breakdowns by hours or unit costs (identified with specific work to be performed); Construction equipment exclusively necessary for the change; Costs of preparation and/ or revision to shop drawings resulting from the change; Worker's Compensation and Public Liability Insurance; Employment taxes under FICA and FUTA; and, Bond Costs when size of change warrants revision.
- (2) Indirect Costs. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.
- (3) Profit. The amount of profit shall be negotiated and may vary according to the nature, extent, and complexity of the work required by the change. The allowability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR 1-31), as implemented by HUD Handbook 2210.18, in effect on the date of this contract. The Contractor shall not be allowed a profit on the profit received by any subcontractor. Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs. On proposals covering both increases and decreases in the amount of the contract, the application of indirect costs and profit shall be on the net-change in direct costs for the Contractor or subcontractor performing the work.
- (g) The Contractor shall include in the proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the contract in its entirety.
- (h) The Contracting Officer shall act on proposals within 30 days after their receipt, or notify the Contractor of the date when such action will be taken.
- (i) Failure to reach an agreement on any proposal shall be a dispute under the clause entitled Disputes herein. Nothing in this clause, however, shall excuse the Contractor from proceeding with the contract as changed.
- (j) Except in an emergency endangering life or property, no change shall be made by the Contractor without a prior order from the Contracting Officer.

30. Suspension of Work

- (a) The Contracting Officer may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the PHA.
- (b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified (or within a reasonable time if not specified) in this contract an adjustment shall be made for any increase in the cost of performance of the contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have

been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or for which any equitable adjustment is provided for or excluded under any other provision of this contract.

- (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order); and, (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

31. Disputes

- (a) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract. A claim arising under the contract, unlike a claim relating to the contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim. The submission may be converted to a claim by complying with the requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.
- (b) Except for disputes arising under the clauses entitled Labor Standards - Davis Bacon and Related Acts, herein, all disputes arising under or relating to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
- (c) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the PHA against the Contractor shall be subject to a written decision by the Contracting Officer.
- (d) The Contracting Officer shall, within 60 (unless otherwise indicated) days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
- (e) The Contracting Officer's decision shall be final unless the Contractor (1) appeals in writing to a higher level in the PHA in accordance with the PHA's policy and procedures, (2) refers the appeal to an independent mediator or arbitrator, or (3) files suit in a court of competent jurisdiction. Such appeal must be made within (30 unless otherwise indicated) days after receipt of the Contracting Officer's decision.
- (f) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer.

32. Default

- (a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with the diligence that will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within this time, the Contracting Officer may, by written notice to the Contractor, terminate the right to

proceed with the work (or separable part of the work) that has been delayed. In this event, the PHA may take over the work and complete it, by contract or otherwise, and may take possession of and use any materials, equipment, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the PHA resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the PHA in completing the work.

- (b) The Contractor's right to proceed shall not be terminated or the Contractor charged with damages under this clause if—
- (1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (i) acts of God, or of the public enemy, (ii) acts of the PHA or other governmental entity in either its sovereign or contractual capacity, (iii) acts of another contractor in the performance of a contract with the PHA, (iv) fires, (v) floods, (vi) epidemics, (vii) quarantine restrictions, (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and
 - (2) The Contractor, within days (10 days unless otherwise indicated) from the beginning of such delay (unless extended by the Contracting Officer) notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, time for completing the work shall be extended by written modification to the contract. The findings of the Contracting Officer shall be reduced to a written decision which shall be subject to the provisions of the Disputes clause of this contract.
- (c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been for convenience of the PHA.

33. Liquidated Damages

- (a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, as specified in the clause entitled Default of this contract, the Contractor shall pay to the PHA as liquidated damages, the sum of \$ \$ 300.00 [Contracting Officer insert amount] for each day of delay. If different completion dates are specified in the contract for separate parts or stages of the work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed. To the extent that the Contractor's delay or nonperformance is excused under another clause in this contract, liquidated damages shall not be due the PHA. The Contractor remains liable for damages caused other than by delay.
- (b) If the PHA terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final

completion of the work together with any increased costs occasioned the PHA in completing the work.

- (c) If the PHA does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

34. Termination for Convenience

- (a) The Contracting Officer may terminate this contract in whole, or in part, whenever the Contracting Officer determines that such termination is in the best interest of the PHA. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the contract is terminated, and the date upon which such termination becomes effective.
- (b) If the performance of the work is terminated, either in whole or in part, the PHA shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by the PHA of a properly presented claim setting out in detail: (1) the total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor; (2) the cost (including reasonable profit) of settling and paying claims under subcontracts and material orders for work performed and materials and supplies delivered to the site, payment for which has not been made by the PHA to the Contractor or by the Contractor to the subcontractor or supplier; (3) the cost of preserving and protecting the work already performed until the PHA or assignee takes possession thereof or assumes responsibility therefore; (4) the actual or estimated cost of legal and accounting services reasonably necessary to prepare and present the termination claim to the PHA; and (5) an amount constituting a reasonable profit on the value of the work performed by the Contractor.
- (c) The Contracting Officer will act on the Contractor's claim within days (60 days unless otherwise indicated) of receipt of the Contractor's claim.
- (d) Any disputes with regard to this clause are expressly made subject to the provisions of the Disputes clause of this contract.

35. Assignment of Contract

The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from the PHA under the contract may be assigned to a bank, trust company, or other financial institution. Such assignments of claims shall only be made with the written concurrence of the Contracting Officer. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership as approved by the Contracting Officer.

36. Insurance

- (a) Before commencing work, the Contractor and each subcontractor shall furnish the PHA with certificates of insurance showing the following insurance is in force and will insure all operations under the Contract:
- (1) Workers' Compensation, in accordance with state or Territorial Workers' Compensation laws.
 - (2) Commercial General Liability with a combined single limit for bodily injury and property damage of not less than \$ 1 MILLION [Contracting Officer insert amount]

per occurrence to protect the Contractor and each subcontractor against claims for bodily injury or death and damage to the property of others. This shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability under (3) below. If the Contractor has a "claims made" policy, then the following additional requirements apply: the policy must provide a "retroactive date" which must be on or before the execution date of the Contract; and the extended reporting period may not be less than five years following the completion date of the Contract.

- (3) Automobile Liability on owned and non-owned motor vehicles used on the site(s) or in connection therewith for a combined single limit for bodily injury and property damage of not less than \$ **MILLION** [Contracting Officer insert amount] per occurrence.
- (b) Before commencing work, the Contractor shall furnish the PHA with a certificate of insurance evidencing that Builder's Risk (fire and extended coverage) Insurance on all work in place and/or materials stored at the building site(s), including foundations and building equipment, is in force. The Builder's Risk Insurance shall be for the benefit of the Contractor and the PHA as their interests may appear and each shall be named in the policy or policies as an insured. The Contractor in installing equipment supplied by the PHA shall carry insurance on such equipment from the time the Contractor takes possession thereof until the Contract work is accepted by the PHA. The Builder's Risk Insurance need not be carried on excavations, piers, footings, or foundations until such time as work on the superstructure is started. It need not be carried on landscape work. Policies shall furnish coverage at all times for the full cash value of all completed construction, as well as materials in place and/or stored at the site(s), whether or not partial payment has been made by the PHA. The Contractor may terminate this insurance on buildings as of the date taken over for occupancy by the PHA. The Contractor is not required to carry Builder's Risk Insurance for modernization work which does not involve structural alterations or additions and where the PHA's existing fire and extended coverage policy can be endorsed to include such work.
- (c) All insurance shall be carried with companies which are financially responsible and admitted to do business in the State in which the project is located. If any such insurance is due to expire during the construction period, the Contractor (including subcontractors, as applicable) shall not permit the coverage to lapse and shall furnish evidence of coverage to the Contracting Officer. All certificates of insurance, as evidence of coverage, shall provide that no coverage may be canceled or non-renewed by the insurance company until at least 30 days prior written notice has been given to the Contracting Officer.

37. Subcontracts

- (a) Definitions. As used in this contract -

(1) "Subcontract" means any contract, purchase order, or other purchase agreement, including modifications and change orders to the foregoing, entered into by a subcontractor to furnish supplies, materials, equipment, and services for the performance of the prime contract or a subcontract.

(2) "Subcontractor" means any supplier, vendor, or firm that furnishes supplies, materials, equipment, or services to or for the Contractor or another subcontractor.

- (b) The Contractor shall not enter into any subcontract with any subcontractor who has been temporarily denied participation in a HUD program or who has been suspended or debarred from participating in contracting programs by any agency of the United States Government or of the state in which the work under this contract is to be performed.
- (c) The Contractor shall be as fully responsible for the acts or omissions of its subcontractors, and of persons either directly or indirectly employed by them as for the acts or omissions of persons directly employed by the Contractor.
- (d) The Contractor shall insert appropriate clauses in all subcontracts to bind subcontractors to the terms and conditions of this contract insofar as they are applicable to the work of subcontractors.
- (e) Nothing contained in this contract shall create any contractual relationship between any subcontractor and the PHA or between the subcontractor and HUD.

38. Subcontracting with Small and Minority Firms, Women's Business Enterprise, and Labor Surplus Area Firms

The Contractor shall take the following steps to ensure that, whenever possible, subcontracts are awarded to small business firms, minority firms, women's business enterprises, and labor surplus area firms:

- (a) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- (b) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;
- (c) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;
- (d) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises; and
- (e) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies.

39. Equal Employment Opportunity

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

- (a) The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, or handicap.
- (b) The Contractor shall take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, national origin, or handicap. Such action shall include, but not be limited to, (1) employment, (2) upgrading, (3) demotion, (4) transfer, (5) recruitment or recruitment advertising, (6) layoff or termination, (7) rates of pay or other forms of compensation, and (8) selection for training, including apprenticeship.

- (c) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.
 - (d) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, or handicap.
 - (e) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
 - (f) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.
 - (g) The Contractor shall furnish all information and reports required by Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
 - (h) In the event of a determination that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts, or Federally assisted construction contracts under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.
 - (i) The Contractor shall include the terms and conditions of this clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor. The Contractor shall take such action with respect to any subcontract or purchase order as the Secretary of Housing and Urban Development or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.
 - (j) Compliance with the requirements of this clause shall be to the maximum extent consistent with, but not in derogation of, compliance with section 7(b) of the Indian Self-Determination and Education Assistance Act and the Indian Preference clause of this contract.
- 40. Employment, Training, and Contracting Opportunities for Low-Income Persons, Section 3 of the Housing and Urban Development Act of 1968.**
- (a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
 - (b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.
 - (c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.
 - (d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.
 - (e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.
 - (f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.
 - (g) With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

41. Interest of Members of Congress

No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of this contract or to any benefit that may arise therefrom.

42. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees

No member, officer, or employee of the PHA, no member of the governing body of the locality in which the project is situated, no member of the governing body of the locality in which the PHA was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this contract or the proceeds thereof.

43. Limitations on Payments made to Influence Certain Federal Financial Transactions

- (a) The Contractor agrees to comply with Section 1352 of Title 31, United States Code which prohibits the use of Federal appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.
- (b) The Contractor further agrees to comply with the requirement of the Act to furnish a disclosure (OMB Standard Form LLL, Disclosure of Lobbying Activities) if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

44. Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringement of any patent rights and shall save the PHA harmless from loss on account thereof; except that the PHA shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified and the Contractor has no reason to believe that the specified design, process, or product is an infringement. If, however, the Contractor has reason to believe that any design, process or product specified is an infringement of a patent, the Contractor shall promptly notify the Contracting Officer. Failure to give such notice shall make the Contractor responsible for resultant loss.

45. Examination and Retention of Contractor's Records

- (a) The PHA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.
- (b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders not exceeding \$10,000.
- (c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the Disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the PHA, HUD, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

46. Labor Standards - Davis-Bacon and Related Acts

If the total amount of this contract exceeds \$2,000, the Federal labor standards set forth in the clause below shall apply to the development or construction work to be performed under the contract.

- (a) Minimum Wages.
 - (1) All laborers and mechanics employed under this contract in the development or construction of the project(s) involved will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the regular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall

be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- (2) (i) Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met: (A) The work to be performed by the classification requested is not performed by a classification in the wage determination; and (B) The classification is utilized in the area by the construction industry; and (C) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employee Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
- (iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
- (iv) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (a)(2)(ii) or (iii) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in classification.
- (3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the

amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

- (b) Withholding of funds. HUD or its designee shall, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working in the construction or development of the project, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due.
- (c) Payrolls and basic records.
- (1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working in the construction or development of the project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under 29 CFR 5.5(a)(1)(iv), that the wages of any laborer or mechanic include the amount of costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(2) (i) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under subparagraph (c)(1) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1214-0149.)

(ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(A) That the payroll for the payroll period contains the information required to be maintained under paragraph (c) (1) of this clause and that such information is correct and complete;

(B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and

(C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by subparagraph (c)(2)(ii) of this clause.

(iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.

(3) The Contractor or subcontractor shall make the records required under subparagraph (c)(1) available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to

make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(d) (1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship and Training, Employer and Labor Services (OATELS), or with a State Apprenticeship Agency recognized by OATELS, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under

the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (3) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
- (e) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.
- (f) Contract termination; debarment. A breach of this contract clause may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.
- (g) Compliance with Davis-Bacon and related Act requirements. All rulings and interpretations of the Davis-Bacon and related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (h) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this clause shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the PHA, HUD, the U.S. Department of Labor, or the employees or their representatives.
- (i) Certification of eligibility.
 - (1) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

- (2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a United States Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (3) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.
- (j) Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.
 - (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics, including watchmen and guards, shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.
 - (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the provisions set forth in subparagraph (j)(1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic (including watchmen and guards) employed in violation of the provisions set forth in subparagraph (j)(1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by provisions set forth in subparagraph (j)(1) of this clause.
 - (3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the provisions set forth in subparagraph (j)(2) of this clause.
- (k) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts all the provisions contained in this clause, and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these provisions.

47. Non-Federal Prevailing Wage Rates

- (a) Any prevailing wage rate (including basic hourly rate and any fringe benefits), determined under State or tribal law to be prevailing, with respect to any employee in any trade or position employed under the contract, is inapplicable to the contract and shall not be enforced against the Contractor or any subcontractor, with respect to employees engaged under the contract whenever such non-Federal prevailing wage rate exceeds:
 - (1) The applicable wage rate determined by the Secretary of Labor pursuant to the Davis-Bacon Act (40 U.S.C. 3141 et seq.) to be prevailing in the locality with respect to such trade;
- (b) An applicable apprentice wage rate based thereon specified in an apprenticeship program registered with the U.S. Department of Labor (DOL) or a DOL-recognized State Apprenticeship Agency; or
- (c) An applicable trainee wage rate based thereon specified in a DOL-certified trainee program.

48. Procurement of Recovered Materials.

- (a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.
- (b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of \$10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of \$10,000 of the item both under and outside that contract.



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Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB Contract No. 600-24-19

SUPPLEMENTAL GENERAL CONDITIONS

SUPPLEMENTAL GENERAL CONDITIONS

To the extent that there is a conflict between the terms of the General Conditions and the terms of the Supplemental General Conditions, the terms of the Supplemental General Conditions shall govern to the extent of such conflict.

If HUD 5370 applies:

Section 31(e) of the General Conditions shall be deleted in its entirety and replaced by the following:

31(e). Forum. The Chief Contracting Officer's decision shall be final unless, within thirty (30) days of receipt of the Contracting Officer's decision, the Contractor files suit in a court of competent jurisdiction.

If HUD 5370-EZ applies:

Section 3(d) of the General Conditions shall be deleted in its entirety and replaced by the following:

31(d). Forum. The Contracting Officer's decision shall be final unless, within thirty (30) days of receipt of the Chief Contracting Officer's decision, the Contractor files suit in a court of competent jurisdiction.

If HUD 5370-C applies:

Section 1 Item 7(d) of the General Conditions shall be deleted in its entirety and replaced by the following:

Section 1 Item 7(d). Forum. The Chief Contracting Officer's decision shall be final unless, within thirty (30) days of receipt of the Contracting Officer's decision, the Contractor files suit in a court of competent jurisdiction.

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Date: _____

Signature: _____
Chief Contracting Officer

Vendor Name(Insert vendor company name above)

Date: _____

Signature: _____

Title: _____

THE HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB Contract No. 600-24-19

WAGE DETERMINATION SCHEDULE

The construction covered by this contract is subject to the requirements of Clause 47 **Labor Standards - Davis-Bacon and Related Acts** of the General Conditions of the Contract for Construction. In accordance with 47 (a)(1) the wage determination of the Secretary of Labor is attached.

General Decision Number: PA190012 04/12/2019 PA12

Superseded General Decision Number: PA20180033

State: Pennsylvania

Construction Type: Residential

County: Allegheny County in Pennsylvania.

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019
1	01/11/2019
2	04/12/2019

BRPA0009-039 12/01/2018

	Rates	Fringes
BRICKLAYER.....	\$ 32.35	22.21

CARP0142-004 06/01/2018		

	Rates	Fringes
CARPENTER (cluding Drywall Hanging and Asphalt Roofing).....	\$ 28.02	12.59

CARP1759-007 06/01/2017		

	Rates	Fringes
SOFT FLOOR LAYER.....	\$ 33.01	16.45

ELEC0005-013 12/21/2018		

	Rates	Fringes
ELECTRICIAN.....	\$ 24.34	15.53

ELEV0006-004 01/01/2019		

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 48.73	33.705+A+B

FOOTNOTE:

A. Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.

B. Eight Paid Holidays (provided employee has worked 5 consecutive days before and the working day after the holiday): New Years's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day; Thanksgiving Day and the Friday after Thanksgiving Day, and Christmas Day.

IRON0003-006 06/01/2018

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 34.49	30.71

PLUM0027-005 06/01/2017		

	Rates	Fringes
PLUMBER.....	\$ 39.20	21.27

* SHEE0012-006 07/01/2018		

	Rates	Fringes
Sheet metal worker Excluding HVAC Duct Work....	\$ 19.49	10.08

SUPA2003-001 10/31/2003		

	Rates	Fringes
Drywall Finishers.....	\$ 15.08	3.40
Laborers, Unskilled.....	\$ 12.70	2.12
PAINTER (Brush and Roller).....	\$ 15.90	4.35
PLASTERER.....	\$ 18.20	5.16
Power equipment operators: (Backhoe).....	\$ 17.34	4.06
Roofer (Excluding Asphalt Roofing).....	\$ 18.70	5.19
Sheet Metal Worker (HVAC Duct Only).....	\$ 16.00	3.08

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division

U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

General Decision Number: PA190001 02/22/2019 PA1

Superseded General Decision Number: PA20180001

State: Pennsylvania

Construction Type: Building

County: Allegheny County in Pennsylvania.

BUILDING ERECTION AND FOUNDATION EXCAVATION PROJECTS (does not include residential construction consisting of single family homes and apartmennts up to and including 4 stories) EXCLUDING SEWAGE AND TREATMENT PLANT PROJECTS

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019
1	01/11/2019
2	02/22/2019

ASBE0002-001 08/01/2018

	Rates	Fringes
Asbestos Workers/Insulator		
Includes the application of all insulating materials, protective coverings, coatings and finishings to all types of mechanical systems.....	\$ 40.21	24.72

BOIL0154-001 01/01/2017

	Rates	Fringes
BOILERMAKER.....	\$ 40.90	27.27

BRPA0009-029 12/01/2018

	Rates	Fringes
BRICKLAYER.....	\$ 32.35	22.21

BRPA0009-060 12/01/2018

	Rates	Fringes
MASON - STONE.....	\$ 33.32	21.50

BRPA0009-061 12/01/2018

	Rates	Fringes
TILE SETTER.....	\$ 31.30	19.42

CARP0142-001 06/01/2018

	Rates	Fringes
Carpenter/Lather.....	\$ 33.75	17.03

CARP1759-001 06/01/2018

	Rates	Fringes
FLOOR LAYER: Carpet.....	\$ 33.75	17.03

CARP2235-001 06/01/2018

	Rates	Fringes
MILLWRIGHT.....	\$ 40.34	19.16

CARP2235-007 01/01/2019

	Rates	Fringes
PILEDRIVERMAN.....	\$ 34.30	19.30

ELEC0005-007 12/21/2018

	Rates	Fringes
ELECTRICIAN.....	\$ 40.76	26.34

ELEC0126-006 05/28/2018

	Rates	Fringes
Line Construction:		
Cable Splicer.....	\$ 46.29	29.25%+11.25
Groundmen.....	\$ 27.77	29.25%+11.25
Lineman.....	\$ 46.29	29.25%+11.25
Truck Driver.....	\$ 30.09	29.25%+11.25
Winch Truck Operator.....	\$ 32.40	29.25%+11.25

ELEV0006-001 01/01/2019

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 48.73	33.705+A+B

FOOTNOTE: A. Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.

B. Eight Paid Holidays (provided employee has worked 5 consecutive days before and the working day after the holiday): New Year's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day; Thanksgiving Day and the Friday after Thanksgiving Day, and Christmas Day.

* ENGI0066-001 06/01/2018

	Rates	Fringes
Power equipment operators:		
CLASS 1.....	\$ 35.09	20.95
CLASS 2.....	\$ 29.90	20.15
CLASS 3.....	\$ 27.46	20.15

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

CLASS I

Asphalt Paver, Asphalt Roller, Asphalt Plant Operator, Athey Loader, Auger (Truck or Tractor Mounted), Auto Grader (C.M.I. and similar), Backhoe (180' and 360' swing), Back-Filling Machine, Batch Plant, Bulldozer, Cable Layer, Cableway, Caisson Drill, Central Mix Plant, Compactor with Blade, Concrete Pump (all types), Over-Head Crane, Crane (Crawler or Truck Mounted)*, Tower Crane (Stationary or Climbing Type), Rough Terrain Crane**, Wagon Crane, Crushing and/or Screening Plant, Derrick Traveler, Derrick (all types)(when assistance is needed it will be an oiler or apprentice), Derrick Boats, Dragline, Drill (Davey or similar), Dredge, Drill (Well and Core)(Truck or Skid Mounted), Elevator, Excavating Equipment (all other), Fork Lift (Lull or similar), Franki Pile Machine (or similar), Guard Post Driver, Gradall (all types), Grader, Elevating Grader, Equipment Greaser, Helicopter, Helicopter Hoist Operators, Front End Loader, Hoist, Hydraulic Boom Truck, Jumbo Operator, Kocal, Koehring Scooper, Locomotive, Metro Chip Harvester (or similar), Mix Mobile, Mixer - Paver, Mucking Machine, Multiple Bowl Machines, Pile Driver (Sonic or similar), Scrapers, Shovels (powered), Slip Form Paver (C.M.I. and similar), Spreader (Concrete, Asphalt, or Stone), Tire Repairman (when assigned to a jobsite), Tower Mobile, Tractors (all types), Trencher, Tug Boat, Vermeer Saw, Welder (repairman), Whirley

* Cranes with Boom or Mast length (including jib) 100 ft or over shall be paid an additional \$.50 per hour for each 50-foot increment of additional boom and/or jib length)

** Rough Terrain Cranes with Boom or Mast length (including jib) 101 ft or over shall be paid an Additional \$.50 per hour for each 50-foot increment of additional boom and/or jib length)

Note: An additional \$1.25 per hour (not counting boom pay) shall be paid for any crane (excluding overhead cranes) rated 100 ton or over.

CLASS II

Ballast Regulator, Boat (material or personnel)(powered),

Boiler, Boring Machine, Compressor (combined with Air Tugger, Air Pump, Gunit Machine, or Sand Blaster), Concrete Belt Placer, Concrete Saw, Conveyor, Carry Crane, Crushing/Screening Plants, Curb Builder (self-propelled), Forklifts (ridden or self-propelled), Form Line Machine, Generator (over 5KW), Grout Pump, Heaters, Hoist (monorail, roof, one drum-regardless of power used), Huck Machine (or similar), Hydraulic Jack (single or multiple)(power driven), Ladavator, Mortar Mixer, Mulching Machine, Pavement Breaker (self-propelled or ridden), Pin Puller (powered), Pipe Cleaning Machine, Pipe Dream, Power Broom (except push type), Pulverizer, Pumps (regardless of power used), Roller/Compactor (Dirt), Refrigeration Plant, Ross Carrier (or similar), Seeding Machine, Skid Steer Loader (or similar), Slab Lifting Machine (hydraulic), Soil Stabilizer (pump type), Spray Cure Machine (power driven), Side Delivery Shoulder Spreader (attachment), Steam Jenny (or similar), Stone Crusher, Stone Spreader (self-propelled), Siphon (steam or air), Tie Tamper (multiple heads), Tractor (when used for landscaping, snaking, or hauling), Truck (Winch)(when hoisting and placing), Tube Finisher (C.M.I. and similar), Tugger, Water Blaster, Welding Machine, Well Point System

CLASS III

Brakeman, Deck Hand, Helicopter Signalman, Oiler*, Elevator (Alterations & Remodeling Commercial Buildings),

* Oilers on Truck Cranes: less than 50 ton shall receive \$.10 over the Class III base rate; 50 ton up to 100 ton rated capacity shall be paid an additional \$.25 per hour over the Class III base rate; 100 ton and over shall be paid an additional \$1.00 per hour over the Class III base rate.

