Richmond Redevelopment and Housing Authority
Division of Procurement Services
901 Chamberlayne Parkway
Richmond, Virginia 23220
www.rrha.com

RRHA Invitation for Bid – RRHA-IFB-2019-24
FIRE DAMAGE REPAIRS @ 2305 – 2315 AMBROSE STREET
(Whitcomb Court)
Issue Date: June 14, 2019
Pre-Bid Conference: June 25, 2019; 10:00 AM
Closing Date and Time: July 16, 2019; 2:00 PM

This communication serves to apprise you and your firm of the above mentioned Invitation for Bids (IFB) for Fire Damage Repairs @ 2305-2315 Ambrose Street (Whitcomb Ct). We invite you and your firm to respond to this IFB. Please review carefully all sections, paying particular attention to the closing date and time listed above and within the body of the documents. RRHA does not discriminate against faith-based organizations (Code of Virginia, § 2.2-4343. 1D)

All Inquiries For Information Should Be Directed To:
Kerry L. James, VCA
Director of Procurement and Contract Administration
901 Chamberlayne Parkway
Richmond, VA 23220
(804) 780-4444 (voice mail)
Email: kerry.james@rrha.com
RICHMOND REDEVELOPMENT AND HOUSING AUTHORITY
901 Chamberlayne Parkway
RICHMOND, VIRGINIA 23220
#RRHA-IFB-2019-24

Issue Date: June 14, 2019

Title: Fire Damage Repairs @ 2305-2315 Ambrose Street (Whitcomb Ct)

Issuing Agency: Richmond Redevelopment and Housing Authority
              Post Office Box 26887
              Richmond, Virginia 23220

Location Where Work Will Be Performed: 2305 – 2315 Ambrose Street, Richmond, VA
Period of Contract: From Contract Award till project completion.

Sealed Bids Will Be Received Until July 16, 2019 – 2:00PM. For Furnishing The Goods/Services Described Herein, And
Then Opened In Public.

All Inquiries For Information Should Be Directed To: Kerry L. James, Director of Procurement and Contract
Administration at Kerry.James@rrha.com, Telephone Number: (804) 780-4444
All questions should be submitted by writing or email 5 days prior to closing.

IF BIDS ARE MAILED, SEND DIRECTLY TO ISSUING AGENCY SHOWN ABOVE. IF BIDS ARE HAND DELIVERED,
DELIVER TO: Richmond Redevelopment and Housing Authority, Division of Procurement and Contract
Administration, 901 Chamberlayne Parkway, Richmond, Virginia 23220.

In Compliance With This Invitation For Bid And To All The Conditions Imposed Therein And Hereby Incorporated
By Reference, The Undersigned Offers And Agrees To Furnish The Services At The Prices Indicated In This
Response. The Undersigned Further Certifies That He/She is Authorized To Sign This Document On Behalf Of The
Submitting Firm.

Licensed Class _____ Virginia Contractor No. ___________________ Specialty ______________________

Name and Address of Firm:
__________________________________________________________
__________________________________________________________
__________________________________________________________
__________________________________________________________

Date: ____________________________

By: ____________________________ (Signature In Ink)

Name: ____________________________ (Please Print)

Title: ____________________________

FEI/FIN NO: ____________________________

Phone: (_____) ____________________________

E-mail: ____________________________

Fax: (_____) ____________________________

D&B Number: ____________________________

NOTE: Changes to this IFB may be issued in the form of an addendum at any time prior to the due date and time
for submitting bids. The Procurement Director maintains a mailing list of all vendors that were provided copies of
this solicitation. The Procurement Director will send the addendum to any vendor who directly received a copy of
the IFB from the Procurement Director. Any vendor who did not directly receive a copy of the IFB from RRHA is
encouraged to visit RRHA's web site regularly to learn of any changes to the solicitation (www.rrha.com) and to
contact the Procurement Director to have their name added to the mailing list. RRHA's purchasing regulations
require each Bidder to submit a signed copy of the addendum to the above delivery address either prior to the bid
due date and time or to be included with the firm's response to the solicitation.
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I. **PURPOSE**: The intent and purpose of this Invitation for Bid is to solicit bids from responsive and responsible bidders for the Fire Damage Repairs @ 2305-2315 Ambrose Street (Whitcomb Ct) for Richmond Redevelopment and Housing Authority (RRHA).

II. **SCOPE OF WORK**: The Contractor shall provide all labor, materials, insurance, bonds, transportation, etc. including, but not limited to the following.

A. **GENERAL REQUIREMENTS**:

1. Contractor’s Personnel:
   a) The Contractor will screen and employ only qualified personnel who shall be skilled in the performance of their duties and acceptable to RRHA. The Contractor agrees to immediately remove any employee RRHA determines to be unacceptable.
   b) The Contractor agrees to follow all reasonable security precautions and procedures requested by RRHA.
   c) The Contractor shall be responsible for the conduct and performance of the Contractor’s employees and compliance with the following rules:
      1) Contractor’s employees appearing to be under the influence of alcohol or drugs shall not be permitted in the buildings or on the properties.
      2) No loud or boisterous conduct will be permitted.
      3) RRHA reserves the right to request removal of any of the Contractor’s employees from the building or property at any time for reasonable cause. The Contractor or the designated supervisory representative shall have such employee leave the facility premises upon receipt of such request.

2. Applicable Regulations and Guidelines:
   a) The Contractor shall be knowledgeable of applicable federal, state and local regulations, codes and guidelines.
   b) The Contractor shall be solely responsible for obtaining and complying with the applicable regulations and specifications with regard to their performance of the work and employee and public safety.

B. **SPECIFIC REQUIREMENTS**: The Contractor shall be responsible for the Fire Damage Repairs @ 2305-2315 Ambrose Street (Whitcomb Ct) (Attachment A – Specifications and Project Manual (Drawings)).

III. **PRE-BID CONFERENCE AND SITE VISIT**: A pre-bid conference will be held, **June 25, 2019 – 10:00 AM – Calhoun Center, 436 Calhoun Street, Richmond, VA 23220**.

A. **Purpose**: The purpose of this conference is to allow potential bidders an opportunity to present questions and obtain clarification relative to any facet of this solicitation. While attendance at the conference is not a prerequisite to submitting a bid, contractors who intend to submit a bid
are encouraged to attend. Bring a copy of the solicitation with you. Any changes resulting from
this conference will be issued in a written addendum to the solicitation.

IV. TERMS AND CONDITIONS:

A. APPLICABLE LAWS AND COURTS: This solicitation and any resulting contract shall be
governed in all respects by the laws of the Commonwealth of Virginia, City of Richmond and
any litigation with respect thereto shall be brought in the courts of the Commonwealth. This
contract is made, entered into, and shall be performed in the jurisdiction of the City of
Richmond, Commonwealth of Virginia. The Contractor shall comply with all applicable federal,
state and local laws, rules and regulations. The Contractor shall procure any permits and
licenses required for its business or the services to be provided by it hereunder.

B. ANTI-DISCRIMINATION: By submitting their bids, bidders certify to that they will conform to the
provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair
Employment Contracting Act of 1975, as amended, where applicable, the Virginians With
Disabilities Act, the Americans With Disabilities Act and §2.2-4311 of the Virginia Public
Procurement Act (VPPA). If the award is made to a faith-based organization, the organization
shall not discriminate against any recipient of goods, services, or disbursements made
pursuant to the contract on the basis of the recipient’s religion, religious belief, refusal to
participate in a religious practice, or on the basis of race, age, color, gender or national origin
and shall be subject to the same rules as other organizations that contract with public bodies
to account for the use of the funds provided; however, if the faith-based organization
segregates public funds into separate accounts, only the accounts and programs funded with
public funds shall be subject to audit by the public body. (Code of Virginia § 2.2-4343.1E).

1. In every contract over $10,000 the provisions of (1) and (2) below apply:

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

      (1) The contractor will not discriminate against any employee or applicant for
          employment because of race, religion, color, sex, national origin, age, disability, or
          any other basis prohibited by state law relating to discrimination in employment,
          except where there is a bona fide occupational qualification reasonably necessary
          to the normal operation of the contractor. The contractor agrees to post in
          conspicuous places, available to employees and applicants for employment, notices
          setting forth the provisions of this nondiscrimination clause.

      (2) The contractor, in all solicitations or advertisements for employees placed by or on
          behalf of the contractor, will state that such contractor is an equal opportunity
          employer.

      (3) Notices, advertisements and solicitations placed in accordance with federal law, rule
          or regulation shall be deemed sufficient for the purpose of meeting these
          requirements. The contractor will include the provisions of #1 above in every
          subcontract or purchase order over $10,000, so that the provisions will be binding
          upon each subcontractor or vendor.
C. **ETHICS IN PUBLIC CONTRACTING:** By submitting their bids, bidders certify that their bids are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other bidder, supplier, manufacturer or subcontractor in connection with their bid, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged.

D. **IMMIGRATION REFORM AND CONTROL ACT OF 1986:** By submitting their bids, bidders certify that they do not and will not during the performance of this contract employ illegal alien workers or otherwise violate the provisions of the federal Immigration Reform and Control Act of 1986.

E. **DEBARMENT STATUS:** By submitting their bids, bidders certify that they are not currently debarred by RRHA, The Commonwealth of Virginia or the Federal Government from submitting offers or proposals on contracts of the type of goods and/or services covered by this solicitation, nor are they an agent of any person or entity that is currently so debarred.

F. **ANTITRUST:** By entering into a contract, the contractor conveys, sells, assigns, and transfer to all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by under said contract.

G. **CLARIFICATION OF TERMS:** If any prospective bidder has questions about the specifications other solicitation documents, the prospective bidder should contact the Contract Officer whose name appears on the face of the solicitation no later than five working days before the due date. Any revisions to the solicitation will be made only by addendum issued by the buyer.

H. **PAYMENT:**

1. **To Prime Contractor:**
   a) Invoices for items ordered, delivered and accepted shall be submitted by the contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the state contract number and/or purchase order number; social security number (for individual contractors) of the federal employer identification number (for proprietorships, partnerships, and corporations).

   b) Any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after invoice or delivery, whichever occurs last. This shall not affect offers of discounts for payment in less than 30 days, however.

   c) All goods or services provided under this contract or purchase orders, that are to be paid for with public funds, shall be billed by the contractor at the contract price.

   d) The following shall be deemed to be the date of payment: the date of postmark in all cases where payment is made by mail, or the date of offset when offset proceedings have been instituted as authorized under the Virginia Debt Collection Act.
e) Unreasonable Charges. Under certain emergency procurements and for most time and material purchases, final job costs cannot be accurately determined at the time orders are placed. In such cases, contractors should be put on notice that final payment in full is contingent on a determination of reasonableness with respect to all invoiced charges. Charges that appear to be unreasonable will be researched and challenged, and that portion of the invoice held in abeyance until a settlement can be reached. Upon determining that invoiced charges are not reasonable, RRHA shall promptly notify the contractor, in writing, as to those charges which it considers unreasonable and the basis for the determination. A contractor may not institute legal action unless a settlement cannot be reached within thirty (30) days of notification. The provisions of this section do not relieve RRHA of its prompt payment obligations with respect to those charges which are not in dispute (Code of Virginia § 2.2-4363).

2. To Subcontractors:

a) A contractor awarded a contract under this solicitation is hereby obligated:

(1) To pay the subcontractor(s) within seven (7) days of the contractor’s receipt of payment for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or

(2) To notify RRHA and the subcontractor(s), in writing, of the contractor’s intention to withhold payment and the reason.

b) The contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed by the contractor that remain unpaid seven (7) days following receipt of payment from , except for amounts withheld as stated in (2) above. The date of mailing of any payment by U.S. Mail is deemed to be payment to the addressee. These provisions apply to each sub-tier contractor performing under the primary contract. A contractor’s obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of RRHA.

I. PRECEDENCE OF TERMS: The following General Terms and Conditions, APPLICABLE LAWS AND COURTS, ANTI-DISCRIMINATION, ETHICS IN PUBLIC CONTRACTING, IMMIGRATION REFORM AND CONTROL ACT OF 1986, DEBARMENT STATUS, ANTITRUST, CLARIFICATION OF TERMS, PAYMENT, HUD FORMS shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any special Terms and Conditions in this solicitation, the state and federal procurement guidelines outlined in the Code of Virginia, Virginia Public Procurement Act and the HUD handbook 7460.8 Rev 2 shall apply.

J. QUALIFICATIONS OF BIDDERS: RRHA may make such reasonable investigations as deemed proper and necessary to determine the ability of the bidder to perform the services/furnish the goods and the bidder shall furnish to RRHA all such information and data for this purpose as may be requested. RRHA reserves the right to inspect bidder’s physical facilities prior to award to satisfy questions regarding the bidder’s capabilities. Further reserves the right to reject any bid if the evidence submitted by, or investigations of, such bidder fails to
satisfy that such bidder is properly qualified to carry out the obligations of the contract and to provide the services and/or furnish the goods contemplated therein.

K. TESTING AND INSPECTION: RRHA reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.

L. ASSIGNMENT OF CONTRACT: A contract shall not be assignable by the contractor in whole or in part without the written consent of RRHA. None of the required work shall be subcontracted by the contractor without the prior, written consent of RRHA which may be withheld by in its sole discretion. The contractor shall be as fully responsible to RRHA for acts and omissions of the contractor's subcontractor(s) and of persons either directly or indirectly employed by its subcontractors, as the contractor is for the acts and omissions of persons directly employed by the contractor. The contractor shall include in each subcontract the contractor enters into for the provision of services under this contract, all provisions required to be included in such subcontracts established elsewhere within this contract.

M. CHANGES TO THE CONTRACT: Changes can be made to the contract in any of the following ways:

1. The parties may agree in writing to modify the scope of the contract. An increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.

2. RRHA may order changes within the general scope of the contract at any time by written notice to the contractor. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The contractor shall comply with the notice upon receipt. The contractor shall be compensated for any additional costs incurred as the result of such order and shall give RRHA a credit for any savings. Said compensation shall be determined by one of the following methods:

a) By mutual agreement between the parties in writing.

b) By agreeing upon a unit price or using a unit price set forth in the contract, if the work to be done can be expressed in units, and the contractor accounts for the number of units or work performed, subject to RRHA's right to audit the contractor's records and/or to determine the correct number of units independently.

c) By ordering the contractor to proceed with the work and keep records of all costs incurred and savings realized. A markup for overhead and profit may be allowed if provided by the contract. The same markup shall be used for determining a decrease in price as the result of savings realized. The contractor shall present RRHA with all vouchers and records of expenses incurred and savings realized. RRHA shall have the right to audit the records of the contractor as it deems necessary to determine costs or savings. Any claim, for an adjustment in price under this provision must be asserted by written notice to RRHA within thirty (30) days from the date of receipt of the written notice. If the parties fail to agree on the amount of adjustment, the question of an increase or decrease in the contract price or time for performance shall be resolved in accordance with the procedures for resolving disputes
provided by the Disputes Clause of this contract or, if there is none, in accordance with state and federal guidelines.

