



PROJECT MANUAL

IFB for Contract No.

Bids Due

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

Attn:
Mr. Kim Detrick,
Director of
Procurement

CONSULTANT:

Issued:

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

INVITATION FOR BIDS (IFB)

The HOUSING AUTHORITY OF THE CITY OF PITTSBURGH will receive separate sealed bids for
; for the following contracts:

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

Bid documents will be available on _____
at _____, at _____

. A Pre-Bid Conference will be held on _____

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

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

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

TO VIEW AND OBTAIN DOCUMENTS

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

AWARD OF CONTRACT (S):

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

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

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

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

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

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

EQUAL EMPLOYMENT OPPORTUNITY REQUIREMENTS:

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

A. Section 3 Participation

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

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

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

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

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

RESIDENT HIRING REQUIREMENTS / RESIDENT HIRING SCALE

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

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

A copy of HUD's Section 3 requirement is provided herein. If you have any questions regarding the Section 3 Requirements or would like to discuss goals and planning for Section 3 Requirements please contact Mr. Lloyd Wilson, 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 Mr. Kim Detrick, Director of Procurement/Chief Contracting Officer, by e-mail at kim.detrick@hacp.org or by contacting him at the Procurement Department, Housing Authority of the City of Pittsburgh, 100 Ross Street, Suite 200 Pittsburgh PA 15219, telephone (412) 456-5116 opt.1. Bids or proposals must demonstrate how the Offeror intends to meet or exceed these goals.

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

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

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

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

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

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

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



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

SPECIAL PROVISIONS

NOTICE TO ALL PROSPECTIVE BIDDERS

CONTRACT NO. _____

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: _____

IFB CONTRACT NO. _____

**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: _____

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

HACP Contract No. _____

**PROJECT MANUAL
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HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

HACP CONTRACT NO. _____

INVITATION FOR BIDS LIST OF DOCUMENTS

The HOUSING AUTHORITY OF THE CITY OF PITTSBURGH will receive separate sealed bids for _____, for the following contracts:

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

THE PROJECT MANUAL, dated _____ consisting of:

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

THE PROJECT DRAWINGS, as prepared by _____, **dated _____**.

THE BID PACKAGE, dated _____ 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

HACP CONTRACT NO. _____

**NOTICE OF
PRE-BID CONFERENCE**

A Pre-Bid Conference will be held on _____

- A Pre-Bid Conference will be held on _____ at _____, at the _____. 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

HACP CONTRACT No. _____

PROJECT SCHEDULE

NO LATER THAN

Invitation for Bids issued

Pre-Bid Conference (Followed by Site Visit)

Last day to submit written questions

Bids due

Notice of Award

(estimated)

Execution of Contracts

(estimated)

Pre-Construction Conference

(estimated)

Construction Start

(estimated)

____ calendar days
from effective date
of Notice to Proceed

All work required under this contract shall be complete

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

HACP CONTRACT NO. _____

***SCOPE OF WORK FOR
GENERAL CONSTRUCTION***

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

1. THE AGREEMENT
(Bound in the Project Manual)

THE BID	Document 00310 - Scope of Work for General Construction Document 00311 - Form of Bid for General Construction
---------	--

THE FORM OF AGREEMENT	Document 00500 - Form of Agreement Document 00590 - Contracting Officer Certification
--------------------------	--

CONDITIONS OF THE CONTRACT	Document HUD - 5370 General Conditions HACP Document - Supplemental General Conditions Document 00830 - Wage Determination Schedule
----------------------------------	---

2. PRIMARY SPECIFICATIONS FOR THE GENERAL CONSTRUCTION CONTRACT
(Bound in the Project Manual)

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

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

The General Contractor shall coordinate the schedule and activities of work performed by this and all other Prime Contracts, as identified by (G)-General, (P)-Plumbing, (H)-HVAC, and (E)-Electrical.

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

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

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

For example, the General Contractor is required by his Primary Specifications to install and repair all general work. In the event that the 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 _____ construction documents drawings, **dated** _____ 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

HACP Contract No. _____

FORM OF BID

GENERAL CONSTRUCTION

Contract No.: _____

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

BIDDER: _____

(Bidder Name)

(Business Address)

(Telephone)

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

- Project Manual, dated _____ containing Bidding Requirements, Contract Forms, Conditions of the Contract, and Specifications
- Project Drawings, dated _____
- 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)*

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

Bid Security is in amount of:

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

Bid Security is in the form of:

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

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

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

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

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

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

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

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

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

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

PROPRIETORSHIP SIGNATURE PAGE

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 _____.

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

PROPRIETORSHIP FICTITIOUS NAME DISCLOSURE

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

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

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

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

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

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

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

PARTNERSHIP FICTITIOUS NAME DISCLOSURE

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

SHEET FB-P-2

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

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

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

<i>Witness</i>	_____ <i>(Printed or Typed Name)</i>	<i>Partner*</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>(Printed or Typed Name)</i>	<i>Partner*</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>	<div style="text-align: center;">_____ <i>(Printed or Typed Name)</i></div>		<div style="text-align: center;">_____ <i>(Printed or Typed Name)</i></div>
	<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

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

*** 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

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

* 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)

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

*** 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

(Bidder's Name)

(Project Name)

(Address)

(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					
<div style="display: flex; justify-content: space-between;"> ____ MBE ____ WBE </div>	TYPE OF SUBCONTRACT WORK OR MATERIALS	<u>DATE SOLICITED</u> BY PHONE BY MAIL		<u>COMMITMENT MADE</u> YES NO <small>(IF YES, GIVE DATE)</small>	GIVE REASON(S) IF NO COMMITMENT MADE
COMPANY NAME		QUOTE RECEIVED		AMOUNT COMMITTED	
ADDRESS		YES	NO	DOLLAR AMOUNT \$	
CONTACT PERSON PHONE				PERCENT OF TOTAL BID %	
<div style="display: flex; justify-content: space-between;"> ____ MBE ____ WBE </div>	TYPE OF SUBCONTRACT WORK OR MATERIALS	<u>DATE SOLICITED</u> BY PHONE BY MAIL		<u>COMMITMENT MADE</u> YES NO <small>(IF YES, GIVE DATE)</small>	GIVE REASON(S) IF NO COMMITMENT MADE
COMPANY NAME		QUOTE RECEIVED		AMOUNT COMMITTED	
ADDRESS		YES	NO	DOLLAR AMOUNT \$	
CONTACT PERSON PHONE				PERCENT OF TOTAL BID %	
<div style="display: flex; justify-content: space-between;"> ____ MBE ____ WBE </div>	TYPE OF SUBCONTRACT WORK OR MATERIALS	<u>DATE SOLICITED</u> BY PHONE BY MAIL		<u>COMMITMENT MADE</u> YES NO <small>(IF YES, GIVE DATE)</small>	GIVE REASON(S) IF NO COMMITMENT MADE
COMPANY NAME		QUOTE RECEIVED		AMOUNT COMMITTED	
ADDRESS		YES	NO	DOLLAR AMOUNT \$	
CONTACT PERSON PHONE				PERCENT OF TOTAL BID %	

Prepared by:

Title:

Phone:

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

MBE/WBE Participation Plan

I. SMALL BUSINESS PARTICIPATION

Is the Bidder a Small Business as defined by the size and standards in 13 CFR 121?

Yes _____ No _____

II. MINORITY BUSINESS PARTICIPATION

Is the Bidder classified as a Minority Business Enterprise?

Yes _____ No _____

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

Yes _____ No _____

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

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

III. WOMEN-OWNED BUSINESS PARTICIPATION

Is the Bidder classified as a Woman-Owned Business Enterprise?

Yes _____ No _____

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

Yes _____ No _____

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

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

****All MBE/WBE firms must be certified.**

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

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

[illegible]

Phone:

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

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

Prepared by:

Title:

Phone:

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH
MBE/WBE EXHIBIT

MBE/WBE COMMITMENT WAIVER REQUEST FORM

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

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

Prepared by: _____ Title: _____ Phone: _____

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

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

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

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

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

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

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

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

NOTICE TO ALL PROSPECTIVE BIDDERS

REQUEST FOR MANPOWER PLAN

HACP CONTRACT NO. _____

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

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

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

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

Bidder's Name: _____

Name of the Person Signing the Bid: _____

Signature of the Person Signing the Bid: _____

Bid Due Date: _____



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

Bidder's Planned Manpower

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

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



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(412) 456-5020
www.hacp.org

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

REQUEST FOR INFORMATION

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

Bidder's Capacity

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

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

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

Justification for Change Orders/Schedule: _____

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

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

Justification for Change Orders/Schedule: _____

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

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



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

NOTICE TO ALL PROSPECTIVE BIDDERS
Previous Related Experience
for

HACP CONTRACT NO. _____

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

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

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

Reference 1			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			



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

**Previous Related Experience
for**

HACP CONTRACT NO. _____

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 2			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
1			
2			
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4			
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100 Ross Street, Suite 200
Pittsburgh, PA 15219
(412) 456-5020
www.hacp.org

**Previous Related Experience
for**

HACP CONTRACT NO. _____

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 3			
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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3			
4			
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Pittsburgh, PA 15219
(412) 456-5020
www.hacp.org

**Previous Related Experience
for**

HACP CONTRACT NO. _____

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 4			
Project:			
Contact:			
Contact Telephone Number:			
Contract Amount:			
Change Orders			
Number	Total \$ Value per Change	Description of Change	Reason for Change
1			
2			
3			
4			
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(412) 456-5020
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**Previous Related Experience
for**

HACP CONTRACT NO. _____

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 5			
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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4			
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100 Ross Street, Suite 200
Pittsburgh, PA 15219
(412) 456-5020
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**Previous Related Experience
for**

HACP CONTRACT NO. _____

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 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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Development & Modernization
100 Ross Street, Suite 200
Pittsburgh, PA 15219
(412) 456-5020
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**Previous Related Experience
for**

HACP CONTRACT NO. _____

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

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

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

Representations, Certifications, and Other Statements of Bidders

Public and Indian Housing Programs

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1. Certificate of Independent Price Determination

(a) The bidder certifies that--

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

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

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

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

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

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

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

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

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

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

[] [Contracting Officer check if following paragraph is applicable]

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

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

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

2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4. Organizational Conflicts of Interest Certification

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

- (a) Result in an unfair competitive advantage to the bidder; or,
- (b) Impair the bidder's objectivity in performing the contract work.

[] In the absence of any actual or apparent conflict, I hereby certify that to the best of my knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement.

5. Bidder's Certification of Eligibility

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

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

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

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

6. Minimum Bid Acceptance Period

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

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

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

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

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

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

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

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

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

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

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

(Check the block applicable to you)

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

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

The bidder represents and certifies that it:

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

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

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

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

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

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

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

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

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

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

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

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

(1) Obtain identical certifications from the proposed subcontractors;

(2) Retain the certifications in its files; and

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

Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities

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

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

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

The bidder certifies that:

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

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

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

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

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

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

13. Bidder's Signature

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

(Signature and Date)

(Typed or Printed Name)

(Title)

(Company Name)

(Company Address)

Previous Participation Certification

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

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

US Department of Agriculture Farmers Home Administration

Part I to be completed by Controlling Participant of Covered Projects (See instructions) 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 \$	4. Number of Units or Beds	5. Section of Act	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 organization chart for all organizations

Name and address of Principals and Affiliates (Name: Last, First, Middle Initial) proposing to participate	8 Role of Each Principal in Project	9. SSN or IRS Employer Number

Certifications: The controlling 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) each certify that all the statements made on this form are true, complete and correct to the best of their knowledge and belief and are made in good faith, including any Exhibits attached to this form.

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

- 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.
- For the period beginning 10 years prior to the date of this certification, and except as shown on the certification:
 - 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;
 - The controlling participants have no defaults or noncompliance under any Conventional Contract or Turnkey Contract of Sale in connection with a public housing project;
 - 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;
 - There has not been a suspension or termination of payments under any HUD assistance contract due to the controlling participant's fault or negligence;
 - 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);
 - 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;
 - 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;
- All the names of the controlling participants who propose to participate in this project are listed above.
- 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.
- None of the controlling participants is a participant in an assisted or insured project as of this date on which construction has stopped for a period in excess of 20 days or which has been substantially completed for more than 90 days and documents for closing, including final cost certification, have not been filed with HUD or FmHA.
- 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).
- 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.
- Statements above (if any) to which the controlling participant(s) cannot certify have been deleted by striking through the words with a pen, and the controlling participant(s) have initialed each deletion (if any) and have attached a true and accurate signed statement (if applicable) to explain the facts and circumstances.

Name of Controlling Participant	Signature of Controlling Participant	Certification Date (mm/dd/yyyy)	Area Code and Tel. No.
This form prepared by (print name)		Area Code and Tel. No.	

Previous Participation Certification

OMB Approval No. 2502-0118

(Exp. 05/31/2019)

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 multifamily Housing programs of HUD/FmHA, State and local Housing Finance Agencies. **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		
Signature of authorized reviewer		Signature of authorized reviewer	Approved <input type="checkbox"/> Yes <input type="checkbox"/> No
			Date (mm/dd/yyyy)

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

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

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

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

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

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

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

Specific Line Instructions are set forth in the Processing Guide.

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

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

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

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

SPECIAL PROVISIONS

NOTICE TO ALL PROSPECTIVE BIDDERS

Documents Required for Payment
HACP Contract No.: _____

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)

(Project Name)

(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 _____ drawings for _____
_____ dated _____ and Project Manual dated _____ regarding:

CONTRACT NO. _____

and addenda thereto numbered _____, all as prepared by _____, which said specifications, drawings, and addenda are incorporated herein by reference and are a part hereof.

The work shall begin at the time stipulated in the NOTICE TO PROCEED and in no event exceeding _____ 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 _____.
- c. Project Drawings issued by _____ dated _____.

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. _____ this contract shall be binding on both parties.

(Printed or Typed Name)

(Printed or Typed Name)

Witness

{

(Signature and Date)

Principal

{

(Signature and Date)

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

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

(CORPORATE
SEAL)

(Corporate Name)

(Printed or Typed Name)

(Printed or Typed Name)

Witness

{

President
V.P. **

{

(Signature and Date)

(Signature and Date)

(Corporate Title)

(Corporate Title)

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

CERTIFICATE AS TO CORPORATE PRINCIPAL

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

_____ who signed this Bid on behalf of the

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

(CORPORATE
SEAL)

(Signature and Date)

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

Secretary

Kim Detrick, Chief Contracting Officer

Attest

Principal

{

{

(Signature and Date)

(Signature and Date)

Manikandan Muthiah, Director of Construction and
Modernization

Approved as to
Contents and Costs

{

(Signature and Date)

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

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

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

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

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

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

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

*(CORPORATE
SEAL)*

(Corporate Name)

(Printed or Typed Name)

(Printed or Typed Name)

Witness

President

*V.P.***

{

{

(Signature and Date)

(Signature and Date)

(Corporate Title)

(Corporate Title)

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

CERTIFICATE AS TO CORPORATE PRINCIPAL

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

_____ who signed this Bid on behalf of the

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

(CORPORATE
SEAL)

(Signature and Date)

SURETY SIGN HERE

(SURETY
SEAL)

(Printed or Typed Name)

(Printed or Typed Name)

Attest
{

(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

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

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

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

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

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

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

(CORPORATE
SEAL)

(Corporate Name)

(Printed or Typed Name)

(Printed or Typed Name)

Witness

President

V.P.**

{

{

(Signature and Date)

(Signature and Date)

(Corporate Title)

(Corporate Title)

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

	<hr/>		<hr/>
	(Printed or Typed Name)		(Printed or Typed Name)
Attest		Surety	
	{		{
	<hr/>		<hr/>
	(Signature and Date)		(Signature and Date)

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

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

General Conditions for Construction Contracts - Public Housing Programs

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

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

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

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

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

The information requested does not lend itself to confidentiality.

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

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1. Definitions

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

3. Architect's Duties, Responsibilities, and Authority

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

2. Contractor's Responsibility for Work

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

4. Other Contracts

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

Construction Requirements

5. Pre-construction Conference and Notice to Proceed

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

6. Construction Progress Schedule

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

7. Site Investigation and Conditions Affecting the Work

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

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

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

8. Differing Site Conditions

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

9. Specifications and Drawings for Construction

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

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

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

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

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

10. As-Built Drawings

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

11. Material and Workmanship

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

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

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

12. Permits and Codes

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

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

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

13. Health, Safety, and Accident Prevention

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

14. Temporary Heating

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

15. Availability and Use of Utility Services

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

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

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

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

17. Temporary Buildings and Transportation of Materials

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

18. Clean Air and Water

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

19. Energy Efficiency

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

20. Inspection and Acceptance of Construction

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

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- (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 _____ 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 _____ 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 nowise 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:

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- (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 \$ _____ [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 \$ _____ [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 \$ _____ [Contracting Officer insert amount] per occurrence.

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

37. Subcontracts

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

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

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

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

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

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

39. Equal Employment Opportunity

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

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

- (c) The Contractor shall post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer that explain this clause.
- (d) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, or handicap.
- (e) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.
- (f) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.
- (g) The Contractor shall furnish all information and reports required by Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- (h) In the event of a determination that the Contractor is not in compliance with this clause or any rule, regulation, or order of the Secretary of Labor, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government contracts, or Federally assisted construction contracts under the procedures authorized in Executive Order 11246, as amended. In addition, sanctions may be imposed and remedies invoked against the Contractor as provided in Executive Order 11246, as amended, the rules, regulations, and orders of the Secretary of Labor, or as otherwise provided by law.
- (i) The Contractor shall include the terms and conditions of this clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued under Executive Order 11246, as amended, so that these terms and conditions will be binding upon each subcontractor or vendor. The Contractor shall take such action with respect to any subcontract or purchase order as the Secretary of Housing and Urban Development or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance; provided that if the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.
- (j) Compliance with the requirements of this clause shall be to the maximum extent consistent with, but not in derogation of, compliance with section 7(b) of the Indian Self-Determination and Education Assistance Act and the Indian Preference clause of this contract.

40. Employment, Training, and Contracting Opportunities for Low-Income Persons, Section 3 of the Housing and Urban Development Act of 1968.

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

41. Interest of Members of Congress

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

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

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

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

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

44. Royalties and Patents

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

45. Examination and Retention of Contractor's Records

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

46. Labor Standards - Davis-Bacon and Related Acts

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

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

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

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

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

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

- (2) (i) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under subparagraph (c)(1) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1214-0149.)
- (ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (A) That the payroll for the payroll period contains the information required to be maintained under paragraph (c) (1) of this clause and that such information is correct and complete;
- (B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and
- (C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by subparagraph (c)(2)(ii) of this clause.
- (iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.
- (3) The Contractor or subcontractor shall make the records required under subparagraph (c)(1) available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to

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

- (d) (1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship and Training, Employer and Labor Services (OATELS), or with a State Apprenticeship Agency recognized by OATELS, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (2) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under

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

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

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

47. Non-Federal Prevailing Wage Rates

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

48. Procurement of Recovered Materials.

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



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

HACP Contract No. _____

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

HACP Contract No. _____

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.

Superseded General Decision Number: PA20190001

State: Pennsylvania

Construction Type: Building

County: Allegheny County in Pennsylvania.

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

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.80 for calendar year 2020 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 \$10.80 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 2020. 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 0 Publication Date 01/03/2020

ASBE0002-001 08/01/2019

Rates Fringes

Asbestos Workers/Insulator

Includes the application

of all insulating

materials, protective

coverings, coatings and

finishings to all types of

mechanical systems.....\$ 41.26

25.67

BOIL0154-001 01/01/2017

Rates Fringes

BOILERMAKER.....\$ 40.90

27.27

BRPA0009-029 06/01/2019

Rates Fringes

BRICKLAYER.....\$ 32.75

22.51

BRPA0009-060 12/01/2019

Rates Fringes

MASON - STONE.....\$ 34.22

22.25

BRPA0009-061 12/01/2019

Rates Fringes

TILE SETTER.....\$ 31.91 20.24

CARP0142-001 06/01/2018

Rates Fringes

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

CARP1759-001 06/01/2018

Rates Fringes

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

CARP2235-001 06/01/2018

Rates Fringes

MILLWRIGHT.....\$ 40.34 19.16

CARP2235-007 01/01/2019

Rates Fringes

PILEDRIVERMAN.....\$ 34.30 19.30

* ELEC0005-007 12/22/2019

Rates Fringes

ELECTRICIAN.....\$ 42.61 27.19

ELEC0126-006 05/24/2019

Rates Fringes

LINE CONSTRUCTION

Cable Splicer.....\$ 47.38 30.25%+11.50
Groundmen.....\$ 28.43 30.25%+11.50
Lineman.....\$ 47.38 30.25%+11.50
Truck Driver.....\$ 30.80 30.25%+11.50
Winch Truck Operator.....\$ 33.17 30.25%+11.50

EARV0006-001 01/01/2019

Rates Fringes

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

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

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

* ENGI0066-001 06/01/2019

Rates Fringes

Power equipment operators:

CLASS 1.....\$ 35.69 21.75
CLASS 2.....\$ 30.22 21.75
CLASS 3.....\$ 27.67 21.75

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

CLASS I

Asphalt Paver, Asphalt Roller, Asphalt Plant Operator, Athey Loader, Auger (Truck or Tractor Mounted), Auto Grader (C.M.I. and similar), Backhoe (180' and 360' swing), Back-Filling Machine, Batch Plant, Bulldozer, Cable Layer, Cableway, Caisson Drill, Central Mix Plant, Compactor with Blade, Concrete Pump (all types), Over-Head Crane, Crane

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

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

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

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

CLASS II

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

CLASS III

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

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

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

IRON0003-002 06/01/2019

	Rates	Fringes
IRONWORKER.....	\$ 35.49	31.84

LAB00613-002 01/01/2019

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

LABORERS CLASSIFICATIONS

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

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

GROUP 3: Asbestos removal or abatement laborer

GROUP 4: Toxic or Hazardous waste handling laborer

LAB00952-004 01/01/2019

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

LANDSCAPING CLASSIFICATIONS

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

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

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

PAIN0057-003 06/01/2019

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 28.50	19.82

PAIN0057-005 06/01/2019

	Rates	Fringes
DRYWALL FINISHER/TAPER.....	\$ 29.10	20.10

PAIN0751-001 09/01/2019

	Rates	Fringes
GLAZIER.....	\$ 30.50	24.11

PLAS0526-007 06/01/2019

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 31.27	19.39

PLAS0526-024 06/01/2019

	Rates	Fringes
PLASTERER.....	\$ 29.78	17.10

PLUM0027-002 06/01/2019

	Rates	Fringes
PLUMBER.....	\$ 42.30	22.47

PLUM0449-001 06/01/2019

	Rates	Fringes
PIPEFITTER.....	\$ 41.50	23.57

ROOF0037-001 06/01/2019

	Rates	Fringes
ROOFER.....	\$ 31.62	17.05

SEPA0542-001 07/01/2017

	Rates	Fringes
SPRINKLER FITTER.....	\$ 37.17	19.52

SHEE0012-002 07/01/2018

	Rates	Fringes
SHEET METAL WORKER.....	\$ 34.47	27.54

TEAM0040-002 01/01/2017

	Rates	Fringes
Truck drivers:		
GROUP 1.....	\$ 28.10	17.42
GROUP 2.....	\$ 28.24	17.50
GROUP 3.....	\$ 28.71	17.80

FOOTNOTES:

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

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

TRUCK DRIVERS CLASSIFICATIONS

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

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

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

Tar and Asphalt Distributors Trucks, Heavy Duty Trailer,
such as Low Boy, High Boy

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

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

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

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

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

in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

Washington, DC 20210

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

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END OF GENERAL DECISION

PART 4: TECHNICAL SPECIFICATIONS

IFB CONTRACT NO. _____

SPECIFICATIONS MANUAL FOR NORTHVIEW HEIGHTS BUILDING 74 UPGRADES

NORTHVIEW HEIGHTS

415 & 427 Mt. Pleasant Rd.
Pittsburgh, PA 15214

Housing Authority City of Pittsburgh
Task Order #65

October 1, 2018



D & D ENGINEERING, INC.
Consulting Electrical Engineers



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SECTION - 01010
SUMMARY OF WORK

PART 1. GENERAL

1.1 CONTRACT DOCUMENTS

- A. Refer to the instructions to Contractors, General Conditions, Special Conditions, Special Requirements, and all contract drawings, which form part of this Contract and have the same force and effect as if herein full.
- B. Drawing List:
- CS Cover Sheet
 - G-01 Abbreviations, Symbols and General Notes
 - G-02 Basement and 1st Floor Code Sheet
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1.2 PROJECT IDENTIFICATION

- A. The Contractors (General Contractor and Electrical Contractor) shall furnish all labor and materials and perform all work necessary for the implementation of all work associated with the Northview Heights Building 74 Upgrades as shown in the Contract Drawings listed above.
- B. By submitting a bid and executing the Contract, each Contractor represents that he/she has carefully examined all Drawings, Specifications, Addenda, and other Contract Documents and has visited the site; and that he/she has satisfied himself/herself as to the nature and location of the Work, the conditions and difficulties under which it is to be performed, and all matters which may in any way affect the Work or its performance. Further that he/she fully understands the intent and purpose of the Documents and conditions bidding. Claims for additional compensation or extension of time because of any Contractor's failure to familiarize himself/herself with the Contract Documents and all conditions which affect the Work will not be allowed.

- C. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. The General Contractor shall be responsible for work associated with drawings G-01 -03, D-1, D-2 and A-1 thru A-6. The Electrical Contractor will be responsible for all work associated with drawings E-001 thru E-104. The intention of the Documents is to include, unless specifically accepted, all labor, all materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services necessary for the proper execution and completion of the Work. The specifications and the drawings are complementary to each other. Work shown but not specified, and work specified but not shown, shall be fully included as if both shown and specified. Should any direct contradiction(s) between specifications, drawings, or specifications and drawings become apparent, the Contractor shall satisfy the most stringent requirements.

1.3 CONTRACT WORK

- A. In general the contract work involves removal and replacement of existing exterior doors, removal and replacement of interior unit doors and windows; remove existing unit "buzzer" (door entry) system and replace with video monitoring devices at each common stairwell entry and in each tenant unit; remove and replace basement fire alarm control panel and all connected system appurtenances and devices, and replace with new fire alarm control panel and all system appurtenances and devices; add unit smoke detectors (battery operated) in each tenant unit. Perform all other work as shown on the Contract Drawings identified above.
- B. Provide all labor, engineering, tools, transportation, services, supervision, materials, and equipment necessary for and incidental to satisfactory completion of required work as indicated in Contract Documents.
- C. Provide all required staging, temporary placement of existing or temporary systems, and all other components of construction.
- D. The work required by the contractors for this project shall be to furnish and deliver all materials, tools, equipment, testing, transportation, secure all permits, license, do and perform all labor, superintendent and all means of construction, pay all fees and do all incidental work, execute and finish in all expeditious, substantial and workmanlike manner the project in accordance with drawings and specifications to complete satisfaction and acceptance of the Owner.
- E. The contract work for this project will include all work required to demolish existing facilities as shown on the Contract Drawings and provide new construction for replacement and upgrade work according to the Contract Drawings.

1.3.1 General Contract - Exterior Door Replacement and Unit Door and Window Replacement

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

- A. Provide demolition of all existing exterior doors and unit doors and windows and appurtenances in place that are not to remain.
- B. Provide new exterior doors and unit doors and windows and appurtenances to replace the existing components being demolished.
- C. Provide all work associated with all Division 1 requirements.
- D. Provide all work associated with Division 2 demolition requirements.

1.3.2 Electrical Contract - Fire Alarm System Replacement, Unit Smoke Detector and Door Entry Additions

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

- A. Provide demolition of all existing fire alarm devices, fire alarm control panel, and all appurtenances associated with the existing system in the basement of the building, in tenant units, and in common stair towers.
- B. Provide new fire alarm control panel, initiation devices, annunciation devices and all appurtenances to replace existing components being demolished.
- C. Provide new unit smoke detectors as shown on the Contract Drawings.
- D. Provide demolition of the existing unit entry buzzers, devices in each unit and the main connection point at the common entry stair tower door.
- E. Provide new video monitoring system to replace the existing components being demolished.
- F. Provide all work associated with all Division 1 requirements.
- G. Provide all work associated with the Division 2 demolition requirements.

1.4 CONCURRENT MODERNIZATION WORK AND BUILDING OPERATION

- A. This project is a major modernization project in existing buildings which are open for public business and will continue to operate throughout all phases of required work. It is essential that all Contractors give special attention and priority to all matters concerning project safety, protection from dust and loose materials, reduction of noise level, protection from water and air infiltration into building, and maintenance of neat, sightly conditions in and around work areas inside and outside of building. Packaging, scrap materials, and demolition debris shall be promptly removed from building and site on a daily basis.
- B. At all times Contractor shall provide clearly visible warning and directions signs, barricades, temporary lighting, overhead protection, and hazard-free walking surfaces throughout public area. At all times special attention must be given to building entrances, exits, and proper safe exiting through work areas as required by law.
- C. Contractor shall consult Owner to establish and maintain safe temporary routes including, but not limited to, proper barricades, walking surfaces, lighting, fire protection, exiting, warning, and directional signs, and general protection of persons from all hazards in accordance with OSHA Standards due wholly or partially to its operations.

- D. During the entire construction progress, the existing fire alarm system shall remain in operation for protection of the building tenants and all necessary personnel. At no time during this project shall any facility be left “unattended” by either a fire alarm system, or contractor monitoring personnel, 24 hours/day.

1.5 CONTRACTOR'S USE OF PREMISES

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

1.6 OWNER OCCUPANCY

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

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01010

SECTION - 01039
COORDINATION AND MEETINGS

PART 1. GENERAL

1.1 SUMMARY

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

1.2 SECTION INCLUDES

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

1.3 RELATED SECTIONS

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

1.4 COORDINATION

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

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

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

1.5 CONSTRUCTION ORGANIZATION AND START-UP

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

1.6 CONTRACTORS' RESPONSIBILITIES FOR COORDINATION

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

C. Close-Out Duties:

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

1.7 RESPONSIBILITY OF AUTHORITY'S REPRESENTATIVE(S)

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

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

1.8 ALTERATION PROJECT PROCEDURES

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

1.9 PRE-CONSTRUCTION MEETING

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

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

1.10 PROGRESS MEETINGS

- A. Authority Representative(s) will schedule and administer meetings throughout progress of the work at regular intervals.
- B. Construction schedule will be updated weekly at the progress meetings. The Contractor's Project Manager and Superintendent are to attend.
- C. Authority Representative(s) will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies to the Authority, participants, and those affected by decisions made.
- D. Attendance Required: The Contractor's Project Manager and Job Superintendent, Authority Representative(s), Architect/Engineer, and as appropriated to agenda topics for each meeting:
 1. Representative of contractors, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- E. Agenda:
 1. Review minutes of previous meetings.
 2. Review of work progress.
 3. Field observations, problems, and decisions.
 4. Identification of problems, which impeded planned progress.
 5. Review of status of submittals.
 6. Review of fabrication and delivery schedules.
 7. Maintenance of progress schedule.

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8. Corrective measures required to regain projected progress schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule, coordination, and on contracts.
13. Other business relating to work.

PART 2. PRODUCTS – Not Used

PART 3. EXECUTION – Not Used

END OF SECTION 01039

SECTION - 01045
CUTTING AND PATCHING

PART 1. GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for cutting and patching.
- B. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- C. Demolition of selected portions of the building for alterations is included in Section "Selective Demolition" and in the Section "Electrical Demolition".

1.2 QUALITY ASSURANCE

- A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.
 - 1. Obtain approval from the Engineer of the cutting and patching proposal before cutting and patching any structural elements.
- B. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Authority's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace work cut and patched in a visually unsatisfactory manner. Obtain approval for changes to the existing building exterior from the Authority.

PART 2. PRODUCTS

2.1 MATERIALS

- A. Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3. EXECUTION

3.1 INSPECTION

- A. Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
- B. Before proceeding, meet at the site with parties involved in cutting and patching, including all trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining.
- D. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to pass them.

3.3 PERFORMANCE

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- C. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer; comply with the original installer's recommendations.
- D. Where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
- E. To avoid marring exiting finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

- F. Cut through concrete and masonry using a cutting machine such as carborundum saw or diamond core drill.
- G. Comply with requirements of applicable Sections of Division-2 where cutting and patching requires excavating and backfilling.
- H. Patching: Patch with durable seams that are invisible as possible. Comply with specified tolerances.
- I. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
- J. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
- I. Patching: Patch with durable seams that are invisible as possible. Comply with specified tolerances.

3.4 CLEANING

- A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damage pipe covering to it original condition.

END OF SECTION 01045

SECTION - 01060
REGULATORY REQUIREMENTS

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Description of applicable code requirements.

1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01039 – Coordination and Meetings
- C. Refer to the instruction to Contractors, General Conditions, Special Conditions, Special Requirements, and Division 1 and all Drawings, which form part of this contract and have the same force and effect as if herein full.

1.3 QUALITY ASSURANCE

- A. Design of Code required construction assemblies are to comply with requirements of the code, except when more rigid requirements are specified or are required by overriding codes.
- B. Conform to reference standard by date of issue current on date for receiving bids.
- C. Obtain copies of codes and regulations when required.
- D. Maintain copy at jobsite during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference code requirements conflict with Contract Documents, request clarification from Engineer before proceeding.

1.4 SCHEDULE OF REGULATORY REQUIREMENTS

Pennsylvania Department of Labor and Industry
Bureau of Management Support Services
Division of Physical Plant and Construction
Box 911
Harrisburg, PA 17108

1.5 BUILDING CLASSIFICATION INFORMATION

- A. All work must comply, at a minimum, with the following:
 - 1. National Electrical Code 2011
 - 2. National Fire Protection Association

3. National Board of Fire Underwriters Laboratories, Incorporated, Rules and Regulations
4. National Electrical Manufacturer's Association
5. National Bureau of Standards Handbook H-30
6. Federal Department of Labor Occupational Safety and Health Standards as contained in the Federal Register Volume 36, Number 105, Dated May 29, 1971 or the latest revision thereof.
7. American National Standards Institute, Inc.
8. Underwriter's Laboratories, Inc.
9. American Society for Testing Materials and Specifications
10. Electrical Underwriters Inspection Bureau
11. Institute of Electrical and Electronics Engineers
12. Insulated Power Cable Engineers Associated Specifications
13. Uniform Federal Accessibility Standards (UFAS)
14. Americans with Disabilities Act of 1990
15. Pennsylvania Department of Labor and Industry Fire and Panic Regulations
16. Pennsylvania Department of Environmental Resources
17. Building Officials and Code Administrators (BOCA)
18. International Building Code 2009
19. City of Pittsburgh laws, codes, and regulations
20. County of Allegheny laws, codes, and regulations
21. Local Fire Authority
22. Requirements of most stringent provision of local applicable building code.
23. Life Safety Code, NFPA 101
24. State codes, Local codes, and all other Jurisdictions having Authority

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01060

SECTION - 01300
SUBMITTALS

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Procedural manuals.

1.2 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01039 – Coordination and Meetings

1.3 SUBMITTAL PROCEDURES

- A. Transmit one (1) electronic copy, plus two (2) paper copies to the Authority of each submittal to the Engineer with the Contractor's standard transmittal form, and a copy of all transmittals to the Authority. Only electronic copies of the reviewed submittals will be returned to the Contractor. If the submittal is not approved, only a transmittal form will be returned to the Contractor. See each specification section for specific submittal information requirements.
- B. Sequentially number the transmittal forms. Resubmittals to have the original number with an alphabetic suffix.
- C. Identify Project, contractor, subcontractor, or supplier; pertinent Drawing sheet and detail number(s), and Specification Section, as appropriate.
- D. Sequentially number the submittal by using the Specification Section along with a 2-digit extension (i.e. for concrete design mix reports, the number shall be 03310.01).
- E. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction work, and coordination of information, is in accord with the requirements of the Work and Contract Documents.
 - 1. Failure by the Contractor to stamp and sign the submittal will be cause for rejection.
 - 2. The submittal will be returned without any action by the Engineer.
- F. Schedule submittals to expedite the project, and deliver to the Engineer at their business address. Coordinate submission of related items.
- G. Identify variations from Contract Documents and product or system requirements, which may be detrimental to successful performance of the

completed Work.

- H. Provide space for Contractor's and the Engineer's review stamps.
- I. After review, the Engineer will send one (1) copy to the Contractor, six (6) copies to the Authority, and keep one (1) copy for the Engineer; if not approved, only a transmittal form will be sent to the Contractor.
- J. Immediately revise and resubmit submittals as required; identify all changes made since the previous submittal.
 - 1. Make any corrections or changes in the submittals required by the Engineer and resubmit until approved.
 - a. Indicate any changes, which have been made other than those, requested by the Engineer.
- K. Distribution: Furnish reviewed submittal copies to installers, subcontractors, suppliers, and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until a copy of Product Data is in the Installer's possession. Forward a copy of all distribution transmittals log to the Construction Manager.
 - a. Do not use unmarked Product Data for construction.

1.4 PROCEDURAL MANUALS

- A. Submit to the Engineer, the number of copies, which the Contractor requires, plus one (1) electronic copy, plus two (2) hard copies to the Authority.
- B. Mark each copy to identify Specification Section number, applicable products, models, options, and other data. Supplement manufacturers standard data to provide information unique to this project.
- C. After review, distribute in accord with the Submittal Procedures, and provide copies for Record Documents as described in Section 01700.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01300

SECTION - 01310
CONSTRUCTION PROGRESS SCHEDULES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Related Sections
- B. Purpose
- C. Format
- D. Contents
- E. Submittals
- F. Revisions to Schedules
- G. Approvals
- H. Time Extensions
- I. Float
- J. Distribution

1.2 RELATED SECTIONS

Refer to the Instructions to Contractors, General Conditions, Special Conditions, Division 1, and all drawings which form part of this contract and have the same force and effect as if herein full.

1.3 PURPOSE

The Construction Progress Schedule ("CPS") shall be utilized to track job progress, analyze potential delays, identify potential progress problems early, determine the project completion date, issue progress payments, determine validity of time extension requests, and complete cost projections and analysis.

1.4 FORMAT

- A. The CPS shall be in time scale CPM Gantt Chart format
- B. The CPS shall provide graphical (horizontal bar chart) representations for each major portion of work or operation (Summary Tasks)
- C. The CPS shall provide a graphical representation for each of the activities/tasks and events that will occur during the performance of the work
- D. The CPS shall show the complete sequence of construction by activity/task, with dates for beginning and completion of each element of construction
- E. Activities shall be listed in a logical, sequential order, and shall use proper precedence logic (Chronological/Sequential System)
- F. Each activity shall have predecessor and/or successor ties. The CPS shall show the interrelations/interdependencies of all activities/tasks

- G. No onsite activity shall have a duration of greater than twenty (20) working days
- H. The Critical Path shall be clearly identified
- I. All CPSs', CPS revisions, preliminary submissions, and associated backup documentation shall be submitted in hard copy and electronic formats. Three (3) hard copies of each document shall be submitted to the Housing Authority, and one (1) hard copy of each document shall be submitted to the Engineer.
- J. Sheet Size: Minimum 8.5 x 14 inches

1.5 CONTENTS

- A. The CPS shall begin at the Notice to Proceed ("NTP") date. The initial CPS shall be based on the anticipated NTP date as provided by the Housing Authority.
- B. The CPS shall identify each phase/stage of demolition, construction, occupancy/relocation, and other logically grouped activities (Summary Tasks).
- C. The CPS shall set forth milestone dates and deadlines, including substantial completion of ALL work, i.e., the entire project.
- D. The CPS shall identify all project constraints.
- E. The CPS shall identify work for each building unit/apartment (unless authorization is obtained in writing from the Contracting Officer allowing the CPS to only identify work for each floor or building). Each task for each unit/apartment shall be identified on the CPS.
- F. The CPS shall identify all Housing Authority, governmental and/or regulatory review periods.
- G. CPS duration shall not exceed contractual construction period.
- H. The CPS shall indicate decision dates for selection of finishes.
- I. The CPS shall clearly identify order dates and lead times for all specified products, particularly long lead time items, items requiring fabrication, and major equipment.
- J. The CPS shall indicate delivery dates for Housing Authority furnished products.
- K. The contractor(s) shall coordinate the CPS content with the Schedule of Values (Schedule of Amounts). All progress payment amounts will be derived from, and tied to, the Schedule of Values and the CPS; therefore all activities on the CPS shall be consistent with the information contained in the Schedule of Values.

1.6 SUBMITTALS AND APPROVALS

- A. The General Contractor is responsible for consolidating the work efforts of all other contractors, including other prime contractors, into one realistic, aggressive CPS, and for submitting the CPS to the Housing Authority for approval.

- B. If any contractor fails to submit schedule information to the General Contractor in a timely manner as specified in the contract, the Contractor shall immediately notify the Housing Authority of this fact in writing. Failure of any contractor to submit required information in a timely manner shall be a default in accordance with the terms of this contract.
- C. If any contractor is found to be in default by the Contracting Officer for failure to submit schedule information in a timely manner, the Contracting Officer may terminate the contractor's right to proceed with the schedule preparation and may elect to complete the contractor's schedule information in his stead, in which case the contractor will be bound by any approved CPS as if the schedule information was prepared/developed by the contractor's own personnel. The contractor and its surety shall then be liable for any damage to the Housing Authority resulting from the contractor's failure to submit the schedule information within the specified timeframe.
- D. All CPSs' submitted to the Contracting Officer for approval shall be dated and signed by a representative of all prime contractors involved in the project. The signatures shall represent an acknowledgement that all prime contractors are in agreement with the submitted schedule. The General Contractor shall be responsible for obtaining all signatures.
- E. Submittal of the initial CPS and subsequent updates/revisions for approval shall be understood to be the contractors' representation that the submitted CPS meets all of the conditions of the contract documents, accurately reflects work to be completed, and that the work will be executed in the sequence indicated on the submitted CPS.
- F. In no event shall any adjustment proposed in a progress report or corrective plan constitute an adjustment in the CPS, contract time, or any milestone date unless any such adjustment is agreed to and authorized in writing by the Contracting Officer.
- G. All contractors shall be aware that time is of the essence when submitting CPS information and when completing the Work in the timeframes established in the approved CPS.