General Note: Hazardous Material Sites Level C & D receive \$1.00 per hour premium for all classifications and Levels A & B receive \$2.50 premium for all classifications

IRON0003-002 06/01/2018

	Rates	Fringes
IRONWORKER.....	\$ 34.49	30.71

LABO0613-002 01/01/2019

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 22.37	17.60
GROUP 2.....	\$ 22.52	17.60
GROUP 3.....	\$ 22.65	17.60
GROUP 4.....	\$ 23.12	17.60

LABORERS CLASSIFICATIONS

GROUP 1: COMMON LABORER - Building laborer; Brick removal for alterations; Carryable pumps; West brick buggy or similar; Walk behind forklift or similar (non self-propelled); Stripper and mover of forms; Toolroom man; all material conveyors (regardless of power used, including starting and stopping); Pouring of mortar or aggregate into blocks of voids

GROUP 2: SKILLED LABORER - West brick buggy or similar (self propelled); Power wheelbarrows and buggies; walk behind forklift or similar (self-propelled); Drill runner; All operators of compacting equipment; Pipe layer; Burner; Jackhammer man - concrete buster; Vibrator operator; Clay spade and/or similar; Gunnite nozzleman; Blaster; Concrete saw operator; Hod carrier; Scaffold builder; Air track operator; Bell and Bottom Man on furnace and stacks; Grout machine feeder and pump operator; Gunnite machine operator or similar; Gunnite machine potman or similar; Mortar Mixer; Mortar mixer machine (regardless of power used, including starting and stopping); Wagon drill operator; Laser cleaner; Lancer

GROUP 3: Asbestos removal or abatement laborer

GROUP 4: Toxic or Hazardous waste handling laborer

LABO0952-004 01/01/2019

	Rates	Fringes
Landscaping		
GROUP 1.....	\$ 21.02	16.08
GROUP 2.....	\$ 21.44	16.08
GROUP 3.....	\$ 21.74	16.08

LANDSCAPING CLASSIFICATIONS

GROUP 1: Landscape laborer to include general landscaping work and the driving of trucks for the distribution of materials on the job site but not to include trucks used to transport supplies to the job

GROUP 2: Skilled Landscape Laborer to plant all types of trees and shrubs without direct supervision.

GROUP 3 - Landscape tractor operator to operate small industrial rubber tire tractor equipped with front end loader and backhoe attachment or a skid loader with landscape attachments used for the sole purpose of landscape work including soil spreading, unloading and loading of materials and such other landscaping work but not for heavy and highway construction work

PAIN0057-003 06/01/2018

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 28.00	19.12

PAIN0057-005 06/01/2018

	Rates	Fringes
DRYWALL FINISHER/TAPER.....	\$ 28.10	19.60

* PAIN0751-001 09/01/2018

	Rates	Fringes
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GLAZIER.....	\$ 29.50	22.96

PLAS0031-014 06/01/2015		
	Rates	Fringes
PLASTERER.....	\$ 27.97	14.26

PLAS0526-007 06/01/2018		
	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 30.37	18.89

PLUM0027-002 06/01/2017		
	Rates	Fringes
PLUMBER.....	\$ 39.20	21.27

PLUM0449-001 06/01/2018		
	Rates	Fringes
PIPEFITTER.....	\$ 40.55	22.27

ROOF0037-001 06/01/2018		
	Rates	Fringes
ROOFER.....	\$ 31.00	16.42

SFPA0542-001 07/01/2017		
	Rates	Fringes
SPRINKLER FITTER.....	\$ 37.17	19.52

SHEE0012-002 07/01/2018		
	Rates	Fringes
SHEET METAL WORKER.....	\$ 34.47	27.54

TEAM0040-002 01/01/2017		
	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 28.10	17.42
GROUP 2.....	\$ 28.24	17.50
GROUP 3.....	\$ 28.71	17.80

FOOTNOTES:

A. Hazardous/toxic waste material/work level A & B receive additional \$2.50 per hour above classification rate

B. Hazardous/toxic waste materials/Work level C & D receive \$1.00 per hour above classification

TRUCK DRIVERS CLASSIFICATIONS

GROUP 1 - Single Axle (2 axles including steering axle);
Includes partsman and warehoueman

GROUP 2 - Tandem - Tri-Axle - Semi-Tractor Trailer
(combination) (3 axles or more including steering axle)

GROUP 3 - Specialty Vehicles; Heavy equipment whose capacity exceeds that for which state licenses are issued specifically refers to units in excess of eight (8) feet width (such as Euclids, Atley Wagon, Payloader, Tournawagons, and similar equipment when not self loaded); Tar and Asphalt Distributors Trucks, Heavy Duty Trailer, such as Low Boy, High Boy

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of

the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

PART 4: TECHNICAL SPECIFICATIONS

Gualtieri Manor HVAC Piping System Replacements, AMP-47

IFB CONTRACT NO. 600-24-19



Housing Authority of the City of Pittsburgh

DEVELOPMENT & MODERNIZATION
100 ROSS STREET, 2nd FLOOR
PITTSBURGH PA 15219
412/456-5020 FAX: 456-5591

Specifications for
GUALTIERI MANOR
HVAC PIPING SYSTEM REPLACEMENT
IFB CONTRACT # 600-24-19

ISSUED FOR MECHANICAL
CONSTRUCTION DOCUMENTS
June 3, 2019

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15010	Common Work Results for HVAC
15140	Hangers and Supports for HVAC piping and Equipment
15190	Identification for HVAC Piping and Equipment
15260	HVAC Insulation
15510	Hydronic Piping
15990	Testing, Adjusting and Balancing for HVAC

END OF TABLE OF CONTENTS

SECTION - 01010
SUMMARY OF WORK

PART 1. GENERAL

1.1 CONTRACT DOCUMENTS

- A. Refer to the instructions to Contractors, General Conditions, Special Conditions, Special Requirements, and all contract drawings, which form part of this Contract and have the same force and effect as if herein full.
- B. Drawing List:
 - CS Cover Sheet
 - H1 HVAC Notes, Symbols, Legends and Details
 - H2 HVAC Demolition Plan and Notes
 - H3 HVAC Demolition Plan and Notes
 - H4 HVAC New Work Plan and Notes
 - H5 HVAC New Work Plan and Notes

1.2 PROJECT IDENTIFICATION

- A. The Contractor shall furnish all labor and materials and perform all work necessary for the implementation of all work associated with the HVAC Piping System Replacement at Gualtieri Manor as shown on the Contract Drawings.
- B. By submitting a bid and executing the Contract, the Contractor represents that he has carefully examined all Drawings, Specifications, Addenda, and other Contract Documents and has visited the site; and that he has satisfied himself as to the nature and location of the Work, the conditions and difficulties under which it is to be performed, and all matters which may in any way affect the Work or its performance. Further that he fully understands the intent and purpose of the Documents and conditions bidding. Claims for additional compensation or extension of time because of any Contractor's failure to familiarize himself with the Contract Documents and all conditions which affect the Work will not be allowed.
- C. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. The HVAC Contractor will be responsible for all work pertaining to this entire Contract based on the entire set of Contract Documents. The intention of the Documents is to include, unless specifically accepted, all labor, all materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services necessary for the proper execution and completion of the Work. The specifications and the drawings are complementary to each other. Work shown but not specified, and work specified but not shown, shall be fully included as if both shown and specified. Should any direct contradiction(s) between specifications, drawings, or specifications and drawings become apparent, the Contractor shall satisfy the most stringent requirements.

1.3 CONTRACT WORK

- A. Remove and replace existing boiler and associated piping and insulation and all appurtenances with new piping, insulation and all appurtenances and modifications to the existing piping system and all other work as shown on the Contract Drawings identified above.
- B. Provide all labor, engineering, tools, transportation, services, supervision, materials, and equipment necessary for and incidental to satisfactory completion of required work as indicated in Contract Documents.
- C. Provide all required staging, temporary placement of existing or temporary systems, and all other components of construction.
- D. The work required by this contractor shall be to furnish and deliver all materials, tools, equipment, testing, transportation, secure all permits, license, do and perform all labor, superintendent and all means of construction, pay all fees and do all incidental work, execute and finish in all expeditious, substantial and workmanlike manner the project in accordance with drawings and specifications to complete satisfaction and acceptance of the Owner.
- E. The contract work for this project will include all work required to demolish existing facilities as shown on the Contract Drawings and provide new construction for replacement and upgrade work according to the Contract Drawings.

1.3.1 HVAC Piping System Replacement

The complete scope is defined in the Contract Drawings and Specifications. In general:

- A. Provide demolition of all existing piping, insulation, access to piping, and all appurtenances in place that are not to remain.
- B. Provide new piping, insulation, drywall, etc. and all appurtenances to replace the existing system being demolished.
- C. Provide all work associated with all Division 1 requirements.

1.4 CONCURRENT MODERNIZATION WORK AND BUILDING OPERATION

- A. This project is a major modernization project in existing buildings which are open for public business and will continue to operate throughout all phases of required work. It is essential that all Contractors give special attention and priority to all matters concerning project safety, protection from dust and loose materials, reduction of noise level, protection from water and air infiltration into building, and maintenance of neat, sightly conditions in and around work areas inside and outside of building. Packaging, scrap materials, and demolition debris shall be promptly removed from building and site on a daily basis.
- B. At all times Contractor shall provide clearly visible warning and directions signs, barricades, temporary lighting, overhead protection, and hazard-free walking

surfaces throughout public area. At all times special attention must be given to building entrances, exits, and proper safe exiting through work areas as required by law.

- C. Contractor shall consult Owner to establish and maintain safe temporary routes including, but not limited to, proper barricades, walking surfaces, lighting, fire protection, exiting, warning, and directional signs, and general protection of persons from all hazards in accordance with OSHA Standards due wholly or partially to its operations.

1.5 CONTRACTOR'S USE OF PREMISES

- A. Contractors shall limit their use of premises to construction activities in areas indicated; allow for Authority's occupancy and use by the public.
 - 1. Confine operations to areas within Contract limits indicated. Portions of site beyond areas in which construction operations are indicated are not to be disturbed.
 - 2. Keep driveways and entrances serving premises clear and available to tenants and the Authority's employees at all times. Do not use these areas for parking or storage of materials. Schedule deliveries to minimize space and time requirements for storage of on-site materials and equipment.
 - 3. Burial of Waste Materials: Do not dispose of waste material on site, either by burial or burning. All materials must be hauled away from the site and disposed of in a manner acceptable to the local in which the disposal occurs.

1.6 OWNER OCCUPANCY

- A. Full Owner Occupancy: Owner (The Housing Authority of the City of Pittsburgh) will occupy site and existing building during the entire construction period. Cooperate with the Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform work so as not to interfere with Owner's operations.
 - 1. The Authority's services have priority over all work. The Authority will make every reasonable effort to accommodate Work in an orderly manner, but reserves the right to adjust or change any work schedule if necessary to maintain proper tenant services.
 - 2. Keep the Authority informed, through the Authority Representative, of Contractor activity so that the Authority can coordinate its functions with work. Schedules must be approved by the Authority. Shutdowns and changeovers of services and systems must be approved by the Authority 72 hours in advance of the work to be scheduled. Shutdowns and changeovers shall be incorporated into the construction CPS.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Division 1 – General
Section 01010 – Summary of Work

Not Used

END OF SECTION 01010

SECTION - 01039
COORDINATION AND MEETINGS

PART 1. GENERAL

1.1 SUMMARY

This section governs the administrative and coordination functions of the Contractors that are scheduled to be on-site under separate Contracts with the Authority.

1.2 SECTION INCLUDES

- A. Coordination
- B. Alteration project procedures
- C. Pre-construction conference.
- D. Progress meetings.

1.3 RELATED SECTIONS

- A. Section 01010 – Summary of Work: Coordination with Authority and all other contractors.
- B. Section 01039 – Coordination and Meetings.
- C. Section 01300 – Submittals.
- D. Section 01700 – Project Closeout: Record documents.

1.4 COORDINATION

- A. Contractor shall:
 - 1. Perform the work as required and in the sequence necessary to maintain the overall progress of the project.
 - 2. Coordinate work with their own employees and subcontractors.
 - 3. Expedite the work to assure compliance with approved schedules.
 - 4. Coordinate the work with that of other Contractors and work by the Authority.
 - 5. Refer to Section 01300 – Submittals, for procedure on Coordination Drawings.
- B. Contractor shall coordinate scheduling, submittals, and work of the various sections of specifications to assure efficient and orderly sequence of installation of interdependent construction elements with provisions for accommodating items to be installed later.
- C. Contractor shall verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various

sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

- D. Contractor shall coordinate space requirements and installation of emergency generator and all appurtenances, which are indicated diagrammatically on the Contract Drawings. Follow locations of appliances, panels, as closely as practicable and within code.
- E. The Contractor shall give the Authority's Representative a minimum of one weeks (seven calendar days) notice of the need for any type of shutdown or interruption in utility service. Shutdowns and changeovers of services and systems must be approved by the Authority. Once notice has been given by the Authority to its resident's, the date of the shutdown can then be scheduled. Utilities include but are not limited to electricity, water, heating, telephone, cable, and the like.
- F. The Contractor shall give 48 hours advanced notice to Authority for approval to work during weekends and weekday non-normal work hours. No premium times will be paid if the contractor needs to work on weekends or out of normal work times during the weekdays.

1.5 CONSTRUCTION ORGANIZATION AND START-UP

- A. The Authority Representative(s) will establish on-site lines of authority and communications:
 - 1. Contractor shall attend a pre-construction meeting and progress meetings as specified. Pre-Construction meeting shall be scheduled and conducted by the Authority. Progress meetings shall be conducted by the Engineer.
 - 2. Establish procedures for intra-project communications:
 - a. Submittals.
 - b. Reports and records.
 - c. Recommendations.
 - d. Coordination drawings.
 - e. Schedules.
 - f. Resolution of conflicts.
 - 3. Contractor shall control the use of the site:
 - a. Allocate space for Contractor's use for field offices, sheds, and work and storage areas.
 - b. Establish locations for access, traffic, and parking allocations and regulations.
 - c. Monitor use of site during construction.

1.6 CONTRACTORS' RESPONSIBILITIES FOR COORDINATION

- A. The Contractor is required to coordinate the work, schedules, and progress of the work with all contractors.
- B. Monitor the use of Temporary Utilities:
 - 1. Verify that adequate services are provided and maintained.
 - 2. Coordinate use of the Authority's facilities.

- C. Close-Out Duties:
 - 1. Equipment, Appliances and Systems start-up:
 - a. Coordinate checkout of utilities, operational systems, and equipment.
 - b. Verify in coordinating initial start-up and testing.
 - c. Record dates of start of operation of systems and equipment.
 - d. Submit to Owner, written notice of beginning of warranty period of equipment, appliances, and systems put into service.
 - 2. At completion of work of the contract, conduct an inspection to assure that:
 - a. All equipment, appliances, and systems are fully functional and in working order.
 - b. Specified cleaning has been accomplished.
 - c. Temporary facilities have been removed from site.
 - 3. Substantial Completion:
 - a. When the Contractor considers that the Work, or a designated portion thereof which is acceptable to the Owner, is substantially complete, the Contractor shall prepare for the Owner's representative a list of items to be completed or corrected.
 - b. The Architect will review the punch list for completion and add any additional items if required. The failure to include any items on such list does not alter the responsibility of the Contractor to complete the Work in accordance with the Contract Documents.
 - c. Subsequently, when all punch list items have been corrected and completed, the Contractor shall provide Architect/Engineer with documentation stating that all outstanding punch list items have been corrected and completed or in what other status the items remain.
 - 4. Administration of Contract Closeout:
 - a. When the Owner's Representative and the Authority, on the basis of inspection and consultation with the Contractor, determines that the Work, or designated portion thereof, is substantially complete, the Authority shall prepare and distribute for approval a Certificate of Substantial Completion.

1.7 RESPONSIBILITY OF AUTHORITY'S REPRESENTATIVE(S)

- A. Authority's Representative(s) will observe the work at all construction phases and for all contracts. Enforce the requirements of all contract documents and report deficiencies immediately.
- B. Authority's Representative(s) will have authority in matters concerning the coordination of all aspects of the project.
 - 1. Verify that adequate services are provided and maintained.
 - 2. Coordinate use of the Authority's facilities.
- C. Maintain reports and records at job site, available to Engineer and HACP:
 - 1. Daily log of progress of work of each contractor.
 - 2. Records:
 - a. Contracts.
 - b. Purchase orders.

- c. Materials and equipment records.
- d. Applicable handbooks, codes, and standards.
- 3. Obtain information from contractors, and maintain file of record documents.
- 4. Assemble documentation for handling of claims and disputes.

1.8 ALTERATION PROJECT PROCEDURES

- A. Materials: As specified in product sections match existing products and work for patching and extending work.
- B. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- C. Remove, cut, and patch work in a manner to minimize damage and to provide a means of restoring products and finishes to specified condition.
- D. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.
- E. Where new work abuts or aligns with existing, perform a smooth and even transition. "Patched Work" to match existing adjacent work in finish, texture, and appearance.
- F. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Engineer.
- G. Where a change of plane of 1/4" or more occurs, submit recommendation for providing a smooth transition for Engineer to review and request instructions from Engineer.
- H. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections in accordance with the approved recommendation of the Authority's Representative(s) at no additional cost to the Authority.
- I. Finish surfaces as specified in individual product sections.

1.9 PRE-CONSTRUCTION MEETING

- A. Authority's Representative(s) will schedule a Pre-Construction Meeting, after "Notice of Award."
- B. Attendance Required: The Authority, Architect/Engineer, and the Contractor's Project Manager/Superintendent(s).
- C. Agenda:
 - 1. Distribution of contract documents.
 - 2. Submission of executed bonds and insurance certificates, list of subcontractors, list of products, schedule of values, and approved progress schedule. (Progress schedule shall be submitted, reviewed,

- revised, and approved prior to Notice to Proceed.)
3. Designation of personnel representing the parties in contract, and the Engineer.
4. Procedures and processing of field decisions, submittals, substitutions, applications for payment, proposal requires, change orders, and contract close-out procedures.
5. Procedures for maintaining project record documents.
6. Critical work sequencing schedules.
7. Major deliveries and priorities.
8. Safety and first aid.
9. Use of premises by Authority and Contractor.
10. Authority's requirements.
11. Construction facilities and controls.
12. Temporary utilities.
13. Survey and building layout.
14. Security and housekeeping procedures.
15. Procedures for testing.
16. Requirements for start-up of equipment.
17. Inspection and acceptance of equipment put into service during construction period.
18. OSHA Orientation Program.

1.10 PROGRESS MEETINGS

- A. Authority Representative(s) will schedule and administer meetings throughout progress of the work at regular intervals.
- B. Construction schedule will be updated weekly at the progress meetings. The Contractor's Project Manager and Superintendent are to attend.
- C. Authority Representative(s) will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies to the Authority, participants, and those affected by decisions made.
- D. Attendance Required: The Contractor's Project Manager and Job Superintendent, Authority Representative(s), Architect/Engineer, and as appropriated to agenda topics for each meeting:
 1. Representative of contractors, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- E. Agenda:
 1. Review minutes of previous meetings.
 2. Review of work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems, which impeded planned progress.
 5. Review of status of submittals.
 6. Review of fabrication and delivery schedules.
 7. Maintenance of progress schedule.

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Section 01039 – Coordination and Meetings

8. Corrective measures required to regain projected progress schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule, coordination, and on contracts.
13. Other business relating to work.

PART 2. PRODUCTS – Not Used

PART 3. EXECUTION – Not Used

END OF SECTION 01039

SECTION - 01045
CUTTING AND PATCHING

PART 1. GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for cutting and patching.
- B. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- C. Demolition of selected portions of the building for alterations is included in Section "Selective Demolition" and in the Section "Electrical Demolition".

1.2 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.
 - 1. Obtain approval from the Engineer of the cutting and patching proposal before cutting and patching any structural elements.
- B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Authority's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace work cut and patched in a visually unsatisfactory manner. Obtain approval for changes to the existing building exterior from the Authority.

PART 2. PRODUCTS

2.1 MATERIALS

- A. Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3. EXECUTION

3.1 INSPECTION

- A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
- B. Before proceeding, meet at the site with parties involved in cutting and patching, including all trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining.
- D. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to by pass them.

3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- C. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.
- D. Where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
- E. To avoid marring exiting finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

- F. Cut through concrete and masonry using a cutting machine such as carborundum saw or diamond core drill.
- G. Comply with requirements of applicable Sections of Division-2 where cutting and patching requires excavating and backfilling.
- H. Patching: Patch with durable seams that are invisible as possible. Comply with specified tolerances.
- I. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
- J. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
- I. Patching: Patch with durable seams that are invisible as possible. Comply with specified tolerances.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damage pipe covering to it original condition.

END OF SECTION 01045

SECTION - 01060
REGULATORY REQUIREMENTS

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Description of applicable code requirements.

1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01039 – Coordination and Meetings
- C. Refer to the instruction to Contractors, General Conditions, Special Conditions, Special Requirements, and Division 1 and all Drawings, which form part of this contract and have the same force and effect as if herein full.

1.3 QUALITY ASSURANCE

- A. Design of Code required construction assemblies are to comply with requirements of the code, except when more rigid requirements are specified or are required by overriding codes.
- B. Conform to reference standard by date of issue current on date for receiving bids.
- C. Obtain copies of codes and regulations when required.
- D. Maintain copy at jobsite during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference code requirements conflict with Contract Documents, request clarification from Engineer before proceeding.

1.4 SCHEDULE OF REGULATORY REQUIREMENTS

Pennsylvania Department of Labor and Industry
Bureau of Management Support Services
Division of Physical Plant and Construction
Box 911
Harrisburg, PA 17108

1.5 BUILDING CLASSIFICATION INFORMATION

- A. All work must comply, at a minimum, with the following:
 - 1. National Electrical Code 2017
 - 2. National Fire Protection Association

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Section 01060 – Regulatory Requirements

3. National Board of Fire Underwriters Laboratories, Incorporated, Rules and Regulations
4. National Electrical Manufacturer's Association
5. National Bureau of Standards Handbook H-30
6. Federal Department of Labor Occupational Safety and Health Standards as contained in the Federal Register Volume 36, Number 105, Dated May 29, 1971 or the latest revision thereof.
7. American National Standards Institute, Inc.
8. Underwriter's Laboratories, Inc.
9. American Society for Testing Materials and Specifications
10. Electrical Underwriters Inspection Bureau
11. Institute of Electrical and Electronics Engineers
12. Insulated Power Cable Engineers Associated Specifications
13. Uniform Federal Accessibility Standards (UFAS)
14. Americans with Disabilities Act of 1990
15. Pennsylvania Department of Labor and Industry Fire and Panic Regulations
16. Pennsylvania Department of Environmental Resources
17. Building Officials and Code Administrators (BOCA)
18. International Building Code 2009
19. City of Pittsburgh laws, codes, and regulations
20. County of Allegheny laws, codes, and regulations
21. Local Fire Authority
22. Requirements of most stringent provision of local applicable building code.
23. Life Safety Code, NFPA 101
24. State codes, Local codes, and all other Jurisdictions having Authority

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01060

SECTION - 01300
SUBMITTALS

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Procedural manuals.

1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01039 – Coordination and Meetings

1.3 SUBMITTAL PROCEDURES

- A. Transmit one (1) electronic copy of each submittal to the Engineer with the Contractor's standard transmittal form, and a copy of all transmittals to the Authority. See each specification section for specific submittal information requirements.
- B. Sequentially number the transmittal forms. Resubmittals to have the original number with and alphabetic suffix.
- C. Identify Project, contractor, subcontractor, or supplier; pertinent Drawing sheet and detail number(s), and Specification Section, as appropriate.
- D. Sequentially number the submittal by using the Specification Section along with a 2-digit extension (i.e. for concrete design mix reports, the number shall be 03310.01).
- E. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information, is in accord with the requirements of the Work and Contract Documents.
 - 1. Failure by the Contractor to stamp and sign the submittal will be cause for rejection.
 - 2. The submittal will be returned without any action by the Engineer.
- F. Schedule submittals to expedite the project, and deliver to the Engineer at their business address. Coordinate submission of related items.
- G. Identify variations from Contract Documents and product or system requirements, which may be detrimental to successful performance of the completed Work.