N. **DEFAULT:** In case of failure to deliver goods and services in accordance with the contract terms and conditions, after due oral or written notice, may procure them from other sources and hold the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies which RRHA, state and federal laws may have in place.

O. **INSURANCE:** By signing and submitting a bid under this solicitation, the Bidder certifies that if awarded the contract, it will have the following insurance coverage at the time the contract is awarded. The Bidder further certifies that the contractor and any subcontractors will maintain this insurance coverage during the entire term of the contract and that all insurance coverage will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission. The contractor’s insurance company will supply a Certificate of Insurance to RRHA listing the below required limits and the Certificate of Insurance shall name and endorse RRHA as an additional insured.

**MINIMUM INSURANCE COVERAGE AND LIMITS REQUIRED FOR MOST CONTRACTS:**

1. Workers’ Compensation – The Contractor shall also obtain and maintain worker’s compensation insurance as required by statutory requirements and benefits, and in such policy limits as mandated, by the State and shall require any subcontractor engaged by the Contractor to satisfy such requirement as well. Coverage is compulsory for employers of three or more employees, to include the employer. Contractors who fail to notify RRHA of increases in the number of employees that change their workers’ compensation requirements under the Code of Virginia during the course of the contract shall be in noncompliance with the contract.

2. Automobile Liability (minimum) – $1,000,000 combined single limit.

3. Commercial General Liability (minimum) - $1,000,000 per occurrence, $2,000,000 aggregate, including $50,000 for fire damage. Commercial General Liability is to include bodily injury and property damage, personal injury and advertising injury, products and completed operations coverage. Must be named as an additional insured and so endorsed on the policy.

4. The Contractor shall indemnify, hold harmless and defend RRHA, its officers, agents, servants, and employees from and against any claims, demands, losses, liabilities, damages, causes of actions and costs and expenses of whatsoever kind or nature arising from or related to:

   a) The provision of services by or the failure to provide any services or the use of any services or materials furnished (or made available) by the Contractor or its agents, servants or employees;
b) Any conduct or misconduct of the Contractor or its agents, servants or employees not included in subparagraph (1) hereof and for which, its agents, servants or employees are alleged to be liable;

c) The negligence or other actionable fault of any subcontractors engaged by the Contractor;

d) Claims, suits, actions or proceedings of whatsoever nature that are brought by the Contractor's employees, candidates for employment and statutory employees, as determined under the State workers' compensation laws.

P. ANNOUNCEMENT OF AWARD: Upon the award or the announcement of the decision to award a contract over $50,000, as a result of this solicitation, RRHA will publicly post such notice on website (www.rhra.com) for a minimum of 10 days. The notice is also posted in the Division of Procurement Services.

Q. DRUG-FREE WORKPLACE: During the performance of this contract, the contractor agrees to (1) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, of/or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition; (iii) state in all solicitations or advertisements for employees place by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order over $10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

R. SMOKE-FREE WORKPLACE: RRHA “smoke-free” policy bans the use of prohibited tobacco products in all public housing living units, indoor common areas in public housing, and in PHA administrative office buildings. The smoke-free policy also extend to all outdoor areas up to 25 feet from the public housing and administrative office buildings. Contractors and all personnel are prohibited from the use of any prohibited tobacco products on RRHA property.

S. NONDISCRIMINATION OF CONTRACTORS: A Bidder, or contractor shall not be discriminated against in the solicitation or award of this contract because of race, religion, color, sex, national origin, age, disability, faith-based organizational status, any other basis prohibited by state law relating to discrimination in employment or because the Bidder or contractor employs ex-offenders unless has made a written determination that employing ex-offenders on the specific contract is not in its best interest. If the award of this contract is made to a faith-based organization and an individual, who applies for or receives goods, service, or disbursements provided pursuant to this contract objects to the religious character of the faith-based organization from which the individual receives or would receive the goods, services, or disbursements, shall offer the individual, within a reasonable period of time after the date of
his/her objection, access to equivalent goods, services, or disbursements from an alternative provider.

T. PERSONNEL:

1. The Contractor represents that it will secure, at its own expense, all personnel necessary to perform the required services hereunder. Such personnel shall not be employees of RRHA nor shall they have any contractual relationship with RRHA. All commitments made by the Contractor in the Bid with respect to (i) the Contractor's qualifications and its satisfaction of mandatory requirements in the IFB and (ii) the number and qualifications of its personnel to be assigned to this Contract, shall be incorporated herein by this reference.

2. All the required services will be performed by the Contractor or under its supervision, and all personnel employed by the Contractor shall be fully qualified and shall be authorized or permitted under State and local law to perform such services. The Contractor shall not reassign any personnel specifically designated in the Bid to perform services under this Contract without RRHA's prior approval. The Contractor certifies that it will comply with RRHA's request for the reassignment of any employee of Contractor performing the Required Services hereunder when RRHA determines, in its reasonable opinion that such employee is not suited to work on this Contract.

U. NO WAIVER: No failure or delay by a party to insist on the strict performance of any term of this Contract, or to exercise any right or remedy consequent on a breach thereof, shall constitute a waiver of any breach or any subsequent breach of such term. Neither this Contract nor any of its terms may be changed or modified, waived, or terminated (unless as otherwise provided hereunder) except by an instrument in writing signed by the party against whom the enforcement of the change, waiver or termination is sought. No waiver of any breach shall affect or alter this contract, but each and every terms of this Contract shall continue in full force and effect with respect to any other than existing or subsequent breach thereof. The remedies provided in this Contract are cumulative and not exclusive of the remedies provided by law or in equity.

V. MINORITY AND SECTION 3 BUSINESS PARTICIPATION: The Contractor shall use its best efforts to comply with the commitment it has made in the Bid relative to the participation of businesses primarily (at least 51%) owned by minorities, women or public housing residents or small businesses (collectively, "Disadvantaged Business Enterprises") in the performance of this Contract. By executing this Contract, the Contractor accepts the right of RRHA to appoint an employee to monitor the Contractor's compliance with the commitments and requirements of this Paragraph. The Contractor agrees to promptly submit reports to RRHA, on request, detailing the level of participation in this contract. RRHA shall have the right to review all relevant documents of the Contractor relating to the participation of Minority and Section 3 Businesses in this Contract on an ongoing basis.
V. SPECIAL TERMS AND CONDITIONS:

A. NOTICES:

1. Any notice, instruction, request or demand required to be given or made to the Contractor hereunder shall be deemed to be duly and properly given or made if delivered or mailed, postage pre-paid, the contractor.

2. Any notice, request, information, or documents required to be given or delivered hereunder by the Contractor or any of its representatives, unless stated otherwise elsewhere in this Contract, shall be signed or approved in writing by the Contractor, and shall be sufficiently given or delivered if mailed, certified or registered with postage prepaid to

Richmond Redevelopment and Housing Authority
Procurement and Contract Administration
901 Chamberlayne Parkway
Richmond, Virginia 23220
ATTN: Corliss Spurlock

Or to such representative or address as may be designate in writing to Procurement and Contract Administration.

B. ASBESTOS: Whenever and wherever during the course of performing any work under this contract, the Contractor discovers the presence of asbestos or suspects that asbestos is present, he shall stop the work immediately, secure the area, notify the Building Owner and await positive identification of the suspect material. During the downtime in such a case, the Contractor shall not disturb any surrounding surfaces but shall protect the area with suitable dust covers. In the event the Contractor is delayed due to the discovery of asbestos or suspected asbestos, then a mutually agreed extension of time to perform the work shall be allowed the Contractor but without additional compensation due to the time extension.

C. AUDIT: The Contractor hereby agrees to retain all books, records, and other documents relative to this contract for five (5) years after final payment, or until audited by the Commonwealth of Virginia, whichever is sooner. RRHA, its authorized agents, and/or State auditors shall have full access to and the right to examine any of said materials during said period.

D. AVAILABILITY OF FUNDS: It is understood and agreed between the parties herein that RRHA shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.

E. AWARD OF CONTRACT: RRHA Commonwealth will make the award(s) on Unit cost/Total Sum basis to the lowest responsive and responsible bidder. The purchasing office reserves the right to conduct any test it may deem advisable and to make all evaluations. The Richmond Redevelopment and Housing Authority also reserves the right to reject any or all bids, in whole or in part, to waive informalities and to delete items prior to making the award, whenever it is deemed in the sole opinion of the procuring public body to be in its best interest.
F. **BID ACCEPTANCE PERIOD:** Any bid in response to this solicitation shall be valid for 60 days. At the end of the 60 days the bid may be withdrawn at the written request of the Bidder. If the bid is not withdrawn at that time it remains in effect until an award is made or the solicitation is canceled.

G. **BID PRICES:** Bids shall be in the form of a firm fixed price.

H. **BID SUBMITTALS:** Bidders shall attach the following documents to their bid documents. (Please sign or initial to indicate your review and acceptance)

1. Completed and signed Bid Form
2. Bid Bond
3. Payment Bond
4. Performance Bond
5. Bidder’s Business License
6. Subcontractors’ Business License
7. Contractor’s Current Certificate of Insurance
8. Subcontractors’ Current Certificate of Insurance
9. Completed HUD 5370 – General Terms and Conditions for Construction Contracts
10. HUD 5369 – Instructions to Bidders for Contracts
11. Completed and notarized Statement of Bidder’s Qualifications
12. Completed and notarized Non-Collusive Affidavit
13. Completed Certificate of Non-Segregated Facilities
14. Completed Section 3 and Minority Business Certificate of Compliance
15. Initiated General Decision Number: VA190139 – Residential
16. Signed Addenda (if any)
I. CONFLICT OF INTEREST: The Contractor warrants that he has fully complied with the State and Local Government Conflict of Interests Act (Section 2.1-639.1 et seq. of the Code of Virginia), The Virginia Governmental Frauds Act (Section 18.2-498.1 et seq.), Articles 2 and 3 of Chapter 10 (Crimes Against the Administration of Justice) of Title 18.2, and Article 4 (Ethics in Public Contracting) of the Public Procurement Act (Section 11-72 et seq.).

J. CONSTRUCTION SCHEDULE: The Contractor shall submit a construction schedule with the bid to reflect the completion time of the project. The completion time may be a factor in making the contract award.

K. CONTRACTOR'S TITLE TO MATERIALS: No materials or supplies for the work shall be purchased by the contractor or by any subcontractor subject to any chattel mortgage or under a conditional sales or other agreement by which an interest is retained by the seller. The contractor warrants that he has clear title to all materials and supplies for which he invoices for payment.

L. CONTRACTOR/SUBCONTRACTOR LICENSE REQUIREMENT: By my signature on this solicitation, I certify that this firm/individual and subcontractor is properly licensed for providing the goods/services specified.

Contractor Name: ________________

Subcontractor Name: ________________

License # ________________ Type ________________

M. CONTRACTOR REGISTRATION: If a contract for construction, removal, Rehabilitation or improvement of a building or other real property is for one hundred and twenty thousand dollars ($120,000) or more, or if the total value of all such contracts undertaken by bidder within any 12-month period is seven hundred and fifty thousand dollars ($750,000) or more, the bidder is required under Title 54.1-1100, Code of Virginia (1950), as amended, to be licensed by the State Board of Contractors a "CLASS A CONTRACTOR." If such a contract is for seventy-five hundred dollars ($7,500) or more but less than one hundred and twenty thousand dollars ($120,000), or if the total value of all such contracts undertaken by bidder within any 12-month period is between one hundred and fifty thousand dollars ($150,000) and seven hundred and fifty thousand dollars ($750,000) or more, the bidder is required to be licensed as a "CLASS B CONTRACTOR." If such a contract is for one-thousand dollars ($1,000) or more but less than seventy-five hundred dollars ($7,500), or if the contractor does less than $150,000 in business in a 12-month period, the bidder is required to be licensed as a "CLASS C CONTRACTOR." The board shall require a master tradesmen license as a condition of licensure for electrical, plumbing and heating, ventilation and air conditioning contractors. The bidder shall place on the outside of the envelope containing the bid and shall place in the bid over his signature whichever of the following notations is appropriate, inserting his contractor license number:

Licensed Class A Virginia Contractor No. ________________ Specialty ________________
Licensed Class B Virginia Contractor No. ________________ Specialty ________________
Licensed Class C Virginia Contractor No. ________________ Specialty ________________
If the bidder shall fail to provide this information on his bid/proposal or on the envelope containing the bid/proposal and shall fail to promptly provide said contractor license number to the Commonwealth in writing when requested to do so before or after the opening of bids/proposals, he shall be deemed to be in violation of § 54.1-1115 of the Code of Virginia (1950), as amended, and his bid/proposal will not be considered.

If a bidder shall fail to obtain the required license prior to submission of his bid/proposal, the bid shall not be considered.

N. DETERMINATION OF RESPONSIBILITY: Each bidder shall be prepared if so requested by RRHA, to present further evidence of his experience, qualification and financial ability to carry out the terms of the contract. Prior to award of the contract, an evaluation will be made to determine if the low bidder has the capability, in all respects, to perform fully the contract requirements and the moral and business integrity and reliability which will assure good faith performance. Factors to be evaluated include but are not limited to:

1. Sufficient financial ability to perform the contract as evidenced by the bidder’s ability to obtain payment and performance bonds from an acceptable surety;

2. Appropriate experience to perform the work described in the bid documents;

3. Any judgments entered against the bidder, or any officers, directors, partners or RRHA for breach of a contract for construction;

4. Any substantial noncompliance with the terms and conditions of prior construction contracts with a public body without good cause where the substantial noncompliance is documented; or RRHA reserves the right to disqualify or refuse to accept the bid.

O. IDENTIFICATION OF BID ENVELOPE: If a special envelope is not furnished, or if return in the special envelope is not possible, the signed bid should be returned in a separate envelope or package and identified as follows:

From: ____________________________________________

Name of Bidder

July 16, 2019 2:00PM

Due Date Time

__________________________

Street or Box Number

RRHA-IFB-2019-24

IFB No.

__________________________

City, State, Zip Code

Fire Damage Repairs @ 2305-15 Ambrose St

IFB Title

An envelope should be addressed as directed on Page 1 of solicitation.

