



PROJECT MANUAL

**Homewood North Water Infiltration Remediation -
Building #5**

IFB for Contract No. 600-28-21

GENERAL CONSTRUCTION

Bids Due

October 28, 2021
10:00 am

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

Attn:
Mr. Kim Detrick,
Director of
Procurement

CONSULTANT: Gerard Associates Architects

Issued: September 20, 2021

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

September 20, 2021

INVITATION FOR BIDS (IFB)

Homewood North Water Infiltration Remediation - Building #5

The HOUSING AUTHORITY OF THE CITY OF PITTSBURGH will receive separate sealed bids for Homewood North Water Infiltration Remediation - Building #5 ; for the following contracts:

GENERAL CONSTRUCTION

The estimated values of the project per contract noted above are in the following ranges:

GENERAL CONSTRUCTION	\$ 180,518.00	\$ 236,930.00
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Bid documents will be available on **September 20, 2021** . A Pre-Bid Conference will be held on **October 7, 2021** at **10:00 am** , at The Homewood North Community Room: 10 Albertice St. Pittsburgh, PA 15208

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 **October 21, 2021** until 10:00 am *Bids will be received at the HACP Procurement Department, 100 Ross Street – Suite 200 (2nd Floor), Pittsburgh, PA, 15219* **until 10:00 am** on October 28, 2021 , at which time and place all bids will be publicly opened and read aloud.

The work must be substantially complete within 120 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.

HACP will also accept online submission for this invitation to bid in addition to accepting submissions at our 100 Ross St office. For respondents wishing to submit online, please go to the following web address and upload the document: <https://www.dropbox.com/request/Mc48dKHU4e9tIdDZEET7>

Please include your name and email address and prompted before submitting and upload all relevant attachments in the same document. Formatting for online submissions should be organized in the same manner as if submitted via CD or flash drive. The title of the uploaded bid shall be as follows: [Full Company Name]_IFB#600-28-21-Bid. In the unlikely event that your bid is too large as a single file add;_ Part 1, Part 2 etc. to the end of the file.

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, Resident Employment Manager/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 Ms Renelda Colvin, MBE/WBE Compliance Specialist, by e-mail at renelda.colvin@hacp.org or by contacting her 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 Offerer 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

Homewood North Water Infiltration Remediation - Building #5

CONTRACT NO. 600-28-21

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: _____

Homewood North Water Infiltration Remediation - Building #5

IFB CONTRACT NO. 600-28-21

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: September 20, 2021

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Homewood North Water Infiltration Remediation - Building #5

HACP Contract No. 600-28-21

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

Homewood North Water Infiltration Remediation - Building #5

HACP CONTRACT NO. 600-28-21

**INVITATION FOR BIDS
LIST OF DOCUMENTS**

The HOUSING AUTHORITY OF THE CITY OF PITTSBURGH will receive separate sealed bids for Homewood North Water Infiltration Remediation - Building #5, for the following contracts:

GENERAL CONSTRUCTION

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

THE PROJECT MANUAL, dated September 20, 2021 consisting of:

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

THE PROJECT DRAWINGS, as prepared by Gerard Associates Architects, dated April 2, 2021.

THE BID PACKAGE, dated September 20, 2021 consisting of a single three-ring binder containing:

Blank bid document forms to be completed by the bidder;

Divider tabs to separate the original bid documents from the copies;

A pre-printed, pre-addressed envelope in which to deliver the bid.

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

Homewood North Water Infiltration Remediation - Building #5

HACP CONTRACT NO. 600-28-21

**NOTICE OF
PRE-BID CONFERENCE**

A Pre-Bid Conference will be held on October 7, 2021

A Pre-Bid Conference will be held on October 7th, 2021 at 10am at the site community room: 10 Albertice St. Pittsburgh, PA 15208. 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

Homewood North Water Infiltration Remediation - Building #5

HACP CONTRACT NO. 600-28-21

PROJECT SCHEDULE

NO LATER THAN
September 20, 2021

Invitation for Bids issued

October 7, 2021
10:00 am

Pre-Bid Conference (Followed by Site Visit)

October 21, 2021
10:00 am

Last day to submit written questions

October 28, 2021
10:00 am

Bids due

December 21, 2021
(estimated)

Notice of Award

January 10, 2022
(estimated)

Execution of Contracts

January 19, 2022
(estimated)

Pre-Construction Conference

February 1, 2022
(estimated)

Construction Start

120 calendar days
from effective date
of Notice to Proceed

All work required under this contract shall be complete

For example, the General Contractor is required by his Primary Specifications to install and repair all general work. In the event that the Plumbing Contractor disturbs the general work, the patching, repair shall be done and follow the same Specification requirements of the appropriate Specification Section by the Plumbing Contractor even if that specification section may not be part of the Plumbing 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

3. PRIMARY DRAWINGS FOR THE GENERAL 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 "General Contractor" shall be interpreted as meaning the Contractor for this General Construction Contract.

The Primary Drawings for this contract consist of all Gerard Associates Architects construction documents drawings, **dated** April 2, 2021 and specifications contained in this project manual.

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

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Homewood North Water Infiltration Remediation - Building #5

HACP Contract No. 600-28-21

FORM OF BID

GENERAL CONSTRUCTION

Contract No.: 600-28-21

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

BIDDER: _____
(Bidder Name)

(Business Address)

(Telephone)

- 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 September 20, 2021 containing Bidding Requirements, Contract Forms, Conditions of the Contract, and Specifications
 - Project Drawings, dated April 2, 2021
 - 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 General Construction Work as described in Document 00310 "Scope of Work for General Construction" and as indicated in the Drawings and Specifications, for the following Firm Fixed Price:

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

- 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

SHEET - FB-I

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

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>(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>

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>(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>

PARTNERSHIP SIGNATURE PAGE

SHEET - FB-P-1

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

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

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

* 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.

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

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

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

** 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

*(SURETY
SEAL)*

_____ <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

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

	_____		_____
	<i>(Printed or Typed Name)</i>		<i>(Printed or Typed Name)</i>
<i>Witness</i>	{	<i>Partner*</i>	{
	_____		_____
	<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.

SURETY SIGN HERE

(SURETY SEAL)

	_____		_____
	<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 CORPORATION, SIGN HERE

(CORPORATE
SEAL)

(Corporate Name)

(Printed or Typed Name)

(Printed or Typed Name)

Attest

{

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

Homewood North Water Infiltration Remediation - Building #5

(Bidder's Name)

(Project Name)

(Address)

600-28-21

(HACP Project No.)

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-subsiary).

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									
MINORITY (MBE) AND FEMALE (WBE) OWNED BUSINESS ENTERPRISES									
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	DOLLAR AMOUNT \$			
CONTACT PERSON PHONE		NO	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	DOLLAR AMOUNT \$			
CONTACT PERSON PHONE		NO	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	DOLLAR AMOUNT \$			
CONTACT PERSON PHONE		NO	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.

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
 Homewood North Water Infiltration Remediation - Building #5**

HACP CONTRACT NO. 600-28-21

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: _____



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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
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 Pittsburgh, PA 15219
 (412) 456-5020
 www.hacp.org

NOTICE TO ALL PROSPECTIVE BIDDERS

**Previous Related Experience
 for**

Homewood North Water Infiltration Remediation - Building #5

HACP CONTRACT NO. 600-28-21

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			
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Development & Modernization
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 Pittsburgh, PA 15219
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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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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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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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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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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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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)

US Department of Housing and Urban Development
Office of Housing/Federal Housing Commissioner

US Department of Agriculture
Farmers Home Administration

Part I to be completed by Controlling Participant(s) of Covered Projects <i>(See instructions)</i> Reason for submission:	For HUD HQ/FmHA use only
1. Agency name and City where the application is filed	2. Project Name, Project Number, City and Zip Code
3. Loan or Contract amount \$	5. Section of Act
4. Number of Units or Beds	6. Type of Project (check one) <input type="checkbox"/> Existing <input type="checkbox"/> Rehabilitation <input type="checkbox"/> Proposed (New)

7. List all proposed Controlling Participants and attach complete organization chart for all organizations showing ownership %

Name and address (Last, First, Middle Initial) of controlling participant(s) proposing to participate	9. SSN or IRS Employer Number (TIN)

Certifications: The controlling participants(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) certify that the information provided on this form and in any accompanying documentation is true and accurate. I/we acknowledge that making, presenting, or submitting a false, fictitious, or fraudulent statement, representation, or certification may result in criminal, civil, and/or administrative sanctions, including fines, penalties, and imprisonment. The controlling participant(s) further certify to the truth and accuracy of the following:

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 participating 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.	

Schedule A: List of Previous Projects and Section 8 Contracts. Below is a complete list of the controlling participants' previous participation projects and participation history in covered projects as per 24 CFR, part 200 §200.214 and multifamily Housing programs of FmHA, State and local Housing Finance Agencies, if applicable. **Note:** Read and follow the instruction sheet carefully. Make full disclosure. Add extra sheets if you need more space. Double check for accuracy. If no previous projects, write by your name, "No previous participation, First Experience".

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

Part II- For HUD Internal Processing Only

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"/> B. Name match in system <input type="checkbox"/> C. Disclosure or Certification problem <input type="checkbox"/> D. Other (attach memorandum)
Staff	Processing and Control	Approved <input type="checkbox"/> Yes <input type="checkbox"/> No Date (mm/dd/yyyy)
Signature of authorized reviewer		Signature of authorized reviewer

Instructions for Completing the Previous Participation Certificate, form HUD-2530

Carefully read these instructions and the applicable regulations. A copy of the regulations published at 24 C.F.R. part 200, subpart H, § 200.210-200.222 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. Incomplete form will be returned to the applicant.

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/USDA FmHA with a certified report of all previous participation in relevant HUD/USDA programs by those parties submitting the application. The information requested in this form is used by HUD/USDA to determine if you meet the standards established to ensure that all controlling participants in HUD/USDA projects will honor their legal, financial and contractual obligations and are of acceptable risks from the underwriting standpoint of an insurer, lender or governmental agency. HUD requires that you certify and submit your record of previous participation, in relevant projects, by completing and signing this form, before your 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 part 200 §200.212, and as further clarified by the Processing Guide (HUD notice H 2016-15) referenced in 24 CFR §200.210(b) and available on the HUD website at: http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/mfh/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.

The Department of Housing and Urban Development (HUD) is authorized to collect this information by law 42 U.S.C. 3535(d) 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.

Purpose: The information collected by form HUD-2530 is required for principals applying to participate in multifamily programs to 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.

Routine Use: The information collected by this form will not be otherwise disclosed outside of HUD, except to public agencies and private sector sources for automated processing of your records and for requesting information about you for participant approval; to appropriate agencies, entities, and persons when it is reasonably necessary to mitigate a breach or related incident; to Federal, state and/or local agencies when relevant to civil, criminal, or regulatory investigations and prosecutions or for other inquiries.

Disclosure: Providing the information is voluntary. You must provide all information requested in this application, including your SSN. Without prior approval or information, a controlling participant may not participate in a proposed or existing multifamily or healthcare project.

SORN ID/URL:<https://www.govinfo.gov/content/pkg/FR-2016-07-29/pdf/2016-18026.pdf>

Public reporting burden for this collection of information is estimated to average three 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.

SPECIAL PROVISIONS

NOTICE TO ALL PROSPECTIVE BIDDERS

Homewood North Water Infiltration Remediation - Building #5

Documents Required for Payment
HACP Contract No.: 600-28-21

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)

Homewood North Water Infiltration
Remediation - Building #5

(Project Name)

+

600-28-21

(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 Gerard Associates Architects drawings for Homewood North Water Infiltration Remediation - Building#5 dated April 2nd, 2021 and Project Manual dated September 20th, 2021 regarding:

CONTRACT NO. 600-28-21

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 120 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 September 20, 2021.
- c. Project Drawings issued by Gerard Associates Architects dated April 2, 2021

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. 600-28-21 this contract shall be binding on both parties.

(Printed or Typed Name)

(Printed or Typed Name)

Witness
{

Principal
{

(Signature and Date)

(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. 600-28-21 this contract shall be binding on both parties.

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

	_____ <i>(Printed or Typed Name)</i>		_____ <i>(Printed or Typed Name)</i>
<i>Witness</i>		<i>Partner*</i>	
{		{	
	_____ <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. 600-28-21 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)

Secretary

Kim Detrick, Chief Contracting Officer

Attest

Principal

{

{

(Signature and Date)

(Signature and Date)

Monique Pierre, Chief Development Officer

*Approved as to
Contents and Costs*

{

(Signature and Date)

Assistant General 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.

Secretary (SEAL)

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

	_____		_____
	<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>

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

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

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

Witness

(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
(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
{

(Signature and Date)

Surety ***
{

(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

	_____		_____
	<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>

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

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

	_____ <i>(Printed or Typed Name)</i>		_____ <i>(Printed or Typed Name)</i>
<i>Witness</i>		<i>Partner*</i>	
{			}
_____ <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)

Witness

(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 (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)
<i>Attest</i>	{	<i>Surety</i>	{
	_____		_____
	(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. 11/30/2023)

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

Public reporting burden for this collection of information is estimated to average 1 hour. This includes the time for collecting, reviewing, and reporting the data. The information requested is required to obtain a benefit. 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, PHAs would be unable to enforce their contracts.. There are no assurances of confidentiality. HUD may not conduct or sponsor, and an applicant is not required to respond to a collection of information unless it displays a currently valid OMB control 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 Terms and Conditions (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 words 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 120 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 \$ ⁴⁰⁰ _____ [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 \$ 1 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/Seller agrees as follows:

- (a) The Contractor/Seller shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, disability, or national origin.
- (b) The Contractor/Seller 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, sexual orientation, gender identity, disability, or national origin. Such action shall include, but not be limited to, (1) employment, (2) upgrading, 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/Seller agrees to post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(d) The Contractor/Seller shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor/Seller, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(e) The Contractor/Seller 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/Seller shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(g) The Contractor/Seller 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/Seller 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 that the Contractor/Seller is in non-compliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor/seller may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(i) The contractor/seller will include the provisions of paragraphs (a) through (h) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each sub[contractor/seller] or vendor. The [contractor/seller] will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the [contractor/seller] becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the [contractor/seller] may request the United States to enter into such 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.



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

Homewood North Water Infiltration Remediation - Building #5

HACP Contract No. 600-28-21

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 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 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 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: _____
Contracting Officer

Vendor Name(Insert vendor company name above)

Date: _____ Signature: _____

Title: _____

THE HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Homewood North Water Infiltration Remediation - Building #5

HACP Contract No. 600-28-21

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: PA20210012 06/11/2021

Superseded General Decision Number: PA20200012

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 \$10.95 for calendar year 2021 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 \$10.95 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 2021. 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	01/01/2021
1	01/08/2021
2	06/04/2021
3	06/11/2021

BRPA0009-039 12/01/2020

	Rates	Fringes
BRICKLAYER.....	\$ 34.50	23.31

CARP0142-004 06/01/2018

	Rates	Fringes
CARPENTER (Including 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 12/26/2020

	Rates	Fringes
ELECTRICIAN.....	\$ 26.25	16.35

ELEV0006-004 01/01/2021

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 52.02	35.825+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 06/01/2021

	Rates	Fringes
IRONWORKER, ORNAMENTAL.....	\$ 37.79	33.14

PLUM0027-005 06/01/2021

	Rates	Fringes
PLUMBER.....	\$ 44.45	24.57

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"

PART 4: TECHNICAL SPECIFICATIONS

Homewood North Water Infiltration Remediation - Building #5



IFB CONTRACT NO. 600-28-21

**SPECIFICATIONS MANUAL FOR
Assessment and Design Solutions for the
Indoor Air Quality and Water Infiltration**

**HOMEWOOD NORTH FAMILY COMMUNITY
BUILDING #5**

**1272 NOLAN COURT
PITTSBURGH, PENNSYLVANIA 15208**

**Housing Authority of the City of Pittsburgh
MGMT #7953 / BPO #3826 / Task Order #39**

**April 2, 2021
Issued for Bid and Construction**



G E R A R D
ASSOCIATES ARCHITECTS

410 FT. PITT COMMONS, 445 FT. PITT BLVD.
PITTSBURGH, PENNSYLVANIA 15219-1532

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Indoor Air Quality Survey Report

***Homewood North Family Community, Building #5
1260, 1262, 1264, 1266, 1268, 1270, and 1272 Nolan
Court
Pittsburgh, Pennsylvania 15208***

For:

***Gerard Associates Architects LLC
445 Fort Pitt Boulevard, Suite 410
Pittsburgh, PA 15219-1333***

Prepared by:

Sci-Tek Consultants, Inc.

Sci-Tek Consultants, Inc. Project Number: 20-989

December 1, 2020



Civil • Environmental • Geotechnical

655 Rodi Road, Suite 303
Pittsburgh, PA 15235
(412) 371-4460
Email: mail@scitekanswers.com
www.scitekanswers.com

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- Appendix B: Site Photographs

EXECUTIVE SUMMARY

Gerard Associates Architects, L.L.C. (Gerard) retained Sci-Tek Consultants, Inc. (Sci-Tek) to conduct an indoor air quality survey at the Homewood North Family Community, Building #5, located on Nolan Court in Pittsburgh, Pennsylvania. The survey was conducted at the request of the Housing Authority of the City of Pittsburgh (HACP).

The indoor air quality survey was conducted on October 7, 2020 by Paula South, an American Council for Accredited Certification (ACAC) Council Certified Indoor Environmental Consultant and member of the Indoor Air Quality Association. The weather on the day of the survey was approximately 65 degrees and mostly sunny with cirrus clouds.

An evaluation of microbiological conditions was conducted by Sci-Tek in order to determine the extent of conditions of the seven residential units that comprise Building #5: 1260, 1262, 1264, 1266, 1268, 1270, and 1272 Nolan Court. The HACP had noted water infiltration through the foundation wall into an empty unit (1272 Nolan Court) and noted similar concerns with the remainder of the units in Building #5.

The microbial survey included bulk sampling, surface sampling, air testing, and visual inspections of suspect surfaces for microbial material. Sci-Tek collected tape lift samples, swab samples, bulk samples, and air (mold spore trap) samples for analysis. Following collection, Sci-Tek prepared and delivered the tape lift and spore trap samples to U.S. Micro-Solutions, Inc., located in Latrobe, Pennsylvania, for analysis by direct microscopic examination. Results were compared to generally accepted guidelines and reference standards in order to interpret sampling results. Sci-Tek also used handheld meters to survey humidity levels and moisture levels in each unit.

The following is the analysis of laboratory results by unit, according to relative abundance of conidia (spores) and hyphal fragments, an analysis of humidity and moisture, and recommendations:

Unit #1260 – The tape-lift sample resulted in the rating of “Few” for 3 genera / fragments, the swab sample did not identify mold, there were no bulk or spore trap samples taken, humidity level was optimal, and the moisture meter reading was high in the drywall by the stairway, an area the tenant identified onsite. This unit is considered to have a normal fungal ecology, however, the water infiltration should be observed by a qualified mold remediation contractor.

Unit #1262 – The tape-lift sample resulted in the rating of “Few” for *Chaetomium* ascospores and “Rare” for *Stachybotrys* conidia, the swab sample did not identify mold, there were no bulk or spore trap samples taken, humidity level was optimal, and the moisture meter reading was low. This unit should be further investigated by a qualified mold remediation contractor due to the presence of water indicator molds of *Chaetomium* and *Stachybotrys*.

Unit #1264 – The tape-lift sample did not identify mold, the swab sample resulted in the rating of “Rare” for two genera, the bulk sample resulted in “Moderate” for one genera, there were no spore trap samples taken, humidity level was high at 65.3%, and the moisture meter reading was low. This unit should be further investigated by a qualified mold remediation contractor due to the moderate fungal contamination by *Alternaria* spores and elevated humidity levels.

Unit #1266 – The tape-lift sample did not identify mold, the swab sample resulted in the rating of “Rare” for one genera and “Few” for 2 genera, there were no bulk or spore trap samples taken, humidity level was optimal, and the moisture meter reading was low. This unit appears to exhibit a normal fungal ecology.

Unit #1268 – The tape-lift sample did not identify mold, the swab sample resulted in the rating of “Rare” for one genera and “Moderate” for 2 genera, there were no bulk samples taken, the spore trap sample taken yielded conidia / hyphal fragment levels all less than outdoor levels, humidity level was optimal, and the moisture meter reading was low. This unit should be further investigated by a qualified mold remediation contractor due to the moderate fungal contamination by *Aspergillus* / *Penicillium* spores.

Unit #1270 – The tape-lift sample and swab sample did not identify mold, there were no bulk or spore trap samples taken, humidity level was optimal, and the moisture meter reading was low. This unit appears to exhibit a normal fungal ecology.

Unit #1272 – The tape-lift sample resulted in the rating of “Many” for *Aspergillus* / *Penicillium* spores, the swab sample did not identify mold, the bulk sample resulted in the rating of “Few” for *Chaetomium* perithecia and “Numerous” for *Chaetomium* ascospores, as well as “Many” for *Stachybotrys* conidia and “Few” for *Stachybotrys* fruiting structures, there were no spore trap samples taken, humidity level was high at 63.3%, and the moisture meter reading was low. This unit should be further investigated by a qualified mold remediation contractor due to the presence of water indicator molds of *Chaetomium* and *Stachybotrys*.

1.0 INTRODUCTION

Gerard Associates Architects, L.L.C. (Gerard) retained Sci-Tek Consultants, Inc. (Sci-Tek) to conduct an indoor air quality survey at the Homewood North Family Community, Building #5, located on Nolan Court in Pittsburgh, Pennsylvania. The survey was conducted at the request of the Housing Authority of the City of Pittsburgh (HACP). An evaluation of microbiological conditions was conducted by Sci-Tek in order to determine the extent of conditions of the seven residential units that comprise Building #5: 1260, 1262, 1264, 1266, 1268, 1270, and 1272 Nolan Court. The HACP had noted water infiltration through the foundation wall into an empty unit (1272 Nolan Court) and noted similar concerns with the remainder of the units in Building #5.

Paula South, an American Council for Accredited Certification (ACAC) Council- Certified Indoor Environmental Consultant and member of the Indoor Air Quality Association, conducted the indoor air quality survey in each residential unit on October 7, 2020. The weather on the day of the survey was approximately 65 degrees and mostly sunny, with cirrus clouds. No significant amounts of odors were noted. Digital images of areas tested are presented in Appendix B, Digital Photographs.

The microbial survey included bulk sampling, surface sampling, air testing, and visual inspections of suspect surfaces for microbial material. Sci-Tek collected tape lift samples, swab samples, bulk samples, and air (mold spore trap) samples for analysis. Sci-Tek collected eight tape lift samples, seven swab samples, two bulk samples, and two air (mold spore trap) samples for analysis. One indoor spore trap sample was collected in Unit #1268, with one outdoor spore trap sample taken for comparative purposes. Sci-Tek utilized the tape lift and swab sampling methods to determine if non-airborne spores were present. Sci-Tek also used handheld meters to survey humidity levels and moisture levels in each unit.

Following collection, Sci-Tek prepared and delivered the samples to U.S. Micro-Solutions, Inc., located in Latrobe, Pennsylvania, for analysis by direct microscopic examination. Results were compared to generally accepted guidelines and reference standards in order to interpret sampling results. Results of the indoor air quality survey are located in Appendix A, Microbial Analytical Results.

2.0 SAMPLE PARAMETERS AND LABORATORY RESULTS

A brief summary of testing methods used for this sampling event is provided in the following table:

<i>Common Laboratory Testing Methods</i>	
<i>Test Method</i>	<i>Description</i>
Airborne Sampling - Mold	Airborne sampling is useful to determine potential inhalation concentration and to identify the presence of hidden mold. Spore trap sampling pumps a known volume of air over a glass slide to be identified under a microscope. Spore trap sampling measures both viable (able to germinate and reproduce) and non-viable (not able to germinate) spores. Non-viable spores can be allergenic or contain mycotoxins (a secondary metabolite of certain mold species).
Surface Sampling - Mold	Surface sampling generally consists of tape-lift sampling and swab (wipe) sampling. Tape-lift sampling is efficient for non-porous surfaces, is inexpensive and quick, and can be analyzed under direct microscopic examination. Swab (wipe) sampling is also inexpensive, non-destructive, and is useful for sampling wet surfaces. Bulk sampling was also conducted where surfaces were previously compromised by water infiltration.

Environmental air samples were collected using high volume rotary vane air sampling pumps. The flow rates of the pumps were calibrated at the beginning and end of the sampling period with the use of a field rotometer, which was calibrated to a primary standard.

Microbial samples were analyzed by U.S. Micro-Solutions, Inc. using Direct Microscopic Examination of Airborne spore trap and surface samples. U.S. Micro-Solutions, Inc. is accredited by the Environmental Microbiology Laboratory Association Program (EMLAP #103009), which is administered by the American Industrial Hygiene Association (AIHA).

Temperature and humidity readings were taken in each unit with a Q-trak brand meter, and moisture readings were taken with a Protimeter brand meter.

Spore trap air samples were taken outdoors and in Unit #1268. Tape lift and swab sampling was conducted in each unit. Bulk sampling was conducted in Units #1264 and #1272. Site photographs of sample locations are presented in Appendix B of this report.

The laboratory results are as follows:

Unit #1260 – The tape-lift sample resulted in the rating of “Few” for 3 genera / fragments, the swab sample did not identify mold, and there were no bulk or spore trap samples taken.

Unit #1262 – The tape-lift sample resulted in the rating of “Few” for *Chaetomium* ascospores and “Rare” for *Stachybotrys* conidia, the swab sample did not identify mold, and there were no bulk or spore trap samples taken.

Unit #1264 – The tape-lift sample did not identify mold, the swab sample resulted in the rating of “Rare” for two genera, the bulk sample resulted in “Moderate” for one genera, and there were no spore trap samples taken.

Unit #1266 – The tape-lift sample did not identify mold, the swab sample resulted in the rating of “Rare” for one genera and “Few” for 2 genera, and there were no bulk or spore trap samples taken.

Unit #1268 – The tape-lift sample did not identify mold, the swab sample resulted in the rating of “Rare” for one genera and “Moderate” for *Aspergillus* / *Penicillium*-like conidia, there were no bulk samples taken, and the spore trap sample taken yielded conidia / hyphal fragment levels all less than outdoor levels.

Unit #1270 – The tape-lift sample and swab sample did not identify mold, and there were no bulk or spore trap samples taken.

Unit #1272 – The tape-lift sample resulted in the rating of “Many” for *Aspergillus* / *Penicillium* spores, the swab sample did not identify mold, the bulk sample resulted in the rating of “Few” for *Chaetomium* perithecia and “Numerous” for *Chaetomium* ascospores, as well as “Many” for *Stachybotrys* conidia and “Few” for *Stachybotrys* fruiting structures, and there were no spore trap samples taken.

Microbial Information

In general, the fungal counts indoors should be lower than outdoor counts from the outdoor spore trap samples. Also, the types of fungi found indoors should be similar to types found outdoors. The following is a description of the types of molds that were found in elevated concentrations during the investigation:

Alternaria-like conidia: The genus *Alternaria* is a commonly found outdoor mold, contains approximately 40 species, and is widely distributed in the environment. An ascomycete fungus, *Alternaria* species are known as major plant pathogens. They are also common allergens in humans, growing indoors and causing hay fever or hypersensitivity reactions that may lead to asthma.

Aspergillus/*Penicillium*-like conidia: The genus *Aspergillus* is a diverse and commonly found mold, contains approximately 200 species, and is widely distributed in the environment. The species

Aspergillus niger often displays a musty odor and is common to indoor environments. The genus *Penicillium* is also a common indoor and outdoor genus with approximately 200 identified species. *Penicillium* species are commonly found inside fiberglass insulation and high spore counts are commonly identified where water damaged cellulose based substrates are present. *Aspergillus* / *Penicillium* conidia are often primary colonizers in damp or moisture intrusion areas of indoor environments.

Chaetomium ascospores: The presence of *Chaetomium* conidia may indicate a cause for concern, for it can pose adverse health effects. Mycotoxins are known to be a secondary metabolite of *Chaetomium* mold, producing adverse health effects. *Chaetomium* is a moisture indicator mold, which suggests an indoor water saturation condition from sources such as roof leaks, plumbing leaks, or other moisture infiltration. The spores (ascospores) of *Chaetomium* are produced within structures (asci), contained in a flask-shaped fruiting body known as perithecium. On spore maturity, the walls of the asci dissolve, releasing mucilaginous spores within the perithecium, which causes this type of mold to not become airborne, but rather sticking to surfaces.

Stachybotrys conidia / fruiting structures: The presence of *Stachybotrys* conidia may indicate a cause for concern, for it can pose adverse health effects. Mycotoxins are known to be a secondary metabolite of *Stachybotrys* mold, producing inflammatory agents, immunosuppression, dermatitis, hemotoxic, and hemorrhagic health effects. *Stachybotrys* is a moisture indicator mold, which suggests an indoor water saturation condition from sources such as roof leaks, plumbing leaks, or other moisture infiltration. The fruiting structures, like the hyphal fragments, are indicative of mold growth.