- H. Provide space for Contractor's and the Engineer's review stamps.
- I. After review, the Engineer will send one (1) electronic copy to the Contractor, and one (1) electronic copy to the Authority, and keep one (1) copy for the Engineer; if not approved, only a transmittal form will be sent to the Contractor.
- J. Immediately revise and resubmit submittals as required; identify all changes made since the previous submittal.
 - 1. Make any corrections or changes in the submittals required by the Engineer and resubmit until approved.
 - a. Indicate any changes, which have been made other than those, requested by the Engineer.
- K. Distribution: Furnish reviewed submittal copies to installers, subcontractors, suppliers, and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until a copy of Product Data is in the Installer's possession. Forward a copy of all distribution transmittals log to the Construction Manager.
 - a. Do not use unmarked Product Data for construction.

1.4 PROCEDURAL MANUALS

- A. Submit to the Engineer one (1) electronic copy, for review and approval. The Contractor will be responsible for making as many copies as are needed for their own use from this reviewed copy.
- B. Mark each copy to identify Specification Section number, applicable products, models, options, and other data. Supplement manufacturers standard data to provide information unique to this project.
- C. After review, distribute in accord with the Submittal Procedures, and provide copies for Record Documents as described in Section 01700.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01300

SECTION - 01310
CONSTRUCTION PROGRESS SCHEDULES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Related Sections
- B. Purpose
- C. Format
- D. Contents
- E. Submittals
- F. Revisions to Schedules
- G. Approvals
- H. Time Extensions
- I. Float
- J. Distribution

1.2 RELATED SECTIONS

Refer to the Instructions to Contractors, General Conditions, Special Conditions, Division 1, and all drawings which form part of this contract and have the same force and effect as if herein full.

1.3 PURPOSE

The Construction Progress Schedule ("CPS") shall be utilized to track job progress, analyze potential delays, identify potential progress problems early, determine the project completion date, issue progress payments, determine validity of time extension requests, and complete cost projections and analysis.

1.4 FORMAT

- A. The CPS shall be in time scale CPM Gantt Chart format
- B. The CPS shall provide graphical (horizontal bar chart) representations for each major portion of work or operation (Summary Tasks)
- C. The CPS shall provide a graphical representation for each of the activities/tasks and events that will occur during the performance of the work
- D. The CPS shall show the complete sequence of construction by activity/task, with dates for beginning and completion of each element of construction
- E. Activities shall be listed in a logical, sequential order, and shall use proper precedence logic (Chronological/Sequential System)
- F. Each activity shall have predecessor and/or successor ties. The CPS shall show the interrelations/interdependencies of all activities/tasks

- G. No onsite activity shall have a duration of greater than twenty (20) working days
- H. The Critical Path shall be clearly identified
- I. All CPSs', CPS revisions, preliminary submissions, and associated backup documentation shall be submitted in hard copy and electronic formats. Three (3) hard copies of each document shall be submitted to the Housing Authority, and one (1) hard copy of each document shall be submitted to the Engineer.
- J. Sheet Size: Minimum 8.5 x 14 inches

1.5 CONTENTS

- A. The CPS shall begin at the Notice to Proceed ("NTP") date. The initial CPS shall be based on the anticipated NTP date as provided by the Housing Authority.
- B. The CPS shall identify each phase/stage of demolition, construction, occupancy/relocation, and other logically grouped activities (Summary Tasks).
- C. The CPS shall set forth milestone dates and deadlines, including substantial completion of ALL work, i.e., the entire project.
- D. The CPS shall identify all project constraints.
- E. The CPS shall identify work for each building unit/apartment (unless authorization is obtained in writing from the Contracting Officer allowing the CPS to only identify work for each floor or building). Each task for each unit/apartment shall be identified on the CPS.
- F. The CPS shall identify all Housing Authority, governmental and/or regulatory review periods.
- G. CPS duration shall not exceed contractual construction period.
- H. The CPS shall indicate decision dates for selection of finishes.
- I. The CPS shall clearly identify order dates and lead times for all specified products, particularly long lead time items, items requiring fabrication, and major equipment.
- J. The CPS shall indicate delivery dates for Housing Authority furnished products.
- K. The contractor(s) shall coordinate the CPS content with the Schedule of Values (Schedule of Amounts). All progress payment amounts will be derived from, and tied to, the Schedule of Values and the CPS; therefore all activities on the CPS shall be consistent with the information contained in the Schedule of Values.

1.6 SUBMITTALS AND APPROVALS

- A. The Contractor is responsible for consolidating the work efforts of all other contractors into one realistic, aggressive CPS, and for submitting the CPS to the Housing Authority for approval.

- B. If any contractor fails to submit schedule information to the Contractor in a timely manner as specified in the contract, the Contractor shall immediately notify the Housing Authority of this fact in writing. Failure of any contractor to submit required information in a timely manner shall be a default in accordance with the terms of this contract.
- C. If any contractor is found to be in default by the Contracting Officer for failure to submit schedule information in a timely manner, the Contracting Officer may terminate the contractor's right to proceed with the schedule preparation and may elect to complete the contractor's schedule information in his stead, in which case the contractor will be bound by any approved CPS as if the schedule information was prepared/developed by the contractor's own personnel. The contractor and its surety shall then be liable for any damage to the Housing Authority resulting from the contractor's failure to submit the schedule information within the specified timeframe.
- D. All CPSs' submitted to the Contracting Officer for approval shall be dated and signed by a representative of all prime contractors involved in the project. The signatures shall represent an acknowledgement that all prime contractors are in agreement with the submitted schedule. The Contractor shall be responsible for obtaining all signatures.
- E. Submittal of the initial CPS and subsequent updates/revisions for approval shall be understood to be the contractors' representation that the submitted CPS meets all of the conditions of the contract documents, accurately reflects work to be completed, and that the work will be executed in the sequence indicated on the submitted CPS.
- F. In no event shall any adjustment proposed in a progress report or corrective plan constitute an adjustment in the CPS, contract time, or any milestone date unless any such adjustment is agreed to and authorized in writing by the Contracting Officer.
- G. All contractors shall be aware that time is of the essence when submitting CPS information and when completing the Work in the timeframes established in the approved CPS.

1.6.1 INITIAL CPS SUBMITTAL AND APPROVAL

- A. The Contractor shall within ten (10) calendar days of execution of the Owner – Contractor Agreement (construction contract) submit the proposed CPS to the Contracting Officer for review.
- B. The proposed CPS shall not be saved as a baseline until written approval is received from the Contracting Officer. Upon approval, the Contractor shall be responsible for saving the baseline schedule, and monitoring and maintaining the CPS.
- C. The Contracting Officer shall review the initial CPS submission, (and any required resubmission), and respond with comments, recommendations, requests, or acceptance within five (5) working days of receipt.
- D. If the proposed CPS is not accepted by the Contracting Officer, the CPS shall be revised by the contractor(s) in accordance with the comments, recommendations, or requests of the Contracting Officer and resubmitted for acceptance within three (3) working days of receipt of said comments, recommendations, or requests. The contractor shall be

required to make the changes as directed by the Contracting Officer to arrive at a reasonable, realistic, and acceptable CPS.

- E. The NTP **will not** be issued and the project **shall not** begin without a CPS approved in writing by the Contracting Officer. The NTP will be issued within five (5) working days of written CPS approval provided all required back up documentation is received by the Housing Authority in the timeframe required in the contract.
- F. Upon acceptance by the Contracting Officer of the proposed CPS, the accepted schedule shall be deemed the "Construction Project Schedule" and will be considered part of the contract.
- G. The Housing Authority's approval or acceptance of the CPS shall not impose on the Housing Authority any responsibility for the CPS, for timely submittals of complete and project-conforming shop drawings, for work sequencing, scheduling milestones, or progress of the work, nor shall acceptance interfere with or relieve the Contractor from the contractor's full responsibility to complete all work in accordance with the contract. Contractors are solely responsible for the development and performance of the means, methods, and execution of performance reflected in the CPS.
- H. A separate submittal schedule shall be submitted along with the initial CPS. The submittal schedule shall include and identify dates for shop drawing submittal and approval, product data, and samples, including Housing Authority furnished products. The submittal schedule must include dates reviewed submittals will be required from the Housing Authority. Contractors are required to relate submittal tasks to construction activities/tasks. The submittal schedule may be incorporated into the CPS provided written authorization is obtained from the Contracting Officer.
- I. The Contractor shall keep the submittal schedule current. The submittal schedule shall be coordinated with the CPS, and shall allow for reasonable time for Housing Authority submittal review as documented in the contract.

1.6.2 MONTHLY UPDATED CPS SUBMITTAL AND APPROVAL

- A. A preliminary updated CPS and all associated backup documentation shall be submitted by the Contractor for review along with the "pencil copy" of the application for payment. The preliminary updated CPS should be submitted to the Housing Authority and the ENGINEER no later than three (3) working days before the pay application progress meeting, with the site walk occurring no later than one (1) working day before the pay application progress meeting.
- B. Backup documentation shall include a narrative discussion of the progress to date, forecasted work for next period, problem areas, and anticipated delays. If applicable, the narrative shall document schedule slippage, provide a detailed explanation concerning the reason(s) for the slippage, how each prime contractor is affected, and shall include a written recovery plan for getting the project back on schedule. The written recovery plan shall include any necessary overtime or additional labor and what steps are being taken to recover the original schedule, and/or what logic changes occurred and why said changes occurred. The plan shall indicate the date by which the progress of the work will comply with the current approved CPS.

- C. The preliminary updated CPS and the pencil copy of the application for payment shall be reviewed by all contractors, Housing Authority representative(s), and the ENGINEER during the site walk meeting.
- D. The Contractor shall make any revisions as noted during the site walk meeting, and shall submit the formal/finalized updated CPS and all associated backup documentation along with the finalized monthly application for payment at the pay application progress meeting.
- E. The formal/finalized updated CPS and associated backup documentation shall be considered part of the application for payment submission. Failure to submit an accurate updated CPS and all associated backup documentation with the application for payment will be cause for rejection of the application for payment.

1.6.3 CRITICAL PATH, LOGIC, or TASK CHANGES CPS UPDATE SUBMITTAL

- A. The Contractor shall **immediately** submit a revised CPS and a written recovery/corrective action plan to the Contracting Officer any time a critical path item is three (3) working days behind the current approved CPS, if a non-critical activity becomes critical, or if there are changes in schedule logic and/or tasks.
- B. The Contracting Officer shall review the updated CPS submission and respond with comments, recommendations, requests, or acceptance within three (3) working days of receipt.
- C. If the revised/updated CPS is not accepted by the Contracting Officer, the schedule shall be revised by the contractor(s) in accordance with the comments, recommendations, or requests of the Contracting Officer and resubmitted for acceptance within five (5) working days of receipt of said comments, recommendations, or requests.
- D. The contractor(s) shall be required to make the changes as directed by the Contracting Officer to arrive at a reasonable, realistic, and acceptable CPS.

1.6.4 CHANGE ORDER OR DIRECTED WORK CPS SUBMITTALS

- A. Any contractor submitting a Request For Change Order ("RFCO") shall submit as backup documentation along with said RFCO a proposed CPS outlining how the change would impact the current approved CPS. The proposed CPS shall show in detail the work involved in the proposed change, how the proposed change will be incorporated into the current approved CPS, and the impact on other work caused by the adjustment to the current approved CPS.
- B. Within three (3) working days of receipt of any **executed** change order(s), change directive, or proceed order that affects the CPS, the contractor to whom the change order, directive, or proceed order was issued shall submit to the Contractor a proposed revised CPS. The Contractor shall then incorporate the changes into the current approved schedule and within three (3) working days of receipt of the proposed revised CPS from the contractor to whom the change order, directive, or proceed order was issued, issue a proposed CPS to the Contracting Officer for review and approval.
- C. Along with the proposed CPS, the Contractor shall submit a written narrative outlining

the change and how it affects the current, approved CPS.

- D. The Contracting Officer shall review the proposed CPS submission and respond with comments, recommendations, requests, or acceptance within three (3) working days of receipt.
- E. If the proposed CPS is not accepted by the Contracting Officer, the proposed CPS shall be revised by the contractor(s) in accordance with the comments, recommendations, or requests of the Contracting Officer and resubmitted for acceptance within three (3) working days of receipt of said comments, recommendations, or requests.
- F. The contractor(s) shall be required to make the changes as directed by the Contracting Officer to arrive at a reasonable, realistic, and acceptable CPS.

1.7 REVISIONS TO CONSTRUCTION PROGRESS SCHEDULES

- A. All revised CPSs' should be saved with the project # and revision # clearly noted.
- B. The lead contractor shall be responsible for updating/revising the current approved CPS.
- C. All revised/updated CPSs' shall include but not be limited to the following information:
 - Actual and baseline construction start and finish dates
 - Actual and baseline procurement start and finish dates
 - Graphical representation of the baseline and actual task start and finish dates
 - Logic revisions – any revised sequences
 - Added or changed work, including change order work and RFI submittals that affect the work
 - Activity duration projections/revisions
 - Activity percent complete – actual percent complete of each activity not based on cost
 - Current events that affect construction progress – adverse weather, strikes, differing site conditions

1.8 TIME EXTENSIONS & DELAY CLAIMS

- A. Time extensions will only be granted for delays that will demonstratively delay the contractual project completion date as of the date of the delay and are authorized by executed change orders from the Contracting Officer. Please note that the delay **MUST** affect the contract completion date **at the time of the delay**.
- B. Contractors may not request additional compensation and/or time from the Housing Authority unless the cause of any delay is attributable to the act or failure to act of the Housing Authority or its representative, or to other causes beyond the contractors' control for which time extensions are available per the contract.

1.9 FLOAT

- A. **ALL** Float shall be recognized as a shared resource that is available for reasonable use by all parties under contract for this project, and by the Housing Authority if necessary. Float shall not be considered for the exclusive use of the Housing Authority or any single

contractor. This includes but is not limited to any float generated due to the efficiencies of any party, or efficiencies gained as a result of favorable weather within a calendar month, where the number of days of normally anticipated adverse weather are fewer than expected.

- B. Any submission, coupled with subsequent approval, of a CPS showing an early completion will have the effect of adding float to the project. This float shall be utilized as necessary and shall be recognized as outlined in Section 01310 Item 1.09 A. No compensation shall be due any contractor or the Owner for failure of any party to meet the early end date. No time extensions will be granted nor delay damages paid unless a delay occurs which impacts the project's critical path, consumes all available float or contingency time, and extends the work beyond the contract completion date. If a CPS submitted shows early completion, but after analysis and review by the Contracting Officer the CPS is determined not to reflect a reasonable plan for performance, the CPS shall be rejected and returned to the contractor for revision and resubmission per the guidelines of this section.

1.10 DISTRIBUTION

- A. The Contractor shall distribute all reviewed and approved CPS's to all project participants within one (1) working day of approval by the Contracting Officer.
- B. The Contractor shall keep a copy of all approved (past and current) CPS's on the project site at all times.

PART 2 PRODUCTS

CPSs' shall be developed in Microsoft Project scheduling software, or other software as approved by the Contracting Officer.

PART 3 EXECUTION Not Used

END OF SECTION 01310

SECTION - 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1. GENERAL

1.1 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01039 – Coordination and Meetings
- C. Section 01700 – Contract Closeout: Final Cleaning

1.2 TEMPORARY VENTILATION

- A. The Contractor is to provide equipment to properly ventilate enclosed areas to assist the cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. When practical, and upon the approval of the Authority Representative(s), extend and supplement equipment with additional fan units as required to maintain clear air for construction operations. Remove equipment at project closeout.
- C. The Contractor must be aware that any burning or dust will set off the existing fire alarm system. The Contractor must provide the Authority with advance notice so that the fire alarm system may be temporarily disconnected in that specific area of burning dust.

1.3 TELEPHONE SERVICE

- A. The Contractor shall provide for phone service and equipment to meet the needs of the Project.

1.4 TEMPORARY SANITARY FACILITIES

- A. The Contractor shall provide and maintain the following facilities and enclosures:
 - 1. Provide one (1) or more portable units as required by the Contractor personnel at the site, located where directed by the Authority Representative(s).
 - 2. Maintain temporary facilities in a clean and sanitary condition.
 - 3. Clean and service weekly, and more often if directed by the Construction Manager, each facility.
 - 4. Comply with applicable Pennsylvania Department of Environmental Resources requirements and with local codes.
 - 5. Permit no public nuisance or unsanitary conditions to exist on the project site.
 - 6. Remove temporary facilities when directed by the Engineer at the completion of the Project.
 - 7. Provide toilet paper and supplies for temporary toilet facilities.

1.5 BARRIERS

- A. The Contractor shall provide barriers to prevent unauthorized entry to construction areas and to allow for Authority Representative(s) use of the site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
 - 1. Provide separations as required to accommodate construction work in progress in the event that the Phasing Schedule is not met.
 - 2. Provide barricades and covered walkways required by governing authorities for public rights-of-way.
 - 3. Protect non-owned vehicular traffic, stored materials, site and structures from damage.
 - 4. Provide and maintain OSHA-approved barriers at floor openings, stairs, roof openings, roofs, temporary railings and protection where required by OSHA.
- B. The Contractor shall reinstall or replace the temporary controls or protection meeting OSHA requirements necessary for the progress of the Work for their Contract.

1.6 PROTECTION OF INSTALLED WORK

- A. The Contractor shall:
 - 1. Protect the installed Work and provide special protection where specified in the individual Specification Sections.
 - 2. Provide temporary and removable protection for installed products. Control the activity in the immediate work area to minimize damage.

1.7 SECURITY

- A. The Contractor shall provide facilities to protect and secure the Work and construction operations from unauthorized entry, vandalism, or theft.
 - 1. Unlock the site at the beginning of the workday and lock and secure the site at the end of the workday.
- B. The Contractor shall provide security and protection of materials and equipment stored on the project site.
- C. The Contractor shall coordinate with the Authority's existing security program.
- D. The Contractor shall be responsible for installing exterior lights to adequately light all areas under construction.

1.8 PARKING

- A. The Authority Representative(s) will arrange for parking area to be used by construction personnel at the Pre-Construction Meeting.

1.9 PROGRESS CLEANING

- A. The Contractor shall maintain the site and work areas in a clean and orderly condition by adhering the following standards:
 - 1. Removing debris, garbage, litter, rubble, and rubbish from pipe chases, plenums, attics, and closed or remote spaces, prior to enclosing those spaces.
 - 2. Removing debris, garbage, litter, rubble, and rubbish from the Contractor's portion of the work site daily and depositing in trash collection facilities.
 - 3. Broom and vacuum cleaning interior areas prior to start of surface finishing, and continue cleaning to eliminate dust, and dirt from being present.
 - 4. Cleaning of construction vehicles prior to exiting the site, with water wash-down hose.
 - 5. Ensure mud and site soils are not carried onto the roadways.
- B. Do not place hazardous materials in the dumpster. Remove from the site by the Contractor.
- C. Workforce personnel are not allowed to eat meals within the confines of each building.

1.10 FIRE PROTECTION

- A. The Contractor shall provide the general temporary fire protection requirements.
 - 1. The Contractor shall provide fire protection for their own special requirements.

1.11 PROJECT INFORMATION SIGNS

- A. The Contractor shall provide information signs with large size lettering to allow legibility at a reasonable distance containing the following information:
 - 1. Bulletin boards with protective covers to post safety and code notices.

1.12 FIELD OFFICES AND SHEDS

- A. Use of any Authority buildings as construction progresses will not be permitted as office or storage space.
- B. Locate offices as directed by the Authority Representative(s).

1.13 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. The Contractor shall remove temporary above-grade or buried utilities, equipment, facilities, materials, prior to Substantial Completion and Final Application for Payment inspection.

- B. Remove underground installations to a minimum depth of two (2) feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.
- E. Restore areas under and adjacent to the Contractor's construction trailers after removal from site.

1.14 TEMPORARY FIRST-AID FACILITIES

- A. The Contractor shall provide temporary first-aid facilities as follows:
 - 1. Provide one (1) sixteen (16) unit first-aid kit (or equivalent) for each 25 persons, or fraction thereof, for all employees on the work site and additionally where required by the Regulatory Agencies.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01500

SECTION 01501
TEMPORARY UTILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Electric power service.
 - 3. Lighting.
 - 4. Telephone service.
- C. Utilities to buildings must be maintained in operational condition 24 hours per day, 7 days per week. Contractor to provide temporary utilities to buildings that require interruption to the permanent utilities. Utility interruptions require a minimum of 7 days notice to the Owner.
- D. Related Sections include the following:
 - 1. Division 1 Section "Temporary Facilities and Controls" for access roads and parking areas, temporary controls, ventilation, support facilities, and security and protection facilities.
 - 2. Divisions 2 through 16 for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner, Owner's Representative, or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
 - 1. Owner's construction forces.
 - 2. Occupants of Project.
 - 3. Architect.
 - 4. Owner's Representative.
 - 5. Testing agencies.
 - 6. Personnel of authorities having jurisdiction.

- B. Water Service: Use water from Owner's existing water system without metering and without payment of use charges.
- C. Electric Power Service: Use electric power from Owner's existing system without metering and without payment of use charges.

1.4 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
 - 1. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. Contractor who fails to carry out their responsibility in supplying utilities required for execution of the Work shall be held responsible for such failure. Owner shall have the right to take action, as it deems proper for the protection and conduct of the Work and shall deduct the cost involved from the amount due the Contractor at fault.
- B. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
 - 1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. General: Provide new materials and equipment suitable for use intended. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.
- B. Water: Potable.
- C. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- D. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

PART 3 - EXECUTION

3.1 TEMPORARY TELEPHONE SERVICE

- A. Telephone Service: Prime Contractor shall provide their own phone service and equipment to meet their needs throughout construction period. Provide job superintendent with cell phone to permit unlimited availability at any location on the project site.

3.2 TEMPORARY WATER SERVICE

- A. Where no other source of water is available in the construction areas, Contractor to provide, protect and maintain adequate water supply for use by all Contractors of the Work.
- B. Make available within 5 days, after written request from any Contractor requiring specified water service.
- C. Contractor shall install temporary water source at construction Entrance/Exit for use in tire and vehicle cleaning before exiting site.
- D. Install either permanent water supply line or temporary water supply line up to the building's footprint. Provide water with minimum flow of 15 gals. per minute and 40 lbs. pressure per sq.in.
- E. Special Service: Where supply of water greater than previously specified is required, Contractor requiring same shall install and pay all costs of such special service.
 - 1. Contractor requiring special service shall install, valve, maintain and protect temporary water lines from Plumbing Contractor's point of termination.
 - 2. When temporary water lines are no longer required, Contractor responsible for their installation shall remove them and restore to original condition any part of grounds or building disturbed or damaged by installation and removal of temporary water lines.

3.3 TEMPORARY LIGHT AND POWER SERVICE

- A. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.
- B. Contractor shall:
 - 1. Provide and maintain weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Provide uninterrupted electrical service to the heating, water and pumping equipment 24 hours a day, seven days a week.
 - a. Make available specified electric services, within two (2) days of written request from a Contractor requiring electrical power.

2. Extend electrical service to the building and/or portions thereof, and exterior pole lights in construction storage trailer area at location acceptable to Prime Contractors, and Architect.
 3. Provide receptacle outlets adequate for connection of power tools and equipment.
 4. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 5. Provide and maintain electrical service to any equipment installed by the General Contractor and/or Mechanical Contractor that is required for temporary and/or permanent heat.
 6. Remove temporary electrical lines when no longer required and restore to original condition grounds and building portions disturbed or damaged.
- C. Special Service: Where supply of electrical power and/or lighting greater than previously specified is required, Contractor requiring same shall install and pay all costs of such special service.

3.4 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

END OF SECTION 01501

SECTION - 01570
TRAFFIC REGULATION

PART 1. GENERAL

1.1 REQUIREMENTS INCLUDED

- A. The General Contractor shall provide, operate, maintain equipment services and personnel listed in this section and, as required to expedite the work.
- B. Remove temporary traffic equipment and facilities when no longer required, restore grounds to original or to specified conditions.

1.2 TRAFFIC SIGNALS AND SIGNS

- A. Provide and operate traffic control and directional signals required to direct and maintain an orderly flow of traffic in all areas under Contractor's control or affected by Contractor's operations.
- B. Provide traffic control and directional signs, mounted on barricades or standard posts:
 - 1. At each sidewalk.
 - 2. At parking areas.