Bids may be hand delivered to the designated location in the office issuing the solicitation. No other correspondence or other bids should be placed in the envelope.
P. INDEMNIFICATION: Contractor agrees to indemnify, defend and hold harmless the Commonwealth of Virginia, its officers, agents, and employees from any claims, damages and actions of any kind or nature, whether at law or in equity, arising from or caused by the use of any materials, goods, or equipment of any kind or nature furnished by the Contractor/any services of any kind or nature furnished by the Contractor, provided that such liability is not attributable to the sole negligence of the using agency or to failure of the using agency to use the materials, goods, or equipment in the manner already and permanently described by the Contractor on the materials, goods, or equipment delivered.

Q. MINORITY/WOMEN OWNED BUSINESS SUBCONTRACTING AND REPORTING: Where it is practicable for any portion of the awarded contract to be subcontracted to other suppliers, the Contractor is encouraged to offer such business to minority and/or women-owned businesses. Names of firms may be available from the buyer and/or from the Division of Purchases and Supply. When such business has been subcontracted to these firms and upon completion of the contract, the contractor agrees to furnish the purchasing office the following information: name of firm, phone number, total dollar amount subcontracted, and type of product/service provided.

R. SUBMISSION OF SMALL BUSINESS SUBCONTRACTING PLAN, EVIDENCE OF COMPLIANCE WITH SMALL BUSINESS SUBCONTRACTING PLAN, AND SUBCONTRACTOR REPORTING:

A. Submission of Small Business Subcontracting Plan: It is the Agency goal of the Commonwealth that 30% of its purchases be made from small businesses certified by DSBSD. This includes discretionary spending in prime contracts and subcontracts. All bidders/offerors are required to submit a Small Business Subcontracting Plan. The contractor is encouraged to offer such subcontracting opportunities to DSBSD-certified small businesses. This shall include DSBSD-certified women-owned and minority-owned businesses and businesses with DSBSD service disabled veteran-owned status when they have also received DSBSD small business certification. Where it is not practicable for any portion of the goods/services to be subcontracted to other suppliers, the bidder/offeror shall note such on the Small Business Subcontracting Plan. No bidder/offeror or subcontractor shall be considered a small business unless certified as such by the Department of Small Business and Supplier Diversity (DSBSD) by the due date for receipt of bids or proposals.

B. Evidence of Compliance with Small Business Subcontracting Plan: Each prime contractor who wins an award in which provision of a small business subcontracting plan is a condition of the award, shall deliver to the contracting agency or institution timely reports substantiating compliance in accordance with the small business subcontracting plan. If a variance exists, the contractor shall provide a written explanation. A subcontractor shall be considered a Small Business for purposes of a contract if and only if the subcontractor holds a certification as such by the DSBSD. Payment(s) may be withheld until the purchasing agency confirms that the contractor has certified compliance with the contractor’s submitted Small Business Subcontracting Plan or is in receipt of a written explanation of the variance. The agency or institution reserves the right to pursue other appropriate remedies for non-compliance to include, but not be limited to, termination for default.

C. Prime Contractor Subcontractor Reporting:
   1. Each prime contractor who wins an award greater than $100,000, shall deliver to the contracting agency or institution on a Quarterly basis, information on use of subcontractors that are DSBSD-certified businesses or Employment Services Organizations (ESOs). The contractor agrees to furnish the purchasing office at a minimum the following information: name of firm, phone number, total dollar
amount subcontracted, category type (Businesses that are DSBSD-certified small, women-owned, minority-owned, businesses with DSBSD Service Disabled Veteran-owned status, or Employment Services Organization) and type of product/service provided, at the frequency required.  

2. In addition each prime contractor who wins an award greater than $200,000 shall deliver to the contracting agency or institution on a Quarterly basis, information on use of subcontractors that are not DSBSD-certified businesses or Employment Services Organizations. The contractor agrees to furnish the purchasing office at a minimum the following information: name of firm, phone number, total dollar amount subcontracted and type of product/service provided, at the frequency required. 

S. PRIME CONTRACTOR RESPONSIBILITIES: The Contractor shall be responsible for completely supervising and directing the work under this contract and all subcontractors that he may utilize, using his best skill and attention. Subcontractors who perform work under this contract shall be responsible to the prime contractor. The contractor agrees that he is as fully responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees. 

T. WORK ESTIMATES (TIME AND MATERIAL CONTRACTS): Under this time and material contract, the contractor shall furnish the agency with a binding written estimate of the total costs to complete the work required. The estimate must include the labor category(ies), the contractor’s hourly rates specified in the contract, and the total material cost. If the agency determines that the estimated price is not fair and reasonable, the agency has the right to ask the contractor to reevaluate the estimate. If the revised estimate is determined to be not fair and reasonable, the agency reserves the right to obtain additional quotes from other vendors. A purchase order will be issued to the contractor, as the authority to proceed with the work, which will incorporate the contractor’s estimate and the terms and conditions of the contract. The contractor and his/her personnel shall log in with the designated contract administrator each day before and after work to confirm labor hours. 

U. SAFETY STANDARDS: All personnel shall, at all times, wear approved clothing, hard hats, safety vest, and any other equipment required to meet OSHA standards. They will obey all safety rules and regulations and will not create hazardous conditions within the operation. The Contractor must meet motor carrier safety regulations (Federal and State), as applicable. It is the Contractor’s responsibility to ensure the OSHA regulations are met in all applicable areas for all exposures encountered during the term of the contract.  

V. SUBCONTRACTS: No portion of the work shall be subcontracted without prior written consent of RRHA. In the event that the contractor desires to subcontract some part of the work specified herein, the contractor shall furnish RRHA the names, qualifications and experience of their proposed subcontractors. The contractor shall, however, remain fully liable and responsible for the work to be done by its subcontractor(s) and shall assure compliance with all requirements of the contract. 

V. BID BOND: A bid bond will be required for this project. Each bid shall be accompanied by a bid bond from a Surety company satisfactory to RRHA or a Certified or Cashier’s Check, made payable to: Richmond Redevelopment and Housing Authority in an amount equal to five (5) percent of the total bid price. Attorneys-in-fact who sign Bid Bonds must file with each bond a certified and effective dated copy of their power of attorney. Each Bid Bond and the accompanying
power of attorney should bear the same date. In case of the failure of the bidder to execute the contract within the prescribed time, RRHA may, at its option consider the bidder in default, in which case the bid bond accompanying the bid shall become the property of RRHA.

An acceptable Surety (bonding) company is one that is authorized to do business in the State where the project is located and acceptable to HUD and RRHA. The Surety must be listed on the most recently published U.S. Treasury Circular 570 (often referred to as the T-List). Individual Sureties are not permitted. The T-List may also be accessed on the Internet at: http://www.fms.treas.gov/c570/index.html.

W. PERFORMANCE AND PAYMENT BONDS: The successful bidder shall deliver to the purchasing office executed Commonwealth of Virginia Standard Performance and Labor and Material Payment Bonds, each in the sum of the contract amount, with RRHA as obligee. The surety shall be a surety company or companies approved by the State Corporation Commission to transact business in the Commonwealth of Virginia. No payment shall be due and payable to the contractor, even if the contract has been performed in whole or in part, until the bonds have been delivered to and approved by the purchasing office.

VI. METHOD OF PAYMENT: The Contractor shall submit invoices to Accounts Payable upon work order completion by the 10th day of the month following the month in which the required Goods and Services were rendered. RRHA may take a 2% discount from an invoice if payment can be made within ten (10) days from receipt of a valid invoice. Otherwise, RRHA shall pay such invoices net thirty (30) days following receipt. All invoices shall clearly describe the work performed. RRHA shall not be subject to payment of late fees or finance charges to the Contractor for its failure to timely pay invoices submitted by the Contractor hereunder. Invoices shall be sent to the following address:

Richmond Redevelopment and Housing Authority
Accounts Payable
P.O. Box 26229
Richmond, Virginia 23261

VII. PRICING SCHEDULE: The Contractor, having been familiarized with local conditions affecting the cost of the work, and with the Specifications, including Invitation For Bids, Instructions to Bidders, this Pricing Schedule, the form of Non-Collusive Affidavit, the form of Statement of Bidder’s Qualifications, the General Conditions, the Special Conditions, and Addenda, if any thereto, hereby proposes to furnish all labor, materials, equipment and service required to fully complete the work as required by the above all in accordance therewith and at the prices stated on Attachment G Bid Form.
VIII. **ATTACHMENTS:**

A. Specifications and Project Manual (Drawings)
B. Bid Form
C. Pre-bid Question Form
D. Statement of Bidder’s Qualifications
E. Non-Collusive Affidavit
F. Certificate of Non-Segregated Facilities
G. Section 3 Certificate of Compliance
H. HUD 5370 – General Terms and Conditions For Construction Contracts
I. HUD 5369 – Instructions to Bidders for Contracts
J. General Decision Number VA190139 – Residential
ATTACHMENT A

Specifications and Project Manual (Drawings)
SPECIFICATIONS AND PROJECT MANUAL

Fire Damage Repairs at

2305-2315 Ambrose Street (Whitcomb Court)

Project Owner
Richmond Redevelopment & Housing Authority
901 Chamberlayne Parkway
Richmond, VA 23220

KEi Architects
101 West Broad Street
Suite 101B
Richmond, VA 23220
804.788.0338
www.keiarchitects.com
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To: Richmond Redevelopment and Housing Authority

In compliance with and subject to your Invitation for Bids and the documents therein specified, all of which are incorporated herein by reference, the undersigned bidder proposes to furnish all labor, equipment, and materials and perform all work necessary for construction of this project, in accordance with the Plans and Specifications dated October 31, 2018, and the Addenda noted below, as prepared by Kelso & Easter, Richmond, Virginia for the consideration of the following amount:

**BASE BID:**

**PART A. Insurance related** (T1.01, A0.01, A1.01B, A2.01B, A2.02B, A3.02B, S1.01, M-1, M-2, E-1, E-2, E-3, E-4, P-1, P-2, P-3 and P-4)

PART A= ____________________________________________ Dollars $___________

**PART B. Agency Improvements:** (T1.01, A1.01, A2.01, A2.02, A2.03, A3.01, A4.01, M-1A, M-2A, P-1A, P-2A, P-3A, P-4A)

PART B= ____________________________________________ Dollars $___________

Lump sum price for construction of the building complete, and in accordance with the Plans and Specifications:

**TOTAL Part A & B= ____________________________________________ Dollars $___________**

The bidder has relied upon the following public historical climatological records:
National Weather Service of the National Oceanic and Atmospheric Administration in Wakefield, VA as reporting for Richmond, VA.

The undersigned understands that time is of the essence and agrees that the time for Substantial Completion of the entire project shall be 120 consecutive calendar days from the date of commencement of the Work as specified in the Notice to Proceed, and Final Completion shall be achieved within 30 consecutive calendar days after the date of Substantial Completion as determined by the A/E.

Acknowledgment is made of receipt of the following Addenda:
If notice of acceptance of this bid is given to the undersigned within 30 days after the date of opening of bids, or any time thereafter before this bid is withdrawn, the undersigned will execute and deliver a contract in the prescribed form within 10 days after the contract has been presented to him for signature. The required payment and performance bonds, on the forms prescribed, shall be delivered to the Owner along with the signed Contract.

Immigration Reform and Control Act of 1986: The undersigned certifies that it does not and will not during the performance of the Contract for this project violate the provisions of the Federal Immigration Reform and Control Act of 1986, which prohibits employment of illegal aliens.

DISQUALIFICATION OF CONTRACTORS: By signing this bid or proposal, the undersigned certifies that this Bidder or any officer, director, partner or owner is not currently barred from bidding on contracts by any Agency of the Commonwealth of Virginia, or any public body or agency of another state, or any agency of the federal government, nor is this Bidder a subsidiary or affiliate of any firm/corporation that is currently barred from bidding on contracts by any of the same. We have attached an explanation of any previous disbarment(s) and copies of notice(s) of reinstatement(s).

Either the undersigned or one of the following individuals, if any, is authorized to modify this bid prior to the deadline for receipt of bids by writing the modification and signing his name on the face of the bid, on the envelope in which it is enclosed, on a separate document, or on a document which is telefaxed to the Owner or by sending the Owner a telegraphic message:

______________________________________________________________________
______________________________________________________________________
______________________________________________________________________

I certify that the firm name given below is the true and complete name of the bidder and that the bidder is legally qualified and licensed by the Commonwealth of Virginia, Department of Commerce, State Board for Contractors, to perform all Work included in the scope of the Contract.

Virginia License No. ______________ Bidder ______________________________
Contractor Class ________________ (Name of Firm)
Specialty ________________ By ______________________________

(Name of Firm) (Signature)
Valid until ______________________  ____________________________________

(Typed Name)

FEIN/SSN: _______________________ Title ________________________________

If Partnership (List Partners’ Names)  If Corporation, affix Corporate Seal &
list State of Incorporation

________________________________________ State: _____________________________

________________________________________ (Affix Seal)

_______________________________________

_______________________________________

Business Address:

_______________________________________

_______________________________________

_______________________________________

_______________________________________

Telephone # ________________________

FAX # ______________________________

END OF SECTION
Prebid Question Form
Richmond Redevelopment and Housing Authority
2305-2315 Ambrose Street – Whitcomb Court
Richmond, Virginia
IFB #
(Use separate form for each question)

Date: __________________________

The following question concerns Drawing sheet number (_______________________________).

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

The following question concerns Drawing sheet number (_______________________________).

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

All responses to questions will be made by Addendum.

Question Submitted by: ___________________________ ___________________________
Name Organization

__________________________________________
Phone Number Fax Number
email Form to:
Procurement
Director, Maintenance Operations
Richmond Redevelopment & Housing Authority

End of Prebid Question Form
PART 1 GENERAL

1.01 GENERAL

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 GENERAL REQUIREMENTS

A. When information is required by the General Contractor, the request shall be submitted on the attached “Request For Information Response Form”. All data requested on the form must be supplied as described herein, prior to the Architect preparing a response.

PART 2 MATERIALS

2.01 PROVIDING THE FORM

A. The Architect shall provide an electronic version of the attached form to the General Contractor via Email.

PART 3 EXECUTION

3.01 SUBMISSION OF REQUEST FOR INFORMATION

A. All request for information shall be on the attached form.

B. All forms shall be submitted to the Architect electronically, via email.

C. All responses by the Architect to the request for information shall be submitted by the Architect to the General Contractor via email.

3.02 INFORMATION TO BE PROVIDED

A. The General Contractor shall provide the following

1. Date Prepared: This shall indicate the actual date that the form is submitted to the Architect.

2. Response Required: This shall indicate the date where a response is required in order to negate an extension of the Project Schedule.