1.6.1 INITIAL CPS SUBMITTAL AND APPROVAL

- A. The General Contractor shall within ten (10) calendar days of execution of the Owner – Contractor Agreement (construction contract) submit the proposed CPS to the Contracting Officer for review.
- B. The proposed CPS shall not be saved as a baseline until written approval is received from the Contracting Officer. Upon approval, the General Contractor shall be responsible for saving the baseline schedule, and monitoring and maintaining the CPS.
- C. The Contracting Officer shall review the initial CPS submission, (and any required resubmission), and respond with comments, recommendations, requests, or acceptance within five (5) working days of receipt.
- D. If the proposed CPS is not accepted by the Contracting Officer, the CPS shall be revised by the contractor(s) in accordance with the comments, recommendations, or requests of the Contracting Officer and resubmitted for acceptance within three (3) working days of

receipt of said comments, recommendations, or requests. The contractor shall be required to make the changes as directed by the Contracting Officer to arrive at a reasonable, realistic, and acceptable CPS.

- E. The NTP **will not** be issued and the project **shall not** begin without a CPS approved in writing by the Contracting Officer. The NTP will be issued within five (5) working days of written CPS approval provided all required back up documentation is received by the Housing Authority in the timeframe required in the contract.
- F. Upon acceptance by the Contracting Officer of the proposed CPS, the accepted schedule shall be deemed the "Construction Project Schedule" and will be considered part of the contract.
- G. The Housing Authority's approval or acceptance of the CPS shall not impose on the Housing Authority any responsibility for the CPS, for timely submittals of complete and project-conforming shop drawings, for work sequencing, scheduling milestones, or progress of the work, nor shall acceptance interfere with or relieve the Contractor from the contractor's full responsibility to complete all work in accordance with the contract. Contractors are solely responsible for the development and performance of the means, methods, and execution of performance reflected in the CPS.
- H. A separate submittal schedule shall be submitted along with the initial CPS. The submittal schedule shall include and identify dates for shop drawing submittal and approval, product data, and samples, including Housing Authority furnished products. The submittal schedule must include dates reviewed submittals will be required from the Housing Authority. Contractors are required to relate submittal tasks to construction activities/tasks. The submittal schedule may be incorporated into the CPS provided written authorization is obtained from the Contracting Officer.
- I. The General Contractor shall keep the submittal schedule current. The submittal schedule shall be coordinated with the CPS, and shall allow for reasonable time for Housing Authority submittal review as documented in the contract.

1.6.2 MONTHLY UPDATED CPS SUBMITTAL AND APPROVAL

- A. A preliminary updated CPS and all associated backup documentation shall be submitted by the General Contractor for review along with the "pencil copy" of the application for payment. The preliminary updated CPS should be submitted to the Housing Authority and the ENGINEER no later than three (3) working days before the pay application progress meeting, with the site walk occurring no later than one (1) working day before the pay application progress meeting.
- B. Backup documentation shall include a narrative discussion of the progress to date, forecasted work for next period, problem areas, and anticipated delays. If applicable, the narrative shall document schedule slippage, provide a detailed explanation concerning the reason(s) for the slippage, how each prime contractor is affected, and shall include a written recovery plan for getting the project back on schedule. The written recovery plan shall include any necessary overtime or additional labor and what steps are being taken to recover the original schedule, and/or what logic changes occurred and why said changes occurred. The plan shall indicate the date by which the progress of the work will comply with the current approved CPS.

- C. The preliminary updated CPS and the pencil copy of the application for payment shall be reviewed by all contractors, Housing Authority representative(s), and the ENGINEER during the site walk meeting.
- D. The Contractor shall make any revisions as noted during the site walk meeting, and shall submit the formal/finalized updated CPS and all associated backup documentation along with the finalized monthly application for payment at the pay application progress meeting.
- E. The formal/finalized updated CPS and associated backup documentation shall be considered part of the application for payment submission. Failure to submit an accurate updated CPS and all associated backup documentation with the application for payment will be cause for rejection of the application for payment.

1.6.3 CRITICAL PATH, LOGIC, or TASK CHANGES CPS UPDATE SUBMITTAL

- A. The General Contractor shall **immediately** submit a revised CPS and a written recovery/corrective action plan to the Contracting Officer any time a critical path item is three (3) working days behind the current approved CPS, if a non-critical activity becomes critical, or if there are changes in schedule logic and/or tasks.
- B. The Contracting Officer shall review the updated CPS submission and respond with comments, recommendations, requests, or acceptance within three (3) working days of receipt.
- C. If the revised/updated CPS is not accepted by the Contracting Officer, the schedule shall be revised by the contractor(s) in accordance with the comments, recommendations, or requests of the Contracting Officer and resubmitted for acceptance within five (5) working days of receipt of said comments, recommendations, or requests.
- D. The contractor(s) shall be required to make the changes as directed by the Contracting Officer to arrive at a reasonable, realistic, and acceptable CPS.

1.6.4 CHANGE ORDER OR DIRECTED WORK CPS SUBMITTALS

- A. Any contractor submitting a Request For Change Order ("RFCO") shall submit as backup documentation along with said RFCO a proposed CPS outlining how the change would impact the current approved CPS. The proposed CPS shall show in detail the work involved in the proposed change, how the proposed change will be incorporated into the current approved CPS, and the impact on other work caused by the adjustment to the current approved CPS.
- B. Within three (3) working days of receipt of any **executed** change order(s), change directive, or proceed order that affects the CPS, the contractor to whom the change order, directive, or proceed order was issued shall submit to the Contractor a proposed revised CPS. The Contractor shall then incorporate the changes into the current approved schedule and within three (3) working days of receipt of the proposed revised CPS from the contractor to whom the change order, directive, or proceed order was issued, issue a proposed CPS to the Contracting Officer for review and approval.

- C. Along with the proposed CPS, the Contractor shall submit a written narrative outlining the change and how it affects the current, approved CPS.
- D. The Contracting Officer shall review the proposed CPS submission and respond with comments, recommendations, requests, or acceptance within three (3) working days of receipt.
- E. If the proposed CPS is not accepted by the Contracting Officer, the proposed CPS shall be revised by the contractor(s) in accordance with the comments, recommendations, or requests of the Contracting Officer and resubmitted for acceptance within three (3) working days of receipt of said comments, recommendations, or requests.
- F. The contractor(s) shall be required to make the changes as directed by the Contracting Officer to arrive at a reasonable, realistic, and acceptable CPS.

1.7 REVISIONS TO CONSTRUCTION PROGRESS SCHEDULES

- A. All revised CPSs' should be saved with the project # and revision # clearly noted.
- B. The lead contractor (General Contractor) shall be responsible for updating/revising the current approved CPS.
- C. All revised/updated CPSs' shall include but not be limited to the following information:
 - Actual and baseline construction start and finish dates
 - Actual and baseline procurement start and finish dates
 - Graphical representation of the baseline and actual task start and finish dates
 - Logic revisions – any revised sequences
 - Added or changed work, including change order work and RFI submittals that affect the work
 - Activity duration projections/revisions
 - Activity percent complete – actual percent complete of each activity not based on cost
 - Current events that affect construction progress – adverse weather, strikes, differing site conditions

1.8 TIME EXTENSIONS & DELAY CLAIMS

- A. Time extensions will only be granted for delays that will demonstratively delay the contractual project completion date as of the date of the delay and are authorized by executed change orders from the Contracting Officer. Please note that the delay **MUST** affect the contract completion date **at the time of the delay**.
- B. Contractors may not request additional compensation and/or time from the Housing Authority unless the cause of any delay is attributable to the act or failure to act of the Housing Authority or its representative, or to other causes beyond the contractors' control for which time extensions are available per the contract.

1.9 FLOAT

- A. **ALL** Float shall be recognized as a shared resource that is available for reasonable use by all parties under contract for this project, and by the Housing Authority if necessary. Float shall not be considered for the exclusive use of the Housing Authority or any single contractor. This includes but is not limited to any float generated due to the efficiencies of any party, or efficiencies gained as a result of favorable weather within a calendar month, where the number of days of normally anticipated adverse weather are fewer than expected.
- B. Any submission, coupled with subsequent approval, of a CPS showing an early completion will have the effect of adding float to the project. This float shall be utilized as necessary and shall be recognized as outlined in Section 01310 Item 1.09 A. No compensation shall be due any contractor or the Owner for failure of any party to meet the early end date. No time extensions will be granted nor delay damages paid unless a delay occurs which impacts the project's critical path, consumes all available float or contingency time, and extends the work beyond the contract completion date. If a CPS submitted shows early completion, but after analysis and review by the Contracting Officer the CPS is determined not to reflect a reasonable plan for performance, the CPS shall be rejected and returned to the contractor for revision and resubmission per the guidelines of this section.

1.10 DISTRIBUTION

- A. The Contractor shall distribute all reviewed and approved CPS's to all project participants within one (1) working day of approval by the Contracting Officer.
- B. The Contractor shall keep a copy of all approved (past and current) CPS's on the project site at all times.

PART 2 PRODUCTS

CPSs' shall be developed in Microsoft Project scheduling software, or other software as approved by the Contracting Officer.

PART 3 EXECUTION Not Used

END OF SECTION 01310

SECTION - 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1. GENERAL

1.1 RELATED SECTIONS

- A. Section 01010 – Summary of Work
- B. Section 01039 – Coordination and Meetings
- C. Section 01700 – Contract Closeout: Final Cleaning

1.2 TEMPORARY VENTILATION

- A. The General Contractor is to provide equipment to properly ventilate enclosed areas to assist the cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. When practical, and upon the approval of the Authority Representative(s), extend and supplement equipment with additional fan units as required to maintain clear air for construction operations. Remove equipment at project closeout.
- C. Each Contractor must be aware that any burning or dust will set off the existing fire alarm system. Each Contractor must provide the Authority with advance notice so that the fire alarm system may be temporarily disconnected in that specific area of burning dust.

1.3 TELEPHONE SERVICE

- A. No telephone service provisions are required.

1.4 TEMPORARY SANITARY FACILITIES

- A. The General Contractor shall provide and maintain the following facilities and enclosures:
 - 1. Provide one (1) or more portable units as required by all contractors personnel at the site, located where directed by the Authority Representative(s).
 - 2. Maintain temporary facilities in a clean and sanitary condition.
 - 3. Clean and service weekly, and more often if directed by the Construction Manager, each facility.
 - 4. Comply with applicable Pennsylvania Department of Environmental Resources requirements and with local codes.
 - 5. Permit no public nuisance or unsanitary conditions to exist on the project site.
 - 6. Remove temporary facilities when directed by the Engineer at the completion of the Project.
 - 7. Provide toilet paper and supplies for temporary toilet facilities.

1.5 BARRIERS

- A. The General Contractor shall provide barriers to prevent unauthorized entry to construction areas and to allow for Authority Representative(s) use of the site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
 - 1. Provide separations as required to accommodate construction work in progress in the event that the Phasing Schedule is not met.
 - 2. Provide barricades and covered walkways required by governing authorities for public rights-of-way.
 - 3. Protect non-owned vehicular traffic, stored materials, site and structures from damage.
 - 4. Provide and maintain OSHA-approved barriers at floor openings, stairs, roof openings, roofs, temporary railings and protection where required by OSHA.
- B. The General Contractor shall reinstall or replace the temporary controls or protection meeting OSHA requirements necessary for the progress of the Work for their Contract.

1.6 PROTECTION OF INSTALLED WORK

- A. Each Contractor shall:
 - 1. Protect the installed Work and provide special protection where specified in the individual Specification Sections.
 - 2. Provide temporary and removable protection for installed products. Control the activity in the immediate work area to minimize damage.

1.7 SECURITY

- A. The General Contractor shall provide facilities to protect and secure the Work and construction operations from unauthorized entry, vandalism, or theft.
 - 1. Unlock the site at the beginning of the workday and lock and secure the site at the end of the workday.
- B. Each Contractor shall provide security and protection of materials and equipment stored on the project site.
- C. The General Contractor shall coordinate with the Authority's existing security program.
- D. The General Contractor shall be responsible for installing exterior lights to adequately light all areas under construction.

1.8 PARKING

- A. The Authority Representative(s) will arrange for parking area to be used by

construction personnel at the Pre-Construction Meeting.

1.9 PROGRESS CLEANING

- A. Each Contractor shall maintain the site and work areas in a clean and orderly condition by adhering the following standards:
 - 1. Removing debris, garbage, litter, rubble, and rubbish from pipe chases, plenums, attics, and closed or remote spaces, prior to enclosing those spaces.
 - 2. Removing debris, garbage, litter, rubble, and rubbish from the Contractor's portion of the work site daily and depositing in trash collection facilities.
 - 3. Broom and vacuum cleaning interior areas prior to start of surface finishing, and continue cleaning to eliminate dust, and dirt from being present.
 - 4. Cleaning of construction vehicles prior to exiting the site, with water wash-down hose.
 - 5. Ensure mud and site soils are not carried onto the roadways.
- B. Do not place hazardous materials in the dumpster. Remove from the site by the Contractor.
- C. Workforce personnel are not allowed to eat meals within the confines of each building.

1.10 FIRE PROTECTION

- A. Each Contractor shall provide the general temporary fire protection requirements.
 - 1. Each Contractor shall provide fire protection for their own special requirements.

1.11 PROJECT INFORMATION SIGNS

- A. The General Contractor shall provide information signs with large size lettering to allow legibility at a reasonable distance containing the following information:
 - 1. Bulletin boards with protective covers to post safety and code notices.

1.12 FIELD OFFICES AND SHEDS

- A. The General Contractor shall provide a field office and storage sheds as required by their needs. Each contractor is responsible for their own storage areas.
 - 1. Use of any Authority buildings as construction progresses will not be permitted as office or storage space.
- B. Locate offices as directed by the Authority Representative(s).

1.13 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. The General Contractor shall remove temporary above-grade or buried utilities, equipment, facilities, materials, prior to Substantial Completion and Final Application for Payment inspection.
- B. Remove underground installations to a minimum depth of two (2) feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.
- E. Restore areas under and adjacent to the General Contractor's construction trailers after removal from site.

1.14 TEMPORARY FIRST-AID FACILITIES

- A. The General Contractor shall provide temporary first-aid facilities as follows:
 - 1. Provide one (1) sixteen (16) unit first-aid kit (or equivalent) for each 25 persons, or fraction thereof, for all employees on the work site and additionally where required by the Regulatory Agencies.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01500

SECTION 01501
TEMPORARY UTILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Electric power service.
 - 3. Lighting.
 - 4. Telephone service.
- C. Utilities to buildings must be maintained in operational condition 24 hours per day, 7 days per week. Contractor to provide temporary utilities to buildings that require interruption to the permanent utilities. Utility interruptions require a minimum of 7 days notice to the Owner.
- D. Related Sections include the following:
 - 1. Division 1 Section "Temporary Facilities and Controls" for access roads and parking areas, temporary controls, ventilation, support facilities, and security and protection facilities.
 - 2. Divisions 2 through 16 for temporary heat, ventilation, and humidity requirements for products in those Sections.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner, Owner's Representative, or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
 - 1. Owner's construction forces.
 - 2. Occupants of Project.
 - 3. Architect.
 - 4. Owner's Representative.
 - 5. Testing agencies.
 - 6. Personnel of authorities having jurisdiction.

- B. Water Service: Use water from Owner's existing water system without metering and without payment of use charges.
- C. Electric Power Service: Use electric power from Owner's existing system without metering and without payment of use charges.

1.4 QUALITY ASSURANCE

- A. Standards: Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241.
 - 1. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

- A. Contractor who fails to carry out their responsibility in supplying utilities required for execution of the Work shall be held responsible for such failure. Owner shall have the right to take action, as it deems proper for the protection and conduct of the Work and shall deduct the cost involved from the amount due the Contractor at fault.
- B. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
 - 1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS AND EQUIPMENT

- A. General: Provide new materials and equipment suitable for use intended. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.
- B. Water: Potable.
- C. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- D. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.

PART 3 - EXECUTION

3.1 TEMPORARY TELEPHONE SERVICE

- A. No telephone services for use by the Authority are required. Each contractor shall be responsible for providing telephone service for their own needs and use.

3.2 TEMPORARY WATER SERVICE

- A. Where no other source of water is available in the construction areas, Contractor to provide, protect and maintain adequate water supply for use by all Contractors of the Work.
- B. Make available within 5 days, after written request from any Contractor requiring specified water service.
- C. Contractor shall install temporary water source at construction Entrance/Exit for use in tire and vehicle cleaning before exiting site.
- D. Install either permanent water supply line or temporary water supply line up to the building's footprint. Provide water with minimum flow of 15 gals. per minute and 40 lbs. pressure per sq.in.
- E. Special Service: Where supply of water greater than previously specified is required, Contractor requiring same shall install and pay all costs of such special service.
 - 1. Contractor requiring special service shall install, valve, maintain and protect temporary water lines from Plumbing Contractor's point of termination.
 - 2. When temporary water lines are no longer required, Contractor responsible for their installation shall remove them and restore to original condition any part of grounds or building disturbed or damaged by installation and removal of temporary water lines.

3.3 TEMPORARY LIGHT AND POWER SERVICE

- A. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.
- B. Contractor shall:
 - 1. Provide and maintain weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Provide uninterrupted electrical service to the heating, water and pumping equipment 24 hours a day, seven days a week.
 - a. Make available specified electric services, within two (2) days of written request from a Contractor requiring electrical power.
 - 2. Extend electrical service to the building and/or portions thereof, and exterior pole lights in construction storage trailer area at location acceptable to Prime Contractors, and Architect.

3. Provide receptacle outlets adequate for connection of power tools and equipment.
 4. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
 5. Provide and maintain electrical service to any equipment installed by the General Contractor and/or Mechanical Contractor that is required for temporary and/or permanent heat.
 6. Remove temporary electrical lines when no longer required and restore to original condition grounds and building portions disturbed or damaged.
- C. Special Service: Where supply of electrical power and/or lighting greater than previously specified is required, Contractor requiring same shall install and pay all costs of such special service.

3.4 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

END OF SECTION 01501

SECTION - 01570
TRAFFIC REGULATION

PART 1. GENERAL

1.1 REQUIREMENTS INCLUDED

- A. The General Contractor shall provide, operate, maintain equipment services and personnel listed in this section and, as required to expedite the work.
- B. Remove temporary traffic equipment and facilities when no longer required, restore grounds to original or to specified conditions.

1.2 TRAFFIC SIGNALS AND SIGNS

- A. Provide and operate traffic control and directional signals required to direct and maintain an orderly flow of traffic in all areas under Contractor's control or affected by Contractor's operations.
- B. Provide traffic control and directional signs, mounted on barricades or standard posts:
 - 1. At each sidewalk.
 - 2. At parking areas.

1.3 FLAGPERSON

- A. Provide qualified and suitably equipped flagperson when construction operations encroach on traffic lanes.

1.4 FLARES AND LIGHTS

- A. Provide flares and lights during periods of low visibility.
 - 1. To clearly delineate traffic lanes and to guide traffic.
 - 2. For use by flagmen in directing traffic.

1.5 CONSTRUCTION PARKING CONTROL

- A. Control vehicular parking to preclude interference with public traffic or parking.
- B. Monitor parking or construction personnel's private vehicles.
- C. No Prime or subcontractor shall close or obstruct any streets, sidewalks, alleys or passageways unless specifically authorized. No material whatsoever shall be placed or stored in streets, alleys, or passageways. Each contractor shall so conduct his operations as to interfere as little as possible with the use ordinarily made of any roads, streets, driveways, alleys, sidewalk facilities, etc.

1.6 HAUL ROUTES

- A. Consult with governing authorities, establish thoroughfares that will be used as

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Section 01570 – Traffic Regulation

- haul routes.
- B. Provide traffic control at critical areas of haul routes to expedite traffic flow, to minimize interference with normal public traffic.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01570

SECTION - 01600
MATERIAL AND EQUIPMENT

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Products
- B. Transportation and handling
- C. Storage and protection
- D. Product options
- E. Substitutions

1.2 RELATED SECTIONS

- A. Refer to the instructions to contractors, general conditions, special conditions, special requirements, and Division 1 and all drawings, which form part of this contract and have the same force and effect as if herein full.

1.3 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse, if so specified.
- B. Material and Equipment Incorporated into the Work shall:
 - 1. Conform to applicable specifications and standards.
 - 2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Architect/Engineer.
 - 3. Manufactured and Fabricated Products:
 - a. Design, fabricate, and assemble in accordance with the best engineering and shop practices.
 - b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
 - c. Two (2) or more items of the same kind shall be identical, by the same manufacturer.
 - d. Products shall be suitable for service conditions.
 - e. Equipment capacities, sizes, and dimensions shown, or specified, shall be adhered to unless variations are specifically approved in writing by the Authority.
 - 4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

- C. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- D. Provide interchangeable components of the same manufacturer, for similar components.

1.4 REUSE OF EXISTING MATERIAL

- A. Except as specified, materials and equipment removed from the existing structure shall not be reused in the project.
- B. Use special care in removal, handling, storage, and reinstallation, to assure proper function in the completed work.

1.5 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance with project construction schedules. Contractor to coordinate the deliveries to avoid conflict of work, and to suit site conditions:
 - 1. Notify the Authority's Representative(s), 48 hours in advance, of all major deliveries.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Promptly inspect shipments to assure that products comply with requirements, are in manufacturer's original containers with identifying labels intact, quantities are correct, and products are undamaged.
- D. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.6 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground.
 - 1. Provide substantial platforms, blocking, or skids to support fabricated products above ground, prevent soiling, or staining.
 - a. Cover products subject to discoloration, or deterioration, from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
 - 2. Store loose granular materials on solid surfaces such as paved areas, or provide plywood or sheet materials to prevent mixing with foreign matter.
 - a. Provide surface drainage to prevent flow or ponding of rainwater.
 - b. Prevent mixing with refuse, chemically injurious materials, or liquids.

- C. Provide off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.7 INSPECTION AND MAINTENANCE STORED PRODUCTS

- A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:
 - 1. State of storage facilities is adequate to provide required conditions.
 - 2. Required environmental conditions are maintained on a continuing basis.
 - 3. Surfaces of product exposed to elements are not adversely affected.
 - a. Weathering of products, coatings, and finishes is not acceptable under requirements of Contract Documents.
- B. Mechanical and electrical equipment which require servicing during long-term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on exterior of package.
 - 1. Comply with manufacturer's instructions on scheduled basis.

1.8 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or descriptions.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01600

SECTION - 01700
PROJECT CLOSEOUT

PART 1. GENERAL

1.1 SECTION INCLUDES

- A. Inspection procedures
- B. Project record document submittal
- C. Operating and maintenance manual submittal
- D. Submittal of warranties
- E. Final cleaning

1.2 RELATED SECTIONS

- A. Section 01011 – Summary of Work
- B. Section 01039 – Coordination and Meetings
- C. Section 01300 - Submittals
- D. Section 01500 – Construction Facilities and Temporary Controls

1.3 GENERAL CLOSEOUT PROCEDURES

- A. Submit written certification that the Contract Documents have been reviewed, Work has been inspected and that the Work is complete in accordance with the Contract Documents and ready for the Authority's Representative(s) punch list inspection.
- B. Provide submittals to the Architect/Engineer and Authority's Representative(s) that are required by governing authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments and remaining sum due at the time of submission.

1.4 SUBSTANTIAL COMPLETION

- A. When the Contractor considers the Work to be substantially complete, the contractor shall submit to the Authority's Representative(s):
 - 1. Written notice that all Work, or designated portions thereof, is substantially complete.
 - 2. A list of items that need to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, the Architect/Engineer and

Authority's Representative(s) will make an inspection to determine the status of completion.

- C. Should the Authority's Representative(s) consider the Work not to be substantially complete:
 - 1. The Authority's Representative(s) will promptly notify, in writing, the Contractor giving the reasons for the Authority's Representative(s) denial.
 - 2. The Contractor shall remedy the deficiencies in the Work and send a second written notice of substantial completion.
- D. The Authority's Representative(s) will re-inspect the Work.
- E. After concurrence between the Authority's Representative(s) that the Work is substantially complete, the Authority's Representative(s) will prepare for the Contractor's signature:
 - 1. A Certificate of Substantial Completion: Attached with the Certificate will be the Contractor's listing of items to be completed or corrected as verified by and amended by the Authority's Representative(s).
 - 2. Submit the Certificate to the Authority's Representative(s) for their written acceptance of the responsibilities assigned to them in the Certificate.

1.5 FINAL INSPECTION

- A. When the Contractor considers the Work to be complete, submit written certification to the Authority's Representative(s) that the following criteria have been met:
 - 1. Complete review of the Contract Documents.
 - 2. Work has been inspected in compliance with the Contract Documents.
 - 3. Equipment and systems have been tested in the presence of the Owner's representative and are operational.
 - 4. Work is completed and ready for final inspection.
- B. The Authority's Representative(s) will make inspections to verify the status of completion within reasonable promptness after receipt of the written notification.
- C. Should the Authority's Representative(s) consider the Work to be incomplete or defective:
 - 1. The Authority's Representative(s) will promptly notify, in writing, the Contractor, listing the incomplete or defective Work.
 - 2. The Contractor shall immediately remedy all of the listed deficiencies of the Work and send a second written notice to the Authority's Representative(s) that the Work is complete.
- D. The Authority's Representative(s) will re-inspect the Work. Each re-inspection will be charged against the Contractor.
- E. When the Authority's Representative(s) consider the Work to be acceptable according to the Contract Documents, the Contractor will be notified by the Authority's Representative(s) to commence with the submission of final closeout documents.

1.6 CONTRACTOR'S CLOSEOUT SUBMITTALS

- A. Evidence of compliance with the requirements of governing authorities:
 - 1. Certificates of Inspection
 - a. Electrical
 - b. Fire Marshall
 - c. Pennsylvania Department of Environmental Resources
 - d. Department of Labor and Industry
 - e. City of Pittsburgh
- B. Warranties and Bonds
- C. Spare parts and maintenance materials
- D. Contractor's Affidavit of Payment and Debts and Claims: TO requirements of General and Supplementary Conditions of the Contract.
- E. Final Contractor's Weekly Payroll Certifications for Public Work Projects. (Davis Bacon Acts and as complies with this Specifications General Conditions for Construction HUD-5370)
- F. Consent of Surety Company to Final Payments

1.7 FINAL ADJUSTMENT OF CONTRACT SUM

- A. Submit final statement of accounting to the Authority's Representative(s). The Authority's Representative(s) will review and forward to the Architect/Engineer for approval.
- B. The statement shall reflect all adjustments to the Contract Sum:
 - 1. The original Contract Sum
 - 2. Additions and deductions resulting from
 - a. Change Orders
 - b. Unit Prices
 - c. Deduction for uncorrected Work
 - d. Deduction for Liquidated Damages
 - e. Deduction for re-inspections payments
 - f. Other adjustments.
- C. The Architect/Engineer will prepare a Change Order, reflecting adjustments to the Contract Sum, which were not previously made by Change Orders. This is further defined in this Specifications General Conditions for Construction, HUD-5370, Page 10, Item 29 Changes.

1.8 FINAL APPLICATION FOR PAYMENT

- A. Contractor shall submit Final Application for Payment on HUD Forms HUD-51000, HUD-51001, HUD-51003, and HUD-51004 in accordance with the procedures and requirements stated in the Conditions of the Contract.

1.9 FINAL CLEANING

- A. Final cleaning shall commence prior to the Contractor's request for final inspection.
- B. Contractor, prior to Substantial Completion and Final Cleaning, shall remove all debris, rubbish, materials, cartons, crates, protective wrappings and films and other construction-related items prior to final cleaning.
- C. All Contractors shall, prior to Substantial Completion and Final Cleaning, wipe the surfaces of the mechanical and electrical equipment. Remove all excess oil and other substances prior to the Final Cleaning.
- D. All Contractors, prior to Substantial Completion and Final Cleaning, shall remove labels and markings that are not permanent.

1.10 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operations.

1.11 PROJECT RECORD DOCUMENTS

- A. Maintain on-site, one set of the following record documents; clearly label each document "Project Record". Record actual revisions to the Work:
 - 1. Contract Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Field Test Reports
 - 5. Change Orders and other modifications to the Contract
 - 6. Reviewed shop drawings, product data and sample
- B. Store Record Documents separately from documents used for construction in drawing file rack.
- C. Record information concurrent with construction progress in colored pen or marker (red-lines). The drawings shall show exact routing, mounting locations and power circuits used during the installation.
- D. Specifications: legibly mark, and record, at each product section the description of actual products installed, including the following:
 - 1. Manufacturer's name and product installed
 - 2. Product substitution or alternates utilized
 - 3. Changes made by Addenda and modifications
- E. Record Drawings: legibly mark, and record each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finished first floor
 - 2. Measured horizontal and vertical location of underground utilities and appurtenances

3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features in the Work
 4. Field Changes of dimensions and details
 5. Details not on original Contract Drawings
- F. Delete the Engineer's title block from all the Documents.
- G. Submit documents to the Architect/Engineer with Final Application for Payment. Accompany submittal with transmittal containing project number, title, contractor's name and signature of contractor's authorized representative.

1.12 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra material in quantities specified in individual specifications sections.
- B. Deliver to project site, or place in locations as directed; obtain receipt of acceptance by Authority prior to final payment.

PART 2. PRODUCTS Not Used.

PART 3. EXECUTION Not Used.

END OF SECTION 01700

SECTION 08111 - HOLLOW METAL DOORS AND FRAMES

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. Exterior standard steel doors and frames.
 - 2. Exterior custom hollow-metal doors and frames.
- B. Related Requirements:
 - 1. Section 087100 "Door Hardware" for door hardware for hollow-metal doors.

1.3 DEFINITIONS

- A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or SDI A250.8.

1.4 COORDINATION

- A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.
- B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1. Include construction details, material descriptions, core descriptions, fire-resistance ratings, and finishes.
- B. Shop Drawings: Include the following:
1. Elevations of each door type.
 2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
 3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
 4. Locations of reinforcement and preparations for hardware.
 5. Details of each different wall opening condition.
 6. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
 7. Details of anchorages, joints, field splices, and connections.
 8. Details of accessories.
 9. Details of moldings, removable stops, and glazing.
- C. Samples for Initial Selection: For hollow-metal doors and frames with factory-applied color finishes.
- D. Samples for Verification:
1. Finishes: For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches (75 by 127 mm).
- E. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

1.7 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each type of hollow-metal door and frame assembly, for tests performed by a qualified testing agency.
- B. Oversize Construction Certification: For assemblies required to be fire-rated and exceeding limitations of labeled assemblies.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver hollow-metal doors and frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.
1. Provide additional protection to prevent damage to factory-finished units.
- B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

- C. Store hollow-metal doors and frames vertically under cover at Project site with head up. Place on minimum 4-inch- (102-mm-) high wood blocking. Provide minimum 1/4-inch (6-mm) space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Apex Industries, Inc.
 - 2. Ceco Door Products; an Assa Abloy Group company.
 - 3. Commercial Door & Hardware Inc.
 - 4. Curries Company; an Assa Abloy Group company.
 - 5. Custom Metal Products.
 - 6. Pioneer Industries, Inc.
 - 7. Premier Products, Inc.
 - 8. Steelcraft; an Ingersoll-Rand company.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction for fire-protection ratings, based on testing at positive pressure according to NFPA 252 or UL 10C.
 - 1. Smoke- and Draft-Control Assemblies: Provide assemblies with gaskets listed and labeled for smoke and draft control by a qualified testing agency acceptable to authorities having jurisdiction, based on testing according to UL 1784 and installed in compliance with NFPA 105.
 - 2. Temperature-Rise Limit: At vertical exit enclosures, provide doors that have a maximum transmitted temperature end point of not more than 450 deg F (250 deg C) above ambient after 30 minutes of standard fire-test exposure.
- B. Fire-Rated, Borrowed-Lite Assemblies: Complying with NFPA 80 and listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9.
- C. Thermally Rated Door Assemblies: Provide door assemblies with U-factor of not more than 0.14 when tested according to ASTM C 518.

2.3 EXTERIOR STANDARD STEEL DOORS AND FRAMES

- A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Heavy-Duty Doors and Frames: SDI A250.8, Level 2;

1. Doors:

- a. Type: As indicated in the Door and Frame Schedule.
- b. Thickness: 1-3/4 inches (44.5 mm).
- c. Face: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.34mm) with minimum A40 coating.
- d. Edge Construction: Model 1, Full Flush.
- e. Edge Bevel: Provide manufacturer's standard beveled or square edges.
- f. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
- g. Bottom Edges: Close bottom edges of doors end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape.
- h. Core: Polystyrene and Vertical steel stiffener.
- i. Fire-Rated Core: Manufacturer's standard vertical steel stiffener, laminated mineral board core for fire-rated and temperature-rise-rated doors.

2. Frames:

- a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm) with a minimum A40 coating.
- b. Sidelite Frames: Fabricated from same thickness material as adjacent door frame.
- c. Construction: Full profile welded.
- d. Manufacturer applied asphaltic frame undercoating

3. Exposed Finish: Shop Primed. Manufacturer's standard, fast-curing, lead and chromate free primer

2.4 BORROWED LITES

- A. Fabricate of metallic-coated steel sheet, minimum thickness of 0.053 inch (1.3 mm).
- B. Construction: Full profile welded.
- C. Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as metal as frames.
- D. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.

2.5 HOLLOW-METAL PANELS

- A. Provide hollow-metal panels of same materials, construction, and finish as adjacent door assemblies.

2.6 FRAME ANCHORS

A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of four anchors per 7-foot jamb and minimum of 5 anchors per 8-foot jamb, with one additional anchor for frames with no floor anchor.
3. Post installed Expansion Anchor: Minimum 3/8-inch- (9.5-mm-) diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.

B. Material: ASTM A 879/A 879M, Commercial Steel (CS), 04Z (12G) coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008M or ASTM A 1011/A 1011M; hot-dip galvanized according to ASTM A 153/A 153M, Class B.

2.7 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Commercial Steel (CS), Type B.

D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

E. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

F. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

G. Glazing: Comply with requirements in Section 088114 "Fire Rated Glazing."

2.8 FABRICATION

A. Door Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch (19 mm) beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.

B. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide

alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.

1. Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by welding.
 2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
 3. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.
 - a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
 4. Terminated Stops: Terminate stops 6 inches (152 mm) above finish floor with a 45 degree angle cut, and close open end of stop with steel sheet closure. Cover opening in extension of frame with welded-steel filler plate, with welds ground smooth and flush with frame.
- C. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to SDI A250.6, the Door Hardware Schedule, and templates.
1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
 2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.
- D. Glazed Lites: Provide stops and moldings around glazed lites where indicated. Form corners of stops and moldings with butted or mitered hairline joints.
1. Provide stops and moldings flush with face of door, and with square stops unless otherwise indicated.
 2. Glazed Lites: Provide fixed and removable stops and moldings so that each glazed lite is capable of being removed independently.
 3. Provide fixed frame moldings on outside of exterior and on secure side of interior doors and frames. Provide loose stops and moldings on inside of hollow-metal doors and frames.
 4. Coordinate rabbet width between fixed and removable stops with glazing and installation types indicated.
 5. Provide stops for installation with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches (230 mm) o.c. and not more than 2 inches (51 mm) o.c. from each corner.

2.9 STEEL FINISHES

- A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.
- B. Factory Finish: Clean, pretreat, and apply manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat, complying with SDI A250.3.
 1. Color and Gloss: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.
- B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

- A. General: Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.
- B. Hollow-Metal Frames: Comply with SDI A250.11.
 1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.
 - a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
 - b. Install frames with removable stops located on secure side of opening.
 2. Fire-Rated Openings: Install frames according to NFPA 80.
 3. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout or mortar.
 4. Hollow-Metal Frames shall be braced or fastened in such a manner that will prevent the pressure of the hand troweled grout from deforming the frame member. Grout shall be mixed to provide a 4" (102 mm) maximum slump consistency and hand troweled into place. Grout mixed to a thinner, "pumpable" consistency shall not be used. All frames scheduled to be grouted solid shall be provided with bituminous back coating.

5. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
 6. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:
 - a. Squareness: Plus or minus 1/16 inch (1.6 mm), measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
 - b. Alignment: Plus or minus 1/16 inch (1.6 mm), measured at jambs on a horizontal line parallel to plane of wall.
 - c. Twist: Plus or minus 1/16 inch (1.6 mm), measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
 - d. Plumbness: Plus or minus 1/16 inch (1.6 mm), measured at jambs at floor.
- C. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.
1. Non-Fire-Rated Steel Doors: Comply with SDI A250.8.
 2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
- D. Glazing: Comply with installation requirements in Section 088000 "Glazing" and with hollow-metal manufacturer's written instructions.

3.3 CLEANING AND TOUCHUP

- A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.
- B. Metallic-Coated Surface Touchup: Clean abraded areas and repair with galvanizing repair paint according to manufacturer's written instructions.
- C. Factory-Finish Touchup: Clean abraded areas and repair with same material used for factory finish according to manufacturer's written instructions.
- D. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 08111

SECTION 08710 - DOOR HARDWARE

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. Mechanical door hardware for the following:
 - a. Swinging doors.
 - 2. Cylinders for door hardware.
 - 3. Electrified door hardware.

- B. Related Requirements:

- 1. Section 08111 "Hollow Metal Doors and Frames" for door silencers provided as part of hollow-metal frames.

1.3 COORDINATION

- A. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- B. Security: Coordinate installation of door hardware, keying, and access control with Owner.
- C. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.
- D. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: For electrified door hardware.
 - 1. Include diagrams for power, signal, and control wiring.
 - 2. Include details of interface of electrified door hardware and building safety and security systems.
- C. Samples: For each exposed product in each finish specified, in manufacturer's standard size.
 - 1. Tag Samples with full product description to coordinate Samples with door hardware schedule.
- D. Samples for Initial Selection: For each type of exposed finish.
- E. Door Hardware Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant. Coordinate door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of door hardware.
 - 1. Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate the fabrication of other work that is critical in Project construction schedule.
 - 2. Format: Use same scheduling sequence and format and use same door numbers as in door hardware schedule in the Contract Documents.
 - 3. Content: Include the following information:
 - a. Identification number, location, hand, fire rating, size, and material of each door and frame.
 - b. Locations of each door hardware set, cross-referenced to Drawings on floor plans and to door and frame schedule.
 - c. Complete designations, including name and manufacturer, type, style, function, size, quantity, function, and finish of each door hardware product.
 - d. Description of electrified door hardware sequences of operation and interfaces with other building control systems.
 - e. Fastenings and other installation information.
 - f. Explanation of abbreviations, symbols, and designations contained in door hardware schedule.
 - g. Mounting locations for door hardware.

- h. List of related door devices specified in other Sections for each door and frame.
- F. Keying Schedule: Prepared by or under the supervision of Installer's Architectural Hardware Consultant, detailing Owner's final keying instructions for locks. Include schematic keying diagram and index each key set to unique door designations that are coordinated with the Contract Documents.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Certificates: For each type of electrified door hardware.
 - 1. Certify that door hardware for use on each type and size of labeled fire-rated doors complies with listed fire-rated door assemblies.
- C. Product Test Reports: For compliance with accessibility requirements, for tests performed by manufacturer and witnessed by a qualified testing agency, for door hardware on doors located in accessible routes.
- D. Field quality-control reports.
- E. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For each type of door hardware to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: Supplier of products and an employer of workers trained and approved by product manufacturers and of an Architectural Hardware Consultant who is available during the course of the Work to consult Contractor, Architect, and Owner about door hardware and keying.
 - 1. Warehousing Facilities: In Project's vicinity.
 - 2. Scheduling Responsibility: Preparation of door hardware and keying schedule.
 - 3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.
- B. Architectural Hardware Consultant Qualifications: A person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and who is currently certified by DHI as an Architectural Hardware Consultant (AHC).

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for door hardware delivered to Project site.
- B. Tag each item or package separately with identification coordinated with the final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.
- C. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including excessive deflection, cracking, or breakage.
 - b. Faulty operation of doors and door hardware.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.
 - 2. Warranty Period: Three years from date of Substantial Completion unless otherwise indicated below:
 - a. Electromagnetic Locks: Five years from date of Substantial Completion.
 - b. Exit Devices: Two years from date of Substantial Completion.
 - c. Manual Closers: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of door hardware from single manufacturer.
 - 1. Provide electrified door hardware from same manufacturer as mechanical door hardware unless otherwise indicated. Manufacturers that perform electrical modifications and that are listed by a testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Rated Door Assemblies: Where fire-rated doors are indicated, provide door hardware complying with NFPA 80 that is listed and labeled by a qualified testing agency, for fire-protection ratings indicated, based on testing at positive pressure according to NFPA 252 or UL 10C.

- B. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release the latch. Locks do not require use of a key, tool, or special knowledge for operation.
- D. Accessibility Requirements: For door hardware on doors in an accessible route, comply with the DOJ's "2010 ADA Standards for Accessible Design"; ICC A117.1; HUD's "Fair Housing Accessibility Guidelines".
 - 1. Provide operating devices that do not require tight grasping, pinching, or twisting of the wrist and that operate with a force of not more than 5 lbf (22.2 N).
 - 2. Comply with the following maximum opening-force requirements:
 - a. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
 - 3. Bevel raised thresholds with a slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
 - 4. Adjust door closer sweep periods so that, from an open position of 90 degrees, the door will take at least 5 seconds to move to a position of 12 degrees from the latch.

2.3 SCHEDULED DOOR HARDWARE

- A. Provide products for each door that comply with requirements indicated in Part 2 and door hardware schedule.
 - 1. Door hardware is scheduled in Part 3.