1.3 FLAGPERSON

- A. Provide qualified and suitably equipped flagperson when construction operations encroach on traffic lanes.

1.4 FLARES AND LIGHTS

- A. Provide flares and lights during periods of low visibility.
 - 1. To clearly delineate traffic lanes and to guide traffic.
 - 2. For use by flagmen in directing traffic.

1.5 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to preclude interference with public traffic or parking.
- B. Monitor parking or construction personnel's private vehicles.
- C. No Prime or subcontractor shall close or obstruct any streets, sidewalks, alleys or passageways unless specifically authorized. No material whatsoever shall be placed or stored in streets, alleys, or passageways. Each contractor shall so conduct his operations as to interfere as little as possible with the use ordinarily made of any roads, streets, driveways, alleys, sidewalk facilities, etc.

1.6 HAUL ROUTES

- A. Consult with governing authorities, establish thoroughfares that will be used as

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Section 01570 – Traffic Regulation

- haul routes.
- B. Provide traffic control at critical areas of haul routes to expedite traffic flow, to minimize interference with normal public traffic.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01570

SECTION - 01600
MATERIAL AND EQUIPMENT

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Products
- B. Transportation and handling
- C. Storage and protection
- D. Product options
- E. Substitutions

1.2 RELATED SECTIONS

- A. Refer to the instructions to contractors, general conditions, special conditions, special requirements, and Division 1 and all drawings, which form part of this contract and have the same force and effect as if herein full.

1.3 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse, if so specified.
- B. Material and Equipment Incorporated into the Work shall:
 - 1. Conform to applicable specifications and standards.
 - 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Architect/Engineer.
 - 3. Manufactured and Fabricated Products:
 - a. Design, fabricate, and assemble in accordance with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
 - c. Two (2) or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes, and dimensions shown, or specified, shall be adhered to unless variations are specifically approved in writing by the Authority.
 - 4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

- C. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- D. Provide interchangeable components of the same manufacturer, for similar components.

1.4 REUSE OF EXISTING MATERIAL

- A. Except as specified, materials and equipment removed from the existing structure shall not be reused in the project.
- B. Use special care in removal, handling, storage, and reinstallation, to assure proper function in the completed work.

1.5 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance with project construction schedules. Contractor to coordinate the deliveries to avoid conflict of work, and to suit site conditions:
 - 1. Notify the Authority's Representative(s), 48 hours in advance, of all major deliveries.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Promptly inspect shipments to assure that products comply with requirements, are in manufacturer's original containers with identifying labels intact, quantities are correct, and products are undamaged.
- D. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.6 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground.
 - 1. Provide substantial platforms, blocking, or skids to support fabricated products above ground, prevent soiling, or staining.
 - a. Cover products subject to discoloration, or deterioration, from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
 - 2. Store loose granular materials on solid surfaces such as paved areas, or provide plywood or sheet materials to prevent mixing with foreign matter.
 - a. Provide surface drainage to prevent flow or ponding of rainwater.
 - b. Prevent mixing with refuse, chemically injurious materials, or liquids.

- C. Provide off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.7 INSPECTION AND MAINTENANCE STORED PRODUCTS

- A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:
 - 1. State of storage facilities is adequate to provide required conditions.
 - 2. Required environmental conditions are maintained on a continuing basis.
 - 3. Surfaces of product exposed to elements are not adversely affected.
 - a. Weathering of products, coatings, and finishes is not acceptable under requirements of Contract Documents.
- B. Mechanical and electrical equipment which require servicing during long-term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on exterior of package.
 - 1. Comply with manufacturer's instructions on scheduled basis.

1.8 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or descriptions.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01600

SECTION - 01700
PROJECT CLOSEOUT

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Inspection procedures
- B. Project record document submittal
- C. Operating and maintenance manual submittal
- D. Submittal of warranties
- E. Final cleaning

1.2 RELATED SECTIONS

- A. Section 01011 – Summary of Work
- B. Section 01039 – Coordination and Meetings
- C. Section 01300 - Submittals
- D. Section 01500 – Construction Facilities and Temporary Controls

1.3 GENERAL CLOSEOUT PROCEDURES

- A. Submit written certification that the Contract Documents have been reviewed, Work has been inspected and that the Work is complete in accordance with the Contract Documents and ready for the Authority's Representative(s) punch list inspection.
- B. Provide submittals to the Architect/Engineer and Authority's Representative(s) that are required by governing authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments and remaining sum due at the time of submission.

1.4 SUBSTANTIAL COMPLETION

- A. When the Contractor considers the Work to be substantially complete, the contractor shall submit to the Authority's Representative(s):
 - 1. Written notice that all Work, or designated portions thereof, is substantially complete.
 - 2. A list of items that need to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, the Architect/Engineer and

Authority's Representative(s) will make an inspection to determine the status of completion.

- C. Should the Authority's Representative(s) consider the Work not to be substantially complete:
 - 1. The Authority's Representative(s) will promptly notify, in writing, the Contractor giving the reasons for the Authority's Representative(s) denial.
 - 2. The Contractor shall remedy the deficiencies in the Work and send a second written notice of substantial completion.
- D. The Authority's Representative(s) will re-inspect the Work.
- E. After concurrence between the Authority's Representative(s) that the Work is substantially complete, the Authority's Representative(s) will prepare for the Contractor's signature:
 - 1. A Certificate of Substantial Completion: Attached with the Certificate will be the Contractor's listing of items to be completed or corrected as verified by and amended by the Authority's Representative(s).
 - 2. Submit the Certificate to the Authority's Representative(s) for their written acceptance of the responsibilities assigned to them in the Certificate.

1.5 FINAL INSPECTION

- A. When the Contractor considers the Work to be complete, submit written certification to the Authority's Representative(s) that the following criteria have been met:
 - 1. Complete review of the Contract Documents.
 - 2. Work has been inspected in compliance with the Contract Documents.
 - 3. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 - 4. Work is completed and ready for final inspection.
- B. The Authority's Representative(s) will make inspections to verify the status of completion within reasonable promptness after receipt of the written notification.
- C. Should the Authority's Representative(s) consider the Work to be incomplete or defective:
 - 1. The Authority's Representative(s) will promptly notify, in writing, the Contractor, listing the incomplete or defective Work.
 - 2. The Contractor shall immediately remedy all of the listed deficiencies of the Work and send a second written notice to the Authority's Representative(s) that the Work is complete.
- D. The Authority's Representative(s) will re-inspect the Work. Each re-inspection will be charged against the Contractor.
- E. When the Authority's Representative(s) consider the Work to be acceptable according to the Contract Documents, the Contractor will be notified by the Authority's Representative(s) to commence with the submission of final closeout documents.

1.6 CONTRACTOR'S CLOSEOUT SUBMITTALS

- A. Evidence of compliance with the requirements of governing authorities:
 - 1. Certificates of Inspection
 - a. Electrical
 - b. Fire Marshall
 - c. Pennsylvania Department of Environmental Resources
 - d. Department of Labor and Industry
 - e. City of Pittsburgh
- B. Warranties and Bonds
- C. Spare parts and maintenance materials
- D. Contractor's Affidavit of Payment and Debts and Claims: TO requirements of General and Supplementary Conditions of the Contract.
- E. Final Contractor's Weekly Payroll Certifications for Public Work Projects. (Davis Bacon Acts and as complies with this Specifications General Conditions for Construction HUD-5370)
- F. Consent of Surety Company to Final Payments

1.7 FINAL ADJUSTMENT OF CONTRACT SUM

- A. Submit final statement of accounting to the Authority's Representative(s). The Authority's Representative(s) will review and forward to the Architect/Engineer for approval.
- B. The statement shall reflect all adjustments to the Contract Sum:
 - 1. The original Contract Sum
 - 2. Additions and deductions resulting from
 - a. Change Orders
 - b. Unit Prices
 - c. Deduction for uncorrected Work
 - d. Deduction for Liquidated Damages
 - e. Deduction for re-inspections payments
 - f. Other adjustments.
- C. The Architect/Engineer will prepare a Change Order, reflecting adjustments to the Contract Sum, which were not previously made by Change Orders. This is further defined in this Specifications General Conditions for Construction, HUD-5370, Page 10, Item 29 Changes.

1.8 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit Final Application for Payment on HUD Forms HUD-51000, HUD-51001, HUD-51003, and HUD-51004 in accordance with the procedures and requirements stated in the Conditions of the Contract.

1.9 FINAL CLEANING

- A. Final cleaning shall commence prior to the Contractor's request for final inspection.
- B. Contractor, prior to Substantial Completion and Final Cleaning, shall remove all debris, rubbish, materials, cartons, crates, protective wrappings and films and other construction-related items prior to final cleaning.
- C. All Contractors shall, prior to Substantial Completion and Final Cleaning, wipe the surfaces of the mechanical and electrical equipment. Remove all excess oil and other substances prior to the Final Cleaning.
- D. All Contractors, prior to Substantial Completion and Final Cleaning, shall remove labels and markings that are not permanent.

1.10 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operations.

1.11 PROJECT RECORD DOCUMENTS

- A. Maintain on-site, one set of the following record documents; clearly label each document "Project Record". Record actual revisions to the Work:
 - 1. Contract Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Field Test Reports
 - 5. Change Orders and other modifications to the Contract
 - 6. Reviewed shop drawings, product data and sample
- B. Store Record Documents separately from documents used for construction in drawing file rack.
- C. Record information concurrent with construction progress in colored pen or marker (red-lines). The drawings shall show exact routing, mounting locations and power circuits used during the installation.
- D. Specifications: legibly mark, and record, at each product section the description of actual products installed, including the following:
 - 1. Manufacturer's name and product installed
 - 2. Product substitution or alternates utilized
 - 3. Changes made by Addenda and modifications
- E. Record Drawings: legibly mark, and record each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finished first floor
 - 2. Measured horizontal and vertical location of underground utilities and appurtenances

3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features in the Work
 4. Field Changes of dimensions and details
 5. Details not on original Contract Drawings
- F. Delete the Engineer's title block from all the Documents.
- G. Submit documents to the Architect/Engineer with Final Application for Payment. Accompany submittal with transmittal containing project number, title, contractor's name and signature of contractor's authorized representative.

1.12 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra material in quantities specified in individual specifications sections.
- B. Deliver to project site, or place in locations as directed; obtain receipt of acceptance by Authority prior to final payment.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01700

SECTION 09910
PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes surface preparation and field painting of exposed interior items and surfaces.

- 1. Surface preparation, priming, and finish coats specified in this Section.

- B. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Architect will select from standard colors and finishes available. Colors shall match existing colors, information as supplied by the Owner, Housing Authority of the City of Pittsburgh.

- 1. Painting includes field painting of exposed bare and covered pipes (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish, and plaster and drywall areas disturbed by this projects work.

- C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.

- 1. Prefinished items include the following factory-finished components:

- a. Finished mechanical and electrical equipment.
 - b. Light fixtures.
 - c. Doors & Frames

- 2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:

- a. Furred areas.
 - b. Ceiling plenums.

- 3. Finished metal surfaces include the following:

- a. Anodized aluminum.
 - b. Stainless steel.
 - c. Copper and copper alloys.
 - d. Bronze and brass.

- 4. Operating parts include moving parts of operating equipment and the following:

- a. Valve and damper operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

1.3 DEFINITIONS

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
 1. "Flat" refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
 2. "Eggshell" refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
 3. "Semi-gloss" refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
 4. "Full gloss" refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.

1.4 SUBMITTALS

- A. Product Data: For each paint system indicated. Include block fillers and primers.
 1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
- B. Samples for Initial Selection: For each type of finish-coat material indicated.
 1. After color selection, Architect will furnish color chips for surfaces to be coated.
- C. Qualification Data: For Applicator.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. VOC content.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain storage containers in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- D. Disposal:
 - 1. Never pour leftover coating down any sink or drain. Use up material on the job or seal can and store safely for future use.
 - 2. Do not incinerate closed containers.
 - 3. For specific disposal or recycle guidelines, contact the local waste management agency or district. Recycle whenever possible.

1.7 PROJECT CONDITIONS

- A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F (10 and 32 deg C).
- B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F (7 and 35 deg C).
- C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.

1. Benjamin Moore & Co. (Benjamin Moore).
2. Coronado Paint Company (Coronado).
3. ICI Dulux Paint Centers (ICI Dulux Paints).
4. Kelly-Moore Paint Co. (Kelly-Moore).
5. M. A. Bruder & Sons, Inc. (M. A. B. Paint).
6. PPG Industries, Inc. (Pittsburgh Paints).
7. Sherwin-Williams Co. (Sherwin-Williams).

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
- C. Colors: As selected by Architect from manufacturer's full range.

2.3 INTERIOR PRIMERS

- A. Interior Ferrous-Metal Primer: Factory-formulated quick-drying rust-inhibitive alkyd-based metal primer.
1. Benjamin Moore; Moore's IMC Alkyd Metal Primer No. M06: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
 2. Coronado; 35-147 Rust Scat Alkyd Metal Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
 3. ICI Dulux Paints; 4130-6130 Devshield Rust Penetrating Metal Primer: Applied at a dry film thickness of not less than 2.2 mils (0.056 mm).
 4. ICI Dulux Paints; 4160-6130 Devguard Multi-Purpose Tank & Structural Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
 5. Kelly-Moore; 1711 Kel-Guard Alkyd White Rust Inhibitive Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
 6. M. A. B. Paint; Rust-O-Lastic Anti-Corrosive Primer 073-132: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
 7. Pittsburgh Paints; 90-709 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
 8. Sherwin-Williams; Kem Kromik Universal Metal Primer B50NZ6/B50WZ1: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).
- B. Interior Zinc-Coated Metal Primer: Factory-formulated galvanized metal primer.

1. Benjamin Moore; Moore's IMC Acrylic Metal Primer No. M04: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
2. Coronado; 36-11 Rust Scat Acrylic Metal Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
3. ICI Dulux Paints; 4160-6130 Devguard Multi-Purpose Tank & Structural Primer: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
4. Kelly-Moore; 1722 Kel-Guard Acrylic Galvanized Iron Primer: Applied at a dry film thickness of not less than 1.8 mils (0.046 mm).
5. M. A. B. Paint; Rust-O-Lastic Hydro-Prime II Acrylic (DTM) Maintenance Primer 073-189: Applied at a dry film thickness of not less than 2.0 mils (0.051 mm).
6. Pittsburgh Paints; 90-709 Pitt-Tech One Pack Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).
7. Sherwin-Williams; primer not required over this substrate.
8. Sherwin-Williams; Galvite HS B50WZ30: Applied at a dry film thickness of not less than 3.0 mils (0.076 mm).

2.4 INTERIOR FINISH COATS

A. Interior Flat Acrylic Paint: Factory-formulated flat acrylic-emulsion latex paint for interior application.

1. Benjamin Moore; Moorecraft Super Spec Latex Flat No. 275: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
2. Coronado; 28 Line Super Kote 5000 Latex Flat Paint: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
3. ICI Dulux Paints; 1200-XXXX Dulux Professional Velvet Matte Interior Flat Latex Wall & Trim Finish: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
4. Kelly-Moore; 450 Pro-Wall Interior Flat Latex Wall Paint: Applied at a dry film thickness of not less than 1.8 mils (0.046 mm).
5. M. A. B. Paint; Fresh Kote Latex Flat 402 Line: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
6. Pittsburgh Paints; 6-70 Line SpeedHide Interior Wall Flat-Latex Paint: Applied at a dry film thickness of not less than 1.0 mil (0.025 mm).
7. Sherwin-Williams; ProMar 200 Interior Latex Flat Wall Paint B30W200 Series: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).

B. Interior Flat Latex-Emulsion Size: Factory-formulated flat latex-based interior paint.

1. Benjamin Moore; Moorecraft Super Spec Latex Flat No. 275: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
2. Coronado; 28 Line Super Kote 5000 Vinyl Latex Flat Wall: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
3. ICI Dulux Paints; 1200-XXXX Dulux Professional Velvet Matte Interior Flat Latex Wall & Trim Finish: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
4. Kelly-Moore; 450 Pro-Wall Interior Flat Latex Wall Paint: Applied at a dry film thickness of not less than 1.8 mils (0.046 mm).

5. M. A. B. Paint; Fresh Kote Latex Flat 402 Line: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
 6. Pittsburgh Paints; 6-70 Line SpeedHide Interior Wall Flat-Latex Paint: Applied at a dry film thickness of not less than 1.0 mil (0.025 mm).
 7. Sherwin-Williams; ProMar 200 Interior Latex Flat Wall Paint B30W200 Series: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
- C. Interior Low-Luster Acrylic Enamel: Factory-formulated eggshell acrylic-latex interior enamel.
1. Benjamin Moore; Moorcraft Super Spec Latex Eggshell Enamel No. 274: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
 2. Coronado; 30-Line Super Kote 5000 Latex Eggshell Enamel: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
 3. ICI Dulux Paints; 1402-XXXX Dulux Professional Acrylic Eggshell Interior Wall & Trim Enamel: Applied at a dry film thickness of not less than 1.4 mils (0.036 mm).
 4. Kelly-Moore; 1610 Sat-N-Sheen Interior Latex Low Sheen Wall and Trim Finish: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
 5. Kelly-Moore; 1686 Dura-Poxy Eggshell Acrylic Enamel: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
 6. M. A. B. Paint; Fresh Kote Latex Satin Eggshell Enamel 405 Line: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
 7. Pittsburgh Paints; 6-400 Series SpeedHide Eggshell Acrylic Latex Enamel: Applied at a dry film thickness of not less than 1.25 mils (0.032 mm).
 8. Sherwin-Williams; ProMar 200 Interior Latex Egg-Shell Enamel B20W200 Series: Applied at a dry film thickness of not less than 1.6 mils (0.041 mm).
- D. Interior Semi-gloss Acrylic Enamel: Factory-formulated semi-gloss acrylic-latex enamel for interior application.
1. Benjamin Moore; Moorcraft Super Spec Latex Semi-Gloss Enamel No. 276: Applied at a dry film thickness of not less than 1.2 mils (0.031 mm).
 2. Coronado; 32-Line Super Kote 5000 Latex Semi-Gloss Enamel: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).
 3. ICI Dulux Paints; 1406-XXXX Dulux Professional Acrylic Semi-Gloss Interior Wall & Trim Enamel: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
 4. Kelly-Moore; 1649 Acrylic-Latex Semi-Gloss Enamel: Applied at a dry film thickness of not less than 1.7 mils (0.043 mm).
 5. Kelly-Moore; 1685 Dura-Poxy Semi-Gloss Acrylic Enamel: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
 6. M. A. B. Paint; Fresh Kote Latex Semi-Gloss 410 Line: Applied at a dry film thickness of not less than 1.5 mils (0.038 mm).
 7. Pittsburgh Paints; 6-500 Series SpeedHide Interior Semi-Gloss Latex: Applied at a dry film thickness of not less than 1.0 mil (0.025 mm).
 8. Sherwin-Williams; ProMar 200 Interior Latex Semi-Gloss Enamel B31W200 Series: Applied at a dry film thickness of not less than 1.3 mils (0.033 mm).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application. Comply with procedures specified in PDCA P4.
 - 1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
 - 2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 - 1. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
 - 1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and re-prime.
 - 2. Ferrous Metals: Clean un-galvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
 - a. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3.
 - b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.

- c. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat.
 3. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- D. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
 1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
 1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 3. Provide finish coats that are compatible with primers used.
 4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, convactor covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
 5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 6. Paint interior surfaces of ducts with a flat, non-specular black paint where visible through registers or grilles.
 7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
 9. Sand lightly between each succeeding enamel or varnish coat.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured

- as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
2. Omit primer over metal surfaces that have been shop primed and touchup painted.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.
- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.
- E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
- F. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- G. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- H. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.
- 3.4 FIELD QUALITY CONTROL
- A. Owner reserves the right to invoke the following test procedure at any time and as often as Owner deems necessary during the period when paint is being applied:

1. Owner will engage a qualified independent testing agency to sample paint material being used. Samples of material delivered to Project will be taken, identified, sealed, and certified in the presence of Contractor.
2. Testing agency will perform appropriate tests for the following characteristics as required by Owner:
3. Owner may direct Contractor to stop painting if test results show material being used does not comply with specified requirements. Contractor shall remove non-complying paint from Project site, pay for testing, and repaint surfaces previously coated with the noncomplying paint. If necessary, Contractor may be required to remove noncomplying paint from previously painted surfaces if, on repainting with specified paint, the two coatings are incompatible.

3.5 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

3.6 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
 1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.7 INTERIOR PAINT SCHEDULE

- A. Ferrous Metal: Provide the following finish systems over ferrous metal:
 1. Low-Luster Acrylic-Enamel Finish: **Two finish coats** over a primer.
 - a. Primer: Interior ferrous-metal primer.
 - b. Finish Coats: Interior low-luster acrylic enamel.
- B. Zinc-Coated Metal: Provide the following finish systems over interior zinc-coated metal surfaces:
 1. Low-Luster Acrylic-Enamel Finish: **Two finish coats** over a primer.
 - a. Primer: Interior zinc-coated metal primer.
 - b. Finish Coats: Interior low-luster acrylic enamel.

- C. Drywall and Plaster: Provide the following finish systems over drywall and plaster:
1. Flat (less than 5 percent gloss) Latex Finish: **Two finish coats** over primer. Color to match existing and be HACP color compatible.
 2. Eggshell (10 – 25 percent gloss) Latex Finish: **Two finish coats** over primer. Color to match existing and be HACP color compatible.
 3. Semi-gloss (35 – 70 percent gloss) Latex Finish: **Two finish coats** over primer. Color to match existing and be HACP color compatible.

END OF SECTION

SECTION 15010
COMMON WORK RESULTS FOR HVAC

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The requirements of this Section apply to all sections of Division 15.

1.2 RELATED WORK

- A. Section 15260, HVAC INSULATION

1.3 QUALITY ASSURANCE

- A. Mechanical, electrical and associated systems shall be safe, reliable, efficient, durable, easily and safely operable and maintainable, easily and safely accessible, and in compliance with applicable codes as specified. The systems shall be comprised of high quality institutional-class and industrial-class products of manufacturers that are experienced specialists in the required product lines. All construction firms and personnel shall be experienced and qualified specialists in industrial and institutional HVAC or steam boiler plant construction, as applicable.
- B. Flow Rate Tolerance for HVAC Equipment: Section 15990, TESTING, ADJUSTING, AND BALANCING FOR HVAC.
1. After HVAC air balance work is completed and permanent drive sheaves are in place, perform field mechanical balancing and adjustments required to meet the specified vibration tolerance.
- C. Products Criteria:
1. Standard Products: Material and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of the products for at least 3 years. The design, model and size of each item shall have been in satisfactory and efficient operation on at least three installations for approximately three years. However, digital electronics devices, software and systems such as controls, instruments, computer work station, shall be the current generation of technology and basic design that has a proven satisfactory service record of at least three years. See other specification sections for any exceptions.
2. All items furnished shall be free from defects that would adversely affect the performance, maintainability and appearance of individual components and overall assembly.
3. Conform to codes and standards as required by the specifications. Conform to local codes, if required by local authorities such as the natural gas supplier, if the local codes are more stringent than those specified.

4. Multiple Units: When two or more units of materials or equipment of the same type or class are required, these units shall be products of one manufacturer.
5. Assembled Units: Manufacturers of equipment assemblies, which use components made by others, assume complete responsibility for the final assembled product.
6. Nameplates: Nameplate bearing manufacturer's name or identifiable trademark shall be securely affixed in a conspicuous place on equipment, or name or trademark cast integrally with equipment, stamped or otherwise permanently marked on each item of equipment.
7. Asbestos products or equipment or materials containing asbestos shall not be used.

D. Equipment Service Organizations:

1. HVAC: Products and systems shall be supported by service organizations that maintain a complete inventory of repair parts and are located reasonably close to the site.

E. HVAC Mechanical Systems Welding: Before any welding is performed, contractor shall submit a certificate certifying that welders comply with the following requirements:

1. Qualify welding processes and operators for piping according to ASME "Boiler and Pressure Vessel Code", Section IX, "Welding and Brazing Qualifications".
2. Comply with provisions of ASME B31 series "Code for Pressure Piping".
3. Certify that each welder has passed American Welding Society (AWS) qualification tests for the welding processes involved, and that certification is current.