3. Information Requested: Contractor shall state the issue or concern, including the following:

   a. The Problem

   b. Contractor’s Interpretation of the solution to the problem as described in the Contract Documents
      1) Impediment to the solution required by the Contract Documents
      2) The specific information needed to resolve the problem

4. Specification Referenced: Where applicable, list the specification section(s) that addresses the issue.

5. Drawing Referenced: Where applicable, list the drawing(s) that addresses the issue.
6. **Submittal Referenced**: Where applicable, list the submittal(s) that addresses the issue.

7. **Other**: List any other documentation, code or ordinance that is pertinent to the issue.

8. **Contractor Recommendation**: The Contractor shall state the recommended approach to resolving the issue.

9. **Cost Impact**: Contractor shall state if there is a cost impact to the recommended solution and the approximate cost of that impact, including the cost of project delays.

10. **Schedule Impact**: Contractor shall state if there is a schedule impact to the recommended solution and the approximate number of additional days that will be required to complete the Work if the recommended solution is implemented.

11. **Subcontractor Impact**: Contractor shall state if there is an additional subcontractor assistance required.

12. **Prepared By**: The person submitting the Form shall indicate their name.

13. **Title**: The person submitting the Form shall indicate their project title.

### 3.03 SIGNATURES:

A. Signed copies of the RFI will be provided at the Construction Meeting immediately following the receipt of a resolution as provided electronically by the Architect.

B. Any party may select to use electronic signatures for their own signature. No party may require the use of electronic signatures of any other party.

### 3.04 TIMELY RESPONSE

A. The Architect shall endeavor to respond to all RFI as quickly as possible.

B. Responses should be received within 14 calendar days, or two weeks.

### 3.05 CHANGE ORDER REQUEST

A. When an inquiry requires or results in a Change in the scope of the Work is requested by the Owner, or required by the General Contractor in accordance with CO-7 of the General Conditions, the General Contractor shall submit to the Architect CO-11 that includes a detailed description of all material and labor required to complete the work performed, unit cost for all material and labor, including a breakdown of material and labor supplied by subcontractor forces.

END OF SECTION
# REQUEST FOR INFORMATION RESPONSE FORM

**PROJECT NAME:**

K&E Project No.:  

<table>
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<tr>
<th>Date Prepared:</th>
<th>Date Response Prepared:</th>
<th>RFI No.</th>
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<tr>
<th>Date Response Required:</th>
<th>Date Response Received:</th>
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**Information Requested:**

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<th>Specification Referenced:</th>
<th>Submittal Referenced:</th>
<th>Other:</th>
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**Contractors Recommendation:**

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<tr>
<th>Cost Impact:</th>
<th>Schedule Impact:</th>
<th>Subcontractor Impact:</th>
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Prepared by:  
Signature:  
Title:  

**Architects Recommendation:**

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<th>Prepared by:</th>
<th>Signature:</th>
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</table>

Title:  

This RFI Response Form is intended to clarify issues raised during construction by the General Contractor or subcontractors in the performance of the work as described on the drawings and specification prepared by Kelso & Easter, Inc. and sub consultants. This RFI firm is not an authorization to proceed with work involving additional cost or extended time. Should the project scope, cost or time be affected by this document, General Contractor shall prepare a change order request for approval by the Owner and Architect prior to commencing with any work.
PART 1  GENERAL

1.01  RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02  PROJECT LOCATIONS

A. The project site is located at:
   2305-2315 Ambrose Street
   Richmond, Virginia

1.03  PROJECT DESCRIPTION

A. The “Project” of this Contract shall comprise the rehabilitation of apartments damaged by fire. Work include cleaning, painting, replacement of doors, windows, hardware, vct, cove base, drywall, toilet accessories, roof replacement, electrical re-wiring new sanitary, vent and domestic water piping and other items as indicated on the drawings and/or described in the Project Manual.

1.04  CONTRACTOR USE OF PREMISES

A. General

   1. Limit use of the premises to construction activities in areas indicated.

   2. Confine operations to areas within Contract limits indicated. Portions of the site beyond areas in which construction operations indicated are not to be disturbed.

   3. Keep site entrances serving the premises clear 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 materials and equipment on site.

1.05  IMPAIRMENT NOTIFICATION PROCEDURES

A. Contractor shall coordinate disconnection, shut off, or removal of security, fire protection, fire alarm, fire suppression, power, telephone, and water with Owner utilizing the attached "Impairment Notification" form. The coordination of impairments to Owner's continued operations are particularly critical and impairments must be scheduled in advance such that Owner may make necessary provisions to maintain services to occupants and patients. Major impairments to Owner's continued operations shall also be indicated in the CPM schedule submitted by Contractor.

1.06  OWNER OCCUPANCY

A. Full Owner Occupancy
Prior to partial public access to the property, all electrical systems will be fully operational and paving areas shall be cured to 15 days. Required inspections and other tests shall have been successfully completed. Upon occupancy, the Owner will provide operation and maintenance of mechanical and electrical systems in occupied portions of the site.

1.07 MISCELLANEOUS PROVISIONS

A. Before Substantial Completion inspect, test and adjust performance of every system or facility of the Work to ensure that overall performance is in compliance with Contract Documents.

B. After Owner occupancy and use of the Project and no later than 180 days after the date of Substantial Completion, the General Contractor, along with the Architect and a representative of the Owner, shall return and again inspect, test and adjust the Work. Measure performance relative to terms of the Contract Documents.

C. The General Contractor shall submit a report of results to the Owner.

D. The General Contractor shall instruct the Owner’s operating personnel on operational requirements needed to maintain compliance concurrent with submittal of inspection report.

E. The General Contractor shall report performance of completed installations after adjustment that appear unable to comply with the requirements of the Contract Documents.

END OF SECTION 01 10 00
PART 1   GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 WORK UNDER THIS CONTRACT

A. The "Work" as described in the Drawings and Specifications shall include all labor, equipment, materials and services and the securing of and payment for all permits and fees required for the construction of this Project.

B. The "Project" of this Contract shall comprise the construction necessary to complete the rehabilitation of property, located 2305-2315 Ambrose St, in Richmond, Virginia. Work shall include, demolition, cleaning, replacement of roofing, identified trusses, drywall, windows, doors, hardware, vct, cove base, toilet accessories and other work as shown on the drawings and described in these specifications. All work shown on the drawings or described in this project manual, and not specifically requested to be included on the bid additive; alternate or separate bid packages shall be a part of the base bid.

1.03 DEFINITIONS

A. Where the word "provide" is used in the Drawings and within these Specifications, it shall mean; to furnish all intended material, equipment and install complete and ready for use.

1.04 LOCATION AND BOUNDARIES OF WORK

A. All improvements are located at the location as identified in the Invitation to Bid.

B. The Contractor shall confine his operations to the vicinity of the work sites as directed by the Architect.

1.05 TIME OF WORK

Unless otherwise especially permitted, scheduled, or shown in construction documents, the General contractor and his sub contractors will have full access to complete the Work of this contract. Contractor shall obey all local ordinances and shall obtain any waivers necessary from the Owner for working beyond the time limits specified.

1.06 LAYOUT OF WORK

A. All work under this Contract shall be constructed in accordance with the dimensions shown on the Contract Drawings or as directed by the Architect. The Contractor shall be responsible for all required layout work and shall utilize a qualified individual with appropriate equipment for the layout. Elevations and dimensions of existing structures and appurtenances are believed to be reasonably correct but are not guaranteed to be absolute and, therefore, are presented only as an approximation. Any error or apparent discrepancy in the data shown or omissions of data required for accurately accomplishing the layout work shall be referred immediately to the Architect for interpretation or correction.

B. The Architect may check all or any portion of the work, and the Contractor shall afford all
necessary assistance to the Architect in carrying out such checks. Any necessary corrections to the work shall be immediately made by the Contractor. Such checking by the Architect shall not relieve the Contractor of any responsibilities for the accuracy or completeness of his work.

1.07 CLEANING UP

A. As the work progresses, the Contractor shall remove from the site all debris and surplus materials and daily from the construction work areas, except those salvage items which shall be returned to Owner, so as to maintain the construction work areas in the neat and presentable condition. The Contractor shall restore all disturbed areas used for construction, storage of materials and access to job to its original condition prior to construction. All debris associated with the construction of this project shall become the property of the Contractor and shall be removed from Owner's property. The Contractor is responsible for disposing of the debris in an appropriate manner. The disposal of solid waste in open dumps is prohibited.

1.08 SANITARY ACCOMMODATIONS

The Contractor shall provide necessary housing for the workmen's use in changing clothes. Toilet accommodations, properly secluded from observation, shall be erected and maintained in conformity with prevailing ordinances and sanitary regulations. These structures, along with others for tools, machinery or supplies will be permitted only at approved places, and the surrounding area shall be maintained in a satisfactory manner. The ground shall be cleared of paper, cans, bottles, and all debris on a daily basis. A safe and adequate supply of drinking water shall be provided for the use of workmen at the site. For additional requirements, refer to Section 01 50 00.

1.09 PREVENTION OF NUISANCE FROM NOISE, ETC.

The contractor shall be responsible for curtailing noise, smoke, fumes or any other nuisances resulting from his operations within the limitations set by law and as directed by the Architect.

1.10 PROTECTION OF PROPERTY AND EXISTING UTILITIES AND STRUCTURES

A. Contractor shall be responsible for the preservation and protection of all site elements shown on the drawings to remain, and property adjacent to the work site against damage or injury as a result of his operations under this Contract. Contractor is also responsible for providing temporary protection as required to insure protection of the public access ways around the site. Any damage or injury occurring on account of any act, omission or neglect on the part of the Contractor shall be restored in a proper and satisfactory manner or replaced by and at the expense of the Contractor.

B. Contractor shall comply promptly with such safety regulations as required by law and as may be prescribed by the Architect, Owner or local authorities having jurisdiction and shall, when so directed, properly correct any unsafe conditions created by, or unsafe practices on the part of his employees. In the event of the Contractor's failure to comply, the Architect or Owner may take the necessary measures to correct the conditions or practices complained of, and all costs thereof will be deducted from any monies due the Contractor. Failure of the Architect to direct the correction of unsafe conditions or practices shall not relieve the Contractor of his responsibility hereunder.

C. Any trees, plantings and facilities within the areas assigned to the Contractor for storing materials, temporary structures or pursuing the work shall be protected from injury and shall be restored to their original condition before completing of the work.

D. Where existing utilities and structures are indicated on the drawings, it shall be understood that all of the existing utilities and structures affecting the work may not be shown and that the
locations of those shown are approximate only. It shall be the responsibility of the Contractor to ascertain the actual extent and exact location of existing utilities and structures. In every instance, the Contractor shall notify the proper authority having jurisdiction and obtain all necessary directions and approvals before performing any work in the vicinity of existing utilities.

E. The work shall be carried out in a manner to prevent disruption of existing services and to avoid damage to the existing utilities. Temporary conditions shall be provided, as required, to insure no interruption of existing services. For additional requirements, refer to Section 01 01 00 and Section 01 50 00. Any damage resulting from the work of this Contract shall be promptly repaired by the Contractor at his own expense in a manner approved by the Architect and further subject to the requirements of any authority having jurisdiction that they perform their own repairs or having them done by others; the Contractor shall be responsible for costs thereof.

F. In the event of any claims for damage or alleged damage to property as a result of work under this Contract, the Contractor shall be responsible for all costs in connection with the settlement of or defense against such claims.

1.11 SAFETY, SECURITY AND CONTROL PROCEDURES FOR CONTRACTOR

A. Pre-Work Meeting: Seven days maximum after preconstruction meeting and prior to beginning work operations at the site, the contractor(s) shall meet with the Architect, a representative of the agency and other personnel as appropriate. The role of the Contractor and his employees with reference to the safety of the general public be reviewed as part of the prework meeting.

B. The Contractor is responsible for barricading or covering any excavations and other dangerous conditions (when not attended) in areas where patient access is likely. Contractors are also responsible for securing their tools so patients do not have access to them.

C. In case of an emergency, call designated Owner personnel. The Contractor will also be responsible to contact the rescue squad, fire department, security, etc., as required.

D. It is the responsibility of the Contractor to follow all codes and safety regulations. The areas involved are subject to inspection by the inspectors from all other regulatory agencies, e.g, Fire Marshall's Office, OSHA, Department of Labor and Industry.

E. The Contractor shall assure that all materials, equipment and tools will be removed daily and returned to the designated staging and storage area. Clean-up and dust barriers will be inspected regularly to avoid possible contamination of food.

1.12 FIRE PROTECTION

A. The Contractor shall not use flammable liquids or gases, stoves, salamanders, tar pots, etc., in and on the site unless approved by the Architect. Where welding, cutting or burning are necessary, incombustible shields shall be used and suitable fire extinguishing equipment shall be maintained nearby.

B. Free and unobstructed access shall be maintained at all times to fire extinguishing equipment and fire hydrants.

1.13 BARRICADES WARNING SIGNS AND LIGHTS

Contractor shall provide, erect and maintain as necessary, strong and suitable barricades, fencing, danger signs and warning lights as may be required for the safety of all those employed in the work,
facility employees, and members visiting the construction site, and for the general public, and as directed by the Architect. For additional requirements, refer to Section 01500.

1.14 TESTING

All laboratory and field testing, unless specified otherwise, will be done by a laboratory selected by the Owner. Cost of this testing will be paid by the Owner except that cost of retesting due to deficient workmanship or materials shall be paid by the Contractor.

1.15 APPLICABLE CODES AND PERMITS

A. All references to codes, specifications and standards referred to in the Specifications or on the Drawings shall mean, and are intended to be, the latest edition, amendment and/or revision of such reference standard in effect as of the date of these Contract Documents.

B. All work performed by the General Contractor shall conform with the latest revision / edition of all pertinent codes and regulations of local, state, and federal authorities. This shall include, but is not limited to the following:

1.) Virginia Uniform Statewide Building Code, 2012 Edition

C. The General Contractor shall maintain a copy of the above referenced codes on the job site.

D. Any changes necessary to the Specifications and Drawings required to make conformity to any of the above stated authorities that the General Contractor or his Subcontractors is aware of, shall be called to the attention of the Architect by the General Contractor prior to the award of Contract, otherwise, the General Contractor shall be held responsible financially for all work necessary for an approved installation.

E. The General Contractor shall maintain a copy of the "approved" Permit Plans on the job site with all notes, changes, revisions, shop drawings, and other such materials as may be part of the Permit Plans as designated by the approving authority. These documents shall be maintained in a clean and unmarked condition for the duration of the Project. Upon completion of the construction and issuance of the Final Certificate of Occupancy, these documents shall be delivered to the Owner by the General Contractor prior to final payment by the Owner.