2.4 HINGES

- A. Hinges: BHMA A156.1. Provide template-produced hinges for hinges installed on hollow-metal doors and hollow-metal frames.
 - 1. IVES Hardware; an Ingersoll-Rand company.

2.5 CONTINUOUS HINGES

- A. Continuous Hinges: BHMA A156.26; minimum 0.120-inch- (3.0-mm-) thick, hinge leaves with minimum overall width of 4 inches (102 mm); fabricated to full height of door and frame and to template screw locations; with components finished after milling and drilling are complete.
- B. Continuous, Gear-Type Hinges: Extruded-aluminum, pinless, geared hinge leaves joined by a continuous extruded-aluminum channel cap; with concealed, self-lubricating thrust bearings.
 - 1. Hager Companies.

2.6 MECHANICAL LOCKS AND LATCHES

- A. Mortise Locks: BHMA A156.13; Security Grade 1; stamped steel case with steel or brass parts; Series 1000.

1. Falcon Lock; an Ingersoll-Rand company.

2.7 ELECTRIC STRIKES

- A. Electric Strikes: BHMA A156.31; Grade 1; with faceplate to suit lock and frame.

1. HES, Inc.; an ASSA ABLOY Group company.

2.8 EXIT DEVICES AND AUXILIARY ITEMS

- A. Exit Devices and Auxiliary Items: BHMA A156.3.

1. Arrow USA; an ASSA ABLOY Group company.

2.9 KEYING

- A. Keying System: Factory registered, complying with guidelines in BHMA A156.28, appendix. Provide one extra key blank for each lock.

1. Existing System:

- a. Hardware supplier shall work with HACP Locksmith to utilize existing system on existing keyway, existing control key and existing master key.

2. Keyed Alike: Key all cylinders to same change key.

- B. Keys: Nickel silver.

1. Stamping: Permanently inscribe each key with a visual key control number and include the following notation:

- a. Notation: "DO NOT DUPLICATE."

2.10 OPERATING TRIM

- A. Operating Trim: BHMA A156.6; aluminum unless otherwise indicated.

1. Trimco Anti-Vandal Pull 1096 Series

2.11 ACCESSORIES FOR PAIRS OF DOORS

- A. Coordinators: BHMA A156.3; consisting of active-leaf, hold-open lever and inactive-leaf release trigger; fabricated from steel with nylon-coated strike plates; with built-in, adjustable safety release.
- B. Carry-Open Bars: BHMA A156.3; prevent the inactive leaf from opening before the active leaf; provide polished brass or bronze carry-open bars with strike plate for inactive leaves of pairs of doors unless automatic or self-latching bolts are used.
- C. Astragals: BHMA A156.22.

2.12 SURFACE CLOSERS

- A. Surface Closers: BHMA A156.4; rack-and-pinion hydraulic type with adjustable sweep and latch speeds controlled by key-operated valves and forged-steel main arm. Comply with manufacturer's written instructions for size of door closers depending on size of door, exposure to weather, and anticipated frequency of use. Provide factory-sized closers, adjustable to meet field conditions and requirements for opening force.
 - 1. LCN-Allegion.

2.13 DOOR GASKETING

- A. Door Gasketing: BHMA A156.22; with resilient or flexible seal strips that are easily replaceable and readily available from stocks maintained by manufacturer.
 - 1. National Guard products.
- B. Maximum Air Leakage: When tested according to ASTM E 283 with tested pressure differential of 0.3-inch wg (75 Pa), as follows:
 - 1. Gasketing on Single Doors: 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) of door opening.
 - 2. Gasketing on Double Doors: 0.50 cfm per foot (0.000774 cu. m/s per m) of door opening.

2.14 THRESHOLDS

- A. Thresholds: BHMA A156.21; fabricated to full width of opening indicated.
 - 1. National Guard products.

2.15 FABRICATION

- A. Manufacturer's Nameplate: Do not provide products that have manufacturer's name or trade name displayed in a visible location except in conjunction with required fire-rating labels and as otherwise approved by Architect.

1. Manufacturer's identification is permitted on rim of lock cylinders only.
- B. Base Metals: Produce door hardware units of base metal indicated, fabricated by forming method indicated, using manufacturer's standard metal alloy, composition, temper, and hardness. Furnish metals of a quality equal to or greater than that of specified door hardware units and BHMA A156.18.
- C. Fasteners: Provide door hardware manufactured to comply with published templates prepared for machine, wood, and sheet metal screws. Provide screws that comply with commercially recognized industry standards for application intended, except aluminum fasteners are not permitted. Provide Phillips flat-head screws with finished heads to match surface of door hardware unless otherwise indicated.
 1. Concealed Fasteners: For door hardware units that are exposed when door is closed, except for units already specified with concealed fasteners. Do not use through bolts for installation where bolt head or nut on opposite face is exposed unless it is the only means of securely attaching the door hardware. Where through bolts are used on hollow door and frame construction, provide sleeves for each through bolt.
 2. Fire-Rated Applications:
 - a. Machine Screws: For the following:
 - 1) Hinges mortised to doors or frames
 - 2) Strike plates to frames.
 - 3) Closers to doors and frames.
 - b. Steel Through Bolts: For the following unless door blocking is provided:
 - 1) Surface hinges to doors.
 - 2) Closers to doors and frames.
 - 3) Surface-mounted exit devices.
 3. Spacers or Sex Bolts: For through bolting of hollow-metal doors.
 4. Gasketing Fasteners: Provide noncorrosive fasteners for exterior applications and elsewhere as indicated.

2.16 FINISHES

- A. Provide finishes complying with BHMA A156.18 as indicated in door hardware schedule.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance of the Work.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Steel Doors and Frames: For surface-applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.

3.3 INSTALLATION

- A. Mounting Heights: Mount door hardware units at heights to comply with the following unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
- B. Install each door hardware item to comply with manufacturer's written instructions. Where cutting and fitting are required to install door hardware onto or into surfaces that are later to be painted or finished in another way, coordinate removal, storage, and reinstallation of surface protective trim units with finishing work. Do not install surface-mounted items until finishes have been completed on substrates involved.
 - 1. Set units level, plumb, and true to line and location. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
 - 2. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- C. Hinges: Install types and in quantities indicated in door hardware schedule, but not fewer than the number recommended by manufacturer for application indicated or one hinge for every 30 inches (750 mm) of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.
- D. Lock Cylinders: Install construction cores to secure building and areas during construction period.
 - 1. Replace construction cores with permanent cores as directed by Owner.

- E. Boxed Power Supplies: Locate power supplies as indicated or verify location with Architect.
 - 1. Configuration: Provide least number of power supplies required to adequately serve doors with electrified door hardware.
- F. Thresholds: Set thresholds for exterior doors and other doors indicated in full bed of sealant."
- G. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
 - 1. Do not notch perimeter gasketing to install other surface-applied hardware.
- H. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- I. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
 - 2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
- B. Occupancy Adjustment: Approximately twelve months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.5 CLEANING AND PROTECTION

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items as necessary to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure that door hardware is without damage or deterioration at time of Substantial Completion.

3.6 MAINTENANCE SERVICE

- A. Maintenance Tools and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Maintenance Service: Beginning at Substantial Completion, maintenance service shall include 12 months' full maintenance by skilled employees of door hardware Installer. Include quarterly preventive maintenance, repair or replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door and door hardware operation. Parts and supplies shall be manufacturer's authorized replacement parts and supplies.

3.7 DEMONSTRATION

- A. Engage Installer to train Owner's maintenance personnel to adjust, operate, and maintain door hardware.

3.8 DOOR HARDWARE SCHEDULE

- A. The hardware sets represent the design intent and direction of the owner and architect. They are a guideline only and should not be considered a detailed hardware schedule. Discrepancies, conflicting hardware and missing items should be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application and functionality.
- B. Refer to door schedule on Drawings for doors numbers in each hardware set.
- C. Refer to following pages for project hardware sets numbers and components.

Manufacturer's Abbreviations:

1. IV - Ives
2. FA - Falcon
3. LCN - LCN
4. NGP – National Guard Products
5. HG -Hager
6. RO - Rockwood
7. AR - Arrow
8. TR - Trimco
9. BE - Best
10. HE – HES
11. 00 - Other

Hardware Schedule

Set: 1.0

Doors: SINGLE TENANT ENTRY DOOR

3 Hinge (heavy weight)	3CB1HW NRP 4-1/2" x 4-1/2"	US26D	IV
1 Mortise Entry Lock	MA571 AG-B 6-Pin	US26D	FA
1 Core	Coordinate with Owner to reinstall exiting core/cylinder in new lock as necessary to maintain security.		
1 Door Closer	4040XP	689	LCN
1 Threshold	8425		NGP
1 Sweep	202NA		NGP
1 Gasketing	700EN (Head & Jambs)		NGP
1 Door Viewer	622		RO

Notes: Provide necessary brackets, spacers, and plates necessary for a complete and proper installation of hardware items listed. Provide UL Listed Fire Rated hardware for all fire rated doors.

Set: 2.0

Doors: SINGLE EXTERIOR DOOR

1	Continuous Hinge (heavy weight)	780-224HD		HG
1	Exit Device	S1250 SF12	AL	AR
1	Core	Coordinate with Owner to reinstall exiting core/cylinder in new lock as necessary to maintain security.		
1	ADA Anti-Vandal Pull	1096SP HA	630	TR
1	Door Closer	4040XP	689	LCN
1	Kickplate	K1062 10" high 4BE	US32D	RO
1	Threshold	8425		NGP
1	Sweep	202NA		NGP
1	Gasketing	700EN (Head & Jambs)		NGP

Notes: Provide necessary brackets, spacers, and plates necessary for a complete and proper installation of hardware items listed. Provide UL Listed Fire Rated hardware for all fire rated doors.

Set: 3.0

Doors: SINGLE EXTERIOR DOOR

1	Continuous Hinge (heavy weight)	780-224HD		HG
1	Exit Device	S1250 SF12	AL	AR
1	Core	Coordinate with Owner to reinstall exiting core/cylinder in new lock as necessary to maintain security.		
1	ADA Anti-Vandal Pull	1096SP HA	630	TR
1	Door Closer	4040XP	689	LCN
1	Kickplate	K1062 10" high 4BE	US32D	RO
1	Threshold	8425		NGP
1	Sweep	202NG		NGP
1	Gasketing	700EN (Head & Jambs)		NGP
1	Door Viewer	622		RO

Notes: Provide necessary brackets, spacers, and plates necessary for a complete and proper installation of hardware items listed. Provide UL Listed Fire Rated hardware for all fire rated doors.

Set: 4.0

Doors: SINGLE EXTERIOR ENTRY STAIR/VESTIBULE DOOR

1	Continuous Hinge (heavy weight)	780-224HD		HG
1	Exit Device	S1250 SF12	AL	AR
1	Core	Coordinate with Owner to reinstall exiting core/cylinder in new lock as necessary to maintain security.		
1	Electric Strike	9600 Series	630	HE
1	ADA Anti-Vandal Pull	1096SP HA	630	TR
1	Door Closer	4040XP	689	LCN
1	Kickplate	K1062 10" high 4BE	US32D	RO
1	Threshold	8425		NGP
1	Sweep	202NA		
1	Gasketing	700EN (Head & Jambs)		NGP

Notes: Provide necessary brackets, spacers, and plates necessary for a complete and proper installation of hardware items listed. Provide UL Listed Fire Rated hardware for all fire rated doors.

Set: 5.0

Doors: DOUBLE EXTERIOR DOOR

2	Continuous Hinge (heavy weight)	780-224HD		HG
1	Exit Device	S1250 SF12	AL	AR
1	Core	Coordinate with Owner to reinstall exiting core/cylinder in new lock as necessary to maintain security.		
1	ADA Anti-Vandal Pull	1096SP HA	630	TR
2	Door Closer	4040XP	689	LCN
2	Kickplate	K1062 10" high 4BE	US32D	RO
1	Threshold	8425		NGP
2	Sweep	202NA		NGP
1	Astragal	114NA		NGP
1	Gasketing	700EN (Head & Jambs)		NGP
2	Flush Bolt	293D		HG
1	Dust Proof Strike	280X		HG

Notes: Provide necessary brackets, spacers, and plates necessary for a complete and proper installation of hardware items listed. Provide UL Listed Fire Rated hardware for all fire rated doors.

Set: 6.0

Doors: DOUBLE EXTERIOR DOOR

1	PUSH PLATES	71RCE	US32D	RO
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END OF SECTION 08710

SECTION 08811 - FIRE-RATED GLAZING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Fire-rated glazing materials installed as windows in fire-rated frames.
- B. Related Sections include the following:
 - 1. Section 08111 "Hollow Metal Doors and Frames" for vision panels in interior doors and interior vision panel (borrowed lites) frames.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM E2010-01: Standard Test Method for Positive Pressure Fire Tests of Window Assemblies.
- B. American National Standards Institute (ANSI):
 - 1. ANSI Z97.1: Standard for Safety Glazing Materials Used in Buildings
- C. Consumer Product Safety Commission (CPSC):
 - 1. CPSC 16 CFR 1201: Safety Standard for Architectural Glazing Materials
- D. Glass Association of North America (GANA):
 - 1. GANA – Glazing Manual.
 - 2. FGMA – Sealant Manual.
- E. National Fire Protection Association (NFPA):
 - 1. NFPA 80: Fire Doors and Windows.
 - 2. NFPA 257 – Fire Tests of Window Assemblies.
- F. Underwriters Laboratories, Inc. (UL):
 - 1. UL 9 – Fire Tests of Window Assemblies.

1.3 DEFINITIONS

- A. Manufacturer: A firm that produces primary glass, fabricated glass or framing as defined in referenced glazing publications.

1.4 SUBMITTALS

- A. Comply with requirements of Section 01300.

- B. Product Data: Submit manufacturer's technical data for each glazing material required, including installation and maintenance instructions.
- C. Certificates of compliance from glass and glazing materials manufacturers attesting that glass and glazing materials furnished for project comply with requirements. Separate certification will not be required for glazing materials bearing manufacturer's permanent label designating type and thickness of glass, provided labels represent a quality control program involving a recognized certification agency or independent testing laboratory acceptable to authority having jurisdiction.
- D. Product Test Listings: From UL indicating fire-rated glass complies with requirements, based on comprehensive testing of current product.
- E. Samples: Submit, for verification purposes, approx. 8-inch by 10-inch sample for each type of glass indicated.

1.5 QUALITY ASSURANCE

- A. Glazing Standards: FGMA Glazing Manual and Sealant Manual.
- B. Fire Protective Rated Glass: Each lite shall bear permanent, non-removable label of UL certifying it for use in tested and rated fire protective assemblies.
- C. Fire Protective Glazing Products for Door Assemblies: Products identical to those tested per UL 10B, classified and labeled by UL.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials under provisions of Section 01600.
- B. Deliver materials to specified destination in manufacturer or distributor's packaging, undamaged, complete with installation instructions.
- C. Store off ground, under cover, protected from weather and construction activities.

1.7 WARRANTY

- A. Provide manufacturer's limited warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: FireLite Plus®, 5/16" thick laminated fire-rated and impact safety-rated glazing material as manufactured by Nippon Electric Glass Company, Ltd., and distributed by Technical Glass Products, 8107 Bracken Place SE, Snoqualmie, WA

98065 phone (800.426.0279) fax (425.396.8300) e-mail sales@fireglass.com, web site <http://www.fireglass.com>

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-rated glass ceramic clear and wireless glazing material listed for use in non-impact safety-rated locations such as transoms and borrowed lites with fire rating requirements ranging from 20 to 90 minutes with required hose stream test.
- B. Passes positive pressure test standards UL 10C.

2.3 MATERIALS-GLASS

- A. Heat-Treated Float Glass (GL-1): ASTM C 1048; Type I; Quality-Q3; Class I (clear) unless otherwise indicated; of kind and condition indicated.
 - 1. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed unless otherwise indicated.
 - 2. For uncoated glass, comply with requirements for Condition A.
 - 3. For coated vision glass, comply with requirements for Condition C (other coated glass).
- B. Fire-Protection-Rated Glazing (GL-2): Listed and labeled by a testing agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 252 for door assemblies and NFPA 257 for window assemblies.
 - 1. Thickness: 5/16 inch [8 mm] overall.
 - 2. Weight: 4 lbs./sq. ft.
 - 3. Approximate Visible Transmission: 85 percent.
 - 4. Approximate Visible Reflection: 9 percent.
 - 5. Fire-rating: 20 minutes to 90 minutes for other windows.
 - 6. Impact Safety Resistance: ANSI Z97.1 and CPSC 16CFR1201 (Cat. I and II).
 - 7. STC Rating: Approximately 38 dB.
 - 8. Surface Finish:
 - a. Standard Grade is polished for a surface quality that is comparable to alternative fire-rated ceramics marketed as having a premium finish.
 - b. Premium Grade is finish ground and polished on both surfaces to provide superior surface quality, improving overall clarity and providing a surface that is unmatched by alternative products.
 - 9. Positive Pressure Test: UL 10C; passes.
- C. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190, and complying with other requirements specified.
 - 1. Sealing System: Dual seal, with manufacturer's standard primary and secondary.

2. Spacer: Aluminum with mill or clear anodic finish.
 3. Desiccant: Molecular sieve or silica gel, or blend of both.
- D. Insulated Glass Units (IG-1): Where specified on drawings, provide insulated unit comprised on GL-1 and GL-2.
- E. Maximum sheet sizes based on surface finish:
1. Standard: 48 inches by 96 inches.
- F. Labeling: Permanently label each piece of FireLite Plus® with the FireLite Plus® logo, UL logo and fire rating in sizes up to 3,325 sq. in., and with the FireLite Plus® label only for sizes that exceed the listing (as approved by the local authority having jurisdiction).
- G. Fire Rating: Fire rating classified and labeled by UL for fire rating scheduled at opening locations on drawings, when tested in accordance with ASTM E2010-01; NFPA 257; and UL 9.
- H. Substitutions: No substitutions allowed.

2.4 GLAZING COMPOUND FOR FIRE-RATED GLAZING MATERIALS

- A. Glazing Tape: Closed cell polyvinyl chloride (PVC) foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2 percent. Glass panels that exceed 1,393 sq. inches for 90-minute ratings must be glazed with fire-rated glazing tape supplied by manufacturer.
- B. Glazing Compound: DAP 33 putty.
- C. Silicone Sealant: One-part neutral curing silicone, medium modulus sealant, Type S; Grade NS; Class 25 with additional movement capability of 50 percent in both extension and compression (total 100 percent); Use (Exposure) NT; Uses (Substrates) G, A, and O as applicable. Available Products:
1. Dow Corning 795 - Dow Corning Corp.
 2. Silglaze-II 2800 - General Electric Co.
 3. Spectrem 2 - Tremco Inc.]
- D. Setting Blocks: Neoprene, EPDM, or silicone; tested for compatibility with glazing compound; of 70 to 90 Shore A hardness.
- E. Cleaners, Primers, and Sealers: Type recommended by manufacturer of glass and gaskets.

2.5 FABRICATION

- A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with recommendations of product manufacturer and referenced glazing standard as required to comply with system performance requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine glass framing, with glazier present, for compliance with the following:
 - 1. Manufacturing and installation tolerances, including those for size, squareness, offsets at corners.
 - 2. Minimum required face or edge clearances.
 - 3. Observable edge damage or face imperfections.
- B. Do not proceed with glazing until unsatisfactory conditions have been corrected.
- C. Clean glazing channels and other framing members receiving glass immediately before glazing. Remove coatings that are not firmly bonded to substrates.

3.2 INSTALLATION (GLAZING)

- A. Comply with referenced FGMA standards and instructions of manufacturers of glass, glazing sealants, and glazing compounds.
- B. Protect glass from edge damage during handling and installation. Inspect glass during installation and discard pieces with edge damage that could affect glass performance.
- C. Set units of glass in each series with uniformity of pattern, draw, bow, and similar characteristics.
- D. Cut glazing tape to length and set against permanent stops, flush with sight lines to fit openings exactly, with stretch allowance during installation.
- E. Place setting blocks located at quarter points of glass with edge block no more than 6 inches from corners.
- F. Glaze vertically into labeled fire-rated metal frames or partition walls with same fire rating as glass and push against tape for full contact at perimeter of pane or unit.
- G. Place glazing tape on free perimeter of glazing in same manner described above.
- H. Install removable stop and secure without displacement of tape.
- I. Use specified glazing compound, without adulteration; bed glazing material in glazing compound; entirely fill all recess and spaces. Provide visible glazing compound with smooth and straight edges.
- J. Install in vision panels in fire-rated doors to requirements of NFPA 80.
- K. Install so that appropriate UL and FireLite Plus® markings remain permanently visible.

3.3 PROTECTION AND CLEANING

- A. Protect glass from contact with contaminating substances resulting from construction operations. Remove any such substances by method approved by glass manufacturer.
- B. Wash glass on both faces not more than four days prior to date scheduled for inspections intended to establish date of substantial completion. Wash glass by method recommended by glass manufacturer.

3.4 GLAZING SCHEDULE

Rating	Assembly	Max. Exposed Area (Sq. In.)	Max. Width Of Exposed Glazing (In.)	O R	Max. Height Of Exposed Glazing (In.)	Stop Height
60 min.	HMS	3,325	95		95	5/8"

* HMS indicates hollow metal steel framing.

END OF SECTION

SECTION 09911 - EXTERIOR PAINTING

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 surface preparation and the application of paint systems on the following exterior substrates and interior substrates:
 - 1. Brick.
 - 2. Concrete masonry units (CMU).
 - 3. Interior plaster.
 - 4. Steel doors and frames.

1.3 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- D. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- E. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- F. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples for Initial Selection: For each type of topcoat product.
- C. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches (200 mm) square.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
3. VOC content.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 2 gallons. of each material and color applied.

1.6 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 20 sq. ft.
 - b. Other Items: Architect will designate items or areas required.
2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Sherwin-Williams Company (The).
 2. Benjamin Moore & Co.
 3. PPG Architectural Finishes, Inc.

2.2 PAINT, GENERAL

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. Material Compatibility:
 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- C. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.
- D. Colors: As selected by Architect from manufacturer's full range.

2.3 WATER-BASED PAINTS

- A. Latex, Exterior Low Sheen- Satin (Gloss Level 4):
 1. Emerald by Sherwin Williams, code K49W00051

B. Light Industrial Coating, Exterior, Water Based (Gloss Level 5):

1. Pro Industrial DTM Acrylic Semi-gloss by Sherwin Williams, code B66W01151.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 1. Masonry (Clay and CMU): 12 percent.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceeds that permitted in manufacturer's written instructions.
- E. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer.

- F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.
 - 3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
 - 4. Paint entire exposed surface of window frames.
 - 5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 - 6. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint undercoats same color as topcoat, but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 PAINTING SCHEDULE

A. All Substrates:

1. Latex System for Masonry:

- a. Prime Coat: Latex, interior, matching topcoat.
- b. Intermediate Coat: Latex, interior, matching topcoat.
- c. Topcoat: Latex, interior semi-gloss (Gloss Level 5)

2. Latex System for Plaster:

- a. Prime Coat: Latex, interior, matching topcoat.
- b. Intermediate Coat: Latex, interior, matching topcoat.
- c. Topcoat: Latex, interior satin (Gloss Level 4)

END OF SECTION 09911

SECTION 10143 – DOOR-IDENTIFICATION PANEL SIGNAGE

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 door-identification signs that are directly attached to the building masonry walls.

1.3 DEFINITIONS

- A. Accessible: In accordance with the accessibility standard.

1.4 COORDINATION

- A. Furnish templates for placement of sign-anchorage devices embedded in permanent construction by other installers.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For door-identification signs.
 - 1. Include fabrication and installation details and attachments to other work.
 - 2. Show sign mounting heights, locations of supplementary supports to be provided by other installers, and accessories.
 - 3. Show message list, typestyles, graphic elements, including raised characters and Braille, and layout for each sign at least half size.
- C. Samples for Initial Selection: For each type of sign assembly, exposed component, and exposed finish.
 - 1. Include representative Samples of available typestyles and graphic symbols.
- D. Samples for Verification: For each type of sign assembly showing all components and with the required finish(es), in manufacturer's standard size unless otherwise indicated and as follows:

1. Door-Identification Signs: Full-size Sample.
 2. Variable Component Materials: Full-size Sample of each base material, character (letter, number, and graphic element) in each exposed color and finish not included in Samples above.
 3. Exposed Accessories: Full-size Sample of each accessory type.
 4. Full-size Samples, if approved, will be returned to Contractor for use in Project.
- E. Product Schedule: For door-identification signs. Use same designations indicated on Drawings or specified.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and manufacturer.
- B. Sample Warranty: For special warranty.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For signs to include in maintenance manuals.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer of products.

1.9 FIELD CONDITIONS

- A. Field Measurements: Verify locations of anchorage devices embedded in permanent construction by other installers by field measurements before fabrication, and indicate measurements on Shop Drawings.

1.10 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of signs that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Deterioration of finishes beyond normal weathering.
 - b. Deterioration of embedded graphic image.
 - c. Separation or delamination of sheet materials and components.
 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Accessibility Standard:

1. Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1 .
2. Character Proportion: Letters and numbers on signs must have a width to-height ratio between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10.
3. Color Contrast: Characters and symbols must contrast with their background - either light characters on a dark background or dark characters on a light background.
4. Raised Characters or Symbols: Letters and numbers on signs must be raised 1/32 in (0.8 mm) minimum and be sans serif characters.
4. Raised characters or symbols must be at least 5/8 in (16 mm) high but no higher than 2 in (50 mm). Symbols or pictograms on signs must be raised 1/32 in (0.8 mm) minimum.
5. Symbols of Accessibility: Accessible facilities required to be identified must use the international symbol of accessibility.
6. Braille: Grade II with accompanying text.

2.2 DOOR-IDENTIFICATION SIGNS

A. Door-Identification Sign: Sign with smooth, uniform surfaces; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:

1. Laminated-Sheet Sign: **Exterior-grade Photopolymer Resin bonded to aluminum alloy baseface sheet with raised graphics.**
 - a. Composite-Sheet Thickness: 0.8mm thick exterior-grade photopolymer resin bonded to 0.4mm thick brushed aluminum alloy base. Color(s): **As selected by Architect from manufacturer's full range-**
2. Sign-Panel Perimeter: Finish edges smooth.
 - a. Edge Condition: **Beveled**
 - b. Corner Condition in Elevation: **Rounded**
3. Frame: **Entire perimeter**
 - a. Material: **Aluminum**
 - b. Profile: **Rounded**
 - c. Corner Condition in Elevation: **Rounded** Finish and Color: **As selected by Architect from manufacturer's full range**
4. Mounting: **Manufacturer's standard method for substrates indicated. Surface mounted to wall with countersunk flathead through fasteners and adhesive.**

5. Text and Typeface: **Accessible raised characters and Braille typeface as selected by Architect from manufacturer's full range. Finish raised characters to contrast with background color, and finish Braille to match background color.**

2.3 SIGN MATERIALS

- A. Aluminum Sheet and Plate: ASTM B 209 (ASTM B 209M), alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated.
- B. Paints and Coatings for Sheet Materials: Inks, dyes, and paints that are recommended by manufacturer for optimum adherence to surface and are UV and water resistant for colors and exposure indicated.

2.4 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of signs, noncorrosive and compatible with each material joined, and complying with the following:
 1. All fasteners shall be "Vandal-Resistant Type"
 2. Use concealed fasteners and anchors unless indicated to be exposed.
 3. For exterior exposure, furnish **stainless-steel** devices unless otherwise indicated.
 4. Exposed Metal-Fastener Components, General:
 - a. Fabricated from same basic metal and finish of fastened sign unless otherwise indicated.
 - b. Fastener Heads: Use **flat countersunk** screws and bolts with tamper-resistant slots unless otherwise indicated.
5. Sign Mounting Fasteners:
 - a. Concealed Studs: Concealed (blind), threaded studs welded or brazed to back of sign material or screwed into back of sign assembly unless otherwise indicated.
 - b. Through Fasteners: Exposed metal fasteners matching sign finish, with type of head indicated, and installed in predrilled holes.
- B. Adhesive: As recommended by sign manufacturer.

2.5 FABRICATION

- A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
 1. Preassemble signs and assemblies in the shop to greatest extent possible. Disassemble signs and assemblies only as necessary for shipping and handling

limitations. Clearly mark units for reassembly and installation; apply markings in locations concealed from view after final assembly.

2. Mill joints to a tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
3. Conceal connections if possible; otherwise, locate connections where they are inconspicuous.
4. Provide rabbets, lugs, and tabs necessary to assemble components and to attach to existing work. Drill and tap for required fasteners. Use concealed fasteners where possible; use exposed fasteners that match sign finish.

2.6 GENERAL FINISH REQUIREMENTS

- A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.7 ALUMINUM FINISHES

- A. Color Anodic Finish: AAMA 611, **Class I, 0.018 mm** or thicker.
- B. Baked-Enamel or Powder-Coat Finish: AAMA 2603 except with a minimum dry film thickness of 1.5 mils (0.04 mm). Comply with coating manufacturer's written instructions for cleaning, conversion coating, and applying and baking finish.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install signs using countersunk screw mounting methods indicated and according to manufacturer's written instructions.
 1. Install signs level, plumb, true to line, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
 2. Install signs so they do not protrude or obstruct according to the accessibility standard.
 3. Before installation, verify that sign surfaces are clean and free of materials or debris that would impair installation.
- B. Accessibility: Install signs in locations on walls **as indicated on Drawings and according to the accessibility standard**
- C. Mounting Methods:
 1. Concealed Studs: Using a template, drill holes in substrate aligning with studs on back of sign. Remove loose debris from hole and substrate surface.

- a. Masonry Substrates: Fill holes with adhesive. Leave recess space in hole for displaced adhesive. Place sign in position and push until flush to surface, embedding studs in holes. Temporarily support sign in position until adhesive fully sets.
 - b. Thin or Hollow Surfaces: Place sign in position and flush to surface, install washers and nuts on studs projecting through opposite side of surface, and tighten.
2. Through Fasteners: Drill holes in substrate using predrilled holes in sign as template. Countersink holes in sign if required. Place sign in position and flush to surface. Install through fasteners and tighten.
3. Adhesive: Clean bond-breaking materials from substrate surface and remove loose debris. Apply linear beads or spots of adhesive symmetrically to back of sign and of suitable quantity to support weight of sign after cure without slippage. Keep adhesive away from edges to prevent adhesive extrusion as sign is applied and to prevent visibility of cured adhesive at sign edges. Place sign in position, and push to engage adhesive. Temporarily support sign in position until adhesive fully sets.

3.2 ADJUSTING AND CLEANING

- A. Remove and replace damaged or deformed signs and signs that do not comply with specified requirements. Replace signs with damaged or deteriorated finishes or components that cannot be successfully repaired by finish touchup or similar minor repair procedures.
- B. Remove temporary protective coverings and strippable films as signs are installed.
- C. On completion of installation, clean exposed surfaces of signs according to manufacturer's written instructions and touch up minor nicks and abrasions in finish. Maintain signs in a clean condition during construction and protect from damage until acceptance by Owner.

END OF SECTION 10143

SECTION - 16010
ELECTRICAL WORK - GENERAL

PART 1. GENERAL

1.1 CONTRACT DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.
- B. Carefully examine the General and Electrical Contract Drawings. If any discrepancies occur between the Contract Drawings or between the Contract Drawings and the specifications, report such discrepancies to the Engineer in writing and obtain written instructions as to the manner in which to proceed. No departures from the Contract Drawings shall be made without prior written approval of the Engineer.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall furnish all labor and materials and perform all work necessary for proper completion, operation and use of the electrical systems as herein specified and as shown on the Contract Drawings.
- B. The Contract Drawings and these Specifications are complimentary, each to the other, and any labor or material called for by either whether or not by both, or necessary for the successful operation of any of the particular types of equipment furnished under this Contract, shall be furnished and installed.
- C. The Contract Drawings are intended to indicate only diagrammatically the extent, general character, and approximate locations of the work included. Work indicated, but having minor details obviously omitted, shall be furnished complete to perform the functions intended without extra cost to the Owner.
- D. The Contractor shall familiarize himself with the other sections of these specifications in order that he may know the electrical requirements of these sections and be prepared to furnish all electrical work and materials required for equipment under those sections.
- E. The work shall include, but not necessarily be limited to, furnishing the following items:
 - 1. All wire, cable, control wire and any other cable associated with the project
 - 2. All conduit, wiremold, wireway
 - 3. New video entry system and tenant unit monitors and all appurtenances
 - 4. New fire alarm control panel, initiating devices, annunciation devices and appurtenances for the basement floor and in each tenant unit and top of common stairwells of the Building 74.
 - 5. New battery powered unit smoke detectors.

- 6. All demolition associated with the scope of work shown on the drawings and defined in these specifications.
- F. The number of conductors shown on the Contract Drawings is not necessarily the correct number required. As many conductors as are required in each case shall be installed.

1.3 CODES

- A. All work shall be executed in strict conformance to the requirements of the latest edition of the following codes and standards:
 - 1. National Electrical Code
 - 2. National Bureau of Standards Handbook H-30
 - 3. State and Local Codes, and all other authorities having jurisdiction
 - 3. Underwriters' Laboratories, Inc.
 - 4. American National Standards Institute, Inc.
 - 5. Institute of Electrical and Electronics Engineers
 - 6. National Electrical Manufacturer's Association
 - 7. National Board of Fire Underwriters
 - 8. Insulated Power Cable Engineers Associated Specifications
 - 9. American Society for Testing Materials and Specifications
 - 11. Federal Department of Labor Occupational Safety and Health Standards as contained in the Federal Register Volume 36, Number 105, dated May 29, 1971, or the latest revision thereof
 - 10. All other authorities having jurisdiction over this section of work
- B. If the Contractor performs any work contrary to any of the above codes and regulations, he shall be held fully responsible for such violations, and shall assume any and all costs arising therefrom to conform to them.

1.4 PERMITS AND FEES

The Contractor shall obtain all permits, pay all fees and furnish the Engineer with evidence of the permits before commencing the Contract work. A certificate of inspection shall be submitted, properly executed, to the Engineer prior to final acceptance of the work. This certificate shall be issued from an inspection agency acceptable to the local electrical utility and/or authority having jurisdiction.

1.5 COORDINATION

- A. The work under this section of the Specifications shall be performed so that the progress of the entire project, including all trades, shall not be delayed nor interfered with. Material and equipment shall be installed as fast as conditions will permit.
- B. The Contractor shall check dimensions, examine drawings and coordinate his/her work so that the electrical work shall be coordinated with the other trades to avoid any conflicts of equipment. Conflicting conditions shall be resolved with the Engineer before installation. No additional compensation will be approved for modifying installations made prior to the resolution of the conflict.

1.6 OBTAINING INFORMATION

The Contractor shall obtain detailed information from the manufacturers of equipment which he is to furnish and install, as to the proper method of installation. Shop drawings of all equipment shall be examined for service and outlet locations. Any conflict shall be brought to the attention of the Engineer for resolution. Failure to do so prior to installation will require the Contractor to make changes at his own expense as may be required by the Engineer.

1.7 PHASE IDENTIFICATION

- A. Wires 8 AWG and smaller shall have continuous colored outer covering.
- B. Wires larger than 6 AWG shall be identified at all periods of termination by colored, gummed or plastic tape applied to the wires as follows:

<u>Applicable System Voltage</u>	<u>Phase A</u>	<u>Phase B</u>	<u>Phase C</u>
120/208, 3 phase, 4 wire	Black	Red	Blue
277/480, 3 phase, 4 wire	Brown	Yellow	Orange

- C. Neutral wires shall be white.
- D. Equipment ground wires shall be green.
- E. The same colors shall be used for the same phases throughout the entire project.
- F. Color coding for multi-conductor or control cables shall comply with UL and NEC requirements.
- G. Bus bars in transfer switches and panelboards shall be properly identified by the color codes specified for the various voltages.
- H. Every coil or reel of wire shall bear the manufacturer's name, the Underwriters' label, type, voltage, size, length and manufacturing date, and shall be delivered to the job in original containers for inspection. Wire shall be manufactured in the USA.

1.8 SUBSTITUTIONS REQUIRING ADDITIONAL WORK

Electrical work is designed for specific acceptable items of equipment and systems. If, by substitution of an alternate item or system, extra work is involved, it shall be the responsibility of the Contractor and he shall assume any and all costs for such extra work. The allowance of a substitute item or system shall in no way relieve him of full responsibility for the work.

1.9 TESTING

- A. Provide any tests of equipment, wiring or insulation deemed necessary by an inspection department or by the Engineer and provide all apparatus, meters,

materials, and labor required to make such tests. Remove any material or equipment which is found to be defective during the tests and replace with new at no additional cost to the Owner.

- B. Test all equipment which is furnished to this Contractor by other parties in the presence of an authorized representative of such part to determine whether or not the operation is satisfactory and that the equipment performs the function intended.

1.10 RECORD DRAWINGS

- A. The Engineer will provide one set of prints which shall be maintained by the Contractor at the site, on which the Contractor shall mark clearly, promptly and accurately as the work progresses, the work as actually installed, including any and all revisions. At the completion of the work, the Contractor shall submit to the Engineer the complete set of annotated Contract Drawings.
- B. Markings on the record Contract Documents shall show all changes as well as the actual plan location and elevation of all underground and concealed conduit.
- C. After verification, the Engineer will submit the record Contract Drawings to the Owner. Non-availability of record Contract Drawings or inaccuracies therein shall be grounds for postponement of final payment, until such time as the discrepancy or availability has been corrected.

1.11 PROTECTION OF ELECTRICAL EQUIPMENT

- A. Electrical equipment shall be protected from the weather, especially from water dripping or splashing upon it, at all times during shipment, storage and construction.
- B. Should any apparatus be subjected to injury by water, it shall be dried out thoroughly and put through a special dielectric test as directed at the expense of the Contractor, or shall be replaced by the Contractor without additional charge.
- C. Electrical equipment shall also be protected from dust, dirt, debris, etc. by suitable care and/or covering until the work is completed and turned over to the Owner. If any damage is caused by exposure to these hazards, the equipment shall be repaired, cleaned, painted or replaced, as necessary, without additional charge to restore it to its proper condition.
- D. All temporary electrical work shall meet the requirements of the National Electrical Code and the applicable sections of the Federal Department of Labor, Occupational Safety and Health Regulations for Construction as contained in the Federal Register, Volume 36, Number 75, dated April 17, 1971, or the latest revision thereof.

1.12 INSTRUCTIONS

- A. The Contractor shall thoroughly instruct the Owner's representative in the proper operations of all systems. Manufacturer's representatives and other skilled personnel necessary shall be retained as long as necessary for the purpose.
- B. The Contractor shall collect three (3) sets of complete instructions for operation and maintenance of all equipment, spare parts lists, fixtures, line per wire diagrams, and systems for all pieces of equipment furnished under this Contract.
- C. Bind the data in a commercial quality 8 1/2 x 11 inch three-ring binders with hardback, cleanable, and plastic covers. When multiple binders are used, correlate data into related consistent groupings. Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS, list title of Project and identify subject matter of contents. Prepare Table of Contents for each binder, arrange content by system and suitably indexed. Upon conclusion of the work, deliver five (5) sets of notebooks to the Owner's representative.

1.13 IDENTIFICATION

- A. All switches, control devices, generators, panelboards, and all appurtenances thereto shall be provided with an approved engraved nameplates. Nameplates shall be made of laminated sheet plastic approximately 1/8 inch thick engraved to provide white letters on a black background. All nameplates shall be secured in their proper location with finished screws. The nameplate shall identify the name of the equipment, and the control or the usage of the device.
- B. Submit a type written list of nameplates for approval before ordering. All nameplates shall be exclusively as described above.

1.14 LOCAL CONDITIONS

- A. The Contractor shall provide and place all sleeves for conduits penetrating floors, walls, and partitions, etc. The Contractor shall locate all necessary slots for this work and these shall be formed before concrete is poured.
- B. All cutting and patching shall be done in a thoroughly workmanlike manner.

PART 2. PRODUCTS

2.1 GENERAL

- A. All materials shall be new, of first quality, and shall conform to the standards of Underwriter's Laboratories, Inc., National Electrical Manufacturer's Association, Insulated Power Cable Engineers, American National Standards Institute, Institute of Electrical and Electronics Engineers, and American Society of Testing Materials in every case where such a standard has been established for the particular type of material in question. Where no specific make of materials, apparatus and/or equipment is mentioned hereinafter, any first-class product of reputable manufacturer may be used provided such product conforms to the

Contract Drawings and Specifications and has a written approval of acceptance by the Engineer.

- B. Where there is more than one item of similar equipment required under this Contract, all such similar equipment shall be the product of one manufacturer.
- C. All articles shall have the name or trademark of the manufacturer and rating in volts and amperes or other proper units marked where they can be observed readily after the device is installed.
- D. Defective equipment or equipment damaged in the course of installation or test shall be replaced or repaired in a manner meeting the approval of the Engineer.

PART 3. EXECUTION

3.1 GENERAL

- A. All work shall be executed in a workmanlike manner, and shall present a neat and mechanical appearance when completed.
- B. Surface-mounted panel boxes, junction boxes, conduit, etc. shall be supported by spacers to provide a clearance between wall and equipment.
- C. Load Balance. The Contractor shall check the load balance on the phases of the various systems and reconnect where necessary as approved by the Engineer to provide equal division of the loads between the phases of the various systems.

END OF SECTION 16010

SECTION - 16030
ELECTRICAL FIELD ACCEPTANCE TESTS

PART 1. GENERAL

1.1 CONTRACT DOCUMENTS

- A. The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this Section.