F. Execution (Installation, Construction) Quality:

1. Apply and install all items in accordance with manufacturer's written instructions. Refer conflicts between the manufacturer's instructions and the contract drawings and specifications to the Engineer for resolution. Provide written hard copies or computer files of manufacturer's installation instructions to the Engineer at least two weeks prior to commencing installation of any item. Installation of the item will not be allowed to proceed until the recommendations are received. Failure to furnish these recommendations is a cause for rejection of the material.
2. All items that require access, such as for operating, cleaning, servicing, maintenance, and calibration, shall be easily and safely accessible by persons standing at floor level, or standing on permanent platforms, without the use of portable ladders. Examples of these items include, but are not limited to: all types of valves, filters and strainers, transmitters, control devices. Prior to commencing installation work, refer conflicts between this requirement and contract drawings to the Engineer for resolution.

3. Provide complete layout drawings required by Paragraph, SUBMITTALS. Do not commence construction work on any system until the layout drawings have been approved.

1.4 SUBMITTALS

- A. Contractor shall make all necessary field measurements and investigations to assure that the equipment and assemblies will meet contract requirements.
- B. If equipment is submitted which differs in arrangement from that shown, provide drawings that show the rearrangement of all associated systems. Approval will be given only if all features of the equipment and associated systems, including accessibility, are equivalent to that required by the contract.
- C. Prior to submitting shop drawings for approval, contractor shall certify in writing that manufacturers of all major items of equipment have each reviewed drawings and specifications, and have jointly coordinated and properly integrated their equipment and controls to provide a complete and efficient installation.
- D. Upon request by Owner, provide lists of previous installations for selected items of equipment. Include contact persons who will serve as references, with telephone numbers and e-mail addresses.
- E. Submittals and shop drawings for interdependent items, containing applicable descriptive information, shall be furnished together and complete in a group. Coordinate and properly integrate materials and equipment in each group to provide a completely compatible and efficient installation. Final review and approvals will be made only by groups.
- F. Samples: Samples will not be required, except for insulation or where materials offered differ from specification requirements. Samples shall be accompanied by full description of characteristics different from specification. The Owner, at the Owner's expense, will perform evaluation and testing if necessary.
- G. Layout Drawings:
 1. Submit complete consolidated and coordinated layout drawings for all new systems, and for existing systems that are in the same areas.
 2. The drawings shall include plan views, elevations and sections of all systems and shall be on a scale of not less than 1:32 (3/8-inch equal to one foot). Clearly identify and dimension the proposed locations of the principal items of equipment. The drawings shall clearly show locations and adequate clearance for all equipment, piping, valves, control panels and other items. Show the access means for all items requiring access for operations and maintenance. Provide detailed layout drawings of all piping and duct systems.
 3. Do not install equipment foundations, equipment or piping until layout drawings have been approved.
 4. In addition, for HVAC systems, provide details of the following:
 - a. Hangers, inserts, supports, and bracing.

- b. Pipe sleeves.
 - c. Duct or equipment penetrations of floors, walls, ceilings, or roofs.
- H. Manufacturer's Literature and Data: Submit under the pertinent section rather than under this section.
 - 1. Submit belt drive with the driven equipment. Submit selection data for specific drives when requested by the Resident Engineer.
 - 2. Submit electric motor data and variable speed drive data with the driven equipment.
 - 3. Equipment and materials identification.
 - 4. Fire-stopping materials.
 - 5. Hangers, inserts, supports and bracing. Provide load calculations for variable spring and constant support hangers.
 - 6. Wall, floor, and ceiling plates.
- I. HVAC Maintenance Data and Operating Instructions:
 - 1. Provide a listing of recommended replacement parts for keeping in stock supply, including sources of supply, for equipment. Include in the listing belts for equipment: Belt manufacturer, model number, size and style, and distinguished whether of multiple belt sets.
- J. Provide copies of approved HVAC equipment submittals to the Testing, Adjusting and Balancing Subcontractor.

1.5 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. Air Conditioning and Refrigeration Institute (ARI): 430-99 Central Station Air-Handling Units
- C. American National Standard Institute (ANSI): B31.1-2004 Power Piping
- D. Air Movement and Control Association (AMCA): 410-96 Recommended Safety Practices for Air Moving Devices
- E. American Society of Mechanical Engineers (ASME): Boiler and Pressure Vessel Code (BPVC):
 - Section I-2007 Power Boilers
 - Section IX-2007 Welding and Brazing Qualifications
 - Code for Pressure Piping: B31.1-2004 Power Piping, with Amendments
- F. American Society for Testing and Materials (ASTM):
 - A36/A36M-05 Carbon Structural Steel
 - A575-96(2002) Steel Bars, Carbon, Merchant Quality, M-Grades R (2002)
 - E84-07 Standard Test Method for Burning Characteristics of Building Materials

E119-07 Standard Test Method for Fire Tests of Building Construction and Materials

- G. Manufacturers Standardization Society (MSS) of the Valve and Fittings Industry, Inc:
 - SP-58-2002 Pipe Hangers and Supports-Materials, Design and Manufacture
 - SP 69-2003 Pipe Hangers and Supports-Selection and Application
 - SP 127-2001 Bracing for Piping Systems, Seismic – Wind – Dynamic, Design, Selection, Application
- H. National Electrical Manufacturers Association (NEMA):
 - MG-1-2006 Motors and Generators
- I. National Fire Protection Association (NFPA):
 - 70-08 National Electrical Code
 - 90A-02 Installation of Air Conditioning and Ventilating Systems
 - 101-06 Life Safety Code

1.6 DELIVERY, STORAGE AND HANDLING

A. Protection of Equipment:

1. Equipment and material placed on the job site shall remain in the custody of the Contractor until phased acceptance, whether or not the Owner has reimbursed the Contractor for the equipment and material. The Contractor is solely responsible for the protection of such equipment and material against any damage.
2. Place damaged equipment in first class, new operating condition; or, replace same as determined and directed by the Engineer. Such repair or replacement shall be at no additional cost to the Owner.
3. Protect interiors of new equipment and piping systems against entry of foreign matter. Clean both inside and outside before painting or placing equipment in operation.
4. Existing equipment and piping being worked on by the Contractor shall be under the custody and responsibility of the Contractor and shall be protected as required for new work.

B. Cleanliness of Piping and Equipment Systems:

1. Exercise care in storage and handling of equipment and piping material to be incorporated in the work. Remove debris arising from cutting, threading and welding of piping.
2. Piping systems shall be flushed, blown or pigged as necessary to deliver clean systems.
3. Clean interior of all tanks prior to delivery for beneficial use by the Owner.
4. Boilers shall be left clean following final internal inspection by Owner insurance representative or inspector.
5. Contractor shall be fully responsible for all costs, damage, and delay arising from failure to provide clean systems.

1.7 SUPERVISION

- A. Each Contractor shall retain a competent superintendent to direct the work constantly during construction, and to represent the Contractor at all times in connection with the work. He shall also instruct the Owner's representative in the use and maintenance of all equipment. This person must be superintendent from beginning to final acceptance of work.

1.8 EQUIPMENT INGRESS

- A. All equipment and materials shall be purchased, if required, in such knocked-down condition that they will pass through the building openings or such openings as may occur incidentally during construction.
- B. Provide for all scaffolding, staging, cribbing, equipment, etc., necessary for the installation under this Division. Comply with the requirements and regulations of federal, state and local bodies, including OSHA.

1.9 PROTECTION OF FINISHED AREAS AND SYSTEMS DURING CONSTRUCTION

- A. All sheet metal duct systems and equipment openings requiring connections shall be protected from the weather and construction dust. Temporary caps shall be provided over all open ends. All openings through the roof shall have temporary caps that are watertight and strong enough to resist wind loads.

1.10 INTERFERENCES/CLARIFICATIONS

- A. Before installing any work, the Contractor shall see that it does not interfere with clearance required for finish on beams, columns, pilasters, walls, other systems or other structural or architectural members. If any work is so installed and it later develops that Architectural/Engineering design cannot be followed, Contractor shall, at his own expense, make such changes in his work as the Engineer may direct to permit completion of Architectural work in accordance with plans and specifications.
- B. Install additional offsets on new ductwork where required to obtain maximum headroom or to avoid conflict with other work without additional cost to the Owner. Where mounting heights are not detailed or dimensioned, install HVAC services and overhead equipment to provide the maximum headroom possible.
- C. Report any interferences between work under this division and that of any other Contractors to the Engineer as soon as they are discovered. The Engineer shall determine which equipment shall be relocated, regardless of which was first installed, and his decision shall be final.
- D. Should there be any discrepancies or question of intent, refer the matter to Engineer for a decision before ordering equipment, materials or before starting any related work.

- E. Minor items and accessories or devices, reasonably inferable as necessary to the complete, proper installation and operation of any system, shall be provided by the Contractor for such system whether or not they are specifically referenced by the specification or the drawings.

1.11 SHOP AREAS AND MATERIAL STORAGE

- A. The Contractor shall make provisions for the delivery and safe storage of his materials and equipment in coordination with the work of others. Materials and equipment shall be delivered at such stages of the work as will expedite the work as a whole and shall be marked and stored in such a way as to be easily checked and inspected.

1.12 CLEAN-UP

- A. At conclusion of each day's work, clean up rubbish, debris and trash accumulated during the day as a result of the work performed. Side-walks, streets and adjoining property shall be kept broom clean and free of debris, rubbish, trash and obstructions of any kind caused by work of this contract.
- B. Upon completion of work, each Contractor shall thoroughly clean all apparatus furnished by him, thoroughly clean ductwork, fixtures, and equipment removing all dirt, grease and oil.

1.13 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to the project properly identified with names, model numbers, types, grades, compliance labels and other information needed for identification.
- B. Materials shall be delivered in manufacturer's original unopened packaging.
- C. Materials shall be stored and protected from the ground contact and other elements.

1.14 OMISSIONS AND DISCREPANCIES

- A. Any discrepancies found between the site conditions and the specifications, or any errors or omissions in the specification, discovered by the Bidding Contractor prior to the bid openings are to be brought to the attention of the Engineer. Approved changes to the drawings and specifications by addendum shall be issued by the Engineer prior to the bid opening as required.

PART 2 - PRODUCTS

2.1 FACTORY-ASSEMBLED PRODUCTS

- A. Provide maximum standardization of components to reduce spare part requirements.

- B. Manufacturers of equipment assemblies that include components made by others shall assume complete responsibility for final assembled unit.
 - 1. All components of an assembled unit need not be products of same manufacturer.
 - 2. Constituent parts that are alike shall be products of a single manufacturer.
 - 3. Components shall be compatible with each other and with the total assembly for intended service.
 - 4. Contractor shall guarantee performance of assemblies of components, and shall repair or replace elements of the assemblies as required to deliver specified performance of the complete assembly.
- C. Components of equipment shall bear manufacturer's name and trademark, model number, serial number and performance data on a name plate securely affixed in a conspicuous place, or cast integral with, stamped or otherwise permanently marked upon the components of the equipment.
- D. Major items of equipment, which serve the same function, must be the same make and model. Exceptions will be permitted if performance requirements cannot be met.

2.2 COMPATIBILITY OF RELATED EQUIPMENT

- A. Equipment and materials installed shall be compatible in all respects with other items being furnished and with existing items so that the result will be a complete and fully operational plant that conforms to contract requirements.

2.3 LIFTING ATTACHMENTS

- A. Provide equipment with suitable lifting attachments to enable equipment to be lifted in its normal position. Lifting attachments shall withstand any handling conditions that might be encountered, without bending or distortion of shape, such as rapid lowering and braking of load.

2.4 EQUIPMENT AND MATERIALS IDENTIFICATION

- A. Use symbols, nomenclature and equipment numbers specified, shown on the drawings and shown in the maintenance manuals.
- B. Interior (Indoor) Equipment: Engraved nameplates, with letters not less than 3/16-inch high of brass with black-filled letters, or rigid black plastic with white letters permanently fastened to the equipment. Identify unit components such as coils, filters, fans, etc.
- C. Control Items: Label all temperature and humidity sensors, controllers and control dampers. Identify and label each item as they appear on the control diagrams.

D. Valve Tags and Lists:

1. Valve tags: Engraved black filled numbers and letters not less than 1/2-inch high for number designation, and not less than 1/4-inch for service designation on 19 gage 1-1/2 inches round brass disc, attached with brass "S" hook or brass chain.
2. Valve lists: Typed or printed plastic coated card(s), sized 8-1/2 inches by 11 inches showing tag number, valve function and area of control, for each service or system. Punch sheets for a 3-ring notebook.
3. Provide detailed plan for each floor of the building indicating the location and valve number for each valve. Identify location of each valve with a color coded thumb tack in ceiling.

2.5 PIPE AND EQUIPMENT SUPPORTS AND RESTRAINTS

A. Pipe Supports: Comply with MSS SP-58. Type Numbers specified refer to this standard. For selection and application comply with MSS SP-69.

B. Attachment to Concrete Building Construction:

1. Concrete insert: MSS SP-58, Type 18.
2. Self-drilling expansion shields and machine bolt expansion anchors: Permitted in concrete not less than four inches thick when approved by the Engineer for each job condition.
3. Power-driven fasteners: Permitted in existing concrete or masonry not less than four inches thick when approved by the Engineer for each job condition.

C. Attachment to Steel Building Construction:

1. Welded attachment: MSS SP-58, Type 22.
2. Beam clamps: MSS SP-58, Types 20, 21, 28 or 29. Type 23 C-clamp may be used for individual copper tubing up to 7/8-inch outside diameter.

D. Attachment to Wood Construction: Wood screws or lag bolts.

E. Hanger Rods: Hot-rolled steel, ASTM A36 or A575 for allowable load listed in MSS SP-58. For piping, provide adjustment means for controlling level or slope. Types 13 or 15 turn-buckles shall provide 1-1/2 inches minimum of adjustment and incorporate locknuts. All-thread rods are acceptable.

F. Hangers Supporting Multiple Pipes (Trapeze Hangers): Galvanized, cold formed, lipped steel channel horizontal member, not less than 1-5/8 inches by 1-5/8 inches, No. 12 gage, designed to accept special spring held, hardened steel nuts. Not permitted for steam supply and condensate piping.

1. Allowable hanger load: Manufacturers rating less 200 pounds.
2. Guide individual pipes on the horizontal member of every other trapeze hanger with 1/4-inch U-bolt fabricated from steel rod. Provide Type 40

insulation shield, secured by two 1/2-inch galvanized steel bands, or preinsulated calcium silicate shield for insulated piping at each hanger.

G. Supports for Piping Systems:

1. Select hangers sized to encircle insulation on insulated piping. To protect insulation, provide Type 39 saddles for roller type supports or preinsulated calcium silicate shields. Provide Type 40 insulation shield or preinsulated calcium silicate shield at all other types of supports and hangers including those for preinsulated piping.
2. Piping Systems except High and Medium Pressure Steam (MSS SP-58):
 - a. Standard clevis hanger: Type 1; provide locknut.
 - b. Riser clamps: Type 8.
 - c. Wall brackets: Types 31, 32 or 33.
 - d. Roller supports: Type 41, 43, 44 and 46.
 - e. Saddle support: Type 36, 37 or 38.
 - f. Turnbuckle: Types 13 or 15. Preinsulate.
 - g. U-bolt clamp: Type 24.
 - h. Copper Tube:
 - 1) Hangers, clamps and other support material in contact with tubing shall be painted with copper colored epoxy paint, plastic coated or taped with non adhesive isolation tape to prevent electrolysis.
 - 2) For vertical runs use epoxy painted or plastic coated riser clamps.
 - 3) For supporting tube to strut: Provide epoxy painted pipe straps for copper tube or plastic inserted vibration isolation clamps.
 - 4) Insulated Lines: Provide pre-insulated calcium silicate shields sized for copper tube.
 - i. Supports for plastic or glass piping: As recommended by the pipe manufacturer with black rubber tape extending one inch beyond steel support or clamp.

H. Pre-insulated Calcium Silicate Shields:

1. Provide 360 degree water resistant high density 965 kPa (140 psi) compressive strength calcium silicate shields encased in galvanized metal.
2. Pre-insulated calcium silicate shields to be installed at the point of support during erection.
3. Shield thickness shall match the pipe insulation.
4. The type of shield is selected by the temperature of the pipe, the load it must carry, and the type of support it will be used with.
 - a. Shields for supporting chilled or cold water shall have insulation that extends a minimum of 1 inch past the sheet metal. Provide for an adequate vapor barrier in chilled lines.
 - b. The pre-insulated calcium silicate shield shall support the maximum allowable water filled span as indicated in MSS-SP 69.

To support the load, the shields may have one or more of the following features: structural inserts 4138 kPa (600 psi) compressive strength, an extra bottom metal shield, or formed structural steel (ASTM A36) wear plates welded to the bottom sheet metal jacket.

2.6 PIPE PENETRATIONS

- A. Install sleeves during construction for other than blocked out floor openings for risers in mechanical bays.
- B. Penetrations are not allowed through beams or ribs, but may be installed in concrete beam flanges. Any deviation from these requirements must receive prior approval of Engineer.
- C. Sheet Metal, Plastic, or Moisture-resistant Fiber Sleeves: Provide for pipe passing through floors, interior walls, and partitions, unless brass or steel pipe sleeves are specifically called for below.
- D. Cast Iron or Zinc Coated Pipe Sleeves: Provide for pipe passing through exterior walls below grade. Make space between sleeve and pipe watertight with a modular or link rubber seal. Seal shall be applied at both ends of sleeve.
- E. Galvanized Steel or an alternate Black Iron Pipe with asphalt coating Sleeves: Provide for pipe passing through concrete beam flanges, except where brass pipe sleeves are called for. Provide sleeve for pipe passing through floor of mechanical rooms, laundry work rooms, and animal rooms above basement. Except in mechanical rooms, connect sleeve with floor plate.
- F. Brass Pipe Sleeves: Provide for pipe passing through quarry tile, terrazzo or ceramic tile floors. Connect sleeve with floor plate.
- G. Sleeve Clearance: Sleeve through floors, walls, partitions, and beam flanges shall be one inch greater in diameter than external diameter of pipe. Sleeve for pipe with insulation shall be large enough to accommodate the insulation. Interior openings shall be caulked tight with fire stopping material and sealant to prevent the spread of fire, smoke, and gases.

2.7 SPECIAL TOOLS AND LUBRICANTS

- A. Furnish, and turn over to the Engineer, special tools not readily available commercially, that are required for disassembly or adjustment of equipment and machinery furnished.
- B. Grease Guns with Attachments for Applicable Fittings: One for each type of grease required for each motor or other equipment.
- C. Tool Containers: Hardwood or metal, permanently identified for intended service and mounted, or located, where directed by the Engineer.

- D. Lubricants: A minimum of one quart of oil, and one pound of grease, of equipment manufacturer's recommended grade and type, in unopened containers and properly identified as to use for each different application.

2.8 WALL, FLOOR AND CEILING PLATES

- A. Material and Type: Chrome plated brass or chrome plated steel, one piece or split type with concealed hinge, with set screw for fastening to pipe, or sleeve. Use plates that fit tight around pipes, cover openings around pipes and cover the entire pipe sleeve projection.
- B. Thickness: Not less than 3/32-inch for floor plates. For wall and ceiling plates, not less than 0.025-inch for up to 3-inch pipe, 0.035-inch for larger pipe.
- C. Locations: Use where pipe penetrates floors, walls and ceilings in exposed locations, in finished areas only. Use also where insulation ends on exposed water supply pipe drop from overhead. Provide a watertight joint in spaces where brass or steel pipe sleeves are specified.

2.9 ASBESTOS

- A. Materials containing asbestos are not permitted.

PART 3 - EXECUTION

3.1 ARRANGEMENT AND INSTALLATION OF EQUIPMENT AND PIPING

- A. Coordinate location of piping, sleeves, inserts, hangers, ductwork and equipment. Locate piping, sleeves, inserts, hangers, ductwork and equipment clear of windows, doors, openings, light outlets, and other services and utilities. Prepare equipment layout drawings to coordinate proper location and personnel access of all facilities. Submit the drawings for review as required by Part 1. Follow manufacturer's published recommendations for installation methods not otherwise specified.
- B. Operating Personnel Access and Observation Provisions: Select and arrange all equipment and systems to provide clear view and easy access, without use of portable ladders, for maintenance and operation of all devices including, but not limited to: all equipment items, valves, filters, strainers, transmitters, sensors, control devices. All gages and indicators shall be clearly visible by personnel standing on the floor or on permanent platforms. Do not reduce or change maintenance and operating space and access provisions that are shown on the drawings.
- C. Equipment and Piping Support: Coordinate structural systems necessary for pipe and equipment support with pipe and equipment locations to permit proper installation.

- D. Location of pipe sleeves, trenches and chases shall be accurately coordinated with equipment and piping locations.
- E. Cutting Holes:
 - 1. Cut holes through concrete and masonry by rotary core drill. Pneumatic hammer, impact electric, and hand or manual hammer type drill will not be allowed, except as permitted by Engineer where working area space is limited.
 - 2. Locate holes to avoid interference with structural members such as beams or grade beams. Holes shall be laid out in advance and drilling done only after approval by Engineer. If the Contractor considers it necessary to drill through structural members, this matter shall be referred to Engineer for approval.
 - 3. Do not penetrate membrane waterproofing.
- F. Interconnection of Instrumentation or Control Devices: Generally, electrical and pneumatic interconnections are not shown but must be provided.
- G. Minor Piping: Generally, small diameter pipe runs from drips and drains, water cooling, and other service are not shown but must be provided.
- H. Electrical and Pneumatic Interconnection of Controls and Instruments: This generally not shown but must be provided. This includes interconnections of sensors, transmitters, transducers, control devices, control and instrumentation panels, instruments and computer workstations. Comply with NFPA-70.
- I. Protection and Cleaning:
 - 1. Equipment and materials shall be carefully handled, properly stored, and adequately protected to prevent damage before and during installation, in accordance with the manufacturer's recommendations and as approved by the Engineer. Damaged or defective items in the opinion of the Engineer, shall be replaced.
 - 2. Protect all finished parts of equipment, such as shafts and bearings where accessible, from rust prior to operation by means of protective grease coating and wrapping. Close pipe openings with caps or plugs during installation. Tightly cover and protect fixtures and equipment against dirt, water chemical, or mechanical injury. At completion of all work thoroughly clean fixtures, exposed materials and equipment.
- J. Concrete and Grout: Use concrete and shrink compensating grout.
- K. Install gages, thermometers, valves and other devices with due regard for ease in reading or operating and maintaining said devices. Locate and position thermometers and gages to be easily read by operator or staff standing on floor or walkway provided. Servicing shall not require dismantling adjacent equipment or pipe work.

L. Work in Existing Building:

1. Make alterations to existing service piping at times that will least interfere with normal operation of the facility.
2. Cut required openings through existing masonry and reinforced concrete using diamond core drills. Use of pneumatic hammer type drills, impact type electric drills, and hand or manual hammer type drills, will be permitted only with approval of the Engineer. Locate openings that will least effect structural slabs, columns, ribs or beams. Refer to the Engineer for determination of proper design for openings through structural sections and opening layouts approval, prior to cutting or drilling into structure. After Engineer's approval, carefully cut opening through construction no larger than absolutely necessary for the required installation.

M. Inaccessible Equipment

1. Where the Owner determines that the Contractor has installed equipment not conveniently accessible for operation and maintenance, equipment shall be removed and reinstalled or remedial action performed as directed at no additional cost to the Owner.
2. The term "conveniently accessible" is defined as capable of being reached without the use of ladders, or without climbing or crawling under or over obstacles such as motors, fans, pumps, belt guards, transformers, high voltage lines, piping, and ductwork.

3.2 TEMPORARY PIPING AND EQUIPMENT

- A. Continuity of operation of existing facilities will generally require temporary installation or relocation of equipment and piping.
- B. The Contractor shall provide all required facilities in accordance with the requirements of phased construction and maintenance of service. All piping and equipment shall be properly supported, sloped to drain, operate without excessive stress, and shall be insulated where injury can occur to personnel by contact with operating facilities. The requirements of Para. 3.1 apply.
- C. Temporary facilities and piping shall be completely removed and any openings in structures sealed. Provide necessary blind flanges and caps to seal open piping remaining in service.

3.3 RIGGING

- A. Design is based on application of available equipment. Openings in building structures are planned to accommodate design scheme.
- B. Alternative methods of equipment delivery may be offered by Contractor and will be considered by Owner under specified restrictions of phasing and maintenance of service as well as structural integrity of the building.

- C. Close all openings in the building when not required for rigging operations to maintain proper environment in the facility for Owner operation and maintenance of service.
- D. Contractor shall provide all facilities required to deliver specified equipment and place on foundations. Attachments to structures for rigging purposes and support of equipment on structures shall be Contractor's full responsibility. Upon request, the Owner will check structure adequacy and advise Contractor of recommended restrictions.
- E. Contractor shall check all clearances, weight limitations and shall offer a rigging plan designed by a Registered Professional Engineer. All modifications to structures, including reinforcement thereof, shall be at Contractor's cost, time and responsibility.
- F. Rigging plan and methods shall be referred to Engineer for evaluation prior to actual work.
- G. Restore building to original condition upon completion of rigging work.