1.16 APPLICABLE STANDARDS

Wherever reference is made to any published standards, codes, or standard specifications, it shall mean the latest standard code, specification or tentative specification of the technical society, organization, or body referred to; which is in effect at the date of invitation of bids. The following is a partial list of typical abbreviations which may be used in the specifications and the organizations to which they refer:

ANSI  - American National Standards Institute
ACI   - American Concrete Institute
AISC  - American Institute of Steel Construction
ASTM - American Society for Testing and Materials
ASME - American Society of Mechanical Engineers
AIA   - American Institute of Architects
AWS   - American Welding Society
UL    - Underwriters Laboratory
NRCA  - National Roofing Contractors Association

1.17 TEMPORARY CONSTRUCTION FACILITIES
A. It shall be the Contractor's responsibility to provide any temporary construction office space and telephone, material and equipment storage facilities, and any temporary utility connections as he deems necessary for his operations. For additional requirements, refer to Section 015000.

B. During the progress of the work and up to the date of final payment, the Contractor shall be solely responsible for the care and protection of all work and materials covered by the Contract. All work and materials shall be protected against damage, injury or loss from any cause whatsoever, and the Contractor shall make good any such damage or loss at his own expense. Protection measures shall be subject to the approval of the Engineer.

1.18 TEMPORARY WATER AND ELECTRICITY

A. Electric power and water, if required for work under the contract, will be furnished by the Owner subject to reasonable use by the Contractor, only to the extent and capacity of present services. The Contractor shall be responsible for providing required connection, temporary wiring, piping, etc., to these services in a safe manner and in accordance with applicable codes. All temporary wire, piping, etc., shall be removed before final completion. For additional requirements, refer to Section 015000.

B. Acceptance by the Contractor of the use of Owner's water and electricity constitutes a release to the Owner of all claims and of all liability to the Contractor for whatever damages resulting from power and water outages or voltage variation.

1.19 DRAWINGS-SPECIFICATIONS DISCREPANCIES

A. If discrepancies occur in the Contract Documents, the order of precedence for interpretation shall be provided for in the General Conditions. The drawings shall not be scaled for dimensions. The absent dimensions shall be interpreted by the Architect.

B. Where drawings may indicate multiple or conflicting solutions contractor shall provide the solution as required and interpreted by the Architect as the correct application at no additional cost to the Owner.

1.20 WARRANTIES AND GUARANTEES

The Contractor shall supply a complete list of warranties and guarantees on all equipment supplied for these specifications. No retainage will be paid the Contractor until the above list and all guarantees and warranties are delivered to the Architect/Engineer. For additional requirements, refer to Section 01740.

1.22 WARRANTY / GUARANTEE PERIODS

A. All guarantee and warranty periods commence on the date of Substantial Completion (Owner's acceptance of the site). All Guarantees and warranty periods shall be for a period of not less than 2 years from the date of Substantial Completion.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:
   A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SUMMARY
   A. This Section specifies requirements for Project meetings including:
      1. Pre-Construction Conference.
      2. Special Inspections Meetings
      3. Pre-Work Meetings.
      4. Progress Meetings.

1.03 PRECONSTRUCTION CONFERENCE
   A. See IFB instructions for pre-construction conference prior to construction
   B. Prior to the start of construction, the Contractor shall furnish the Owner a list of hazardous materials that may be brought onto the job site. If additional material, not on the initial list, is to be brought to the job site, the Owner shall be given a 48-hour prior notification. When requested by the Owner, the Contractor shall furnish the Owner with material safety data sheets for any materials to be brought onto the job site.

1.04 PRE-WORK MEETINGS
   A. It may be determined at the preconstruction meeting that a pre-work meeting is required.

1.05 PROGRESS MEETINGS
   A. A Progress Meeting shall be held at a minimum of every two (2) weeks at a time and place to be determined during the pre-construction meeting. The Architect will prepare the agenda for the meetings, conduct the meetings, and notify all parties of any change in schedule.
   B. The Progress Meetings shall be attended by the General Contractor, representatives of major Subcontractors who have decision-making authority on matters relating to this Contract, the authorized representative of the Owner, and the Architect or his authorized representative. Notice of meetings shall be given to all parties and any other parties to the meeting discussion items 48 hours in advance of the meeting time.
   C. All representatives attending such meetings shall have decision-making authority on matters relating to their agency or entity's involvement this Contract.
   D. All decisions, instructions, and interpretations given by the Architect or his representatives at these meetings shall be binding and conclusive.
   E. The Architect will record all major issues as discussed and all decisions made in the form of
written memorandum. Copies of this memoranda shall be distributed to all parties to the discussion whether in attendance or not.

F. This first meeting, usually held in the first of the month, shall be a progress review and construction coordination meeting. The second meeting, usually held in the last of the month, shall be the monthly pay meeting to which the General Conditions refer.

G. A suggested agenda for these meetings shall contain, but not be limited to, the following information:

1. Review of work progress since previous meeting.
2. Review of work proposed to be performed to the next meeting.
3. Application for Payment. (Once per month)
4. Field observations, problems, conflicts, quality of work performed.
5. Comments and concerns of Owner, facility, contractor, subcontractor regarding the work.
6. Review submittal schedules: expedite as required.
7. Review Requests for Information (RFI's).
8. Review Change Order Requests from Owner and Change Order Proposals from Contractor.
10. Other business, as required.

H. Review Contractor's Construction Schedule:

1. Review progress since the last meeting.
2. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule.
3. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so.
4. Discuss whether revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
5. Problems which impede construction schedule.
6. Review of off-site fabrication, delivery schedules.
7. Corrective measures and procedures to regain projected schedule.
8. Plan progress, schedule, during succeeding work period.
9. Coordination of schedules.

I. Reporting: No later than 5 days after each meeting, the Architect shall distribute copies of minutes of the meeting to each party present and to parties who should have been present. Include a summary, in narrative form, of progress since the previous meeting.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:
   A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 RELATED SECTIONS
   A. PROGRESS SCHEDULE: (See Section 01 32 16, CPM Schedules and Reports)
   B. PROJECT RECORD DOCUMENT: (See Section 01 78 00 Closeout Submittals)

1.03 FIRST SUBMITTAL
   A. Submittals can be sent electronically, otherwise the first submittal shall be given in the form of one (1) photocopy for review. Catalog cuts and product literature shall be submitted with 6 copies.

1.04 SUBSEQUENT SUBMITTALS
   A. Unless submitted electronically, all subsequent submittals shall be made in a minimum of five (5) copies (blueline or photocopy) for review. Catalog cuts and product literature shall be submitted with 6 copies.

1.05 SUBMITTALS
   A. Submittal controlled by these general requirements shall include shop drawings, product data, samples and miscellaneous work-related submittal. The individual submittal requirements are specified in applicable sections for each unit of work.
   B. Submittals shall be accepted by the Architect/Engineer with action as noted in paragraph 3. Submittals with delivery dates for all manufactured equipment and all materials shall be provided to the Architect/Engineer and incorporated in the construction progress schedule as critical path items prior to issuance of the Notice to Proceed.

1.06 DEFINITIONS
   A. The work-related submittal of this Section, in addition to the definitions of the General Conditions, and elsewhere in the Contract Documents, are further categorized for convenience as follows:
   B. Shop Drawings include specially-prepared technical data for all forms including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for application to more than one project.
   C. Product data include standard printed information on materials, products and systems; not specially-prepared for this project, other than the designation of selections from among available choices printed therein.
D. Samples include both fabricated and unfabricated physical examples of materials, products and units of work; both as complete units and as smaller portions of units of work; either for limited visual inspection or (where indicated) for more detailed testing and analysis.

E. Mock-ups are a special form of samples, which are too large or otherwise inconvenient for handling in the specified manner for transmittal of sample submittals.

F. Miscellaneous submittal related directly to work include warranties, maintenance agreements, workmanship bonds, survey data and reports, physical work records, statements of applicability, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, security/protection/safety keys and similar information, devices and materials applicable to the work and not processed as shop drawings, product data or samples.

PART 2 – DESCRIPTION OF REQUIREMENTS

2.01 SHOP DRAWINGS

A. Shop Drawings, schedules and brochures or catalogues will be required for all materials of this Project except for bulk materials.

B. The General Contractor shall submit Shop Drawings and product data submittals to the Architect as follows:

1) Can be submitted electronically otherwise submit one copy of drawings and six (6) copies of product data for each submittal.

2) Each submission shall have the following minimum information: Project Name; General Contractor; Sub-Contractor, if appropriate; Manufacturer's name, address, phone number, product model number and section of this Specification where specified. In the event that the product is a substitution from that specified herein the Contractor shall call the Architect's attention by identifying it as a substitution in writing.

3) Each item submitted as part of a Shop Drawing submission shall bear the approval stamp and signature of the General Contractor and the date. All submissions not bearing the Contractors approval stamp will be returned without review.

4) The General Contractor shall be responsible for submitting Shop Drawings that require local/state OIC to the appropriate authorities prior to submitting to the Architect. By submitting drawings to the Architect, the General Contractor represents that they have been approved and any modifications that may have been required shown and highlighted thereon.

5) Submittals marked "Rejected" or "Revise and Resubmit" shall be promptly resubmitted as indicated in order to meet the requirements of the Contract. No work identified in the Shop Drawings shall commence prior to the Contractor having received Approved Shop Drawings.

6) Submittals marked "No Exception Taken", "Submit Specified Item", "See Attached Comments", or "Make Corrections Noted" do not require re-submission unless specifically requested.

C. The review of submittals will be general and shall not be construed as:

1) Permitting any departure from the Contract requirements.
2) Relieving the General Contractor of the responsibility for any error in detail, dimension or otherwise that may exist.

3) Approving departure from additional details of instructions previously furnished by the Architect.

2.02 SAMPLES AND COLORS

A. In addition to samples specified in individual sections of the Specifications, the General Contractor shall furnish duplicate samples of all materials requiring color, texture or pattern selection to the Architect. Colors will not be selected from printed material.

B. Samples specified herein shall be delivered to the Architect within a reasonable time after the contract award so as not to delay job progress. Samples submitted shall be identified in accordance with paragraph 2 above.

C. Unless otherwise specified, colors, textures or patterns will be selected from the entire range of available patterns, textures and color chips of the Contractor's intended manufacturer where same are suitable. The Architect reserves the right to select color from any manufacturer necessary to achieve the desired color results. No material or colors shall be installed without first receiving the written approval of the Architect.

D. In order to achieve the intended appearance, the Architect will select colors and samples at one time, only when all applicable submissions have been received. Colors and samples will not be selected independently of each other.

2.03 CERTIFICATION

A. Where compliance with product standards or testing standards are required by the Contract Documents, the General Contractor shall submit three copies of test data by a recognized independent testing laboratory certifying compliance with the referenced standard test.

2.04 SUB-CONTRACTORS AND SUPPLIERS

A. No later than 30 days from the Contract Date, the General Contractor shall provide the Owner and Architect with a complete listing of all Sub-Contractors and Suppliers. The Owner reserves the right to reject any sub-contractor without cause.

2.05 TEST REPORTS

A. The General Contractor shall submit a minimum of five copies of all test reports as required by the Specifications.

2.06 SCHEDULE OF VALUES

A. A Schedule of Values similar to the Schedule of Amounts for Contract Payments (AIA Document G702) shall be submitted by the General Contractor with each request for payment. Each Specification Section of the Schedule and / or subcontract shall be itemized as required to reflect quantities and activities. Schedules shall also reflect previous, current, and total “to date” quantities for each Specification Section.

2.07 STAKE OUT PLAN
A. Prior to excavation work, the General Contractor shall submit to the Architect for approval, a complete Stake Out Plan as prepared by a Certified Land Surveyor. No excavation shall begin prior to the receipt of the approved plan.

2.08 PHOTOGRAPHS

The General Contractor shall provide a minimum of fifteen (15) photographs per month from different views that show overall work status. Photographs shall be submitted electronically. One set shall be distributed to the Owner and one set to the Architect.

PART 3 – EXECUTION

3.01 METHOD OF SUBMITTAL

A. All submittals shall be made to the Architect. Submittals relating to structural, mechanical, electrical or other design professionals shall be forwarded by the Architect directly to the appropriate Consulting Engineer for review. Upon review by the Engineer, all submittals will be forwarded to the Architect who will in turn forward them to the General Contractor.

B. One copy of each test report and certification shall be forwarded by the General Contractor to the Architect, the Engineer and the Owner.

C. Required submittals for all materials, supplies and systems with lead times which might affect the completion date of this project shall be submitted to the Architect prior to the commencement of construction activities on the project. The contractor shall prepare a list of those items and the lead time necessary for items to be ordered.

3.02 ARCHITECT'S/ENGINEER'S ACTION

A. Where action and return is required or requested, Architect/Engineer will review each submittal, mark with "Action", and where possible return within thirty (30) days of receipt. Where submittal must be held for coordination, Contractor will be so advised without delay.

B. Final Unrestricted Release - Work may proceed, provided it complies with contract documents, when submittal is returned with the following marking: "No Exception Taken"

C. Final-But Restricted Release - Work may proceed, provided it complies with notations and corrections on submittal and with contract documents, when submittal is returned with the following marking: "Approved as Noted"

D. Returned for Resubmittal - Do not proceed with Work. Revise submittal in accordance with notations thereon, and resubmit without delay to obtain a different action marking. Do not allow submittals with the following marking (or unmarked submittal where a marking is required) to be used in connection with performance of the work: "Revise and Resubmit"

E. Returned for Non-Compliance - Do not proceed with work. Product submitted does not comply with Contract Documents. Resubmit for product complying with the requirements of the Contract Documents. Do not allow submittals with the following marking to be used in connection with performance of the work:
"Not Approved"

END OF SECTION
PART 1 - **GENERAL**

1.01 **RELATED DOCUMENTS:**

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 **SUMMARY**

A. This Section specifies requirements for quality control services. Quality control services include inspections and tests performed by independent agencies, governing authorities, as well as the Contractor.

B. Contractor Responsibilities: Provide inspections and tests specified or required by governing authorities, except where they are the Owner's responsibility, or are provided by another entity; services include those specified to be performed by an independent agency not by the Contractor. Costs are included in the Contract.

1. Employ and pay an independent agency, to perform quality control services if required.

2. The Owner will engage and pay for services of an independent agency to perform inspections and tests specified as the Owner's responsibility.

   a. Where the Owner has engaged an agency for testing and inspection part of the Work, and the Contractor is also required to engage an entity for the same element, the Contractor shall not employ the entity engaged by the Owner, unless otherwise agreed in writing with the Owner.

3. Retesting: The Contractor is responsible for retesting where results prove unsatisfactory and do not indicate compliance with Contract Documents, regardless of whether the original test was the Contractor's responsibility.

   a. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.