Ambient Air / Moisture Meter Information

Air temperature and humidity were tested in each unit with a calibrated Q-trak brand field meter. Moisture content in drywall was tested with prongs on a Protimeter brand field meter. Results were written on field notes onsite and are presented in the following table:

<i>Unit Number / Location</i>	<i>Temperature (Degrees F)</i>	<i>Humidity</i>	<i>Moisture Reading</i>
1260 – Living Room	72.3	42.3%	High
1260 – Laundry Room	71.3	43.4%	No excess moisture in drywall
1262 – Laundry Room	79.4	44.0%	No excess moisture in drywall
1264 – Laundry Room	73.7	65.3%	No excess moisture in drywall
1266 – Laundry Room	76.0	45.2%	No excess moisture in drywall
1268 – Laundry Room	76.1	41.6%	No excess moisture in drywall

1270 – Laundry Room	75.3	44.4%	No excess moisture in drywall
1272 – Laundry Room	66.7	63.3%	No excess moisture in drywall
Outdoor Air	64.9	51.5%	No excess moisture in drywall

Optimal humidity levels range between 30% and 50% indoors in ideal conditions. High humidity levels were measured in Units #1264 and #1272, all others were found to fall between the 30-50% range. All drywall moisture readings in the units were found to be dry, with the exception of Unit #1260, where the drywall near the stairway was also visibly wet.

3.0 SAMPLE METHODOLOGY

3.1 Microbial Field Procedures

There are four (4) commonly accepted laboratory methods for testing for microbials. These tests include airborne sampling, surface sampling, bulk sampling, and dust sampling. A brief summary of these testing methods is provided in the following table:

<i>Common Microbial Laboratory Testing Methods</i>	
<i>Test Method</i>	<i>Description</i>
Airborne Sampling	Airborne sampling is useful to determine potential inhalation concentration and to identify the presence of hidden mold. Two types of airborne sampling approaches are used: viable spore sampling and spore trap sampling. Viable spore sampling pumps a known volume of air over a Petri dish and identifies viable, culturable mold spores. Spore trap sampling pumps a known volume of air over a glass slide to be identified under a microscope. Spore trap sampling measures both viable (able to germinate and reproduce) and non-viable (not able to germinate) spores. Non-viable spores can be allergenic or contain mycotoxins (a secondary metabolite of certain mold species).
Surface Sampling	Surface sampling generally consists of tape-lift sampling and swab (wipe) sampling. Tape-lift sampling is efficient for non-porous surfaces, is inexpensive and quick, and can be analyzed under direct microscopic examination. Swab (wipe) sampling is also inexpensive, non-destructive, and is useful for sampling wet surfaces.
Bulk Sampling	Bulk sampling is generally used when the impacted material is porous (ex. fabric, carpeting, wall cores), however, the bulk sampling method is also invasive and destructive.
Dust Sampling	This method uses a dust collection cassette available from a laboratory, with a collection sieve that allows for several types of laboratory analysis, for example, viable/non-viable, allergens, and/or toxins.

For the purposes of this evaluation, airborne samples, surface samples, and bulk samples were collected for microbial analysis.

3.2 Temperature, Humidity, and Moisture Field Procedures

Air temperature and humidity were tested in each unit with a calibrated Q-trak brand field meter. Moisture content in drywall was tested with prongs on a Protimeter brand field meter.

3.3 Laboratory Testing Information

Microbial samples were analyzed by U.S. Micro-Solutions, Inc. using Direct Microscopic Examination of surface samples. U.S. Micro-Solutions, Inc. is accredited by the Environmental Microbiology Laboratory Association Program (EMLAP #103009), which is administered by the American Industrial Hygiene Association (AIHA).

4.0 REGULATORY REVIEW

Currently, there are no numeric standards for surface or airborne microbial contamination indoors or outdoors. This is largely because different people react to microbial contamination in different ways – where some may show symptoms, others do not have any adverse reactions at all.

The indoor air quality industry uses generally accepted guidelines and reference standards in order to interpret sampling results. These guidelines are constantly being reviewed and edited as additional information is collected by professionals and regulatory agencies.

In general, interpretation of sampling results is based on indoor vs. outdoor ambient levels, complaint vs. non-complaint areas, and predominant microbial genera. It is noted that the data should be interpreted with discretion and is not indicative of health criteria or spore viability.

5.0 CONCLUSIONS AND RECOMMENDATIONS

An evaluation of microbiological conditions was conducted by Sci-Tek in order to determine the extent of conditions in Building #5 of the Homewood North Family Community, located along Nolan Court in Pittsburgh, PA, 15208. This evaluation was conducted by the request of Gerard Associates Architects, LLC and the Housing Authority of the City of Pittsburgh.

As previously stated, there are no numeric standards for surface or airborne microbial contamination indoors or outdoors. In general, interpretation of sampling results is based on indoor vs. outdoor ambient levels, complaint vs. non-complaint areas, and predominant microbial genera.

Mold spores need food (cellulose), oxygen, and a continual source of water in order to grow. As long as there is no water intrusion to the building components, this removes the potential food and water source for mold spore *growth* in the building. Air sampling, bulk sampling, and surface sampling done as part of this report measures both living and non-living spores.

The following is the analysis of laboratory results by unit, according to relative abundance of conidia (spores) and hyphal fragments, an analysis of humidity and moisture, and recommendations:

Unit #1260 – The tape-lift sample resulted in the rating of “Few” for 3 genera / fragments, the swab sample did not identify mold, there were no bulk or spore trap samples taken, humidity level was optimal, and the moisture meter reading was high in the drywall by the stairway, an area the tenant identified onsite. This unit is considered to have a normal fungal ecology, however, the water infiltration should be observed by a qualified mold remediation contractor.

Unit #1262 – The tape-lift sample resulted in the rating of “Few” for *Chaetomium* ascospores and “Rare” for *Stachybotrys* conidia, the swab sample did not identify mold, there were no bulk or spore trap samples taken, humidity level was optimal, and the moisture meter reading was low. This unit should be further investigated by a qualified mold remediation contractor due to the presence of water indicator molds of *Chaetomium* and *Stachybotrys*.

Unit #1264 – The tape-lift sample did not identify mold, the swab sample resulted in the rating of “Rare” for two genera, the bulk sample resulted in “Moderate” for one genera, there were no spore trap samples taken, humidity level was high at 65.3%, and the moisture meter reading was low. This unit should be further investigated by a qualified mold remediation contractor due to the moderate fungal contamination by *Alternaria* spores and elevated humidity levels.

Unit #1266 – The tape-lift sample did not identify mold, the swab sample resulted in the rating of “Rare” for one genera and “Few” for 2 genera, there were no bulk or spore trap samples taken,

humidity level was optimal, and the moisture meter reading was low. This unit appears to exhibit a normal fungal ecology.

Unit #1268 – The tape-lift sample did not identify mold, the swab sample resulted in the rating of “Rare” for one genera and “Moderate” for 2 genera, there were no bulk samples taken, the spore trap sample taken yielded conidia / hyphal fragment levels all less than outdoor levels, humidity level was optimal, and the moisture meter reading was low. This unit should be further investigated by a qualified mold remediation contractor due to the moderate fungal contamination by *Aspergillus* / *Penicillium* spores.

Unit #1270 – The tape-lift sample and swab sample did not identify mold, there were no bulk or spore trap samples taken, humidity level was optimal, and the moisture meter reading was low. This unit appears to exhibit a normal fungal ecology.

Unit #1272 – The tape-lift sample resulted in the rating of “Many” for *Aspergillus* / *Penicillium* spores, the swab sample did not identify mold, the bulk sample resulted in the rating of “Few” for *Chaetomium* perithecia and “Numerous” for *Chaetomium* ascospores, as well as “Many” for *Stachybotrys* conidia and “Few” for *Stachybotrys* fruiting structures, there were no spore trap samples taken, humidity level was high at 63.3%, and the moisture meter reading was low. This unit should be further investigated by a qualified mold remediation contractor due to the presence of water indicator molds of *Chaetomium* and *Stachybotrys*.

6.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

Signature (American Council for Accredited Certification / Certified Indoor Environmental Consultant):

Paula South

Paula South

12/01/2020

Date



7.0 REPORT LIMITATIONS

Sci-Tek Consultants, Inc. holds that services performed for this survey were conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession practicing contemporaneously in the same locality under similar conditions. Sci-Tek used commercially reasonable efforts consistent with local industry standards in place at the time of the survey to identify the suspect hazardous materials found and prepared this report based on the data obtained.

Field observations and laboratory results are based upon the conditions at the time of the assessment and may not coincide with conditions at any other time. Conditions will vary with seasonal and temperature change. It is difficult, if not impossible, to identify, sample, and test all microbial materials that may be present at the time of the survey. Other biological and chemical materials may be present at the site that were not visually observed or submitted for laboratory analysis.

Exposure, dosage, and sensitivity thresholds vary widely from person to person and diagnoses of health effects from microbial and chemical contaminants are best left to medical professionals.

No other warranty is expressed or implied.

Appendix A

Microbial Analytical Results



Customer Name:	Sci-Tek Consultants, Inc.	Sample Date:	October 7, 2020
Customer Address:	655 Rodi Road, Suite 303 Pittsburgh, PA 15235	Date Received:	October 13, 2020
		Date of Report:	October 16, 2020
Customer Phone:	(412) 371-4460	Fax:	(412) 371-4462
PO Number:		Attention:	Paula South
Project Name/Number:	Gerard / HACP Nolan Court		

Customer sample numbers below are uniquely identified by prefixing Laboratory # **108780-20**

Direct Microscopic Examination - Tape Lift
Analytical Method: MIC 02

Customer Sample Number	60-01					60-02					62-01				
	Living Room Tape Lift					Laundry Room Tape Lift					Laundry Room Tape Lift				
Sample Description/ Location	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num
Particle ID															
<i>Alternaria</i> conidia															
Ascospores							X								
<i>Aspergillus</i> fruiting structures															
<i>Aspergillus/Penicillium</i> -like conidia							X								
Basidiospores															
<i>Bipolaris/Drechslera</i> conidia															
<i>Chaetomium</i> ascospores												X			
<i>Cladosporium</i> conidia															
<i>Curvularia</i> conidia															
<i>Epicoccum</i> conidia															
Hyphal Fragments												X			
Insect fragments															
<i>Penicillium</i> fruiting structures															
<i>Pithomyces/Ulocladium</i> conidia															
Plant fragments															
Pollen (unidentified)															
Rusts															
Smuts/ Myxomycetes															
<i>Stachybotrys</i> conidia												X			
<i>Stachybotrys</i> fruiting structures															
<i>Torula</i> conidia															
Unidentified dematiaceous conidia															
Unidentified hyaline conidia							X								
Skin Cell Fragments			0					1					1		
Debris			1					1					1		
No fungal conidia/hyphal fragments noted			X												
Analyst Initials			HC					HC					HC		
Date Analyzed			10/15/20					10/15/20					10/15/20		
Lot # / Exp Date:Tape Lift			N/A					B1848147 10/2020					B1848283 10/2020		

Results relate only to the samples tested. The *Aspergillus/Penicillium*-like category cannot be differentiated by non-viable sampling methods.
 Mod = Moderate; Num = Numerous



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Technical Manager: 
 Sharon Danko, AS, MLT (ASCP)



Customer Name: Sci-Tek Consultants, Inc. **Sample Date:** October 7, 2020
Customer Address: 655 Rodi Road, Suite 303 **Date Received:** October 13, 2020
 Pittsburgh, PA 15235 **Date of Report:** October 16, 2020

Customer Phone: (412) 371-4460 **Fax:** (412) 371-4462
PO Number: **Attention:** Paula South
Project Name/Number: Gerard / HACP Nolan Court

Customer sample numbers below are uniquely identified by prefixing Laboratory # 108780-20

Direct Microscopic Examination - Tape Lift															
Analytical Method: MIC 02															
Customer Sample Number	64-01					66-01					68-02				
Sample Description/ Location	Laundry Room Tape Lift					Laundry Room Tape Lift					Laundry Room Tape Lift				
Particle ID	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num
<i>Alternaria</i> conidia															
Ascospores															
<i>Aspergillus</i> fruiting structures															
<i>Aspergillus/Penicillium</i> -like conidia															
Basidiospores															
<i>Bipolaris/Drechslera</i> conidia															
<i>Chaetomium</i> ascospores															
<i>Cladosporium</i> conidia															
<i>Curvularia</i> conidia															
<i>Epicoccum</i> conidia															
Hyphal Fragments															
Insect fragments															
<i>Penicillium</i> fruiting structures															
<i>Pithomyces/Ulocladium</i> conidia															
Plant fragments															
Pollen (unidentified)															
Rusts															
Smuts/ Myxomycetes															
<i>Stachybotrys</i> conidia															
<i>Stachybotrys</i> fruiting structures															
<i>Torula</i> conidia															
Unidentified dematiaceous conidia															
Unidentified hyaline conidia															
Skin Cell Fragments			1					1					1		
Debris			2					1					1		
No fungal conidia/hyphal fragments noted			X					X					X		
Analyst Initials			HC					HC					HC		
Date Analyzed			10/15/20					10/15/20					10/15/20		
Lot # / Exp Date:Tape Lift			N/A					N/A					B1848303	10/2020	

Results relate only to the samples tested. The *Aspergillus/Penicillium*-like category cannot be differentiated by non-viable sampling methods.
 Mod = Moderate; Num = Numerous

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Technical Manager: Sharon Danko
 Sharon Danko, AS, MLT (ASCP)



Customer Name:	Sci-Tek Consultants, Inc.	Sample Date:	October 7, 2020
Customer Address:	655 Rodi Road, Suite 303 Pittsburgh, PA 15235	Date Received:	October 13, 2020
		Date of Report:	October 16, 2020
Customer Phone:	(412) 371-4460	Fax:	(412) 371-4462
PO Number:		Attention:	Paula South
Project Name/Number:	Gerard / HACP Nolan Court		

Customer sample numbers below are uniquely identified by prefixing Laboratory # **108780-20**

Direct Microscopic Examination - Tape Lift
Analytical Method: MIC 02

Customer Sample Number	70-01					72-02									
	Laundry Room Tape Lift					Entry Room Tape Lift									
Sample Description/ Location	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num
<i>Alternaria</i> conidia															
Ascospores															
<i>Aspergillus</i> fruiting structures															
<i>Aspergillus/Penicillium</i> -like conidia									X						
Basidiospores															
<i>Bipolaris/Drechslera</i> conidia															
<i>Chaetomium</i> ascospores															
<i>Cladosporium</i> conidia															
<i>Curvularia</i> conidia															
<i>Epicoccum</i> conidia															
Hyphal Fragments															
Insect fragments															
<i>Penicillium</i> fruiting structures															
<i>Pithomyces/Ulocladium</i> conidia															
Plant fragments															
Pollen (unidentified)															
Rusts															
Smuts/ Myxomycetes															
<i>Stachybotrys</i> conidia															
<i>Stachybotrys</i> fruiting structures															
<i>Torula</i> conidia															
Unidentified dematiaceous conidia															
Unidentified hyaline conidia															
Skin Cell Fragments					1					1					
Debris					1					1					
No fungal conidia/hyphal fragments noted					X										
Analyst Initials					ARP					ARP					
Date Analyzed					10/15/20					10/15/20					
Lot # / Exp Date:Tape Lift					B1848266 10/2020					B1848134 10/2020					

Results relate only to the samples tested. The *Aspergillus/Penicillium*-like category cannot be differentiated by non-viable sampling methods.
 Mod = Moderate; Num = Numerous



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Technical Manager: Sharon Danko
 Sharon Danko, AS, MLT (ASCP)



Customer Name: Sci-Tek Consultants, Inc. Sample Date: October 7, 2020
 Customer Address: 655 Rodi Road, Suite 303 Date Received: October 13, 2020
 Pittsburgh, PA 15235 Date of Report: October 16, 2020
 Customer Phone: (412) 371-4460 Fax: (412) 371-4462
 PO Number: Attention: Paula South
 Project Name/Number: Gerard / HACP Nolan Court

Customer sample numbers below are uniquely identified by prefixing Laboratory # 108780-20

Direct Microscopic Examination - Swab
 Analytical Method: MIC 02

Customer Sample Number	60-03					62-02					64-02				
	Laundry Room Swab					Laundry Room Swab					Laundry Room Swab				
Sample Description/ Location	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num
Particle ID															
<i>Alternaria</i> conidia															
Ascospores															
<i>Aspergillus</i> fruiting structures															
<i>Aspergillus/Penicillium</i> -like conidia															
Basidiospores															
<i>Bipolaris/Drechslera</i> conidia															
<i>Chaetomium</i> ascospores															
<i>Cladosporium</i> conidia											X				
<i>Curvularia</i> conidia															
<i>Epicoccum</i> conidia															
Hyphal Fragments											X				
Insect fragments															
<i>Penicillium</i> fruiting structures															
<i>Pithomyces/Ulocladium</i> conidia															
Plant fragments															
Pollen (unidentified)															
Rusts															
Smuts/ Myxomycetes															
<i>Stachybotrys</i> conidia															
<i>Stachybotrys</i> fruiting structures															
<i>Torula</i> conidia															
Unidentified dematiaceous conidia															
Unidentified hyaline conidia															
Skin Cell Fragments			1					0					1		
Debris			1					1					1		
No fungal conidia/hyphal fragments noted			X					X							
Analyst Initials	ARP					ARP					ARP				
Date Analyzed	10/15/20					10/15/20					10/15/20				
Lot # / Exp Date:Swab	1903704 03/2020					1903704 03/2020					1903704 03/2020				

Results relate only to the samples tested. The *Aspergillus/Penicillium*-like category cannot be differentiated by non-viable sampling methods.
 Mod = Moderate; Num = Numerous

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Technical Manager: 
 Sharon Danko, AS, MLT (ASCP)



Customer Name:	Sci-Tek Consultants, Inc.	Sample Date:	October 7, 2020
Customer Address:	655 Rodi Road, Suite 303 Pittsburgh, PA 15235	Date Received:	October 13, 2020
		Date of Report:	October 16, 2020
Customer Phone:	(412) 371-4460	Fax:	(412) 371-4462
PO Number:		Attention:	Paula South
Project Name/Number:	Gerard / HACP Nolan Court		

Customer sample numbers below are uniquely identified by prefixing Laboratory # **108780-20**

Direct Microscopic Examination - Swab
Analytical Method: MIC 02

Customer Sample Number	66-02					68-03					70-02				
Sample Description/ Location	Laundry Room Swab					Laundry Room Swab					Laundry Room Swab				
Particle ID	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num
<i>Alternaria</i> conidia															
Ascospores															
<i>Aspergillus</i> fruiting structures															
<i>Aspergillus/Penicillium</i> -like conidia		X						X							
Basidiospores															
<i>Bipolaris/Drechslera</i> conidia															
<i>Chaetomium</i> ascospores															
<i>Cladosporium</i> conidia		X													
<i>Curvularia</i> conidia															
<i>Epicoccum</i> conidia															
Hyphal Fragments	X														
Insect fragments															
<i>Penicillium</i> fruiting structures															
<i>Pithomyces/Ulocladium</i> conidia															
Plant fragments															
Pollen (unidentified)															
Rusts															
Smuts/ Myxomycetes															
<i>Stachybotrys</i> conidia															
<i>Stachybotrys</i> fruiting structures															
<i>Torula</i> conidia															
Unidentified dematiaceous conidia						X									
Unidentified hyaline conidia															
Skin Cell Fragments			1					1					1		
Debris			1					1					1		
No fungal conidia/hyphal fragments noted														X	
Analyst Initials			ARP					ARP					ARP		
Date Analyzed			10/15/20					10/15/20					10/15/20		
Lot # / Exp Date:Swab			1903704 03/2020					1903704 03/2020					1903704 03/2020		

Results relate only to the samples tested. The *Aspergillus/Penicillium*-like category cannot be differentiated by non-viable sampling methods.
 Mod = Moderate; Num = Numerous



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Technical Manager: Sharon Danko
 Sharon Danko, AS, MLT (ASCP)



Customer Name:	Sci-Tek Consultants, Inc.	Sample Date:	October 7, 2020
Customer Address:	655 Rodi Road, Suite 303 Pittsburgh, PA 15235	Date Received:	October 13, 2020
		Date of Report:	October 16, 2020
Customer Phone:	(412) 371-4460	Fax:	(412) 371-4462
PO Number:		Attention:	Paula South
Project Name/Number:	Gerard / HACP Nolan Court		

Customer sample numbers below are uniquely identified by prefixing Laboratory # 108780-20

Direct Microscopic Examination - Swab
Analytical Method: MIC 02

Customer Sample Number	72-03														
	Hallway Swab														
Sample Description/ Location															
Particle ID	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num
<i>Alternaria</i> conidia															
Ascospores															
<i>Aspergillus</i> fruiting structures															
<i>Aspergillus/Penicillium</i> -like conidia															
Basidiospores															
<i>Bipolaris/Drechslera</i> conidia															
<i>Chaetomium</i> ascospores															
<i>Cladosporium</i> conidia															
<i>Curvularia</i> conidia															
<i>Epicoccum</i> conidia															
Hyphal Fragments															
Insect fragments															
<i>Penicillium</i> fruiting structures															
<i>Pithomyces/Ulocladium</i> conidia															
Plant fragments															
Pollen (unidentified)															
Rusts															
Smuts/ Myxomycetes															
<i>Stachybotrys</i> conidia															
<i>Stachybotrys</i> fruiting structures															
<i>Torula</i> conidia															
Unidentified dematiaceous conidia															
Unidentified hyaline conidia															
Skin Cell Fragments			1												
Debris			1												
No fungal conidia/hyphal fragments noted			X												
Analyst Initials			ARP												
Date Analyzed			10/15/20												
Lot # / Exp Date:Swab			1903704 03/2020												

Results relate only to the samples tested. The *Aspergillus/Penicillium*-like category cannot be differentiated by non-viable sampling methods.
 Mod = Moderate; Num = Numerous



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Technical Manager: 
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Customer Address:	655 Rodi Road, Suite 303 Pittsburgh, PA 15235	Date Received:	October 13, 2020
Customer Phone:	(412) 371-4460	Date of Report:	October 16, 2020
PO Number:		Fax:	(412) 371-4462
Project Name/Number:	Gerard / HACP Nolan Court	Attention:	Paula South

Customer sample numbers below are uniquely identified by prefixing Laboratory # **108780-20**

Direct Microscopic Examination - Bulk
Analytical Method: MIC 02

Customer Sample Number	64-03					72-01									
	Laundry Room Bulk - Peeling Paint					Entry Room Bulk - Drywall									
Particle ID	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num	Rare Amt	Few	Mod	Many	Num
<i>Alternaria</i> conidia			X												
Ascospores															
<i>Aspergillus</i> fruiting structures															
<i>Aspergillus/Penicillium</i> -like conidia															
Basidiospores															
<i>Bipolaris/Drechslera</i> conidia															
<i>Chaetomium</i> ascospores										X					
<i>Chaetomium</i> perithecia							X								
<i>Cladosporium</i> conidia															
<i>Curvularia</i> conidia															
<i>Epicoccum</i> conidia															
Hyphal Fragments									X						
Insect fragments															
<i>Penicillium</i> fruiting structures															
<i>Pithomyces/Ulocladium</i> conidia															
Plant fragments															
Pollen (unidentified)															
Rusts															
Smuts/ Myxomycetes															
<i>Stachybotrys</i> conidia									X						
<i>Stachybotrys</i> fruiting structures							X								
<i>Torula</i> conidia															
Unidentified dematiaceous conidia															
Unidentified hyaline conidia															
Skin Cell Fragments			1					1							
Debris			2					3***							
No fungal conidia/hyphal fragments noted															
Analyst Initials			ARP					ARP							
Date Analyzed			10/15/20					10/15/20							
Lot # / Exp Date: Bulk			N/A					N/A							

Results relate only to the samples tested. The *Aspergillus/Penicillium*-like category cannot be differentiated by non-viable sampling methods.
 Mod = Moderate; Num = Numerous

*** A debris rating of 3 or greater indicates that the accuracy of the analysis is likely affected.

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Technical Manager: Sharon Danko
 Sharon Danko, AS, MLT (ASCP)



Customer Name:	Sci-Tek Consultants, Inc.	Sample Date:	October 7, 2020
Customer Address:	655 Rodi Road, Suite 303 Pittsburgh, PA 15235	Date Received:	October 13, 2020
		Date of Report:	October 16, 2020
Customer Phone:	(412) 371-4460	Fax:	(412) 371-4462
PO Number:		Attention:	Paula South
Project Name/Number:	Gerard / HACP Nolan Court		

Customer sample numbers below are uniquely identified by prefixing Laboratory # 108780-20

Airborne Spore Trap Analysis - AllergencoD
Analytical Method: MIC 01

Total Volume (L)	45				45							
Sample Number	EXT-01				68-01							
Location:	Outdoor Spore Trap				Laundry Room Spore Trap							
Particle ID	Raw ct.	AS	Spores/m ³	%	Raw ct.	AS	Spores/m ³	%	Raw ct.	AS	Spores/m ³	%
Alternaria	7	22	154	1%								
Ascospores	24	22	528	2%	6	22	132	3%				
Aspergillus/Penicillium-like	14	22	308	1%	10	22	220	5%				
Basidiospores	103	178	18,334	76%	87	22	1,914	47%				
Bipolaris/Drechslera												
Cercospora	2	22	44	0%								
Chaetomium												
Cladosporium	175	22	3,850	16%	67	22	1,474	36%				
Curvularia												
Epicoccum	5	22	110	0%								
Helicomyces												
Nigrospora												
Oidium												
Pithomyces/Ulocladium												
Polythrincium	1	22	22	0%								
Rusts	1	22	22	0%								
Smuts/ Myxomycetes	36	22	792	3%	15	22	330	8%				
Stachybotrys												
Torula												
Trichoderma												
Unidentified dematiaceous conidia												
Unidentified hyaline conidia												
Total Mold (Spores/m³ of air)	368		24,164		185		4,070					
Pollen	1	22	22		0	22	< 22					
Hyphal Fragments	10	22	220		1	22	22					
Insect Fragments												
Plant Fragments												
Skin Cell Fragments			1				1					
Debris			1				1					
Analyst Initials			ARP				ARP					
Date Analyzed			10/15/20				10/15/20					
Cassette Serial # / Exp Date:			3048624 06/2020				3048639 06/2020					

Entire trace analyzed. Results relate only to the samples tested. Results are reported as calculated. For biological data, the first and/or second digit should be considered significant. Total percentage may not equal 100% due to rounding. Percentages reported as 0% are greater than 0 and less than 0.5%. The *Aspergillus/Penicillium*-like category cannot be differentiated by non-viable sampling methods.
 AS=Analytical Sensitivity (spores/m³); Blank Lines = None Detected

When providing duplicates of this report, the document should be provided in total and not in section in accordance with AIHA-LAP, LLC. Any unauthorized or improper disclosure, copying, distribution, use, or falsification of these results is prohibited. USMS shall have no liability to the Customer or the Customer's customer for opinions stated, recommendations made, actions taken, or conduct implemented based on the test results reported.



Technical Manager: *Sharon Danko*
 Sharon Danko, AS, MLT (ASCP)

GUIDELINES FOR DIRECT MICROSCOPIC EXAMINATION (DME) OF BULK, SWAB, AND TAPE SAMPLES

These guidelines contain opinions and interpretations and are not intended for determination of health significance nor are they necessarily representative of unacceptable indoor environments.

Molds require a food source, moisture, and spore production to proliferate, removing any one of these factors can control fungal growth. However, because of their ubiquitous nature, spores can never be completely eliminated from an area.

RELATIVE ABUNDANCE OF CONIDIA (SPORES) AND HYPHAL FRAGMENTS ¹		
RATING	Relative Amounts of Observed Fungal Structures per high power field (600X)	SIGNIFICANCE
Rare	0-1	Indicates a minimal amount of conidia (spores) and/or other fungal structures. Most normal indoor surfaces will show no to low fungal conidia/hyphal fragments. Generally, water indicator molds such as <i>Stachybotrys</i> or <i>Chaetomium</i> should be further investigated.
Few	2-5	Indicates low amounts of settled conidia (spores). Typically, this amount is not consistent with active fungal growth, however, it may suggest an active source nearby, or that a surface has not been cleaned appropriately. The presence of hyphal fragments or fruiting structures may indicate a nearby source of contamination. Generally, the presence of moisture indicator molds (e.g., <i>Stachybotrys</i> or <i>Chaetomium</i>) may suggest a chronic or acute water condition from sources such as roofs, plumbing leaks, increased humidity, etc.
Moderate	6-10	Indicates a moderate to heavy amount of fungal contamination (conidia/spores). Generally, this category is indicative of a surface that is, or has been affected, by active fungal growth. The presence of fruiting structures or hyphal fragments may support the premise that fungal growth is on-going. However, the presence of moderate to numerous conidia/spores alone does not necessarily indicate the viability of the spores. Further investigation of the affected areas may be warranted.
Many	11-100	
Numerous	>100	Indicates that the sample area was highly contaminated with fungal conidia/spores and/or hyphal fragments. Samples in this category display an unusually high number of conidia/spores or other fungal structures in each microscopic field.