3.4 PIPE AND EQUIPMENT SUPPORTS

- A. Where hanger spacing does not correspond with joist or rib spacing, use structural steel channels secured directly to joist and rib structure that will correspond to the required hanger spacing, and then suspend the equipment and piping from the channels. Drill or burn holes in structural steel only with the prior approval of the Engineer.
- B. Use of chain, wire or strap hangers; wood for blocking, stays and bracing; or, hangers suspended from piping above will not be permitted. Replace or thoroughly clean rusty products and paint with zinc primer.
- C. Use hanger rods that are straight and vertical. Turnbuckles for vertical adjustments may be omitted where limited space prevents use. Provide a minimum of 1/2-inch clearance between pipe or piping covering and adjacent work.
- D. HVAC Horizontal Pipe Support Spacing: Refer to MSS SP-69. Provide additional supports at valves, strainers, in-line pumps and other heavy components. Provide a support within one foot of each elbow.
- E. HVAC Vertical Pipe Supports:
 - 1. Up to 6-inch pipe, 30 feet long, bolt riser clamps to the pipe below couplings, or welded to the pipe and rests supports securely on the building structure.
 - 2. Vertical pipe larger than the foregoing, support on base elbows or tees, or substantial pipe legs extending to the building structure.

F. Overhead Supports:

1. The basic structural system of the building is designed to sustain the loads imposed by equipment and piping to be supported overhead.
2. Provide steel structural members, in addition to those shown, of adequate capability to support the imposed loads, located in accordance with the final approved layout of equipment and piping.
3. Tubing and capillary systems shall be supported in channel troughs.

G. Floor Supports:

1. Provide concrete bases, concrete anchor blocks and pedestals, and structural steel systems for support of equipment and piping. Anchor and dowel concrete bases and structural systems to resist forces under operating and seismic conditions (if applicable) without excessive displacement or structural failure.
2. Do not locate or install bases and supports until equipment mounted thereon has been approved. Size bases to match equipment mounted thereon plus 2 inch excess on all edges.
3. All equipment shall be shimmed, leveled, firmly anchored, and grouted with epoxy grout. Anchor bolts shall be placed in sleeves, anchored to the bases. Fill the annular space between sleeves and bolts with a granular material to permit alignment and realignment.

3.5 MECHANICAL DEMOLITION

- A. Insulation or materials shall be identified before attempting any demolition. Contractor shall comply with the requirements of EPA regulations, National Emissions Standards, and the OSHA regulations, as well as applicable State laws and City Codes and Ordinances. Asbestos insulation if found, shall be removed under a separate contract.
- B. Before commencing the work of this section, the Contractor shall check with Owner about materials, and equipment to be removed and those to be preserved. All those items requiring demolition shall be hauled away from site.
- C. Items so indicated on drawings to be removed and not indicated or specified to be saved or retained shall be demolished, removed, demounted, or disconnected in the best possible manner to ensure that no damage will result to other adjacent items or surface to remain.
- D. During removal of items so indicated, caution shall be used to eliminate damage to any equipment having salvage value. All material being removed shall become the property of the contractor for disposal unless otherwise noted or directed. Deliver any such item retained by the Owner to any location on the project site as indicated by the Engineer.

E. Disposal and Clean-Up:

1. Areas in which demolition and salvage work is being done shall be cleaned daily.
2. All dirt, dust, debris, unsalvageable and un reusable items and the like shall be totally removed from the project site on a daily basis. Under no circumstances shall such refuse be allowed to collect for longer periods.
3. Refuse shall not be allowed to block, or otherwise impair circulation in corridors, stairs, sidewalks or other traffic areas.

F. Confine the work to the immediate area concerned; maintain cleanliness and wet down demolished materials to eliminate dust. Do not permit debris to accumulate in the area to the detriment of plant operation. Perform all flame cutting to maintain the fire safety integrity of this plant.

G. Completely remove all piping, wiring, conduit, and other devices associated with the equipment not to be re-used in the new work. This includes all pipe, valves, fittings, insulation, and all hangers including the top connection and any fastenings to building structural systems. Seal all openings, after removal of equipment, pipes, ducts, and other penetrations in roof, walls, floors, in an approved manner and in accordance with plans and specifications where specifically covered. Structural integrity of the building system shall be maintained. Reference shall also be made to the drawings and specifications of the other disciplines in the project for additional facilities to be demolished or handled.

3.6 CLEANING AND PAINTING

A. Prior to final inspection and acceptance of the plant and facilities for beneficial use by the Owner, the plant facilities, equipment and systems shall be thoroughly cleaned and painted.

B. In addition, the following special conditions apply:

Cleaning shall be thorough. Use solvents, cleaning materials and methods recommended by the manufacturers for the specific tasks. Remove all rust prior to painting and from surfaces to remain unpainted. Repair scratches, scuffs, and abrasions prior to applying prime and finish coats.

1. Material And Equipment Not To Be Painted Includes:
 - a. Motors, controllers, control switches, and safety switches.
 - b. Control and interlock devices.
 - c. Regulators.
 - d. Pressure reducing valves.
 - e. Control valves and thermostatic elements.
 - f. Lubrication devices and grease fittings.
 - g. Copper, brass, aluminum, stainless steel and bronze surfaces.
 - h. Valve stems and rotating shafts.
 - i. Pressure gauges and thermometers.
 - j. Glass.

- k. Name plates.
- 2. Control and instrument panels shall be cleaned, damaged surfaces repaired, and shall be touched-up with matching paint obtained from panel manufacturer.
- 3. Temporary Facilities: Apply paint to surfaces that do not have existing finish coats.
- 4. Paint shall withstand the following temperatures without peeling or discoloration:
 - a. Condensate and feedwater -- 100 degrees F on insulation jacket surface and 250 degrees F on metal pipe surface.
 - b. Steam -- 125 degrees F on insulation jacket surface and 375 degrees F on metal pipe surface.
- 6. Final result shall be smooth, even-colored, even-textured factory finish on all items. Completely repaint the entire piece of equipment if necessary to achieve this.

3.7 IDENTIFICATION SIGNS

- A. Provide laminated plastic signs, with engraved lettering not less than 3/16-inch high, designating functions, for all equipment, switches, motor controllers, relays, meters, control devices, including automatic control valves. Nomenclature and identification symbols shall correspond to that used in maintenance manual, and in diagrams specified elsewhere. Attach by chain, adhesive, or screws.
- B. Factory Built Equipment: Metal plate, securely attached, with name and address of manufacturer, serial number, model number, size, performance.

3.8 STARTUP AND TEMPORARY OPERATION

- A. Start up equipment as described in equipment specifications. Verify that vibration is within specified tolerance prior to extended operation.

3.9 OPERATING AND PERFORMANCE TESTS

- A. Should evidence of malfunction in any tested system, or piece of equipment or component part thereof, occur during or as a result of tests, make proper corrections, repairs or replacements, and repeat tests at no additional cost to the Owner.
- B. When completion of certain work or system occurs at a time when final control settings and adjustments cannot be properly made to make performance tests, then make performance tests for heating systems and for cooling systems respectively during first actual seasonal use of respective systems following completion of work.

END OF SECTION

SECTION 15140
HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section includes specifications for supports of all HVAC equipment and materials as well as piping system anchors.

1.2 RELATED WORK

- A. Section 15260 - HVAC Insulation

1.3 QUALITY ASSURANCE

- A. Refer to Division 1, General Conditions, Equals and Substitutions.

1.4 SUBMITTALS

- A. Refer to Division 1, General Conditions, Submittals.
- B. Schedule of all hanger and support devices indicating shields, attachment methods, and type of device for each pipe size and type of service.

1.5 DESIGN CRITERIA

- A. Materials and application of pipe hangers and supports shall be in accordance with MSS Standard Practice SP-58 unless noted otherwise.
- B. Piping connected to base mounted pumps, compressors, or other rotating or reciprocating equipment is to have vibration isolation supports for a distance of one hundred pipe diameters or three supports away from the equipment, whichever is greater. Standard pipe hangers/supports as specified in this section are required beyond the 100 pipe diameter/3 support distance.
- C. Piping flexible connections and vibration isolation supports are required for piping connected to coils that are in a fan assembly where the entire assembly is mounted on vibration supports; the vibration isolation supports are required for a distance of one hundred pipe diameters or three supports away from the equipment, whichever is greater. Piping flexible connection and vibration isolation supports are not required when the fan section is separately and independently isolated by means of vibration supports and duct flexible connections. Standard pipe hangers/supports as specified in this section are required when there are no vibration isolation devices in the piping and beyond the 100 pipe diameter/3 support distance.
- D. Piping supported by laying on the bottom chord of joists or trusses will not be accepted.

- E. Fasteners depending on soft lead for holding power or requiring powder actuation will not be accepted.
- F. Allow sufficient space between adjacent pipes and ducts for insulation, valve operation, routine maintenance, etc.

PART 2 - PRODUCTS

2.1 STRUCTURAL SUPPORTS

- A. Provide all supporting steel required for the installation of mechanical equipment and materials, whether or not it is specifically indicated or sized, including angles, channels, beams, etc. to suspend or floor support tanks and equipment.

2.2 PIPE HANGERS AND SUPPORTS

- A. HANGERS FOR STEEL PIPE SIZES 1/2" THROUGH 2": Carbon steel, adjustable, clevis, black finish.
- B. HANGERS FOR STEEL PIPE SIZES 2-1/2" AND OVER Carbon steel, adjustable, clevis, black finish. Adjustable steel yoke, cast iron roll, double hanger. Anvil figure 181.
- C. MULTIPLE OR TRAPEZE HANGERS: Steel channels with welded spacers and hanger rods if calculations are submitted.
- D. WALL SUPPORT: Welded steel bracket with hanger.
- E. VERTICAL RISER SUPPORT: Carbon steel riser clamp, copper plated when used with copper pipe.
- F. FLOOR SUPPORT FOR PIPE SIZES THROUGH 4": Cast iron adjustable pipe saddle, locknut nipple, floor flange, and concrete pier or steel support.
- G. FLOOR SUPPORT FOR PIPE SIZES 5" AND OVER: Adjustable cast iron roll and stand, steel screws, and concrete pier or steel support.
- H. COPPER PIPE SUPPORT: Carbon steel ring, adjustable, copper plated or polyvinylchloride coated.
- I. INSULATION PROTECTION SHIELDS: Galvanized carbon steel of not less than 18 gauge for use on insulated pipe 2-1/2 inch and larger. Minimum shield length is 12 inches.
- J. STEEL HANGER RODS: Threaded both ends, threaded one end, or continuous threaded, black finish.
 - 1. Size rods for individual hangers and trapeze support as indicated in the following schedule.

Total weight of equipment, including valves, fittings, pipe, pipe content, and insulation, are not to exceed the limits indicated.

Maximum Load (Lbs.) (650 °F Maximum Temp.)	Rod Diameter (inches)
610	3/8
1130	1/2
1810	5/8
2710	3/4
3770	7/8
4960	1
8000	1-1/4

Provide rods complete with adjusting and lock nuts.

2.3 WOOD STRUCTURE SUPPORTS

- A. Carbon steel pipe short strap for piping 1/2" through 2". Fastened with two No. 24 x 2 (minimum size) wood screws.
- B. Carbon steel coach screw rods machine threaded on opposite ends, minimum 3/8" diameter.
- C. Carbon steel side beam bracket with minimum 3/8" rod size and fastened with minimum 1/2" x 3" lag screws.

2.4 BEAM CLAMPS

- A. MSS SP-58 Type 23 malleable black iron clamp for attachment to beam flange to 0.62 inches thick for single threaded rods of 3/8, 1/2, and 5/8 inch diameter, for use with pipe sizes 4 inch and less. Furnish with a hardened steel cup point set screw.
- B. MSS SP-58 Type 28 or Type 29 forged steel jaw type clamp with a tie rod to lock clamp in place, suitable for rod sizes to 1-1/2 inch diameter but limited in application to pipe sizes 8 inch and less without prior approval.

2.5 CONCRETE INSERTS

- A. Carbon steel expansion anchors, vibration resistant, with ASTM B633 zinc plating. Use drill bit of same manufacturer as anchor.

2.6 ANCHORS

- A. Use welding steel shapes, plates, and bars to secure piping to the structure.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Work shall be installed as shown and according to the manufacturer's diagrams and recommendations.
- B. Install supports to provide for free expansion of the piping and duct system. Support all piping from the structure using concrete inserts, beam clamps, ceiling plates, wall brackets, or floor stands. Fasten ceiling plates and wall brackets securely to the structure and test to demonstrate the adequacy of the fastening.
- C. Piping shall be supported independently from ductwork and all other trades.
- D. Where piping can be conveniently grouped to allow the use of trapeze type supports, use standard structural shapes for the supporting steel.
- E. Perform all welding in accordance with standards of the American Welding Society. Clean surfaces of loose scale, rust, paint or other foreign matter and properly align before welding. Use wire brush on welds after welding. Welds shall show uniform section, smoothness of weld metal and freedom from porosity and clinkers. Where necessary to achieve smooth connections, joints shall be dressed smooth.

3.2 HANGER AND SUPPORT SPACING

- A. Place a hanger within 12 inches of each horizontal elbow, valve, strainer, or similar piping specialty item.
- B. Where several pipes can be installed in parallel and at the same elevation, provide multiple or trapeze hangers.
- C. Support riser piping independently of connected horizontal piping.
- D. Adjust hangers to obtain the slope specified in the piping section of this specification.

Space hangers for pipe as follows:

- 1. Install hangers for steel piping with the following maximum spacing and minimum rod sizes:

NPS 3/4: Maximum span, 7 feet; minimum rod size, 1/4 inch.
NPS 1: Maximum span, 7 feet; minimum rod size, 1/4 inch.
NPS 1-1/2: Maximum span, 9 feet; minimum rod size, 3/8 inch.
NPS 2: Maximum span, 10 feet; minimum rod size, 3/8 inch.
NPS 2-1/2: Maximum span, 11 feet; minimum rod size, 3/8 inch.
NPS 3: Maximum span, 12 feet; minimum rod size, 3/8 inch.
NPS 4: Maximum span, 14 feet; minimum rod size, 1/2 inch.
NPS 6: Maximum span, 17 feet; minimum rod size, 1/2 inch.

NPS 8: Maximum span, 19 feet; minimum rod size, 5/8 inch.
NPS 10: Maximum span, 20 feet; minimum rod size, 3/4 inch.
NPS 12: Maximum span, 23 feet; minimum rod size, 7/8 inch.
NPS 14: Maximum span, 25 feet; minimum rod size, 1 inch.
NPS 16: Maximum span, 27 feet; minimum rod size, 1 inch.
NPS 18: Maximum span, 28 feet; minimum rod size, 1-1/4 inches.
NPS 20: Maximum span, 30 feet; minimum rod size, 1-1/4 inches.

2. Install hangers for drawn-temper copper piping with the following maximum spacing and minimum rod sizes:

NPS 3/4: Maximum span, 5 feet; minimum rod size, 1/4 inch.
NPS 1: Maximum span, 6 feet; minimum rod size, 1/4 inch.
NPS 1-1/2: Maximum span, 8 feet; minimum rod size, 3/8 inch.
NPS 2: Maximum span, 8 feet; minimum rod size, 3/8 inch.
NPS 2-1/2: Maximum span, 9 feet; minimum rod size, 3/8 inch.
NPS 3: Maximum span, 10 feet; minimum rod size, 3/8 inch.

3. Plastic Piping Hanger Spacing: Space hangers according to pipe manufacturer's written instructions for service conditions. Avoid point loading. Space and install hangers with the fewest practical rigid anchor points.
4. Fiberglass Piping Hanger Spacing: Space hangers according to pipe manufacturer's written instructions for service conditions. Avoid point loading. Space and install hangers with the fewest practical rigid anchor points.
5. Support vertical runs at roof, at each floor, and at 10-foot (3-m) intervals between floors.

3.3 VERTICAL RISER CLAMPS

- A. Support vertical piping with clamps secured to the piping and resting on the building structure or secured to the building structure below at each floor.

3.4 ANCHORS

- A. Install where indicated on the drawings and details. Where not specifically indicated, install anchors at ends of principal pipe runs and at intermediate points in pipe runs between expansion loops. Make provisions for preset of anchors as required to accommodate both expansion and contraction of piping.

END OF SECTION

SECTION 15190
IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
 - 1. Pipe labels.
 - 2. Stencils.
 - 3. Valve tags.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For color, letter style, and graphic representation required for each identification material and device.
- C. Equipment Label Schedule: Include a listing of all equipment to be labeled with the proposed content for each label.
- D. Valve numbering scheme.
- E. Valve Schedules: For each piping system to include in maintenance manuals.

1.4 COORDINATION

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- B. Coordinate installation of identifying devices with locations of access panels and doors.
- C. Install identifying devices before installing acoustical ceilings and similar concealment.

PART 2 - PRODUCTS

2.1 PIPE LABELS

- A. General Requirements for Manufactured Pipe Labels: Preprinted, color-coded, with lettering indicating service, and showing flow direction. Manufacturers standard legends and colors should be used whenever possible. Pipe marker

color field and legend height shall comply with ASME/ANSE A 13.1 specifications.

- B. Pretensioned Pipe Labels: Precoiled, semirigid plastic formed to cover full circumference of pipe and to attach to pipe without fasteners or adhesive.
 - 1. Basis-of-Design Product: Craftmark Pipe Markers; Specmark Snap-on Markers.
 - 2. Subject to compliance with requirements, provide the Basis-of-Design Product or comparable product by one of the following:
 - a. Brady, Inc.
 - b. Seton, Inc.
 - 3. For pipe sizes NP5 5 and smaller including pipe insulation: semi-rigid plastic wrap-around pipe markers that extend 360 degrees around pipe at each marker location. Include legend (pipe content) and arrows to indicate direction of flow.
 - 4. For pipe sizes NP5 5 and larger including pipe installation: Semi-rigid plastic strap-on pipe markers. Include legend (pipe content), and arrows to indicate direction of flow. Include at least 2 nylon straps to secure marker to pipe.
- C. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.
 - 1. Basis-of-Design Product: Craftmark Pipe Markers; Duramark Self-Stick Markers.
 - 2. Subject to compliance with requirements, provide the Basis-of-Design Product or comparable product by one of the following:
 - a. Brady, Inc.
 - b. Seton, Inc.
- D. Exterior Pretensioned Pipe Labels: Pre-coiled, semi-rigid plastic formed to partially cover, cover full circumference of pipe and to attach to pipe without fasteners or adhesive.
 - 1. Basis-of-Design Product: Craftmark Pipe Markers; Specmark HT Extreme Environmental Markers.
 - 2. Subject to compliance with requirements, provide the Basis-of-Design Product or comparable product by one of the following:
 - a. Brady, Inc.
 - b. Seton, Inc.
 - 3. For pipe sizes NP5 6 or smaller including pipe insulation: Semi-rigid plastic wrap-around pipe markers. Include legend (pipe content) and arrows to indicate direction of flow. Include at least 2 nylon straps to secure marker to pipe.

4. For pipe sizes NPS 6 or larger: rigid 0.090 inches fiberglass carrier with high temp adhesive back pipe marker attached to surface. Include legend (pipe content) and arrow to indicate direction of flow. Include at least 2 nylon straps to secure marker to pipe.
- E. Pipe Label Contents: Include identification of piping service using same designations or abbreviations as used on Drawings, pipe size, and an arrow indicating flow direction.
 1. Flow-Direction Arrows: Integral with piping system service lettering to accommodate both directions, or as separate unit on each pipe label to indicate flow direction.
 2. Lettering Size: At least 1-1/2 inches high.

2.2 STENCILS

- A. Basis-of-Design Product: Craftmark Pipe Markers; Plastic Stencils.
- B. Subject to compliance with requirements, provide the Basis-of-Design Product or comparable product by one of the following:
 1. Seton, Inc.
- C. Stencils: Prepared with letter sizes according to ASME A13.1 for piping; minimum letter height of 1-1/4 inches for ducts; and minimum letter height of 3/4 inch for access panel and door labels, equipment labels, and similar operational instructions.
 1. Stencil Material: [Aluminum] [Brass] [Fiberboard] [Fiberboard or metal] [Polyester 0.02 inch].
 2. Stencil Paint: Exterior, gloss, [alkyd enamel] [acrylic enamel] black unless otherwise indicated. Paint may be in pressurized spray-can form.
 3. Identification Paint: Exterior, [alkyd enamel] [acrylic enamel] in colors according to ASME A13.1 unless otherwise indicated.

2.3 VALVE TAGS

- A. Basis-of-Design Product: Craftmark Pipe Markers; Valve Tags.
- B. Subject to compliance with requirements, provide the Basis-of-Design Product or comparable product by one of the following:
 1. Brady, Inc.
 2. Seton, Inc.
- C. Valve Tags: Stamped or engraved with 1/4-inch letters for piping system abbreviation and 1/2-inch numbers.

1. Tag Material: Brass, 0.036-inch minimum thickness, and having predrilled or stamped holes for attachment hardware.
 2. Fasteners: Brass #16 jack chain, #6 beaded chain; or S-hook.
- D. Valve Schedules: For each piping system, on 8-1/2-by-11-inch (A4) bond paper. Tabulate valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room or space), normal-operating position (open, closed, or modulating), and variations for identification. Mark valves for emergency shutoff and similar special uses.
1. Valve-tag schedule shall be included in operation and maintenance data.

2.4 MECHANICAL ROOM PIPE INSULATION PAINTING

Pratt & Lambert designations with Effecto Enamel Gloss finish:

1.	Gas Piping	Y362Y	<i>Spectrum Yellow</i>
2.	Hot Water Supply (HEATING) Expansion lines & Separator tanks	Y0277Y	<i>Sunspot</i>
3.	Hot Water Return (HEATING)	R111R	<i>Vintage Claret</i>
3a.	Hot Water Return (PLUMBING)	R111R	<i>Vintage Claret with 1"</i> <i>wide White color</i> <i>bands at 12" o.c.</i>
4.	Cold Water (HEATING)	B761M	<i>Real Blue</i>
4a.	Cold Water (PLUMBING)	B761M	<i>Real Blue with 1"</i> <i>wide White color</i> <i>bands at 12" o.c.</i>
5.	Hot Water lines & Storage Tanks (PLUMBING)	YG446Y	<i>Serpentine</i>
6.	Boiler Flues, ducts, etc.	YG446Y	<i>Serpentine</i>
7.	Electric conduit	-----	Match ceiling and/or wall colors.
8.	Boiler Expansion Tanks	-----	Match ceiling and/or wall colors.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean piping and equipment surfaces of substances that could impair bond of identification devices, including dirt, oil, grease, release agents, and incompatible primers, paints, and encapsulants.

3.2 PIPE LABEL INSTALLATION

- A. Stenciled Pipe Label Option: Stenciled labels may be provided instead of manufactured pipe labels, at Installer's option. Install stenciled pipe labels [with painted, color-coded bands or rectangles, complying with ASME A13.1, on each piping system.

1. Identification Paint: Use for contrasting background.
 2. Stencil Paint: Use for pipe marking.
- B. Locate pipe labels where piping is exposed or above accessible ceilings in finished spaces; machine rooms; accessible maintenance spaces such as shafts, tunnels, and plenums; and exterior exposed locations as follows:
1. Near each valve and control device.
 2. Near each branch connection, excluding short takeoffs for fixtures and terminal units. Where flow pattern is not obvious, mark each pipe at branch.
 3. Near penetrations through walls, floors, ceilings, and inaccessible enclosures.
 4. At access doors, manholes, and similar access points that permit view of concealed piping.
 5. Near major equipment items and other points of origination and termination.
 6. Spaced at maximum intervals of 50 feet along each run. Reduce intervals to 25 feet in areas of congested piping and equipment.
 7. On piping above removable acoustical ceilings. Omit intermediately spaced labels.
- C. Pipe Label Color Schedule:
1. Dual-Temperature-Water Piping:
 - a. Background Color: Yellow.
 - b. Letter Color: Black
 2. Heating Water Piping:
 - a. Background Color: Red
 - b. Letter Color: White

3.3 VALVE-TAG INSTALLATION

- A. Install tags on valves and control devices in piping systems, except check valves; valves within factory-fabricated equipment units; shutoff valves; faucets; convenience and lawn-watering hose connections; and HVAC terminal devices and similar roughing-in connections of end-use fixtures and units. List tagged valves in a valve schedule.
- B. Valve-Tag Application Schedule: Tag valves according to size, shape, and color scheme and with captions similar to those indicated in the following subparagraphs:

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1. Valve-Tag Size and Shape:
 - a. Chilled Water: 1-1/2 inches round.
 - b. Hot Water: 1-1/2 inches round.
2. Valve-Tag Color:
 - a. Chilled Water: Natural.
 - b. Hot Water: Natural.
3. Letter Color:
 - a. Chilled Water: Black.
 - b. Hot Water: Black.