4. Associated Services: The Contractor shall cooperate with agencies performing inspections or tests and provide auxiliary services as requested. Notify the agency in advance of operations to permit assignment of personnel. Auxiliary services include but are not limited to:

   a. Provide access to the Work and furnish incidental labor and facilities necessary to facilitate inspections and tests.
   b. Take representative samples of materials that require testing or assist the agency in taking samples.
   c. Provide facilities for storage and curing of samples, and deliver samples to testing laboratories.
   d. Provide a preliminary design mix proposed for use for material mixes that require control by the testing agency.
   e. Provide security and protection of samples and test equipment at the Project site.

C. Duties of the Testing Agency: The agency engaged to perform inspections, and testing of
materials and construction shall cooperate with the Architect and Contractor in performance of its duties, and provide qualified personnel to perform inspections and tests.

1. The agency shall notify the Architect and Contractor promptly of deficiencies observed during performance of its services.
2. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.

D. Coordination: The Contractor and each agency engaged to perform inspections and tests shall coordinate the sequence of activities to accommodate services with a minimum of delay. The Contractor and each agency shall coordinate activities to avoid removing and replacing construction to accommodate inspections and tests.

1. The Contractor is responsible for scheduling inspections, tests, taking samples and similar activities.

E. Submittals: The testing agency shall submit a certified written report of each inspection and test to the Architect, in duplicate, unless the Contractor is responsible for the service. If the Contractor is responsible, submit a certified written report of each inspection and test through the Contractor, in duplicate.

1. Submit additional copies of each report to the governing authority, when the authority so directs.
2. Report Data: Written reports of each inspection or test shall include, but not be limited to:
   a. Date of issue.
   b. Project title and number.
   c. Name, address and telephone number of testing agency.
   d. Dates and locations of samples and tests or inspections.
   e. Names of individuals making the inspection or test.
   f. Designation of the Work and test method.
   g. Identification of product and Specification Section.
   h. Complete inspection or test data.
   i. Test results and an interpretations of test results.
   j. Ambient conditions at the time of sample-taking and testing.
   k. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
   l. Name and signature of laboratory inspector.
   m. Recommendations on retesting.

F. Qualification for Service Agencies: Engage inspection and testing agencies which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories, and specialize in the types of inspections and tests to be performed.

1. Each inspection and testing agency engaged shall be authorized to operate in the State in which the Project is located.

G. Repair and Protection: Upon completion of inspection and testing repair damaged construction and restore substrates and finishes to eliminate deficiencies. Comply with requirements for "Cutting and Patching."

H. Protect construction exposed by or for quality control service activities, and protect repaired construction.
I. The Contractor is responsible for repair and protection regardless of the assignment of responsibility for inspection and testing.

PART 2 – QUALITY CONTROL MEASURES TO BE EMPLOYED

2.01 SURVEYS AND LAYOUT

A. The General Contractor shall provide the services of Certified Land Surveyor, and other qualified personnel, during the Contract Period, for layout of lines and elevations of buildings and structures, including foundation systems, footings and piers, floor and roof systems, pavements, fencing, sidewalks, grading, utilities, and landscaping as required by the Project.

2.02 INSPECTION AND TESTING AGENCIES

A. The Owner shall arrange for a testing agency to provide on site testing of soil excavations, soil compaction, concrete and other items as specified herein. The Contractor shall schedule and give timely notification of all testing to the Owner, Architect and the testing agency. The tests shall be fully documented and certified. Cost for testing and selection of testing agency will be provided by the Owner.

B. Reports submitted must bear the name of the qualified individual performing the inspection and/or test, and must be signed by that individual. Copies shall be forwarded to the Owner's representative and the Architect.

C. All tests must be pre-approved in writing by the Owner prior to contacting the testing agency.

2.03 UNDERGROUND AND CONCEALED SERVICES

A. The General Contractor shall be responsible for contacting "Miss Utility" or all local operators of utility services prior to commencement of excavation or demolition in order to locate service and utility lines. The General Contractor shall be responsible for all repairs to underground lines when this procedure is not followed.

2.04 COORDINATION

A. Each Sub-Contractor shall cooperate fully with the inspections and testing required for this Project.

B. Each Sub-Contractor shall maintain his own quality methods in addition to the required testing.

2.05 INSPECTIONS

A. At least 24 hours shall be allowed for inspection prior to any test or concrete placement. The inspection will be made after notification that all items have been installed for the test or preparatory for concrete placement. Should the inspection reveal that corrective measures are required or that the work is not complete, an additional 24 hours will be allowed to complete the inspections after all work has been corrected or completed.

B. Notification shall be given at least 24 hours in advance of backfilling or encasing any underground utility in order that an inspection may be made of the installation. Failure to provide such notification may require re-opening of the trench at the General Contractor's expense.

2.06 ACCEPTANCE OF SUBSTRATES
A. Work of the various sections shall not begin until the installing contractor has examined the substrates and has determined that they are acceptable. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer. Notice of any unsatisfactory conditions shall be given to the General Contractor in writing. Proceeding with the work shall indicate acceptance of the substrate by that installer or Contractor.

2.07 WARRANTIES AND GUARANTEES

A. In addition to those stated elsewhere in these specifications, the Contractor shall provide a minimum guarantee of two (2) year on the renovations.

B. All equipment shall have full manufacturer's warrantee. All warranties and guarantees shall become effective on the date of substantial completion.

END OF SECTION
SECTION 01 42 19
REFERENCE STANDARDS AND DEFINITIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SUMMARY

A. This Section specifies requirements for all reference standards and definitions.

1.03 DEFINITIONS, ABBREVIATIONS, SPECIFICATION FORMAT, PERMITS

A. Definitions: Basic Contract definitions are included in the Conditions of the Contract.

1. Indicated: Refers to graphic representations, notes or schedules on the Drawings, or other Paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Where terms such as shown, noted, scheduled, and specified are used, it is to help the reader locate the reference.

2. Directed: Terms such as directed, requested, authorized, selected, approved, required, and permitted mean directed by the Architect, requested by the Architect, and similar phrases.

3. Approve, where used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.

4. Regulation includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

5. Furnish means supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

6. Install describes operations at Project site including the actual unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

7. Provide means to furnish and install, complete and ready for the intended use.

8. Installer: An Installer is the Contractor or an entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier for performance of a particular construction activity, including installation, erection, application, and similar operations. Installers are required to be experienced in the operations they are engaged to perform.

a. The term experienced, when used with the term Installer, means having a minimum of five previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of the authority having jurisdiction.

9. Project Site is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

10. Testing Laboratories: A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.
B. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specifications Institute's format.

1. Language used in the Specifications and other Contract Documents is abbreviated. Words that are implied, but not stated shall be interpolated as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable and the context of the Contract Documents so indicates.

2. Imperative language is used generally. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor, or by others when so noted.
   a. The words "shall be" are implied wherever a colon (:) is used within a sentence or phrase.

C. Abbreviations and Names: Where acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards generating organization, authority having jurisdiction, or other entity applicable to the context of the text provision. Refer to the "Encyclopedia of Associations," published by Gale Research Co., available in most libraries.

D. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

END OF SECTION
1.01 RELATED DOCUMENTS:
   A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions
      of all Division 1 sections of these specifications shall apply to all work under this section of the
      Specifications.

1.02 SUMMARY
   A. This Section specifies requirements for temporary services and facilities, including construction
      and support facilities, security and protection.
   B. Temporary utilities required include but are not limited to:
      Water service and distribution
      Temporary electric power and light
   C. Temporary construction and support facilities required include, but are not limited to:
      Project Identification Signage
      Dust Partitions
      Temporary enclosures.
      Temporary Project identification signs and bulletin boards.
      Waste disposal services.
      Construction aids and miscellaneous services and facilities.
   D. Security and protection facilities required include, but are not limited to:
      Temporary fire protection.
      Barricades, warning signs, lights.
      Enclosure fence for Contractor's staging area at the site.
      Environmental protection.

1.03 GENERAL
   A. The General Contractor shall arrange and provide temporary facilities and controls as specified
      herein and as required for the proper and expeditious completion of the work. Pay all costs, except
      as otherwise specified, until final acceptance of the work.
   B. The General Contractor shall protect all work areas with dust protection mechanisms. Work areas
      should be enclosed with a temporary dust containment to maintain the surrounding areas clean and
      free of dust at the end of each work period.
   C. The General Contractor shall make all temporary connections to utilities and services in locations
      acceptable to the Owner, Architect and local authorities having jurisdiction thereof; furnish all
      necessary labor and materials and make all installations in a manner subject to the acceptance of
      such authorities and the Architect; maintain such connections; remove the temporary installations
      and connections when no longer required; and restore the services and sources of supply to proper
      operating condition.

1.04 SUBMITTALS
   A. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures
      performed on temporary utilities.
   B. Implementation and Termination Schedule: Submit a schedule indicating implementation and
      termination of each temporary utility within 5 days of the date established for commencement of
      the Work.
   C. Impairment Notification: Utilize Impairment Notification Form specified in Section 01 10 00-
      "Summary of Work."
1.05 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction, including but not limited to:
   - Virginia Uniform Statewide Building Code requirements.
   - Health and Safety regulations.
   - Utility company regulations.
   - Police, fire Department Rescue Squad rules
   - Facilities Administration and Security Requirements.
   - Environmental Protection regulations.

   1. Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services", prepared jointly by AGC and ASC, for industry recommendations.

C. Electrical Service: Comply with NEMA, NECA and UL Standards and regulations for temporary electric service. Install Service in compliance with National Electric Code (NFPA 70).

D. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.06 PROJECT CONDITIONS

A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of the permanent service. Utilize "Impairment Notification Procedures" form herein the Section 01 10 00 "Summary of Work."

B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on the site.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.

B. Lumber and Plywood: Comply with requirements in Division-6 Section 061000 "Rough Carpentry".
   1. For job-built temporary sheds with the construction area, provide UL labeled, fire treated lumber and plywood for framing, sheathing and siding.
   2. For signs and directory boards, provide exterior type, Grade B-B High Density Concrete Form Overlay Plywood conforming to PS-1, of sizing and thickness indicated.
   3. For safety barriers, sidewalk bridges and similar uses, provide minimum 5/8" thick exterior plywood.

C. Gypsum Wallboard: Provide gypsum wallboard complying with requirements of ASTM C 36 on interior walls of temporary enclosures.

2.02 EQUIPMENT

A. General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
B. Water Hoses: Provide 3/4" heavy duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.

C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.

D. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

E. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.

F. First Aid Supplies: Comply with governing regulations.

G. Fire Extinguishers: Provide "hand-carried", portable, UL-rated, class "A" fire extinguisher for temporary Offices and similar spaces. In other locations, provide "hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures.
   1. Comply with NFPA 10 and 241 for classification, extinguishing agent and size required by location and class of fire exposure.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required. Coordinate location of temporary facilities with Owner.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

3.02 TEMPORARY UTILITY INSTALLATION

A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendations.
   1. Arrange with the company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary services.
   2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
   3. Obtain easements to bring temporary utilities to the site, where the Owner's easements cannot be used for that purpose.
   4. Provide temporary utilities for Owner provided temporary mobile cooking and washing facilities.

B. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner or Architect, and will not be accepted as a basis of claims for Change Order.

C. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.

D. Sterilization: Sterilize temporary water piping prior to use.
E. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and
distribution system of sufficient size, capacity, and power characteristics during construction
period. Include meters, transformers, overload protected disconnects, automatic ground-fault
interrupters and main distribution switch gear.

3.03 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

A. Locate field offices, storage sheds, sanitary facilities and other temporary construction and
support facilities for easy access.

B. PROJECT IDENTIFICATION

1. Except as required by these specifications, no signs or advertisements shall be permitted on
the premises without the approval of the Owner.

2. The General Contractor shall provide and install two (2) construction signs as directed by the
Owner and Architect as follows:
   a) Size: 6' x 8' horizontal top +9' Above Finish Grade
   b) Materials: 3/4" Douglas Fir overlaid Plywood Grade B/B high density, exterior, good two
      sides complying with PS-1. Mounted on three (3) 4 x 4 (PT) wood posts and wood frame.
      Prime and two coats of gloss exterior enamel paint.
   c) Lettering: Silk screened or self adhesive die cut letters.
   d) Graphics: Schematic design drawing to be provided by the Architect.
   e) Data: Construction sign shall give names and addresses of:
      1) Owner
      2) Architect
      3) Engineers (s) and consultants
      4) Contractor
      5) Project

C. Maintain temporary construction and support facilities until near Substantial Completion. Remove
prior to Substantial Completion. Personnel remaining after Substantial Completion will be
permitted to use permanent facilities, under conditions acceptable to the Owner.

D. Provide incombustible construction for offices, shops and sheds located within the construction
area, or within 30 feet of building lines. Comply with requirements of NFPA 241.

E. Field Offices: Provide insulated, weathertight temporary office of sufficient size to accommodate
required office personnel at the project site. Keep the office clean and orderly for use of small
progress meetings. Furnish and equip offices as follows:
   1. Furnish with a desk and chairs, a 4-drawer file cabinet, plan table and plan rack and a 6-shelf
      bookcase.
   2. Equip with a water cooler and private toilet complete with water closet, lavatory and mirror-
      medicine cabinet unit.

F. Storage and Fabrication Sheds: Install storage and fabrication sheds, sized, furnished and
equipped to accommodate materials and equipment involved, including temporary utility service.
Sheds may be given shelters or fully enclosed spaces within the building or elsewhere on the site.

G. Drinking Water Facilities: Provide containerized tap-dispenser "bottled-water" type drinking water
units, including paper supply.
   1. Where power is accessible, provide electric water coolers to maintain dispensed water
temperature at 45 to 55 degree F (7 to 13 degree C).

H. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes
and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

H. Project Identification and Temporary Signs: Prepare identification and other signs; install signs and inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative treated wood or steel. Do not permit installation of unauthorized signs.

1. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with details attached to this section.

2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.

I. Temporary Exterior Lighting: Install exterior yard and sign lights so that signs are visible when Work is being performed.

J. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80°F(27°C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.

K. Rodent and Pest Control: Before work has commenced, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches and other pests. Employ the service to perform extermination and control procedures at regular intervals so the project will be free of pests and their residues continuously and at Substantial Completion. Perform control operations in a lawful manner using the environmentally safe materials.

L. SANITARY CONVENIENCES

The General Contractor shall provide a temporary chemical type toilet at an approved location, for use by employees on the Contract. The convenience premises shall receive daily attention and shall be maintained in a clean and sanitary condition, and be removed from the site upon completion of the Contract or earlier if permanent facilities become available.