¹This scale of relative abundance is affected by the size of the sampled area. If very large areas are sampled with a swab for example, this may cause the results to be skewed into a lower or higher category. These results correspond roughly to a sample area measuring one square inch.

SKIN CELL ANALYSIS	
SKIN CELL RATING	Relative Amounts of Observed Skin Cells per high power field (600 X)
0	No skin cells present
1	0-1
2	2 to 5
3	6 to 10
4	11 to 15
5	≥16

DEBRIS RATING for DME ANALYSIS (using 600X magnification)		
DEBRIS RATING	CONDITIONS FOR REPORTING DEBRIS RATING	SIGNIFICANCE
0	Debris is not present.	Sample may be a blank sample or from a very clean or remediated area.
1	Debris is present and <10% of the average viewing field is obscured.	Minimal amount of debris is observed.
2	Debris is present and 10% to <40% of the average viewing field is obscured.	Low amount of debris is observed, relative amounts of conidia/hyphal fragments may be affected.
3*	Debris is present and 40% to 75% of the average viewing field is obscured.	Moderate amount of debris is observed, relative amounts of conidia/hyphal fragments may be underestimated.
4*	Debris is present and >75% of the average viewing field is obscured.	High amount of debris is observed, relative amounts of conidia/hyphal fragments are estimated.
6	Slide completely obscured by excessive debris.	Unable to analyze. Recollect sample.

* A debris rating of 3 or greater indicates that the accuracy of the analysis is likely affected.

SPORE TRAP INTERPRETATION TIPS

Contains opinions and interpretations

Currently there are no numeric standards for indoor airborne or surface microbial contamination. Suggested guidelines are constantly being reviewed and updated as more information is collected.

Some common denominators should be considered when interpreting results:

1. Comparison of indoor/outdoor concentration ratios.
2. Complaint vs. non-complaint areas or affected vs. non-affected areas.
3. Consider air exchange rates and activity levels in a building structure, weather, and season of the year.
4. Rank order assessment and concentration (e.g. Spores/m³ of air) of the fungi.
5. Predominant fungal genera: Are there water indicator microorganisms present, such as but not limited to: *Chaetomium*, *Stachybotrys*, *Rhodotorula*, *Trichoderma*, and *Scopulariopsis*.
6. Generally fungal counts indoors should be lower than outdoor counts and the types of fungi found indoors should be similar to outdoors.
7. There is always a potential bias from infiltration of outdoor air, poor housekeeping, excessive indoor relative humidity, or potential contamination sources (e.g. water intrusion through a basement wall) that may negatively influence post remedial verification (PRV) or clearance levels.
8. The investigator should look for various patterns among the indoor types of molds detected:
 - a. Increased levels of primary (1st) colonizers in damp or moisture intrusion areas of homes or commercial buildings: ***Aspergillus/Penicillium*** or ***Cladosporium*** are usually noted.
 - b. ***Chaetomium*** or ***Stachybotrys*** are tertiary (3rd) colonizers of indoor materials and are usually associated with chronic long-standing water/moisture issues in a building.
 - c. The presence of **hyphal fragments** or **fruiting structures** noted on spore trap samples usually indicates amplification (growth) of fungi on building substrates.
 - d. **Ascospores** and **basidiospores** noted on indoor spore trap samples most often represent the entrance of inadequately filtered outdoor air. During inclement weather, remember to note time, temperature, and season. Most indoor materials will not support the growth of these fungi.
9. When unidentified **hyaline** (clear) or **dematiaceous** (dark-pigmented) conidia are noted on a spore trap sample, it indicates that no particular fungus can be identified. These fungal conidia may represent such yeast-like fungi as *Aureobasidium*, *Sporidiobolus*, unidentifiable *Acremonium* species, Basidiomycetes (basidiospores), and Ascomycetes (ascospores).
10. Keep in mind when interpreting spore trap sample reports, that indoor levels may be higher than corresponding outdoor levels (winter time in the northern U.S.) with a predominance of *Aspergillus/Penicillium* or *Cladosporium* conidia with no significant amplification of any molds.

SPORE TRAP GUIDELINES FOR INDOOR MICROBIAL CONTAMINATION

DEBRIS RATING for SPORE TRAP ANALYSIS (using 600X magnification) (Air-O-Cell, Micro 5, Allergenco D, Cyclex d, VersaTrap, etc.)		
DEBRIS RATING	CONDITIONS FOR REPORTING DEBRIS RATING	SIGNIFICANCE
0	A visible trace, including particulates and debris, is not observed.	Indicates the sample is a blank, the area is exceptionally clean, or improper sampling occurred.
1	Debris is present and <10% of the average viewing field is obscured.	Minimal amount of debris is observed.
2	Debris is present and 10% to <40% of the average viewing field is obscured.	Low amount of debris is observed, counts may be affected.
3*	Debris is present and 40% to 75% of the average viewing field is obscured.	Moderate amount of debris is observed, counts of conidia/hyphal fragments may be underestimated.
4*	Debris is present and >75% of the average viewing field is obscured.	High amount of debris is observed, counts are estimated.
5* <small>See Relative Abundance chart below</small>	Excessive debris is present.	Periphery of trace analyzed. Relative amounts of conidia/hyphal fragments noted. Suggest recollection.
6	Slide completely obscured by excessive debris.	Unable to analyze. Recollect sample.

*A rating of 3 or greater indicates that the accuracy of the analysis is likely affected.

RELATIVE ABUNDANCE of OBSERVED CONIDIA & HYPHAL FRAGMENTS	
RATING	Relative Amounts of Observed Fungal Structures per high power field (600 X)
Rare	0-1
Few	2 to 5
Moderate	6 to 10
Many	11 to 100
Numerous	>100

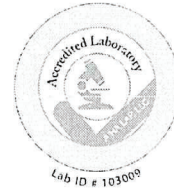
SKIN CELL ANALYSIS	
SKIN CELL RATING	Relative Amounts of Observed Skin Cells per high power field (600 X)
0	No skin cells present
1	0-1
2	2 to 5
3	6 to 10
4	11 to 15
5	≥16

End of Report



U.S. Micro-Solutions, Inc.

302 Unity Plaza
Latrobe, PA 15650
P: 724-853-4047 F: 724-853-4049
supplies@usmslab.com



LABORATORY TEST REQUEST – CHAIN OF CUSTODY

Customer Name: Sci-Tek Consultants, Inc.	Phone #: 412-371-4460	FAX #: 412-371-4462	
Address: 655 Rodi Road, Suite 303	City: Pittsburgh	State: PA	Zip: 15235
Attention To: Paula South	E-Mail: psouth@scitekanswers.com		
Sample Obtained By: Paula South	Results: <input type="checkbox"/> FAX <input checked="" type="checkbox"/> E-Mail	PO#	Proposal #
Project Name/Number: Gerard / HACP Nolan Court			
Turn-Around-Time: (Spore Trap & DME Only)*	Standard (48-72 hr) <input checked="" type="checkbox"/>	Next Day (24 hr, M-F) <input type="checkbox"/>	Same Day (6 hr, M-F) <input type="checkbox"/>
		3-Hour (M-F) <input type="checkbox"/>	Saturday <input type="checkbox"/>
Comments: If you have questions, email or use cell phone number 412-716-3683			

Sample #	Sample Date / Time	Sample Code	Analysis Code	Sample Location & Description	Sample Volume/Area
EXT-01	10-7-20 10:23	ST	SPT	Outdoor Spore Trap	45 L
60-01	10-7-20 N/A	T	DME	Living Room Tape Lift	N/A
60-02	10-7-20 N/A	T	DME	Laundry Room Tape Lift	N/A
60-03	10-7-20 N/A	S	DME	Laundry Room Swab	N/A
62-01	10-7-20 N/A	T	DME	Laundry Room Tape Lift	N/A
62-02	10-7-20 N/A	S	DME	Laundry Room Swab	N/A
64-01	10-7-20 N/A	T	DME	Laundry Room Tape Lift	N/A
64-02	10-7-20 N/A	S	DME	Laundry Room Swab	N/A

Relinquished By (Customer MUST sign) <i>Paula South</i>	Date & Time 10-7-20 14:39
Received By – Lab Use Only <i>[Signature]</i>	Date & Time 10/13/20 10:15
	Lab # 10878020

Sample Code	
A	Air Plate
B	Bulk
ST	Spore Trap
S	Swab
W	Water
T	Tape
O	Other

Analysis Code			
DME	Direct Microscopic Exam	COL	Colilert – Presence/absence of <i>E. coli</i> , coliforms
SPT	Spore Trap <input checked="" type="checkbox"/> Allergenco-D <input type="checkbox"/> AirOCell <input type="checkbox"/> M5	HPC	Heterotrophic Plate Count
FUNG	Fungal Culture – Counts w/ Identification	MYC	Mycobacteria Culture
BACT	Bacterial Culture – Counts w/ Identification	STA	<i>Staphylococcus</i> / MRSA Culture
BACT24	Bacterial Culture (24 hr) - Counts w/ presence/absence of gram-negatives	DUO	Duodoscope Culture
SSQT	Sewage Screen (quant) – Counts w/ Identification <i>E. coli</i> , <i>coliforms</i> , <i>enterococci</i> (<i>fecal streptococci</i>)	HCU	Heater/Cooler Water Culture <i>includes mycobacteria, HPC, coliforms, & P. aeruginosa</i>
SSQL	Sewage Screen (qualitative) – Presence/absence <i>E. coli</i> , <i>coliforms</i> , <i>enterococci</i> (<i>fecal streptococci</i>)	PSA	<i>Pseudomonas aeruginosa</i> Culture
SS24	Sewage Screen (24 hr) - Presence/absence <i>E. coli</i> , <i>coliforms</i> , <i>enterococci</i> (<i>fecal streptococci</i>)	iDS	Species Identification by MALDI-TOF

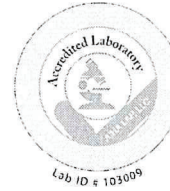
*All samples received after 1:00 p.m. Monday-Friday will be considered received the NEXT business day.

Same Day and Next Day samples received on Saturday will be reported on Monday and Tuesday, respectively.



U.S. Micro-Solutions, Inc.

302 Unity Plaza
Latrobe, PA 15650
P: 724-853-4047 F: 724-853-4049



LABORATORY TEST REQUEST – CHAIN OF CUSTODY Additional Samples

Customer Name: **Sci-Tek Consultants, Inc.**

Project Name/Number: **Gerard / HACP Nolan Court**

Sample #	Sample Date / Time	Sample Code	Analysis Code	Sample Location & Description	Sample Volume/Area	
64-03	10-7-20	N/A	B	DME	Laundry Room Bulk - Peeling Paint	Approx 2" square
66-01	10-7-20	N/A	T	DME	Laundry Room Tape Lift	N/A
66-02	10-7-20	N/A	S	DME	Laundry Room Swab	N/A
68-01	10-7-20	10:44	ST	SPT	Laundry Room Spore Trap	45 L
68-02	10-7-20	N/A	T	DME	Laundry Room Tape Lift	N/A
68-03	10-7-20	N/A	S	DME	Laundry Room Swab	N/A
70-01	10-7-20	N/A	T	DME	Laundry Room Tape Lift	N/A
70-02	10-7-20	N/A	S	DME	Laundry Room Swab	N/A
72-01	10-7-20	N/A	B	DME	Entry Room Bulk - Drywall	Approx 2" square
72-02	10-7-20	N/A	T	DME	Entry Room Tape Lift	N/A
72-03	10-7-20	N/A	S	DME	Hallway Swab	N/A

Received By – Lab Use Only 	Date & Time 10/13/20 10:15	Lab # 108780-20
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Appendix B

Site Photographs

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #1 – Bulk sample #72-01, Unit #1272 entry area



Photo #2 – Tape-lift sample #72-02, Unit #1272 entry area

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #3 – Swab sample #72-03, Unit #1272 hallway



Photo #4 – Spore trap air sample #Ext-01, Outdoors near Unit #1272

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA

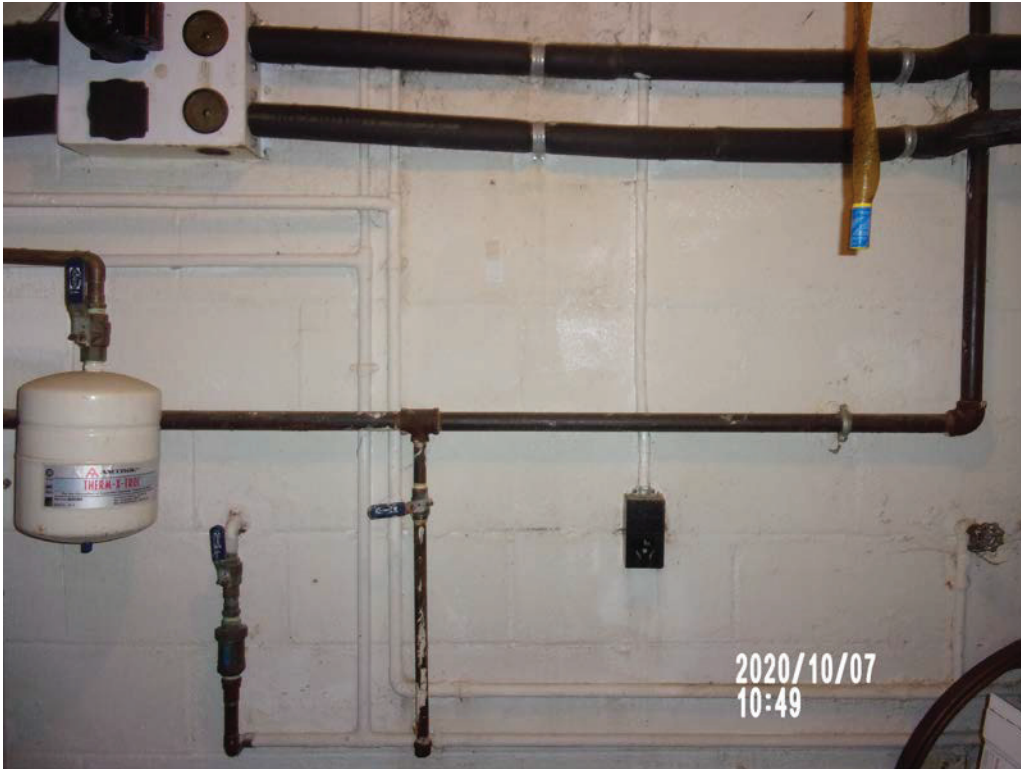


Photo #5 – Unit #1270 laundry room



Photo #6 – Tape-lift sample #70-01, Unit #1270 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #7 – Swab sample #70-02, Unit #1270 laundry room

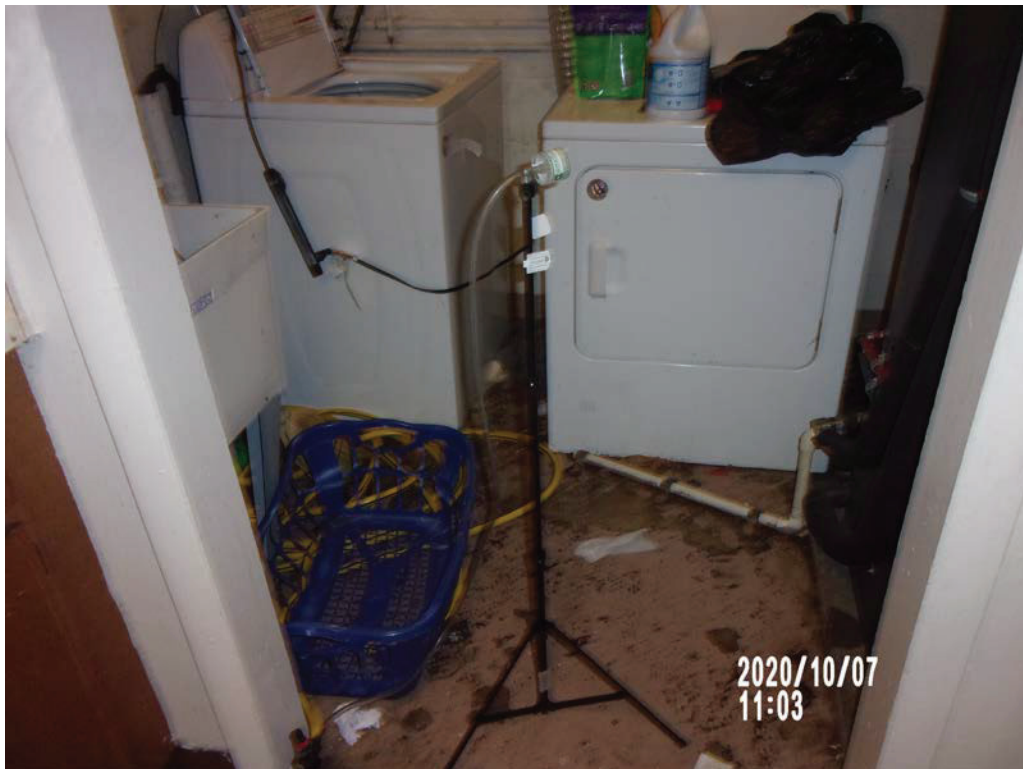


Photo #8 – Spore trap air sample #68-01, Unit #1268 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #9 – Tape-lift sample #68-02, Unit #1268 laundry room



Photo #10 – Swab sample #68-03, Unit #1268 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #11 – Unit #1268 laundry room



Photo #12 – Unit #1266 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #13 – Unit #1266 laundry room



Photo #14 – Tape-lift sample #66-01, Unit #1266 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #15 – Swab sample #66-02, Unit #1266 laundry room



Photo #16 – Unit #1264 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #17 – Unit #1264 laundry room floor



Photo #18 – Bulk sample #64-03, Unit #1264 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #19 – Tape-lift sample #64-01, Unit #1264 laundry room



Photo #20 – Swab sample #64-02, Unit #1264 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #21 –Unit #1262 laundry room



Photo #22 – Tape-lift sample #62-01, Unit #1262 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #23 – Swab sample #62-02, Unit #1262 laundry room



Photo #24 – Damp area by stairway in living room, Unit #1260

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #25 – Moisture meter at red level reading, Unit #1260 living room



Photo #26 – Tape-lift sample #60-01, Unit #1260 living room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA



Photo #27 – Unit #1260 laundry room



Photo #28 – Tape-lift sample #60-02, Unit #1260 laundry room

SITE PHOTOGRAPHS
Homewood North Family Community, Pittsburgh, PA

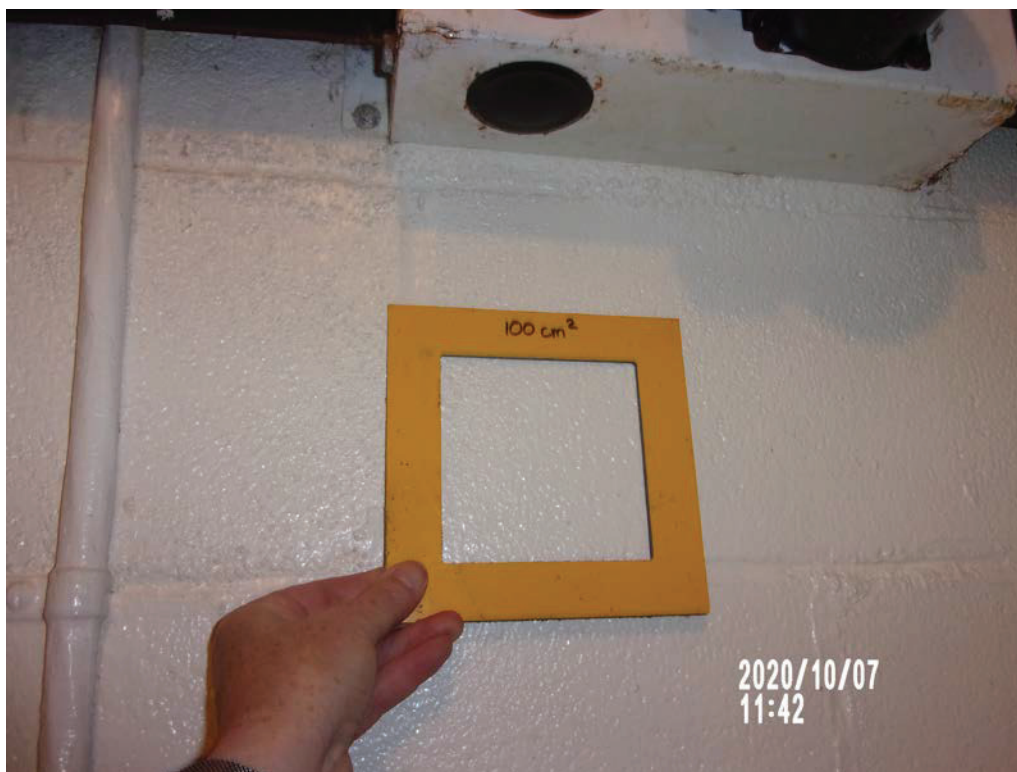


Photo #29 – Swab sample #60-03, Unit #1260 laundry room

SECTION 011000 - SUMMARY

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. Project information.
2. Work covered by Contract Documents
3. Phased construction.
4. Access to site.
5. Coordination with occupants.
6. Work restrictions.
7. Specification and drawing conventions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of HACP's Facilities.

1.3 PROJECT INFORMATION

A. Project Identification: Housing Authority of the City of Pittsburgh, Homewood North Family Community, Building #5.

1. Project Location: 1272 Nolan Court, Pittsburgh, Pennsylvania

B. Owner: (HACP) Housing Authority of the City of Pittsburgh, 100 Ross Street, 2nd Floor, Pittsburgh, Pennsylvania 15219.

1. HACP Contact: Stephen Graziani, Project Manager

C. Architect: Gerard Associates Architects, L.L.C., 445 Fort Pitt Boulevard, Suite 410, Pittsburgh, Pennsylvania 15219.

1. Representative: Dawn Danyo DiMedio, A.I.A., LEED AP BD+C
Vincent Trevino

- D. **Architect's Consultants:** The Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:
 - a. No additional design professionals retained.
- E. **Contractor:** To be determined.
- F. **Construction Manager / HACP's Representative:** To be determined.
 - 1. Construction Manager will be engaged for this Project to serve as an advisor to HACP and to provide assistance in administering the Contract for Construction between HACP and each Prime Contractor, according to a separate contract between HACP and Construction Manager.
- G. **Project Web Site:** Not applicable to this project.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

- A. **The Work of Project is defined by the Contract Documents and consists of the following:**
 - 1. **The Scope of Work Area includes but is not limited to selective demolition and construction on the interior and exterior of the existing facility. The building shall be fully occupied throughout the course of demolition and construction. The project shall be bid as s Single Prime.**
 - 2. **General Prime Contractor: The Scope of Work includes but shall not be limited to excavation of the existing rear yard as necessary to install a new waterproofing membrane system at below grade masonry/concrete construction. The work shall include installation of storm water systems and drainable fill necessary to restore existing grades. Existing site elements including fencing and concrete pavement shall be restored or replaced in accordance with the documents. Interior work includes remediation of mold and restoration of general construction as necessary upon mold removal. The general contractor shall provide a work plan for remediation prepared by persons qualified and experienced in mold removal either under the direct employ of the General Contractor or via subcontracted forces. The general contractor shall be responsible for coordinating the total scope of restorative construction based upon the mold remediation plan. All work shall be reflected in the General Contractor's bid.**
 - 3. **Electrical Prime Contractor: The Scope of Work includes but shall not be limited to miscellaneous electrical wiring in support of the General Construction. Cost shall be included in the General Contractor's bid.**
 - 4. **Mechanical Prime Contractor: The Scope of Work includes but shall not be limited to miscellaneous mechanical work in support of the General Construction. Cost shall be included in the General Contractor's bid.**

5. **Plumbing Prime Contractor:** The Scope of Work includes but shall not be limited to miscellaneous plumbing work in support of the General Construction. Cost shall be included in the General Contractor's bid.
6. All associated fees for permit and inspections required to complete the scope of work described above.

B. Type of Contract:

1. Project will be constructed under a single prime contract, General Prime.

1.5 PHASED CONSTRUCTION AND OCCUPANT DISRUPTION

A. The Work shall be conducted in a single phase and will be required to be coordinated and sequenced by the General Prime Contractor.

1. **General Prime Contractor is responsible for the Construction Schedule; Occupant Disruption Schedule, (DCPOD Schedule), coordination with all Contractors and disciplines and providing an update on a weekly bases during the Construction Phase. All Contractors and disciplines are required to coordinate and provide detailed Construction Schedules, for their disciplines scope of work, to the General Prime Contractor, to be incorporated into the comprehensive schedule. All milestones and occupancy disruptions shall be identified within the schedule and shall be provided at least 1 week prior to occupant disruptions, to allow HACP's Representative to coordinate with occupants.**
 - a. **General Phasing and Occupant Disruption Schedule Milestones to be minimally identified: Start and End dates of specific scope of work milestones, occupant milestones, substantially complete milestones, ready for occupancy milestones and other associated milestones for approval from HACP and the Architect minimally for the Site, Building, each Elevation, each Public Area, each Employee Occupied Area, Roofs and all Interior Scope of Work. Schedules to be inclusive of all required Occupant Disruption and Displacement time frames for each scope of work Weekly and Daily. Listing all types of disruption. IE: Noise, Light, Odors, Displacement of Occupant, etc.**
2. **General Prime Contractor to Schedule a Demolition and Construction Phase Occupant Disruption Meeting within 7 calendar days of receiving the Notice to Proceed.**
3. **Demolition and Construction Phasing Occupant Disruption Schedule (DCPOD Schedule) shall be provided by each Contractor/Discipline to the General Prime Contractor within 14 calendar days from Notice to Proceed.**
4. **General Prime Contractor is to provide the initial DCPOD Schedule within 28 calendar days after the Notice to Proceed.**

-
5. Phases can include multiple areas of scope of work simultaneously.
 6. No Demolition or Construction shall start until the DCPOD Schedule has been provided and approved by HACP's Representative to Proceed.
- B. Before commencing Work of each phase, submit an updated copy of Contractor's construction schedule showing the sequence, commencement and completion dates for all phases of the Work.

1.6 USE OF PREMISES

- A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.
- B. Use of Site: Limit use of Project site to work zones delineated in General Prime Contractor's approved CDPOD Plan and Schedule. Do not disturb portions of Project site beyond areas in which the Work is indicated.
1. Limits: Continue construction operations to HACP approved limits of work per construction plan.
 2. HACP Occupancy: Allow for HACP resident and employee occupancy of Project site.
 3. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to HACP, HACP's employees and emergency vehicles at all times. Each Prime Contractor will be responsible for providing offsite parking, offsite storage of materials, and offsite placement of trailer.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations and minimize space and time requirements for materials and equipment onsite.
- C. Condition of Existing Building: Maintain existing building in a weather-tight condition throughout all phases of the demolition and construction period. Repair damage caused by construction operations. Protect building and its occupants at all times during construction period.

1.7 COORDINATION WITH OCCUPANTS

- A. Full HACP Resident and Employee Occupancy: HACP employees and residents will occupy the site and existing building during entire construction period. Cooperate with Construction Manager/HACP Representative during construction operations to minimize conflicts and facilitate HACP usage. Perform the Work so as not to interfere with HACP's day to day operations and to have minimal daily disruption to each apartment resident. Maintain existing exits unless otherwise indicated.

1. **Maintain access to existing walkways, corridors and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors or other occupied or used facilities without written permission from HACP and approval of authorities having jurisdiction.**
 2. **Notify HACP not less than 120 hours in advance of activities that will affect HACP's operations.**
- B. Owner Limited Occupancy of Completed Areas of Construction: HACP reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of furniture and limited occupancy shall not constitute acceptance of the total Work.**
1. **Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to HACP acceptance of the completed Work.**
 2. **Obtain a Certificate of Occupancy from authorities having jurisdiction before limited HACP occupancy.**
 3. **Before limited HACP occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, HACP will operate and maintain mechanical and electrical systems serving occupied portions of the Work.**
 4. **On occupancy, HACP will assume responsibility for maintenance and custodial service for occupied portions of Work.**
- C. Access to Occupied Building and Occupied Areas of the Building during Construction: HACP shall require access to occupied buildings and occupied areas of the building during the entire construction period. The Contractor shall provide temporary access and cooperate with HACP and HACP's contractors to provide access for the duration of the Work. Any temporary entrances shall be accessible as determined by UFAS standards and meet HACP's requirements for secure access to the buildings.**
1. **General Prime Contractor (G.C.) shall provide:**
 - a. **Demolition to accommodate temporary entrances and the reinstallation or replacement in like kind of materials removed or damage during the work.**
 - b. **Temporary Security Door and Frame:**
 - 1) **Door to be insulated hollow metal painted lack to match existing frame, with half wire glass for security. Door to be UFAS compliant.**
 - 2) **Frame to be hollow metal.**
 - c. **Wall area adjacent to opening to be in filled. Interior – drywall, exterior with material to maintain building weather tightness.**

-
- d. Any ramp and landing required to provide temporary access to the entrance area shall be removed without visible signs or have areas replaced in kind.