1.2 DESCRIPTION OF WORK

- A. Tests will be made under the supervision and direction of the Engineer to insure that all apparatus function as designed.
- B. All defective material and workmanship disclosed as the result of the tests given herein shall be corrected. The Contractor shall show by demonstration in service that all circuits and devices are in good operating condition. Tests shall be such that each item of control equipment will function not less than five times. The cost of the tests shall be borne by the Contractor, including expense incident to retests occasioned by defects and failures of equipment to meet the Specification.
- C. Unless otherwise specified, the Contractor shall supply electric current necessary for the tests.

PART 2. PRODUCTS

2.1 TEST EQUIPMENT

The Contractor shall furnish all equipment, meters, etc. necessary for field acceptance tests. Calibration certificate(s) for the equipment to be used shall be provided to the Owner and Engineer in English language.

PART 3. EXECUTION

3.1 INSULATION RESISTANCE OF CIRCUITS

All electric systems shall be tested for insulation resistance after all wiring is completed and connected ready for the attachment of fixtures and equipment, and again when fixtures and equipment are connected ready for use. Tests shall be made with an instrument capable of measuring accurately the resistance involved and having a voltage rating of 1000 volts. Readings shall be taken after the voltage has been applied continuously for one minute. The insulation resistance between conductors and also between each conductor and ground shall be measured. For wiring completed and connected ready for the attachment of fixtures and equipment, the values of insulation resistance shall not be less than one (1) megohm per 1000 volts of service voltage.

3.2 ACCEPTANCE TESTS

- A. The final operating tests shall be conducted in the presence of the Engineer and shall be subject to his approval. He shall be notified seven calendar days or more in advance when any test is to take place, and it shall not be started without his permission.
- B. Each motor or electrical device, with its control, shall be run as nearly as possible under operating conditions for a length of time sufficient to demonstrate correct alignment, wiring capacity, speed and satisfactory operation. All main switches and circuit breakers shall be operated. Tests shall demonstrate the proper functioning of all control equipment and instrumentation.
- C. These tests shall be in addition to, and not in substitution form the tests of the individual items at the manufacturer=s plant, or for the tests specified under the other sections of the Specifications.

END OF SECTION 16030

SECTION - 16110 RACEWAYS

PART 1. GENERAL

1.1 CONTRACT DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall furnish all labor and material to install the raceway systems necessary for a complete electrical system.
- B. Types of raceways in this section include the following:
 - 1. Rigid conduit.
 - 2. Flexible metal conduit.
 - 3. Liquid tight flexible metal conduit.
 - 4. Wiremold 700

1.3 QUALITY ASSURANCE

- A. Installer - Qualified with at least 3 years of successful installation experience on projects with electrical raceway work similar to that required for this project.
- B. National Electrical Manufacturers Association (NEMA) Compliance - Comply with applicable requirements of NEMA standards pertaining to raceways.
- C. Underwriters Laboratory (UL) Compliance and Labeling - Comply with provisions of UL safety standards pertaining to electrical raceway systems and provide products and components which have been UL-listed and labeled.
- D. National Electrical Code (NEC) Compliance - Comply with requirements as applicable to construction and installation of raceway systems.
- E. Referenced Standards:
 - 1. American National Standards Institute (ANSI):
 - a. C80.6, Intermediate Metal Conduit - Zinc-Coated.
 - 2. American Society for Testing and Materials (ASTM):
 - a. A123, Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - b. D1784, Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
 - c. D1788, Standard Specification for Rigid Acrylonitrile-Butadiene-Styrene (ABS) Plastics.
 - d. D2564, Solvent Cements for (PVC) Plastic Pipe, Tubing, and Fittings.
 - e. F512, Standard Specification for Smooth-Wall Poly(Vinyl Chloride) (PVC) Conduit and Fittings for Underground Installation.

3. ETL Testing Laboratories, INC (ETL).
4. National Electric Manufacturers Association (NEMA):
 - a. 250, Enclosures for Electrical Equipment (1000 Volts Maximum).
5. National Fire Protection Association (NFPA):
 - a. 70, National Electric Code(NEC).
6. Underwriters Laboratories Inc (UL):
 - a. 1, Flexible Metal Conduit.
 - b. 6, Rigid Metal Conduit.
 - c. 360, Liquid-Tight Flexible Steel Conduit.
 - d. 467, Grounding and Bonding Equipment.
 - e. 514, Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers.
 - f. 1242, Intermediate Metal Conduit.

PART 2. PRODUCTS

2.1 METAL CONDUIT AND TUBING

- A. Provide metal conduit, tubing and fittings of all types, grades, sizes and weights (wall thicknesses) for each service indicated. Where types and grades are not indicated, provide proper selection determined by Installer to fulfill wiring requirements and comply with applicable portions of NEC for raceways.
- B. Size all conduit as indicated on the Contract Drawings and/or in accordance with Table 1, Chapter 9 of the NEC. Minimum interior raceway size shall be 3/4 inch, and exterior raceway size shall be 1 inch, unless specified otherwise.
- C. Intermediate Metal Conduit (IMC)
 1. IMC shall be made of hot-dipped galvanized steel. Galvanizing shall be applied to both the inside and outside of the conduit.
 2. IMC fittings shall be malleable iron, zinc plated as manufactured by O-Z/Gedney or equivalent. No fittings shall be compression or set-screw type.
- D. Flexible Galvanized Steel Conduit (Flex)
 1. Formed of continuous, spiral wound, hot-dipped galvanized steel strip with successive convolutions securely interlocked.
 2. Standard: UL 1.
 3. Acceptable Manufacturers:
 - a. International Metal Hose Company.
 - b. Flexible Metal Hose Company.
 - c. Triangle PWC Inc.
 - d. LTV Steel Company.

2.2 CONDUIT FITTINGS AND ACCESSORIES

- A. Fittings for use with IMC in Non-Hazardous locations:
 1. Expansion couplings:

- a. 2 or 4 IN nominal straight-line conduit movement in either direction.
 - b. Weathertight.
 - c. Insulating bushing.
 - d. Sleeve-steel, zinc plated.
 - 2. Expansion/deflection couplings:
 - a. 3/4 IN nominal straight-line conduit movement in either direction.
 - b. 30-Degree nominal deflection from the normal in all directions.
 - c. Watertight.
 - d. Insulating bushing.
 - e. End couplings/hubs - bronze; or steel zinc-plated with aluminum cellulose lacquer finish.
 - f. Outer jacket neoprene.
 - g. Jacket clamps-stainless steel.
 - h. Inner sleeve (when used) - molded plastic.
 - 3. Pulling elbows and tees:
 - a. Raintight.
 - b. Cover - steel, zinc-plated.
 - 4. Mogul pulling elbows:
 - a. Die cast copper free aluminum.
- C. Fittings for use with FLEX:
 - 1. Fittings shall meet the following minimum requirements unless otherwise noted:
 - 2. Malleable iron, zinc-plated.
 - 3. Fittings shall be squeeze or clamp-type.
 - 4. Set screw type shall not be used.
 - 5. Standard: UL 514.
- D. Fittings for use with FLEX-LT:
 - 1. Fittings shall meet the following minimum requirements unless otherwise noted.
 - 2. Body: Malleable iron, zinc-plated.
 - 3. Ferrule: Steel, zinc-plated.
 - 4. Locknuts and compression nuts: Malleable iron, zinc-plated.
 - 5. Sealing ring: Neoprene.
 - 6. Standard: UL 514.
- E. Acceptable Manufacturers:
 - 1. Adalet.
 - 2. Carlon.
 - 3. Crouse-Hinds.
 - 4. OZ Gedney Company.
 - 5. Perma-Cote.
 - 6. Rob-Roy Ind.
 - 7. Thomas and Betts.

2.3 CONDUIT SUPPORT SYSTEMS

- A. For use with IMC:
 - 1. Acceptable Manufacturers:

- a. Unistrut Building Systems.
 - b. B-Line Systems Inc.
 - c. Kindorf.
2. All components shall be hot-dipped galvanized.
 - a. Standard: ASTM A153.
3. Channels and brackets:
 - a. Formed from hot rolled carbon steel sheet and strip.
 - b. Standards: ASTM A570.
4. Fittings: Formed from structural steel or hot-rolled carbon steel sheet and strip.
 - a. Standards: ASTM A36 and A635.
5. Clamps:
 - a. Formed from low carbon hot rolled steel sheet and strip.
 - b. Standard: ASTM A569.
6. Channel nuts:
 - a. Formed from mild steel bar stock, case hardened.
 - b. Standard: ASTM A575.
7. Screws, nuts, bolts and continuous threaded rods.
 - a. Formed from mild steel bar stock.
 - b. Standards: ASTM A307 and A563.

2.4 ALL CONDUIT FITTINGS

- A. Mark Products:
 1. UL listed.
 2. Identify the nominal trade size on the product.
 3. Stamp with the name or trademark of the manufacturer.

2.5 WIREMOLD 700

- A. The surface metal raceway system specified herein for branch circuit wiring or data network, voice, video and other low-voltage wiring shall be the V500 System as manufactured by The Wiremold Company. Systems of other manufacturers may be considered equal if, in the opinion, and the written approval of the engineer, they meet all the performance standards specified herein.
- B. The raceway and all system components must be UL Listed. They shall be manufactured of steel; zinc plated, galvanized and/or finished in Ivory ScuffCoat™ (a polyester topcoat over Ivory base) and shall be suitable for field repainting to match surroundings.
 1. The raceway shall be a one-piece design with a base and cover factory assembled. Total width shall be 0.75" by 0.53" [19.05mm by 13.46mm] deep with a cross sectional area of 0.20 square inches [129mm²]. The raceway base and cover shall have an approximate thickness of .040" [10.16mm]. The raceway shall be available in 5' and 10' [1.52m and 3.048m] lengths.
 2. A hand operated cutting tool shall be available for the base and cover to ensure clean, square cuts.

3. A full compliment of fittings must be available including but not limited to mounting clips and straps, couplings, flat, internal and external elbows, cover clips, tees, entrance fittings, conduit connectors and bushings. The covers shall be painted with an enamel finish, ivory in color to match the V500 Raceway. They shall overlap the raceway to hide uneven cuts. All fittings shall be supplied with a base where applicable. A transition fitting shall be available to adapt to other raceways manufactured by The Wiremold Company.
4. Device boxes shall be available for mounting standard devices and faceplates. A device box shall be available in single- and multiple-gang configurations, up to six-gang. Single-gang boxes shall allow for snap-on and fastener application. They shall range in depth from 0.94" to 2.75" [23.88mm to 69.85mm]. Extension boxes shall be available to adapt to existing standard flush switch and receptacle boxes. Round fixture and extension boxes shall be available to mount fixtures and other devices with mounting centers of 1 15/32", 1 5/8", 1 23/32", 1 27/32", 2 3/4", 3 1/2" and 4 1/16" [37.29mm, 41.27mm, 43.65mm, 46.83mm, 69.85mm, 88.90mm, and 103.12mm] diameters. Round fixture and extension boxes shall be available in depths ranging from 0.47" to 1.00" [11.94mm to 25.4mm] and in diameters of 3.00", 4.75", 5.50" and 6.38" [76.2, 120.65, 139.7, and 162.05]. All device and fixture box covers shall be painted with an enamel finish, ivory in color to match the raceway cover.
4. The raceway manufacturer will provide a complete line of connectivity outlets and modular inserts for UTP/STP, Fiber Optic, Coaxial and other cabling types with face plates and bezels to facilitate mounting. A complete line of preprinted station and port identification labels, snap-in icon buttons as well as write-on station identification labels shall be available.

PART 3. EXECUTION

3.1 INSTALLATION OF ELECTRICAL RACEWAYS

- A. Install electrical raceways where indicated, in accordance with manufacturers=written instructions, the applicable requirements of NEC and complying with recognized industry practices.
- B. Coordinate with other work, as necessary, to interface installation of electrical raceways and components with other work.
- C. Conduits shall be routed in the field unless otherwise indicated.
 1. Whenever possible avoid routing conduits through areas of high ambient temperature or radiant heat.
 2. Raceway runs shall be installed level, square and parallel to building structure.
- D. Complete installation of electrical raceways before starting installation of cables/wires within raceways.

- E. Conduit runs:
 - 1. All conduits within a structure shall be installed exposed.
 - 2. Conduit shall not be routed on the exterior of structures except as specifically indicated on the Drawings.
- F. Conduit shall not interfere with, or prevent access to, piping, valves, etc., or other equipment for operation, maintenance and repair.
- G. Total of Bends in Conduit Run:
 - 1. Less than 360 degrees.
 - 2. Provide pull boxes, conduits, or pulling elbows or tees as needed.
- H. Raceway runs, where shown, indicate the preferred location. Site conditions may affect actual routing. Coordinate routing and measurement with other trades and with equipment suppliers to avoid interference with equipment, piping, etc.
- I. FLEX-LT
 - 1. Install as the final conduit to motors, electrically operated valves, primary elements (instrumentation), final connections to light fixtures, step-down transformers, and electrical equipment that is liable to vibrate.
 - 2. Shall not be used as a conduit run:
 - a. Maximum length shall not exceed:
 - 1) 36 IN to motors.
 - 2) 24 IN to all other equipment.
- J. Conduit Support Systems:
 - 1. Compatible with the material and finish of the conduit supported.
 - a. Hot-dipped galvanized steel for use with IMC.
- K. Field Bending and Cutting of Conduits:
 - 1. Utilize tools and equipment recommended by the manufacturer of the conduit, designed for the purpose and the conduit material to make all field bends and cuts.
 - 2. Do not reduce the internal diameter of the conduit when making conduit bends.
 - 3. Degrease thread after threading and apply a zinc rich paint.
 - 4. Debur interior and exterior after cutting.
- L. Conduit Installation:
 - 1. Install conduit and fittings, as required (including offsets and crossovers), for a complete system that has a neat appearance and is in compliance with all applicable codes.
 - 2. Accessible conduit:
 - a. Run in straight lines parallel to or at right angles to building lines.
 - 1) Install conduit adjacent to walls and floors.
 - 2) Maintain minimum 6 IN separation between instrumentation and power circuits.
 - b. Maintain minimum 6 IN separation from process, gas, air and water pipes.
 - 3. Conduit support systems:

- a. Support conduit from the building structure.
 - 1) Do not support conduit from process, gas, air or water piping; or from other conduits.
- b. Provide hangers and brackets to limit the maximum uniform load on a single support to 25 LBS; or to the maximum uniform load recommended by the manufacturer if the support is rated less than 25 LBS.
 - 1) Do not exceed maximum concentrated load recommended by the manufacturer on any support.
 - 2) Conduit hangers: Continuous threaded rods combined with struts or conduit clamps:
 - a) Do not use perforated strap hangers and iron bailing wire.
- c. Conduit support system fasteners:
 - 1) Use sleeve-type expansion anchors as fasteners in masonry wall construction. Do not use concrete nails and power-driven fasteners.
- d. Maximum spacing between conduit supports:
 - 1) IMC: 10FT.
 - 2) Rigid nonmetallic conduit:
 - a) 1/2 to 2 IN: 3FT.
 - b) 2-1/2 to 6 IN: 6FT.
- e. Support all conduits within 3 FT of the conduit termination.
- f. Support all conduits at 90-degree bends and at vertical drops.
- g. Provide substantial vertical support for all conduit drops for stability and to minimize vibration.
4. Male threads of conduit systems shall be coated with an electrically conductive anti-seize compound.
5. Threaded connections shall be made wrench-tight.
6. Conduit joints shall be watertight.
 - a. Where exposed to possible submersion.
 - b. In areas classified as wet.
 - c. Underground.
7. Conduits shall be installed to eliminate moisture pockets. Where water cannot drain to openings, provide drain fittings in the low spots of the conduit run.
8. Rigid non-metallic conduit and fittings shall be joined utilizing solvent cement.
 - a. Immediately after installation of conduit and fittings, the fitting or conduit shall be rotated 1/4 turn to provide uniform contact.
9. Install expansion fittings:
 - a. Where conduits span structural expansions joints, with copper bonding jumpers.
 - b. In long conduit runs.
 - c. Elsewhere as identified on the Drawings.
 - 1) Provide fittings with 2 IN straight-line movement in either direction.
 - 2) Except where identified on the Drawings as requiring 4 IN straight-line movement in either direction.
10. Install expansion/deflection fittings:
 - a. Where conduits enter a structure.

- 1) Except electrical manholes and handholes.
 - 2) Except where the ductbank is tied to the structure with rebar.
 - b. Elsewhere as identified on the Drawings.
 - c. Provide fittings with 3/4 IN straight line movement in either direction and 30 degree deflection.
 - 1) Except where identified on the Drawings as requiring 2 IN straight line movement in either direction.
 11. Provide conduit seals:
 - a. Not more than 18 IN from where they are required.
 12. Terminate conduits:
 - a. In all type enclosures:
 - 1) With an insulated grounding bushing on the interior.
 - 2) With a locknut on the exterior.
 - b. When stubbed up through the floor:
 - 1) With an insulated grounding bushing.
 13. No conduit to be supported from pipe, etc.
 14. Multiple runs supported on trapeze. Provided 25% spare capacity on all trapeze support systems.
 15. No horizontal runs in masonry walls or partitions.
 16. Cap all vertical stubs.
- M. The protective coating integrity of conduits, fittings, and accessories shall be maintained.
1. Repair IMC utilizing a zinc rich paint.
 2. Repair surfaces which will be inaccessible after installation prior to installation.
- N. Remove moisture and debris from conduit before wire is pulled into place.
1. Pull mandrel with diameter nominally 1/4 IN smaller than the interior of the conduit, to remove obstructions.
 2. Swab conduit by pulling a clean, tight-fitting rag through the conduit.
 3. Tightly plug ends of conduit with tapered wood plugs or plastic inserts until wire is pulled.
- O. Only nylon or polyethylene rope shall be used to pull wire and cable in conduit systems.
- P. System and equipment grounding and bonding in strict accordance with NEC, Article 250.
- Q. All non-metallic or flexible conduit shall contain a separate grounding conductor in addition to the circuit conductors.
- R. Existing conduits which are reused shall be checked for proper grounding and continuity and corrections made as required.
- S. No welding permitted on conduits.
- T. All underground electrical systems shall include buried identification tape. The tape shall be continuous for the entire length of underground electrical system.

- U. Where ceiling, wall or other surfaces do not allow for conduit to be concealed, or in areas where concealing conduit would create excessive demolition or an unsightly installation, Wiremold is to be utilized for all wiring and device installation. The Engineer and Owner shall make the final determination on any areas in question.
- V. Fill openings in walls, floors, and ceilings and finish flush with surface.

3.2 CLEANING

Upon completion of installation of raceways, inspect interiors of raceways, remove burrs, dirt and construction debris.

END OF SECTION 16110

SECTION - 16120
WIRES AND CABLES – 600 VOLT AND BELOW

PART 1. GENERAL

1.1 CONTRACT DOCUMENTS

The General Provisions of the Contract, including General and Supplementary Conditions and General Requirements, apply to the work specified in this section.

1.2 DESCRIPTION OF WORK

- A. The Contractor shall furnish all labor and material necessary for a complete electrical system.
- B. The Contractor shall furnish and install all wire required for a complete electrical power distribution, operational control and instrumentation systems and as indicated on the Contract Documents.

PART 2. PRODUCTS

2.1 WIRES AND CABLES

- A. Wire and cable sizes shall be as indicated on the Contract Drawings; however, in no case shall their size be smaller than required by the National Electrical Code.
- B. Wire and cable shall be annealed, 98 percent conductivity, soft drawn copper. All wire and cable shall be the product of a single manufacturer and shall not have been manufactured more than six months prior to delivery to the site.
- C. Wire and cable shall be 600 volt class insulation and shall bear the Underwriters' Labels unless specified otherwise.
- D. Usage of Insulation Types:
 - 1. Type XHHW shall be used for underground feeds, service entrance conductors and for branch circuits No. 6 AWG and larger except for control circuits.
 - 2. Type THHN/THWN shall be used for interior branch circuits No. 8 AWG and smaller.
- E. Conductors 8 AWG and larger sizes shall be stranded. Conductors 10 AWG and smaller shall be solid.
- F. All conductors, 8 AWG and smaller sizes, shall have a continuous colored outer cover as specified in Section 16010.
- G. Conductor size limitations:
 - 1. Power conductors shall not be smaller than No. 12 AWG unless otherwise indicated on the drawings.

2. Control conductors shall not be smaller than No. 14 AWG unless otherwise indicated on the drawings.
 3. Instrumentation conductors shall not be smaller than No. 18 AWG unless otherwise indicated on the drawings.
- H. Color coding for multi-conductor control cables shall comply with the requirements of the National Electrical Code.
- I. Shielded cable shall be two conductor twisted plus common, three pair, 600 volt, polyethylene insulated, aluminum tape shield with polyvinyl chloride jacket as manufactured by Belden, General Cable, or equivalent, unless specified elsewhere.
- J. Color code all wiring as follows:
1. Lighting and power wiring:

	120/208V	480V
	=====	=====
Phase 1	Black	Brown
Phase 2	Red	Yellow
Phase 3	Blue	Orange
Neutrals	White	White
Ground	Green	Green

2.2 SPLICES AND TAPS

- A. Utilize mechanical splicing devices and lugs for splices and terminations in wires 6 AWG and larger. For wires 2 AWG and larger, use a type of splicing device in which the contact pressure on the wire is obtained by two or more screws or bolts, and so designed that the failure of any one screw, bolt or nut will not result in a total loss of contact pressure. Acceptable manufacturer is 3M Scotchlok Lugs and Connectors, or equivalent. Mechanical splicing devices shall have insulating covers whenever obtainable, and shall otherwise be insulated with plastic tape, 3M, or equivalent.
- B. Splices in conductors 8 AWG and smaller shall be made with pressure connectors consisting of cone shaped sprongs with insulating covers, "Scotchlok", or equivalent. The terminations of 8 AWG and smaller wires shall be made by forming the wires about the terminal screws in the case of solid wires. All stranded wires shall be provided with spade lugs attached to the wires by a crimped sleeve.
- C. All splices and terminations made in wet or damp locations shall utilize mechanical splicing lugs and heat shrink kits as manufactured by Raychem Corporation.
- D. No splices shall be permitted in conduit, they shall be made in a junction box.
- E. Motor lead splices shall be made with a UL listed motor splicing kit, 3M kit number 5300 series or equivalent. Splice may be either pigtail type or inline, depending on the space available in the motor connection compartment.

2.3 CONNECTORS AND TERMINAL LUGS

- A. Unless otherwise specified, connectors and terminal lugs used on wire sizes 8 AWG or larger shall be of the mechanical or clamp type.
- B. All wires connected to terminal boards, terminal blocks, or to other similar terminals shall terminate by means of pressure vinyl insulated ring terminals equal to Stakon pressure terminal manufactured by the Thomas Betts Company, Inc., Buchanan Electric Products Corporation; or equivalent.

2.4 ACCEPTABLE MANUFACTURERS

- A. Building wire, power and control cable:
 - 1. Subject to compliance with Contract Documents, the following manufacturers are acceptable:
 - a. American Insulated Wire Corporation.
 - b. Carol Cable Company, Inc.
 - c. Rome Cable Corporation.
 - d. Southwire Company.
 - 2. Conform to ICEA/NEMA S-66-524/WC 7 and UL 44 for type XHHW insulation.
 - 3. Conform to ICEA/NEMA S-61-402/WC 5 and UL 83 for type THHN/THWN insulation.
 - 4. UL listed.
 - 5. Surface mark with manufacturers name or trademark, conductor size, insulation type and UL label.
- B. Instrumentation Cable:
 - 1. Subject to compliance with Contract Documents, the following manufacturers are acceptable:
 - a. Alpha Wire Corporation.
 - b. American Insulated Wire Corporation.
 - c. Belden Wire and Cable.
 - d. Carol Cable Company.
 - 2. Conform to UL 444, Communications Cable, NEC type CMP, tinned copper conductors, 100 percent shield coverage. Teflon insulated with Teflon jacket.
 - 3. UL listed.
 - 4. Surface mark with manufacturers name or trademark, conductor size, insulation type and UL label.
- C. Splices and Taps:
 - 1. Subject to compliance with Contract Documents, the following manufacturers are acceptable:
 - a. Burndy Corporation.
 - b. Ideal.
 - c. Penn Union.
 - d. Thomas and Betts.

- D. Pulling Lubricant: Cable manufacturer's standard containing no petroleum or other products which will deteriorate insulation.

PART 3. EXECUTION

3.1 WIRE INSTALLATION

- A. All wiring shall be installed in accordance with the applicable provisions of the National Electrical Code and as indicated on the Contract Drawings. It shall be installed in a manner so as not to damage the insulation.
- B. The Contractor shall install as many wires and conduits as are required and necessary for a complete electrical system and shall provide adequately for the equipment actually to be installed.
- C. All conductors to be contained within a single conduit shall be drawn in at the same time. Only UL approved wire pulling compound shall be used as a lubricant in Contract Drawing conductors through the conduits.
- D. A reasonable amount of slack shall be left in each conductor in panelboards, outlet boxes and other devices to facilitate the making of joints and connections to fixtures and equipment.
- E. Raceways shall be clean and dry before conductors are installed. Should the drag wire or pulling cable indicate that the raceway is not clean or dry, correct the condition before wires are installed.
- F. Nowhere shall power and control wiring be installed in the same conduit.
- G. Install all wiring in raceways unless otherwise indicated on the drawings.
- H. Feeder, branch, control and instrumentation circuits shall not be combined in conduit, wireway, junction or pull boxes; except as permitted in the following:
 - 1. Where specifically indicated on the drawings or field conditions dictate and written permission is obtained from the Engineer.
 - a. Feeder and branch circuits shall be isolated from each other and from all control and instrumentation circuits.
 - b. Control circuits shall be isolated from feeder, branch and instrumentation circuits.
 - 1) Where combining of control circuits is permitted the combinations shall comply with the following:
 - a) 12 VDC, 24 VDC and 48 VDC may utilize a common raceway.
 - 2) 125 VDC shall be isolated from all other AC and DC circuits.
 - 3) AC control circuits shall be isolated from all DC circuits.
- I. Maintain electrical continuity of the shield when splicing twisted shielded conductors.

- J. Make splices and taps only at pull or junction boxes.
 - 1. Crimp or indenter-type connectors: Installation shall be made using a ratchet type compression tool.
 - 2. Insulated conical spring type connectors may be used for wire smaller than #6 AWG.
 - 3. Solderless lugs and screw type connectors may be used for #6 AWG and larger wire.

3.2 WIRE IDENTIFICATION

- A. Number all feeder and branch circuit wires at all terminations and junction points with adhesive numbered labels, attached to wire within six (6) inches of the termination point. The labels shall be in accordance with the approved wiring diagrams. Numbered labels shall have vinyl plastic face with adhesive back as made by T&B, or equivalent.
- B. All control wires shall be identified on each end using the wire numbers from the schematic Contract Documents.
 - 1. Number shall be typed on the heat shrinkable labels with permanent ink. Hand lettered labels are not acceptable. Manufactured by Raychem Corp.
 - 2. Labels shall be installed approximately 1 inch from the termination point and shrunk to a tight fit on the wire with a heat gun.
 - 3. Labels shall be oriented so that they are right side up and readable after the wire is connected to the terminal block.

END OF SECTION 16120

SECTION - 16130 ELECTRICAL BOXES

PART 1. GENERAL

1.1 CONTRACT DOCUMENTS

Drawings and General Provisions of this Contract, including General and Supplementary Conditions and General Requirements, apply to work specified in this section.

1.2 DESCRIPTION OF WORK

- A. Extent of electrical box work is indicated on the Contract Drawings.
- B. Types of electrical boxes in this section include the following:
 - 1. Outlet boxes.
 - 2. Junction boxes.
 - 3. Pull boxes.

1.3 QUALITY ASSURANCE

- A. Manufacturers shall be firms regularly engaged in the manufacture of electrical boxes, of types and sizes required, whose products have been in satisfactory use in similar service for not less than 3 years.
- B. Installer shall be qualified with at least three years of successful installation experience on projects with electrical installation work similar to that required for project.
- C. National Electrical Code (NEC) Compliance - Comply with NEC as applicable to construction and installation of electrical wiring boxes.
- D. Underwriters Laboratory (UL) Compliance - Provide electrical boxes which have been UL listed and labeled.

PART 2. PRODUCTS

2.1 OUTLET BOXES

- A. Provide outlet box accessories as required for each installation, including mounting brackets, wallboard hangers, extension rings, fixture studs, cable clamps and metal straps for supporting outlet boxes, which are compatible with outlet boxes for being used and fulfilling requirements of individual wiring situations.
- B. Interior surface mount boxes shall be cast metal outlet wiring boxes, of types, shapes and sizes, including depth of boxes, with threaded conduit ends and cast metal face plates.

- C. Ceiling and wall outlet boxes, which are to support fixtures, shall have short galvanized 3/8-inch fixture studs inserted from back of box. Mounting bolts of outlet boxes shall not be used for the support of fixtures. Adequately support each outlet box containing a fixture study so it is capable of sustaining, without damage, a dead load of at least twice the fixture weight. Where the ceiling construction requires it, anchor each fixture outlet box with an approved bar or stud box hanger.
- D. Weatherproof outlet boxes shall be aluminum cast metal, of types, shapes and sizes, including depth of boxes, with threaded conduit ends and aluminum face plates with spring hinged waterproof caps suitably configured for each application, including face plate gaskets and corrosion resistant fasteners.
- E. Where raceways are exposed, outlet boxes for wiring devices on walls, partitions, or steel framework, shall be Crouse-Hinds, or equivalent, Type FS or FD condulets as required with covers to fit. All outlet boxes that are exposed to weather shall be cast aluminum with gasketed covers.

F. OUTLET AND DEVICE BOXES

- 1. Sheet Steel: One-piece drawn type, zinc- or cadmium-plated.
- 2. Cast Metal:
 - (1) Box: Malleable iron or cast ferrous metal.
 - (2) Cover: Gasketed, weatherproof, malleable iron, or cast ferrous metal with stainless steel screws.
 - (3) Hubs: Threaded.
 - (4) Lugs (Cast Mounting) Manufacturer:
 - (1) Crouse-Hinds; Type FS or FD.
 - (2) Appleton; Type FS or FD.
- 3. Cast Aluminum:
 - a. Material:
 - (1) Box: Cast, copper-free aluminum.
 - (2) Cover: Gasketed, weatherproof, cast copper-free aluminum with stainless steel screws.
 - (3) Hubs: Threaded.
 - (4) Lugs: Cast mounting.
 - b. Manufacturers:
 - (1) Crouse-Hinds; Type FS-SA or FD-SA.
 - (2) Appleton; Type FS or FD.
- 4. PVC-Coated Sheet Steel:
 - a. Type: One-piece.
 - b. Material: Zinc- or cadmium-plated.
 - c. Coating: All surfaces; 40-mil PVC.
 - d. Manufacturer: Appleton.

G. JUNCTION AND PULL BOXES

1. Outlet Boxes Used as Junction or Pull Box: As specified under Article OUTLET AND DEVICE BOXES.
2. Large Sheet Steel Box: NEMA 250, Type 1.
 - a. Box: Code-gauge, galvanized steel.
 - b. Cover: Full access, screw type.
 - c. Machine Screws: Corrosion-resistant.
3. Large Cast Metal Box: NEMA 250, Type 4 and 12.
 - a. Box: Cast malleable iron or ferrous metal with drilled and tapped conduit entrances.
 - b. Cover: nonhinged or hinged with screws.
 - c. Hardware and Machine Screws: ASTM A167, Type 316 stainless steel.
 - d. Manufacturers, Surface Mounted Type:
 - (1) Crouse-Hinds; Series W.
 - (2) O.Z./Gedney; Series Y.
 - e. Manufacturers, Recessed Type:
 - (1) Crouse-Hinds; Type WJBF.
 - (2) O.Z./Gedney; Series YR.
4. Large Stainless Steel Box: NEMA 250, Type 4X.
 - a. Box: 14-gauge, ASTM A240, Type 316 stainless steel, with white enamel painted interior mounting panel.
 - b. Cover: Hinged with clamps.
 - c. Hardware and Machine Screws: ASTM A167, Type 316 stainless steel.
 - d. Manufacturers:
 - (1) Hoffman Engineering Co.
 - (2) Robroy Industries.
 - (3) Or Engineer Equivalent.
5. Wireway is not an acceptable substitute for junction or pull boxes.
6. Provide holes in pull and junction boxes to receive entering raceways. There shall be no holes except those used by raceways. Provide a separate section for each wiring system of light, power and low tension in each pull box. Boxes shall not be smaller than the size required by the NEC.

2.3 AREA APPLICATIONS

- A. Submit requests for substitution in accordance with Specification.
- B. Pull and Junction Boxes for General Use Unclassified Areas:

1. Material: 14 GA galvanized steel with seams continuously welded, ground smooth and no knockouts.
 2. Zinc rich coating on all seams.
 3. Stainless steel captivated cover screws threaded into sealed wells.
 4. Flat door with oil resistant gasket.
 5. UL listed.
- C. Pull and Junction Boxes for Wet Areas:
1. Material: 14 GA steel with polyester powder coating inside and out over phosphatized surfaces.
 2. Seams continuously welded, ground smooth, no knockouts.
 3. Stainless steel clamps on four sides.
 4. Flat cover with oil resistant gasket.
 5. NEMA 4 classification.
 6. UL listed.

PART 3. EXECUTION

3.1 INSTALLATION OF ELECTRICAL BOXES

- A. General - Install electrical boxes in compliance with recognized industry practices to ensure that products fulfill requirements.
- B. Wire fill according to NEC.
- C. Coordinate installation of electrical boxes with wire/cable and raceway installation work.
- D. Provide weatherproof outlets for interior and exterior locations exposed to weather or moisture.
- E. Boxes in masonry walls shall be 4" square, deep boxes with raised square cut corners designed for masonry.
- F. In exposed cinder block or masonry, boxes shall be flush with surface of block. Holes cut with masonry saw.
- G. Junction and pull boxes:
1. Use where necessary.
 2. Relocate at no additional cost if any part is covered by piping or otherwise inaccessible.
 3. Identify system contained in box with indelible waterproof marking pen. Identify covers, screw attached, on both sides.
 4. Where more than one circuit is contained in a box, identify each circuit wire with circuit number.
 5. Make covers of boxes inaccessible.
 6. Install boxes rated for the area classification.
- H. Provide knockout closures to cap unused knockout holes where blanks have been removed.

- I. Install boxes and conduit bodies in those locations to ensure ready accessibility of electrical wiring.
- J. Fasten boxes rigidly to substrates or structural surfaces to which attached, or solidly embed electrical boxes in concrete or masonry.
- K. Provide electrical connections for installed boxes.
- L. Cover outlet boxes that serve as junction boxes with a blank switch plate if it occurs on the wall, and by a round flat galvanized cover if it occurs on the ceiling.
- M. Use locknut and bushing for boxes in non-classified areas.
- N. Use cast metal boxes with threaded conduit hubs in hazardous areas.
- O. Use Type FS And FD boxes in wet areas and where exposed IMC steel conduit is required.
- P. Use epoxy resin coated, stainless steel, cast aluminum or fiberglass boxes for corrosive areas.
- Q. Fill unused punched-out, tapped, or threaded hub openings with insert plugs.
- R. Use outlet boxes sized to accommodate quantity of conductors enclosed.
- S. Use boxes sized to accommodate tying in box.
- T. Install IMC conduit squarely into boxes which do not have hubs or are drilled and tapped. Install with locknut on the outside and bushing on inside.
- U. Install conduit into boxes with hubs, or that are tapped, using thread lubricant.
- V. Do not use back-to-back boxes on this Project.
- W. Seal all points of conduit entry into fiberglass cable pulling enclosures for a waterproof installation.

END OF SECTION 16130

SECTION 16701
MULTI-TENANT ENTRY SECURITY SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Multi-tenant security video intercom.

1.2 RELATED SECTIONS

- A. Section 01300 - Submittals
- B. Other Division 16 sections that apply.

1.3 REFERENCES

- A. American National Standards Institute (ANSI/TIA/EIA) 568 - Commercial Building Telecommunications Cabling Standard.
- B. International Organization for Standards (ISO) 9001:2000 - Quality Management Systems - Requirements.

1.4 SYSTEM DESCRIPTION

- A. The system shall be hard wired and constructed with a 2-line communication system and a 2-line video system. The system is designed with video trunk lines from the video bus control unit and communication trunk lines that use a distribution point from a bus control unit. System shall be ADA compliant. System shall allow for future CCTV integration. Systems with audio only components shall be configurable.
- B. Functional Components:
 - 1. Entrance stations.
 - 2. Tenant stations.
 - 3. CCTV system (future).
 - 4. Access control system.
- C. System Requirement: Unless noted otherwise on drawings provide system size as follows.
 - 1. Entrance stations: as shown on Contract Drawings
 - 2. Tenant stations: as shown on Contract Drawings
 - 3. CCTV system Inputs: Future
- D. Operation:
 - 1. Calling Tenant Station from Entrance station and Communicating.
 - 2. Activating Door Release from Entry (tenant entry with access key) and Tenant Station (request from visitor at entrance station).

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Submit the following:
 - 1. Wiring Diagrams: Indicate wiring for each item of equipment and interconnections between items of equipment.
 - 2. Include manufacturer's names, model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.
- D. Installation and Operation Manuals:
 - 1. Submit manufacturer's installation and operation manual, including operation instructions and component wiring diagrams.
 - 2. Provide detailed information required for Owner to properly operate equipment.
- E. Warranty: Submit manufacturer's standard warranty.
- F. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- G. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: ISO 9001:2008 certified company.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials during handling and installation to prevent damage.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Aiphone Corp., which is located at: 6670 185th Ave. NE; Redmond, WA 98052 ; Toll Free Tel: 800-692-0200; Tel: 425-455-0510; Fax: 425-455-0071; Email: [request info \(marketing@aiphone.com\)](mailto:request info (marketing@aiphone.com)). Approved equivalent that meets the technical portions of this specification.

2.2 MULTI-TENANT AUDIO/VIDEO ENTRY SECURITY SYSTEM

- A. Basis of Design: Aiphone "GT Series" Multi-Unit Entry as manufactured by Aiphone Corporation.
- B. Entrance Stations: Entrance stations are intermixable within the "GT Series" system.
 - 1. Model GT-DMB-N: All-in-One Video Entrance Station.
 - a. Video Module: 170 degree Pan Tilt and Zoom (PTZ) video camera at entry.
 - b. Audio Module: Microphone and speaker.
 - 1) Calling: Electronic ring tone from entrance panel.
 - 2) Communication: Hands-free from entrance panel to tenant station.
 - a) Talk Path: Single channel with privacy.
 - c. Keypad: 10 digit keypad. Keyless entry.
 - 1) Direct digit dialing, alphabetical scrolling, or "jump" scrolling by letter to select tenant name.
 - 2) Digital panel can store up to 500 tenant name and number locations.
 - 3) Alpha-numeric room numbers and names are programmable.
 - 4) Access Control keypad with up to 500 unique codes to activate door release.
 - d. Liquid Crystal Display (LCD): 3.5 in display.
 - 1) Greeting message: Scrolling welcome message, up to 160 characters, adjustable scroll speed.
 - 2) Tenant names and numbers, and system status.
 - 3) Energy saver mode: Activated via the built-in motion sensor.
 - e. User Guide:
 - 1) Configurable to display any one of six languages.
 - 2) Provides operational assistance by displaying a visual pictogram as well as audible guidance.
 - f. PC Program: For loading resident information, access codes, and welcome message (Via USB).
 - g. Android Program: For loading resident information, access codes, and welcome message (Via NFC).
 - h. Power: 24V DC, use specified number of PS-2420UL per system configuration.
 - i. Capacity:
 - 1) Entry panels per system: 16.
 - 2) Concierge stations per system: 4.
 - 3) Tenant stations per system: 500.
 - 4) Tenant stations per unit: 4.
 - j. Wire: Two sets of 2-conductor, PE insulation (two common buses for audio and video).
 - 1) Aiphone No. 872002, 2 conductor PE insulated, non-shielded, 11.05 lbs per ft (16.44 kg per m).
 - 2) Aiphone No. 871802, 2 conductor PE insulated, non-shielded, 11.05 lbs per ft (16.44 kg per m).
 - k. Wiring Distance:
 - 1) Bus control unit to farthest entrance; 980 ft (298.7 m).
 - 2) Bus control unit to farthest tenant (audio); 980 ft (298.7 m).
 - 3) Video bus control unit to farthest entrance; 980 ft (298.7 m).

- 4) Video bus control unit to farthest tenant (video); 500 ft (152.4 m).
 - l. Construction: Stainless steel weather resistant.
 - 1) Dimensions (H x W): 12-5/8 x 7-5/8 in (321 x 194 mm).
 - m. Mounting: Flush.
 - n. Mounting: Surface Mounted Hooded Box: SBX-GTDMB.
- C. Tenant Stations:
 - 1. Station Panel: Model GT-1M3.
 - a. Video identification.
 - b. Talk with visitors.
 - c. Unlock doors.
 - d. Turn entrance light on.
 - e. Instant communication with guard stations.
- D. Bus Controller Components and Mounting Hardware:
 - 1. Bus Control Unit: Model GT-BC.
 - 2. Video Bus Control Unit: Model GT-VBC.
 - 3. Expanded Bus Control Unit: Model GT-BCXB-N.
 - 4. 4-Way Video Junction Unit: Model GT-4Z.
 - 5. Power Supply: Model PS-2420UL.
 - 6. External Signal relay: Model GT-RY.
 - 7. Frames and back boxes for surface and flush mount as required.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive integrated security and communication system.
- B. Notify Architect/Engineer of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

3.2 PREPARATION

- A. Verify the following compliance before starting installation.
 - 1. All units, except for the entrance station and tenant door station, are designed for indoor use only. Do not use outdoors.
 - 2. The unit turns inoperative during power failure.
 - 3. In areas where broadcasting station antennas are close by, intercom system may be affected by radio frequency interference.
 - 4. Keep the intercom wires at least 1 foot (30 cm) away from strong electrical wiring (AC 100-240 V) including, in particular, wiring for inverter electrical appliances. Noise and malfunction could result.
 - 5. Keep the unit more than 3.3 feet (1 m) away from radio or TV set.
 - 6. If a strong light shines on the main unit screen, the picture will turn white or only silhouettes will be visible.
 - 7. Other manufacturer's devices (such as sensor, detectors, door releases) used with this system, comply with the manufacturer's installation requirements.