M. TEMPORARY WATER

The General Contractor shall make his own arrangements for water for construction and drinking purposes as required.

N. TEMPORARY LIGHT AND POWER

The General Contractor shall furnish and install temporary electric facilities, including lamps, for construction and safety operations. All temporary facilities shall remain the property of the General Contractor, and be removed after permanent connections have been completed. Electrical wiring, conduit or equipment which are part of the permanent electrical systems, shall not be used for temporary facilities, unless specifically approved by the Architect. The General Contractor shall be responsible for any damage or injury to equipment, materials, or personnel caused by temporary electrical installations. Costs for materials and installation of temporary electrical facilities shall be at the General Contractor's expense. The General Contractor shall arrange and pay for energy consumed in providing temporary electrical facilities.

O. TEMPORARY ROADS

The General Contractor shall provide and maintain in good usable condition, temporary roads and access to the site as required throughout the construction period. At points of access, insure that no mud or debris is carried onto adjacent streets or properties. Any material deposited on adjacent roads or properties shall be removed daily.
P. MATERIAL HOIST

Provide a material hoist as required for use by all trades complete with guards, safety devices, signals and runways necessary for safe operation in accordance with ANSI A10.5, the AGC Manual of Accident Prevention in Construction, and all applicable state and local codes.

Q. TEMPORARY FIELD OFFICE – if desired

1. The General Contractor shall provide and maintain a Field Office of sufficient size to conduct progress meetings complete with light, heat, toilet facilities, plan table, chairs, telephone service, and other facilities as required to execute the Contract. The General Contractor shall pay all lease, set-up charges, utility and telephone charges associated with the Field Office.

2. Construction shanties, sheds, and temporary facilities provided as required above or for the Contractor's convenience shall be maintained in good condition and neat appearance.

R. WASTE REMOVAL

1. The General Contractor shall provide all labor, materials, equipment and services for complete material disposal. The General Contractor shall pay for and secure any necessary permits, and abide by all applicable local jurisdictional requirements and health codes.

3.04 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

B. Enclosure Fence: When work begins, install an enclosure fence with lockable entrance gates. Locate where indicated to enclose the portion determined sufficient to accommodate staging area and construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.

1. Provide open-mesh, chain-link fencing with posts set in a compacted mixture of gravel and earth.

C. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

D. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.05 OPERATION, TERMINATION AND REMOVAL

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

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling humidity control, ventilation and similar facilities on a 24-hour day basis where required to achieve indicated results and to
avoid possibility of damage.

2. **Protection:** Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. **Termination and Removal:** Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of the Contractor. The Owner reserves the right to take possession of Project identification signs.

2. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
   a. Replace air filters and clean inside of ductwork and housing.
   b. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
   c. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

**END OF SECTION**
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SUMMARY

A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

B. The Contractor's Construction Schedule and the Schedule of Submittals are included under Section "Submittals."

C. Standards: Refer to Section "Definitions and Standards" for applicability of industry standards to products specified.

D. Procedural requirements governing the Contractor's selection of products and product options are included under Section "Materials and Equipment".

1.03 DEFINITIONS

A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.

B. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions". The Following are not considered substitutions:

1. Substitutions requested by Bidders during the bidding period, and accepted prior to award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.

2. Revisions to the Contract Documents requested by the Owner or Architect.

3. Specified options of projects and construction methods included in the Contract Documents.

4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.04 SUBMITTALS

A. Substitution Request Submittal: Requests for substitution will be considered if received within 30 days after commencement of the Work. Requests received more than 30 days after commencement of the Work may be considered or rejected at the discretion of the Architect.

1. Submit 3 copies of each request for substitution for consideration. Submit requests in
the form and in accordance with procedures required for Change Order proposals.

2. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following instruction, as appropriate:

   a. Product Data, including Drawings and description of products, fabrication and installation procedures.

   b. Samples, where applicable or requested.

   c. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements such as size, weight, durability, performance and visual effect.

   d. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors, that will become necessary to accommodate the proposed substitution.

   e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.

   f. Cost information, including a proposal of the net change, if any in the Contract Sum.

   g. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.

3. Architect's Action: Within one week of receipt of the request for substitution, the Architect will request additional information or documentation necessary for evaluation of the request. Within one week of receipt of the request, or one week of receipt of the additional information or documentation, which ever is later, the Architect will notify the Contractor of acceptance or rejection of the proposed substitution. If a decision on use of a proposed substitute cannot be made or obtained within the time allocated, use the product specified by name. Acceptance will be in the form of a Change Order.

PART 2 - PRODUCTS

2.01 SUBSTITUTIONS

A. Conditions: The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise, requests will be returned without action except to record noncompliance with these requirements.

1. Extensive revisions to Contract Documents are not required.

2. Proposed changes are in keeping with the general intent of Contract Documents.
3. The request is timely, fully documented and properly submitted.

4. The request is directly related to an "or equal" clause or similar language in the Contract Documents.

5. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.

6. The specified product or method of construction cannot receive necessary approval by the governing authority, and the requested substitution can be approved.

7. A substantial advantage is offered the Owner, the terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate Contractors, and similar considerations.

8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.

9. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.

10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.

B. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 - EXECUTION

3.01 PROPOSING A SUBSTITUTION

A. In Proposing a Substitution: The Contractor shall be solely and fully responsible for any changes in physical size and/or utility connecting requirements, which differ from those indicated on the Drawings. The Contractor shall provide, as part of the substitution proposal, at no additional cost to the Owner, all necessary physical specifications alterations, and changes in utilities (electric, gas, water, sewer, etc.) fully coordinated with and integrated into the facilities under construction.

3.02 PRODUCTS

A. The products, equipment, and/or materials incorporated into the design by the Architect/Engineer are selected to establish a basis for the design. Each may have specific requirements from which the bid and Contract are established. This requirement for fully coordinating substitution item, at no additional cost to the Owner, is not intended to prohibit competition, but only to establish a basis for the contract.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SUMMARY

A. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock.

1. "Named Products" are items identified by manufacturer's product name, including make or model designation indicated in the manufacturer's product literature.

B. "Materials" are products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

C. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

D. Product List Schedule: Within 60 days of commencement of Work, submit 3 copies of the completed product list schedule. Provide an explanation for omissions, and variations from Contract requirements. The Architect will respond within 2 weeks of receipt of the Schedule. No response in this time constitutes no objection to products or manufacturers, but does not waive the requirement that products comply with Contract Documents. The Architect's response will include a list of unacceptable products.

E. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

1. When the Contractor has the option of selecting between two or more products, the product selected shall be compatible with products previously selected.

F. Product Delivery, Storage, and Handling: Deliver, store and handle products in accordance with manufacturer's recommendations, using methods that will prevent damage, deterioration and loss.

1. Schedule delivery to minimize long-term storage and prevent overcrowding construction spaces. Coordinate with installation to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.

2. Deliver products in manufacturer's original sealed container or packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.

3. Inspect products on delivery to ensure compliance with Contract Documents, and to ensure that products are undamaged and properly protected.

4. Store products to facilitate inspection and measurement of quantity or counting of units. Store heavy materials away from the structure in a manner that will not endanger supporting
5. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

G. Product Selection: Provide products that comply with the Contract Documents, are undamaged and unused at installation.

1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

2. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.

3. Semi-proprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.

4. Non-Proprietary Specifications: When Specifications list products or manufacturers that are available and may be used, but do not restrict the Contractor to use of these products only, the Contractor may propose any product that complies with Contract requirements. Comply with provisions for "substitutions" to obtain approval for use of an unnamed product.

H. Descriptive Specification Requirements: Where Specifications describe a product, listing characteristics required, with or without use of a brand name, provide a product that provides the characteristics and otherwise complies with requirements.

1. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply and are recommended for the application. Manufacturer's recommendations may be contained in product literature, or by certification of performance.

2. Compliance with Standards: Where Specifications require compliance with a standard, select a product that complies with the standard specified.

3. Visual Matching: Where Specifications require matching a Sample, the Architect's decision on whether a proposed product matches is final. Where no product matches and complies with other requirements, comply with provisions for "substitutions" for selection of a matching product in another category.

4. Visual Selection: Where requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product that complies with other requirements. The Architect will select color, pattern and texture from the product line selected.

J. Installation of Products: Comply with manufacturer's instructions and recommendations for installation of products. Anchor each product securely in place, accurately located and aligned with other Work. Clean exposed surfaces and protect to ensure freedom from damage and deterioration at time of Substantial Completion.

1.03 TRANSPORTATION AND HANDLING

A. Materials, products and equipment shall be properly containerized, packaged, boxed and
protected to prevent damage during transportation and handling.

1.04 STORAGE AND PROTECTION

A. Provide suitable temporary weathertight secure storage facilities as may be required for materials that will be damaged by storage in the open. General Contractor shall arrange and provide storage of items at his own expense.

B. Allocate the available storage areas and coordinate their use by the trades of the job. Maintain a current layout of all storage facilities as appropriate for the Project.

C. Protect materials delivered to the site from damage. Use of damaged material on the work will not be allowed.

1.05 INSTALLATION

A. Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used clean, and conditioned as directed by the manufacturers, unless otherwise directed.

PART 2 - PRODUCTS - Not Used.

PART 3 - EXECUTION - Not Used.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SUMMARY

A. This Section specifies administrative and procedural requirements for project closeout, including but limited to:

1. Inspection procedures.

B. Other requirements are specified in the following:

1. Section 01 78 00 "Closeout Submittals" for document submittal.
2. Section 01 78 40 "Warranties and Bonds" for submittal of warranties.
4. Section 01 74 00 "Cleaning and Waste" for cleaning.
5. Closeout requirements for specific construction activities are included in the appropriate Sections in Divisions-2 through Division -16.

1.03 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for Certification of Substantial Completion, complete the following. List exceptions in the request.

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100% completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.

2. If 100% completion cannot be shown, include a list of incomplete items, the value of incomplete construction and reasons the Work is not complete.

3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents in accordance with the general conditions.

4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, temporary occupancy permits, operating certificates and similar releases.

5. Deliver tools, spare parts, extra stock, and similar items.

6. Complete start-up testing of systems, and instruction of the Owner's operating and maintenance personnel. Discontinue or change-over and remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.
7. Complete final clean-up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

C. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection, or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection, when requested, and assure that the Work has been substantially completed.

2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.04 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.

3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect.

4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substance Completion, or when the Owner took possession of and responsibility for corresponding elements of the Work.

5. Submit consent of surety to final payment for the site.

B. Reinspection Procedures: The Architect will reinspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.

1. Upon completion of reinspection, the Architect will prepare a certificate of final acceptance, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled, but are required for final acceptance.

2. If necessary, reinspection will be repeated.
B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected of a normal, publically accessible site cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.

2. Remove labels that are not permanent labels.

3. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compound and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

4. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

5. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

6. Clean the site, including landscape development areas, of rubbish, litter and other foreign substances. Sweep paved areas broom clean; remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted, to a smoother even-textured surface.

C. Removal of Protection: Remove temporary protection facilities installed for protection of the Work during construction.

D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the site. Remove waste materials from the site and dispose of in a lawful manner.

1. Where extra materials of value remaining after completion of associated Work have been the Owner's property, arrange for disposition of these materials as directed.

3.02 CERTIFICATE OF OCCUPANCY

A. Where the local law at the site of the Work requires either a Temporary or Permanent Certificate of Occupancy, the General Contractor shall apply for, obtain and pay for these certificates and deliver them in total to the Architect.

B. Substantial Completion shall not be granted without necessary Certificates of Occupancy. However, the Certificate of Occupancy shall not be the only criteria for determining Substantial Completion.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SUMMARY

A. This Section specifies requirements for all cutting and patching work on the project, whether existing exposed work or work to be concealed by new work.

1.03 CUTTING AND PATCHING PROPOSAL

A. Approval of procedures is required before proceeding with cutting and patching of existing exposed surfaces. Submit a proposal describing procedures in advance of the time cutting and patching will be performed. Include the following information, as applicable:

1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.

2. Describe anticipated results; include changes to structural elements and operating components and changes in the building's appearance and other visual elements.

3. List products to be used and entities that will perform Work.

4. Indicate dates when cutting and patching is to be performed.

5. List utilities that will be disturbed, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted. Contractor shall follow procedures outlined in the Impairment Notification Form attached to Section 011000 "Summary of Work."

B. Approval by the Architect to proceed does not waive the Architect's right to later require complete removal and replacement of Work found to be unsatisfactory.

1.04 OTHER REQUIREMENTS

A. Structural Work

1. Do not cut and patch structural elements in a manner that would reduce the load-carrying capacity or load deflection ratio. Obtain approval of the cutting and patching proposal before cutting and patching structural elements.

B. Operational and Safety Limitations

1. Do not cut and patch operating elements or safety components in a manner that would reduce their capacity to perform as intended, or would increase maintenance, or
decrease operational life or safety. Obtain approval of the cutting and patching proposal before cutting and patching operating elements or safety related systems.

C. Visual Requirements

1. Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would reduce the building’s aesthetic qualities, or result in visual evidence of cutting and patching.

2. Remove and replace Work cut and patched in a visually unsatisfactory manner.

D. Inspection

1. Before cutting, 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.

E. Temporary Support

1. Provide temporary support of Work to be cut as required.

F. Protection

1. Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions that might be exposed during cutting and patching operations.

2. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3. Take all precautions to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

G. Performance

1. Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

2. Only cut existing construction to provide for the installation of other components or in the performance of other construction activities, and the subsequent patching required to restore surfaces to their original condition.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Use materials 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, subject to the approval of the Architect. Use materials whose performance will equal or that surpass of existing materials.

PART 3 - EXECUTION
3.01 CUTTING

A. Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review procedures with the original installer; comply with the original installer's recommendations.

B. Where cutting is required, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces. DO NOT USE IMPACT HAMMERS OR DRILLS.

C. Cut through concrete and masonry using a cutting machine with a carborundum saw or diamond core drill.

D. Comply with requirements of applicable sections of Division-2 where cutting and patching requires excavating and backfilling.

E. Bypass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.

3.02 PATCHING

A. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

B. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

C. 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.

D. Where the removal of walls or partitions extends one finish area into another, patch and repair floor and walls surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary to achieve uniform color and appearance.

E. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken area containing the patch, after the patched area has received primer and second coat.

F. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.03 CLEANING

A. Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Removal paint, mortar, oils, putty and similar items. Thoroughly clean piping, conduit and similar features before painting or finishing is applied. Restore damaged pipe covering to its original condition.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SUMMARY

A. This Section specifies administrative and procedural requirements for pre and final cleaning at Substantial Completion.

1. Special cleaning requirements for specific elements of the Work are included in appropriate Sections of Divisions-2 through -16.