1.8 WORK RESTRICTIONS

- A. **Work Restrictions, General:** Comply with restrictions on construction operations.
1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. **On-Site Work Hours:** Limit work in the existing building to normal business working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated or directed by HACP Contracting Officer in writing.
1. **Weekend Hours:** Only upon receipt of written approval from HACP Contracting Officer in writing.
 2. **Early Morning Hours:** None without prior approval of HACP Contracting Officer in writing.
 3. **Hours for Utility Shutdowns:** None without prior approval of HACP Contracting Officer in writing.
 4. **Hours for noisy activity:** 8:00 a.m. to 5:00 p.m.
- C. **Existing Utility Interruptions:** Do not interrupt utilities serving facilities occupied by HACP or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
1. Notify HACP's Representative and Architect not less than 7 calendar days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without HACP's written permission.
 3. Interruptions shall be scheduled such that current tenants are not without service for more than 2 hours.
 4. Schedule interruptions such that the minimum numbers of units are without heat or water at any given time.
- D. **Noise, Vibration and Odors:** Coordinate operations that may result in high levels of noise and vibration, odors other disruption to HACP occupancy with HACP.
1. Notify HACP Representative not less than two days in advance of proposed disruptive operations.
 2. Obtain HACP's written permission before proceeding with disruptive operations.
- E. **Nonsmoking Building:** Smoking is not permitted within the building or within 25 feet (8M) of entrances, operable windows, or outdoor-air intakes.
- F. **Controlled Substances:** Use of tobacco products and other controlled substances on Project site is not permitted.

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- G. **Employee Identification:** Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.
 - H. **Employee Screening:** Comply with HACP's requirements for drug and background screening of Contractor personnel working on Project site.
 - 1. Maintain list of approved screened personnel with HACP's Representative.

1.9 SPECIFICATION AND DRAWING CONVENTIONS

- A. **Specification Content:** The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall", "shall be", or "shall comply with", depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. **Division 01 General Requirements:** Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. **Drawing Coordination:** Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. **Terminology:** Materials and products are identified by the typical generic terms used in the individual Specification Sections.
 - 2. **Abbreviations:** Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
 - 3. **Keynoting:** Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 011200 – MULTIPLE CONTRACT SUMMARY

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 a summary of each contract, including responsibilities for coordination and temporary facilities and controls.
- B. Specific requirements for work of each contract are also indicated in individual Specification Sections and on Drawings.
- C. Related Sections:
 - 1. Division 01 Section "Summary" for the Work covered by the Contract Documents, restrictions on use of the Project site, phased construction, coordination with occupants, and work restrictions, and continual fire protection systems.
 - 2. Division 01 Section "General Conditions Responsibility Matrix" for division of responsibilities for the work.
 - 3. Division 01 Section "Project Management and Coordination" for general coordination requirements.

1.3 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, the condition at which roofing is insulated and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures equivalent in weather protection to permanent construction.

1.4 PROJECT COORDINATION

- A. General Construction Contractor shall be responsible for coordination of all trades on sites. This project shall be bid as a single prime contract – General Construction.

1.5 COORDINATION ACTIVITIES

-
- A. Refer to “General Conditions Responsibility Matrix” that describes ownership of each of the following coordination activities, but are not limited to the following:
1. Provide overall coordination of the Work.
 2. Coordinate shared access to workspaces.
 3. Coordinate product selections for compatibility.
 4. Provide overall coordination of temporary facilities and controls.
 5. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
 6. Coordinate construction and operations of the Work with work performed by each Contract and Owner’s construction forces.
 7. Prepare coordination drawings in collaboration with each contractor to coordinate work by more than one contract.
 8. Coordinate sequencing and scheduling of the Work. Include the following:
 - a. Initial Coordination Meeting: At earliest possible date, arrange and conduct a meeting with all contractors and Owner’s Representative for sequencing and coordinating the Work; negotiate reasonable adjustments to schedules.
 - b. Prepare a combined Contractors’ construction schedule for entire Project. Base schedule on preliminary construction schedule. Secure time commitments for performing critical construction activities from contractors. Show activities of each contract on a separate sheet. Prepare a simplified summary sheet indicating combined construction activities of contracts.
 - 1) Submit schedules for approval
 - 2) Distribute copies of approved schedules to contractors.
 9. Provide quality-assurance and quality-control services specified in Division 01 Section “Quality Requirements”.
 10. Coordinate sequence of activities to accommodate tests and inspections, and coordinate schedule of tests and inspections.
 11. Provide information necessary to adjust, move, or relocate existing utility structures affected by construction.
 12. Provide progress cleaning of common areas and coordinate progress cleaning of areas or pieces of equipment where more than one contractor has worked.
 13. Coordinate cutting and patching.
 14. Coordinate protection of the Work.
 15. Coordinate firestopping.
 16. Coordinate completion of interrelated punch list items.
 17. Coordinate preparation of Project record documents if information from more than one contractor is to be integrated with information from other contractors to form one combined record.
 18. Print and submit record documents if installations by more than one contractor are indicated on the same contract drawing or shop drawing.
 19. Collect record specification sections from contractors, collate Sections into numeric order, and submit complete set.
 20. Coordinate preparation of operation and maintenance manuals if information from more than one contractor is to be integrated with information from other contractors to form one combined record.

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21. Coordinate the waste disposal plan for the project to include all communications with sub-contractors.
 22. Verify provision of waste management facilities, to divert as much waste as possible from landfill and provide training to other prime contractors.
 - a. Evaluate facilities in enough time prior to removal from the site to ensure load complies with requirements or to require responsible prime to remove inappropriate items.
 - b. Allow each prime a minimum of half a working day to correct incorrect disposal of waste items.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011200

SECTION 012100 – ALTERNATES

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 administrative and procedural requirements governing alternates.
 - 1. Certain items are specified in the Contract Documents by Alternate. Alternates have been established to define specific scopes of work subject to deletion from the project.
- B. Types of Alternates include the following:
 - 1. No alternates are required.

1.3 COORDINATION

- A. Coordinate work defined by Alternate with other portions of the Work.
 - 1. No change to Contractor's indirect expense is permitted for selection of higher or lower priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012100

SECTION 012900 – Payment Procedures

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 administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Division 1 “Allowances” for procedural requirements governing the handling and processing of allowances.
 - 2. Division 1 “Unit Prices” for administrative requirements governing the use of unit prices.
 - 3. Division 1 “Contract Modification Procedures” for administrative procedures for handling changes to the Contract.
 - 4. Division 1 “Construction Progress Documentation” for administrative requirements governing the preparation and submittal of the Contractor’s construction schedule.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to Various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.

1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor’s construction schedule. Cost-loaded Critical Path Method Schedule may serve to satisfy requirements for the schedule of values.
 - 1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with continuation sheets.

- b. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 2. Submit the schedule of values to Architect through Construction Manager/HACP's Representative at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 3. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values coordinated with each phase of payment.
 4. Sub-schedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide sub-schedules showing values coordinated with each element.
 5. Sub-schedules for Separate Design Contracts: Where HACP has retained design professionals under separate contracts who will each provide certification of payment requests, provide sub-schedules showing values coordinated with the scope of each design services contract as described in Section 011000 "Summary".
- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
 1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. HACP's Project number.
 - e. Contractor's name and address.
 - f. Date of submittal.
 2. Arrange schedule of values consistent with format of appropriate HUD forms. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 - 1) Labor
 - 2) Materials.
 - 3) Equipment.

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of Contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
6. Provide separate line items in the schedule of values for initial cost materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate HACP payments or deposits, if any, and balance to be paid by Contractor.
9. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
10. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and Construction Manager/HACP's Representative and reviewed and paid upon approval of HACP's Contracting Officer.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between HACP and Each Prime Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

- C. Payment Application Times: Submit Application for Payment to Project Manager/HACP's Representative by the 21st day of the month, unless indicated otherwise. The period covered by each Application for Payment is one month, ending on the last day of the month.
1. Submit draft copy of Application for Payment seven days prior to due date for review by Construction Manager/HACP's Representative and the Architect.
- D. Application for Payment Forms: Use forms provided by HACP for Applications for Payment.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Application will be returned without action if incomplete.
1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
 4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.
- F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
1. Provide certificate of insurance, evidence of transfer of title to HACP, and consent of surety to payment, for stored materials.
 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Construction Manager/HACP's Representative and Architect by a method

ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction to retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. HACP reserves the right to designate which entities involved in the Work must submit waivers.
 4. Waiver Forms: Submit executed waivers of lien on forms acceptable to HACP.
- I. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion on an item, submit conditional final or full waivers.
 3. HACP reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or proceeded by conditional final waivers from every entity involved with performance of the Work covered by the application, which is lawfully entitled to a lien.
 5. Waiver Forms: Submit executed waivers of lien on forms, acceptable to HACP.
- J. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
 5. Products list (preliminary if not final).
 6. Schedule of unit prices.
 7. Submittal schedule (preliminary if not final).
 8. List of Contractor's staff assignments.
 9. List of Contractor's principal consultants.
 10. Copies of building permits.

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11. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 12. Initial progress report.
 13. Report of preconstruction conference.
 14. Certificates of insurance and insurance policies.
 15. Performance and payment bonds.
 16. Data needed to acquire HACP's insurance.
- K. Interim application for Payment: Administrative actions and submittals that are scheduled at regular intervals to coincide with Application submission.
1. Updated Schedule of Values.
 2. Schedule of salvaged, refurbished and reused materials.
 3. Schedule of recycled product content.
 4. Schedule of regional material compliance.
 5. Schedule of certified wood products used on the project.
- L. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for HACP occupancy of designated portions of the Work.
- M. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. Use appropriate HUD or approved HACP form for, "Contractor's Affidavit of Payment of Debts and Claims".
 5. Use appropriate HUD or approved HACP form, "Contractor's Affidavit of Release of Liens".
 6. AIA Document G707 or approved HACP form, "Consent of Surety to Final Payment".
 7. Evidence that claims have been settled.
 8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when HACP took possession of and assumed responsibility for corresponding elements of the Work.
 9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

Indoor Air Quality and Water Infiltration
Building #5, Homewood North Family Community
Housing Authority of the City of Pittsburgh
Task Order #39

Payment Procedures
012900
April 2, 2021

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 – PROJECT MANAGEMENT AND COORDINATION

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 administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Administrative and supervisory personnel.
 - 3. Coordination drawings.
 - 4. Requests for Information (RFIs).
 - 5. Project meetings.
- B. Contractor shall participate in coordination requirements for all work proceeding on site, not just work included in this contract. Certain areas of responsibility are assigned to a specific contractor.
- C. Reference to "Contractor" on the drawings and the specifications shall refer to the each separate Prime Contractor, unless noted otherwise, with coordination responsibilities specified within this Section.
- D. Related Requirements:
 - 1. Section 011200 "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
 - 2. Section 017000 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

1.3 DEFINITIONS

- A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

- A. Coordination: The contractors shall coordinate their construction operations with those of the HACP's Contractors and Construction Manager/HACP's Representative and entities to ensure efficient and orderly installation of each part of the Work and the work by other HACP's Contractors.

The existing structure shall remain occupied and in use for the duration of construction activities. Coordination with the occupant shall be conducted and a work schedule agreed to by all parties, including but not limited to the Occupant, HACP Construction Manager/Representative, Architect and Contractors prior to the onset of work. No portion of the project site shall be unusable to the tenant/Occupant for a period of longer than 5 business days. Where completion of the work requires temporary relocation of Occupant furniture, fixtures and equipment, Contractor shall be responsible for temporary relocation and replacement.

- B. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service and repair of all components, including mechanical and electrical.
5. Maintain safe access to all existing areas of the site.
6. Coordinate access to the site that will be concurrently under construction with other contractors.

- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for HACP and separate contractors if coordination of their Work is required.

- D. Administrative Procedures: Coordinate scheduling and timing of administrative procedures with construction activities and activities of other contractors to ensure orderly progress of the Work. Activities include:

1. Preparation of Contractors' construction schedule.
2. Preparation of Contractors' Demolition and Construction Phasing Occupant Disruption Schedule (DCPOD).
3. Preparation of the schedule of values.
4. Preparation of the submittal schedule.

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5. Installation and removal of temporary facilities and controls.
 6. Delivery and processing of submittals.
 7. Progress meetings.
 8. Pre-installation conferences.
 9. Project closeout activities.
 10. Startup and adjustment of systems.
 11. Project closeout activities.
 12. All RFI's logged and coordinated through General Construction contractor.

- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water and materials.

1.5 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

- a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
- b. Locate existing utilities that enter the building.
- c. Locate existing Building Automation System (BAS) lines that enter the building.
- d. Indicate required installation sequences.
- e. Indicate functional and spatial relationships for components of systems.
- f. Show location and size of access doors required for access to concealed controls.
- g. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

2. Sheet Size: At least 11 by 17 inches but no larger than 30 by 42 inches.
3. Submit Digitally to Architect through General Contractor's project web site: PDF electronic files.
4. After return from Architect, mark up and provide one printed copy to be located in trailer as a Project Record Drawing, and provide HACP with five printed copies.
5. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

- B. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:

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1. File Preparation Format: Same digital data software program, version and operating system as original Drawings.
 2. File Preparation Format: DWG, Version 2013, operating in Microsoft Windows operating system.
 3. File Submittal Format: Submit or post coordination drawing files using Portable Data File (PDF) format.
 4. Architect will furnish the Contractor one set of digital data files of Drawings for use in preparing coordination digital data files. Refer to associated fees.
 - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
 - b. Refer to "Division 01 Section Summary for requirements for using Architect's digital files.
 - c. Digital Data Software Program: Drawings are available in Autodesk AutoCAD 2013 DWG format.

- C. Key Personnel Names: Within 7 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list on site, in temporary field office, on Project Website and by each temporary telephone. Keep list current at all times.

1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.

1.7 PROJECT MEETINGS

- A. General: Construction Manager/HACP's Representative will schedule and conduct meetings and conferences at Project site. Prepare the meeting agenda. Distribute agenda, record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including HACP and Architect, within three days of the meeting.

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- B. Preconstruction Conference: Construction Manager/HACP's Representative will schedule and conduct a preconstruction conference before starting construction, at a time convenient to HACP and Architect, but no later than 7 days after execution of the Agreement. Hold the conference at Project site. Conduct the meeting to review responsibilities and personnel assignments.
- C. Progress Meetings: The Architect will Schedule and conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.
1. Attendees: In addition to representatives of HACP, Architect and Construction Manager/HACP's Representative, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Review schedule for next period.
 - b. Cutting and Patching: Review requirements for cutting and patching work for each prime contract. Assign responsibility for each prime contractor to identify areas requiring cutting for the general to execute. Periodic meetings shall be held until the requirement for cutting and patching has been satisfied. Cutting and patching for all prime contractors shall be performed by the General Construction Contractor based upon locations as identified by the Prime Contractors.
 3. Minutes: The Architect will record the meeting minutes.
 4. Reporting: The Architect will distribute the meeting minutes to each party present and to parties who should have been present, via email in digital format with-in 3 days of the meetings date.
- D. Pre-installation Conference: Conduct a pr-installation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Construction manager of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.

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- b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written recommendations.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- E. Project Closeout Conference: Construction Manager/HACP's Representative will schedule and conduct a project closeout conference, at a time convenient to HACP and Architect, but no later than 10 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of HACP, Construction Manager/HACP's Representative, Architect and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the

meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Requirements for preparing sustainable design documentation.
 - e. Requirements for preparing operations and maintenance data.
 - f. Requirements for delivery of material samples, attic stock, and spare parts.
 - g. Requirements for demonstration and training.
 - h. Preparation of Contractor's punch list.
 - i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - j. Submittal procedures.
 - k. Coordination of separate contracts.
 - l. HACP's partial occupancy requirements.
 - m. Installation of HACP's furniture, fixtures and equipment.
 - n. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

1.8 REQUESTS FOR INTERPRETATION (RFI's)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
 1. RFI's shall originate with Contractor. RFI's submitted by entities other than Contractor will be returned with no response.
 - a. RFI's should be submitted through the coordinating contractor.
 2. Coordinate and submit RFI's in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:

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1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Architect and Construction Manager/HACP's Representative.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies and attachments.

C. Format of RFI's:

1. RFI's shall be submitted electronically via email on standard RFI form. Paper copies may be substituted in addition.
2. Identify each page of attachments with the RFI number and sequential page number.

D. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow seven working days for Architect's response for each RFI. RFI's received after 1:00 p.m. will be considered as received the following work day.

1. The following RFI's will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Architect's actions on submittals.
 - f. Incomplete RFI's or RFI's with numerous errors.
2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.

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3. Architect's action on RFI's that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 1 Section "Contract Modification Procedures".
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Construction Manager/HACP's Representative in writing within 7 days of receipt of the RFI response.

 - E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect and Construction Manager/HACP's Representative within seven days if Contractor disagrees with response.

 - F. RFI Log: Prepare, maintain, and submit a tabular log of RFI's organized by the RFI number. RFI Log shall be submitted electronically via email. Submit log weekly. Use CSI Log Form 13.2B. Include the following:
 1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect and Construction Manager/HACP's Representative.
 4. RFI number including RFI's that were dropped and not submitted.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date Architect's and Construction Manager's/HACP's Representative response was received.
 8. Identification of related Minor Change in the Work. Construction Change Directive, and Proposal Request, as appropriate.

 - G. The Architect shall maintain the RFI Log between the Architect and Contractor. It is recommended that the Contractor maintain a separate RFI log with subcontractors.

1.9 PROJECT WEB SITE (Not Used)

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

Project Name: Homewood North Family Community – Building #5

GAA Project Number: 2034

Date: _____

In accepting and using digital files, provided by Gerard Associates Architects, L.L.C. the undersigned recognizes and accepts that:

1. Gerard Associates Architects, L.L.C. is providing these digital files for the undersigned's sole convenience, and does not assume any responsibility for the accuracy or suitability of information contained therein for the use intended by the undersigned; and
2. The undersigned is fully and solely responsible to verify the accuracy of the digital files and the actual built conditions, as it may affect the undersigned's work; and
3. The digital files are an instrument of service of Gerard Associates Architects, L.L.C. who shall be deemed the author of the digital files and shall retain all common law, statutory and other reserved rights, including the copyright; and
4. Under no circumstances shall the transfer of the digital files, or other instruments of service for use by the undersigned be deemed to be a sale by Gerard Associates Architects, L.L.C. and Gerard Associates Architects, L.L.C. makes no warranties, express or implied, of merchantability or of fitness for a particular purpose; and
5. The digital files shall not be used in whole or part for any project or purpose, other than The Housing Authority of the City of Pittsburgh Task Order #39 Homewood North Community.
6. To the fullest extent permitted by law, the undersigned hereby indemnifies and holds harmless Gerard Associates Architects, L.L.C. and its officers, directors, employees and consultants from and against all claims, damages, losses and expenses, including, but not limited to, attorney's fees arising out of, relating to and resulting from use of any information provided by Gerard Associates Architects, L.L.C.
7. A service and administrative fee of \$100 for each digital file is payable to Gerard Associates Architects, L.L.C. prior to transfer of the requested files.

The Undersigned:

Signature

Company Name (Print Clearly)

Name and Title (Print Clearly)

Date

SECTION 013300 – SUBMITTAL PROCEDURES

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 administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples and other submittals.
- B. Related Requirements:
 - 1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Section 013100 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.
- C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.
 - 1. E-mail all submittals as PDF file attachments to HACP Representative and Architect for review.

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- a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - b. No hardcopies of the submittal is required unless specifically requested by the Architect or HACP representative.
 2. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 3. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - C. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
 1. Submittals shall be "packaged" together by the due date they are needed by.
 - a. Contractor shall allow time for resubmission of items.
 - b. Contractor shall prioritize submissions with-in packages.
 2. Submittal Packages shall be submitted at time indicated on the agreed upon schedule.
 - D. Processing Time: Allow enough time for submittal review, including time for re-submittals, as follows. Time for review shall commence in Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

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1. Initial Review: Allow 7 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Re-submittal Review: Allow 7 days for review of each re-submittal.
 4. Sequential Review: Where sequential review of submittals by Architect's Consultants, HACP or other parties is indicated, allow 10 days for initial review of each submittal.
 - a. Sequential review shall be required for Submittals specified in the HVAC and Electrical disciplines.
- E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name and address if Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Submittal number or other unique identifier, including revision identifier.
 - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Location(s) where product is to be installed, as appropriate.
 - l. Other necessary identification.
- F. Deviations: Highlight or otherwise specifically identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
1. Submit one copy of submittal to Architect in addition to specified number of copies to concurrent reviewer.
 2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

H. Electronic Submittal Delivery

1. Submittals shall be processed and delivered electronically via E-mail and PDF file attachments. Comments and sketches by the Architect shall be delivered to the Contractor electronically via E-mail and PDF file attachments.
2. The following types of submittals included in, but not limited to, the list below shall be delivered to the architect electronically:
 - a. Product Data.
 - b. Certifications.
 - c. Test Data.
 - d. Schedules.
 - e. Calculations.
 - f. Mix Designs.
 - g. Warranty Information
3. All submittals which are 11" x 17" or smaller shall be delivered electronically via E-mail and PDF file attachment. The Contractor shall contact the Architect regarding delivery method for submittals larger than 11" x 17"
4. Shop Drawings may be delivered via E-mail and PDF file attachment. The Shop Drawings shall be packaged to assist the electronic review process on a computer screen. This includes keeping the number of pages to a minimum. Shop Drawings shall be broken down into 20 page increments and issued under separate submittal numbers.
5. All samples and color selections shall be delivered by mail or courier to the Architect for review. Samples and color selection shall not be reviewed electronically. See separate section of specifications for quantities and sample selection process. The Architect shall return review comments via web-based software.

I. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.

1. Transmittal Form: Provide locations on form for the following information:
 - a. Project name.
 - b. Date.
 - c. Destination To:
 - d. Source (From:).
 - e. Names of subcontractor, manufacturer, and supplier.
 - f. Category and type of submittal.
 - g. Submittal purpose and description.
 - h. Specification Section number and title according to specifications.
 - i. Drawing number and detail references, as appropriate.
 - j. Transmittal number, numbered consecutively.
 - k. Submittal and transmittal distribution record.
 - l. Remarks.
 - m. Signature of transmitter.
2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents,

including minor variations and limitations. Include same label information as related submittal.

- J. Re-submittals: Make re-submittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked "No Exception Taken".
- K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- L. Use for Construction: Use only final submittals with mark indicating "No Exception Taken" taken by Architect.
- M. Submittal Logs: The Architect shall maintain the submittal log between the Architect and Contractor. It is recommended that the Contractor maintain a submittal log with subcontractors.

1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

- A. General: At Contractor's written request, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
 - 1. The Architect will provide electronic files for a fee. Drawings or Electronic media requested by the Contractor on the Drawings/Electronic Media Request Form, as provided by the Architect can be purchased upon completion of the "Release for Use of Electronic Drawing Media" form, also available from the Architect. Fees associated with a request are limited to administrative expenses incurred in satisfying a request and are set at \$100 per file request.

PART 2 - PRODUCTS

2.1 SUBMITTAL SCHEDULE

- A. Contractor must submit to the Architect for review a submittal schedule that is included as part of the construction schedule. The specific requests for review of product data; shop drawings for product and systems must be identified with critical timing requirements, both for submission and review.

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1. Contractor to submit a draft to Architect for agreement with required approval dates with submission time and submission packages.
 2. Architect will review for items that will require earlier than scheduled review to meet required approval dates.
 3. Submittals shall be "packaged" together by the due date the contractor will need approval by in order to timely order material.
 - a. Contractor shall allow time for resubmission of rejected items.
 - b. Contractor shall prioritize submissions with-in packages.
 4. Submittal Packages shall be submitted at time indicated on the agreed upon schedule.
 5. See Division 1 Section "Construction Progress Schedules" for additional requirements.
- B. Timing of submittals will adhere to the submitted agreed upon schedule.
1. Contractor will prioritize groups of submittals together in packages as defined in the contract for review and approval by architects and consulting engineers.
 2. Contractor shall schedule the submission packages the Architect, return due times, and critical Lead times on the construction schedule. To aid the Architect in staffing large volume of submittals for review.
 - a. Contractor shall allow sufficient time for resubmission for items that may be rejected.
 - b. The submittal packages and schedule shall be evaluated and items that have longer review times as determined by HACP, or Architect shall be submitted in an earlier package by the contractor.

2.2 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings not as Product Data.
 2. Mark each copy of each submittal to show which products and options are applicable.
 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operation and maintenance manuals.

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- k. Compliance with specified referenced standards.
 - l. Testing by recognized testing agency.
 - m. Application of testing agency labels and seals
 - n. Notation of coordination requirements.
4. Submit Product Data before or concurrent with Samples.
- a. E-mail submittals as PDF file attachments to Architect for review. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - b. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings: Prepare Project specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the contract Documents or standard printed data, unless submittal of Architect's CAD Drawings are otherwise permitted.
- 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of Products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shop work manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design Calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.
 - m. Relationship to adjoining construction clearly indicated.
 - n. Seal and signature of professional engineer, if specified.
 - o. Wiring Diagrams: Differentiate between manufacturer-installed and field installed wiring.
 - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
 - a. E-mail shop drawings as PDF file attachments to Architect for review. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - b. Mark up and retain one returned copy as a Project Record Document.
 - c. Submit five copies where copies are required for operation and maintenance manuals.
- D. Samples: Submit Samples for review of kind, color, pattern and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

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1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample Source
 - d. Number and title of appropriate Specification Section.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as HACP's property, are the property of Contractor.
 4. Samples for initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches, showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three sets of Samples. Architect will retain one Sample set, provide HACP Representative with one Sample set and return one set as a Project Record Sample.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product.
 2. Number and name of room or space.
 3. Location within room or space.

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- a. E-mail information as PDF file attachment to Architect for review. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - b. Mark up and retain one returned copy as a Project Record Document.
 - c. Submit five copies where copies are required to operation and maintenance manuals.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation".
- G. Submittals Schedule: Comply with requirements of this section and those specified in Division 1 Section "Construction Progress Documentation".
- H. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures".
- I. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures".
- J. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
 2. Number and title of related Specification Section(s) covered by subcontract.
 3. Drawing number and detail references, as appropriate, covered by subcontract.
 4. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Architect will return copies.
 - a. Mark up and retain one returned copy as a Project Record Document.

2.3 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit informational Submittals required by other Specification Sections.
1. Number of Copies:
 - a. E-mail submittals as PDF file attachment to Architect for review. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - b. Mark up and retain one returned copy as a Project Record Document.
 - c. Submit five copies where copies are required for operation and maintenance manuals. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

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2. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements".
- B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination".
 - C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
 - D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
 - E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
 - F. Manufacturer's Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
 - G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
 - H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
 - I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
 - J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
 - K. Schedule of Tests and inspections: Comply with requirements specified in Division 1 Section "Quality Requirements".
 - L. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

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- M. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- N. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data".
- O. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- P. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
 2. Required substrate tolerances.
 3. Sequence of installation or erection.
 4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- Q. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement weather conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- R. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- S. Material Safety Data Sheets (MSDS's): Do not submit information directly to HACP or Architect.

1. Architect will not review submittals that include MSDS's and will return the entire submittal for resubmittal.

2.4 DELEGATED-DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:

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1. "No Exception Taken": Proceed with work covered by submittal provided it complies with requirements of Contract Documents; final acceptance will depend upon that compliance.
 2. "Make Corrections Noted": Proceed with work covered by submittal provided it complies with notations or corrections on submittal and requirements of Contract Documents; final acceptance will depend on that compliance.
 3. "Revise and Resubmit": Do not proceed with work covered by submittal, including purchasing, fabrication, delivery or other activity. Revise and/or prepare a new submittal in accordance with notations, and resubmit without delay. Repeat this procedure, if necessary, to obtain a different action mark. Do not use submittals marked "Revise and Resubmit" at Project site, or elsewhere where work is in progress.
 4. "Not Acceptable": Work covered by this submittal is completely unacceptable. Prepare new submittal and submit without delay.
 5. "Subject to Action by Architect's Consultant": Work covered by this submittal has been reviewed by the Architect but must also be reviewed by Architect's consultant before work covered by submittal can be purchased, fabricated, delivered, or used on this project.
- B. Informational Submittals: Architect will review each submittal and will return it with appropriate comments. Architect will forward each submittal to appropriate party.
- C. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review.
- D. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 013300

SECTION 014000 – QUALITY REQUIREMENTS

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 administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and control services required by Architect, HACP, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mock-ups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate

compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.

D. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

E. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter". It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.

F. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 ACTION SUBMITTALS

A. Shop Drawings: For integrated exterior mockups, provide plan, sections, and elevations, indicating materials and size of mockup construction.

1, Indicate manufacturer and model number of individual components.