8. The LCD panel is manufactured with very high precision techniques, inevitably will have a very small portion of its picture elements always lit or not lit at all. This is not considered a unit malfunction. Please be aware of this in advance.
9. The sensor of an entrance station (Integrated type) may activate due to moving shadows or moving tree branches, etc. and cause a message to display.

3.3 INSTALLATION

- A. Install integrated security and communication system in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Mount equipment plumb, level, square, and secure. For video entrance stations and video door stations, comply with manufacturer's design requirements to provide optimum picture quality of station monitoring.

3.4 SET-UP AND ADJUSTING

- A. Adjust integrated security and communication system for proper operation in accordance with manufacturer's instructions.

3.5 DEMONSTRATION AND TRAINING

- A. Demonstration:
 1. Demonstrate that integrated security and communication system functions properly.
 2. Perform demonstration at final system inspection by qualified representative of manufacturer.
- B. Instruction and Training:
 1. Provide instruction and training of Owner's personnel as required for operation of integrated security and communication system.
 2. Provide hands-on demonstration of operation of system components and complete system, including user-level program changes and functions.
 3. Provide instruction and training by qualified representative of manufacturer.

3.6 PROTECTION

- A. Protect installed integrated security and communication system from damage during construction.

END OF SECTION 16701

SECTION - 16702
TENANT DOOR ENTRY KEYING SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Multi-tenant door entry keying system

1.2 RELATED SECTIONS

- A. Section 01300 - Submittals
- B. Other Division 16 sections that apply.

1.3 REFERENCES

- A. American National Standards Institute (ANSI/TIA/EIA) 568 - Commercial Building Telecommunications Cabling Standard.
- B. International Organization for Standards (ISO) 9001:2000 - Quality Management Systems - Requirements.

1.4 SYSTEM DESCRIPTION

- A. The access controller shall be 'smart' to the entry and be able to operate in a 'stand-alone' mode or within a network of other like controllers. All decisions regarding the user access, alarms, and automatic timed functions are made at the controller, independent of a computer. Controllers and all system components shall be supplied for all door entry as indicated on the Contract Drawings, and in particular the door schedule of drawing A-6.
- B. Functional Components:
 - 1. Entrance stations
 - 2. FOB (keyless) entry devices
 - 3. Data communications
 - 4. Access control
- C. System Requirements: Unless noted otherwise on drawings, provide a system as follows:
 - 1. Compatible with door strike hardware specified in Section 08710.
 - 2. Proximity Reader
 - 3. LAN capabilities
 - 4. Main Controller
- D. Operation:
 - 1. Allowing tenant access through controlled device
 - 2. Communication of entry to main controller (location and final hardware configuration to be determined by Owner).

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Submit the following:
 - 1. Wiring Diagrams: Indicate wiring for each item of equipment and interconnections between items of equipment.
 - 2. Include manufacturer's names, model numbers, ratings, power requirements, equipment layout, device arrangement, complete wiring point-to-point diagrams, and conduit layouts.
- D. Installation and Operation Manuals:
 - 1. Submit manufacturer's installation and operation manual, including operation instructions and component wiring diagrams.
 - 2. Provide detailed information required for Owner to properly operate equipment.
- E. Warranty: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: ISO 9001:2008 certified company.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials during handling and installation to prevent damage.

PART 2 PRODUCTS

2.1 MAIN CONTROLLER FOR ENTRY

- A. The controllers shall contain and operate various outputs for controlling access:
 - 1. A 1.0 amp, dry circuit, single pole, double throw relay for application of power to an electric locking device, automatic gate, or door operator.
 - 2. An alarm output consisting of a 1.0 amp, Form C, dry circuit closure.

3. The alarm output must be configurable to annunciate
 - a. Door forced condition.
 - b. Door held open condition.
 - c. Both conditions.
 - d. Neither condition.
 4. An RS485 network communications output capable of linking up to 128 controllers into one network.
 5. A serial RS232 output provided at a built-in DB-9M connector that is automatically configured for direct connection to a personal computer or to a modem without a PC attached to the remote site.
- B. The controllers shall contain and manage various inputs for controlling access:
1. A door status input for sensing a normally closed switch.
 2. A request to exit, normally open input for remote operation of an electric locking device, automatic gate, or door operator; and optionally a second request to exit and separate annunciation for each door of Door Held Open and Door Forced alarms.
 3. A general, normally open input that can provide a global release of all lock relays in the network.
 4. A special purpose, multi-pin connector for adding an auxiliary board for increasing the functionality of the main controller.
 5. Two Proximity reader or two Wiegand interface inputs.
- C. The controllers shall contain special visual aids for viewing diagnostic tests and ID functions:
1. An LCD display to be used as a programming and diagnostic aid.
 2. A segmented LED display to be used as a controller address display.
 3. A single push-button switch for setting the controller address, and for selecting and performing diagnostic tests.
- D. The controller's database memory shall be nonvolatile (supported by a lithium battery with an expected life of at least five years):
1. The database shall maintain a memory capacity to manage 10,000 card or tag holders per controller and it shall be expandable to 65,000 card or tag holders per controller.
 - a. Cards can be enrolled into the system using a block enrollment method. This method shall allow card enrollment by serial number.
 - b. Card and tag enrollment can also be accomplished by a 'learn' method, requiring the card to be presented to an enrollment reader at the time of enrollment.
 2. The database shall maintain a memory capacity capable of storing at least 3,600 transactions.
 - a. When the transaction memory becomes full, old transactions will be deleted on a first in, first out basis to make room for new transactions.

- b. The controller's transaction memory shall be a record of all transactions performed by the controller.
 - c. The transaction memory shall operate independent of other controllers within the network of controllers.
- 3. The controllers shall be capable of communicating with a personal computer at a remote location via a direct connection or a telephone modem.
 - a. The controller shall automatically sense if connected directly to a PC or if connected via modem and adjust its communication protocols accordingly.
 - b. If the controller is using a modem, the modem shall communicate at 9600 baud or faster.
 - c. The controller shall contact the host and upload the contents of the controller's buffer when the buffer reaches a pre-programmed percentage of its event database memory capacity. Should the communication connection be broken during the upload process, the controller shall try to reestablish the communication connection every 10 minutes until a successful connection is made and all data is uploaded.
- 4. The controllers shall be capable of automatically adjusting for daylight savings time on a per network basis if desired by the user.
- E. The controllers shall provide two reader inputs. These inputs can either both be proximity or both be Wiegand interface inputs:
 - 1. Two readers can be operated simultaneously.
 - 2. The readers can be configured to indicate direction – ingress and egress.
 - 3. The second reader can be used to operate a second door with fully independent controls.
- F. The controllers shall be programmed using a personal computer with the following requirements:
 - 1. The personal computer must use the Windows 10 operating system.
 - 2. The personal computer must use a 90 MHz, Pentium microprocessor (or faster).
 - 3. The personal computer must have 20 Mbytes of available hard disk space.
 - 4. The personal computer must have a minimum of 16 Mbytes of RAM.
 - 5. The personal computer must have an available COM port equipped with a 16550 UART.
 - 6. The personal computer must have a mouse or some similar pointing device.
 - 7. The personal computer must have a CD-ROM drive.
- G. The maximum dimensions for the controller within the enclosure shall be 9.25 inches high by 8.2 inches wide by 2.6 inches deep (24.65 cm H x 20.25 cm W x 6.60 cm D).
- H. All cable/wiring connections shall be of quick disconnect type.

- I. The controllers shall operate using 12 volts DC with a current consumption of no more than 670 mA in an alarm state with all options installed.
- J. The controllers shall have MOVs across all relay outputs and transorbs across all inputs and non-relay outputs to provide electrical surge/transient protection.
- K. The controllers shall provide protection against incorrect input power connections (i.e. reversed power and ground, voltage too high or too low).
- L. The operating temperature range of the controller shall be no less than 0° F to 140° F (-18° C to 60° C) at 0% to 90% Relative Humidity, noncondensing.

2.2 CONTROLLER PROGRAMMING SOFTWARE

All configuration, programming, and monitoring of the controllers must be done through a software program that makes these tasks easy to perform.

- A. The software program must have the following features:
 - 1. Be able to manage up to 32 distinct time zones with each time zone subdivided into the 7 days of the week, 3 holiday schedules, and 4 start/stop time intervals.
 - 2. Be able to configure up to 1024 input monitoring points (8 per individual controllers with option board installed) and 512 Form C, output relay points (4 per individual controller with option board installed) with the following features:
 - a. All Form C, output relay points must be programmable to either follow the state of an associated input point or be latched to a state based on an input point.
 - b. The operation of all Form C, output relay points must be assignable to time zones, such that the output relay points can have time periods when they are active/operational, and time periods when they are inactive/idle.
 - c. All input monitoring points must be linkable to output relay points, allowing input events to initiate output relay responses.
 - d. For each controller, all input monitoring points and output relay points on that controller must be able to be used in multiple links on that controller, allowing any combination of controller inputs to drive any combination of controller outputs.
 - 3. Be able to configure up to 3, separately configurable, event monitoring windows, with each window capable of displaying event information from any individual controller or all controllers on the access control network.
 - 4. Be able to automatically unlock specific doors at a given time of the day and day of the week, with user defined overrides on user defined dates.
 - 5. Be able to implement a "First Person In" feature such that an access control network can be programmed to not automatically unlock general access doors until an authorized person has entered the premises. This

feature should allow early entrance (in advance of the normal unlock time) in fifteen minute increments up to one hour.

6. Be able to disable the reporting of events that do not need to be tracked, to save event storage space on the controller.
7. Be able to poll the access control network and retrieve network hardware information that the program uses to automatically setup and configure itself without manual data entry.

2.3 ACCESS CONTROL NETWORK

The access control network of controllers must be able to expand to meet future requirements as follows.

- A. An access control network must be able to expand to up to 256 doors in 1-door increments.
- B. The access control software and host PC must be able to communicate with up to 255 remote access control networks via modem connections.

2.4 READER/PROXIMITY READER

The primary type of reader shall be a proximity type of reader. The proximity reader shall be connected directly to the main controller without the need for an option card and it shall not require a special interface for data formatting. The proximity reader shall read a unique identification number from each card or tag when the card or tag is presented in close proximity to the surface of the reader (without a need for the card or tag to touch the reader).

- A. The controller will support a variety of reader styles:
 1. A door frame reader (mullion reader) which can be mounted directly on a standard metal mullion doorframe (1.75 inches or 4.5 cm).
 - a. The read range using a standard proximity card shall be up to 4.00 inches (10.16 cm).
 - b. The dimensions of the reader shall be 3.25 inches high by 1.40 inches wide by 0.375 inches deep (8.2 cm H x 3.5 cm W x 0.96 cm D).
 - c. The reader shall be of a weatherproof, potted, rugged design.
 - d. The reader shall provide a multi-color LED and a sound alert for status annunciation.
 2. A single gang mount, wall switch reader which will mount onto a metal or plastic electrical junction box. This reader cannot be mounted on a solid metal surface.
 - a. The read range using a standard proximity card shall be up to 6.00 inches (15.24 cm).
 - b. The dimensions of the reader shall be 4.40 inches high by 3.00 inches wide by 0.375 inches deep (11.13 cm H x 7.62 cm W x 0.96 cm D).
 - c. The reader shall be of a weatherproof, potted, rugged design.

- d. The reader shall provide a multi-color LED and a sound alert for status annunciation.
- 3. A medium range reader that can be mounted to most building materials except metal.
 - a. The read range using a standard proximity card shall be up to 14 inches (35.56 cm).
 - b. The dimensions of the reader shall be 8.50 inches high by 6.00 inches wide by 0.75 inches deep (21.59 cm H x 15.24 cm W x 1.91 cm D).
 - c. The reader shall be of a weatherproof, potted, rugged design.
 - d. The reader shall provide a multi-color LED and a sound alert for status annunciation.
- 4. An extended range reader that can be mounted to most building materials except metal.
 - a. The read range using a standard proximity card shall be up to 18 inches (45.72 cm) when powered at 24 VDC.
 - b. The dimensions of the reader shall be 16.00 inches high by 12.00 inches wide by 1.35 inches deep (21.59 cm H x 15.24 cm W x 1.91 cm D).
 - c. The reader shall be of a weatherproof, rugged design.
 - d. The reader shall provide a multi-color LED and a sound alert for status annunciation.
- 5. A high-security, vandal resistant reader constructed of bullet and heat resistant material that is capable of withstanding severe shock. It can be mounted to most building materials including metal.
 - a. The read range using a standard proximity card shall be up to 1.0 inches (2.54 cm).
 - b. The dimensions of the reader shall be 5.25 inches high by 2.00 inches wide by 0.75 inches deep (13.35 cm H x 5.08 cm W x 1.91 cm D).
 - c. The reader shall be of a weatherproof, rugged design.
- B. The operating temperature of all readers shall be at least -22° F to 150°F (-30°C to 65°C).
- C. Accidental or intentional transmission of radio frequency signals into the reader shall not compromise the security of the access control system.
- D. The electrical connection between the reader and the controller shall be a color-coded, six conductor, #24 AWG or greater gauge, shielded cable. No coaxial cable or special connectors shall be required.

2.5 PROXIMITY CARDS/TAGS

Proximity cards or tags shall be read when presented in any orientation or at any angle to the front of the surface plane of the reader. Cards and tags shall be

uniquely encoded and not sensitive to facility code matching or other limiting factors.

- A. Presentation of a card or tag to a reader will produce an audio 'beep' from the reader and will change the color of the reader LED.
 - 1. The audio beep shall be a single beep for access denied and a double beep for access granted.
 - 2. An Amber LED shall indicate power is on.
 - 3. A Green LED shall indicate access is granted.
 - 4. A Red LED shall indicate access is denied.
- B. A standard proximity card shall be in the shape of a credit card and shall fit comfortably in a wallet, pocket, or purse.
 - 1. The dimensions shall be 3.38 inches high by 2.13 inches wide by 0.065 inches deep (8.6 cm H x 5.4 cm W x 178 mm D).
 - 2. The color shall be light gray or off-white.
- C. A standard proximity key tag shall be in the shape of a teardrop. It will have an eyelet, allowing the tag to be attached to a key ring.
 - 1. The dimensions shall be 1.57 inches high by 0.98 inches wide (at its widest area) by 0.157 inches deep (40 mm H x 25 mm W x 4 mm D).
 - 2. The color shall be light gray or black.
- D. Provide a minimum of 50 (fifty) FOBs to the HACP – for programming by their internal staff at the completion of the project. The HACP Locksmith shall be integral to the review/approval process for these components and all features of the system that will be their responsibility.

2.6 OTHER TYPES OF PROXIMITY CARDS/TAGS

The controller shall also be able to accept readers and scanners using a Wiegand interface in place of the proximity reader. The Wiegand interface reader shall be connected directly to the main controller without the need for an option card and it shall not require a special interface for data formatting. The Wiegand interface reader shall read a unique identification from each card when the card is swiped through a slot in the body of the reader.

- A. The controller will support a variety of Wiegand interface types:
 - 1. Magnetic Stripe
 - 2. Wiegand Swipe or Insert
 - 3. Bar Code
 - 4. Keypad
 - 5. Biometric (such as hand-geometry, fingerprint, or retinal recognition)
 - 6. Electrical Discharge or Touch Devices
- B. Wiegand interface reader devices must output data per the Security Industry Association's (SIA) Wiegand Reader Interface Standard (SIA document number AC-01D-96).

2.6 MANUFACTURERS

- A. Acceptable manufacturer: KeriSystems, PXL-500 Tiger II Controller with SB-593 Satellite Expansion Board; LAN-520/NC-485 LAN Port (to provide LAN/WAN Ethernet connectivity between Doors and one or more PXL network); MS-4000 Proximity Reader (vandal resistant); MS Series Proximity Key-Ring Tags and Patches (as required by the Owner); and all component parts required, or approved equivalent.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive tenant door keying entry system.
- B. Notify Architect/Engineer of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

3.2 INSTALLATION

- A. Install integrated keying entry system in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Mount equipment plumb, level, square, and secure. For entrance devices, controllers and all required devices, comply with manufacturer's design requirements to provide optimum picture quality of station monitoring.

3.3 DEMONSTRATION AND TRAINING

- A. Demonstration:
 - 1. Demonstrate that door keying entry system functions properly.
 - 2. Perform demonstration at final system inspection by qualified representative of manufacturer.
- B. Instruction and Training:
 - 1. Provide instruction and training of Owner's personnel as required for operation of door keying entry system.
 - 2. Provide hands-on demonstration of operation of system components and complete system, including user-level program changes and functions.
 - 3. Provide instruction and training by qualified representative of manufacturer.

3.4 PRODUCT WARRANTY

The product warranty to the user warrants the equipment to be free from defects in material and workmanship for the following time period from the date of purchase.

- A. A three-year warranty for the controller electronics.
- B. A lifetime warranty for the doorframe and single gang mount readers.
- C. A lifetime warranty for the medium and extended range proximity readers.
- D. A lifetime warranty for the high security, vandal resistant proximity reader.
- E. A lifetime warranty for proximity cards and key tags.

END OF SECTION 16702

SECTION -16720
DIGITAL, ADDRESSABLE FIRE ALARM SYSTEM

PART 1 – GENERAL

1.1. SUMMARY

- A. This Section covers fire alarm systems, including initiating devices, notification appliances, controls, and supervisory devices.
- B. Work covered by this section includes the furnishing of labor, equipment, and materials for installation of the fire alarm system as indicated on the drawings and specifications.
- C. The Fire Alarm System shall consist of all necessary hardware equipment and software programming to perform the following functions:

Fire alarm system detection and notification operations. All interior devices for operations shall be addressable. All exterior devices for operations are not required to be addressable.

1.2. ACCEPTABLE EQUIPMENT AND SERVICE PROVIDERS

- A. Manufacturers: The equipment, system, and service described in this specification conform to a basis of design and represent the base bid for the equipment performance and system performance. Any manufacturer's equipment submitted shall be able to be compatible with any existing equipment which is to remain. It is the contractors' responsibility to have the vendor of the equipment that will be submitted as shop drawings to visit the site and verify the operability of their equipment with any existing equipment which is to remain.

Subject to compliance with the requirements of this specification, provide alternate products by one of the following:

- a. SimplexGrinnell
- b. Other Approved Equal
- B. Being listed as an acceptable Manufacturer in no way relieves obligation to provide all equipment and features in accordance with these specifications.
- C. The equipment and service provider shall be a nationally recognized company specializing in fire alarm and detection systems. This provider shall employ factory trained and NICET Level III certified technicians, and shall maintain a service organization within 50 miles of this project location. The equipment and service provider shall have a minimum of 10 years experience in the fire protective signaling systems industry.

1.3. RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.
- B. The work covered by this section is to be coordinated with related work as

specified elsewhere in the specifications. Requirements of the following sections apply:

Division 16: "Basic Electrical Materials and Methods."

Division 16: "Wiring Methods."

- C. The system and all associated operations shall be in accordance with the following:

Requirements of the following Model Building Code: IBC, 2006 Edition

Requirements of the following Model Fire Code: NFPA, 2009 Edition

NFPA 72, National Alarm & Signaling Code, 2008 Edition

NFPA 70, National Electrical Code, 2008 Edition

NFPA 101, Life Safety Code, 2006 Edition

NFPA 90A, Standard for the Installation of Air Conditioning and Ventilating Systems, 2002 Edition

Other applicable NFPA standards

Local Jurisdictional and Regulatory Agencies Adopted Codes and Standards

Uniform Federal Accessibility Standards UFAS

1.4. SYSTEM DESCRIPTION

- A. General: Provide a complete, non-coded addressable, microprocessor-based fire alarm system with initiating devices, notification appliances, and monitoring and control devices as indicated on the drawings and as specified herein.
- B. Software: The fire alarm system shall allow for loading and editing instructions and operating sequences as necessary.
1. The system shall be capable of on-site programming to accommodate system expansion and facilitate changes in operation.
 2. All software operations shall be stored in a non-volatile programmable memory within the fire alarm control unit. Loss of primary and secondary power shall not erase the instructions stored in memory.
 3. Panels shall be capable of full system operation during new site specific configuration download, master exec downloads, and slave exec downloads.
 4. Panels shall automatically store all program changes to the panel's non-volatile memory each time a new program is downloaded. A compare utility program shall also be available to authorized users to compare any two of the saved programs via programming PC. The compare utility shall provide a deviation report highlighting the changes between the two compared programs.
 5. Panels shall provide electronic file storage with a means to retrieve a record copy of the site-specific software. Sufficient file storage shall be provided for other related system documentation such as record

- drawings, record of completion, owner's manuals, testing and maintenance records, etc.
6. The electronic media used to store the record copy of site-specific software and other related system documentation shall be located in the fire alarm control panel.
- C. History Logs: The system shall provide a means to recall alarms and trouble conditions in chronological order for the purpose of recreating an event history. A separate alarm and trouble log shall be provided.
- D. Wiring/Signal Transmission:
1. Transmission shall be hard-wired, using separate individual circuits for each zone of alarm operation as required or addressable signal transmission, dedicated to fire alarm service only. System connections for initiating device circuits shall be Class B, Style D, signaling line circuits shall be Class B, Style 4 and notification appliance circuits shall be Class B, Style Y.
 2. Circuit Supervision: Circuit faults shall be indicated by a trouble signal at the FACU. Provide a distinctive indicating audible tone and alphanumeric annunciation.
- E. Remote Access:
1. FACU shall have Remote Access through a Dial-Up Service Cellular Modem using the public switched telephone system or a private switched telephone system. This connection will allow access to the FACU and the overall system from a remote location designated by the HACP.
 2. FACU shall have remote access via an Internet/Intranet Interface. The Internet interface shall provide an alternative access to system information using the familiar interface of a standard Internet browser. A remotely located fire professional can use this access to analyze control panel status during non-alarm conditions and can also use this information to assist local fire responders during alarm conditions. Email notification of events shall be provided as required by the Owner. The interface must be compatible with the customer's network and shall be given a static TCP/IP address. Systems that do not have an integrated module for this function must provide all of the necessary hardware and software.
- F. Required Functions: The following are required system functions and operating features:
1. Priority of Signals: Fire alarm events have highest priority. Subsequent alarm events are queued in the order received and do not affect existing alarm conditions. Priority Two, Supervisory and Trouble events have second-, third-, and fourth-level priority, respectively. Signals of a higher-level priority take precedence over signals of lower priority even though the lower-priority condition occurred first. Annunciate all events regardless of priority or order received.
 2. Non-interfering: An event on one zone does not prevent the receipt of

- signals from any other zone. All zones are manually resettable from the FACU after the initiating device or devices are restored to normal. The activation of an addressable device does not prevent the receipt of signals from subsequent addressable device activations.
3. Transmission to an approved Supervising Station (FACU): Automatically route alarm, supervisory, and trouble signals to customer's receiver using serial data (contact ID). Simultaneously transmit via ContactID, points to a customer monitored central station receiver. Fire Alarm System supplier is responsible for entering all alarm points into the central station receiver to insure proper coordination. Dial out of alarms and all other necessary signals shall be via cellular dialing system as shown on the Contract Drawings.
 4. Annunciation: Operation of alarm and supervisory initiating devices shall be annunciated at the FACU and the remote annunciator, indicating the type of device, the operational state of the device (i.e. alarm, trouble or supervisory) and shall display the custom label associated with the device.
 5. Selective Alarm: A system alarm shall include:
 - a. Indication of alarm condition at the FACU and the annunciator(s).
 - b. Identification of the device /zone that is the source of the alarm at the FACU and the annunciator(s).
 - c. Operation of audible and visible notification appliances until silenced at FACU.
 - d. Transmission of signal to the supervising station.
 6. Supervisory Operations: Upon activation of a supervisory device such as a tamper switch, the system shall operate as follows:
 - a. Activate the system supervisory service audible signal and illuminate the LED at the control unit and the remote annunciator.
 - b. Pressing the Supervisory Acknowledge Key will silence the supervisory audible signal while maintaining the Supervisory LED "on" indicating off-normal condition.
 - c. Record the event in the FACU historical log.
 - d. Transmission of supervisory signal to the supervising station.
 - e. Restoring the condition shall cause the Supervisory LED to clear and restore the system to normal.
 7. Alarm Silencing: If the "Alarm Silence" button is pressed, all audible alarm signals shall cease operation.
 8. System Reset
 - a. The "System Reset" button shall be used to return the system to its normal state. Display messages shall provide operator assurance of the sequential steps ("IN PROGRESS", "RESET COMPLETED") as they occur. The system shall verify all circuits or devices are restored prior to resetting the system to avoid the

- potential for re-arming the system. The display message shall indicate "ALARM PRESENT, SYSTEM RESET ABORTED."
- b. Should an alarm condition continue, the system will remain in an alarmed state.
9. A manual evacuation (drill) switch shall be provided to operate the notification appliances without causing other control circuits to be activated.
10. WALKTEST: The system shall have the capacity of 8 programmable passcode protected one person testing groups, such that only a portion of the system need be disabled during testing. The actuation of the "enable one person test" program at the control unit shall activate the "One Person Testing" mode of the system as follows:
- a. The city circuit connection and any suppression release circuits shall be bypassed for the testing group.
 - b. Control relay functions associated with one of the 8 testing groups shall be bypassed.
 - c. The control unit shall indicate a trouble condition.
 - d. The alarm activation of any initiating device in the testing group shall cause the audible notification appliances assigned only to that group to sound a code to identify the device or zone.
 - e. The unit shall automatically reset itself after signaling is complete.
 - f. Any opening of an initiating device or notification appliance circuit wiring shall cause the audible signals to sound for 4 seconds indicating the trouble condition.
11. Install Mode: The system shall provide the capability to group all non-commissioned points and devices into a single "Install Mode" trouble condition allowing an operator to clearly identify event activations from commissioned points and devices in occupied areas.
- a. It shall be possible to individually remove points from Install Mode as required for phased system commissioning.
 - b. It shall be possible to retrieve an Install Mode report listing that includes a list of all points assigned to the Install Mode. Panels not having an install mode shall be reprogrammed to remove any non-commissioned points and devices.
- G. Analog Smoke Sensors:
- 1. Monitoring: FACU shall individually monitor sensors for calibration, sensitivity, and alarm condition, and shall individually adjust for sensitivity. The control unit shall determine the condition of each sensor by comparing the sensor value to the stored values.
 - 2. Environmental Compensation: The FACU shall maintain a moving average of the sensor's smoke chamber value to automatically compensate for dust, dirt, and other conditions that could affect detection operations.

3. Programmable Sensitivity: Photoelectric Smoke Sensors shall have 7 selectable sensitivity levels ranging from 0.2% to 3.7%, programmed and monitored from the FACU.
 4. Sensitivity Testing Reports: The FACU shall provide sensor reports that meet NFPA 72 calibrated test method requirements. The reports shall be capable of being printed for annual recording and logging of the calibration maintenance schedule. Reports shall be accessible through download to a USB drive from which they can be printed.
 5. The FACU shall automatically indicate when an individual sensor needs cleaning. The system shall provide a means to automatically indicate when a sensor requires cleaning. When a sensor's average value reaches a predetermined value, (3) progressive levels of reporting are provided. The first level shall indicate if a sensor is close to a trouble reporting condition and will be indicated on the FACU as "ALMOST DIRTY." This condition provides a means to alert maintenance staff of a sensor approaching dirty without creating a trouble in the system. If this indicator is ignored and the second level is reached, a "DIRTY SENSOR" condition shall be indicated at the FACU and subsequently a system trouble is reported to the supervising station. The sensor base LED shall glow steady giving a visible indication at the sensor location. The "DIRTY SENSOR" condition shall not affect the sensitivity level required to alarm the sensor. If a "DIRTY SENSOR" is left unattended, and its average value increases to a third predetermined value, an "EXCESSIVELY DIRTY SENSOR" trouble condition shall be indicated at the control unit.
 6. The FACU shall continuously perform an automatic self-test on each sensor that will check sensor electronics and ensure the accuracy of the values being transmitted. Any sensor that fails this test shall indicate a "SELF TEST ABNORMAL" trouble condition.
 7. Programmable bases. It shall be possible to program relay and sounder bases to operate independently of their associated sensor.
 8. Magnet test activation of smoke sensors shall be distinguished by its label and history log entry as being activated by a magnet.
- H. Fire Suppression Monitoring:
1. Water flow: Activation of a water flow switch shall initiate general alarm operations.
 2. Sprinkler valve tamper switch: The activation of any valve tamper switch shall activate system supervisory operations.
 3. Water flow switch and sprinkler valve tamper switch shall be capable of existing on the same initiating zone. Activation of either device shall distinctly report which device is in alarm on the initiating zone.
- I. Audible Alarm Notification: By horns/horn strobes in areas as indicated on the Contract Drawings.
- J. Power Requirements
1. The control unit shall receive AC power via a dedicated fused disconnect

- circuit.
2. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal AC power in a normal supervisory mode for a period of 24 hours with 15 minutes of alarm operation at the end of this period. The system shall automatically transfer to battery standby upon power failure. All battery charging and recharging operations shall be automatic.
 3. All circuits requiring system-operating power shall be 24 VDC and shall be individually fused at the control unit.
 4. The incoming power to the system shall be supervised so that any power failure will be indicated at the control unit. A green "power on" LED shall be displayed continuously at the user interface while incoming power is present.
 5. The system batteries shall be supervised so that a low battery or a depleted battery condition, or disconnection of the battery shall be indicated at the control unit and displayed for the specific fault type.
 6. The system shall support NAC Lockout feature to prevent subsequent activation of Notification Appliance Circuits after a Depleted Battery condition occurs in order to make use of battery reserve for front panel annunciation and control.
 7. The system shall support 100% of addressable devices in alarm or operated at the same time, under both primary (AC) and secondary (battery) power conditions.
 8. Loss of primary power shall sound a trouble signal at the FACU.

1.5. SUBMITTALS

- A. General: Submit the following according to Conditions of Contract and Division 1 Specification Sections.
 1. Product data sheets for system components highlighted to indicate the specific products, features, or functions required to meet this specification. Alternate or as-equal products submitted under this contract must provide a detailed line-by-line comparison of how the submitted product meets, exceeds, or does not comply with this specification.
 2. Wiring diagrams from manufacturer.
 3. Shop drawings showing system details including location of FACU, all devices, circuiting and details of graphic annunciator.
 4. System power and battery charts with performance graphs and voltage drop calculations to assure that the system will operate in accordance with the prescribed backup time periods and under all voltage conditions per UL and NFPA standards.
 5. System operation description including method of operation and supervision of each type of circuit and sequence of operations for all manually and automatically initiated system inputs and outputs. A list of

all input and output points in the system shall be provided with a label indicating location or use of IDC, SLC, NAC, relay, sensor, and auxiliary control circuits.

6. Operation and maintenance data for inclusion in Operating and Maintenance Manual. Include data for each type product, including all features and operating sequences, both automatic and manual. Provide the names, addresses, and telephone numbers of service organizations.
 7. Product certification signed by the manufacturer of the fire alarm system components certifying that their products comply with indicated requirements.
 8. Record of field tests of system.
- B. Submission to Local Jurisdictional and Regulatory Agencies: If required by the local jurisdictional and regulatory agencies, in addition to routine submission of the above material, make an identical submission to the agencies. Include copies of shop drawings as required to depict component locations to facilitate review. Upon receipt of comments from the Agencies, make resubmissions if required to make clarifications or revisions to obtain approval. All fees associated with this submittal and review by the local jurisdiction shall be paid for by the contractor.

1.6. QUALITY ASSURANCE

- A. Installer Qualifications: A factory authorized installer is to perform the work of this section.
- B. Each and every item of the Fire Alarm System shall be listed under the appropriate category by Underwriters Laboratories, Inc. (UL), and shall bear the "UL" label.

1.7. MAINTENANCE SERVICE

- A. Maintenance Service Contract: Provide maintenance of fire alarm systems and equipment for a period of 12 months, using factory-authorized service representatives.
- B. Basic Services: Systematic, routine maintenance visits on a quarterly basis at times scheduled with the Owner. In addition, respond to service calls within 24 hours of notification of system trouble. Adjust and replace defective parts and components with original manufacturer's replacement parts, components, and supplies.
- C. Additional Services: Perform services within the above 12-month period not classified as routine maintenance or as warranty work when authorized in writing. Compensation for additional services must be agreed upon in writing prior to performing services.
- D. Renewal of Maintenance Service Contract: No later than 60 days prior to the expiration of the maintenance services contract, deliver to the Owner a proposal to provide contract maintenance and repair services for an additional one-year term. Owner will be under no obligation to accept maintenance service contract

renewal proposal.

- E. Adjust and replace defective parts and components with original manufacturer's replacement parts, components and supplies.

1.8. EXTRA MATERIALS

- A. General: Furnish extra materials, packaged with protective covering for storage, and identified with labels clearly describing contents as follows:
 - 1. Break Rods for Manual Stations: Furnish quantity equal to 20 percent of the number of manual stations installed; minimum of 6 rods.
 - 2. Notification Appliances: Furnish quantity equal to 10 percent of each type and number of units installed, but not less than one of each type.
 - 3. Smoke Detectors or Sensors, Fire Detectors, and Flame Detectors: Furnish quantity equal to 10 percent of each type and number of units installed but not less than one of each type.
 - 4. Detector or Sensor Bases: Furnish quantity equal to 10 percent of each type and number of units installed but not less than one of each type.
 - 5. Manual Pull Stations and Covers: Furnish quantity equal to 10 percent of the number of units of each type installed but not less than one of each type.

PART 2 – PRODUCTS

2.1. FIRE ALARM CONTROL PANEL (FACU)

- A. General: Comply with UL 864, "Control Units and Accessories for Fire Alarm Systems".
- B. The following FACU hardware shall be provided:
 - 1. Power Limited base panel with platinum cabinet and door, 120 VAC input power.
 - 2. Capability to support up to 400 I/O points including up to 250 standard addressable devices (single and multi-point) and up to 32 non-addressable zones (IDCs).
 - 3. 400 points of annunciation where one (1) point of annunciation equals:
 - a. 1 LED driver output on a graphic driver or 1 switch input on a graphic switch input module.
 - b. 1 LED on panel or 1 switch on panel.
 - 4. 4 Amp Power Supply minim with temperature compensated, dual rate battery charger capable of charging up to 33 Ah batteries without a separate external battery charger. Battery charger voltage and amperage values shall be accessible on the FACU LCD display.

5. Municipal City Circuits Connection with Disconnect switch, 24VDC Remote Station (reverse polarity), local energy, shunt master box, or a form "C" contact output.
 6. One Auxiliary electronically resettable fused 2A @24VDC Output, with electronic overload protection, automatic restoral, programmable disconnect operation for 4-wire detector reset.
 7. Addressable device capacity shall be a minimum of 100 addressable pints of manual pull stations, automatic heat or smoke detectors, addressable monitor and/control modules of any individual device limit up to the capacity of the SLC.
 8. Optional SLC expander modules shall be available to increase the panel capacity to the full capacity of 250. These shall be in increments of 75 points and shall allow these additional points to be on separate isolated SLC loops (up to three). This point mix can be spread across the isolated loops as desired.
 9. Four (4) Class B or A (Style Y/Z) Notification Appliance Circuits (NAC; rated 3A@24VDC resistive). As an option, each NAC shall be configurable for use as auxiliary power taps to control non-reverse polarity devices. Maximum current rating is 2 Amps when used to control auxiliary devices powered from the 24 VDC auxiliary power output.
 10. Eight (8) form "C" Auxiliary Relay Circuits (Form C contacts rated 2A @ 24VDC, resistive), operation is programmable for trouble, alarm, elevator control, sprinkler control, HVAC central control, and supervisory of other fire response functions. Relays shall be capable of switching up to ½ A @ 120VAC, inductive. See Paragraph 2.8 of this section for further details of interface with building support systems.
 11. The FACU shall support up to (5) RS-232-C ports and one service port. All (5) RS-232 Ports shall be capable of two-way communications.
 12. Remote Unit Interface: supervised Class B (Style 4) or Class X (Style 7) signaling line circuit (SLC) for control and monitoring of remotely located annunciators and I/O.
 13. Programmable DACTs for Common Event Reporting for connection to the customers' Central Station provider and per Point Reporting (serial) to the customer owned Central Station receiver. All necessary programming will be provided by the supplier.
 14. Service Port Modem for dial in pass code access to all fire control panel information
 15. Safelinc Internet communications board – standard RJ45 connection port shall be provided, integral to FACU cabinet, for connection into customers network.
- C. Cabinet: Lockable steel enclosure. Arrange unit so all operations required for testing or for normal care and maintenance of the system are performed from the front of the enclosure. If more than a single unit is required to form a complete control unit, provide exactly matching modular unit enclosures.

- D. Alphanumeric Display and System Controls: The user interface shall be a 4.3" diagonal color touchscreen LCD with separate status LEDS for Alarm (red), Priority 2 (red), Supervisory (yellow), Trouble (yellow), Alarm Silenced (yellow) and AC Power (green).
1. The Touchscreen LCD display shall indicate alarm, supervisory, and component status messages and shall include capability for entering and executing control commands through a convenience and detailed operator information display.
 2. The display shall display two individual conditions including all information associated for the conditions with the ability to scroll up or down for display of multiple system conditions. Alarms, Priority 2, Supervisory, and Troubles shall be able to be displayed individually by display press activation of each specific condition.
 3. The operator display shall utilize a logical, menu-driven touchscreen display with password access control. All system operator functions shall be available through this display. Display shall support dual language selection, including Unicode character language sets.
 4. Alarm, Priority 2, Supervisory, Trouble, and Alarm Silenced conditions shall be indicated by dedicated LED's and a tone-alert audible indication. Each condition will cause the display to present a dedicated acknowledge push-button "switch" that shall silence the tone-alert but shall leave the LED on until all conditions in that category are restored to normal.
 5. To conserve power, when the display has not been touched and no new system status has occurred for 60 seconds, the back light shall dim to 20% of normal brightness. If there is no activity in the system (System is Normal), the standby screen shall display the current time and date to verify proper operation. If an event occurs and the screen is touched, the backlight shall return to full intensity.
 6. Three programmable control switches with status LED's and provisions for custom labeling shall be provided as part of the display. The display menu shall provide a lamp test feature that when selected, shall activate the panel LED's for 5 seconds. Dual-color LED's shall blink alternately.
 7. The display shall support a custom background image that can be displayed on each of the remote color touchscreen annunciators when status is normal. File types supported shall be JPG, BMP, GIF, and PNG. Image type is to be JPG, and minimum image size shall be 480 x 240, with a file size limit of 100 kb.
 8. Password access shall provide for; System Information, Panel Setup, Alarm and Trouble Logs, Reset, Diagnostics, setting User Access Level, Lamp Test and Reports Menu. User password access shall be programmable.
 9. Alarm and Trouble History Logs (up to 1000 entries for each, 2000 total events) shall be available for viewing from the display or available to be

downloaded to USB drive where it can be inserted into a PC for printing.

2.2. REMOTE COLOR LCD TOUCHSCREEN ANNUNCIATOR

- A. Provide a remote Color Touch screen LCD Annunciator, as shown on the Contract Drawings, with the same "look and feel" as the FACU operator interface. The Remote LCD Annunciator shall use the same Primary Acknowledge, Silence, and Reset Keys; Status LEDs and Color LCD Touch screen Display as the FACU.
- B. Annunciator shall be a 4.3" diagonal Color Touchscreen LCD with separate status LEDs for Alarm (red), Priority 2 (red), Supervisory (yellow), Trouble (yellow), Alarm Silenced (yellow) and AC Power (green).
- C. The annunciator shall indicate alarm, supervisory, and component status messages and shall include capability for entering and executing control commands through a convenient and detailed operator information display.
- D. The annunciator shall display two individual conditions including all information associated for the conditions with the ability to scroll up or down for display of multiple system conditions. Alarms, Priority 2, Supervisory, and Troubles shall be able to be displayed individually by display press activation of each specific condition.
- E. Annunciator Touchscreen display access shall be controlled by a keyswitch with a key that shall be removable only in the disabled position. User Access shall be configurable per annunciator.
- F. When the keyswitch is activated, system status indications shall be displayed as they occur with individual point detail as programmed at the control panel. Soft keys shall be displayed to allow user actions.
- G. The annunciator shall utilize a logical, menu-driven touchscreen display with password access control. All system operator functions shall be available through this display. Display shall support dual language selection, including Unicode character language sets.
- H. Alarm, Priority 2, Supervisory, Trouble, and Alarm Silenced conditions shall be indicated by dedicated LED's and a tone-alert audible indication. Each condition will cause the display to present a dedicated acknowledge push-button "switch" that shall silence the tone-alert but shall leave the LED on until all conditions in that category are restored to normal.
- I. To conserve power, when the annunciator has not been touched and no new system status has occurred for 60 seconds, the back light shall dim to 20% of normal brightness. If there is no activity in the system (System is Normal), the standby screen shall display the current time and date to verify proper operation. If an event occurs, or if the keyswitch is activated and the screen is touched, the backlight shall return to full intensity.
- J. Three programmable control switches with status LED's and provisions for

custom labeling shall be provided as part of the annunciator. The display menu shall provide a lamp test feature that when selected, shall activate the panel LED's for 5 seconds. Dual-color LED's shall blink alternately.