END OF SECTION

SECTION 15260
HVAC INSULATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section includes insulation specifications for heating, ventilating and air conditioning piping, ductwork and equipment. Furnish and install all insulating materials and accessories as specified or as required for a complete installation. The following types of insulation are specified in this section:

1. Pipe Insulation

1.2 RELATED WORK

- A. Section 15010 - Common Work Results for HVAC
- B. Section 15140 - Hangers and Supports for HVAC Piping and Equipment

1.3 QUALITY ASSURANCE

- A. Refer to Division 1, General Conditions, Equals and Substitutions. Label all insulating products delivered to the construction site with the manufacturer's name and description of materials. Insulation systems shall be applied by experienced contractors. Within the past five (5) years, the contractor shall be able to document the successful completion of a minimum of three (3) projects of at least 50% of the size and similar scope of the work specified in this section.

1.4 SUBMITTALS

- A. Refer to Division 1, General Conditions, Submittals. Submit a schedule of all insulating materials to be used on the project, including adhesives, fastening methods, fitting materials along with material safety data sheets and intended use of each material. Include manufacturer's technical data sheets indicating density, thermal characteristics, jacket type, and manufacturer's installation instructions.
- B. All operations and maintenance data shall comply with the submission and content requirements specified under section GENERAL REQUIREMENTS.

1.5 APPLICABLE PUBLICATIONS

ASTM B209	Aluminum and Aluminum Alloy Sheet and Plate
ASTM C165	Test Method for Compressive Properties of Thermal Insulations
ASTM C177	Heat Flux and Thermal Transmission Properties
ASTM C195	Mineral Fiber Thermal Insulation Cement
ASTM C240	Cellular Glass Insulation Block
ASTM C302	Density of Preformed Pipe Insulation
ASTM C303	Density of Preformed Block Insulation
ASTM C355	Test Methods for Test for Water Vapor Transmission of Thick Materials
ASTM C449	Mineral Fiber Hydraulic Setting Thermal Insulation Cement

ASTM C518	Heat Flux and Thermal Transmission Properties
ASTM C533	Calcium Silicate Block and Pipe Thermal Insulation
ASTM C534	Preformed Flexible Elastomeric Thermal Insulation
ASTM C547	Mineral Fiber Preformed Pipe Insulation
ASTM C552	Cellular Glass Block and Pipe Thermal Insulation
ASTM C553	Mineral Fiber Blanket and Felt Insulation
ASTM C578	Preformed, Block Type Cellular Polystyrene Thermal Insulation
ASTM C591	Unfaced Preformed Rigid Cellular Polyisocyanurate Thermal Insulation
ASTM C610	Expanded Perlite Block and Thermal Pipe Insulation
ASTM C612	Mineral Fiber Block and Board Thermal Insulation
ASTM C921	Properties of Jacketing Materials for Thermal Insulation
ASTM C1136	Flexible Low Permeance Vapor Retarders for Thermal Insulation
ASTM D412	Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension
ASTM D1000	Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications
ASTM D1621	Standard Test Method for Compressive Properties Of Rigid Cellular Plastics
ASTM D1622	Standard Test Method for Apparent Density of Rigid Cellular Plastics
ASTM D1940	Method of Test for Porosity of Rigid Cellular Plastics
ASTM D2126	Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
ASTM D2240	Standard Test Method for Rubber Property—Durometer Hardness
ASTM E84	Surface Burning Characteristics of Building Materials
ASTM E814	Standard Test Method for Fire Tests of Penetration Firestop Systems
ASTM E2336	Standard Test Methods for Fire Resistive Grease Duct Enclosure Systems
MICA	National Commercial & Industrial Insulation Standards
NFPA 225	Surface Burning Characteristics of Building Materials
UL 723	Surface Burning Characteristics of Building Materials

1.6 DEFINITIONS

- A. Concealed: shafts, furred spaces, space above finished ceilings, utility tunnels and crawl spaces. All other areas, including walk-through tunnels, shall be considered as exposed.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not store insulation materials on grade or where they are at risk of becoming wet. Do not install insulation products that have been exposed to water. Protect installed insulation work with plastic sheeting to prevent water damage.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials or accessories containing asbestos will not be accepted.

- B. Use composite insulation systems (insulation, jackets, sealants, mastics, and adhesives) that have a flame spread rating of 25 or less and smoke developed rating of 50 or less, with the following exceptions:
- C. Pipe insulation which is not located in an air plenum may have a flame spread rating not over 25 and a smoke developed rating no higher than 450 when tested in accordance with UL 723 and ASTM E84.

2.2 INSULATION TYPES

- A. Insulating materials shall be fire retardant, moisture and mildew resistant, and vermin proof. Insulation shall be suitable to receive jackets, adhesives and coatings as indicated.
- B. RIGID FIBERGLASS INSULATION: Minimum nominal density of 3 lbs. per cu. ft., and thermal conductivity of not more than 0.23 at 75 degrees F, minimum compressive strength of 25 PSF at 10% deformation, rated for service to 450 degrees F.
- C. ELASTOMERIC INSULATION: Flexible closed cell, minimum nominal density of 5.5 lbs. per cu. ft., thermal conductivity of not more than 0.27 at 75 degrees F, minimum compressive strength of 4.5 psi at 25% deformation, maximum water vapor permeability of 0.17 perm inch, maximum water absorption of 6% by weight, rated for service range of -20 degrees F to 220 degrees F on piping and 180 degrees F where adhered to equipment.
- D. FIREPROOFING INSULATION: Mineral fiber with nominal density of 8 lbs. per cu. ft., flame spread index of 25, fuel contribution index of 0, and smoke developed index of 0, thermal conductivity of not more than 0.23 at 75 degrees F, rated for service of -120 degrees F to 1200 degrees F. Use rigid or semi-rigid board for duct insulations.

Foil-scrim-polyethylene vapor barrier jacket, factory applied to insulation, maximum permeance of .02 perms.

2.3 JACKETS

- A. PVC FITTING COVERS AND JACKETS (PFJ): White PVC film, gloss finish one side, semi-gloss other side, FS LP-535D, Composition A, Type II, Grade GU. Ultraviolet inhibited indoor/outdoor grade to be used where exposed to high humidity, ultraviolet radiation, in kitchens or food processing areas or installed outdoors. Jacket thickness to be minimum .02" indoors/.03" outdoors for piping 12" and smaller, .03" indoors/.04" outdoors for piping 15" and larger.
- B. PVC covers and jackets have limited ability to resist water vapor transmission. On systems operating below 40 degrees F which use PVC covers or jackets, insulation must first be covered with low permeance vapor barrier mastic/fabric or vapor barrier tape.

- C. ALL SERVICE JACKETS (ASJ): Heavy duty, fire retardant material with white kraft reinforced foil vapor barrier, factory applied to insulation with a self-sealing pressure sensitive adhesive lap, maximum permeance of .02 perms and minimum beach puncture resistance of 50 units.

2.4 INSULATION INSERTS AND PIPE SHIELDS

- A. Construct inserts with calcium silicate or polyisocyanurate (service temperatures below 300 degrees F only), minimum 140 psi compressive strength. Piping 12" and larger, supplement with high density 600 psi structural calcium silicate insert. Provide galvanized steel shield. Insert and shield to be minimum 180 degree coverage on bottom supported piping and full 360 degree coverage on clamped piping. On roller mounted piping and piping designed to slide on support, provide additional load distribution steel plate.
- B. Where contractor proposes shop/site fabricated inserts and shields, submit schedule of materials, thicknesses, gauges and lengths for each pipe size to demonstrate equivalency to pre-engineered/premanufactured product described above. On low temperature systems, high density rigid polyisocyanurate may be substituted for calcium silicate provided insert and shield length and shield gauge are increased to compensate for lower insulation compressive strength.
- C. Precompressed 20# density molded fiberglass blocks, Hamfab or equal, of the same thickness as adjacent insulation may be substituted for calcium silicate inserts with one 1"x6" block for piping through 2-1/2" and three 1"x6" blocks for piping through 4". Submit shield schedule to demonstrate equivalency to pre-engineered/premanufactured product described above.
- D. Wood blocks will not be accepted.

2.5 ACCESSORIES

- A. All products shall be compatible with surfaces and materials on which they are applied, and be suitable for use at operating temperatures of the systems to which they are applied.
- B. Adhesives, sealants, and protective finishes shall be as recommended by insulation manufacturer for applications specified.
- C. Insulation bands to be 3/4 inch wide, constructed of aluminum or stainless steel. Minimum thickness to be .015 inch for aluminum and .010 inch for stainless steel.
- D. Tack fasteners to be stainless steel ring grooved shank tacks.
- E. Staples to be clinch style.
- F. Insulating cement to be ANSI/ASTM C195, hydraulic setting mineral wool.
- G. Finishing cement to be ASTM C449.

- H. Fibrous glass or canvas fabric reinforcing shall have a minimum untreated weight of 6 oz./sq. yd.
- I. Bedding compounds to be non-shrinking and permanently flexible.
- J. Vapor barrier coatings to have maximum applied water vapor permeance of .05 perms.
- K. Fungicidal water base coating (Foster 40-20 or equal) to be compatible with vapor barrier coating.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that all piping, and equipment are tested and approved prior to installing insulation. Do not insulate systems until testing and inspection procedures are completed.
- B. Verify that all surfaces are clean, dry and without foreign material before applying insulation materials.

3.2 INSTALLATION

- A. All materials shall be installed by skilled labor regularly engaged in this type of work. All materials shall be installed in strict accordance with manufacturer's recommendations, building codes, and industry standards. Do not install products when the ambient temperature or conditions are not consistent with the manufacturer's recommendations. Surfaces to be insulated must be clean and dry.
- B. Locate insulation and cover seams in the least visible location. All surface finishes shall be extended in such a manner as to protect all raw edges, ends and surfaces of insulation.
- C. Install insulation with smooth and even surfaces. Poorly fitted joints or use of filler in voids will not be accepted. Provide neatly beveled and coated terminations at all nameplates, uninsulated fittings, or at other locations where insulation terminates.
- D. Install fabric reinforcing without wrinkles. Overlap seams a minimum of 2 inches.
- E. Use full length material (as delivered from manufacturer) wherever possible. Scrap piecing of insulation or pieces cut undersize and stretched to fit will not be accepted.
- F. All pipe insulation shall be continuous through walls, ceiling or floor openings and through sleeves except where firestop or firesafing materials are required. Vapor barriers shall be maintained continuous through all penetrations.

- G. Provide a continuous unbroken moisture vapor barrier on insulation applied to systems noted below. Attachments to cold surfaces shall be insulated and vapor sealed to prevent condensation.

Provide a complete vapor barrier for insulation on the following systems:

Cold Water Make-Up

Chilled Water

Piping with a surface temperature below 65 degrees F

3.3 PROTECTIVE JACKET INSTALLATION

- A. PVC FITTING COVERS AND JACKETS (PFJ): Lap seams and joints a minimum of 2 inches and continuously seal PVC with welding solvent recommended by jacket manufacturer. Lap slip joint ends 4" without fasteners where required to absorb expansion and contraction. For sections where vapor barrier is not required and jacket requires routine removal, tack fasteners may be used. Secure PVC fitting covers with tack fasteners. For systems requiring a vapor barrier, apply a 1-1/2" band of mastic over ends, throat, seams and penetrations.

3.4 PIPING, VALVE, AND FITTING INSULATION

- A. GENERAL: Install insulation with butt joints and longitudinal seams closed tightly. Provide minimum 2" lap on jacket seams and 2" tape on butt joints, firmly cemented with lap adhesive unless otherwise noted. Additionally secure with staples along seams and butt joints. Coat staples, longitudinal and transverse seams with vapor barrier mastic on systems requiring vapor barrier.

Install insulation continuous through pipe hangers and supports with hangers and supports on the exterior of insulation. Where a vapor barrier is not required or where roller hangers are not being used, hangers and supports may be attached directly to piping with insulation completely covering hanger or support and jacket sealed at support rod penetration. Where riser clamps are required to be attached directly to piping requiring vapor barrier, extend insulation and vapor barrier jacketing/coating around riser clamp.

Where insulated piping is installed on hangers and supports, the insulation shall be installed continuous through the hangers and supports. High density inserts shall be provided as required to prevent the weight of the piping from crushing the insulation. Pipe shields are required at all support locations. The insulation shall not be notched or cut to accommodate the supporting channels.

- B. INSULATION INSERTS AND PIPE SHIELDS: Provide pipe shields at all hanger and support locations. Rigid insulation inserts shall be installed between the pipe and the insulation shields. Quantity and placement of inserts shall be according to the manufacturer's installation instructions, however the inserts shall be no less than 12" in length. Inserts shall be of equal thickness to the adjacent insulation and shall be vapor sealed as required for system.

Provide insulation inserts and pipe shields at all hanger and support locations. Inserts may be omitted on 3/4" and smaller copper piping provided 12" long 22 gauge pipe shields are used.

- C. **FITTINGS AND VALVES:** Fittings, valves, unions, flanges, couplings and specialties may be insulated with factory molded or built up insulation of the same thickness as adjoining insulation. Where the ambient temperature exceeds 150 degrees F, cover insulation with fabric reinforcing and mastic. Where the ambient temperatures do not exceed 150 degrees, furnish and install PVC fitting covers.
- D. **MINERAL FIBER:** Secure each 3' section with three stainless steel bands or five 16 gauge stainless steel or annealed copper tie wires evenly spaced and at ends. Twist wire ends, snip off excess and turn ends over into insulation. Stagger joints where more than one layer is used.
- E. **ELASTOMERIC AND POLYOLEFIN:** Where practical, slip insulation on piping during pipe installation when pipe ends are open. Miter cut fittings allowing sufficient length to prevent stretching. Completely seal seams and joints for vapor tight installation. For elastomeric insulation, apply full bed of adhesive to both surfaces. For polyolefin, seal factory preglued seams with roller and field seams and joints with full bed of hot melt polyolefin glue to both surfaces. Cover elastomeric insulation on systems operating below 40 degrees F with vapor barrier mastic.

3.5 PIPING PROTECTIVE JACKETS

- A. Provide a protective PVC jacket (PFJ) for the following insulated piping:
 - 1. Piping exposed in finished locations
- B. Provide a protective PVC (PFJ) or Fabric Reinforced Mastic (FMJ) jacket for the following insulated piping:
 - 1. All piping within mechanical rooms

3.6 PIPE INSULATION SCHEDULE:

Provide insulation on new and existing remodeled piping as indicated in the following schedule:

<u>Service</u>	<u>Insulation</u>	<u>Jacket</u>	<u>Thickness by Pipe Size</u>
Heating Hot Water	Rigid Fiberglass	ASJ	1-1/2" ($\leq 1.5"$) 2" ($> 1.5"$)
Note: On 1" or smaller hot water pipe runouts to terminal unit coils the insulation thickness may be reduced to 1/2" on both the supply and return pipes within 4ft of the coil but not on the distribution system side of the temperature control valve.			
Dual Temp Water	Rigid Fiberglass	ASJ	1-1/2" ($\leq 1.5"$) 2" ($> 1.5"$)

Condensate Drain	Rigid Fiberglass	ASJ	1/2"
	Elastomeric	None	1/2"

The following piping and fittings are not to be insulated: Piping unions for systems not requiring a vapor barrier

For systems with fluid temperatures 65° F or less, furnish and install removable elastomeric insulation covers, plugs or caps for all mechanical equipment and devices that require access by balancing contractors or service and maintenance personnel. Examples include but are not limited to: flow sensing devices, circuit setters, manual ball valve air vents, drain valves, blowdown valves, pressure/temperature test plugs, grease fittings, pump bearing caps, equipment labels, etc. Covers shall be tight fitting to ensure a complete vapor barrier.

END OF SECTION

SECTION 15510
HYDRONIC PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes pipe and fitting materials, joining methods, special-duty valves, and specialties for the following:
 - 1. Hot-water heating piping.
 - 2. Dual-water piping.
 - 3. Condensate-drain piping.

1.3 DEFINITIONS

- A. PTFE: Polytetrafluoroethylene.
- B. RTRF: Reinforced thermosetting resin (fiberglass) fittings.
- C. RTRP: Reinforced thermosetting resin (fiberglass) pipe.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of the following:
 - 1. Valves. Include flow and pressure drop curves based on manufacturer's testing for calibrated-orifice balancing valves and automatic flow-control valves.
 - 2. Hydronic specialties.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Welding certificates.
- C. Field quality-control test reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For air control devices, hydronic specialties, and special-duty valves to include in emergency, operation, and maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Differential Pressure Meter: For each type of balancing valve and automatic flow control valve, include flowmeter, probes, hoses, flow charts, and carrying case.

1.8 QUALITY ASSURANCE

- A. Steel Support Welding: Qualify processes and operators according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX.
 - 1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
 - 2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- C. ASME Compliance: Comply with ASME B31.9, "Building Services Piping," for materials, products, and installation. Safety valves and pressure vessels shall bear the appropriate ASME label. Fabricate and stamp air separators and expansion tanks to comply with ASME Boiler and Pressure Vessel Code: Section VIII, Division 1.

PART 2 - PRODUCTS

2.1 COPPER TUBE AND FITTINGS

- A. Drawn-Temper Copper Tubing: ASTM B 88, Type L.
- B. Annealed-Temper Copper Tubing: ASTM B 88, Type K.
- C. DWV Copper Tubing: ASTM B 306, Type DWV.
- D. Wrought-Copper Fittings: ASME B 75.
- E. Cast Copper Alloy Fittings: CDA C89833, UL Water Quality Mark, NSF61.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Grinnell Mechanical Products, a TYCO International Company; Fig. 640 Rigid Couplings or a comparable product by one of the following:
 - a. Anvil International, Inc.
 - b. S. P. Fittings; a division of Star Pipe Products.
 - c. Victaulic Company.
 - 2. Grooved-End Copper Fittings: ASTM B 75 (ASTM B 75M), copper tube or CDA 89833 copper alloy casting.
 - 3. Grooved-End-Tube Couplings: Rigid pattern, unless otherwise indicated; gasketed fitting. Copper enamel coated, ductile-iron housing with keys matching pipe and fitting grooves, Grade "EN" EPDM tri-seal gasket rated for minimum 250 deg F for use with housing, and steel bolts and nuts.

- F. Copper or Bronze Pressure-Seal Fittings:
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 3. Housing: Copper.
 - 4. O-Rings and Pipe Stops: EPDM.
 - 5. Tools: Manufacturer's special tools.
 - 6. Minimum 200-psig working-pressure rating at 250 deg F.
- G. Copper, Mechanically Formed Tee Option: For forming T-branch on copper water tube.
- H. Wrought-Copper Unions: ASME B16.22.

2.2 PLASTIC PIPE AND FITTINGS

- A. CPVC Plastic Pipe: ASTM F 441/F 441M, Schedules 40 and 80, plain ends as indicated in Part 3 "Piping Applications" Article.
- B. CPVC Plastic Pipe Fittings: Socket-type pipe fittings, ASTM F 438 for Schedule 40 pipe; ASTM F 439 for Schedule 80 pipe.
- C. PVC Plastic Pipe: ASTM D 1785, Schedules 40 and 80, plain ends as indicated in Part 3 "Piping Applications" Article.
- D. PVC Plastic Pipe Fittings: Socket-type pipe fittings, ASTM D 2466 for Schedule 40 pipe; ASTM D 2467 for Schedule 80 pipe.

2.3 JOINING MATERIALS

- A. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
 - 1. ASME B16.21, nonmetallic, flat, asbestos free, 1/8-inch (3.2-mm) maximum thickness unless thickness or specific material is indicated.
 - a. Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
 - b. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
- B. Grooved Couplings, Flange Bolts, and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.
 - 1. Hex Nuts: ASTM A 563, Grade A.
 - 2. Bolts and Nuts: Zinc electroplated.
- C. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.

- D. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
- E. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for joining copper with copper; or BAg-1, silver alloy for joining copper with bronze or steel.
- F. Welding Filler Metals: Comply with AWS D10.12/D10.12M for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.
- G. Solvent Cements for Joining Plastic Piping:
 - 1. CPVC Piping: ASTM F 493.
 - a. CPVC solvent cement shall have a VOC content of 490 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - b. Adhesive primer shall have a VOC content of 550 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - c. Solvent cement and adhesive primer shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
 - 2. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
 - a. PVC solvent cement shall have a VOC content of 510 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - b. Adhesive primer shall have a VOC content of 550 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - c. Solvent cement and adhesive primer shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- H. Gasket Material: Thickness, material, and type suitable for fluid to be handled and working temperatures and pressures.

2.4 TRANSITION FITTINGS

- A. Plastic-to-Metal Transition Fittings:
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Charlotte Pipe and Foundry Company.
 - b. IPEX Inc.
 - c. KBI.
 - 2. CPVC, PVC one-piece fitting with one threaded brass or copper insert and one Schedule 80 solvent-cement-joint end.

B. Plastic-to-Metal Transition Unions:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Charlotte Pipe and Foundry Company.
 - b. IPEX Inc.
 - c. KBI.
 - d. NIBCO INC.
2. MSS SP-107, CPVC and PVC union. Include brass or copper end, Schedule 80 solvent-cement-joint end, rubber gasket, and threaded union.

2.5 DIELECTRIC FITTINGS

- A. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.

B. Dielectric Unions:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Capitol Manufacturing Company.
 - b. Central Plastics Company.
 - c. Hart Industries International, Inc.
 - d. Jomar International Ltd.
 - e. Matco-Norca, Inc.
 - f. McDonald, A. Y. Mfg. Co.
 - g. Watts Regulator Co.; a division of Watts Water Technologies, Inc.
 - h. Wilkins; a Zurn company.
2. Description:
 - a. Standard: ASSE 1079.
 - b. Pressure Rating: 125 psig minimum at 180 deg F [150 psig] [250 psig].
 - c. End Connections: Solder-joint copper alloy and threaded ferrous.

C. Dielectric Nipples:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Grinnell Mechanical Products, a TYCO International Company; 407GG or a comparable product by one of the following:
 - a. Elster Perfection.
 - b. Matco-Norca, Inc.
 - c. Precision Plumbing Products, Inc.
 - d. Victaulic Company.
2. Description:
 - a. Pressure Rating: 300 psig at 225 deg F.
 - b. End Connections: Grooved.
 - c. Lining: Inert and noncorrosive.

2.6 VALVES

- A. All water system valves to be rated at not less than 125 psig water working pressure at 240 °F unless noted otherwise.
- B. GATE VALVES
 - 1. 2" and smaller: Use ball valves; gate valves will not be accepted in sizes 2" and smaller.
 - 2. 2-1/2" and larger: Use butterfly valves; gate valves will not be accepted in sizes 2-1/2" and larger.
- C. BALL VALVES
 - 1. 2" and smaller: Two piece bronze body; threaded or soldered ends, as appropriate to the pipe material; stainless steel or chrome plated brass/bronze ball; conventional port; glass filled teflon seat; threaded packing gland follower; blowout-proof stem; 600 psig WOG.
 - 2. Valve stems shall allow operators to clear insulation without interference. Provide stem extensions when valve operators interfere with pipe insulation.
 - 3. 2-1/2" and over: Ball valves will not be accepted in sizes over 2 inch.
- D. Bronze, Calibrated-Orifice, Circuit Balancing Valves:
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Grinnell Mechanical Products, a TYCO International Company; CB800 or a comparable product by one of the following:
 - a. Armstrong Pumps, Inc.
 - b. Bell & Gossett Domestic Pump; a division of ITT Industries.
 - c. Flow Design Inc.
 - d. Gerand Engineering Co.
 - e. Griswold Controls.
 - f. Taco.
 - 2. Body: Bronze, globe type with calibrated orifice.
 - 3. Plug: Resin.
 - 4. Disc: Brass, resistant to dezincification.
 - 5. O-ring: EPDM E
 - 6. End Connections: Threaded or socket.
 - 7. Pressure Gage Connections: Integral seals for portable differential pressure meter.
 - 8. Handle Style: Handwheel, with memory stop to retain set position.
 - 9. CWP Rating: Minimum 300 psig.
 - 10. Maximum Operating Temperature: 300 deg F.
- E. Cast-Iron , Calibrated-Orifice, Circuit Balancing Valves:
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Grinnell Mechanical Products, a TYCO International Company; CB800 or a comparable product by one of the following:
 - a. Armstrong Pumps, Inc.