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2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.6 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 1. Specification Section number and title.
 2. Description of test and inspection.
 3. Identification of applicable standards.
 4. Identification of test and inspection methods.
 5. Number of tests and inspections required.
 6. Time schedule or time span for tests and inspections.
 7. Entity responsible for performing tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.
- C. Reports: Prepare and submit certified written reports that include the following:
 1. Date of issue.
 2. Project title and number.
 3. Name, address and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Names of individuals making tests and inspections.
 6. Description of the Work and test and inspection method.
 7. Identification of product and Specification Section.
 8. Complete test or inspection data.
 9. Test and inspection results and an interpretation of test results.
 10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and re-inspecting.
- D. Permits, Licenses and Certificates: For HACCP's records, submit copies of permits, licenses certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Install Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated or this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. "Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design and extent.
- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirement for specialists shall not supersede building codes and regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: a nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

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- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements and test methods, comply with the following:
 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - e. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.8 QUALITY CONTROL

- A. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- B. Tests and inspections are the Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ same entity engaged by HACP, unless agreed to in writing by HACP.
 2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 4. Testing and inspecting requested by Contractor and not require by the Contract Documents are Contractor's responsibility.
 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. Manufacturer's Field Services: Where indicated, engage a factory authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures".

- D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-sit-tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- F. Associated Services: Cooperate with agencies performing required tests, inspections and similar quality control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples and similar activities.
- H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.

1. Distribution: Distribute schedule to HACP, Architect, testing agencies and each party involved in performance of portions of the Work where tests and inspections are required.

1.9 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
 1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
 2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 4. Submitting a final report of special tests and inspections at Substantial Completion which includes a list of unresolved deficiencies.
 5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 6. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
 1. Date test or inspection was conducted.
 2. Description of the Work tested or inspected.
 3. Date test or inspection results were transmitted to Architect.
 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

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- A. General: On completion of testing, inspecting, sample taking and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching".
 - B. Protect construction exposed by or for quality-control service activities.
 - C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

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 PROJECT CONDITIONS

- A. This Section is not intended to limit types and amounts of temporary construction facilities and controls required. Omission from this Section will not be accepted as an application that such temporary activity is not required for successful completion of the work and compliance with requirements of the Contract Documents.
- B. Provide and maintain each temporary construction facility and control when required for proper performance of the work. Terminate and remove when no longer needed or when permanent facilities, with proper authorization, are available for use.
- C. Obtain and pay for all required applications, fees, permits and inspections required for temporary construction facilities and controls.
- D. Install, operate, maintain and protect temporary construction facilities and controls in a manner and at locations which are safe, non-hazardous, sanitary and adequately protect project work, workmen and the public.
- E. The building will be occupied during construction. Provide temporary barriers to restrict access to the area(s) of construction for the health, safety and welfare of the Occupants and other members of the Public, to only those individuals that need for access to the area to complete the Work. Temporary barriers shall be required to coordinate with the Demolition and Construction Phasing and Occupant Disruption Schedule, provided by the General Prime Contractor, updated on a weekly bases and as approved by HACP. Access to individual apartment units on a daily bases is required. Maintain means of egress at all times.

1.3 REQUIREMENTS OF REGULATORY AGENCIES

- A. Provide and maintain all temporary facilities off-site in compliance with governing rules, regulations, codes, ordinances and laws of agencies and utility companies having jurisdiction over work involved in project.

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- B. Be responsible for all temporary work provided and obtain any necessary permits and inspections for such work.
 - C. Confine equipment, storage of materials, and operation of workmen to the limits indicated or directed and shall abide by law, ordinances, conditions stated in permits and directions of the Construction Manager/HACP's Representative.
 - D. Do not interfere with normal use of roads in vicinity of project site, except as absolutely necessary to execute required work, and then only after proper arrangements have been made with authorities having jurisdiction, including permits, approvals and temporary traffic control as applicable.

1.4 TEMPORARY FIELD OFFICES AND TRAILERS

- A. Due to the scope and size of the project, as well as the lack of available space on site, the bidding contractors are not required to provide temporary field offices and trailers. No available area inside the existing Community will be provided for the contractors' use.

1.5 TEMPORARY SANITARY FACILITIES

- A. No facilities are available on site. General Prime Contractor to provide temporary portable toilet(s), acceptable to public health authorities, as required to service the project for the use of all construction personnel on site, including personnel from other prime contracts. Maintain in a clean, sanitary condition; provide all supplies. Locate as directed by Construction Manager/HACP's Representative within secure construction area.

1.6 TEMPORARY LIGHT AND POWER

- A. Temporary use of on-site electrical power for construction shall be made available for use.

1.7 CONSTRUCTION AIDS

- A. Shoring and Bracing: Provide all shoring and bracing required for safety and proper execution of their work. Remove these items when the work is completed
- B. Barriers: Provide protective barriers and fencing as required to protect the public from demolition operations, including demolition preparation work, and construction activities for the duration of the Work.
 - a. Provide and maintain OSHA approved barriers where required by OSHA.

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- C. First Aid Facilities: Provide a minimum of one (1) 16-unit first-aid kit (or equivalent) for each 25 persons (or fraction thereof) on the worksite.

1.8 WATCHMAN SERVICE

- A. If Contractor considers watchman services necessary or desirable for protection of their own interest, such services may be employed at their own complete expense.

1.9 SAFETY

- A. Safety requirements shall be in accordance with the General Conditions.
- B. Provide and maintain guard lights at all barricades, railings, obstructions in the roadways or sidewalks.
- C. Strict attention and full adherence must be given the Williams-Steiger Occupational Safety and Health Act of 1970, U.S. Department of Labor.

1.10 TEMPORARY SIGNS

- A. Temporary Signs: Provide as required to adequately direct traffic, personnel and the public regarding the project.

1.11 STREETS AND TRAFFIC

A. Cleaning and Repair

1. Contractors shall remove mud and spillage from public walks, streets and sewers without delay. Failure to clean areas promptly will result in areas being cleaned by HACP at the responsible Contractor's expense.
2. Damage to roads or other facilities on the grounds, resulting from hauling, storage of materials, or other activities in connection with the work shall be repaired or replaced, at no expense to HACP, by the Contractor causing the damage. Repairs or replacements shall be made to the satisfaction of the Construction Manager/HACP's Representative and the Architect.

B. Traffic

1. Notify City of Pittsburgh Police Department at least two (2) weeks in advance of any anticipated work affecting traffic flow.
 - a. To assure maintenance of flow and to safeguard all parties involved in planning to maintain flow, a field inspection should be made jointly by the Construction

Manager/HACP's Representative, the Architect and Contractor personnel before performing any work which would interrupt normal traffic patterns.

- b. Re-routing of traffic shall be planned, as to route and direction, in cooperation with the City of Pittsburgh Police Department.

1.12 PARKING

- A. There are no on-site or assigned parking for employees of Contractors and subcontractors. Parking on streets or in restricted areas is prohibited. Specific parking plans will be discussed at the Pre-Construction Meeting.

1.13 USE CHARGES

- A. General: Shall be as dictated by the General Conditions for Construction Contracts – Public Housing Programs and agreed upon between HACP and each Prime Contractor.

1.14 INFORMATIONAL SUBMITTALS

- A. Off-Site Plans: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- D. Dust and HVAC Control Plan: Submit coordination drawing and narrative that indicates the dust and HVAC control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
 1. Locations of dust control partitions at each phase of work.
 2. HVAC system isolation schematic drawing.

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3. Location of proposed air-filtration system discharge.
 4. Waste handling procedures.
 5. Other dust-control measures.

1.15 QUALITY ASSURANCE

- A. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC./ANSI A117.1.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch (3.8-mm) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high galvanized-steel pipe posts; minimum 2-3/8 inch (60-mm) OD line posts and 2-7/8 inch (73-mm) OD corner and pull posts, with 1-5/8 inch (42-mm) OD top rails.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry".
- C. Polyethylene Sheets: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less per ASTM E 84.
- D. Dust Control Adhesive Surface Walk-off Mats: Provide mats minimum 36 by 60 inches (914 by 1624 mm).
- E. Gypsum Board: Minimum 1/2 inch thick by 48 inches wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.
- F. Insulation: Un-faced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
- G. Paint: Comply with requirements in Division 9 painting Sections.

2.2 TEMPORARY FACILITIES (Not Used)

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

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- B. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

PART 3 – EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities off-site in close proximity where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
1. Locate temporary facilities to limit site disturbance and that minimize disruption of daily activities of HACP and residents.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Water Service: Use of HACP's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to HACP. At Substantial Completion, restore these facilities to condition existing before initial use.
1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
- B. Sanitary Facilities: Prime General Contractor to provide temporary toilets, wash facilities, and drinking water for use of all construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- C. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
1. At all times during demolition and construction, HACP may request the contractor to provide temporary heating or insulating accommodations.

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- D. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
1. Prior commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
 - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
 3. Contractors are required to continuously clean floor areas to keep areas not under demolition and construction clean.
 4. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- E. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- F. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity and power characteristics required for construction operations.
1. Connect temporary service to HACP's existing power source, as directed by HACP.
- G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
 2. Install lighting for Project identification sign.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
1. Provide incombustible construction for temporary offices, shops and sheds located off-site of the occupied building and construction area. Comply with NFPA 241.
 2. Maintain support facilities until Construction Manager/HACP's Representative schedules Substantial Completing inspection. Remove before Substantial Completion.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement and utilities.
 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: See Section 1.12.
- D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution".
- E. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- F. Existing Elevator Use: Use of HACP's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to HACP. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes and similar items of limited life.
1. Do not load elevators beyond their rated weight capacity.
 2. Provide protective coverings, barriers, devices, signs other procedures to protect elevator car and entrance doors and frame. If despite such protection, elevators become damaged, engage elevator installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
- G. Existing Stair Usage: Use of HACP's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to HACP. At Substantial Completion, restore stairs to condition existing before initial use.
1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

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- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
1. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
 2. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
 3. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- D. Tree and Plant Protection: Provide measures to prevent damage to existing tree and plants.
- E. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- F. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- G. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather-tight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- H. Temporary Partitions: Provide floor-to ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by HACP and Residents from fumes and noise.
1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire –retardant-treated plywood on construction operations side.
 2. Construct dustproof partitions with two layers of 3-mil polyethylene sheet on each side.. Cover floor with two layers of 3-mil polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood. This shall occur in the existing lobbies where adjacent to the units under construction.
 3. Insulate partitions to control noise transmission to occupied areas.
 4. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
 5. Provide walk-off mats at each entrance through temporary partition.
- I. Existing exterior wall mural:
1. Protect temporary protection for existing exterior wall mural during cleaning of building and demolition and construction with materials and methods as required.

- J. Temporary Fire Protection: Maintain existing fire-protection systems.
1. Smoking is prohibited on site and within construction areas.
 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 3. Develop and supervise an overall fire-prevention and protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
- B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
1. Protect porous materials from water damage.
 2. Protect stored and installed material from flowing or standing water.
 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 4. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Phase: After installation of weather barriers, but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 2. Keep interior spaces reasonably clean and protected from water damage.
 3. Periodically collect and remove waste containing cellulose or other organic matter.
 4. Discard or replace water-damaged material.
 5. Do not install material that is wet.
 6. Discard, replace, or clean stored or installed material that begins to grow mold.
 7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

3.6 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.
- B. Maintenance: Maintain facilities in good operating condition until removal.

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1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. HACP reserves right to take possession of Project identification signs.
 2. At Substantial Completion, repair, renovate and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures".

END OF SECTION 015000

SECTION 016000 – PRODUCT REQUIREMENTS

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 administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and equal products.
- B. Related Requirements:
 - 1. Division 01 Section "Substitution Procedures" for requests and reviews of substitutions.
 - 2. Division 01 Section "Allowances" for products selected under an allowance.
 - 3. Division 01 Section "Alternates" for products selected under an alternate.
 - 4. Division 01 through 26 for specific product requirements.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material", "equipment", "system", and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. "Equal" Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis of Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis of design product", including make or model number or other designation, to establish the significant qualities related

to type, function, dimension, in-service performance, physical properties, appearance and other characteristics for purposes of evaluating "Equal" products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. "Equal" Product Requests: Submit request for consideration of each "Equal" product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Include data to indicate compliance with the requirements specified in "'Equal' Products" Article.
 2. Include any previously submitted Substitution Request Forms whether for "during Bid phase" (form 012500.01) or "after Bid phase" (012500.02) with Architect's approval verification.
 3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of an "Equal" product request. Architect will notify Contractor of approval or rejection of proposed "Equal" product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Section 013300 "Submittal Procedures".
 - b. Use product specified if Architect does not issue a decision on use of an "Equal" product request within time allocated.
- B. Basis of Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures". Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 2. If a dispute arises between contractors over concurrently selected but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:

1. Schedule delivery to minimize long term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weather-tight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure off-site for storage of materials and equipment by HACP's construction forces. Coordinate location with HACP.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to HACP.
 2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for HACP.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, read for execution.
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

3. Refer to 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures".

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. HACP reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected", Architect will make selection.
 5. Descriptive, performance, and referenced standard requirements in the Specifications establish salient characteristic of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal", or "or approved equal", or "or approved", comply with requirements in "Equal Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
 1. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. "Equal" products or substitutions for Contractor's convenience will not be considered.
 2. Products:
 - a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. "Equal" products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
 - b. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Equal Products" Article for consideration of an unnamed product.
 3. Manufacturers:
 - a. Restricted List: Where Specifications include a list of manufacturer's names, provide a product by one of the manufacturers listed that complies with

- requirements. "Equal" products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
- b. Non-Restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Equal' Products" Article for consideration of an unnamed manufacturers product.
 - 4. Basis of Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or an "Equal" product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Equal' Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample" provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
- 1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density or texture from manufacturer's product line that includes both standard and premium items.

2.2 "EQUAL" PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for equal product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
- 1. Evidence that proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 CLOSEOUT SUBMITTALS

- A. Record Drawings: Maintain a set of prints of the Contract Drawings as record Drawings. Mark to show actual installation where installation varies from that shown originally.
 - 1. Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
- B. Operation and Maintenance Data: Submit one (1) copy of manual. Organize data into three-ring binders with identification on front and spine of each binder, and envelopes for folded drawings. Include the following:
 - 1. Manufacturer's operation and maintenance documentation.
 - 2. Maintenance and service schedules.
 - 3. Maintenance service contracts.
 - 4. Emergency instructions.
 - 5. Spare parts list.
 - 6. Wiring diagrams.
 - 7. Copies of warranties.

1.2 CLOSEOUT PROCEDURES

- A. Substantial Completion: Before requesting Substantial Completion inspection, complete the following:
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Advise Owner of pending insurance changeover requirements.
 - 3. Submit specific warranties, maintenance service agreements, and similar documents.
 - 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 5. Submit record Drawings, operation and maintenance manuals, and similar final record information.
 - 6. Deliver tools, spare parts, extra materials, and similar items.
 - 7. Make final changeover of permanent locks and deliver keys to Owner.
 - 8. Complete startup testing of systems.
 - 9. Remove temporary facilities and controls.

10. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 11. Complete final cleaning requirements, including touchup painting.
 12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will proceed with inspection or advise Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will advise Contractor of items that must be completed or corrected before certificate will be issued.
- C. Request inspection for Final Completion, once the following are complete:
1. Submit a copy of Substantial Completion inspection list stating that each item has been completed or otherwise resolved for acceptance.
 2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- D. Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
- E. Submit a written request for final inspection for acceptance. On receipt of request, Architect will proceed with inspection or advise Contractor of unfulfilled requirements. Architect will prepare final Certificate for Payment after inspection or will advise Contractor of items that must be completed or corrected before certificate will be issued.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance.
1. Verify compatibility with and suitability of substrates.
 2. Examine roughing-in for mechanical and electrical systems.
 3. Examine walls, floors, and roofs for suitable conditions.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

- C. Take field measurements as required to fit the Work properly. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication.
- D. Verify space requirements and dimensions of items shown diagrammatically on Drawings.

3.2 CONSTRUCTION LAYOUT AND FIELD ENGINEERING

- A. Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks.
- B. Engage a land surveyor to lay out the Work using accepted surveying practices.

3.3 INSTALLATION

- A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated. Make vertical work plumb and make horizontal work level.
 - 1. Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections to form hairline joints.
 - 2. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 3. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations.
- C. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- D. Use products, cleaners, and installation materials that are not considered hazardous.
- E. Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place. Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed.

3.4 CUTTING AND PATCHING

- A. Provide temporary support of work to be cut. Do not cut structural members without prior written approval of Architect.
- B. Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

-
- C. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will minimize evidence of patching and refinishing.
 2. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

3.5 CLEANING

- A. Clean Project site and work areas daily, including common areas. Dispose of materials lawfully.
1. Remove liquid spills promptly.
 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
 3. Remove debris from concealed spaces before enclosing the space.
- B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion:
1. Remove labels that are not permanent.
 2. Clean transparent materials, including mirrors. Remove excess glazing compounds. Replace chipped or broken glass.
 3. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Sweep concrete floors broom clean.
 4. Vacuum carpeted surfaces and wax resilient flooring.
 5. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures. Clean light fixtures, lamps, globes, and reflectors.
 6. Clean Project site, yard, and grounds, in areas disturbed by construction activities. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds to a smooth, even-textured surface.

3.6 DEMONSTRATION AND TRAINING

- A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system. Include a detailed review of the following:
1. Include instruction for basis of system design and operational requirements, review of documentation, emergency procedures, operations, adjustments, troubleshooting, maintenance, and repairs.

Indoor Air Quality and Water Infiltration
Building #5, Homewood North Family Community
Housing Authority of the City of Pittsburgh
Task Order #39

Execution and Closeout Requirements
017000
April 2, 2021

END OF SECTION 017000

SECTION 017329 – CUTTING AND PATCHING

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 procedural requirements for cutting and patching.
- B. Related Sections include the following:
 - 1. Division 01 Section “Selective Structure Demolition” for demolition of selected portions of the building.
 - 2. Division 02 through 26 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
 - 3. Division 07 Section “Penetration Firestopping” for patching fire-rated construction.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building’s appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.

-
5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
 6. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory Work.

1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety. Operating elements include the following:
 1. Primary operational systems and equipment.
 2. Air or smoke barriers.
 3. Fire-suppression systems.
 4. Mechanical systems piping and ducts.
 5. Control systems.
 6. Communication systems.
 7. Conveying systems.
 8. Electrical wiring systems.
 9. Operating systems of special construction in Division 13 Sections.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
 1. Water, moisture, or vapor barriers.
 2. Membranes and flashings.
 3. Equipment supports.
 4. Piping, ductwork, vessels and equipment.
 5. Noise and vibration control elements and systems.
 6. Structural members not specifically noted to be modified.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding. Mechanical and electrical contractors shall clearly identify locations requiring cutting with the general Contractor present. Mechanical and Electrical prime contractors shall make every effort to minimize area of cutting required. Multiple conferences may be required to identify all areas requiring cuts and patches.

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be use, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible tie and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

-
2. Exposed Finishes: 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.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather-tight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty and similar materials.

END OF SECTION 017329

SECTION 022100 - SITE CLEARING AND DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Protecting existing trees and vegetation to remain.
 - 2. Removing existing trees and vegetation indicated to be removed.
 - 3. Clearing and grubbing.
 - 4. Stripping and stockpiling topsoil.
 - 5. Removing above and below grade site improvements, including structures.
 - 6. Disconnecting, capping or sealing of utilities as required.
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
 - 1. Section 023000 - EARTHWORK for soil materials, excavating, backfilling, and site grading and removal of site utilities.
 - 2. Section 022700 - EROSION AND SEDIMENTATION CONTROLS for required erosion and sedimentation control measures.

1.2 DEFINITIONS

- A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other non-soil materials.
- B. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

1.3 MATERIAL OWNERSHIP

- A. Except for stripped topsoil or other materials indicated to remain the Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.4 SUBMITTALS

- A. Photographs sufficiently detailed of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.
- B. Record drawings, according to Section 001700 - PROJECT CLOSEOUT identifying and accurately locating capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.5 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the Owner and authorities having jurisdiction.

2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
- B. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- C. Do not commence site-clearing operations until erosion and sedimentation control measures are in place.
- D. Protection of Existing Improvements: Provide protection necessary to prevent damage to existing improvements indicated to remain in place or outside of the limit of work. Protect improvements on adjoining properties and on Owner's property.
 1. Restore improvements damaged by Contractor's clearing activities to their original condition, at no additional expense to the Owner.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.
 1. Restore damaged improvements to their original condition, as acceptable to the Owner.

3.2 TREE PROTECTION

- A. Do not excavate within tree protection zones, unless otherwise indicated.

3.3 UTILITIES

- A. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.
 1. Arrange with utility companies to shut off indicated utilities.
- B. Existing Utilities: Do not interrupt utilities serving facilities occupied by the affected Property Owner or others unless permitted under the following conditions, and then only after arranging to provide temporary utility services according to requirements indicated.
 1. Notify the affected Property Owner not less than two days in advance of proposed utility interruptions.
 2. Do not proceed with utility interruptions without the affected Property Owner's written permission.
- C. Removal of underground utilities is included in Section 02300 – EARTHWORK.
- D. Removal of underground utilities is included in Division 2 Sections covering site utilities.

3.4 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.
 1. Do not remove trees, shrubs, and other vegetation indicated to remain.

2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
 3. Grind stumps and remove roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.
 4. Use only hand methods for grubbing within tree protection zone.
 5. Chip removed tree branches and dispose of off-site.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.5 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.
1. Remove subsoil and non-soil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.
- C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust or contamination by air-borne weed seed.
1. Limit height of topsoil stockpiles to 72 inches.
 2. Do not stockpile topsoil within tree protection zones.

3.6 EXCESS TOPSOIL

- A. Topsoil that has been stripped and stockpiled, but is not needed after the completion of all final topsoil spreading and grassing, shall be stockpiled on site in a location to be approved by the Owner.

3.7 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.
- B. Remove buildings, foundations, slabs, paving, curbs, gutters, and aggregate base as indicated.
1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.

3.8 DISPOSAL

- A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off the Owner's property.
1. Burning on site is prohibited.
 2. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities.

END OF SECTION

SECTION 022700 - EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Control measures to prevent all erosion, siltation and sedimentation of wetlands, waterways, construction areas, adjacent areas and off-site areas.
 2. Control measures shall be accomplished adjacent to or in the following work areas:
 - a. Soil stockpiles and on-site storage and staging areas.
 - b. Cut and fill slopes and other stripped and graded areas.
 - c. Constructed and existing swales and ditches.
 - d. Retention ponds.
 - e. At edge of wetlands areas, if applicable, as shown on Drawings.
 3. Additional means of protection shall be provided by the Contractor as required for continued or unforeseen erosion problems, at no additional cost to Owner.
 4. Periodic maintenance of all sediment control structures shall be provided to ensure intended purpose is accomplished. Sediment control measures shall be in working condition at the end of each day.
 5. After any significant rainfall, sediment control structures shall be inspected for integrity. Any damaged device shall be corrected immediately.
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 02210 - SITE CLEARING for protection of existing trees and other vegetation to remain.
 2. Section 02300 – EARTHWORK for soil materials, excavating, backfilling, and site grading and removal of site utilities.

1.2 QUALITY ASSURANCE

- A. When applicable, comply with the requirements of Storm Water Pollution Prevention Plan prepared for the National Pollutant Discharge Elimination System (NPDES) permit, which are incorporated herein by reference, and all other applicable requirements of governing authorities having jurisdiction. The specifications and drawings are not represented as being comprehensive, but rather convey the intent to provide complete slope protection and erosion control for both the Owner's and adjacent property.
1. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to a sediment and erosion control plan specific to the site that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.
- B. Erosion control measures shall be established at the beginning of construction and maintained during the entire period of construction. On-site areas, which are subject to severe erosion, and off-site areas which are especially vulnerable to damage from erosion and/or sedimentation, are to be identified and receive special attention.

- C. All land-disturbing activities are to be planned and conducted to minimize the size of the area to be exposed at any one time, and the length of time of exposure.
- D. Surface water runoff originating upgrade of exposed areas should be controlled to reduce erosion and sediment loss during the period of exposure.
- E. When the increase in the peak rates and velocity of storm water runoff resulting from a land-disturbing activity is sufficient to cause accelerated erosion of the receiving streambed, provide measures to control both the velocity and rate of release so as to minimize accelerated erosion and increased sedimentation of the stream.
- F. All land-disturbing activities are to be planned and conducted so as to minimize off-site sedimentation damage.
- G. The Contractor is responsible for cleaning out and disposing of all sediment once the storage capacity of the sediment facility is reduced by one-half.
- H. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- I. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Straw Bales: Wire or nylon bound bales of straw, oriented around sides, rather than over and under.
- B. Stakes: Stakes for bales shall be one of the following materials: Wood stakes of sound hardwood 2 x 2 inches in size or steel reinforcing bars of at least No. 4 size. Lengths shall be approximately three feet.
- C. Siltation Fence: Fabricated or prefabricated unit consisting of the following filter fabric properties:

1. Grab Tensile Strength	90	ASTM D1682
2. Elongation at Failure (%)	50	ASTM D1682
3. Mullen Burst Strength (PSI)	190	ASTM D3786
4. Puncture Strength (lbs.)	70	ASTM D751 (modified)
5. Slurry Flow Rate (gal/min/sf)	0.5	Virginia DOT VTM-51
6. Equivalent Opening Size	40-80	US Std. Sieve CW-02215
7. Ultraviolet Radiation Stability (%)	90	ASTM G26
- D. Protective Measures: As temporary coverings on ground areas subject to erosion, provide one of the following protective measures, and as directed by the Architect with concurrence of the Owner:
 - 1. Hay or straw temporary mulch, 100 pounds per 1,000 square feet.
 - 2. Wood fiber cellulose temporary mulch, 35 pounds per 1,000 square feet.
 - 3. Tackifier for anchoring mulch or straw shall be a non-petroleum based liquid bonding agent specifically made for anchoring hay or straw.
 - 4. Provide natural (jute, wood excelsior) or man-made (glass fiber) covering with suitable staples or anchors to secure to ground surface. Note that wire staples and non-biodegradable coverings shall not be used for any area that will be mown turf.

5. Temporary vegetative cover for graded areas shall be undamaged, air dry threshed straw or hay free of undesirable weed seed.

PART 3 - EXECUTION

3.1 DRAWINGS

- A. Perform all work in accordance with Erosion and Control Plan as shown and specified on Drawings.

END OF SECTION

SECTION 023000 – EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section including, but not limited, to the following:
1. Preparing subgrades for retaining wall structures.
 2. Excavating and backfilling for retaining wall structures.
 3. Removal of underground utilities.
 4. Drainage course for slabs-on-grade.
 5. Subbase course for concrete pavements.
 6. Subbase and base course for asphalt paving.
 7. Subsurface drainage backfill for trenches.
 8. Excavating and backfilling for utility trenches.
 9. Excavating and backfilling trenches for buried mechanical and electrical utilities and pits for buried utility structures.
- B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 03300 - CAST-IN-PLACE CONCRETE for granular course if placed over vapor retarder and beneath the slab-on-grade.
 2. Division 02, 15, and 16 Sections for installing underground mechanical and electrical utilities and buried mechanical and electrical structures.

1.2 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Course placed between the subbase course and hot-mix asphalt paving.
- C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Drainage Course: Course supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.

- H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation, or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping or blasting, when permitted:
- I. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- J. Subbase Course: Course placed between the Subgrade and base course for hot-mix asphalt pavement, or course placed between the Subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- K. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below sub base, drainage fill, or topsoil materials.
- L. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.3 SUBMITTALS

- A. Product Data: For the following:
 - 1. Each type of plastic warning tape.
 - 2. Geotextile.
 - 3. Controlled low-strength material, including design mixture.
- B. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:
 - 1. Classification according to ASTM D 2487 of each onsite and borrow soil material proposed for fill and backfill.
 - 2. Laboratory compaction curve according to ASTM D 1557 for each onsite and borrow soil material proposed for fill and backfill.
- C. Pre-excavation Photographs and Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, which might be misconstrued as damage caused by earthwork operations. Submit before earthwork begins. Maintain catalog of up-to-date photographs at the site.

1.4 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by the Owner or others unless permitted in writing by Architect and then only after arranging to provide temporary utility services according to requirements indicated.
 - 1. Notify the Owner not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without the Owner's written permission.
 - 3. Contact utility-locator service for area where Project is located before excavating.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, ASTM D 2940, with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, ASTM D 2940, with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand, ASTM D 2940, except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel, ASTM D 448 coarse-aggregate grading Size 57, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.
- I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand, ASTM D 448, coarse-aggregate grading Size 67, with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve.
- J. Sand: ASTM C 33; fine aggregate, natural, or manufactured sand.
- K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 GEOTEXTILES

- A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 - 1. Survivability: Class 2, AASHTO M 288.
 - 2. Grab Tensile Strength: 157 lbf, ASTM D 4632.
 - 3. Sewn Seam Strength: 142 lbf, ASTM D 4632.
 - 4. Tear Strength: 56 lbf, ASTM D 4533.
 - 5. Puncture Strength: 56 lbf, ASTM D 4833.
 - 6. Apparent Opening Size: No. 40 sieve, maximum, ASTM D 4751.