- K. The annunciator shall support a custom background image that can be displayed on each of the remote color touchscreen annunciators when status is normal. File types supported shall be JPG, BMP, GIF, and PNG. Image type is to be JPG, and minimum image size shall be 480 x 240, with a file size limit of 100 kb.
- L. Password access shall provide for; System Information, Panel Setup, Alarm and Trouble Logs, Reset, Diagnostics, setting User Access Level, Lamp Test and Reports Menu. User password access shall be programmable.
- M. Operator keys shall be key switch enabled to prevent unauthorized use. The key shall only be removable in the disabled position. Acknowledge, Silence and Reset operation shall be the same as the FACU.
- N. Data communications to the fire alarm control unit shall require a single unshielded twisted pair that supports other annunciators on the same communications channel. 24VDC operating power shall be provided from the fire alarm control unit.

Weatherproof surface mounting cabinet shall be supplied as part of the Remote Annunciator. Paint finish to match fire alarm control unit. In addition, a wire-mesh, cage-like enclosure shall be provided that completely encloses all components of the Remote Annunciator.

2.3. EMERGENCY POWER SUPPLY

- A. General: Components include battery, charger, and an automatic transfer switch.
- B. Battery: Sealed lead-acid or nickel cadmium type. Provide sufficient capacity to operate the complete alarm system in normal or supervisory (non-alarm) mode for a period of 60 hours. Following this period of operation on battery power, the battery shall have sufficient capacity to operate all components of the system, including all alarm notification devices in alarm mode for a period of 15 minutes.

2.4. ADDRESSABLE MANUAL PULL STATIONS

- A. General Requirements for Manual Fire Alarm Boxes: Comply with UL 48, boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color, with visible indication of operation; and shall be mounted on recessed outlet box. If required by the installation as a surface mounted device, provide manufacturer's surface back box.
- B. Description: Addressable single action type, red LEXAN. Station will mechanically latch upon operation and remain so until manually reset by opening with a key common with the control units. Provide a weatherproof single-action pull station where shown on the drawings with the addressable module located in an environmentally controlled space. Station shall be pull lever type with integral

addressable module arranged to communicate manual-station status (normal, alarm, trouble) to fire alarm control unit. Where double-action stations are provided, the mechanism shall require two actions (push top activation door) to initiate an alarm.

- C. Protective Shield: Provide a SIG-COM tamperproof, clear LEXAN shield and red frame that easily fits over manual pull stations which is hinged at the top to permit lifting for access to initiate a local alarm. When shield is lifted to gain access to the station, a battery powered piercing warning horn shall be activated. The horn shall be silenced by lowering and realigning the shield. The horn shall provide 85dB at 10 feet and shall be powered by a 9 VDC battery.
- D. Combination of pull station and cover, when installed, shall have a protrusion depth of not more than 4 inches and shall be operable with one hand, not requiring tight grasp, pinching, or twisting of the wrist and not more than 5 lbf to activate, as stated in UFAS 4.27.4 requirement.

2.5. ADDRESSABLE ANALOG SMOKE SENSORS

- A. General: Comply with UL 268, "Smoke Detectors for Fire Protective Signaling Systems." Include the following features:
 - 1. Factory Nameplate: Serial number and type identification.
 - 2. Operating Voltage: 24 VDC, nominal and shall be two-wire type.
 - 3. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore normal operation.
 - 4. Plug-In Arrangement: Sensor and associated electronic components are mounted in a module that connects to a fixed base with a twist-locking plug connection. Base shall provide break-off plastic tab that can be removed to engage the head/base locking mechanism. Provide terminals in the fixed base for connection to building wiring. No special tools shall be required to remove head once it has been locked. Removal of the detector head shall interrupt the supervisory circuit of the fire alarm detection loop and cause a trouble signal at the control unit. Sensors shall include a communication transmitter and receiver in the mounting base having a unique identification and capability for status reporting to the FACU. Sensor address shall be located in the base to eliminate false addressing when replacing sensors. Integral Addressable Module shall be arranged to communicate detector status (normal, alarm, trouble) to the fire alarm control unit. Each sensor base shall contain an integral visual indicating LED that will flash to indicate communication to the FACU and will turn on steady when in alarm.
 - 5. Each sensor base shall contain a magnetically actuated test switch to provide for easy pre-certification alarm testing at the sensor location.
 - 6. Each sensor shall be scanned by the Control Unit for its type identification to prevent inadvertent substitution of another sensor type. Upon detection of a "wrong device", the control unit shall operate with the installed device at the default alarm settings for that sensor; 2.5% obscuration for

- photoelectric sensor, 135-deg F and 15-deg F rate-of-rise for the heat sensor, but shall indicate a "Wrong Device" trouble condition.
7. The sensor's electronics shall be immune from nuisance alarms caused by EMI and RFI.
 8. Unless otherwise indicated, detectors shall be analog addressable type, individually monitored at the fire alarm control unit for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by the fire alarm control unit. Provide multiple levels of detection sensitivity for each sensor.
 9. Removal of the sensor head for cleaning shall not require the setting of addresses.
- B. Type: Smoke detectors shall be of the photoelectric or combination photoelectric /heat type.
- C. Bases: Sounder bases shall be supplied where shown and shall interact with the local strobes as required.
- D. Single Station Apartment (Unit) Detectors: Provide where indicated on the drawings Gentex 9120B Photoelectric 120 VAC smoke detectors with a 9VDC battery backup. If multiple detectors are installed in a single apartment, they shall be interconnected to operate at the same time.

2.6. ADDRESSABLE HEAT SENSORS

- A. Thermal Sensor: Combination fixed-temperature and rate-of-rise unit with plug-in base and alarm indication lamp; 135-deg F fixed-temperature setting or a rate-of-rise that exceeds 15 deg F per minute, except as otherwise indicated.
- B. Thermal sensor shall be of the epoxy encapsulated electronic design. It shall be thermistor-based, rate-compensated, self-restoring and shall not be affected by thermal lag. Selectable rate compensated, fixed temperature sensing with or without rate-of-rise operation.
- C. Sensor fixed temperature sensing shall be independent of rate-of-rise sensing and] programmable to operate at 135-deg F or 155-deg F. Sensor rate-of-rise temperature detection shall be selectable at the FACU for either 15-deg F or 20-deg F per minute.
- D. Sensor shall have the capability to be programmed as a utility monitoring device to monitor for temperature extremes in the range from 32-deg F to 155-deg F.
- E. Mounting: Twist-lock base interchangeable with smoke sensor base.
- F. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, trouble) to fire alarm control unit.

2.7. ADDRESSABLE CIRCUIT INTERFACE MODULES

- A. Addressable Circuit Interface Modules: Arrange to monitor or control one or more system components that are not otherwise equipped for addressable communication. Modules shall be used for monitoring of waterflow, valve tamper,

- non-addressable devices.
- B. Addressable Circuit Interface Modules will be capable of mounting in a standard electric outlet box. Modules will include cover plates to allow surface or flush mounting. Modules will receive their operating power from the signaling line circuit or a separate two wire pair running from an appropriate power supply, as required.
- C. There shall be the following types of modules:
1. Type 1: Monitor Circuit Interface Module:
 - a. For conventional 2-wire smoke detector and/or contact device monitoring with Class B or Class A wiring supervision. The supervision of the zone wiring will be Class B. This module will communicate status (normal, alarm, trouble) to the FACU.
 - b. For conventional 4-wire smoke detector with Class B wiring supervision. The module will provide detector reset capability and over-current power protection for the 4-wire detector. This module will communicate status (normal, alarm, trouble) to the FACU.
 2. Type 2: Line Powered Monitor Circuit Interface Module
 - a. This type of module is an individually addressable module that has both its power and its communications supplied by the two wire signaling line circuit. It provides location specific addressability to an initiating device by monitoring normally open dry contacts. This module shall have the capability of communicating four zone status conditions (normal, alarm, current limited, trouble) to the FACU.
 - b. This module shall provide location specific addressability for up to five initiating devices by monitoring normally closed or normally open dry contact security devices. The module shall communicate four zone status conditions (open, normal, abnormal, and short). The two-wire signaling line circuit shall supply power and communications to the module.
 3. Type 3: Single Address Multi-Point Interface Modules
 - a. This multipoint module shall provide location specific addressability for four initiating circuits and control two output relays from a single address. Inputs shall provide supervised monitoring of normally open, dry contacts and be capable of communicating four zone status conditions (normal, open, current limited, and short). The input circuits and output relay operation shall be controlled independently and disabled separately.
 - b. This dual point module shall provide a supervised multi-state input and a relay output, using a single address. The input shall provide supervised monitoring of two normally open, dry contacts with a single point and be capable of communicating four zone status conditions (normal, open, current limited, and short). The two-wire signaling line circuit shall supply power and communications to the module.

- c. This dual point module shall monitor an unsupervised normally open, dry contact with one point and control an output relay with the other point, using a single address. The two-wire signaling line circuit shall supply power and communications to the module.
- 4. Type 4: Line Powered Control Circuit Interface Module
 - a. This module shall provide control and status tracking of a Form "C" contact. The two-wire signaling line circuit shall supply power and communications to the module.
- 5. Type 5: 4-20 mA Analog Monitor Circuit Interface Module
 - a. This module shall communicate the status of a compatible 4-20 mA sensor to the FACU. The FACU shall annunciate up to three threshold levels, each with custom action message; display and archive actual sensor analog levels; and permit sensor calibration date recording.
- D. All Circuit Interface Modules shall be supervised and uniquely identified by the control unit. Module identification shall be transmitted to the control unit for processing according to the program instructions. Modules shall have an on-board LED to provide an indication that the module is powered and communicating with the FACU. The LEDs shall provide a troubleshooting aid since the LED blinks on poll whenever the peripheral is powered and communicating.

2.8. STANDARD ALARM NOTIFICATION APPLIANCES

- A. Visible/Only: Strobe shall be listed to UL 1971. The V/O shall consist of a xenon flash tube and associated lens/reflector system. The V/O enclosure shall mount directly to standard single gang, double gang or 4" square electrical box, without the use of special adapters or trim rings. V/O appliances shall be provided with different minimum flash intensities of 15cd, 30cd, 75cd and 110cd. Provide a label inside the strobe lens to indicate the listed candela rating of the specific Visible/Only appliance. Provide weatherproof devices where shown.
- B. Visible Strobe: Strobe shall be listed to UL 1971. It shall consist of a xenon flash tube, prismatic lens enclosure and all mounting hardware to fit a double gang or 4" square electrical box. Strobe shall be utilized on the exterior of each stairwell of the building, to replace the existing device in that location. All component parts shall be UL listed and acceptable to the AHJ for the function intended.
- B. Audible/Visible: Combination Audible/Visible (S/V) units combine the audible and visible functions into a common housing. The notification appliances shall be listed to UL 1971 and UL 464. Provide weatherproof devices where shown.
 - 1. The following taps are available: 0.25W, 0.50W, 1.0W and 2.0W. A label inside the strobe lens to indicate listed candela rating of the specific strobe. The horn shall have a minimum sound pressure level of 84dBA@24 VDC at 10 feet.
 - 2. The A/V installs directly to a standard single gang or double gang 4" square, 1 1/2" deep electrical box with 1 1/2" extension.

- C. Notification Appliance Circuit provides synchronization of strobes at a rate of 1Hz and operates horns with a Temporal Code Pattern operation. The circuit shall provide the capability to silence the audible signals, while the strobes continue to flash over a single pair of wires. The capability to synchronize multiple notification appliance circuits shall be provided.
- D. Accessories: The contractor shall furnish any necessary accessories.

2.9. NAC POWER EXTENDER

- A. The IDNet NAC Power Extender panel shall be a stand-alone panel capable of powering a minimum of 4 notification appliance circuits. Notification appliance circuits shall be Class B, Style Y rated at 2 amps each. Panel shall provide capability to be expanded to 8 notification appliance circuits.
- B. The internal power supply & battery charger shall be capable of charging up 12.7 Ah batteries internally mounted or 18Ah batteries mounted in an external cabinet.
- C. The NAC extender panel may be mounted close to the host control panel or can be remotely located. The IDNET Addressable NAC Extender Panel when connected to an addressable panel shall connect to the host panel via an IDNet communications channel. Via the IDNET channel each output NAC can be individually controlled for general alarm or selective area notification.
- D. For IDNet connected NAC extender panels up to five panels can be connected on a single IDNet channel.
- E. When connected to a conventional (non-addressable panel) one or two standard notification appliance circuits from the main control panel may be used to activate all the circuits on the NAC power extender panel.
- F. Alarms from the host fire alarm control panel shall signal the NAC power extender panel to activate. The panel shall monitor itself and each of its NACs for trouble conditions and shall report trouble conditions to the host panel.

2.9 DIGITAL ALARM COMMUNICATOR TRANSMITTER

- A. Digital alarm communicator transmitter shall be acceptable to the remote central station and shall comply with UL 632 and be listed and labeled by an NRTL.
- B. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire-alarm control unit and automatically capture two cellular telephone line(s) and dial a preset number for a remote central station. When contact is made with central station(s), signals shall be transmitted. If service on either line is interrupted for longer than 45 seconds, transmitter shall initiate a local trouble signal and transmit the signal indicating loss of cellular telephone line to the remote alarm receiving station over the remaining line. Transmitter shall automatically report cellular telephone service restoration to the central station. If service is lost on both cellular telephone lines, transmitter shall initiate the local trouble signal.

- C. Local functions and display at the digital alarm communicator transmitter shall include the following:
 - 1. Verification that both cellular telephone lines are available.
 - 2. Programming device.
 - 3. LED display.
 - 4. Manual test report function and manual transmission clear indication.
 - 5. Communications failure with the central station or fire-alarm control unit.
- D. Digital data transmission shall include the following:
 - 1. Address of the alarm-initiating device.
 - 2. Address of the supervisory signal.
 - 3. Address or loss of power.
 - 4. Low battery.
 - 5. Abnormal test signal.
 - 6. Communication bus failure.
- E. Secondary Power: Integral rechargeable battery and automatic charger.
- F. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

PART 3 -- EXECUTION

3.1. INSTALLATION, GENERAL

- A. Install system components and all associated devices in accordance with applicable NFPA Standards and manufacturer's recommendations.
- B. Installation personnel shall be supervised by persons who are qualified and experienced in the installation, inspection, and testing of fire alarm systems. Examples of qualified personnel shall include, but not be limited to, the following:
 - 1. Factory trained and certified personnel.
 - 2. National Institute of Certification in Engineering Technologies (NICET) fire alarm level II certified personnel.
 - 3. Personnel licensed or certified by state or local authority.

3.2. EQUIPMENT INSTALLATION

- A. Furnish and install a complete Fire Alarm System as described herein and as shown on the plans. Include sufficient control unit(s), annunciator(s), manual stations, automatic fire detectors, smoke detectors, audible and visible notification appliances, wiring, terminations, electrical boxes, Ethernet drops, and all other necessary material for a complete operating system.

- B. Existing Fire Alarm Equipment shall be maintained fully operational until the new equipment has been tested and accepted. During working hours, when the existing system is temporarily taken out of service, the Contractor shall be responsible for contacting the City of Pittsburgh Fire Department, SSA (the HACP security coordinators), and any other pertinent agency, to identify the areas in which the system is non-operational. If the Contractor does not notify all agencies, the Contractor will be responsible for any charges for inadvertent callouts. The Contractor will also be responsible for calling "911"/fire department during the hours that the system is being worked on.
- C. Loss of coverage by the existing fire alarm system, or a combination of existing FACU and new devices connected to the new FACU, during non-work hours is not allowed. If for any reason the existing fire alarm system is rendered inoperable during non-work hour such as in the evenings or over the weekend, the Contractor shall provide whatever is required to provide coverage 24 hours a day 7 days a week. This may include, but is not limited to, additional hardware, fire monitor personnel, telephone connections, etc. to ensure that the Northview Heights Senior High Rise is protected.
- D. Equipment Removal: After acceptance of the new fire alarm system, disconnect and remove the existing fire alarm equipment and restore damaged surfaces. Package operational fire alarm and detection equipment that has been removed and deliver to the Owner. Remove from the site and legally dispose of the remainder of the existing material.
- E. Water-Flow and Valve Supervisory Switches: Connect for each sprinkler valve required to be supervised.
- F. Device Location-Indicating Lights: Locate in the public space immediately adjacent to the device they monitor.
- G. Install manual station with operating handle 43 inches (1.22 m) above finished floor. Install wall mounted audible and visual notification appliances not less than 80 inches (2.03 m) above finished floor to bottom of lens and not greater than 96 inches (2.44 m) above floor to bottom of lens. All mounting heights shall be UFAS compliant as shown on the contract drawings.
- H. Mount outlet box for electric door holder to withstand 80 pounds pulling force.
- I. Automatic Detector Installation: Conform to NFPA 72.

3.3. PREPARATION

- A. Coordinate work of this Section with other affected work and construction schedule.

3.4. CONNECTIONS

- A. Make addressable connections with a supervised interface device to devices as indicated on the Contract Drawings. Install the interface device less than 3 feet

(1 m) from the device controlled. Make an addressable confirmation connection when such feedback is available at the device or system being controlled.

3.5. WIRING INSTALLATION

- A. System Wiring: No existing wiring shall be reused at any location. Wire and cable shall be a type listed for its intended use by an approval agency acceptable to the Authority Having Jurisdiction and shall be installed in accordance with the appropriate articles from the current approved edition of NFPA 70: National Electric Code (NEC).
- B. Contractor shall obtain from the Fire Alarm System Manufacturer written instruction regarding the appropriate wire/cable to be used for this installation. No deviation from the written instruction shall be made by the Contractor without the prior written approval of the Fire Alarm System Manufacturer.
- C. Color Coding: Color-code fire alarm conductors differently from the normal building power wiring. Use one color code for alarm initiating device circuits wiring and a different color code for supervisory circuits. Color-code notification appliance circuits differently from alarm-initiating circuits. Paint fire alarm system junction boxes and covers red.
- D. Mount end-of-line device in box with last device or separate box adjacent to last device for Class "B" supervision.

3.6. IDENTIFICATION

- A. Identify system components, wiring, cabling and terminals. Comply with requirements for identification specified in Section 16010.
- B. Install framed instructions in a location visible from the fire alarm control unit.
- C. All ID NET addresses shall be permanently labeled (label maker affixed with permanent glue) on all associated devices. A list of this information shall be prepared and submitted as part of the shop drawing information.

3.7. GROUNDING

- A. Ground fire alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from the main service ground to the fire alarm control unit.

3.8. FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Provide services of a factory-authorized service representative to supervise the field assembly and connection of components and the pretesting, testing, and adjustment of the system.
- B. Service personnel shall be qualified and experienced in the inspection, testing, and maintenance of fire alarm systems. Examples of qualified personnel shall be

permitted to include, but shall not be limited to, individuals with the following qualifications:

1. Factory trained and certified.
 2. National Institute for Certification in Engineering Technologies (NICET) fire alarm certified.
 3. International Municipal Signal Association (IMSA) fire alarm certified.
 4. Certified by a state or local authority.
 5. Trained and qualified personnel employed by an organization listed by a national testing laboratory for the servicing of fire alarm systems.
- C. Pretesting: Determine, through pretesting, the conformance of the system to the requirements of the Drawings and Specifications. Correct deficiencies observed in pretesting. Replace malfunctioning or damaged items with new and retest until satisfactory performance and conditions are achieved.
- D. Inspection:
1. Inspect equipment installation, interconnection with system devices, mounting locations, and mounting methods.
 2. Verify that units and controls are properly installed, connected, and labeled and that interconnecting wires and terminals are identified.
- E. Acceptance Operational Tests:
1. Perform operational system tests to verify conformance with specifications:
 - a. Each alarm initiating device installed shall be operationally tested. Each device shall be tested for alarm and trouble conditions. Contractor shall submit a written certification that the Fire Alarm System installation is complete including all punch-list items. Test battery operated emergency power supply. Test emergency power supply to minimum durations specified. Test Supervising Station Signal Transmitter. Coordinate testing with Supervising Station monitoring firm/entity.
 - b. Test each Notification Appliance installed for proper operation. Submit written report indicating sound pressure levels at specified distances.
 - c. Test Fire Alarm Control Panel and Remote Annunciator.
 2. Provide minimum 10 days notice of acceptance test performance schedule to Owner, and local Authority Having Jurisdiction.
- F. Retesting: Correct deficiencies indicated by tests and completely retest work affected by such deficiencies. Verify by the system test that the total system meets the Specifications and complies with applicable standards.
- G. Report of Tests and Inspections: Provide a written record of inspections, tests, and detailed test results in the form of a test log. Use NFPA 72 Forms for documentation.

- H. Final Test, Record of Completion, and Certificate of Occupancy:
Test the system as required by the Authority Having Jurisdiction in order to obtain a certificate of occupancy. Provide completed NFPA 72 Record of Completion form to Owner and AHJ.
- I. Provide for a minimum of 4 (four) site visits, subsequent to final test and acceptance for programming revision information provided by the Owner.

3.9. CLEANING AND ADJUSTING

- A. Cleaning: Remove paint splatters and other spots, dirt, and debris. Clean unit internally using methods and materials recommended by manufacturer.
- B. Occupancy Adjustments: When requested within one year of date of Substantial Completion, provide on-site assistance in adjusting sound pressure levels and adjusting controls and sensitivities to suit actual occupied conditions. Provide up to three visits to the site for this purpose.

3.10. TRAINING

- A. Provide the services of a factory-authorized service representative to demonstrate the system and train Owner's maintenance personnel as specified below.
 - 1. Train Owner's maintenance personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventive maintenance of the system. Provide a minimum of 8 hours' training for up to six (6) people at the discretion of HACP. Due to scheduling conflicts, training for all six people may be required to be conducted over two (2) separate eight-hour sessions. Training shall be video taped to allow for Owner's personnel to be able to utilize training information at their need.
 - 2. Schedule training with the Owner at least seven days in advance.

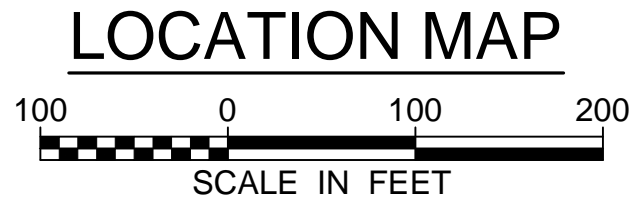
END OF SECTION 16720

HOUSING AUTHORITY of the CITY of PITTSBURGH

DEVELOPMENT AND MODERNIZATION DEPARTMENT
100 ROSS STREET, 2ND FLOOR
PITTSBURGH, PENNSYLVANIA 15219

HACP MANAGEMENT # 7381
TASK ORDER #65
NORTHVIEW HEIGHTS
BUILDING #74
UPGRADES

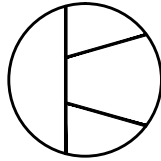
NOVEMBER 13, 2019



DRAWING INDEX

DRAWING NO.	DESCRIPTION
CS	COVER SHEET
G-01	ABBREVIATIONS, SYMBOLS AND GENERAL NOTES
G-02	BASEMANT AND FIRST FLOOR CODE SHEET
G-03	SECOND AND THIRD FLOOR CODE SHEET
D-1	BASEMENT DEMOLITION PLAN
D-2	TYPICAL ENLARGED DEMOLITION PLAN
A-1	BASEMENT LEVEL PLAN
A-2	FIRST FLOOR PLAN
A-3	SECOND FLOOR PLAN
A-4	THIRD FLOOR PLAN
A-5	ENLARGED TYPICAL NEW WORK PLANS, ELEVATIONS, DETAILS AND FINISH SCHEDULE
A-6	DOOR SCHEDULE, DOOR TYPES AND DETAILS
E001	GENERAL NOTES, LEGEND, ABBREVIATIONS AND DETAILS
E100	FIRE DETECTION PLAN - DEMOLITION AND NEW WORK BASEMENT FLOOR
E101	FIRE DETECTION PLAN - DOOR ENTRY DEMOLITION AND NEW WORK FIRST FLOOR
E102	FIRE DETECTION PLAN - DOOR ENTRY DEMOLITION AND NEW WORK SECOND FLOOR
E103	FIRE DETECTION PLAN - NEW WORK THIRD FLOOR
E104	FIRE DETECTION PLAN - NEW WORK ENLARGED PLAN AND VIDEO MONITORING INTERCONNECTION WIRING

PROJECT TEAM:

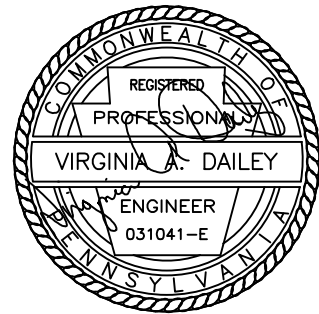


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DEMOLITION KEYNOTES

- 1

REMOVE EXISTING PARTITION. PATCH AND REPAIR ADJACENT SURFACES TO LIKE NEW CONDITIONS.
- 2

REMOVE EXISTING DOOR, FRAME AND HARDWARE. REPAIR AND PREP OPENING TO RECIEVE NEW. SALVAGE EXISTING MORTISE LOCKSETS AND CORES. LABEL WITH ITS ORIGINAL LOCATION FOR COORDINATION AND RETURN TO OWNER.
- 3

PATCH REPAIR EXISTING PLASTER/WALL SURFACE AS REQUIRED TO RECEIVE NEW WINDOW/DOOR AND PAINT FINISH.
- 4

REMOVE EXISTING WOOD BLOCKING AROUND EXISTING OPENING.
- 5

REMOVE EXISTING INTERCOM SYSTEM. REPAIR AND PREP TO RECIEVE NEW MASORY INFILL TO MATCH EXISTING.
- 6

REMOVE EXISTING MASONRY AS REQUIRED FOR NEW INTERCOM SYSTEM PANEL. COORDINATE NEW OPENING SIZE PER MANUFACTURER'S REQUIREMENTS.
- 7

REMOVE EXISTING DOORBELL.
- 8

REMOVE AND SALVAGE EXISTING APT SIGNAGE FOR POTENTIAL REUSE.
- 9

REMOVE EXISTING WINDOW. REPAIR, PATCH AND PREP OPENING TO RECIEVE NEW.
- 10

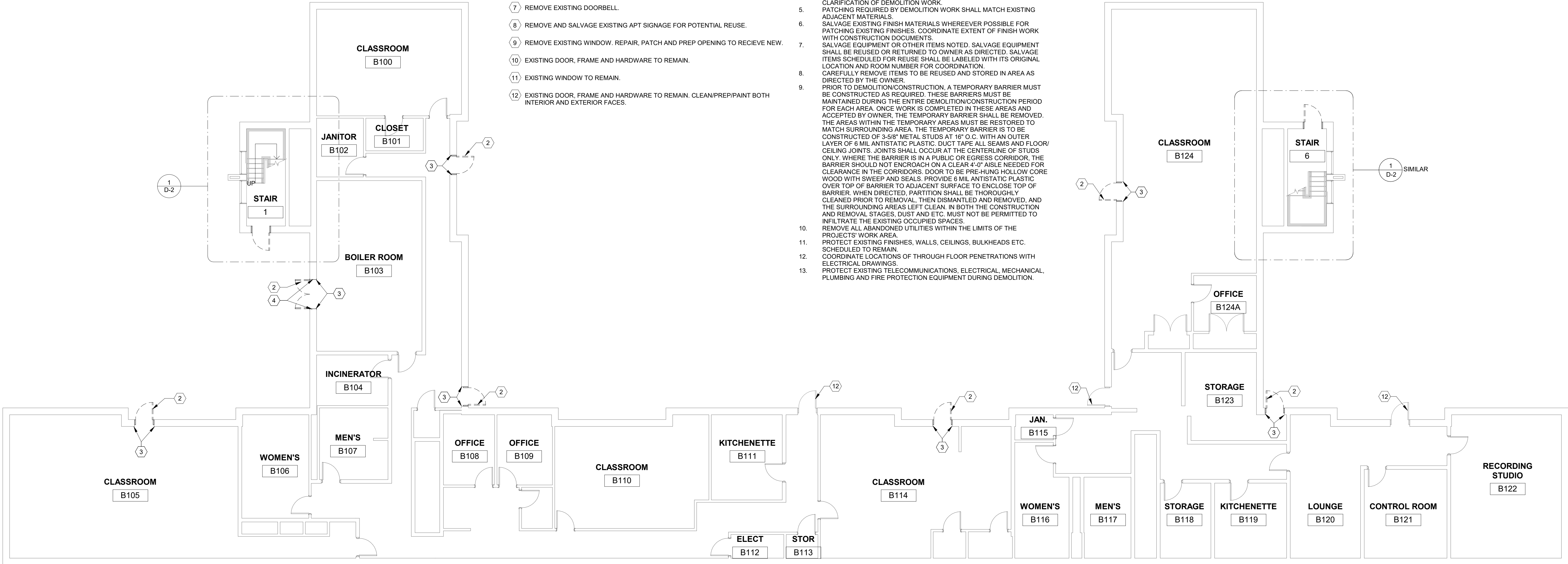
EXISTING DOOR, FRAME AND HARDWARE TO REMAIN.
- 11

EXISTING WINDOW TO REMAIN.
- 12

EXISTING DOOR, FRAME AND HARDWARE TO REMAIN. CLEAN/PREP/PAINT BOTH INTERIOR AND EXTERIOR FACES.

GENERAL DEMOLITION NOTES

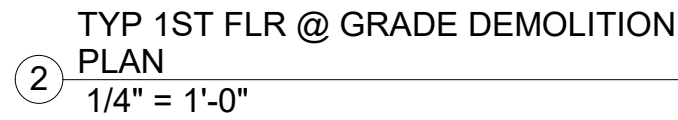
1. DO NOT SCALE DRAWINGS. CHECK AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AT SITE BEFORE PROCEEDING WITH WORK. EXISTING DIMENSIONS NOTED ON DRAWING ARE FROM OWNER PROVIDED DOCUMENTS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANY CONFLICTS OR DISCREPANCY BETWEEN INFORMATION ON DRAWINGS AND ACTUAL FIELD 'AS-BUILT' CONDITIONS SHOULD BE BROUGHT TO THE ARCHITECTS ATTENTION FOR RESOLUTION PRIOR TO COMMENCING WITH WORK.
3. DEMOLITION DRAWINGS ARE INTENDED TO INDICATE SCOPE AND GENERAL INTENT OF THE GENERAL DEMOLITION WORK REQUIRED, BUT NOT LIMITED TO THE DEMOLITION ITEMS SHOWN. DEMOLITION WORK INCLUDES REMOVAL OF ALL ITEMS THAT WOULD INTERFERE WITH THE CONSTRUCTION AND PATCHING AS REQUIRED AT ALL DISTURBED AREAS WITHOUT LIMITATION.
4. REFER TO ELECTRICAL DRAWINGS PREPARED BY OTHERS FOR FURTHER CLARIFICATION OF DEMOLITION WORK.
5. PATCHING REQUIRED BY DEMOLITION WORK SHALL MATCH EXISTING ADJACENT MATERIALS.
6. SALVAGE EXISTING FINISH MATERIALS WHEREEVER POSSIBLE FOR PATCHING EXISTING FINISHES. COORDINATE EXTENT OF FINISH WORK WITH CONSTRUCTION DOCUMENTS.
7. SALVAGE EQUIPMENT OR OTHER ITEMS NOTED. SALVAGE EQUIPMENT SHALL BE REUSED OR RETURNED TO OWNER AS DIRECTED. SALVAGE ITEMS SCHEDULED FOR REUSE SHALL BE LABELED WITH ITS ORIGINAL LOCATION AND ROOM NUMBER FOR COORDINATION.
8. CAREFULLY REMOVE ITEMS TO BE REUSED AND STORED IN AREA AS DIRECTED BY THE OWNER.
9. PRIOR TO DEMOLITION/CONSTRUCTION, A TEMPORARY BARRIER MUST BE CONSTRUCTED AS REQUIRED. THESE BARRIERS MUST BE MAINTAINED DURING THE ENTIRE DEMOLITION/CONSTRUCTION PERIOD FOR EACH AREA. ONCE WORK IS COMPLETED IN THESE AREAS AND ACCEPTED BY OWNER, THE TEMPORARY BARRIER SHALL BE REMOVED. THE AREAS WITHIN THE TEMPORARY AREAS MUST BE RESTORED TO MATCH SURROUNDING AREA. THE TEMPORARY BARRIER IS TO BE CONSTRUCTED OF 3-5/8" METAL STUDS AT 16" O.C. WITH AN OUTER LAYER OF 6 MIL ANTISTATIC PLASTIC. DUCT TAPE ALL SEAMS AND FLOOR/CEILING JOINTS. JOINTS SHALL OCCUR AT THE CENTERLINE OF STUDS ONLY. WHERE THE BARRIER IS IN A PUBLIC OR EGRESS CORRIDOR, THE BARRIER SHOULD NOT ENCROACH ON A CLEAR 4'-0" AISLE NEEDED FOR CLEARANCE IN THE CORRIDORS. DOOR TO BE PRE-HUNG HOLLOW CORE WOOD WITH SWEEP AND SEALS. PROVIDE 6 MIL ANTISTATIC PLASTIC OVER TOP OF BARRIER TO ADJACENT SURFACE TO ENCLOSE TOP OF BARRIER. WHEN DIRECTED, PARTITION SHALL BE THOROUGHLY CLEANED PRIOR TO REMOVAL, THEN DISMANTLED AND REMOVED, AND THE SURROUNDING AREAS LEFT CLEAN. IN BOTH THE CONSTRUCTION AND REMOVAL STAGES, DUST AND ETC. MUST NOT BE PERMITTED TO INFILTRATE THE EXISTING OCCUPIED SPACES.
10. REMOVE ALL ABANDONED UTILITIES WITHIN THE LIMITS OF THE PROJECTS' WORK AREA.
11. PROTECT EXISTING FINISHES, WALLS, CEILINGS, BULKHEADS ETC. SCHEDULED TO REMAIN.
12. COORDINATE LOCATIONS OF THROUGH FLOOR PENETRATIONS WITH ELECTRICAL DRAWINGS.
13. PROTECT EXISTING TELECOMMUNICATIONS, ELECTRICAL, MECHANICAL, PLUMBING AND FIRE PROTECTION EQUIPMENT DURING DEMOLITION.



1 BASEMENT DEMO
1/8" = 1'-0"

DEMOLITION PLAN LEGEND	
	DEMOLITION / REMOVE
	EXISTING TO REMAIN

OWNER		PROJECT TEAM		<div><div>10</div><div>9</div><div>8</div><div>7</div><div>6</div><div>5</div><div>4</div><div>3</div><div>2</div><div>1</div></div> <div>BY DATE DESCRIPTION NO.</div> <div>REVISIONS</div>	<div><div>REGISTERED ARCHITECT</div><div>PENNSYLVANIA</div><div>SEAL</div></div>	NORTHVIEW HEIGHTS BUILDING #74 UPGRADES 415 Mount Pleasant Road, Pittsburgh, PA 15214		PROJECT NO. 17001	DRAWING NUMBER: <div>D-1</div>		
HOUSING AUTHORITY OF THE CITY OF PITTSBURGH DEVELOP & MODERNIZATION DEPT. 100 ROSS STREET PITTSBURGH, PA 15219 PHONE: 412-456-5020		RIOS WILLIAMS ARCHITECTS, P.C. 200 ROSEWOOD COURT VENETIA, PA 15367 PHONE: 724-255-7985 Contact: Lizette Rios-Williams lizette@rioswilliamsarchitects.com						DATE 11-13-2019			
								D&D ENGINEERING, INC. CONSULTING ELECTRICAL ENGINEERS		SCALE As indicated	SHEET NUMBER: 5 OF 18
								DRAWING TITLE: BASEMENT DEMOLITION PLAN		CHECKED BY LRW	





 DEMOLITION / REMOVE
 EXISTING TO REMAIN

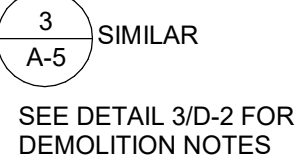
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- 2 REMOVE EXISTING DOOR, FRAME AND HARDWARE. REPAIR AND PREP OPENING TO RECEIVE NEW. SALVAGE EXISTING MORTISE LOCKSETS AND CORES. LABEL WITH ITS ORIGINAL LOCATION FOR COORDINATION AND RETURN TO OWNER.
- 3 PATCH REPAIR EXISTING PLASTER/WALL SURFACE AS REQUIRED TO RECEIVE NEW WINDOW/DOOR AND PAINT FINISH.
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- 8 REMOVE AND SALVAGE EXISTING APT SIGNAGE FOR POTENTIAL REUSE.
- 9 REMOVE EXISTING WINDOW. REPAIR, PATCH AND PREP OPENING TO RECEIVE NEW.
- 10 EXISTING DOOR, FRAME AND HARDWARE TO REMAIN.
- 11 EXISTING WINDOW TO REMAIN.
- 12 EXISTING DOOR, FRAME AND HARDWARE TO REMAIN. CLEAN/PREP/PAINT BOTH INTERIOR AND EXTERIOR FACES.

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- REFER TO ELECTRICAL DRAWINGS PREPARED BY OTHERS FOR FURTHER CLARIFICATION OF DEMOLITION WORK.
- PATCHING REQUIRED BY DEMOLITION WORK SHALL MATCH EXISTING ADJACENT MATERIALS.
- REMOVE EXISTING FINISH MATERIALS WHEREEVER POSSIBLE FOR PATCHING EXISTING FINISHES. COORDINATE EXTENT OF FINISH WORK WITH CONSTRUCTION DOCUMENTS.
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- COORDINATE LOCATIONS OF DRAINAGE FLOOR PENETRATIONS WITH ELECTRICAL DRAWINGS.
- PROTECT EXISTING TELECOMMUNICATIONS, ELECTRICAL, MECHANICAL, PLUMBING AND FIRE PROTECTION EQUIPMENT DURING DEMOLITION.

DRAWING TITLE:

TYPICAL ENLARGED DEMOLITION PLANS

OWNER		PROJECT TEAM				NORTHVIEW HEIGHTS BUILDING #74 UPGRADES 415 Mount Pleasant Road, Pittsburgh, PA 15214		PROJECT NO. 17001		DRAWING NUMBER:	
HOUSING AUTHORITY OF THE CITY OF PITTSBURGH DEVELOP & MODERNIZATION DEPT. 100 ROSS STREET PITTSBURGH, PA 15219 PHONE: 412-456-5020		RIOS WILLIAMS ARCHITECTS, P.C. 200 ROSEWOOD COURT VENETIA, PA 15367 PHONE: 724-255-7985 Contact: Lizette Rios-Williams lizette@rioswilliamsarchitects.com		D&D ENGINEERING, INC. 35 WILSON STREET ETNA TECHNICAL CENTER, SUITE 102 PITTSBURGH, PA 15223 PHONE: 412-784-1560		 D&D ENGINEERING, INC. CONSULTING ELECTRICAL ENGINEERS		DATE 11-13-2019		<div style="font-size: 48pt; font-weight: bold;">D-2</div>	
						SCALE As indicated					
						DRAWN BY LRW					
								CHECKED BY LRW		SHEET NUMBER: 6 OF 18	



GENERAL NOTES

1. EXISTING CONDITIONS AND DIMENSIONS SHALL BE FIELD VERIFIED. IF DISCREPANCIES OCCUR, REPORT SUCH DISCREPANCIES TO THE ARCHITECT IMMEDIATELY FOR DECISIONS PRIOR TO PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS.
2. ALL MATERIALS SHALL BE NEW UNLESS DESIGNATED SALVAGE FOR REUSE.
3. ANY DAMAGE CAUSED BY SELECTIVE DEMOLITION THAT AFFECTS AREAS OUTSIDE OF THE WORK AREA SHALL BE REPAIRED PRIOR TO START OF NEW CONSTRUCTION.
4. GC RESPONSIBLE FOR THE PATCH, REPAIR OR REPLACEMENT OF ANY WALL DISMANTLING FOR ACCESS OF ANY MEP SYSTEMS RELATED TO THIS PROJECT WITHIN OR OUTSIDE OF THE WORK AREA.
5. GC RESPONSIBLE TO SEAL GAPS OF ALL WALL AND FLOOR PENETRATIONS PER REQUIRED RATING.
6. GC TO PROVIDE BLOCKING FOR ALL WALL SUPPORTED ITEMS.
7. ALL EXISTING MASONRY DOOR JAMBS SCHEDULED TO RECEIVE NEW DOOR/FRAME SHALL BE PAINTED TO MATCH EXISTING WALL COLOR.
8. NEW WALL BASE TO MATCH EXISTING SHALL BE PROVIDED IF DAMAGED DURING REMOVAL/INSTALLATION OF NEW DOOR/FRAME. REPLACE FULL LENGTH TO AN EXISTING SEAM.

THE PROPOSED PHASING LISTED BELOW IS INTENDED TO REDUCE THE CONSTRUCTION INTERRUPTION OF THE OCCUPANTS. CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF THE CONSTRUCTION AND SHALL ASSESS THE FEASIBILITY OF THE SUGGESTED OUTLINE BELOW. CONTRACTOR MAY OFFER OTHER SEQUENCING RECOMMENDATIONS TO BE CONSIDERED BY THE OWNER AND ARCHITECT.

ALL MATERIALS SHALL BE ON HAND PRIOR TO COMMENCEMENT OF WORK. EACH DOOR OPENING SHALL BE REMOVAL AND REINSTALLED WITHIN 8-HOUR WORK DAY.

1. RESIDENTIAL PHASE

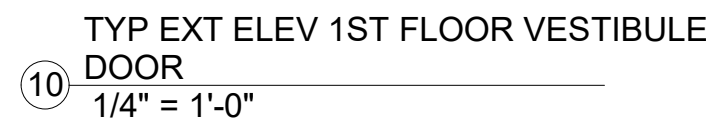
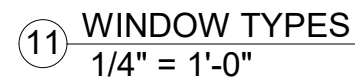
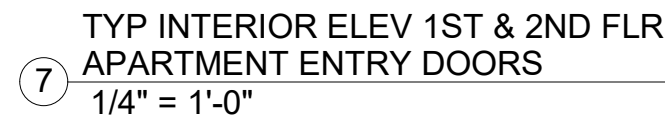
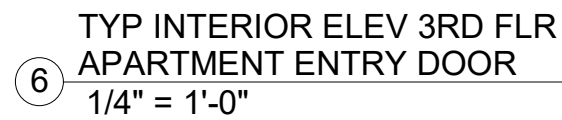
A. PHASE 1: COMPLETE THE REMOVAL AND INSTALLATION OF ALL EXTERIOR STAIR TOWER DOORS.