- b. Bell & Gossett Domestic Pump; a division of ITT Industries.
 - c. Flow Design Inc.
 - d. Gerand Engineering Co.
 - e. Griswold Controls.
 - f. Taco.
 - g. Tour & Andersson; available through Victaulic Company.
2. Body: Cast-iron body, ball, plug, or globe pattern with calibrated orifice or venturi.
 3. Stem Seals: EPDM O-rings.
 4. Disc: Brass, resistant to dezincification.
 5. End Connections: Flanged or grooved.
 6. Pressure Gage Connections: Integral seals for portable differential pressure meter.
 7. Handle Style: Handwheel, with memory stop to retain set position.
 8. CWP Rating: Minimum 300 psig.
 9. Maximum Operating Temperature: 300 deg F.

F. DRAIN VALVES: Use 3/4 inch ball valve with threaded hose adapter except strainer blowdown valves to be the same size as the blowdown connection.

2.7 AIR CONTROL DEVICES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Amtrol, Inc.
2. Armstrong Pumps, Inc.
3. Bell & Gossett Domestic Pump; a division of ITT Industries.
4. Taco.

B. Manual Air Vents:

1. Body: Bronze.
2. Internal Parts: Nonferrous.
3. Operator: Screwdriver or thumbscrew.
4. Inlet Connection: NPS 1/2.
5. Discharge Connection: NPS 1/8.
6. CWP Rating: 150 psig.
7. Maximum Operating Temperature: 225 deg F.

C. Automatic Air Vents:

1. Body: Bronze or cast iron.
2. Internal Parts: Nonferrous.
3. Operator: Noncorrosive metal float.
4. Inlet Connection: NPS 1/2.
5. Discharge Connection: NPS 1/4.
6. CWP Rating: 150 psig.
7. Maximum Operating Temperature: 240 deg F.
8. working pressure of 175 psig at 240°F when used in hot water heating systems.

2.8 HYDRONIC PIPING SPECIALTIES

A. Y-Pattern Strainers:

1. Basis-of-Design Product: Subject to compliance with requirements, provide Grinnell Mechanical Products, a TYCO International Company; S853 or a comparable product by one of the following:
 - a. Anvil International, Inc.
2. Body: ASTM A 536, Grade 65-45, ductile iron.
3. End Connections: Grooved.
4. Strainer Screen: Stainless steel Type 304-basket standard 2 inches through 4 inches: 1/16 inch perforations [5 inches through 12 inches; 1/8 inch perforations].
5. CWP Rating: 125 psig.

B. Stainless-Steel Bellow, Flexible Connectors:

1. Body: Stainless-steel bellows with woven, flexible, bronze, wire-reinforcing protective jacket.
2. End Connections: Threaded or flanged to match equipment connected.
3. Performance: Capable of 3/4-inch misalignment.
4. CWP Rating: 150 psig.
5. Maximum Operating Temperature: 250 deg F.

C. Spherical, Rubber, Flexible Connectors:

1. Body: Fiber-reinforced rubber body.
2. End Connections: Steel flanges drilled to align with Classes 150 and 300 steel flanges.
3. Performance: Capable of misalignment.
4. CWP Rating: 150 psig.
5. Maximum Operating Temperature: 250 deg F.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS

- A. Hot-water heating piping, aboveground, NPS 2 and smaller shall be any of the following:
 1. Type L, drawn-temper copper tubing, wrought-copper fittings, and soldered joints.
- B. Hot-water heating piping, aboveground, NPS 2-1/2 and larger, shall be any of the following:
 1. Type L, drawn-temper copper tubing, wrought-copper fittings, and soldered joints.

- C. Dual-temperature heating and cooling water piping, aboveground, NPS 2 and smaller, shall be any of the following:
 - 1. Type L, drawn-temper copper tubing, wrought-copper fittings, and soldered joints.
- D. Dual-temperature heating and cooling water piping, aboveground, NPS 2-1/2 and larger, shall be any of the following:
 - 1. Type L, drawn-temper copper tubing, wrought-copper fittings, and soldered joints.
- E. Condensate-Drain Piping: Schedule 40 PVC plastic pipe and fittings and solvent-welded joints.

3.2 VALVE APPLICATIONS

- A. Install shutoff-duty valves at each branch connection to supply mains, and at supply connection to each piece of equipment.
- B. Install calibrated-orifice, balancing valves in the return pipe of each heating or cooling terminal.

3.3 PIPING INSTALLATIONS

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicate piping locations and arrangements if such were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
- B. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas.
- C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
- D. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.
- E. Install piping to permit valve servicing.
- F. Install piping at indicated slopes.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Install piping to allow application of insulation.

- J. Select system components with pressure rating equal to or greater than system operating pressure.
- K. Install groups of pipes parallel to each other, spaced to permit applying insulation and servicing of valves.
- L. Install drains, consisting of a tee fitting, NPS 3/4 ball valve, and short NPS 3/4 threaded nipple with cap, at low points in piping system mains and elsewhere as required for system drainage.
- M. Install piping at a uniform grade of 0.2 percent upward in direction of flow.
- N. Reduce pipe sizes using eccentric reducer fitting installed with level side up.
- O. Install branch connections to mains using mechanically formed tee fittings in main pipe, with the branch connected to the bottom of the main pipe. For up-feed risers, connect the branch to the top of the main pipe.
- P. Install unions in piping, NPS 2 and smaller, adjacent to valves, at final connections of equipment, and elsewhere as indicated.
- Q. Install strainers on inlet side of each control valve, and elsewhere as indicated. Install NPS 3/4 nipple and ball valve in blowdown connection of strainers NPS 2 and larger. Match size of strainer blowoff connection for strainers smaller than NPS 2.

3.4 HANGERS AND SUPPORTS

- A. Hanger, support, and anchor devices are specified in Section 230529 "Hangers and Supports for HVAC Piping and Equipment." Comply with the following requirements for maximum spacing of supports.
- B. Install the following pipe attachments:
 - 1. Adjustable steel clevis hangers for individual horizontal piping less than 20 feet long.
 - 2. Adjustable roller hangers and spring hangers for individual horizontal piping 20 feet or longer.
 - 3. Pipe Roller: MSS SP-58, Type 44 for multiple horizontal piping 20 feet or longer, supported on a trapeze.
 - 4. Spring hangers to support vertical runs.
 - 5. Provide copper-clad hangers and supports for hangers and supports in direct contact with copper pipe.
 - 6. On plastic pipe, install pads or cushions on bearing surfaces to prevent hanger from scratching pipe.
- C. Install hangers for steel piping with the following maximum spacing and minimum rod sizes:
 - NPS 3/4: Maximum span, 7 feet; minimum rod size, 1/4 inch.
 - NPS 1: Maximum span, 7 feet; minimum rod size, 1/4 inch.

NPS 1-1/2: Maximum span, 9 feet; minimum rod size, 3/8 inch.

- D. Install hangers for drawn-temper copper piping with the following maximum spacing and minimum rod sizes:

NPS 3/4: Maximum span, 5 feet; minimum rod size, 1/4 inch.

NPS 1: Maximum span, 6 feet; minimum rod size, 1/4 inch.

NPS 1-1/2: Maximum span, 8 feet; minimum rod size, 3/8 inch.

NPS 2: Maximum span, 8 feet; minimum rod size, 3/8 inch.

- E. Plastic Piping Hanger Spacing: Space hangers according to pipe manufacturer's written instructions for service conditions. Avoid point loading. Space and install hangers with the fewest practical rigid anchor points.
- F. Support vertical runs at roof, at each floor, and at 10-foot (3-m) intervals between floors.

3.5 PIPE JOINT CONSTRUCTION

- A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- C. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32.
- D. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8.
- E. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- F. Welded Joints: Construct joints according to AWS D10.12/D10.12M, using qualified processes and welding operators according to Part 1 "Quality Assurance" Article.
- G. Plastic Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
 2. CPVC Piping: Join according to ASTM D 2846/D 2846M Appendix.
 3. PVC Pressure Piping: Join ASTM D 1785 schedule number, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule number PVC pipe and socket fittings according to ASTM D 2855.
 4. PVC Nonpressure Piping: Join according to ASTM D 2855.
- H. Grooved Joints: Assemble joints with coupling and gasket, lubricant, and bolts. Cut or roll grooves in ends of pipe based on pipe and coupling manufacturer's written instructions for pipe wall thickness. Use grooved-end fittings and rigid, grooved-end-pipe couplings.
- I. Mechanically Formed, Copper-Tube-Outlet Joints: Use manufacturer-recommended tool and procedure, and brazed joints.
- J. Pressure-Sealed Joints: Use manufacturer-recommended tool and procedure. Leave insertion marks on pipe after assembly.

3.6 TERMINAL EQUIPMENT CONNECTIONS

- A. Sizes for supply and return piping connections shall be the same as or larger than equipment connections.
- B. Install ports for pressure gages and thermometers at coil inlet and outlet connections.

3.7 HYDRONIC SPECIALTIES INSTALLATION

- A. Install manual air vents at high points in piping, at heat-transfer coils, and elsewhere as required for system air venting.
- B. Install automatic air vents at high points of system piping in mechanical equipment rooms only. Manual vents at heat-transfer coils and elsewhere as required for air venting.

END OF SECTION

SECTION 15990
TESTING, ADJUSTING AND BALANCING FOR HVAC

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section includes air and water testing, adjusting and balancing for the entire project. Included are the following topics:

1.2 RELATED WORK

- A. Section 15010 Common Work Results for HVAC
- B. Section 15260 HVAC Insulation

1.3 QUALITY ASSURANCE

- A. An independent Firm specializing in the Testing and Balancing of HVAC systems for a minimum of 3 years. A Firm not engaged in the commerce of furnishing or providing equipment or material generally related to HVAC work other than that specifically related to installing Testing and Balancing components necessary for work in this section such as, but not limited to sheaves, pulleys, and balancing dampers.
- B. A certified member of AABC or certified by NEBB or TABB in the specific area of work performed. Maintain certification for the entire duration of the project. If certification of firm or any staff performing work is terminated or expires during the duration of the project, contact Owner immediately.
- C. Technicians on this project must have satisfactorily completed work on a minimum of (3) three projects of at least 50% in size, and of similar complexity. Size is defined as the quantity of each specific individual item requiring testing and balancing such as, but not limited to, equipment, devices, terminal devices, and grilles and diffusers.
- D. Submit Qualifications of firm and project staff to Engineer upon request.

1.4 REFERENCE STANDARDS

- A. AABC National Standards for Total System Balance, Sixth Edition, 2002.
- B. ASHRAE ASHRAE Handbook, 2007 HVAC Applications, Chapter 37, Testing Adjusting and Balancing.
- C. NEBB Procedural Standards for Testing Adjusting Balancing of Environmental Systems, Seventh Edition, 2005.
- D. TABB Tab Procedural Guide, First Edition, 2003.

1.5 DESCRIPTION

- A. The Contractor will separately contract with an independent test and balance agency to perform all testing, adjusting, and balancing of air and hydronic systems required for this project. Work related to the testing, adjusting, and balancing that must be performed by the installing mechanical contractor is specified in other section of these specifications.
- B. Provide total mechanical systems testing, adjusting and balancing. Requirements include the balance of air and water distribution, adjustment of new and existing systems and equipment to provide design requirements indicated on the drawings, electrical measurement and verification of performance of all mechanical equipment, all in accordance with standards published by AABC, NEBB, or TABB.
- C. Test, adjust and balance all air and hydronic systems so that each room, piece of equipment or terminal device meets the design requirements indicated on the drawings and in the specifications.
- D. Accomplish testing, adjusting and balancing work in a timely manner that allows partial occupancy of major buildings, occupancy of one building when the project involves many buildings, and completion of the entire project in the time stated in the Instruction to Bidders and in accordance with the completion schedule established for this project.
- E. Verify that provisions are being made to accomplish the specified testing, adjusting and balancing work. If problems are found, handle as specified in Part 3 under Deficiencies.

1.6 SUBMITTALS

- A. See also Related Work in this section.
- B. Submit testing, adjusting and balancing reports bearing the seal and signature of the NEBB, AABC or TABB Certified Test and Balance Supervisor. The reports certify that the systems have been tested, adjusted and balanced in accordance with the referenced standards; are an accurate representation of how the systems have been installed and are operating; and are an accurate record of all final quantities measured to establish normal operating values of the systems.

Submission:

Format: Cover page identifying project name, project number and descriptive title of contents. Divide the contents of the report into the below listed divisions:

General Information
Summary
Hydronic Systems

Contents: Provide the following minimum information, forms and data:

General Information: Inside cover sheet identifying Test and Balance Agency, Contractor, Architect, Engineer, Project Name and Project Number. Include addresses, contact names and telephone numbers. Also include a certification sheet containing the seal and signature of the Test and Balance Supervisor.

Summary: Provide summary sheet describing mechanical system deficiencies. Describe objectionable noise or drafts found during testing, adjusting and balancing. Provide recommendations for correcting unsatisfactory performances and indicate whether modifications required are within the scope of the contract, are design related or installation related. List instrumentation used during testing, adjusting and balancing procedures.

The remainder of the report to contain the appropriate standard NEBB, AABC, or TABB forms for each respective item and system. Fill out forms completely. Where information cannot be obtained or is not applicable indicate same.

PART 2 - PRODUCTS

2.1 INSTRUMENTATION

- A. Provide all required instrumentation to obtain proper measurements. Application of instruments and accuracy of instruments and measurements to be in accordance with the requirements of NEBB, AABC, or TABB Standards and instrument manufacturer's specifications.
- B. All instruments used for measurements shall be accurate, and calibration histories for each instrument to be available for examination upon request. Calibration and maintenance of all instruments to be in accordance with the requirements of NEBB, AABC, or TABB Standards

PART 3 - EXECUTION

3.1 PRELIMINARY PROCEDURES

- A. Review preconstruction meeting report, applicable construction bulletins, applicable change orders and approved shop drawings of equipment, outlets/inlets and temperature controls.
- B. Check filters for cleanliness, dampers and valves for correct positioning, equipment for proper rotation and belt tension, temperature controls for completion of installation and hydronic systems for proper charge and purging of air.

- C. Notify Project Representative on a daily basis during balancing. Identify deficiencies preventing completion of testing, adjusting and balancing procedures. Do not proceed until systems are fully operational with all components necessary for complete testing, adjusting and balancing. Installing Contractors are required to provide personnel to check and verify system completion, readiness for balancing and assist Balancing Agency in providing specified system performance.

3.2 PERFORMING TESTING, ADJUSTING AND BALANCING

- A. Perform testing, adjusting and balancing procedures on each system identified, in accordance with the detailed procedures outlined in the referenced standards except as may be modified below.
- B. Unless specifically instructed in writing, all work in this specification section is to be performed during the normal workday.
- C. In areas containing ceilings, remove ceiling tile to accomplish balancing work; replace tile when work is complete and provide new tile for any tile that are damaged by this procedure. If the ceiling construction is such that access panels are required for the work of this section and the panels have not been provided, inform the owner's project representative.
- D. Cut insulation, ductwork and piping for installation of test probes to the minimum extent necessary for adequate performance of procedures. Patch using materials identical to those removed, maintaining vapor barrier integrity and pressure rating of systems.
- E. Measure and record system measurements at the fan and/or pump to determine total flow. Adjust equipment as required to yield specified total flow at terminals. Proceed taking measurements in mains and branches as required for final terminal balancing. Perform terminal balancing to specified flows balancing branch dampers, deflectors, extractors and valves prior to adjustment of terminals.
- F. Final water system measurements must be within the following range of specified gpm:

Heating flow rates	0% to -10%
Cooling flow rates	-5% to +5%
- G. Contact the temperature control Contractor for assistance in operation and adjustment of controls during testing, adjusting and balancing procedures. Cycle controls and verify proper operation and setpoints. Include in report description of temperature control operation and any deficiencies found.
- H. Permanently mark equipment settings, including damper and valve positions, control settings, and similar devices allowing settings to be restored. Set and lock memory stops.

- I. Leave systems in proper working order, replacing belt guards, closing access doors and electrical boxes, and restoring temperature controls to normal operating settings.

3.3 HYDRONIC SYSTEM

- A. For HVAC pumps 10 horsepower or less, valve throttling alone may be used for hydronic system balancing.
- B. Throttling of triple-duty valves shall not exceed 50% closed. Where additional throttling would be necessary to achieve the system design flow the impellor shall be trimmed.
- C. Verify Triple duty valve utilized on systems with Variable Frequency Drives are 100% open when balancing work is complete.
- D. The pressure drop across triple duty valves shall not exceed 25 ft. w.g. Where additional throttling would be necessary to achieve the system design flow the impellor shall be trimmed.
- E. For HVAC pumps greater than 10 horsepower through 60 horsepower, trim the impellor where valve throttling will result in a draw that exceeds 3 horsepower.
- F. For HVAC pumps larger than 60 horsepower, trim the impellor where valve throttling results in a horsepower draw that exceeds 5% of the pump motor horsepower rating.
- G. Future fouling of an open piping system may be considered when determining impellor trim requirements.
- H. Verify butterfly valves utilized for hydronic system balancing are provided with position-lock operators (memory stops). The adjustment and marking of lever-lock operators that use throttling notches will not be accepted. Lock all memory stops so the valves can be reopened to their balanced positions if they are used for isolation purposes.

3.4 DEFICIENCIES

- A. Division 15 contractor to correct any installation deficiencies found by the test and balance agency that were specified and/or shown on the Contract Documents to be performed as part of that division of work. Test and balance agency will notify the Project Representative of these items and instructions will be issued to the Division 15 Contractor for correction of the deficient work. All corrective work to be done at no cost to the Owner. Retest mechanical systems, equipment, and devices once corrective work is complete as specified.

END OF SECTION

HOUSING AUTHORITY of the CITY of PITTSBURGH

DEVELOPMENT AND MODERNIZATION DEPARTMENT
100 ROSS STREET, 2ND FLOOR
PITTSBURGH, PENNSYLVANIA 15219

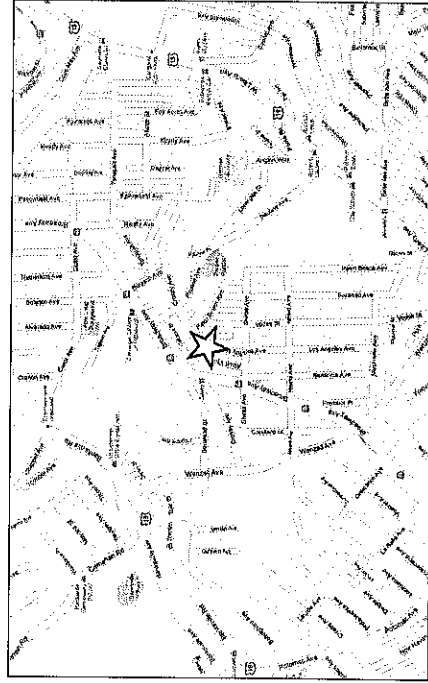
HACP MANAGEMENT #7381
TASK ORDER #57

GUALTIERI MANOR HVAC
PIPING SYSTEM REPLACEMENT, PA 1-47

MARCH 22, 2019

SITE MAP

GUALTIERI HIGH RISE
2125 LOS ANGELES AVENUE
PITTSBURGH, PA 15216



DRAWING INDEX

DRAWING NO.	DESCRIPTION
CS	COVERSHEET
H-1	HVAC NOTES, SYMBOLS, LEGENDS AND DETAILS
H-2	HVAC DEMOLITION PLANS AND NOTES
H-3	HVAC DEMOLITION PLANS AND NOTES
H-4	HVAC NEW WORK PLANS AND NOTES
H-5	HVAC NEW WORK PLANS AND NOTES

PROJECT TEAM:



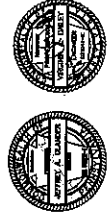
D & D ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS

Ethna Technical Center Voice: 412.784.1560
Suite 205 Fax: 412.784.1561
35 Wilson Street E-Mail: info@ddengr.com
Pittsburgh, PA 15223 Web: www.ddengr.com



Olander Engineering, Inc.

227 E. Main Street * Carnegie, PA 15106
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e-mail: jolander@olanderengineering.com



DRAWING NUMBER
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SHEET NUMBER
1 OF 6



Olander Engineering, Inc.
227 E. Main Street • Coopersburg, PA 17008
(610) 326-1111
www.olerander.com

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QUALIFIER MANOR, PA 147

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HVAC NEW WORK PLAN
AND NOTES

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D & D ENGINEERING, INC.
227 E. Main Street • Coopersburg, PA 17008
(610) 326-1111
www.dd-engineering.com

NEW WORK DESIGN NOTES:

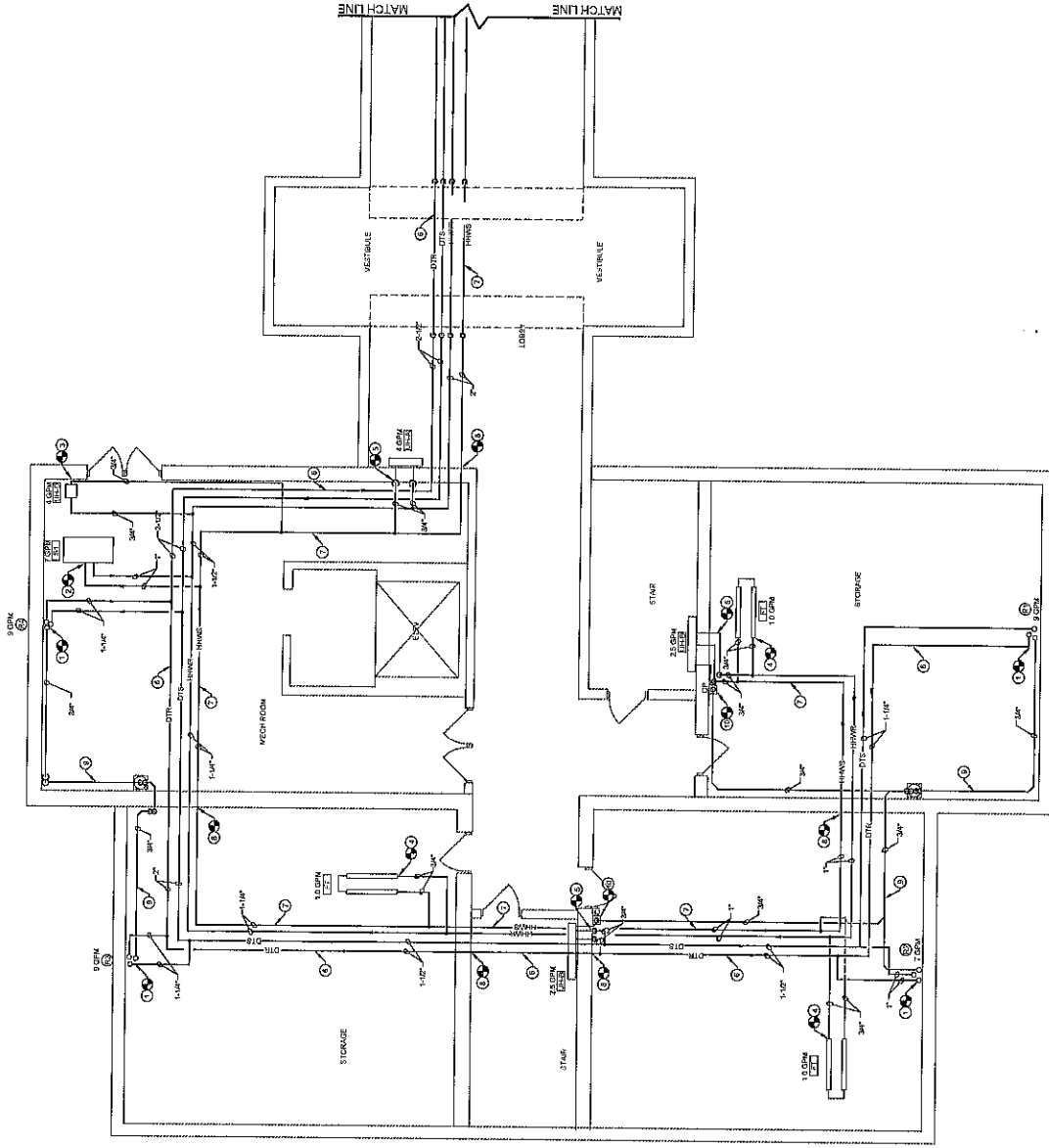
1. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
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NEW WORK CONSTRUCTION NOTES:

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NEW WORK CODED NOTES:

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FIRST FLOOR NORTH PIPING NEW WORK PLAN
SCALE: 3/4" = 1'-0"