7. UV Stability: 50 percent after 500 hours exposure, ASTM D 4355.

B. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters, with elongation less than 50 percent, complying with AASHTO M 288 and the following, measured per test methods referenced:

1. Survivability: Class 2, AASHTO M 288.
2. Grab Tensile Strength: 247 lbf, ASTM D 4632.
3. Sewn Seam Strength: 222 lbf, ASTM D 4632.
4. Tear Strength: 90 lbf, ASTM D 4533.
5. Puncture Strength: 90 lbf, ASTM D 4833.
6. Apparent Opening Size: No. 60 sieve, maximum, ASTM D 4751.
7. Permittivity: 0.02 per second, minimum, ASTM D 4491.
8. UV Stability: 50 percent after 500 hours exposure, ASTM D 4355.

2.3 ACCESSORIES

A. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Preparation of Subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Section 02210 - SITE CLEARING.
- C. Protect and maintain erosion and sedimentation controls, which are specified in Section 02210 - SITE CLEARING, during earthwork operations.
- D. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area. Dispose of contaminated water in accordance with regulations of authorities having jurisdiction.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.

1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.

3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to Subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
 2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 24 inches outside of concrete forms other than at footings.
 - b. 12 inches outside of concrete forms at footings.
 - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
 - e. 6 inches beneath bottom of concrete slabs on grade.
 - f. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.

3.5 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
 2. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.7 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
 1. Clearance: 12 inches each side of pipe or conduit.

- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 - 1. For pipes and conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 - 2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
 - 3. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.8 SUBGRADE INSPECTION

- A. Notify Architect when excavations have reached required subgrade.
- B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade below the building slabs and pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
 - 1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
 - 2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
 - 3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.9 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi may be used when approved by Architect.
 - 1. Fill unauthorized excavations under other construction or utility pipe as directed by Architect.

3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.11 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Construction below finish grade including, where applicable, subdrainage, damp proofing, waterproofing, and perimeter insulation.
 - 2. Surveying locations of underground utilities for Record Documents.

3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring and bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.12 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 03300 - CAST-IN-PLACE CONCRETE.
- D. Provide 4-inch thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase.
- E. Place and compact initial backfill of subbase material free of particles larger than 1 inch in any dimension, to a height of 12 inches over the utility pipe or conduit.
 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- F. Backfill voids with satisfactory soil while installing and removing shoring and bracing.
- G. Place and compact final backfill of satisfactory soil to final subgrade elevation.
- H. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.13 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 1. Under grass and planted areas, use satisfactory soil material.
 2. Under walks and pavements, use satisfactory soil material.
 3. Under steps and ramps, use engineered fill.
 4. Under building slabs, use engineered fill.
 5. Under footings and foundations, use engineered fill.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.14 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.15 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
 1. Under structures, building slabs, steps, and pavements, scarify and re-compact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent, and areas within 10 feet of structures, building slabs, steps, and pavements at 92 percent.
 2. Under walkways, scarify and re-compact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
 3. Under lawn or unpaved areas, scarify and re-compact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
 4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.16 GRADING

- A. General: Uniformly grade areas to a smooth surface free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 1. Provide a smooth transition between adjacent existing grades and new grades.
 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 1. Lawn or Unpaved Areas: Plus or minus 1 inch.
 2. Walks: Plus or minus 1 inch.
 3. Pavements: Plus or minus 1/2 inch.

3.17 SUBSURFACE DRAINAGE

- A. Subdrainage Pipe: Specified in Division 2 Section "Subdrainage."
- B. Subsurface Drain: Place subsurface drainage geotextile around perimeter of subdrainage trench. Place a 6 inch course of filter material on subsurface drainage geotextile to support subdrainage pipe. Encase subdrainage pipe in a minimum of 12 inches of filter material, placed in compacted layers 6 inches thick, and wrap in subsurface drainage geotextile, overlapping sides and ends at least 6 inches.
 1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 1557.
- C. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade in compacted layers 6 inches thick. Overlay drainage backfill with 1 layer of subsurface drainage geotextile, overlapping sides and ends at least 6 inches.

1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 1557.
2. Place and compact impervious fill over drainage backfill in 6-inch-thick compacted layers to final subgrade.

3.18 SUBBASE AND BASE COURSES

- A. Place subbase and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase and base course under pavements and walks as follows:
 1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
 2. Place base course material over subbase course under hot-mix asphalt pavement.
 3. Shape subbase and base course to required crown elevations and cross-slope grades.
 4. Place subbase and base course 6 inches or less in compacted thickness in a single layer.
 5. Place subbase and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 6. Compact subbase and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.
- C. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.19 DRAINAGE COURSE

- A. Place drainage course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:
 1. Install subdrainage geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
 2. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.20 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent geotechnical engineering testing agency to perform field quality control testing.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design-bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.
- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least 1 test for every 2000 sq. ft. or less of paved area or building slab, but in no case fewer than 3 tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least 1 test for each 100 feet or less of wall length, but no fewer than 2 tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least 1 test for each 150 feet or less of trench length, but no fewer than 2 tests.

- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; re-compact and retest until specified compaction is obtained.

3.21 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and re-compact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.22 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.

END OF SECTION

SECTION 023160 - GRANULAR FILL

PART 1 GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To
 - 1. Furnish and install granular base under interior slabs-on-grade as described in Contract Documents.
- B. Products Installed But Not Supplied Under This Section
 - 1. Under-slab vapor retarder and seam tape.
- C. Related Sections
 - 1. Section 02742 - Base course under asphalt concrete paving
 - 2. Division 07 - Furnishing of vapor retarder and seam tape

1.2 REFERENCES

- A. American Society For Testing And Materials
 - 1. ASTM E 1643-98, 'Standard Practice for Installation of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs'

1.3 SEQUENCING

- A. Install vapor retarder and granular base system immediately after application of termite control and prior to placing concrete.

PART 2 PRODUCTS

2.1 GRANULAR BASE

- A. Gravel - 1/4 inch minimum to one inch maximum well-graded, clean gravel or crushed rock.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install vapor retarder in accordance with ASTM E 1643 and following instructions.
 - 1. Install vapor retarder over compacted subgrade and tops of interior stem walls so entire area under slab is covered.
 - 2. Lap joints 3 inches minimum and seal with specified seam tape.
 - 3. Seal vapor retarder around pipes, conduits, and other utility items which penetrate vapor retarder.
 - 4. Except for punctures required for reinforcing and anchor bolts at top of stem walls, seal tears and punctures prior to placing granular base.

- B. Place 4 inches minimum of granular base over vapor retarder, level, and compact as specified.
- C. Do not allow water onto vapor retarder or granular base prior to placing of concrete.

END OF SECTION

SECTION 024100 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. Work Included:

1. Demolition and removal of buildings and structures and as required for new work. Refer to the Drawings for additional requirements.
2. Demolition and removal of selected site elements and as required for new work. Refer to the Drawings for additional requirements.
3. Removal and legal disposal of demolished materials off site. Except those items specifically designated to be relocated, reused, or turned over to the facility, all existing removed materials, items, trash and debris shall become property of the Contractor and shall be completely removed from the site and legally disposed of at their expense. Salvage value belongs to the Contractor. On-site sale of materials is not permitted.
4. Maintenance, watering and care of trees designated to remain by a certified arborist during the construction period.
5. Demolition and removal work shall properly prepare for new construction to be provided under the Contract.

B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:

1. Section 01500 - TEMPORARY FACILITIES AND CONTROLS:
 - a. Maintenance of access, cleaning during construction, dust and noise control.
2. Section 02300 - EARTHWORK:
 - a. Excavating and removal of existing pavement, sub-surface building and utility structures and lines, appurtenances, and other elements indicated on the Drawings.
3. Division 15 - PLUMBING:
 - a. Disconnecting, capping and otherwise making inactive existing mechanical services in areas where demolition and removal work is required. Mechanical tradesmen will disconnect, cap and deactivate such items where required to be removed.
4. Division 16 - ELECTRICAL WORK:
 - a. Disconnecting, capping and otherwise making inactive existing electrical services in areas where demolition and removal work is required. Electrical tradesmen will disconnect, cap and deactivate such items where required to be removed.

1.2 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to the Owner ready for reuse, at a location designated by the Owner. Protect from weather until accepted by Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated. Protect from weather until reinstallation.

- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 MATERIALS OWNERSHIP

- A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques, antiques, and other items of interest or value that may be encountered during selective demolition remain property of the Owner. Carefully remove each item or object in a manner to prevent damage and deliver promptly to a location acceptable to the Owner.

1.4 SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with early and late starting and finishing dates for each activity.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
- B. Landfill Records: Provide trip tickets (receipts) indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 QUALITY ASSURANCE

- A. Examination of Existing Conditions: The Contractor shall examine the Contract Drawings for demolition and removal requirements and provisions for new work. Verify all existing conditions and dimensions before commencing work. The Contractor shall visit the site and examine the existing conditions as he finds them and shall inform herself/himself of the character, extent and type of demolition and removal work to be performed. Submit any questions regarding the extent and character of the demolition and removal work in the manner and within the time period established for receipt of such questions during the bidding period.
- B. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- C. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
- D. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- E. Standards: Comply with ANSI A10.6 and NFPA 241.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- C. Perform surveys as the Work progresses to detect hazards resulting from demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Arrange to shut off indicated utilities with utility companies and Owner.
 - 2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.
 - 4. Prior to commencing cutting work in existing surfaces, take all precautionary measures to assure that mechanical and electrical services to the particular area have been made inactive. Coordinate with Fire Protection, Plumbing, HVAC, and Electrical subcontractors. Only licensed tradesmen of that particular trade shall disconnect and cap existing mechanical and electrical items that are to be removed, abandoned and/or relocated.
 - 5. If, during the process of cutting work, existing utility lines are encountered which are not indicated on the Drawings, regardless of their condition, immediately report such items to the Architect. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection specified in Section 01500 - TEMPORARY FACILITIES AND CONTROLS.
 - 2. Maintain adequate passage to and from all exits at all times. Before any work is done which significantly alters access or egress patterns, consult with the Architect and obtain

approval of code required egress. Under no condition block or interfere with the free flow of people at legally required exits, or in any way alter the required condition of such exits.

- B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area(s).
 - 1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction. Provide temporary barricades as required to limit access to demolition areas.
 - 2. Protect existing site improvements, appurtenances, and landscaping to remain.
- C. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.

3.4 PROTECTION OF PUBLIC AND PROPERTY

- A. Provide all measures required by federal, state and municipal laws, regulations, and ordinances for the protection of surrounding property, the public, workmen, and Commonwealth's employees during all demolition and removal operations. Measures are to be taken, but not limited to installation of sidewalks, sheds, barricades, fences, warning lights and signs, trash chutes and temporary lighting.
- B. Protect all walks, roads, streets, curbs, pavements, trees and plantings, on and off premises, and bear all costs for correcting such damage as directed by the Architect, and to the satisfaction of the Owner.
- C. Demolition shall be performed in such a manner that will insure the safety of adjacent property. Protect adjacent property from damage and protect persons occupying adjacent property from injuries which might occur from falling debris or other cause and so as not to cause interference with the use of other portions of the building, of adjacent buildings or the free access and safe passage to and from the same.
- D. Every precaution shall be taken to protect against movement or settlement of the building, of adjacent buildings, sidewalks, roads, streets, curbs and pavements. Provide and place at the Contractor's own expense, all necessary bracing and shoring in connection with demolition and removal work.
- E. Remove portions of structures with care by using tools and methods that will not transfer heavy shocks to existing and adjacent building structures, both internal and external of the particular work area.
- F. Provide and maintain in proper condition, suitable fire resistive dust barriers around areas where interior demolition and removal work is in progress. Dust barriers shall prevent the dust migration to adjacent areas. Remove dust barriers upon completion of major demolition and removal in the particular work area.

3.5 DISCOVERY OF HAZARDOUS MATERIALS

- A. If hazardous materials, such as chemicals, asbestos-containing materials, or other hazardous materials are discovered during the course of the work, cease work in affected area only and immediately notify the Architect and the Owner of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.
- B. If unmarked containers are discovered during the course of the work, cease work in the affected area only and immediately notify the Architect and the Owner of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Take immediate precautions to prohibit endangering the containers integrity. Continue work in other areas.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Comply with requirements of Section 01741 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL and the following.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.

END OF SECTION

SECTION 027760 - CAST-IN-PLACE CONCRETE SITE ELEMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To
 - 1. Compact sub-base as described in Contract Documents.
 - 2. Furnish and install granular base as described in Contract Documents.
 - 3. Furnish and install cast-in-place concrete site elements as described in Contract Documents.
- B. Products Installed But Not Supplied Under This Section
 - 1. Light pole base anchors
- C. Related Sections
 - 1. Section 02300 - Compaction procedures and tolerances

1.2 REFERENCES

- A. American Society For Testing And Materials
 - 1. ASTM D 1751-83 (1991), 'Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)'

PART 2 PRODUCTS

2.1 MATERIALS

- A. Form work - Meet requirements specified in Division 3.
- B. Granular Base - Road Base type gravel or crushed rock, graded as follows -

<u>Sieve</u>	<u>Percent by Weight Passing Sieve</u>
1 inch	100
3/4 inch	85 - 100
No. 4	45 - 60
No. 10	30 - 50
No. 200	5 - 10 (non-plastic)

- C. Expansion Joints
 - 1. Manufactured commercial fiber type meeting requirements of ASTM D 1751 and ½ inch thick.
 - 2. Approved Manufacturers -
 - a. Flexcell by Celotex Building Products Div, Tampa, FL (813) 873-4417
 - b. Conflex by Masonite Building & Industrial Products Group, Chicago, IL (800) 255-0785
 - c. Sealtight by W R Meadows Inc, Elgin, IL 708) 683-4500
 - d. Equal as approved by Architect before bid. See Section 01600.
- D. Concrete - Meet requirements specified in Section 03300 exterior concrete.

PART 3 EXECUTION

3.1 PREPARATION

- A. Sub-Base - Compact sub-base as specified in Section 02315.

3.2 INSTALLATION

- A. Granular Base - Place 4 inches minimum of granular base, level, and compact as specified in Section 02315.
- B. Joints
 - 1. Expansion & Contraction Joints -
 - a. Spacing -
 - 1) Sidewalks & Curbs - 50 feet on center and at changes in direction or intersections.
 - b. Install so top of expansion joint material is 1/4 inch below finished surface of concrete.
 - c. No expansion joint required between curbs and walks parallel to curb.
 - d. Provide expansion joint at end of walks perpendicular to and terminating at curb.
 - 2. Scored Control Joints -
 - a. Spacing -
 - 1) Curbs - 10 feet on center.
 - 2) Sidewalks - 5 feet on center, or as indicated on Contract Documents.
 - b. Control joints shall be approximately one quarter of concrete thickness.
- C. Finish
 - 1. Curb, Sidewalks -
 - a. Standard Finishing -
 - 1) Broom finish.
 - 2) Round edges including edges formed by expansion joints.
 - 3) Remove edger marks.
- D. Special Requirements
 - 1. Form vertical surfaces full depth. Do not allow concrete to flow out from under forms in any degree.
 - 2. Rub exposed concrete pale bases and curbs with carborundum block and finish with applied mixture of portland cement.

END OF SECTION

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures and finishes for the following applications:
 - a. Slabs-on-grade.
 - b. Cutting and patching of mechanical and electrical penetrations through cast-in-place concrete.
 - c. Utility trench Infill.
- B. Items To Be Installed Only: Install the following items as furnished by the designated Sections:
 - 1. Section 05500 - METAL FABRICATIONS:
 - a. Lintels, sleeves, anchors, inserts, plates and similar items for miscellaneous and ornamental metal.
 - 2. Section 15900 - FIRE PROTECTION:
 - a. Lintels, sleeves, anchors, inserts, plates and similar items for fire protection systems.
 - 3. Section 15300 - PLUMBING:
 - a. Lintels, sleeves, anchors, inserts, plates, sumps and similar items for plumbing systems.
 - 4. Section 15500 - HEATING, VENTILATING AND AIR CONDITIONING:
 - a. Lintels, sleeves, anchors, inserts, plates, and similar items for heating, ventilating, and air conditioning systems.
 - b. Pipe and duct sleeves for placement into cast-in-place concrete openings.
 - 5. Section 16111 - ELECTRICAL:
 - a. Lintels, sleeves, anchors, inserts, plates, floor boxes and similar items for electrical systems.
- C. Items To Be Furnished Only: Not Applicable.
- D. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
 - 1. Section 02300 - EARTHWORK for drainage fill under slabs-on-grade.

1.2 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mixing water to be withheld for later addition at Project site.
 - 2. Indicate amount of fly ash in the mix.
- C. Anchor Bolt Location: Indicate compliance with approved shop drawings.

- D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates.
 - E. Material Certificates: For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Form materials and form-release agents.
 - 4. Steel reinforcement and accessories.
 - 5. Curing compounds.
 - 6. Floor and slab treatments.
 - 7. Bonding agents.
 - 8. Adhesives.
 - 9. Vapor retarders.
 - 10. Semi-rigid joint filler.
 - 11. Joint filler strips.
 - 12. Repair materials.
 - F. Floor surface flatness and levelness measurements to determine compliance with specified tolerances and requirements for applied finishes and materials, except as noted for slope to drains.
 - G. Field quality-control test and inspection reports.
 - H. Minutes of pre-installation conference.
- 1.4 QUALITY ASSURANCE
- A. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
 - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
 - 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
 - C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
 - D. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code--Reinforcing Steel."
 - E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specification for Structural Concrete."
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

- F. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- G. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01.
 - 1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete subcontractor.
 - 2. Review special inspection and testing, and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint filler strips, semi-rigid joint fillers, forms and form removal limitations, shoring and re-shoring procedures, vapor-retarder installation, anchor rod and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage. Avoid damaging coatings on steel reinforcement.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

- A. Cement: Shall be American-made Portland cement, free from water soluble salts or alkalis which will cause efflorescence on exposed surfaces. Portland cement shall be Type II, ASTM C150. Use only one brand of cement for each type of cement throughout project. Contractor shall be responsible for whatever steps are necessary to ensure that no visual variations in color will result in exposed concrete, and shall place on order and secure in advance a sufficient quantity of this (these) cement(s) to complete concrete work specified herein.
 - 1. Fly Ash: ASTM C 618.
 - 2. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normalweight Fine Aggregate: Shall be washed, inert, natural sand conforming to ASTM C33 and following additional requirements:

Sieve	Retained Percent
#4	0 - 5
#16	25 - 40
#50	70 - 87
#100	93 - 97
Fineness Modulus	2.80 (Plus/Minus 0.20)
Organic	Plate 2 maximum
Silt	2.0 percent maximum
Mortar Strength	100 percent minimum compression ratio sound 5 percent maximum loss, magnesium sulfate, five cycles

- C. Normalweight Coarse Aggregate: Shall be well graded crushed stone or washed gravel conforming to ASTM C33 and the following additional requirements:

Designated Size (Inches)	3	2	1-1/2	1	3/4	1/2	3/8
F.M. (+/-0.20)	7.95	7.45	7.20	6.95	6.70	6.10	4.50
Organic	Plate 1 maximum						
Silt	1.0 percent maximum						
Soundness	5 percent maximum loss, magnesium sulfate five cycles						

Maximum designated sizes for normalweight coarse aggregate to be used in concrete sections shall be as noted below, except that sizes shall also be chosen in conjunction with required clearances.

1. One and one-half inches for sections over ten inches in thickness.
 2. One inch for sections more than eight and up to ten inches in thickness.
 3. Three-quarter inch for sections more than three and up to eight inches in thickness.
- D. Water: Shall be from approved source, potable, clean and free from oils, acids, alkali, organic matter, and other deleterious material.
- E. Admixtures:
1. Water-reducing agent:
 - a. "WRDA" - W.R. Grace & Co.
 - b. "PDA25" - Protex Industries, Inc.
 - c. "Pozzolith 344H" - Master Builder's Co.
 - d. Note: Water-reducing agent shall be by same manufacturer as air-entraining agent.
 2. Air-entraining agent:
 - a. "DAREX AEA" - W.R. Grace & Co.
 - b. "PROTEX AEA" - Protex Industries
 - c. "MB-VR" or "MB-AE" - Master Builder's Co.
 3. Superplasticizer: High-range water-reducer conforming to ASTM C494, Type F or Type G.
 4. Admixtures retarding setting of cement in concrete shall not be used without written approval of Architect.
 5. Admixtures causing accelerated setting of cement in concrete shall not be used without written approval of Architect.

2.2 CONCRETE MIXTURES

- A. The Contractor shall recommend, on the basis of trial mixes and strength curves specified below, design mixes for each type and strength of concrete. The Testing Agency will verify that the proposed mix designs conform to all specification requirements.
- B. Sufficient materials for concrete mix design shall be furnished by Contractor not less than five weeks before use. Duplicate small samples plainly and neatly labeled with source, where proposed to be used, date, and name of collector shall be provided and presented to Testing Agency for permanent reference.
- C. Mixes shall be designed in accordance with "Method 1" of ACI 301, and the requirements of this Section. All concrete is normalweight unless specifically designated otherwise; air-dry weight not to exceed 150 lbs. per cubic foot.
- D. Limiting values shown below apply for specific strengths of concrete with coarse aggregates less than one and one-half inches unless noted otherwise in TABLE A below.

TABLE A

Minimum Allowable at 28 day (psi)	Max. Allowable Net Water Content Gallons/Sack*	Minimum Permissible Cement Factor Sacks/Cubic Yard**	Compressive Strength
	4000	5.75	
	6.00		
	3000	6.50	
	5.00		

- * Maximum; decrease if possible. This represents total water in mix at time of mixing, including free water on aggregate.
- ** Minimum; increase as necessary to meet other requirements.

- E. In all slabs and walls exposed to weather, all concrete shall contain the approved air-entraining admixture as per manufacturer’s written instructions to provide entrained air, by volume, in the cured concrete within 4.5 to 6.5 percent.
- F. Water-Reducing Admixture - The approved water-reducing admixture shall be used in all concrete, in accordance with manufacturer’s written instructions.
- G. Concrete slabs, including slabs on grade, shall have a maximum water cement ratio of 0.45 and shall include Aridus admixture installed in accordance with manufacturer’s recommendations.
- H. The approved superplasticizer shall be used in all concrete slabs, including slabs on grade.
- I. Water content and cement content of concrete to be used in work shall be based on curve showing relation between water content, cement content, and 7- and 28-day compressive strengths of concrete made using proposed materials. Curves shall be determined by four or more points, each representing an average of at least three test specimens at each age, and shall have range of values sufficient to yield desired data, including all compressive strengths required by Contract Documents, without extrapolation. Design mix of concrete to be used in work, as determined from curve, shall correspond to following test strengths (TABLE B) obtained in laboratory trial mixtures, but in no case shall resulting mix conflict with limiting values as specified in TABLE A.

TABLE B
 Minimum Strength of Lab Trial Mixes (psi)

Design Strength	Trial Mix Strength		
	7-days	14-days	28-days
	4000	3800	5000
	2700	3000	3750

- J. Any deviation from approved mix design, which Contractor deems desirable under certain project conditions, will not be allowed without written approval of Architect. Cost of any additional testing by Testing Agency associated therewith shall be paid for by Contractor.

2.3 FORM MATERIALS

- A. Construct formwork to shapes, lines, and dimensions required, plumb and straight, secured and braced sufficiently rigid to prevent deformation under load, and sufficiently tight to prevent leakage, all in conformance with ACI Standard 347, “Recommended Practice for Concrete Formwork”.

- B. Formwork for exposed concrete shall be medium-density plastic overlaid plywood, 5/8" minimum thickness; for concealed concrete shall be "Plyform" plywood, 5/8" minimum thickness.
- C. Chamfer Strips: Half-inch, 45 degree poplar wood strips, nailed six inches on center, and installed in inside corners of all forms, unless otherwise directed by Architect.
- D. Form Ties and Spreaders: Richmond Tyscrus by Richmond Screw Anchor Co.; Superior-ties by Superior Concrete Accessories, Ind.; or Sure-Grip Ties by Dayton Sure-Grip and Shore Co. Wire ties shall not be used. Ties for foundation walls shall be snap-ties or type specified above with removal cones and shall incorporate water seal washer. Ties shall be arranged in a symmetrical manner.
- E. Form Release Agent: Non-staining and non-emulsifiable type, or equal approved by Architect. Form release agent shall be biodegradable and shall not impart any stain to concrete nor interfere with adherence of any material to be applied to concrete surfaces.

2.4 REINFORCEMENT AND ACCESSORIES

- A. Reinforcing Steel Bars: Shall be newly rolled billet steel conforming to ASTM A615 Grade 60. Bars shall be bent cold.
- B. Welded Wire Fabric: Shall conform to ASTM A185.
- C. All structural steel reinforcement and embedded items shall be hot-dip galvanized after fabrication in accordance with ASTM A123.
- D. All hot-dip galvanized steel shall be inspected for compliance with ASTM A123 and shall be marked with a stamp that indicates the number of ounces of zinc per square foot of steel. After galvanizing, the bars shall be dipped in a 0.2 percent chromic acid solution. A notarized Certificate of Compliance with all of the above shall be required from the galvanizer.
- E. Reinforcement Accessories: Shall conform to Product Standard PS7-766, National Bureau of Standards, Department of Commerce, Class C, as produced by Superior Concrete Accessories, Inc.; Dayton Sure-Grip Co.; or R.K.L. Building Specialties Co., Inc. Reinforcement accessories shall include spacers, chairs, ties, slab bolsters, clips, chair bars, and other devices for properly assembling, placing, spacing, supporting, and fastening reinforcement. Tie wire shall be galvanized or stainless wire of sufficient strength for intended purpose, but not less than No. 18 gauge. Metal supports shall be of such type as not to penetrate surface of formwork and show through surface of concrete. Accessories touching interior formed surfaces exposed to view shall have not less than 1/8 inch of plastic between metal and concrete surface. Plastic tips shall extend not less than 1/2 inch up on metal legs. Individual and continuous slab bolsters and chairs shall be of type to suit various conditions encountered and must be capable of supporting 300 pound load without damage or permanent distortion.

2.5 MISCELLANEOUS MATERIALS

- A. Grout: Shall be ready-to-use metallic aggregate product requiring only addition of water at job site such as "Embeco Pre-mixed Grout" by Master Builder's; "Vibro-Foil Ready-Mixed" by W.R. Grace & Co.; or "Ferrolith G" by Sonneborn Building Products, Inc. Grout shall be easily workable and shall have no drying shrinkage at any age. Compressive strength of grout (2" x 2" cubes) shall not be less than 5000 psi at 7 days, and 7500 psi at 28 days.
- B. Under Slab Vapor Barrier
 1. Stego Wrap 15 mil Vapor Barrier
 2. Husky 15 mil Vapor Barrier

- C. Vapor Barrier Seaming Tape
 - 1. Stego Tape – red polyethylene seam bonding tape (3.75" wide)
 - 2. Husky Yellow Guard – yellow polyethylene seam bonding tape (4" wide)
- D. Concrete Bonding Tape
 - 1. Stego Crete Claw (3" and 6" widths)
 - 2. Husky Crete Lock (6" width)
- E. Membrane Curing Compound: Shall conform to ASTM C309, Type 1. Product used shall be shown to be compatible with the later application of coatings. Curing compound shall not be used on any floor slab scheduled to receive an adhered floor finish.
- F. Chemical Hardener: All exposed concrete floor slabs shall be hardened with three applications of fluosilicate chemical hardener followed by two applications of clear acrylic concrete sealer by Sonneborn Division, ChemRex Inc. "Lapidolith"; or equal product by W.R. Meadows Co. or Concrete Service Material Company.

2.6 MORTAR-BASED, UTILITY TRENCH INFILL

- A. Provide ready-to-use mortar product for filling in trench openings in existing slab for the installation and/or rerouting of utilities. Follow all installation requirements.
 - 1. Approved products:
 - a. Mapei Topcem Premix, Ready To Use – Accelerated Cure Screed

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine all work prepared by others to receive work of this Section and report any defects affecting installation to the Contractor for correction. Commencement of work will be construed as complete acceptance of preparatory work by others.
 - 1. Inspection shall be performed by a structural engineer licensed by the local authorities having jurisdiction. Certify compliance with shop drawings.

3.2 HANDLING, STORAGE, AND PROTECTION OF MATERIALS

- A. Handle and store materials separately in such manner as to prevent intrusion of foreign matter, segregation, or deterioration. Do not use foreign materials or those containing ice. Remove improper and rejected materials immediately from point of use. Cover materials, including steel reinforcement and accessories, during construction period. Stockpile concrete constituents properly to assure uniformity throughout project.

PART 4 - PLACING OF REINFORCEMENT

- A. Reinforcement shall be placed in accordance with requirements of CRSI 93, "Recommended Practice for Placing Reinforcing Bars"; CRSI 93, "Recommended Practice for Placing Bar Supports"; and with further requirements below.
- B. Reinforcement shall be accurately placed in accordance with Contract Documents and shall be firmly secured in position by wire ties, chairs, spacers, and hangers, each of type approved by Architect.