B. PHASE 2: COMPLETE THE REMOVAL AND INSTALLATION OF THE APARTMENT ENTRY DOORS ONE STAIR TOWER AT A TIME AND ONE FLOOR LEVEL AT A TIME.

2. BASEMENT PHASE

A. PHASE 3: BASEMENT SCOPE OF WORK

SHEET NUMBER:
9 OF 18



CONSTRUCTION DRAWINGS

**ENLARGED TYPICAL NEW WORK PLANS, ELEVATIONS, DETAILS AND
FINISH SCHEDULE**

PROJECT NO. 17001	<div>DRAWING NUMBER:</div> <div>A-5</div>
DATE 11-13-2019	
SCALE As indicated	
DRAWN BY LRW	
CHECKED BY LRW	<div>SHEET NUMBER:</div> <div>11 OF 18</div>

DOOR SCHEDULE																					
Mark	DOOR									FRAME					Fire Rating	Hardware Set	Head Detail	Jamb Detail	SIGNAGE TYPE	Notes	
	Width	Double Door Sizes		Height	Thickness	Type	Material	Finish	Glass	Frame Type	Frame Finish	Frame Material	Frame Depth	Glazing							
		Large Leaf	Small Leaf																		
74A	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PNT	--	A	PNT 2	HM	0' - 6"		-	2	H1	J1	ST1 & ST4		
74B	5' - 0"	3' - 0"	2' - 0"	6' - 8"	0' - 1 3/4"	F_DB	HM	PTD	--	A	PNT 2	HM	0' - 6"		-	5	H1	J1	ST1	NOTE 5	
74C	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	A	PNT 2	HM	0' - 6"		-	2	H1	J1	ST1		
74D	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	A	PNT 2	HM	0' - 6"		-	2	H1	J1	ST1		
74E	3' - 0"			6' - 8"	0' - 1 3/4"	F	EXIST	PTD	--	EXIST	PNT 2	EXIST	0' - 0"		-	6	-	-	ST1	NOTE 2 AND 3	
74F	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	A	PNT 2	HM	0' - 6"		-	2	H1	J1	ST1	NOTE 4	
74G	3' - 0"			6' - 8"	0' - 1 3/4"	F	EXIST	PTD	--	EXIST	PNT 2	EXIST	0' - 0"		-	6	-	-	ST1	NOTE 2 AND 3	
74H	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	A	PNT 2	HM	0' - 6"		-	3	H1	J1	ST1	NOTE 4	
74I	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	A	PNT 2	HM	0' - 6"		-	2	H1	J1	ST1		
74J	3' - 0"			6' - 8"	0' - 1 3/4"	F	EXIST	PTD	--	EXIST	PNT 2	EXIST	0' - 0"		-	6	-	-	ST3 & ST5 & ST6	NOTE 2 AND 3	
872	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
873	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
874	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
875	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
876	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
877	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
878E	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	B	PNT 2	HM	0' - 6"		60	4	H1	J1	ST1	NOTE 6	
879E	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	B	PNT 2	HM	0' - 6"		60	4	H1	J1	ST1	NOTE 6	
880	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
881	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
882	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
883	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
884E	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	B	PNT 2	HM	0' - 6"		60	4	H1	J1	ST1	NOTE 6	
885E	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	B	PNT 2	HM	0' - 6"		60	4	H1	J1	ST1	NOTE 6	
886	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
887	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
888	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
889	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
890E	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	B	PNT 2	HM	0' - 6"		60	4	H1	J1	ST1	NOTE 6	
891E	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	B	PNT 2	HM	0' - 6"		60	4	H1	J1	ST1	NOTE 6	
892	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
893	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
894	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
895	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
896E	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	B	PNT 2	HM	0' - 6"		60	4	H1	J1	ST1	NOTE 6	
897E	3' - 0"			6' - 8"	0' - 1 3/4"	F	HM	PTD	--	B	PNT 2	HM	0' - 6"		60	4	H1	J1	ST1	NOTE 6	
898	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
899	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
900	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
901	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
902	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
903	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
904	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
905	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD	--	C	PNT 3	HM	0' - 6"	FRISGC	60	1	H1	J1	ST1		
906	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
907	2' - 8"			6' - 8"	0' - 1 3/4"	P	HM	PTD		A	PNT 3	HM	0' - 5 1/2"		60	1	H2	J2	ST1	NOTE 1	
S1	3' - 0"			6' - 8"	0' - 1 3/4"	NV	HM	PTD	LSG	B	PNT 2	HM	0' - 6"		-	4	H1	J1	ST2	NOTE 6 AND 7	
S2	3' - 0"			6' - 8"	0' - 1 3/4"	NV	HM	PTD	LSG	B	PNT 2	HM	0' - 6"		-	4	H1	J1	ST2	NOTE 6 AND 7	
S3	3' - 0"			6' - 8"	0' - 1 3/4"	NV	HM	PTD	LSG	B	PNT 2	HM	0' - 6"		-	4	H1	J1	ST2	NOTE 6 AND 7	
S4	3' - 0"			6' - 8"	0' - 1 3/4"	NV	HM	PTD	LSG	B	PNT 2	HM	0' - 6"		-	4	H1	J1	ST2	NOTE 6 AND 7	
S5	3' - 0"			6' - 8"	0' - 1 3/4"	NV	HM	PTD	LSG	B	PNT 2	HM	0' - 6"		-	4	H1	J1	ST2	NOTE 6 AND 7	
S6	3' - 0"			6' - 8"	0' - 1 3/4"	NV	HM	PTD	LSG	B	PNT 2	HM	0' - 6"		-	4	H1	J1	ST2	NOTE 6 AND 7	

GENERAL DOOR SCHEDULE AND HARDWARE SET NOTES:

- FIELD VERIFY ALL DIMENSIONS OF EXISTING WALL OPENINGS SCHEDULED TO RECIEVE NEW DOOR FRAMES AND DOORS.
- COORDINATE DOOR / FRAME PREP AND INSTALLATION WITH ELECTRICAL DEVICES AND ELECTRICAL CONTRACTOR. REFER TO ELECTRCIAL DRAWINGS FOR SPECIFICATIONS AND DETAILS.
- PROVIDE UL LISTED FIRE RATED HARDWARE AND GLAZING FOR ALL FIRE RATED DOORS.
- PROVIDE SIKAFLEX POLYURETHANE SEALANT AROUND THE INSIDE AND OUTSIDE PERIMETER OF ALL HM DOOR/WINDOW FRAMES.

HARDWARE SETS

SET #1: SINGLE TENANT ENTRY DOOR

1-1/2 PAIR BUTT HINGES
1 MORTISE ENTRY LOCKSET
1 CORE
1 CLOSURE
1 THRESHOLD
1 SWEEP
1 GASKETING
1 DOOR VIEWER

SET #2: SINGLE EXTERIOR ENTRY DOOR

1 CONTINOUS HINGE
1 EXIT DEVICE
1 CORE
1 ADA ANTI-VANDAL PULL
1 CLOSURE
1 KICKPLATE
1 THRESHOLD
1 SWEEP
1 GASKETING

SET #3: SINGLE EXTERIOR ENTRY DOOR

1 CONTINOUS HINGE
1 EXIT DEVICE
1 CORE
1 ADA ANTI-VANDAL PULL
1 CLOSURE
1 KICKPLATE
1 THRESHOLD
1 SWEEP
1 GASKETING
1 DOOR VIEWER

SET #4: SINGLE EXTERIOR ENTRY STAIR/VESTIBULE DOOR

1 CONTINOUS HINGE
1 EXIT DEVICE
1 CORE
1 ELECTRIC STRIKE
1 ADA ANTI-VANDAL PULL
1 CLOSURE
1 KICKPLATE
1 THRESHOLD
1 SWEEP
1 GASKETING
1 DOOR VIEWER

1 INTERCOM SYSTEM BY ELECTRICAL CONTRACTOR

SET #5: DOUBLE EXTERIOR DOOR

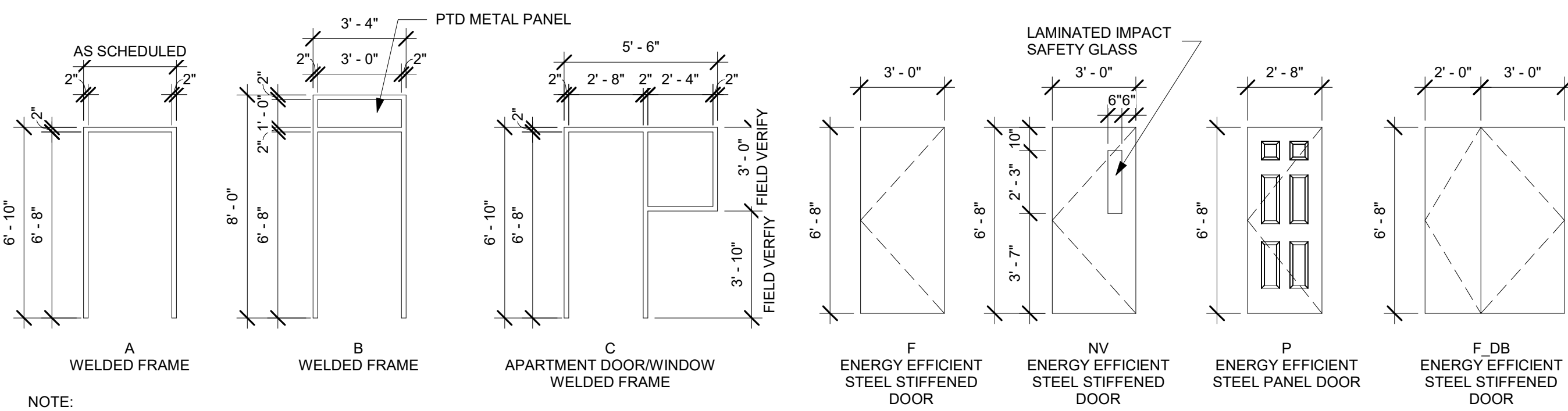
2 CONTINOUS HINGES
1 EXIT DEVICE
1 CORE
1 ADA ANTI-VANDAL PULL
2 CLOSURES
2 KICKPLATE
1 THRESHOLD
2 SWEEPS
1 ASTRAGAL
1 GASKETING
2 FLUSH BOLTS
1 DUST PROOF STRIKE

SET #6: EXISTING DOORS TO REMAIN

1 PUSH PLATE

DOOR SCHEDULE NOTES:

- FIELD VERIFY EXISTING 3RD FLOOR PARTITION WIDTH TO DETERMINE REQUIRED FRAME JAMB DEPTH
- EXISTING HM DOOR/FRAME AND HARDWARE TO REMAIN.
- CLEAN/PREP/PAINT EXISTING DOOR AND FRAME ON BOTH INTERIOR AND EXTERIOR FACES, AND STEEL LINTELS.
- REINSTALL EXISTING DOOR ALARM CONTACT PER MANUFACTURER'S RECOMMENDATION
- HOLLOW METAL FRAME SIZE SHALL BE CUSTOM ORDERED TO FIT EXISTING MASONRY OPENING WITHOUT THE USE OF WOOD BLOCKING AS CURRENTLY INSTALLED. FIELD VERIFY EXISTING OPENING.
- PREP DOOR AND FRAME AS REQUIRED TO RECIEVE ELECTRIC STRIKE. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
- PREP DOOR AND FRAME AS REQUIRED TO RECIEVE KEY FOB ENTRY SYSTEM. SEE ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.



GENERAL NOTES:

1. ALL WORK EXECUTED AND MATERIALS USED SHALL BE IN STRICT CONFORMANCE TO THE REQUIREMENTS OF THE LATEST EDITIONS OF THE FOLLOWING CODES AND STANDARDS:
- A. NATIONAL ELECTRICAL CODE
 - B. NATIONAL BUREAU OF STANDARDS HANDBOOK H-30
 - C. STATE CODES, LOCAL CODES, AND ALL OTHER JURISDICTIONS HAVING AUTHORITY
 - D. UNDERWRITER'S LABORATORIES, INC.
 - E. AMERICAN NATIONAL STANDARDS INSTITUTE, INC.
 - F. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS
 - G. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
 - H. NATIONAL BOARD OF FIRE UNDERWRITERS
 - I. INSULATED POWER CABLE ENGINEERS ASSOCIATED SPECIFICATIONS
 - J. AMERICAN SOCIETY FOR TESTING MATERIALS AND SPECIFICATIONS
 - K. FEDERAL DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH STANDARDS AS CONTAINED IN THE FEDERAL REGISTER VOLUME 36, NUMBER 105, DATED MAY 29, 1971 OR THE LATEST REVISION THEREOF.
- IF THE ELECTRICAL CONTRACTOR PERFORMS ANY WORK CONTRARY TO ANY OF THE ABOVE CODES AND REGULATIONS, THE CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE FOR SUCH VIOLATIONS, AND SHALL ASSUME ANY AND ALL COSTS ASSOCIATED IN CORRECTING THE VIOLATIONS.
2. ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO LEARN OF ALL EXISTING CONDITIONS, WHICH IN ANY WAY WILL AFFECT THE EXECUTION OF THIS WORK AND THE REQUIREMENTS OF THIS CONTRACT AS SHOWN OR REASONABLY INFERRED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS.
3. ELECTRICAL CONTRACTOR SHALL DOCUMENT ANY REQUEST OR DEVIATION FROM THE CONTRACT DOCUMENTS ON ANY ITEM THAT MAY HAVE BEEN DISCUSSED IN THE FIELD, OR DIRECTED BY OTHERS, REGARDING MATERIALS OR INSTALLATION METHODS.
4. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL WORK (AS DESCRIBED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS) WITH ALL OTHER TRADES AND SUBCONTRACTORS ON THE PROJECT. THIS MAY INCLUDE, BUT NOT BE LIMITED TO, PROVIDING COMPLETE DRAWINGS AND SPECIFICATIONS TO GENERAL TRADES TO ENSURE COORDINATION WITH ALL TRADES AND CONSTRUCTION INSPECTORS.
5. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY WIRING AS NECESSARY, TO ENSURE THAT NO DISRUPTION IN SERVICE OCCURS. TEMPORARY WIRING SHALL BE OF SIMILAR TYPE AND INSULATION WITH EXISTING WIRING.
6. PROVIDE TYPE OF CONDUIT FOR THE FOLLOWING:
- A. BUILDING EXTERIOR - RGS
 - B. BUILDING INTERIOR - EMT
7. ANY CUTTING, ROUGH AND FINISHED PATCHING, AS WELL AS ALL PAINTING FOR ALL WORK IS TO BE PERFORMED BY THE ELECTRICAL CONTRACTOR.
8. LINKSEAL ALL CONDUIT PENETRATIONS OF EXTERIOR WALLS ABOVE AND BELOW GRADE.
9. ALL MATERIALS SHALL BEAR THE LABEL OF UNDERWRITER'S LABORATORIES AND MEET THE CURRENT U.L. STANDARD FOR THAT TYPE OF MATERIAL.
10. ELECTRICAL CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, AND INSPECTIONS, INCLUDING BUT NOT LIMITED TO, THE CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE LOCAL INSPECTION AUTHORITIES. FEES SHALL BE INCLUSIVE FOR ALL WORK TO BE PERFORMED WHETHER ONE OR MORE THAN ONE PERMIT/LICENSE IS REQUIRED.
11. ALL DEVICES LOCATED IN COMMON AREAS OR UFAS UNITS MUST BE INSTALLED AT UFAS COMPLIANT MOUNTING HEIGHTS.
12. ALL CONDUCTORS SHALL BE COPPER WITH TYPE THHN/THWN INSULATION. CONDUCTORS (#10 AND SMALLER) SHALL BE SOLID. CONDUCTORS (#8 AND LARGER) SHALL BE STRANDED. THE MINIMUM CONDUCTOR SIZE FOR POWER CONDUCTORS SHALL BE #12.
13. ALL GROUND CONDUCTORS SHALL BE FULLY INSULATED WITH GREEN INSULATION.
14. THE WIRING METHODS FOR THIS PROJECT SHALL BE WIRE IN CONDUIT IN EXPOSED AREAS AND TYPE "MC" CABLE IN CONCEALED AREAS. THE CONDUIT SHALL BE ELECTRIC METALLIC TUBING (EMT) AND THE MINIMUM SIZE SHALL BE 3/4". CONDUIT PLACED BELOW GRADE AND/OR CONCRETE ENCASED SHALL BE SCHEDULE 40 PVC AND A MINIMUM SIZE SHALL BE 1". WIRING SHALL BE INSTALLED CONCEALED WHEREVER POSSIBLE. ALL EXPOSED WIRING CONDITIONS SHALL BE INSTALLED IN CONDUIT IN UNFINISHED SPACES, STEEL SURFACE METAL RACEWAY WIREMOLD TYPE V700 IN INTERIOR FINISHED SPACES, AND RGS IN EXTERIOR FINISHED SPACES (UNLESS NOTED OTHERWISE) AND MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

15. ELECTRICAL CONTRACTOR SHALL PROVIDE ADEQUATELY SIZED WIREWAYS, JUNCTION BOXES, AND OUTLET BOXES FOR RESPECTIVE APPLICATIONS. THESE ITEMS SHALL BE SIZED IN ACCORDANCE WITH THE LATEST EDITION OF THE 2008 NATIONAL ELECTRICAL CODE AND BE READILY ACCESSIBLE. THESE ITEMS SHALL BE OF GALVANIZED STEEL CONSTRUCTION UNLESS SPECIFIED OTHERWISE.
16. CONDUCTORS, EQUIPMENT AND/OR DEVICES OF DIFFERENT VOLTAGES SHALL NOT BE INSTALLED IN THE SAME OUTLET OR JUNCTION BOX. EACH CIRCUIT SHALL HAVE ITS OWN NEUTRAL CONDUCTOR. DO NOT SHARE NEUTRALS. COVER PLATES SHALL BE PROVIDED ON ALL BLANK OUTLET BOXES FOR FUTURE USE. PROVIDE ADDITIONAL INSULATION BEHIND EACH JUNCTION OR OUTLET BOX LOCATED ON EXTERIOR WALLS.
17. LOCATION OF ITEMS AND DIMENSIONS SHOWN ON DRAWINGS ARE APPROXIMATE. MOUNTING HEIGHTS OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED WITH THE EQUIPMENT REQUIREMENTS, FIELD CONDITIONS AND APPROVED BY THE OWNER/ENGINEER.
18. EXACT LOCATIONS OF ELECTRICAL DEVICES AND EQUIPMENT SHALL BE VERIFIED.
19. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.
20. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS OR INSTRUCTIONS FOR CONSTRUCTION SAFETY. THE ELECTRICAL ENGINEER ASSUMES NO RESPONSIBILITY FOR ANY WORKER'S OR TRANSIENTS SAFETY, OR FOR THE ADEQUACY OF EQUIPMENT, BUILDING COMPONENTS, SCAFFOLDS, FORMS, OR OTHER WORK AID, OR ANY NECESSITY TO WORK ON "LIVE" ELECTRICAL COMPONENTS. FURTHER, NO SUPERINTENDENCE IS INCLUDED OR INTENDED.
21. THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO PROTECT ALL OPEN EXCAVATIONS DURING ANY DEMOLITION AND/OR CONSTRUCTION.
22. DEVIATION FROM MANUFACTURER'S NAMES, CATALOG/MODEL/PARTS NUMBERS SHOWN ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS SHALL NOT BE PERMITTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE OWNER AND/OR ENGINEER.
23. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ANY CUTTING AND/OR PATCHING REQUIRED BY ELECTRICAL WORK RESULTING FROM THE FAILURE TO INSTALL EMBEDDED OR BUILT-IN ITEMS AS AND WHEN REQUIRED.
24. ELECTRICAL CONTRACTOR SHALL VERIFY THAT THE WORK IS FEASIBLE AS SHOWN ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS. ELECTRICAL CONTRACTOR SHALL VERIFY LOCATION OF ELECTRICAL ITEMS IN RELATION TO ARCHITECTURAL AND STRUCTURAL ITEMS AS REQUIRED. ELECTRICAL CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.

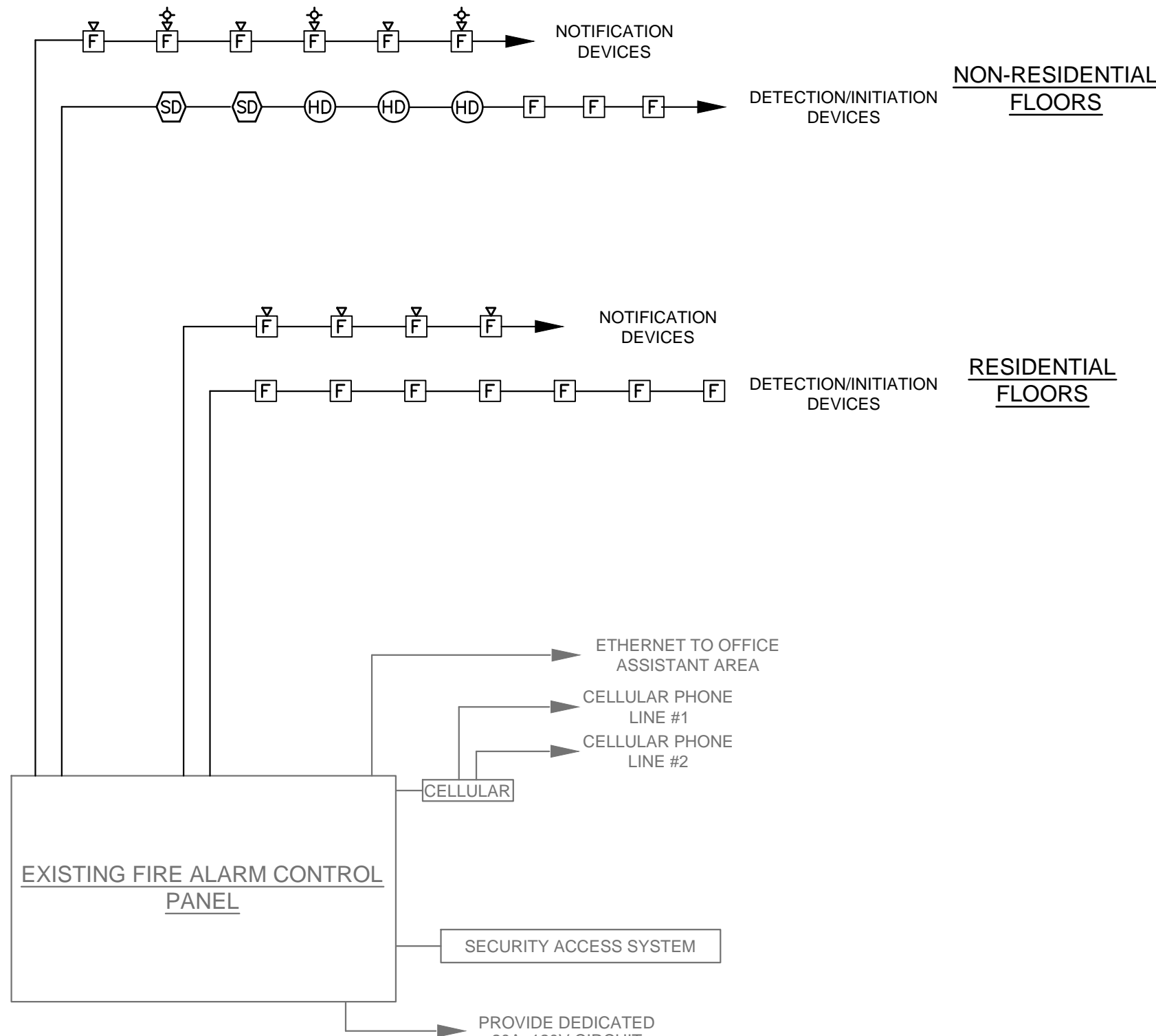
25. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF A WORK ZONE TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION PUBLICATION 203 - WORK ZONE TRAFFIC CONTROL FOR WORK IN ALL AREAS IN OR ADJACENT TO VEHICULAR TRAFFIC AREAS.
26. ELECTRICAL CONTRACTOR SHALL PROVIDE ANY ADDITIONAL JUNCTION BOXES AND/OR HANDHOLES, NOT SHOWN ON THE PLANS, BUT REQUIRED TO COMPLETE CONSTRUCTION. THESE ITEMS SHALL BE IN STRICT CONFORMANCE TO THE REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE. LOCATIONS OF ADDITIONAL HANDHOLES SHALL REQUIRE APPROVAL BY THE ENGINEER BEFORE INSTALLATION. ELECTRICAL CONTRACTOR MAY BE REQUIRED TO REMOVE OR RELOCATE ANY INSTALLATION OF ADDITIONAL HANDHOLES THAT ARE NOT APPROVED, AND AT NO ADDITIONAL COST TO THE OWNER.
27. EXISTING WIRING TO REMAIN CONTINUOUSLY OPERATIONAL DURING ALL CONSTRUCTION. TEMPORARY WIRING SHALL BE INSTALLED AS NEEDED. ALL CABLE SHALL BE OF SIMILAR TYPE AND INSULATION.
28. POWER AND CONTROL CABLES ARE TO BE SEPARATED AT ALL TIMES. SOME JUNCTIN BOXES MAY REQUIRE A MECHANICAL BARRIER TO MAINTAIN SEPARATION OF POWER FROM CONTROL.
29. ALL WORK ON THE FIRE ALARM SYSTEM TO BE COMPLETED DAILY AND THE FIRE ALARM SYSTEM RETURNED TO SERVICE AT THE END OF EACH WORK DAY. IF FIRE ALARM SYSTEM CANNOT BE RETURNED TO SERVICE AT THE END OF EACH WORK DAY, E.C. SHALL PROVIDE PERSONNEL TO PERFORM FIRE WATCH DUTIES UNTIL THE START OF THE NEXT WORK DAY PER SPECIFICATION SECTION 16720.
30. CONNECT ALL UNIT SMOKE DETECTORS WITHIN EACH RESPECTIVE UNIT TO A 20-A CIRCUIT SERVING WALL OUTLETS. UNIT SMOKE DETECTORS SHALL NOT BE TIED INTO THE FIRE ALARM SYSTEM.

ABBREVIATIONS

A	AMPERES
A/C	AIR CONDITIONING
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
E	EMERGENCY
EC	ELECTRICAL CONTRACTOR
ER	EXISTING TO BE REMOVED AND RELOCATED
FH	FIRE HOSE
FU	FUSE(S)
G OR GND	GROUND
GFI	GROUND FAULT INTERRUPTING
HP	HORSEPOWER
L	LAMP
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NE	NORMAL/EMERGENCY
NF	NON FUSED
NO	NORMALLY OPEN
P	PUMP OR POLE
PNL	PANEL
PP	POWER PANEL
RE	REMOVED AND RELOCATED EQUIPMENT
SM	IN NEW LOCATION
SW	SURFACE MOUNT
V	SWITCH
W	VOLTS
W	WATTS OR WIRE
WI	WITH
WG	WIRE GUARD
WP	WEATHERPROOF

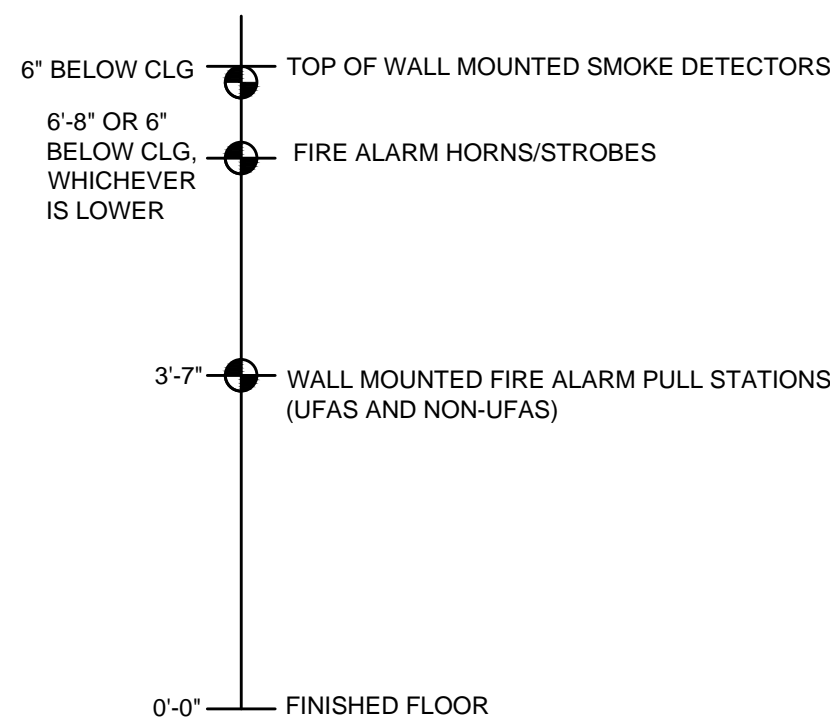
ELECTRICAL

①	JUNCTION BOX
▨	DISTRIBUTION PANELBOARD
—○	CONDUIT ELLED UP
—⊗	CONDUIT ELLED DOWN
⤿	HOMERUN TO PANEL
—●—	GROUNDING WIRE
□—●—■	GROUNDING CONNECTION
▢ PB	PULL BOX
—	EXISTING FACILITIES/EQUIPMENT
—	NEW FACILITIES/EQUIPMENT
▨	EQUIPMENT DEMOLITION
◇	DEMOLITION KEYED NOTE
⬆	NEW WORK KEYED NOTE
#	"# " INDICATES PHOTO NUMBER ON DRAWING.
▲	ARROW INDICATES DIRECTION OF VIEW.
EM/EX	EXIST /EMERGENCY FIXTURE; LTHONIA; LHQM LED R




BUILDING 74

1 FIRE ALARM RISER DIAGRAM
N.T.S.



2 DETAIL - MOUNTING HEIGHT SCHEDULE
N.T.S.

CONSTRUCTION DOCUMENTS

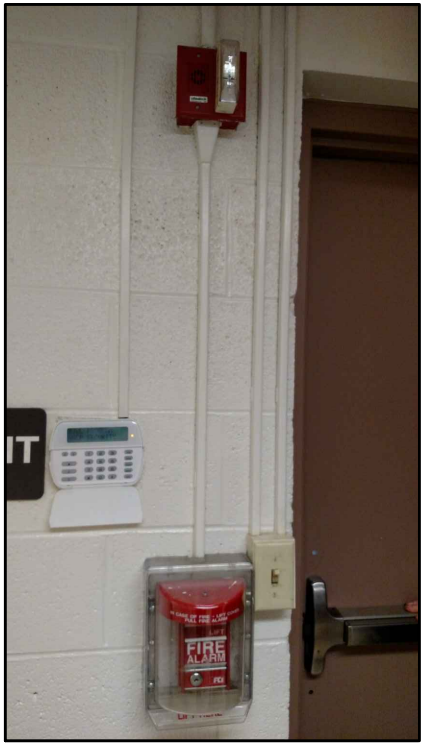
OWNER		PROJECT TEAM		<div></div> <div>SEAL</div>		NORTHVIEW HEIGHTS BUILDING #74 UPGRADES		PROJECT NO. 17001.65		<div>E001</div> <div>SHEET NUMBER 13 OF 18</div>			
HOUSING AUTHORITY OF THE CITY OF PITTSBURGH DEVELOP & MODERNIZATION DEPT. 100 ROSS STREET PITTSBURGH, PA 15219 Phone: (412) 456-5020		RIOS WILLIAMS ARCHITECTS, P.C. 200 ROSEWOOD COURT VENETIA, PA 15367 PHONE: 724-255-7985 Contact: Lizette Rios-Williams lizette@rioswilliamsarchitects.com				D&D ENGINEERING, INC. 35 WILSON STREET ETNA TECHNICAL CENTER, SUITE 102 PITTSBURGH, PA 15223 PHONE: 412-784-1560		DATE 11-13-2019				SCALE SEE PLAN	
								DRAWN BY JGK					
								CHECKED BY VAD					

FIRE ALARM DEVICE LEGEND

SD	ADDRESSABLE SMOKE DETECTOR
DD	DUCT DETECTOR
HD	ADDRESSABLE HEAT DETECTOR
IAM	INDIVIDUAL ADDRESSABLE MODULE
RIAM	INDIVIDUAL ADDRESSABLE MODULE RELAY
F	PULL STATION
FK	MULTI CANDELA WALL MOUNTED HORN/STROBE ONLY UNIT
FK	CEILING MOUNTED HORN/STROBE ONLY
FK	WEATHER PROOF WALL MOUNTED HORN/STROBE
FACP	FIRE ALARM CONTROL PANEL

DOOR ACCESS SYSTEM

M	TENANT ENTRANCE STATION
V	TENANT VIDEO MONITOR



BASEMENT FLOOR - EXISTING SECURITY SYSTEM ITEMS TO REMAIN PICTURE#1

- GENERAL NOTES:
- BASEMENT FLOOR HAS EXISTING DOOR SECURITY/MONITORING SYSTEM. AS OLD DOORS ARE REMOVED AND NEW DOORS INSTALLED AS INDICATED ON DOOR SCHEDULE, DRAWING A-6, EXISTING DEVICES SHALL BE REMOVED/RETAINED TO BE RECONNECTED TO NEW DOORS/FRAMES AS REQUIRED TO PROVIDE SECURITY TO BUILDING ENTRY. ALL WORK ASSOCIATED WITH THIS SHALL BE PROVIDED. SEE PICTURE#1 ON THIS DRAWING.
 - CIRCUITING FOR NEW EMERGENCY/EXIT FIXTURES SHALL BE FROM EXISTING LIGHTING CIRCUIT, BUT A HEAD OF ANY SWITCHING.

- DEMOLITION GENERAL NOTES:
- SEE SPECIFICATION SECTION 02050 FOR DESCRIPTION OF DEMOLITION.
- DEMOLITION KEYED NOTES:
- REMOVE EXISTING FIRE ALARM CONTROL PANEL AND REPLACE WITH NEW FIRE ALARM CONTROL PANEL. SEE RISER DIAGRAM ON DRAWING E001
 - REMOVE EXISTING FIRE ALARM NOTIFICATION AND INITIATION DEVICES. REMOVE EXISTING DEVICE BACK BOX.
 - REMOVE EXISTING FIRE DETECTION DEVICE IN THIS LOCATION.
 - ALL REMOVED DEVICES, AND FACP'S SHALL BECOME THE PROPERTY OF THE OWNER UNTIL IDENTIFIED OTHERWISE.
 - REMOVE BUZZER AT COMMON DOOR ENTRY. LEAVE CONDUIT OR WIRING PATH FROM COMMON DOOR ENTRY TO EACH UNIT. SEE PICTURE ON DRAWING E104.

- NEW KEYED NOTES:
- PROVIDE NEW FIRE ALARM CONTROL PANEL. FIELD VERIFY QUANTITY AND LOCATION OF ALL INITIATION, DETECTION AND NOTIFICATION DEVICES. SEE SPECIFICATION SECTION 16720.
 - PROVIDE NEW FIRE ALARM NOTIFICATION AND INITIATION DEVICES IN EXISTING DEVICES LOCATION. PROVIDE NEW DEVICE BACK BOXES.
 - PROVIDE NEW FIRE DETECTION DEVICE IN EXISTING DEVICE LOCATION.
 - PROVIDE NEW FIRE DETECTION DEVICE OR FIRE ALARM NOTIFICATION AND INITIATION DEVICE IN THIS LOCATION.
 - NEW TENANT ENTRANCE STATION TO BE LOCATED IN THE SAME LOCATION AS EXISTING BUZZER LOCATION, SOME MODIFICATION TO MASONRY WILL BE REQUIRED.
 - COORDINATE ELECTRICAL WORK FOR NEW DOOR ENTRY. SEE DOORS SCHEDULE ON DRAWING A-6 FOR DOORS, AND HARDWARE SET INFORMATION. SEE SPECIFICATION 16701 AND 16702 FOR DOOR ACCESS/VIDEO MONITORING SYSTEM.
 - SEE SPECIFICATION SECTION 16702 - TENANT DOOR ENTRY KEYING SYSTEM - FOR DETAILS CONCERNING THE FOB (KEYLESS ENTRY DEVICES) AND ALL ITEMS RELATED TO THE DOOR ENTRY SYSTEM REQUIREMENTS. THIS SYSTEM SHALL BE COMPATIBLE WITH THE PRESENT HARDWARE THAT THE HACP PROVIDES.

1 BASEMENT FLOOR PLAN - DEMOLITION & NEW WORK
SCALE: 1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

OWNER HOUSING AUTHORITY OF THE CITY OF PITTSBURGH DEVELOP & MODERNIZATION DEPT. 100 ROSS STREET PITTSBURGH, PA 15219 Phone: (412) 456-5020	PROJECT TEAM RIOS WILLIAMS ARCHITECTS, P.C. 200 ROSEWOOD COURT VENETIA, PA 15367 PHONE: 724-255-7985 Contact: Lizette Rios-Williams lizette@rioswilliamsarchitects.com	D&D ENGINEERING, INC. 35 WILSON STREET ETNA TECHNICAL CENTER, SUITE 102 PITTSBURGH, PA 15223 PHONE: 412-784-1560	10 9 8 7 6 5 4 3 2 1	BY DATE DESCRIPTION REVISIONS	NO.	SEAL	NORTHVIEW HEIGHTS BUILDING #74 UPGRADES D & D ENGINEERING, INC. CONSULTING ELECTRICAL ENGINEERS DRAWING TITLE: FIRE DETECTION PLAN - DEMOLITION AND NEW WORK BASEMENT FLOOR	PROJECT NO. 17001.65	DRAWING NUMBER E100
								DATE 11-13-2019	SHEET NUMBER 14 OF 18
								SCALE SEE PLAN	
								DRAWN BY JGK	
								CHECKED BY VAD	



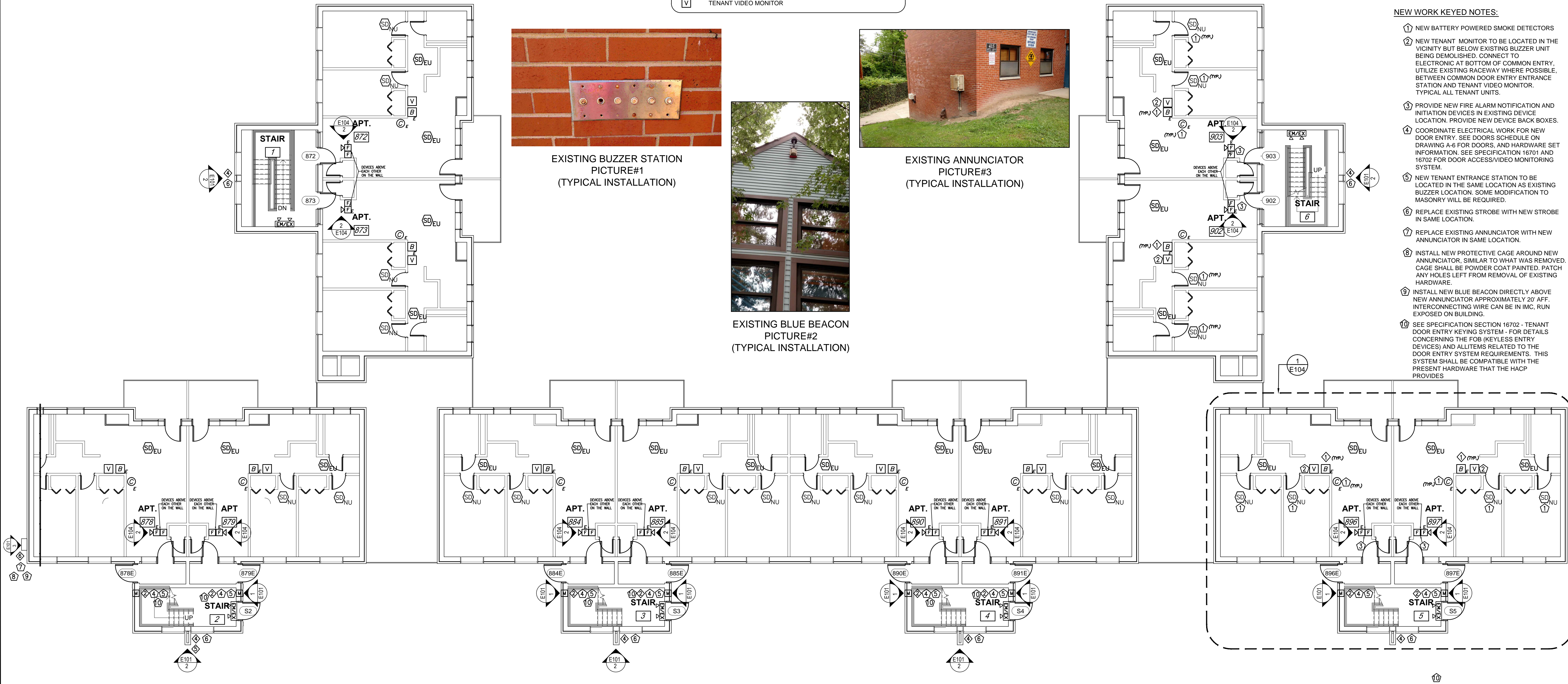
FIRE ALARM DEVICE LEGEND

- EXISTING UNIT SMOKE DETECTOR-PRESENT-TO-REMAIN
- NEW UNIT SMOKE DETECTOR
- EXISTING CARBON MONOXIDE DETECTOR-PRESENT-TO-REMAIN
- EXISTING BUZZ, HARD-WIRED TO EXISTING BOTTOM AT COMMON DOOR ENTRY STAIRWELL.
- EXISTING PULL STATION
- EXISTING WALL MOUNTED HORN UNIT - TO REMAIN

DOOR ACCESS SYSTEM

- TENANT ENTRANCE STATION
- TENANT VIDEO MONITOR

- GENERAL NOTES:**
 - EXISTING PULL STATIONS ARE TO BE REMOVED AND REPLACED WITH NEW PULL STATIONS. NEW PULL STATIONS ARE TO BE TIED IN TO NEW FACP. SEE DRAWING E100 FOR FACP LOCATION.
 - EXISTING HORNS ARE TO BE PRESENT-TO-REMAIN AND ARE TO BE TIED INTO NEW FACP.
 - ALL NEW WIRING FOR ALL DEVICES TO BE TIED INTO NEW FACP SHALL BE PROVIDED AND INSTALLED.
 - SEE ARCHITECTURAL DRAWINGS A-5 AND A-6 FOR INFORMATION TO STAIR DOORWAYS.
 - CIRCUITING FOR NEW EMERGENCY/EXIT FIXTURES SHALL BE FROM EXISTING LIGHTING CIRCUIT, BUT A HEAD OF ANY SWITCHING.
- DEMOLITION KEYED NOTES:**
 - REMOVE EXISTING BUZZERS, PATCH AND PAINT TO MATCH EXISTING. TYPICAL ALL TENANT UNITS.
 - REMOVE BUZZER AT COMMON DOOR ENTRY. LEAVE CONDUIT OR WIRING PATH FROM COMMON DOOR ENTRY TO EACH UNIT. SEE PICTURE ON DRAWING E104.
 - REMOVE EXISTING PULL STATION AND REPLACE WITH NEW PULL STATION.
 - REMOVE EXISTING STROBES AT TOP OF EACH STAIR TOWER EXTERIOR.
 - REMOVE EXISTING BLUE BEACON FROM TOP OF THIS STAIR TOWER EXTERIOR. PROVIDE WATERPROOF COVER OVER HOLE LEFT BY REMOVAL.
 - REMOVE EXISTING ANNUNCIATOR, PROTECTIVE CAGE AND ALL APPURTENANCES FROM EXTERIOR BUILDING WALL.
- NEW WORK KEYED NOTES:**
 - NEW BATTERY POWERED SMOKE DETECTORS
 - NEW TENANT MONITOR TO BE LOCATED IN THE VICINITY BUT BELOW EXISTING BUZZER UNIT BEING DEMOLISHED. CONNECT TO ELECTRONIC AT BOTTOM OF COMMON ENTRY. UTILIZE EXISTING RACEWAY WHERE POSSIBLE. BETWEEN COMMON DOOR ENTRY ENTRANCE STATION AND TENANT VIDEO MONITOR. TYPICAL ALL TENANT UNITS.
 - PROVIDE NEW FIRE ALARM NOTIFICATION AND INITIATION DEVICES IN EXISTING DEVICE LOCATION. PROVIDE NEW DEVICE BACK BOXES.
 - COORDINATE ELECTRICAL WORK FOR NEW DOOR ENTRY. SEE DOORS SCHEDULE ON DRAWING A-6 FOR DOORS, AND HARDWARE SET INFORMATION. SEE SPECIFICATION 16701 AND 16702 FOR DOOR ACCESS/VIDEO MONITORING SYSTEM.
 - NEW TENANT ENTRANCE STATION TO BE LOCATED IN THE SAME LOCATION AS EXISTING BUZZER LOCATION. SOME MODIFICATION TO MASONRY WILL BE REQUIRED.
 - REPLACE EXISTING STROBE WITH NEW STROBE IN SAME LOCATION.
 - REPLACE EXISTING ANNUNCIATOR WITH NEW ANNUNCIATOR IN SAME LOCATION.
 - INSTALL NEW PROTECTIVE CAGE AROUND NEW ANNUNCIATOR, SIMILAR TO WHAT WAS REMOVED. CAGE SHALL BE POWDER COAT PAINTED. PATCH ANY HOLES LEFT FROM REMOVAL OF EXISTING HARDWARE.
 - INSTALL NEW BLUE BEACON DIRECTLY ABOVE NEW ANNUNCIATOR APPROXIMATELY 20' AFF. INTERCONNECTING WIRE CAN BE IN IMC, RUN EXPOSED ON BUILDING.
 - SEE SPECIFICATION SECTION 16702 - TENANT DOOR ENTRY KEYING SYSTEM - FOR DETAILS CONCERNING THE FOB (KEYLESS ENTRY DEVICES) AND ALL ITEMS RELATED TO THE DOOR ENTRY SYSTEM REQUIREMENTS. THIS SYSTEM SHALL BE COMPATIBLE WITH THE PRESENT HARDWARE THAT THE HACP PROVIDES



1 1ST FLOOR PLAN - DEMOLITION & NEW WORK
SCALE: 1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

OWNER HOUSING AUTHORITY OF THE CITY OF PITTSBURGH DEVELOP & MODERNIZATION DEPT. 100 ROSS STREET PITTSBURGH, PA 15219 Phone:(412) 456-5020	PROJECT TEAM RIOS WILLIAMS ARCHITECTS, P.C. 200 ROSEWOOD COURT VENETIA, PA 15367 PHONE: 724-255-7985 Contact: Lizette Rios-Williams lizette@rioswilliamsarchitects.com D&D ENGINEERING, INC. 35 WILSON STREET ETNA TECHNICAL CENTER, SUITE 102 PITTSBURGH, PA 15223 PHONE: 412-784-1560	<table><tr><td>10</td><td></td></tr><tr><td>9</td><td></td></tr><tr><td>8</td><td></td></tr><tr><td>7</td><td></td></tr><tr><td>6</td><td></td></tr><tr><td>5</td><td></td></tr><tr><td>4</td><td></td></tr><tr><td>3</td><td></td></tr><tr><td>2</td><td></td></tr><tr><td>1</td><td></td></tr><tr><td>NO.</td><td></td></tr><tr><td>BY</td><td>DATE</td></tr><tr><td>DESCRIPTION</td><td>REVISIONS</td></tr></table>	10		9		8		7		6		5		4		3		2		1		NO.		BY	DATE	DESCRIPTION	REVISIONS	 SEAL	NORTHVIEW HEIGHTS BUILDING #74 UPGRADES D & D ENGINEERING, INC. CONSULTING ELECTRICAL ENGINEERS DRAWING TITLE: FIRE DETECTION PLAN - DOOR ENTRY DEMOLITION & NEW WORK FIRST FLOOR	<table><tr><td>PROJECT NO. 17001.65</td><td rowspan="2">DRAWING NUMBER E101</td></tr><tr><td>DATE 11-13-2019</td></tr><tr><td>SCALE SEE PLAN</td><td rowspan="2">SHEET NUMBER 15 OF 18</td></tr><tr><td>DRAWN BY JGK</td></tr><tr><td>CHECKED BY VAD</td><td></td></tr></table>	PROJECT NO. 17001.65	DRAWING NUMBER E101	DATE 11-13-2019	SCALE SEE PLAN	SHEET NUMBER 15 OF 18	DRAWN BY JGK	CHECKED BY VAD	
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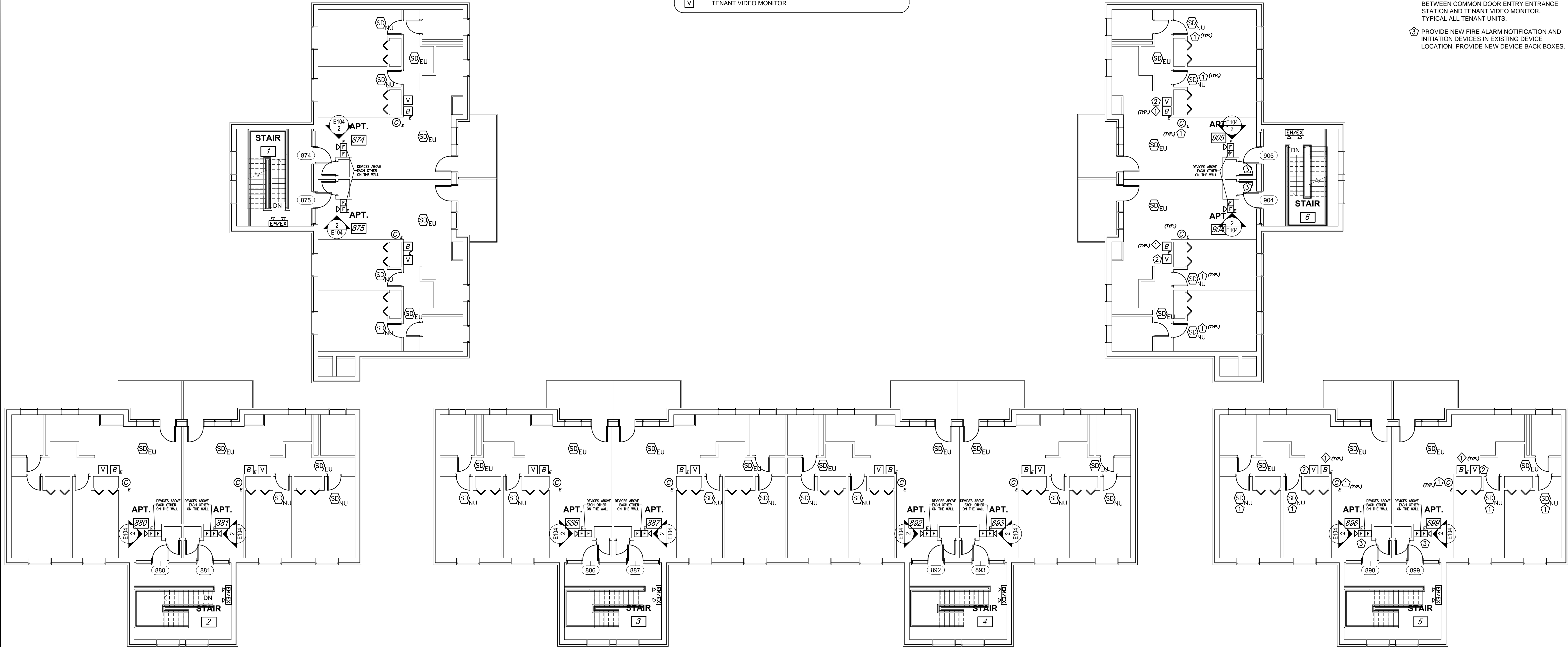
FIRE ALARM DEVICE LEGEND

- EXISTING UNIT SMOKE DETECTOR-PRESENT-TO-REMAIN
- NEW UNIT SMOKE DETECTOR
- EXISTING CARBON MONOXIDE DETECTOR-PRESENT-TO-REMAIN
- EXISTING BUZZ, HARD-WIRED TO EXISTING BOTTOM AT COMMON DOOR ENTRY STAIRWELL.
- EXISTING PULL STATION
- EXISTING WALL MOUNTED HORN UNIT - TO REMAIN

DOOR ACCESS SYSTEM

- TENANT ENTRANCE STATION
- TENANT VIDEO MONITOR

- GENERAL NOTES:**
 - EXISTING PULL STATIONS ARE TO BE REMOVED AND REPLACED WITH NEW PULL STATIONS. NEW PULL STATIONS ARE TO BE TIED IN TO NEW FACP. SEE DRAWING E100 FOR FACP LOCATION.
 - EXISTING HORNS ARE TO BE PRESENT-TO-REMAIN AND ARE TO BE TIED INTO NEW FACP.
 - ALL NEW WIRING FOR ALL DEVICES TO BE TIED INTO NEW FACP SHALL BE PROVIDED AND INSTALLED.
 - SEE ARCHITECTURAL DRAWINGS A-5 AND A-6 FOR INFORMATION TO STAIR DOORWAYS.
 - CIRCUITING FOR NEW EMERGENCY/EXIT FIXTURES SHALL BE FROM EXISTING LIGHTING CIRCUIT, BUT A HEAD OF ANY SWITCHING.
- DEMOLITION KEYED NOTES:**
 - REMOVE EXISTING BUZZERS, PATCH AND PAINT TO MATCH EXISTING. TYPICAL ALL TENANT UNITS.
 - REMOVE BUZZER AT COMMON DOOR ENTRY. LEAVE CONDUIT OR WIRING PATH FROM COMMON DOOR ENTRY TO EACH UNIT. SEE PICTURE ON DRAWING E104.
 - REMOVE EXISTING PULL STATION AND REPLACE WITH NEW PULL STATION.
- NEW WORK KEYED NOTES:**
 - NEW BATTERY POWERED SMOKE DETECTORS
 - NEW TENANT MONITOR TO BE LOCATED IN THE VICINITY BUT BELOW EXISTING BUZZER UNIT BEING DEMOLISHED. CONNECT TO ELECTRONIC AT BOTTOM OF COMMON ENTRY. UTILIZE EXISTING RACEWAY WHERE POSSIBLE, BETWEEN COMMON DOOR ENTRY ENTRANCE STATION AND TENANT VIDEO MONITOR. TYPICAL ALL TENANT UNITS.
 - PROVIDE NEW FIRE ALARM NOTIFICATION AND INITIATION DEVICES IN EXISTING DEVICE LOCATION. PROVIDE NEW DEVICE BACK BOXES.



1 2ND FLOOR PLAN - DEMOLITION & NEW WORK
SCALE: 1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

OWNER HOUSING AUTHORITY OF THE CITY OF PITTSBURGH DEVELOP & MODERNIZATION DEPT. 100 ROSS STREET PITTSBURGH, PA 15219 Phone:(412) 456-5020	PROJECT TEAM RIOS WILLIAMS ARCHITECTS, P.C. 200 ROSEWOOD COURT VENETIA, PA 15367 PHONE: 724-255-7985 Contact: Lizette Rios-Williams lizette@rioswilliamsarchitects.com	PROJECT TEAM D&D ENGINEERING, INC. 35 WILSON STREET ETNA TECHNICAL CENTER, SUITE 102 PITTSBURGH, PA 15223 PHONE: 412-784-1560	<table><tr><td>10</td><td></td></tr><tr><td>9</td><td></td></tr><tr><td>8</td><td></td></tr><tr><td>7</td><td></td></tr><tr><td>6</td><td></td></tr><tr><td>5</td><td></td></tr><tr><td>4</td><td></td></tr><tr><td>3</td><td></td></tr><tr><td>2</td><td></td></tr><tr><td>1</td><td></td></tr><tr><td>NO.</td><td></td></tr><tr><td>BY</td><td>DATE</td></tr><tr><td>DESCRIPTION</td><td></td></tr><tr><td>REVISIONS</td><td></td></tr></table>	10		9		8		7		6		5		4		3		2		1		NO.		BY	DATE	DESCRIPTION		REVISIONS		 SEAL	NORTHVIEW HEIGHTS BUILDING #74 UPGRADES D & D ENGINEERING, INC. CONSULTING ELECTRICAL ENGINEERS DRAWING TITLE: FIRE DETECTION PLAN - DOOR ENTRY DEMOLITION & NEW WORK SECOND FLOOR	<table><tr><td>PROJECT NO. 17001.65</td><td rowspan="2">DRAWING NUMBER E102</td></tr><tr><td>DATE 11-13-2019</td></tr><tr><td>SCALE SEE PLAN</td><td rowspan="2">SHEET NUMBER 16 OF 18</td></tr><tr><td>DRAWN BY JGK</td></tr><tr><td>CHECKED BY VAD</td><td></td></tr></table>	PROJECT NO. 17001.65	DRAWING NUMBER E102	DATE 11-13-2019	SCALE SEE PLAN	SHEET NUMBER 16 OF 18	DRAWN BY JGK	CHECKED BY VAD	
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FIRE ALARM DEVICE LEGEND

- ADDRESSABLE SMOKE DETECTOR
- EXISTING UNIT SMOKE DETECTOR-PRESENT-TO-REMAIN
- NEW UNIT SMOKE DETECTOR
- EXISTING CARBON MONOXIDE DETECTOR-PRESENT-TO-REMAIN
- EXISTING BUZZ, HARD-WIRED TO EXISTING BOTTOM AT COMMON DOOR ENTRY STAIRWELL.
- EXISTING PULL STATION
- EXISTING WALL MOUNTED HORN UNIT - TO REMAIN

DOOR ACCESS SYSTEM

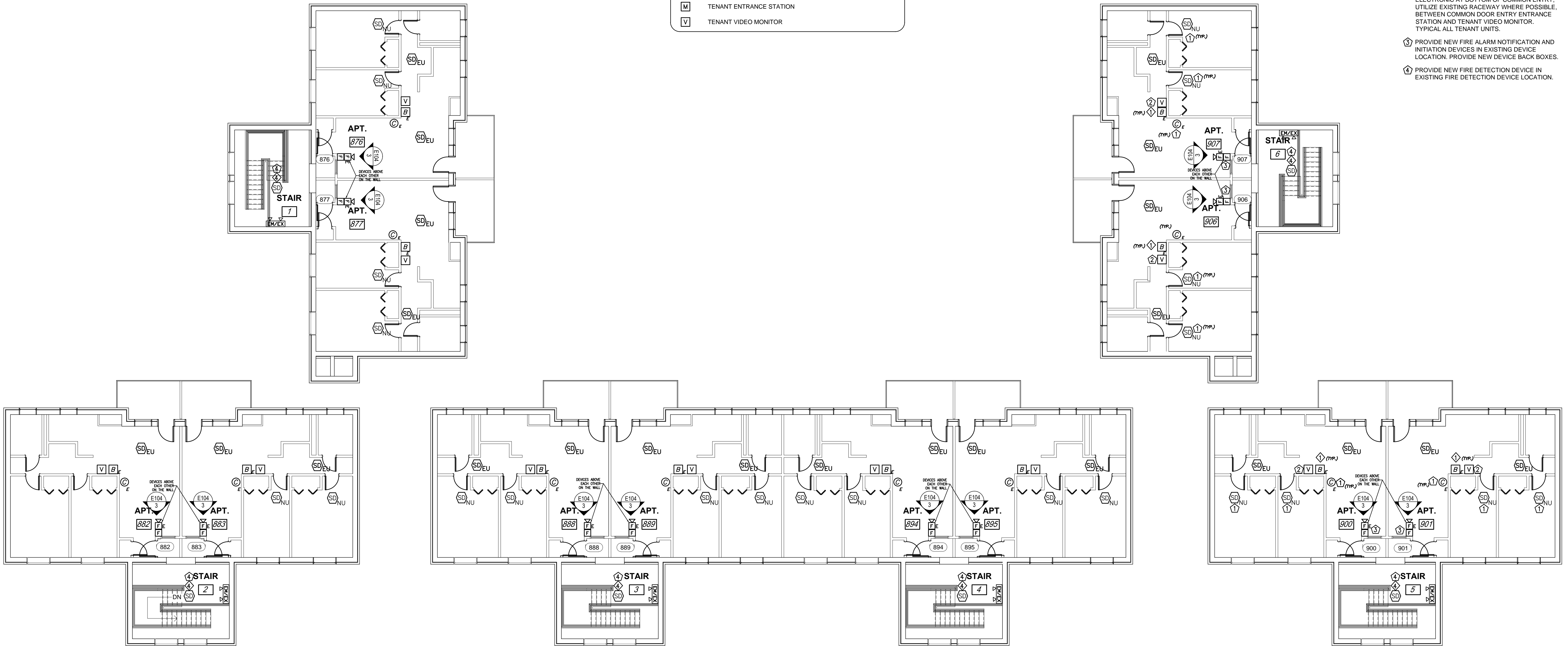
- TENANT ENTRANCE STATION
- TENANT VIDEO MONITOR

GENERAL NOTES:

- EXISTING PULL STATIONS ARE TO BE REMOVED AND REPLACED WITH NEW PULL STATIONS. NEW PULL STATIONS ARE TO BE TIED IN TO NEW FACP. SEE DRAWING E100 FOR FACP LOCATION.
- EXISTING HORNS ARE TO BE PRESENT-TO-REMAIN AND ARE TO BE TIED INTO NEW FACP.
- ALL NEW WIRING FOR ALL DEVICES TO BE TIED INTO NEW FACP SHALL BE PROVIDED AND INSTALLED.
- SEE ARCHITECTURAL DRAWINGS A-5 AND A-6 FOR INFORMATION TO STAIR DOORWAYS.
- CIRCUITING FOR NEW EMERGENCY/EXIT FIXTURES SHALL BE FROM EXISTING LIGHTING CIRCUIT, BUT A HEAD OF ANY SWITCHING.

DEMOLITION KEYED NOTES:

- REMOVE EXISTING BUZZERS. PATCH AND PAINT TO MATCH EXISTING. TYPICAL ALL TENANT UNITS.
 - REMOVE BUZZER AT COMMON DOOR ENTRY. LEAVE CONDUIT OR WIRING PATH FROM COMMON DOOR ENTRY TO EACH UNIT. SEE PICTURE ON DRAWING E104.
 - REMOVE EXISTING PULL STATION AND REPLACE WITH NEW PULL STATION.
 - REMOVE EXISTING FIRE DETECTION DEVICE IN THIS LOCATION.
- #### NEW WORK KEYED NOTES:
- NEW BATTERY POWERED SMOKE DETECTORS
 - NEW TENANT MONITOR TO BE LOCATED IN THE VICINITY BUT BELOW EXISTING BUZZER UNIT BEING DEMOLISHED. CONNECT TO ELECTRONIC AT BOTTOM OF COMMON ENTRY. UTILIZE EXISTING RACEWAY WHERE POSSIBLE. BETWEEN COMMON DOOR ENTRY ENTRANCE STATION AND TENANT VIDEO MONITOR. TYPICAL ALL TENANT UNITS.
 - PROVIDE NEW FIRE ALARM NOTIFICATION AND INITIATION DEVICES IN EXISTING DEVICE LOCATION. PROVIDE NEW DEVICE BACK BOXES.
 - PROVIDE NEW FIRE DETECTION DEVICE IN EXISTING FIRE DETECTION DEVICE LOCATION.



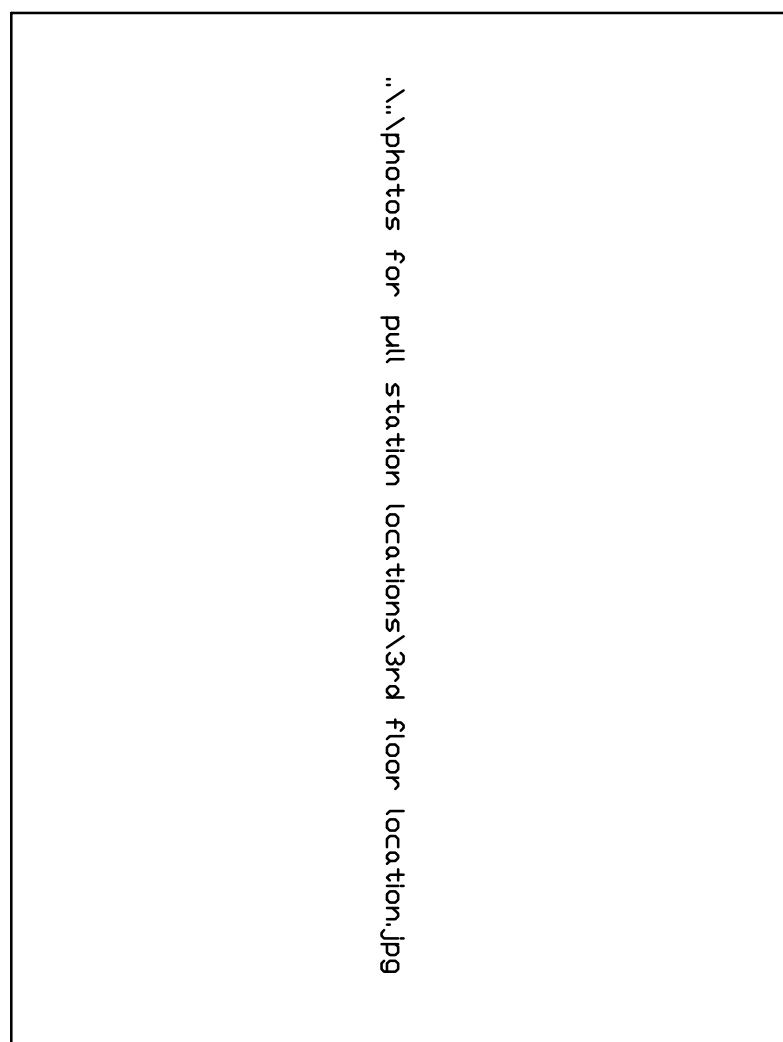
1 3RD FLOOR PLAN - DEMOLITION & NEW WORK
SCALE: 1/8" = 1'-0"

CONSTRUCTION DOCUMENTS

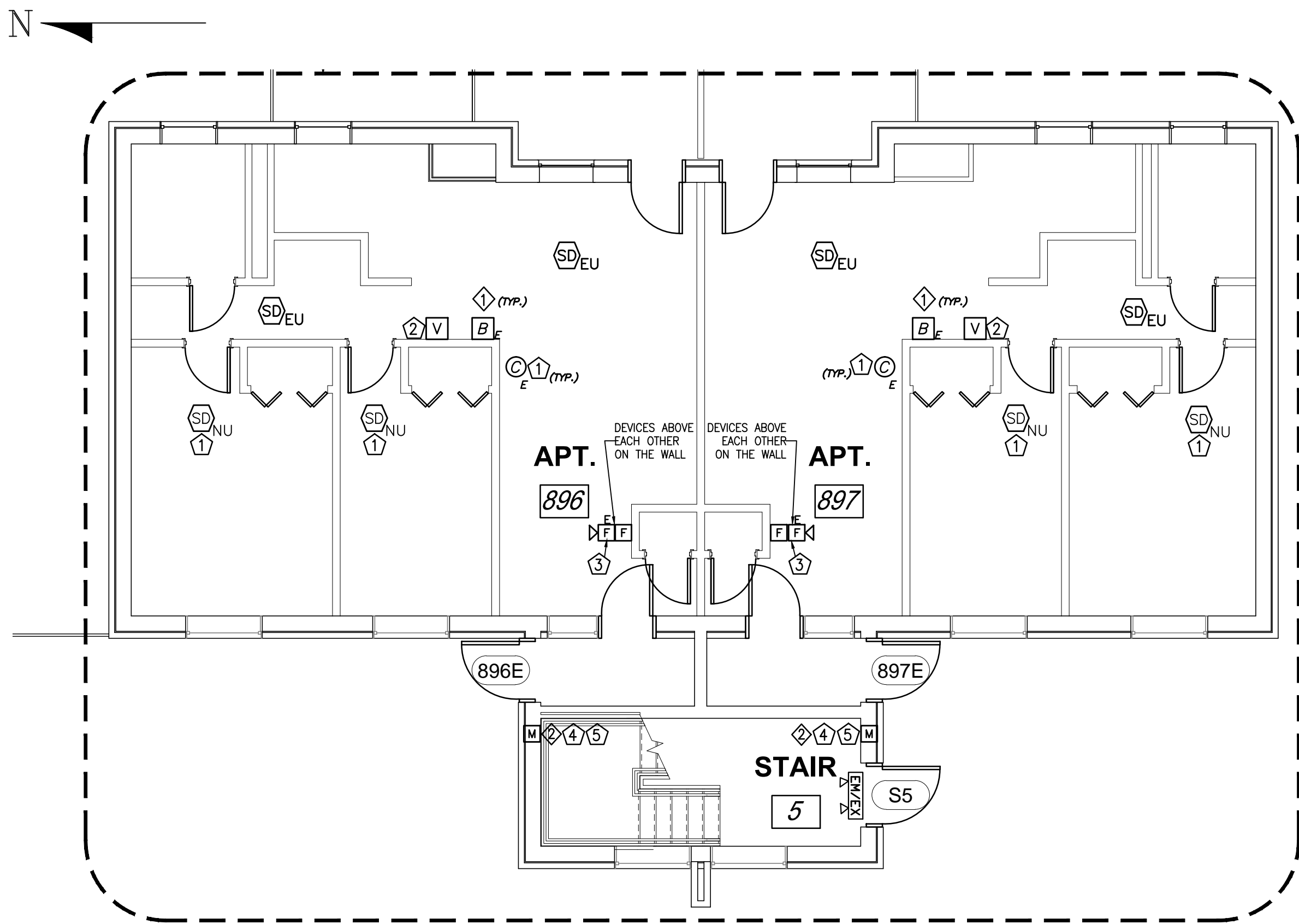
OWNER	PROJECT TEAM	REVISIONS	SEAL	NORTHVIEW HEIGHTS BUILDING #74 UPGRADES	PROJECT NO. 17001.65	DRAWING NUMBER E103
HOUSING AUTHORITY OF THE CITY OF PITTSBURGH DEVELOP & MODERNIZATION DEPT. 100 ROSS STREET PITTSBURGH, PA 15219 Phone:(412) 456-5020	RIOS WILLIAMS ARCHITECTS, P.C. 200 ROSEWOOD COURT VENETIA, PA 15367 PHONE: 724-255-7985 Contact: Lizette Rios-Williams lizette@rioswilliamsarchitects.com	D&D ENGINEERING, INC. 35 WILSON STREET ETNA TECHNICAL CENTER, SUITE 102 PITTSBURGH, PA 15223 PHONE: 412-784-1560		D & D ENGINEERING, INC. CONSULTING ELECTRICAL ENGINEERS	DATE 11-13-2019	SHEET NUMBER 17 OF 18
DRAWING TITLE: FIRE DETECTION PLAN - NEW WORK THIRD FLOOR				SCALE SEE PLAN	DRAWN BY JCK	
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1ST & 2ND FLOOR LOCATION - EXISTING DEVICES
PICTURE #2



3RD FLOOR LOCATION - EXISTING DEVICES
PICTURE #3



1 ENLARGED UNIT FLOOR PLAN - NEW WORK
SCALE: 3/16" = 1'-0"

FIRE ALARM DEVICE LEGEND

SD-EU EXISTING UNIT SMOKE DETECTOR-PRESENT-TO-REMAIN

SD-NU NEW UNIT SMOKE DETECTOR

C-E EXISTING CARBON MONOXIDE DETECTOR-PRESENT-TO-REMAIN

B-E EXISTING BUZZ, HARD-WIRED TO EXISTING BOTTOM AT COMMON DOOR ENTRY STAIRWELL.

F-E EXISTING PULL STATION

F-E WALL MOUNTED HORN UNIT

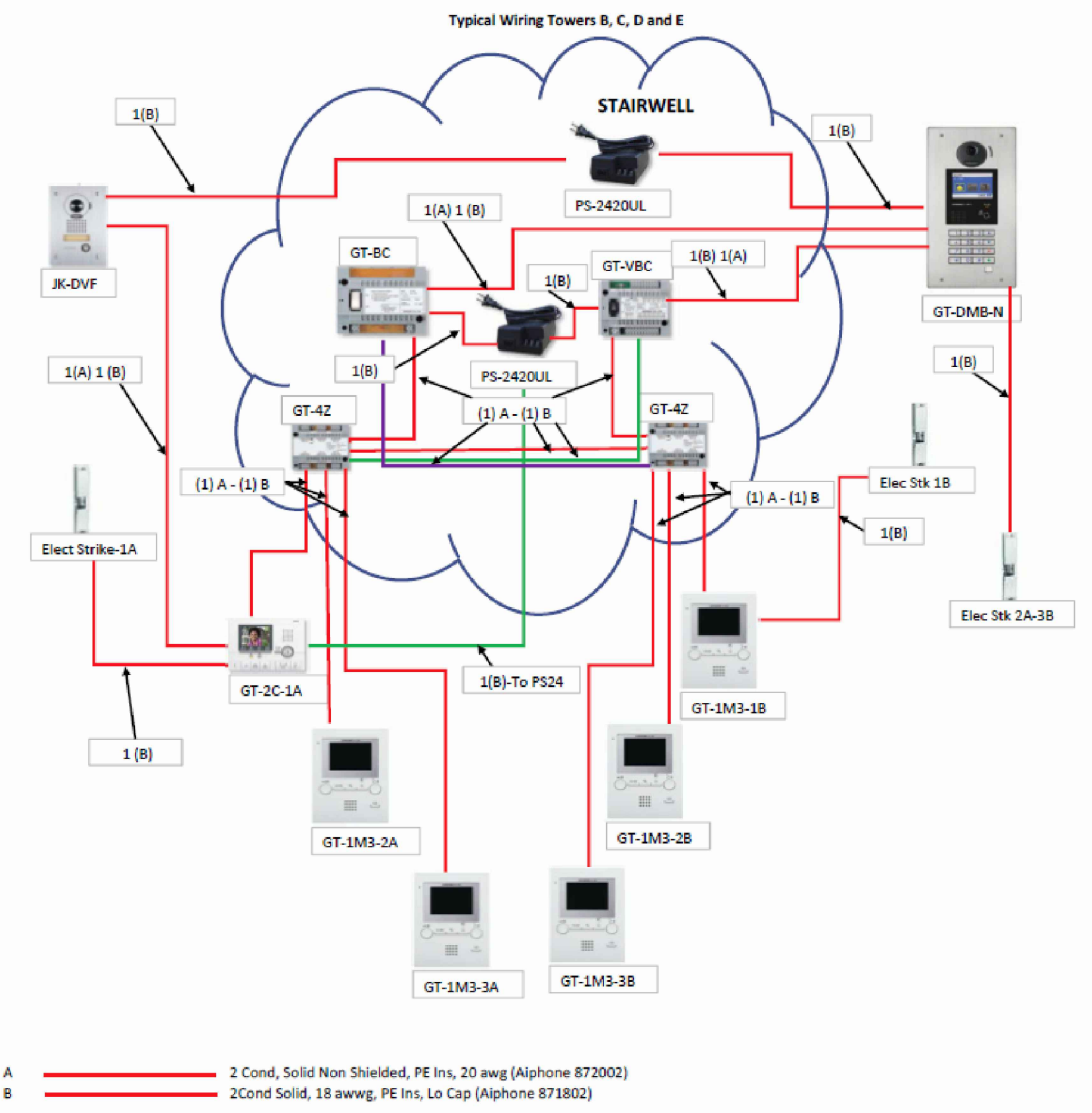
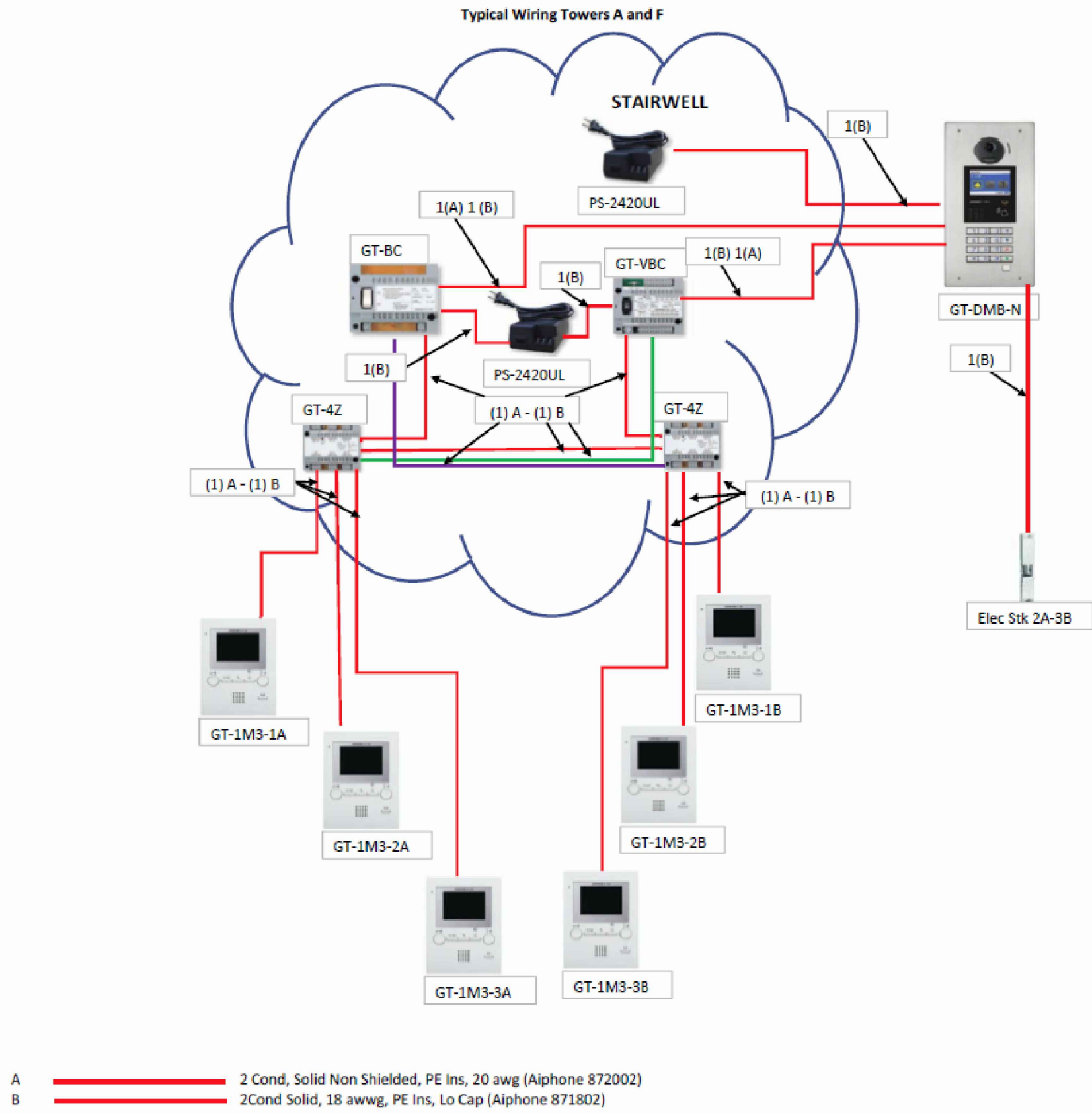
DOOR ACCESS SYSTEM

M TENANT ENTRANCE STATION

V TENANT VIDEO MONITOR

- GENERAL NOTES:**
- EXISTING PULL STATIONS ARE TO BE REMOVED AND REPLACED WITH NEW PULL STATIONS. NEW PULL STATIONS ARE TO BE TIED IN TO NEW FACP. SEE DRAWING E100 FOR FACP LOCATION.
 - EXISTING HORNS ARE TO BE PRESENT-TO-REMAIN AND ARE TO BE TIED INTO NEW FACP.
 - ALL NEW WIRING FOR ALL DEVICES TO BE TIED INTO NEW FACP SHALL BE PROVIDED AND INSTALLED.
 - SEE ARCHITECTURAL DRAWINGS A-5 AND A-6 FOR INFORMATION TO STAIR DOORWAYS.
 - CIRCUITING FOR NEW EMERGENCY/EXIT FIXTURES SHALL BE FROM EXISTING LIGHTING CIRCUIT, BUT A HEAD OF ANY SWITCHING.

- DEMOLITION KEYED NOTES:**
- REMOVE EXISTING BUZZERS, PATCH AND PAINT TO MATCH EXISTING. TYPICAL ALL TENANT UNITS.
 - REMOVE BUZZER AT COMMON DOOR ENTRY. LEAVE CONDUIT OR WIRING PATH FROM COMMON DOOR ENTRY TO EACH UNIT. SEE PICTURE ON DRAWING E104.
 - REMOVE EXISTING PULL STATION AND REPLACE WITH NEW PULL STATION.
- NEW WORK KEYED NOTES:**
- NEW BATTERY POWERED SMOKE DETECTORS
 - NEW TENANT MONITOR TO BE LOCATED IN THE VICINITY BUT BELOW EXISTING BUZZER UNIT BEING DEMOLISHED. CONNECT TO ELECTRONIC AT BOTTOM OF COMMON ENTRY. UTILIZE EXISTING RACEWAY WHERE POSSIBLE. BETWEEN COMMON DOOR ENTRY ENTRANCE STATION AND TENANT VIDEO MONITOR. TYPICAL ALL TENANT UNITS.
 - PROVIDE NEW FIRE ALARM NOTIFICATION AND INITIATION DEVICES IN EXISTING DEVICE LOCATION. PROVIDE NEW DEVICE BACK BOXES.

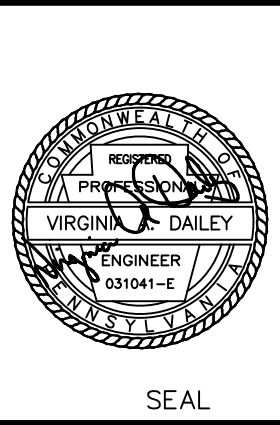


2 TYPICAL INTERCONNECTION WIRING, DIAGRAM-DOOR ENTRY/TENANT MONITOR
(FOR REFERENCE ONLY)

CONSTRUCTION DOCUMENTS

OWNER	PROJECT TEAM	
HOUSING AUTHORITY OF THE CITY OF PITTSBURGH DEVELOP & MODERNIZATION DEPT. 100 ROSS STREET PITTSBURGH, PA 15219 Phone:(412) 456-5020	RIOS WILLIAMS ARCHITECTS, P.C. 200 ROSEWOOD COURT VENETIA, PA 15367 PHONE: 724-255-7985 Contact: Lizette Rios-Williams lizette@rioswilliamsarchitects.com	D&D ENGINEERING, INC. 35 WILSON STREET ETNA TECHNICAL CENTER, SUITE 102 PITTSBURGH, PA 15223 PHONE: 412-784-1560

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REVISIONS			



NORTHVIEW HEIGHTS BUILDING #74 UPGRADES

D & D ENGINEERING, INC. CONSULTING ELECTRICAL ENGINEERS

DRAWING TITLE: FIRE DETECTION PLAN - NEW WORK
ENLARGED PLAN

PROJECT NO. 17001.65
DATE 11-13-2019
SCALE SEE PLAN
DRAWN BY JGK
CHECKED BY VAD

DRAWING NUMBER

E104

SHEET NUMBER
18 OF 18