- C. Bending, welding or cutting reinforcement in field in any manner other than as shown on Drawings is prohibited unless specific approval for each case is given by Architect.
- D. Reinforcement shall be continuous through construction joints unless otherwise indicated on Drawings.
- E. Reinforcement shall be spliced only in accordance with requirements of Contract Documents or as otherwise specifically approved by Architect. Splices of reinforcement at points of maximum stress shall generally be avoided. Welded wire fabric shall lap six inches or one space plus two inches, whichever is larger, and shall be wired together.
- F. At time concrete is placed, reinforcement shall be free of excessive rust, scale, or other coatings that will destroy or reduce bond requirements. Reinforcement expected to be exposed to weather for a considerable length of time shall be painted with a heavy coat of cement grout. Protect stored materials so as not to end or distort bars in any way. Bars that become damaged will be rejected.
- G. Before concrete is cast, check all reinforcement after it is placed to insure that reinforcement conforms to Contract Documents and approved Shop Drawings. Such checking shall be done only by qualified experienced personnel. In addition, the Architect shall be notified at least 36 hours prior to concrete placement and given opportunity to inspect completed reinforcement and formwork before concrete placement. Prior approval of Shop Drawings shall in no way limit Architect's right to demand modifications or additions to reinforcement or accessories.

4.2 JOINTS

- A. Construction and control joints indicated on Drawings are mandatory and shall not be omitted.
- B. Joints not indicated or specified shall be placed to least impair strength of structure and shall be subject to approval of Architect.

4.3 INSTALLATION OF EMBEDDED ITEMS

- A. Conform to requirements of ACI 318, paragraph 6.3, "Conduits and Pipes Embedded in Concrete", and as specified below.
- B. Install steel sleeves, embedded wall plates and similar items, furnished by other trades, at locations shown on the Drawings.
- C. Anchor bolts for column baseplates shall be installed with templates provided. Vertical alignment and plan locations shall be maintained within one-sixteenth inch of the locations shown on the Drawings.
 - 1. Inspection shall be performed by a surveyor licensed by the local authorities having jurisdiction. Certify compliance with Shop Drawings.

4.4 MIXING, CONSISTENCY, AND DELIVERY OF CONCRETE

- A. Concrete shall be ready-mixed, produced by plant acceptable to Architect. Hand or site mixing shall not be done. Constituents, including admixtures except certain corrosion inhibitors and superplasticizers, shall be batched at central batch plant. Admixtures shall be pre-mixed in solution form and dispensed as recommended by manufacturer.
- B. Central plant and rolling stock equipment and methods shall conform to Truck Mixer and Agitator Standard of Truck Mixer Manufacturer's Bureau of National Ready-Mixed Concrete Association, and Contract Documents. Consistency of concrete at time of deposit shall be as follows:

Portion of Structure	Slump	
	Recommended	Max. Range
Walls, columns	4"	3" - 5"
Slabs, beams	3"	2" - 4"

- C. Ready-mixed concrete shall be transported to site in watertight agitator or mixer trucks loaded not in excess of rated capacities. Discharge at site shall be within one and one-half hours after cement was first introduced into mix. Discard cement not discharged within one and one-half hours and dispose of legally. Concrete with a temperature greater than 85 degrees F. shall not be placed. Central mixed concrete shall be plant mixed a minimum of five minutes. Agitation shall begin immediately after pre-mixed concrete is placed in truck and shall continue without interruption until discharged. Transit mixed concrete shall be mixed at mixing speed for at least ten minutes immediately after charging truck followed by agitation without interruption until discharged. Concrete shall be furnished by a single plant unless accepted by the Architect in writing.
- D. Re-tempering of concrete which has partially hardened, that is, mixing with or without additional cement, aggregates, or water, will not be permitted.

4.5 PLACING CONCRETE

- A. Intent of this Specification is that concrete shall not be pumped. Refer to "Submittals and Concrete Constituents" in this Section for requirements should pumping be proposed.
- B. Remove water and foreign matter from forms and excavations and, except in freezing weather or as otherwise directed, thoroughly wet wood forms just prior to placing concrete. Place no concrete on frozen soil and provide adequate protection against frost action during freezing weather.
- C. To secure full bond at construction joints, surfaces of concrete already placed, including vertical and inclined surfaces, shall be thoroughly cleaned of foreign materials and laitance, roughened with suitable tools such as chipping hammers or wire brushes, and re-cleaned by stream of water or compressed air. Well before new concrete is deposited, joints shall be saturated with water. After free or glistening water disappears, joints shall be given thorough coating of neat cement slurry mixed to consistency of very heavy paste. Surface shall receive coating of approximately one-eighth inch thick; this shall be scrubbed in by means of stiff bristle brushes. New concrete shall be deposited before neat cement dries or changes color.
- D. Do not place concrete having slump outside of allowable slump range.
- E. Transport concrete from mixer to place of final deposit as rapidly as practical by methods which prevent separation of ingredients and displacement of reinforcement, and which avoid rehandling. Deposit no partially hardened concrete. When concrete is conveyed by chutes, equipment shall be of such size and U-shaped design as to ensure continuous flow in chute. Flat (coal) chutes shall not be employed. Chutes shall be of metal or metal lines and different portions shall have approximately same slope. Slope shall not be less than 25 degrees nor more than 45 degrees from horizontal and shall be such as to prevent segregation of ingredients. Discharge end of chute shall be provided with baffle plate or spout to prevent segregation. If discharge end of chute is more than five feet above surface of concrete in forms, spout shall be used and lower and maintained as near surface of deposit as practicable. When operation is intermittent, chute shall discharge into hopper. Chute shall be thoroughly cleaned before and after each run and debris and any water used shall be discharged outside forms. Concrete shall not be allowed to flow horizontally over distances exceeding five feet.

- F. Concrete shall be placed in such manner as to prevent segregation, and accumulations of hardened concrete on forms or reinforcement above mass of concrete being placed. To achieve this end, suitable hoppers, spouts with restricted outlets and tremies, shall be used as required.
 - G. During and immediately after depositing, concrete shall be thoroughly compacted by means of internal type mechanical vibrators or other tools, or by spading to produce required quality of finish. Vibration shall be done by experienced operators under close supervision and shall be carried on only enough to produce homogeneity and optimum consolidation without permitting segregation of constituents or "pumping" of air. Vibrators used for normalweight concrete shall operate at speed at not less than 7,000 vpm and be of suitable capacity. Do not use vibrators to move concrete. Vibration shall be supplemented by proper wooden spade puddling to remove included bubbles and honeycomb adjacent to visible surfaces. At least one vibrator shall be on hand for every 10 cubic yards of concrete placed per hour, plus one spare. Vibrators shall be operable and on site prior to starting placement.
 - H. Vertical lifts shall not exceed 18 inches. Vibrate completely through successive lifts to avoid pour lines. Vibrate first lift thoroughly until top of lift glistens to avoid stone pockets, honeycomb, and segregation.
 - I. Concrete shall be deposited continuously, and in layers of such thickness that no concrete will be deposited on concrete which has hardened sufficiently to cause formation of seams and planes of weakness within section. If section cannot be placed continuously between planned construction joints, as specified, field joint and additional reinforcement shall be introduced so as to preserve structural continuity. Architect shall be notified in any such case.
 - J. Cold joints, particularly in exposed concrete, including "honeycomb", are unacceptable. If they occur in concrete surfaces exposed to view, Architect will require that entire section in which blemish occurs be removed and replaced with new materials at Contractor's expense.
 - K. When placing exposed concrete walls or columns, strike corners of forms rapidly and repeatedly from outside along full height while depositing concrete and vibrating.
 - L. Chutes, hoppers, spouts, adjacent work, etc. shall be thoroughly cleaned before and after each run, and water and debris shall be discharged outside form.
- 4.6 FLOOR FLATNESS/LEVELNESS TOLERANCES
- A. FF defines maximum floor curvature allowed over 24 inches. Computed on basis of successive 12 inch elevation differentials, FF is commonly referred to as "flatness F-Number".
 - B. FL defines relative conformity of floor surface to horizontal plane as measured over 10 feet IN distance. FL is commonly referred to as "levelness F-Number".
 - C. Measure floors in accordance with ASTM E1155.
 - D. Overall FF or FL number represents test surface defined as total floor area of one building level.
 - E. Local FF or FL numbers represent test section surfaces. Each single concrete pour at one building level is separated into test sections which shall not exceed 2500 square feet.
 - F. Ensure slabs achieve specified overall tolerances. Minimum local tolerance (1/2 bay or as designated by Architect) is 2/3 of specified tolerance unless noted otherwise.
 - G. FL tolerances do not apply to unshored, framed construction.
 - 1. Variations from elevations identified on Drawings: Plus/Minus 1/2 inch.

4.7 TYPES OF SLAB FINISHES

- A. Scratch Finish: Level to FF15/FL13 tolerance with minimum local tolerance of FF13/FL10, roughen surface with stiff brushes or rakes before final set.
 - 1. Locations: Slabs to receive thick set mortar beds, concrete floor topping, and other similar bonded cementitious finish flooring materials over 1 inch in thickness.
- B. Float Finish: After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating.
 - 1. Begin floating when surface water has disappeared and when concrete has stiffened sufficiently to permit operation of power-driven floats.
 - 2. Cut down high spots and fill low spots.
 - 3. Immediately after leveling, re-float surface to uniform, sandy texture and FF20/FL15 tolerance.
 - 4. Locations: Where concrete flatwork is to receive waterproofing membranes or setting beds for finished materials and for top surfaces of walls, slabs and beams.
- C. Trowel Finish: After float finish, follow by power troweling and then hand troweling.
 - 1. Begin final troweling when surface produces ringing sound as trowel is moved over surface.
 - 2. Finish surfaces free of trowel marks; leave uniform in texture and appearance.
 - 3. Flatness/Levelness Tolerances and Locations: FF 25/FL 20 (typical).
 - 4. Grind surface smooth to remove defects which may telegraph through applied finish.
 - 5. Locations: Slabs left exposed to view, slabs covered with resilient flooring, carpet, seamless flooring, epoxy flooring or other similar applied finish.
- D. Fine Broom Finish: After trowel finish, while surface is still plastic, draw soft fiber bristle broom uniformly over surface to create fine-grained but smooth texture to match Architect's sample.
 - 1. Locations: At exterior concrete walks, pavements and steps. Provide smooth edging.
- E. Contractor, at his own expense, shall level depressed spots and grind high spots in concrete surfaces which are in excess of specified tolerances. Leveling materials proposed for providing proper surface shall be approved by Architect.

4.8 REPAIRING OF UNFORMED CONCRETE SURFACES

- A. Tops of slabs and walls shall be repaired by using either same material as originally cast or by use of dry-pack material, as approved by Architect. Areas affected shall be chipped back square and to depth of one inch minimum. Hole shall then be moistened with water for a minimum of two hours, followed by brush coat of 1/16 inch thick cement paste. Immediately plug hole with concrete, or with dry-pack material consisting of 1:1.5 mixture of cement and concrete sand mixed slightly damp to touch. Hammer dry-pack into hole until dense and excess paste appears on surface. Finish patch flush and to same texture as surrounding concrete. For large repairs employ 1-1-2 mixture of cement, concrete sand and pea gravel at same dry-pack consistency.

4.9 CURING AND PROTECTION

- A. When concrete is placed at or below ambient air temperatures of 40 degrees F. or whenever in opinion of Architect, such or lower temperatures are likely to occur within 48 hours after placement of concrete, cold weather concreting procedures, according to ACI 306 and as specified herein, shall be followed. To this end, entire area affected shall be protected by adequate housing or covering, and heating. No salt, chemicals or other foreign materials shall be used in the mix to lower freezing point of concrete.

- B. Protect concrete work against injury from heat, cold, and defacement of any nature during construction operations.
- C. Concrete shall be treated and protected immediately after concreting or cement finishing is completed, to provide continuous moist curing above 50 degrees F. for at least seven days, regardless of ambient air temperatures.
- D. Curing compounds will not be permitted for slab on-grade.
- E. Keep permanent temperature records showing date and outside temperature for concreting operations. Thermometer readings shall be taken at start of work in morning, at noon, and again late in afternoon. Locations of concrete placed during such periods shall likewise be recorded, in such manner as to show any effect temperatures may have had on construction. Copies of temperature record shall be distributed daily to Architect.

4.10 HARDENER

- A. Prepare surfaces and apply surface hardener to all concrete floors not receiving resilient flooring, ceramic tile or membrane waterproofing.
- B. Prepare surface and apply special sealer system to all concrete flatwork and curbs exposed to the elements.

4.11 CLEANING

- A. Concrete surfaces shall be cleaned of objectionable stains as determined by the Architect. Materials containing acid in any form or methods which will damage "skin" of concrete surfaces shall not be employed, except where otherwise specified.

END OF SECTION

SECTION 042000 - UNIT MASONRY

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
1. Standard concrete masonry units.
 2. Special shapes, sizes and cuts as noted or detailed.
 3. Mortar and grout.
 4. Reinforcing steel, masonry joint reinforcement, ties and anchors.
- B. Items To Be Installed Only: Install the following items as furnished by the designated Sections:
1. Section 05500 - METAL FABRICATIONS:
 - a. Lintels, miscellaneous metal and iron sleeves, anchors, inserts and plates to be built into masonry walls.
 2. Section 06100 - ROUGH CARPENTRY:
 - a. Wood nailers and blocking built into masonry.
 3. Section 08111 - STEEL DOORS AND FRAMES:
 - a. Hollow metal frames in masonry openings.
 4. Section 08411 – ALUMINUM FRAMED ENTRANCES AND STOREFRONTS
- C. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 07920 - JOINT SEALANTS for sealing control and expansion joints in unit masonry.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For the following:
1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
 2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."
- C. Qualification Data: For testing agency.

- D. **Material Certificates:** Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards. Provide for each type and size of the following:
1. **Masonry units:**
 - a. Include material test reports substantiating compliance with requirements.
 - b. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
 2. **Cementitious materials.** Include brand, type, and name of manufacturer.
 3. **Mortar mixes.** Include description of type and proportions of ingredients.
 4. **Grout mixes.** Include description of type and proportions of ingredients.
 5. **Reinforcing bars.**
 6. **Joint reinforcement.**
 7. **Anchors, ties, and metal accessories.**
- E. **Mix Designs:** For each type of mortar and grout. Include description of type and proportions of ingredients.
1. Include test reports, per ASTM C 780 for mortar mixes required to comply with property specification.
 2. Include test reports, per ASTM C 1019 for grout mixes required to comply with compressive strength requirement.
- F. **Cold-Weather Procedures:** Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

1.3 QUALITY ASSURANCE

- A. **Testing Agency Qualifications:** An independent agency qualified according to ASTM C 1093 for testing indicated, as documented according to ASTM E 548.
- B. **Source Limitations for Masonry Units:** Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.
- C. **Source Limitations for Mortar Materials:** Obtain mortar ingredients of a uniform quality, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. **Store masonry units on elevated platforms in a dry location.** If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver pre-blended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store pre-blended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.5 PROJECT CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
 - 2. Where 1 wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 - 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.
- C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

- D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.1 MASONRY UNITS, GENERAL

- A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

2.2 CONCRETE MASONRY UNITS (CMUs)

- A. Concrete Masonry Units: ASTM C 90, normal weight unless indicated otherwise manufactured to dimensions 3/8 inch less than nominal dimensions.
- B. Shapes: Provide standard shapes indicated and as required for building configuration. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.

2.3 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Aggregate for Mortar: ASTM C 144. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
- D. Aggregate for Grout: ASTM C 404.
- E. Water: Potable.

2.4 REINFORCEMENT

- A. Uncoated Steel Reinforcing Bars: ASTM A.
- B. Masonry Joint Reinforcement, General: ASTM A 951.
 - 1. Exterior Walls: Hot-dip galvanized, carbon steel.

2. Wire Size and Spacing: As required by Code.

2.5 TIES AND ANCHORS

- A. Materials: Provide ties and anchors specified in subsequent paragraphs that are made from materials that comply with subparagraphs below, unless otherwise indicated.
 1. Mill-Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 641/A 641M, Class 1 coating.
 2. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 153/A 153M, Class B-2 coating.
 3. Galvanized Steel Sheet: ASTM A 653/A 653M, Commercial Steel, G60 zinc coating.
 4. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

2.6 MISCELLANEOUS ANCHORS

- A. Anchor Bolts: L-shaped steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153/A 153M, Class C; of dimensions indicated.

2.7 EMBEDDED FLASHING MATERIALS

- A. Laminated Flashing: Copper sheet 5 oz./ sq. ft. bonded with asphalt between two (2) layers of glass-fibre cloth.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.
- B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.
- C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).
- D. Weep/Vent Products: Free-draining mesh; made from polyethylene strands, full height and width of head joint and depth 1/8 inch less than depth of outer wythe; in color selected from manufacturer's standard.

2.9 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

1. Available Manufacturers:
 - a. Diedrich Technologies, Inc.
 - b. EaCo Chem, Inc.
 - c. ProSoCo, Inc.

2.10 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, except as otherwise indicated.
1. Do not use calcium chloride in mortar or grout.
 2. Limit cementitious materials in mortar to portland cement and lime.
- B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.
1. For masonry below grade or in contact with earth, use Type M.
 2. For reinforced masonry, use Type S.
 3. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Thickness: Build composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.

- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed. Do not use units cut to less than one-half size.
- E. Do not install concrete masonry units with more than 5 percent damage to the face. Do not install masonry units which will show defects after installation. Cracked or damaged units shall be removed and replaced as directed by the Owner or Architect.
- F. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- G. Comply with construction tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:
 - 1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
 - 2. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
 - 3. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
 - 4. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch. Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
 - 5. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
 - 6. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

3.2 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs. Prior to installation review bond pattern with Architect and the Owner.
- C. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that

are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

- D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- E. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.
- F. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated. Fill all below-grade concrete masonry units solid.

3.3 MORTAR BEDDING AND JOINTING

- A. Lay concrete masonry units as follows:
 - 1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
 - 2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
 - 3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
 - 4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
- B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated. Provide "weathered" (sloped) joint at top of projected accent courses.
- D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint), unless otherwise indicated.

3.4 MASONRY JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches. Space reinforcement not more than 16 inches o.c.
- B. Interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.
- D. Provide continuity at corners by using prefabricated L-shaped units.

3.5 CONTROL AND EXPANSION JOINTS

- A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

3.6 LINTELS

- A. Install steel lintels where indicated.
- B. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.7 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at lintels, other obstructions to downward flow of water in wall, and where indicated.
- B. Install flashing as follows, unless otherwise indicated:
 - 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
 - 2. At lintels extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
- C. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.
- D. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:
 - 1. Use open head joints to form weep holes.
 - 2. Space weep holes 24 inches o.c., unless otherwise indicated.
- E. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in Part 2 "Miscellaneous Masonry Accessories".

3.8 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect adjacent non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
 - 5. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

3.9 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
 - 1. Crush masonry waste to less than 4 inches in each dimension.
 - 2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Section 02300 - EARTHWORK.
 - 3. Do not dispose of masonry waste as fill within 18 inches of finished grade.
- C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off the Site.

END OF SECTION

SECTION 061053 - MISCELLANEOUS GENERAL CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: ICC-ES evaluation reports for treated wood.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

2.2 TREATED MATERIALS

- A. Preservative-Treated Materials: AWPA C2, except that lumber not in ground contact and not exposed to the weather may be treated according to AWPA C31 with inorganic boron (SBX).
 - 1. Use treatment containing no arsenic or chromium.
 - 2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
 - 3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- B. Provide preservative-treated materials for all miscellaneous rough carpentry unless otherwise indicated.
 - 1. Wood members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Concealed members in contact with masonry or concrete.
 - 3. Wood framing members that are less than 18 inches above the ground.
 - 4. Wood floor plates that are installed over concrete slabs-on-grade.
- C. Fire-Retardant-Treated Materials: Comply with performance requirements in AWPA C20.
 - 1. Use Exterior type for exterior locations and where indicated.
 - 2. Use Interior Type A, High Temperature (HT) where indicated.
 - 3. Use Interior Type A unless otherwise indicated.
 - 4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.
- D. Provide fire-retardant treated materials for all miscellaneous rough carpentry.

2.3 LUMBER

- A. Dimension Lumber:
 - 1. Maximum Moisture Content: 15 percent.
 - 2. Miscellaneous Framing: Construction, Stud, or No. 3.
- B. Exposed Boards: Eastern white, Idaho white, lodgepole, ponderosa, or sugar pine, Premium or 2 Common (Sterling): NeLMA, NLGA, WCLIB, or WWPA; with 15 percent maximum moisture content.
- C. Concealed Boards: Eastern softwoods, No. 3 Common: NELMA; with 15 percent maximum moisture content.
- D. Miscellaneous Lumber: Standard, Stud, or No. 3 grade with 15 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

2.4 PLYWOOD BACKING PANELS

- A. Telephone and Electrical Equipment Backing Panels: Plywood, Exterior, fire-retardant treated, not less than 1/2-inch nominal thickness.

2.5 FASTENERS

- A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
 - 1. Power-Driven Fasteners: CABO NER-272.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Set miscellaneous rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Securely attach miscellaneous rough carpentry to substrates, complying with the following:
 - 1. CABO NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in the IBC.

END OF SECTION 061053

SECTION 071050 – WATERPROOFING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Tuff-N-Dri H8 Waterproofing System

1.2 RELATED SECTIONS

- A. Division 2 Earthwork

1.3 SYSTEM DESCRIPTION

- A. Waterproofing System: Tuff-N-Dri H8 Waterproofing System.

1.4 SUBMITTALS

- A. Submit under provisions of Section 013300.
- B. Product Data: Provide properties of primer, bitumen, mastics, and characteristics of reinforcement fabric.
- C. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.5 QUALIFICATIONS

- A. Applicator: Company specializing in performing the work of this section with minimum 5 years experience approved by manufacturer.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply in standing water or over snow.

1.7 WARRANTY

- A. Provide fifteen (15) year warranty under provisions of Section 017000.
- B. Warranty: Include coverage for waterproofing failing to resist penetration of water.
- C. For warranty repair work, be responsible for removing and replacing materials concealing waterproofing.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Tuff-N-Dri as manufactured by Tremco or approved equal.
- B. Substitutions: Under provisions of Section 016000.

2.2 COMPONENTS

- A. All components shall be as recommended and manufactured to provide a complete warranted waterproofing system.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify substrate surfaces are durable; free of matter detrimental to adhesion or application of waterproofing system.
- B. Verify items which penetrate surfaces to receive waterproofing are securely installed.

3.2 PREPARATION

- A. Protect adjacent surfaces not designated to receive waterproofing.
- B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions.
- C. Do not apply waterproofing to surfaces unacceptable to manufacturer or applicator.
- D. Apply mastic to seal penetrations, small cracks, or minor honeycomb in substrate.

3.3 APPLICATION

- A. Refer to manufacturer's installation guide for recommended application.

3.4 PROTECTION OF FINISHED WORK

- A. Protect finished Work under provisions of Section 015000.
- B. Do not permit traffic over unprotected or uncovered membrane.

3.5 SCHEDULE

- A. Foundation Walls: Apply waterproofing to exterior side of all foundation walls below finished grade, enclosing habitable space, and against which fill rests. Extend a minimum of one (1) foot from foundation wall horizontally onto spread footing.

END OF SECTION

SECTION 077140 - GUTTERS & DOWNSPOUTS

PART 1 GENERAL

1.1 SUMMARY

- A. Includes But Not Limited To
 - 1. Furnish and install gutters and downspouts as described in Contract Documents.
- B. Related Sections
 - 1. Section 079200 - Joint Sealants

1.2 REFERENCES

- A. Sheet Metal & Air Conditioning Contractors National Association, Inc
 - 1. SMACNA Architectural Sheet Metal Manual, current addition.

1.3 SUBMITTALS

- A. Product data on materials specified

PART 2 PRODUCTS

2.1 MATERIALS

- A. Aluminum
 - 1. Downspouts - 0.032 inch aluminum including elbows.
 - 2. Gutters - 0.040 inch thick minimum, SMACNA Style "B".
 - 3. Finish -
 - a. Metal exposed to view shall be natural anodized aluminum or have face coating of polyvinylidene Fluoride (PVF₂) Resin-base finish (Kynar 500 or Hylar 5000) containing 70 percent minimum PVF₂ in resin portion of formula. Thermo cured two coat system consisting of corrosion inhibiting epoxy or acrylic latex primer and top coat factory applied over properly pretreated metal.
 - b. Color: As selected by Architect from ATAS Aluminum Standard stock color chart.
- B. Screws, Bolts, Nails, & Accessory Fasteners - Of strength and type consistent with function.
- C. Hangers, Fasteners, & Accessories - Of compatible material.
- D. Downspout transition boots -
 - 1. Pre-manufactured PVC or ABC plastic, painted to match cultured stone masonry.
 - 2. Equal as approved by Architect before installation.

2.2 FABRICATION

- A. Fabricate in accordance with SMACNA Manual.
- B. Form accurately to details.
- C. Profiles, bends, and intersections shall be even and true to line.

PART 3 EXECUTION

3.1 PREPARATION

- A. Before starting work, verify governing dimensions at building. Inspect for conditions which would prevent installation of a first class system. Do not install over improper conditions.

3.2 INSTALLATION

- A. Install within four days of installation of adjoining roof system.
- B. Install in accordance with SMACNA Manual.
- C. Insulate work to prevent electrolytic action.
- D. Lap joints in gutter 1-1/2" inches, apply two beads of sealant in lap, and rivet with stainless steel rivets 1 inch on center. Lap joints in downspouts at least 1-1/2 inches in direction of water flow.
- E. Furnish and install outlet tubes as indicated. Furnish and install expansion joints as indicated.
- F. Paint exposed fasteners and rivets to match prefinished metal.
- G. No gutter joint shall be located over an entry.

3.3 FIELD QUALITY CONTROL

- A. At completion of this work, block downspouts and flood gutters in presence of Architect. Repair leaks and adjust gradients for proper drainage.

3.3 CLEANING

- A. Leave metals clean and free of defects, stains, and damaged finish.

END OF SECTION

SECTION 079000 – JOINT SEALERS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Preparing substrate surfaces, both new and existing.
- B. Sealant and joint backing for all new work.
- C. Sealant for all existing joints in exterior masonry construction and exterior joints between dissimilar materials such as between masonry and glazing systems; and masonry and hollow metal frames.

1.2 RELATED SECTIONS

- A. Section 033000 - Cast-In-Place Concrete: Sealants required in conjunction with cast-in-place concrete.
- B. Section 042000 - Unit Masonry Systems: Sealants required in conjunction with masonry.

1.3 REFERENCES

- A. ASTM C790 - Use of Latex Sealing Compounds.
- B. ASTM C804 - Use of Solvent-Release Type Sealants.
- C. ASTM C834 - Latex Sealing Compounds.
- D. ASTM C920 - Elastomeric Joint Sealants.
- E. ASTM D1565 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Open-Cell Foam).
- F. SWRI (Sealant, Waterproofing and Restoration Institute) - Sealant and Caulking Guide Specification.

1.4 SUBMITTALS

- A. Submit under provisions of Section 013300.
- B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
- C. Samples: Submit two samples, illustrating sealant colors for selection.
- D. Manufacturer's Installation Instructions: Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.

1.5 QUALITY ASSURANCE

- A. Perform work in accordance with sealant manufacturer's requirements for preparation

- of surfaces and material installation instructions.
- B. Perform acoustical sealant application work in accordance with ASTM C919.

1.6 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years experience.
- B. Applicator: Company specializing in performing the work of this section with minimum 3 years experience.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.8 COORDINATION

- A. Coordinate work under provisions of Section 013100.
- B. Coordinate the work with all sections referencing this section.

PART 2 PRODUCTS

2.1 SEALANTS

- A. Acrylic Emulsion Latex (Type A): ASTM C834, single component; color as selected; Acrylic Latex 834 manufactured by Tremco.
- B. One Part Acrylic Terpolymer (Type B): single component, no mixing, non-staining, color as selected; MONO manufactured by Tremco.
- C. Acoustical Sealant (Type C): Non-hardening, non-drying, non-bleeding; Acoustical Sealant manufactured by Tremco.

2.2 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: ASTM D1056; round, closed cell polyethylene foam rod; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that substrate surfaces and joint openings are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION OF NEW AND EXISTING JOINTS

- A. Remove loose materials and foreign matter which might impair adhesion of sealant. For existing joints to be recaulked, remove existing sealant in its entirety.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions.
- D. Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

- A. Install sealant in accordance with manufacturer's instructions. Seal all joints in new and existing exterior masonry work, joints between exposed architectural metals and adjoining masonry and elsewhere as noted or specified. Caulk all joints between gypsum products and differing materials. Apply acoustical sealant at perimeters of acoustical barriers or partitions.
- B. Measure joint dimensions and size materials to achieve required width/depth ratios.
- C. Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- G. Tool joints concave.

3.4 CLEANING

- A. Clean work under provisions of 017000.
- B. Clean adjacent soiled surfaces.

3.5 PROTECTION OF FINISHED WORK

- A. Protect finished installation under provisions of Section 015000.
- B. Protect sealants until cured.

3.6 SCHEDULE

<u>Location</u>	<u>Type</u>	<u>Color</u>
A. Masonry	B	As Selected
B. Window Perimeter	B	As Selected
C. Metal Roofing	B	As Selected
D. Door Frame/Walls	B	As Selected
E. Under Thresholds	B	As Selected
F. General Interior Use	A	As Selected
G. Exterior Uses	B	As Selected
H. Acoustical Barriers.....	C	Charcoal Gray

END OF SECTION

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Submittals: Product Data.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.

2.2 PANEL PRODUCTS

- A. Provide in maximum lengths available to minimize end-to-end butt joints.
- B. Interior Gypsum Board: ASTM C 36/C 36M or ASTM C 1396/C 1396M, 1/2-inch in thickness unless otherwise indicated on Drawings, with manufacturer's standard edges. Type X where indicated; Sag-resistant type for ceiling surfaces.
- C. Exterior Gypsum Sheathing: ASTM C 1177, 5/8-inch in thickness unless otherwise indicated on Drawings. Type X where required for fire-resistance-rated assemblies and where indicated.
 - 1. Product: FIBEROCK Aqua-Tough Sheathing by USG Corporation.

2.3 ACCESSORIES

- A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.
 - 1. Provide corner-bead at outside corners unless otherwise indicated.
 - 2. Provide LC-bead (J-bead) at exposed panel edges.
 - 3. Provide control joints where indicated.

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- B. Joint-Treatment Materials: ASTM C 475/C 475M.
 - 1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
 - 2. Joint Compounds: Drying-type, ready-mixed, all-purpose compounds.
 - 3. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.
 - 4. Cementitious Backer Unit Joint-Treatment Materials: Products recommended by cementitious backer unit manufacturer.
 - C. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834.
 - D. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install gypsum board to comply with ASTM C 840.
 - 1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
 - 2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
 - 3. Multilayer Fastening Methods: Fasten base layers and face layer separately to supports with screws.
- B. Install cementitious backer units to comply with ANSI A108.11.
- C. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.
- D. Finishing Gypsum Board: ASTM C 840.
 - 1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.
 - 2. At substrates for ceramic tile and acoustical ceiling tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges.
 - 3. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.
 - 4. Where indicated, provide Level 5 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges. Apply skim coat to entire surface.

END OF SECTION 092900

SECTION 099100 PAINTING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Surface preparation and field painting of exposed exterior and interior items and surfaces.

1.2 SUBMITTALS

- A. Product Data: For each product indicated.
- B. Samples: For each type of finish-coat material indicated.

1.3 QUALITY ASSURANCE

- A. Samples (Mockups): Provide a full-coat finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5.
 - 1. Wall Surfaces: Provide samples on at least 100 sq. ft.
 - 2. Small Areas and Items: Architect will designate items or areas required.
 - 3. Finals approval of colors will be from samples.

1.4 PROJECT CONDITIONS

- A. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
- B. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.
- C. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.
- D. 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 above the dew point; or to damp or wet surfaces.

1.5 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
 - 1. Quantity: 5 percent, but not less than 1 gal. or 1 case, as appropriate, of each material and color applied.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.
- B. Approved Manufacturers:
 - 1. Sherwin-Williams Co.

2.2 PAINT MATERIALS, GENERAL

- A. Materials Compatibility: Provide black 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 materials 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 from manufacturer's full range.

2.3 PREPARATORY COATS

- A. Concrete Unit Masonry Block Filler: High-performance latex block filler of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
- B. Exterior Primer: Exterior alkyd or latex-based primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
 - 1. Ferrous-Metal and Aluminum Substrates: Rust-inhibitive metal primer.
 - 2. Zinc-coated metal substrates: Galvanized metal primer.
 - 3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.
- C. Interior Primer: Interior latex-based or alkyd primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
 - 1. Ferrous-Metal Substrates: Quick drying, Rust-inhibitive metal primer.
 - 2. Zinc-coated metal substrates: Galvanized metal primer.
 - 3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.

2.4 EXTERIOR FINISH COATS

- A. Exterior Low-Luster Acrylic Paint:
 - 1. Sherwin-Williams; A-100 Exterior Latex Satin House & Trim Paint A82 Series.
- B. Exterior Semigloss Acrylic Enamel:
 - 1. Sherwin-Williams; A-100 Latex Gloss A8 Series.
- C. Exterior Full-Gloss Acrylic Enamel for Concrete, Masonry, and Wood:
 - 1. Sherwin-Williams; SuperPaint Exterior High Gloss Latex Enamel A85 Series.
- D. Exterior Full-Gloss Acrylic Enamel for Ferrous and Other Metals:
 - 1. Sherwin-Williams; DTM Acrylic Coating Gloss (Waterborne) B66W100 Series.

2.5 INTERIOR FINISH COATS

- A. Interior Low-Luster Acrylic Enamel:
 - 1. Sherwin-Williams; "Super Paint" Acrylic Latex Enamel.
- B. Interior Semigloss Acrylic Enamel:
 - 1. Sherwin-Williams; "Super Paint" Acrylic Latex Enamel.
- C. Interior Full-Gloss Acrylic Enamel:
 - 1. Sherwin-Williams; "Super Paint" Acrylic Latex Enamel.

PART 3 - EXECUTION

3.1 APPLICATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements

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- for paint application.
- 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.
 - C. 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 items, 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.
 - D. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instruction for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and reprime.
 - 2. Cementations Materials: Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
 - 3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 - b. Prime, Stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
 - c. If transparent finish is required, back prime with spar varnish.
 - d. Back prime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.
 - e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
 - 4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
 - a. 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.
 - 5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from stock by mechanical methods.
 - E. Material Preparation:
 - 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.
 - F. Exposed Surfaces: Include 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.
 - 1. 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.
 - 2. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
 - 3. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 - 4. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.

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- 5. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
 - G. Sand lightly between each succeeding enamel or varnish coat.
 - H. 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. Omit primer over metal surfaces that have been shop primed and touchup painted.
 - 2. 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.
 - I. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
 - J. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer.
 - K. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
 - L. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
 - M. 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.
 - N. 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.
 - O. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

3.2 CLEANING AND PROTECTING

- A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.
- B. 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.
- C. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by other 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 PCDA P1.

3.3 EXTERIOR PAINT SCHEDULE

- A. Ferrous Metal:
 - 1. Acrylic Finish: Two finish coats over a rust-inhibitive primer.
 - a. Primer: Exterior ferrous-metal primer (not required on shop primed items).
 - b. Finish Coats: Exterior full-gloss acrylic enamel for ferrous and other metals.
- B. Zinc-Coated Metal:
 - 1. Acrylic Finish: Two finish coats over a galvanized metal primer.
 - a. Primer: Exterior galvanized metal primer.
 - b. Finish Coats: Exterior full-gloss acrylic enamel for ferrous and other metals.

3.4 INTERIOR PAINT SCHEDULE

- A. Concrete Unit Masonry:
 - 1. Acrylic Finish: Two finish coats over a block filler.

- a. Block Filler: Concrete unit masonry block filler.
- b. Finish Coats: Interior semigloss acrylic enamel.
- B. Gypsum Board:
 - 1. Acrylic Enamel Finish: Two finish coats over a primer.
 - a. Primer: Interior gypsum board primer.
 - b. Finish Coats: Interior semigloss acrylic enamel.
- C. Wood and Hardboard:
 - 1. Acrylic-Enamel Finish: Two finish coats over a primer.
 - a. Primer: Interior wood primer for acrylic-enamel and semigloss alkyd enamel finishes.
 - b. Finish Coats: Interior semigloss acrylic enamel.
- D. Ferrous Metal:
 - 1. Acrylic Finish: Two finish coats over a primer.
 - a. Primer: Interior ferrous-metal primer.
 - b. Finish Coats: Interior semigloss acrylic enamel.
- E. Zinc-Coated Metal:
 - 1. Acrylic Finish: Two finish coats over a primer.
 - a. Primer: Interior zinc-coated metal primer.
 - b. Finish Coats: Interior semigloss acrylic enamel.

END OF SECTION 099100

SECTION 230010 – HVAC General Requirments

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. These basic Mechanical Requirements are specifically applicable to all Mechanical Division Sections, in addition to Division 01 - General Requirements, the General Conditions and the Supplementary General Conditions which also apply to this division.
- B. This Section includes instructions on general project objectives, alternates, allowances, as-built drawings, submittals, regulatory requirements, demolition instructions, and installation instructions.
- C. HVAC systems includes all mechanical work.

1.2 SCOPE OF WORK

- A. Low Velocity Ductwork
- B. Refrigerant Piping
- C. Condensate Piping
- D. Sealed Combustion Furnaces
- E. Motor starters and disconnects
- F. Single Stage Outdoor Condensing Units
- G. Electrical Resistance Wall Heater
- H. Control wiring
- I. Temperature controls, electronic
- J. Exterior Wall Louvers
- K. Demolition of existing equipment and systems
- L. HVAC System Testing: Test, adjust, and balance systems and equipment to provide the specified operation. Provide system tests, control sequence of operation test, and an independent certified airflow test/adjustment/balance (TAB), including the coil data sheets. The TAB agency shall be certified by either the Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB). Submit three (3) copies of the design engineer approved TAB report to the Contracting Officer for final approval.

- M. Training: Provide instruction of building operations personnel for all HVAC systems and equipment. Duration of training shall be a minimum of four (4) hours for each system or discipline. Audible/visual electronic recordings of the training shall be provided to the users for operation and maintenance of all systems (3 copies).
- N. Motor starter/disconnects and VFD's to be furnished by the Mechanical Contractor and installed by the Electrical Contractor.

1.3 DEFINITIONS

- A. Any reference in this Division to "this Contractor", "Contractor" or reference to furnish or install or to supply any work with no reference to the Contractor responsible shall be furnished and installed under this division.
- B. "Provide"- Furnish and install.
- C. "Furnish" - Obtain and deliver to the job for installation by other trades.
- D. "Install" - Set and connect an equipment item furnished by others. Place item in full operating condition.
- E. Mechanical and HVAC words are used interchangeably and have the same meaning.

1.4 INTENT OF DRAWINGS

- A. Separate drawings have been prepared for the convenience of the General, Plumbing, Heating and Electrical Trades. Their work is generally shown under the proper heading however, all drawings listed are part of each contract insofar as they are applicable. Particularly as they apply to space limitations, obstructions, type of construction, and space requirements for the installation of other trades work.
- B. The drawings are diagrammatic and additional transitions, offsets, fittings, drains, vents and drips shall be provided as may be required to install the systems, even if not shown, at no additional cost.
- C. The drawings take precedence over the specifications where there is conflicting information or whichever is more stringent.
- D. The systems shall be complete, ready for operation with all components required, including items which may not be fully shown or specified. Items not shown, fully detailed or specified, but required for a complete system shall be provided at no extra cost and shall conform to accepted trade practices. Connect every terminal unit, air outlet/inlet and equipment item.

1.5 AS-BUILT DRAWINGS

- A. During construction, the Contractor shall maintain a separate reproducible set of Mechanical drawings on which he shall record the exact location of all concealed piping and ductwork which

is not installed as shown. These "as built" drawings shall be delivered to the Architect at the end of the job.

1.6 SUBMITTALS AND SUBSTITUTIONS

- A. Submit under provisions of the General Requirements all products in this division. Submit shop drawings and product data only if manufacturers or products supplied deviate from the specification requirements, space indicated or capacities scheduled. Shop drawings submitted because of deviations shall be submitted as instructed in this section and in the further instructions given in the individual sections. Products fully complying with these specifications do not have to be submitted.
- B. Submit Substitutions under provisions of the General Requirements and Conditions and the instructions given in this section of the specifications.
- C. Full Drawings: Submit field checked and coordinated equipment room piping and ductwork layouts at 1/4" equals 1'0" and ductwork layouts of the floor plans at 1/4" equals 1'0" scale.
- D. Submit shop drawings and product data grouped to include complete submittals of related systems, products, and accessories in a single submittal. Highlight equipment data. General Catalog data will be returned unless custom highlighted.
- E. Mark dimensions and values in units to match those specified. List any differences between the product submitted and the product specified and shown on the drawings.
- F. All materials and equipment shall be new and shall of good quality and equal in all respects to the products of well recognized and reputable United States' manufacturers.
- G. Where the specifications give more than one manufacturer's name for an item of equipment, the drawings are based on the name given first. Additional names indicate only that these manufacturers make equipment of acceptable quality and before using same, it shall be the responsibility of the Contractor to determine if the dimensions, mechanical and electrical characteristics are suitable. If revisions in the work or of other trades is required due to use of any equipment other than shown on the drawings, the additional cost shall be included in the Bid Price.
- H. Manufacturer's installation diagrams shall be provided for all equipment requiring shop drawings. Shop drawings shall be submitted in a timely manner for examination and comment.
- I. Approval shall be considered as general only and as aid to the Contractor. Any items missed in review and/or is counter to the drawings or does not relieve the Contractor from the necessity of furnishing the materials and performing all work as required by the plans and specifications. Review of shop drawing does not constitute the engineer takes responsibly the shop drawings are correct or complete and is only a convenience to the contractor to correct any errors made by the contractor or vendor.

1.7 REGULATORY REQUIREMENTS

- A. Conform to the following codes:
 - 1. International Mechanical Code/2015 Edition.
 - 2. International Energy Conservation Code/2015 Edition
 - 3. International Building Code / 2015 Edition.
 - 4. International Plumbing Code/2015 Edition, Allegheny County Plumbing Code
- B. Nothing in the Contract Documents shall be construed to conflict with any laws, ordinances or regulations of authorities having jurisdiction over the contract work and all requirements shall be complied with throughout, without additional cost to the Owner.
- C. Obtain permits, pay any fees and request inspections from authority having jurisdiction.
- D. All mechanical equipment shall bear the label of an approved agency.

1.8 PROJECT/SITE CONDITIONS

- A. Install Work in locations shown on Drawings, unless prevented by Project conditions.
- B. Prepare drawings showing proposed rearrangement of Work to meet Project conditions, including changes to Work specified in other sections. Obtain permission of Architect/Engineer before proceeding.
- C. The Contractor is solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours. The duty of the Engineer to visit the site is not intended to include review of the adequacy of the Contractor's safety in, on, or near the construction site.

1.9 CHASES, CUTTING AND PATCHING

- A. This trade shall cooperate with the General trade, advising him of the sizes, number and locations of all openings, recesses, access doors and panels, and pipe sleeves required to properly install his pipe lines, ducts etc. Unless otherwise shown or noted all piping, ducts etc., in finished rooms shall be completely concealed in partitions or furred spaces. The Mechanical trade shall install all required sleeves which shall be built into place as the general construction proceeds.
- B. This trade will furnish to the general trade shop drawings showing all mechanical/plumbing penetrations. The general trade shall leave the required openings when they perform the masonry, general construction and concrete work.
- C. Cutting where necessary for Mechanical work shall be done by the Mechanical Trade in a neat and careful manner to prevent damage or weakening of walls, roof or floors and shall meet the approval of the Architect/Engineer. Patching caused by the Mechanical Trade shall be done by

the Mechanical Trade for holes up to 12"x 12" (one square foot). Patching material shall match adjacent surfaces.

PART 2 - PRODUCTS

2.1 FIRE BARRIER MATERIALS

- A. Approved fill material for fire barriers shall be packed mineral wool, T & B Flame-Safe, 3M Fire Barrier caulk or Dow Corning RTV foam. Approved protective devices shall be UL listed fire dampers for ductwork and UL listed "link-seals" for piping. Large shaft and wall openings around ducts and piping and shaft floors where fire ratings must be maintained shall be infilled with 3M Inc. fire barrier wall sheets.

2.2 ACCESS DOORS

- A. Manufacturers:
 - 1. Milcor, Inc.
 - 2. Nystrom, Inc.
 - 3. Or approved equal.
- B. Access doors shall be of metal with mounting frame and screw driver operated CAM lock latches flush with panel face. Fire rating to match required rating of the respective shaft/wall/floor/ceiling assemblies. See architectural drawings for locations of fire rated assemblies.

2.3 INLET and EXHAUST AIR KITS

- A. Manufacturers:
 - 1. Superior, Inc.
 - 2. Dayton, Inc.
 - 3. Panasonic, Inc.
 - 4. Or approved equal.
- B. Inlet and exhaust kits shall be installed in accordance with the manufacturer's instructions. Match fire ratings where required by existing construction.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install equipment in accordance with the instructions in these specifications and as shown on the drawings. In lieu of a where a specific item is not detailed, install in accordance with industry standards.
- B. All equipment shall be installed in accordance with the instructions which shall be available at the job site. If the installation instructions are contrary to the work shown or specified, the contractor shall consult the engineer before proceeding with the installation.

3.2 PROCEDURE AND COORDINATION

- A. Pipe lines, conduits, etc., other than Mechanical contract work shall be under installation throughout the building site and this Contractor shall consult with all other trades to coordinate the assembly and installation of all trades to avoid conflict and need for rearrangement, as no extras shall be granted due to lack of coordination. This applies particularly to locations of ducts, heating and plumbing pipes, electric conduits, recessed lights fixtures, etc., which occur in close quarters such as furred walls, columns & ceilings, pipe and duct shafts etc., and where minimum head clearances shall be maintained.
- B. Do not install piping or ductwork in transformer rooms, electric equipment rooms, electric closets or generator rooms unless they serve these spaces. Do not install piping adjacent to electric devices. Provide drip pan protection if piping must be installed above or adjacent to electric panels or devices.
- C. Mechanical equipment shall be installed in a manner to permit ease of service and the Mechanical Contractor shall inform other trades of access requirement to prevent interference with same.
- D. All new piping, ductwork, equipment, etc. shall be installed so that it does not interfere with access to existing valves, access doors, equipment, etc.
- E. Protect all unfinished work from damage. Seal off all portions of the duct systems or piping not being worked on to permit continued service and to prevent the entry of dirt. Install temporary filters over all exhaust/return air openings in the work area. Repair or replace any damage caused by the installation of the Mechanical systems.
- F. Where alterations of new work affect the use of present buildings or facilities. the Contractor shall schedule his work and activities so that interference is kept to a minimum. When shutdown of existing systems or equipment is required, the work shall be executed at the convenience of the Owner under the direction of the Architect/Engineer.

3.3 PROTECTION OF BUILDING FIRE/SMOKE BARRIERS

- A. Passages of pipes and air ducts through fire barriers and/or smoke barriers shall be protected as follows:

1. The space between the penetrating item and the fire barrier and/or smoke barrier shall be filled with a material capable of maintaining the fire/smoke resistance of the barrier or be protected by an approved device design for the specific purpose.
- B. Where the penetrating item uses a sleeve to penetrate the fire and/or smoke barrier the sleeve shall be solidly set in the fire/smoke barrier and the space between the item and the sleeve shall be filled as described below.
 1. All piping or duct insulation shall stop at each side of a fire barrier and the void space between the item and the rated barrier shall be protected. Void space between fire barriers and piping and ductwork subject to surface condensation shall be filled with caulk or foam material capable of preventing vapor transmission. Sufficient room shall be maintained for expansion.
- C. Fire barriers shall include 1-hour, 2-hour, 3-hour and 4-hour UL rated floors and walls. Refer to architectural plans for location of fire barriers and smoke barriers and provide protection required to maintain ratings in accordance with all codes the applicable codes.
- D. Use UL approved fire dampers for protection of ductwork penetrations, and 3M, Hilti, or equal products for piping penetrations and packing materials.

3.4 ACCESS DOORS

- A. Install access doors where shown on the drawings and where required to service equipment concealed behind walls, ceilings, or floors. Accessible ceilings do not require access doors. Minimum size 12"x12".

3.5 PAINTING

- A. In finished spaces, painting of all Mechanical equipment, apparatus and piping shall be done by the Painting Trade under the General Trade Specification.
- B. All uncoated ferrous surfaces located outdoors, including ferrous metal piping covered by insulation, shall be painted at the job site with one coat of rust inhibited metal primer and one coat of exterior grade. If heated surfaces are involved, heat resistant paint shall be used. Do not paint galvanized metal, aluminum, copper or factory painted surfaces.

3.6 TEMPORARY HEAT

- A. The Mechanical system shall not be used under any exceptions to provide temporary heating, ventilating, exhaust, or air conditioning until the building is clean, without any dust or debris that can enter the Mechanical system and is ready for occupancy. Covering the return/exhaust air inlets with filter media is not an acceptable alternative to having an enclosed, dust-free environment for the systems to operate in. In no event shall the Mechanical Contractor's 1-year warranty be shortened by the use of permanent equipment for temporary heat.

3.7 ELECTRICAL REQUIREMENTS

- A. Furnish to the Electrical trade for installation combination motor starters and variable frequency drives for all HVAC equipment. Refer to Section 230510 HVAC Electrical Devices and Requirements.
- B. Electrical Trade shall provide power wiring to HVAC equipment.
- C. Electrical Trade shall provide power wiring to HVAC control devices. Coordinate with HVAC Trade.
- D. HVAC Trade shall provide control wiring to HVAC systems.

3.8 CLEANUP

- A. All tools, benches and other workmen's materials and appliances shall be removed from the premises after formal and final approval of completion is given. The premises shall be cleaned of all remaining debris.

3.9 INSTRUCTIONS AND OPERATION AND MAINTENANCE MANUALS

- A. See Section 01700.
- B. Upon final acceptance and turning over of the project to the Owner, make available qualified persons fully familiar with the installation and capable of instructing the Owner's staff in the operation, care and manipulation of the various systems.
- C. Provide to Owner three (3) copies of IOM manuals, as-built drawings, and all other information requested in Execution section of the mechanical sections of these specifications. Assemble into loose leaf binders indexed by tabs per each item with table of contents.

3.10 MECHANICAL WARRANTY

- A. Refer to Division 01 for general warranty requirements. Review all Division 23 sections for additional installation and equipment warranties.
- B. The Mechanical Contractor shall guarantee that all apparatus is of best grade and quality and that all work has been done in strict accord with the specifications and drawings. Correct defects in workmanship, materials and equipment that develop within one year from date of acceptance by repair or replacement.

END OF SECTION

FOR CONSTRUCTION

THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND MATERIALS BEFORE BEGINNING WORK. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND MATERIALS BEFORE BEGINNING WORK. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND MATERIALS BEFORE BEGINNING WORK. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND MATERIALS BEFORE BEGINNING WORK.

REVISIONS

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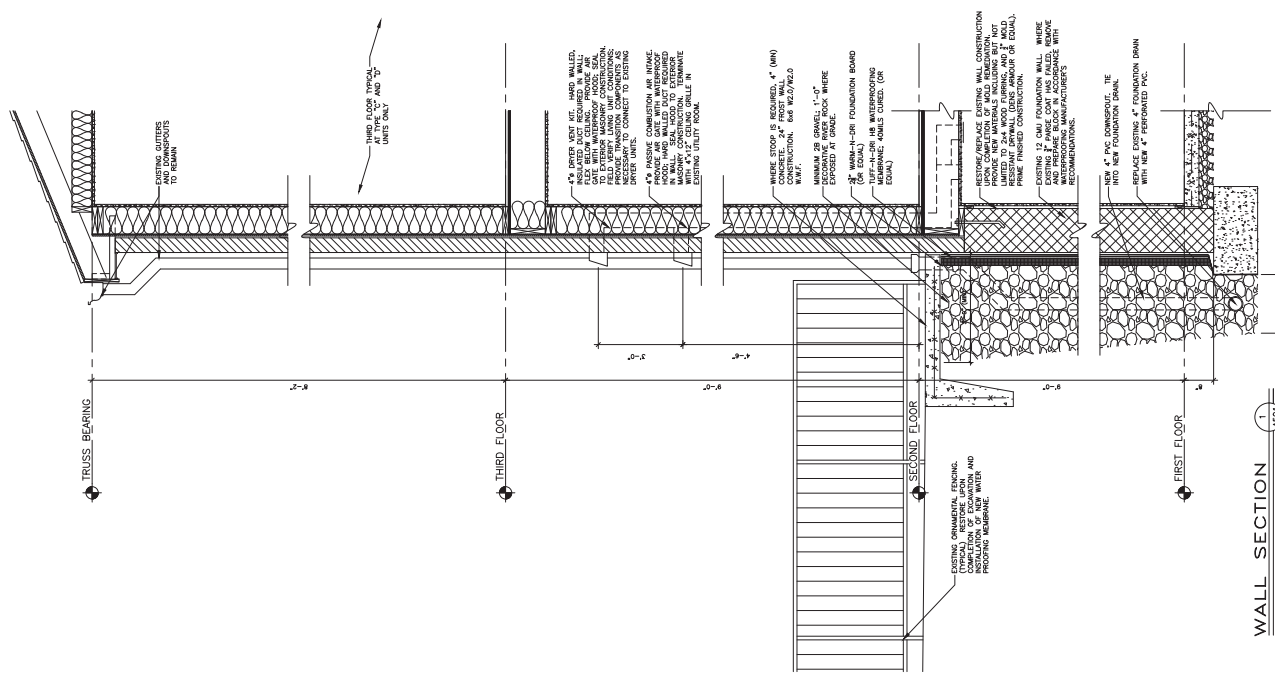
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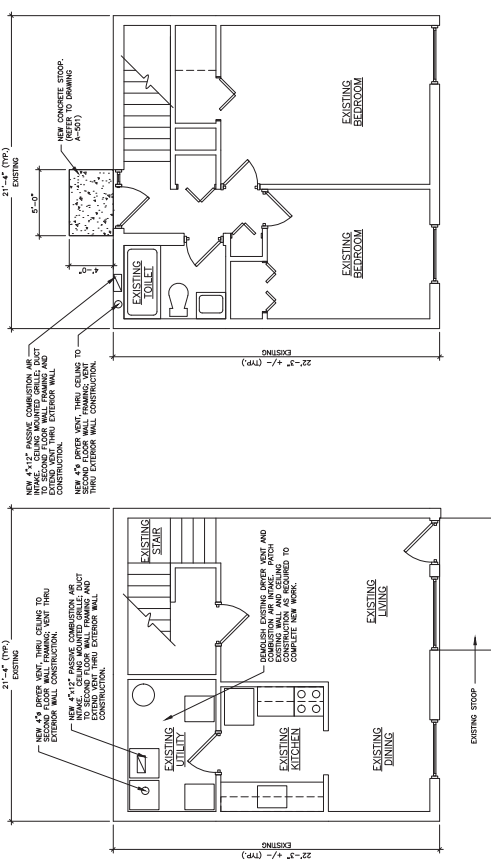
410 FT. PITT COMMONS, 445 FT. PITT BLVD., PITTSBURGH, PENNSYLVANIA 15219-1333 PHONE: 412-566-1531 FAX: 412-566-1532 DRAWING NAME

SECTIONS & DETAILS

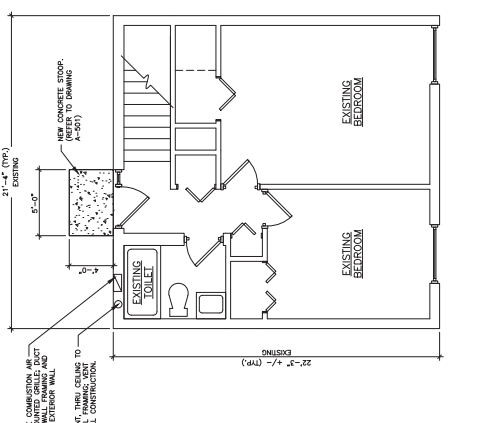
Table with columns for sheet number, revision, date, and title. Shows sheet A-501 dated 04/02/21.



WALL SECTION SCALE: 3/4"=1'-0"



FIRST FLOOR UNIT PLAN (TYP.) SCALE: 1/4"=1'-0"



SECOND FLOOR UNIT PLAN (TYP.) SCALE: 1/4"=1'-0"

- GENERAL NOTES (LARGELY TO BOTH FIRST AND SECOND FLOOR SITES): 1) GENERAL CONTRACTOR SHALL VERIFY ALL EXISTING SITE CONDITIONS. 2) GENERAL CONTRACTOR SHALL INCLUDE ALL WORK AS IS NECESSARY TO PROVIDE A COMPLETE PROJECT. 3) GENERAL CONTRACTOR SHALL COORDINATE LIMITS OF RESTORATIVE WORK WITH MOLD REMEDIATION CONTRACTOR. 4) GENERAL CONTRACTOR SHALL REPLACE/RESTORE ALL EXISTING ELEMENTS DAMAGED BY MOLD, WATER AND REMEDIATION MEASURES. 5) GENERAL CONTRACTOR SHALL REMOVE ALL EXISTING MATERIALS REPORT AND THE EXISTING CONSTRUCTION DRY PRIOR TO RESTORATIVE WORK. 6) GENERAL CONTRACTOR SHALL REPLACE/RESTORE ALL EXISTING ELEMENTS DAMAGED BY MOLD, WATER AND REMEDIATION MEASURES. 7) GENERAL CONTRACTOR SHALL REMOVE ALL EXISTING MATERIALS REPORT AND THE EXISTING CONSTRUCTION DRY PRIOR TO RESTORATIVE WORK. 8) GENERAL CONTRACTOR SHALL REPLACE/RESTORE ALL EXISTING ELEMENTS DAMAGED BY MOLD, WATER AND REMEDIATION MEASURES. 9) GENERAL CONTRACTOR SHALL REMOVE ALL EXISTING MATERIALS REPORT AND THE EXISTING CONSTRUCTION DRY PRIOR TO RESTORATIVE WORK.