2. Pre-cleaning requirements: Pre-clean all areas contaminated by fire, soot, smoke and odor. Power wash exterior and use cleaners that specifically address these issue. White pigmented shellac or comparable sealers can be used for odor control. If necessary, hire a company that specializes in removal of fire related contaminates.

B. General Project closeout requirements are included in Section 01 78 00 "Project Closeout".

C. General cleanup and waste removal requirements are included in Section 01 50 00 "Temporary Facilities and Controls".

D. Environmental Requirements: Conduct cleaning and waste disposal operations in compliance with local laws and ordinances. Comply fully with Federal and Local environmental and anti-pollution regulations.

1. Do not dispose of volatile wastes such as mineral spirits, oil or paint thinner in storm or sanitary drains.

2. Burning or burying of debris, rubbish or other waste material on the premises will not be permitted.

1.03 CLEANING UP: GENERAL REQUIREMENTS

A. The premises and the jobsite shall be maintained in a reasonably neat and orderly condition and kept free from accumulation of waste materials and rubbish daily and during the entire construction period. The General Contractor shall remove all crates, cartons, and other flammable waste materials and trash from the work areas and away from the construction site at the end of each working day.

B. Rubbish shall be carefully removed and disposed of.

C. Care shall be taken by workmen not to mark, soil, or otherwise deface finished surfaces. In the event that finished surfaces become defaced, clean and restore such surfaces to their original condition. Clean up immediately after each trade's work.
D. In addition to the cleaning specified above and the more specific cleaning that may be required in various sections of the Specifications, the site shall be prepared for occupancy by a thorough cleaning throughout, including washing (or cleaning by other approved methods) of surfaces on which dirt or dust has collected. Leave all equipment in an undamaged, bright, clean and polished condition. Re-cleaning will not be required after the work has been inspected and accepted unless later operations of the General Contractor make re-cleaning of certain portions necessary.

E. Upon completion of all work, remove temporary buildings and structures, fences, scaffolding, surplus materials, and rubbish of every kind from the site of the work.

PART 2 - PRODUCTS

2.01 CLEANING AGENTS

A. Cleaning Agents: Use cleaning materials and agents recommended by the manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property, or that might damage finished surfaces.

PART 3 - EXECUTION

3.01 FINAL CLEANING

A. General: Provide final cleaning operations when indicated. Employ experienced workers or professional cleaners for final cleaning.

Clean each surface or unit of Work to the condition expected of a publicly accessible site cleaning and maintenance program. Comply with manufacturer's instructions.

B. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion for the entire Project or a portion of the Project.

1. Clean the Project site, yard and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste materials, litter and foreign substances. Sweep paved areas broom clean. Remove petro-chemical spills, stains and other foreign deposits. Rake grounds that are neither planted nor paved, to a smooth even-textured surface.

2. Remove tools, construction equipment, machinery and surplus material from the site.

3. Remove snow and ice to provide safe access to the site.

4. Clean exposed hard-surfaced finishes to a dirt-free condition, free of stains, films and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

5. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics and similar spaces.

6. Touch-up and otherwise repair and restore marred exposed finishes and surfaces. Replace finishes and surfaces that can not be satisfactorily repaired or restored, or that show evidence of repair or restoration. Do not paint over "UL" and similar labels, including mechanical and electrical name plates.
7. Wipe surfaces of mechanical and electrical equipment, elevator equipment and similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.

8. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

9. Clean light fixtures, lamps, globes and reflectors to function with full efficiency. Replace burned out bulbs, and defective and noisy starters in fluorescent and mercury vapor fixtures.

10. Leave the Project clean and ready for occupancy.

H. Pest Control: Engage an experienced licensed exterminator to make a final inspection, and rid the Project of rodents, insects, and other pests. Comply with regulations of local authorities.

I. Removal of Protection: Remove temporary protection of facilities installed during construction to protect previously completed installations during the remainder of the construction period.

J. Compliances: Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of a lawful manner.

1. Where extra materials of value remain after completion of associated construction and have not become the Owner's property, dispose of these materials as directed.

END OF SECTION
SECTION 01 78 00
CLOSEOUT SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SUMMARY

A. This Section specifies administrative and procedural requirements for Project Record Documents

B. Project Record Documents required include:

   a. Marked-up copies of Contract Drawings.
   b. Marked-up copies of Shop Drawings.
   c. Newly prepared Drawings.
   d. Marked-up copies of Specifications, Addenda and Change Orders.
   e. Updated flash drive with all items "a" through "d".
   F. Marked-up Product Data submittals.
   g. Record Samples.
   h. Field records for Variable and Concealed Conditions.
   i. Record Information on Work that is Recorded only Schematically.

C. Specific record copy requirements that expand requirements of this Section are included in the individual Sections Divisions.

D. General project closeout requirements are included in Section 01 70 00 "Execution and Closeout Procedures."

E. General requirements for submittal of Project Record Documents are included in Section 01 30 00 "Administrative Requirements."

F. Maintenance of Documents and Samples: Store record documents and samples in a field office apart from Contract Documents used for construction. Do not permit Project Record Documents to be used for construction purposes. Maintain record documents in good order, and in a clean, dry legible condition. Make documents and samples available at all times for inspection by the Architect.

G. The General Contractor shall maintain the "Permit Set" of approved prints and Specifications at the jobsite throughout the duration of the project and transmit these documents to the Architect upon completion of the project.

H. No review or receipt of the records above by the Owner or Architect shall be a waiver of any deviation from the Contract Documents or the Shop Drawings or in any way relieve the General Contractor from his responsibility to perform the work in accordance with the Contract Documents and the Shop Drawings to the extent they are in accordance with the Contract Documents.
1.03 RECORD DRAWINGS

A. Mark-up Procedures: During the construction period, maintain a set of blue or black-line white prints of Contract Drawings and Shop Drawings for Project Record Documents purposes.

1. Mark these Drawings to indicate changes and actual installation where the installation varies appreciably from the installation shown originally. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include, but are not limited to:

   a. Dimensional changes to the Drawings.
   b. Revisions to details shown on the Drawings.
   c. Depths of foundations below the first floor.
   d. Locations and depths of underground utilities.
   e. Revisions to routing of piping and conduits.
   f. Revisions to electrical circuitry.
   g. Actual equipment locations.
   h. Locations of concealed internal utilities.
   i. Changes made by Change Order.
   j. Details not on original Contract Drawings.

2. Mark completely and accurately record prints of Contract Drawings or Shop Drawings, whichever is most capable for showing actual physical conditions. Where Shop Drawings are marked, show cross-reference on Contract Drawings location.

3. Mark record sets with red erasable colored pencil; use other colors to distinguish between changes for different categories of the Work at the same location.

4. Mark important additional information which was either shown schematically or omitted from original Drawings.

5. Note construction change directive numbers, alternative numbers, Change Order numbers and similar identification.

I. Responsibility for Markup: Where feasible, the individual or entity who obtained record data, whether the individual or entity is the installer, subcontractor, or similar entity, is required to prepare the markup on record Drawings.

1. Accurately record information in an understandable Drawing technique.

2. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the mark-up prior to concealment.

3. At time of Substantial Completion, submit record Drawings to Architect for Owner's records. Organize into sets; bind and label sets for Owner's continued use.

1.04 RECORD SPECIFICATIONS

A. During the construction period, maintain one copy of the Project Specifications, including addenda and modifications issued, for Project Record Document purposes.

1. Mark the Specifications to indicate the actual installation where the installation varies substantially from that indicated in Specifications and modifications issued. Note related Project Record
Drawings information, where applicable. Give particular attention to substitutions, selection of product options, and information on concealed installations that would be difficult to identify or measure and record later.

2. In each Specification Section where products, materials or units of equipment are specified or scheduled, mark the copy with the proprietary name and model number of the product furnished.

3. Record the name of the manufacturer, supplier and installer, and other information necessary to provide a record of selections made and to document coordination with record Product Data submittals and maintenance manuals.

4. Note related record Product Data, where applicable. For each principal product specified, indicate whether record Product Data has been submitted in maintenance manual instead of submitted as record Product Data.

5. Upon completion of mark-up, submit record Specifications to the Architect for Owner's records.

1.05 RECORD PRODUCT DATA

A. During the construction period, maintain one copy of each Product Data submittal for Project Record Document purposes.

1. Mark the Product Data to indicate the actual product installation where the installation varies substantially from that indicated in Product Data submitted. Include significant changes in the product delivered to the site, and changes in manufacturer's instructions and recommendations for installation.

2. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

3. Note related Change Orders and mark-up of record Drawings, where applicable.

4. Upon completion of markup, submit a complete set of record Product Data to the Architect for the Owner's records.

5. Where record Product Data is required as a part of maintenance manuals, submit mark-up Product Data as an insert in the manual, instead of submittal as record Product Data.

1.06 RECORD SAMPLE SUBMITTAL

A. Immediately prior to date of Substantial Completion, the Contractor shall meet with the Architect and, if desired, the Owner's personnel at the site to determine which of the Samples maintained during the construction period shall be transmitted to Owner for record purposes. Comply with the Architect's instructions for packaging, identification marking, and delivery to Owner's sample storage space. Dispose of other Samples in manner specified for disposal of surplus and waste materials.

1.07 MISCELLANEOUS RECORD SUBMITTALS

A. Refer to other Specification Sections for miscellaneous recordkeeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use.
1. Categories of requirements resulting in miscellaneous records include, but are not limited to the following:

   a. Fields records on excavations and foundations.
   b. Field records on underground construction and similar Work.
   c. Survey showing locations and elevations of underground lines.
   d. Invert elevations on drainage piping.
   e. Surveys establishing site lines and levels.
   f. Authorized measurements utilizing unit prices or allowances.
   g. Records of plant treatment.
   h. Ambient and substrate condition tests.
   i. Certifications received in lieu of labels on bulk products.
   j. Batch mixing and bulk delivery records.
   k. Testing and qualification of tradesmen.
   l. Documented qualification of installation firms.
   m. Load and performance testing.
   n. Inspections and certifications by governing authorities.
   o. Leakage and water-penetration tests.
   p. Fire resistance and flame spread test results.
   q. Final inspection and correction procedures.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 RECORDING

   A. Post changes and modifications to the Documents as they occur. Do not wait until the end of the Project. The Architect will periodically review record documents to assign compliance with this requirement.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SUMMARY

A. This Section specifies general administrative and procedural requirements for warranties and bonds required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.

1. Refer to the General Conditions of terms of the Contractor's special warranty of workmanship and material.

2. General closeout requirements are included in Section 01 70 00 "Execution and Closeout Procedures".

3. Specific requirements for warranties for the Work and products and installations that are specified to be warranted, are included in the individual Sections of all Divisions.

4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.

B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

1.03 WARRANTY REQUIREMENTS

A. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

B. Reinstatement of Warranty: When Work covered by the warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

C. Replacement Cost: Upon determination that Work covered by the warranty that has been filed is damaged, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing and rebuilding defective Work regardless of whether other Owner has benefitted from use of the Work through a portion of its anticipated useful service life.

D. Owner Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products which have warranties not in conflict with requirements of the Contract Documents.

E. The Owner reserves the right to refuse to accept Work for the Project where a special warranty, certification, or similar commitment is required on such Work or part of the Work, until evidence
it is presented that entities required to countersign such commitments are willing to do so.

1.04 SUBMITTALS

A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.

1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within 15 days of completion of that designated portion of the Work.

B. When a special warranty is required to be executed by the Contractor, or the Contractor and a subcontractor, supplier or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.

1. Refer to individual Sections of all Divisions for specific content requirements, and particular requirements for submittal of special warranties.

C. Form of Submittal: At Final Completion, compile 2 copies of each required warranty and bond properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

D. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8½" by 11" paper.

1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark each tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address and telephone number of the installer.

2. Identify each binder on the front and spine, with the typed or printed title "WARRANTIES AND BONDS", the Project title or name, and the name of the Contractor.

3. When operating and maintenance manuals are required for warranted construction, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

END OF SECTION
PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SCOPE

A. Demolition shall include removal of the existing fire damaged items as identified as shown on the drawings.

B. Care shall be used to insure that building facilities to remain are not damaged. General Contractor shall be responsible for repairing all damaged areas not schedule for demolition.

C. The procedures shall provide for safe conduct of the work, protection of property to remain undisturbed, coordination with other work in progress, and timely disconnection of utility services. The spread of dust and flying particles shall be minimized. Masonry and similar construction shall be wetted during demolition and removal. Use of water will not be permitted where it will result in, or create, hazardous or objectionable conditions or cause damage to existing property.

D. All demolition not shown on the drawings, but that can be reasonably expected to facilitate the construction, and equipment installation shown on the proposed layouts shall also be considered a part of the demolition requirement of this specification.

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Review all specifications and drawings.

1.04 REGULATORY REQUIREMENTS

A. Conform to applicable code for disposal of debris.

B. Coordinate clearing work with utility companies.

1.05 PROTECTION

A. Provide, erect and maintain temporary barriers and security devices.

B. Erect and maintain weatherproof closures for exterior openings.

C. Erect and maintain dustproof partitions to prevent spread of dust, fumes and smoke to other parts of the building. On completion, remove partitions and repair damaged surfaces to match adjacent surfaces.

D. Protect existing items which are not indicated to be altered.

PART 2 - SPECIAL INSTRUCTIONS:
2.01 EXISTING BUILDING

A. The General Contractor shall use the site in a manner so as to not impede the operation of the activities and services in the existing buildings.

B. The General Contractor shall schedule the site work in a manner so as to allow the existing parking at the existing structure to remain as long as practicable.

C. The General Contractor shall schedule the work of this project so as to not require the existing structures to close during any period of construction.

D. The General Contractor shall secure the site to prevent children from playing in the project area during construction.

E. Demolition at and into exist walls shall be performed in a manner so as to keep all existing spaces occupiable and operational.

F. Demolition to create new openings shall be coordinated with mechanical and electrical components in walls. Cuts shall be clean and shall be repaired to so that remaining walls have the appearance of adjacent finished surfaces.

G. Demolition of existing walls or portions thereof shall include any electrical and mechanical device on or at the wall. Where wiring or piping must be cut, work will be performed by a licensed electrician or plumber respectively. All remaining devices shall be reconnected and operational.

PART 3 - EXECUTION

3.01 EXISTING UTILITIES

A. Existing utility services with related meters and equipment shall be disconnected by the Contractor, to extent shown or specified in mechanical, electrical, and plumbing drawings and specifications. Contractor shall be responsible for calling Miss Utility as required by law, prior to any demolition or construction activities commence. Contractor shall maintain record of calls and any identification numbers provided by said utilities in connection with this procedure, and shall log all visits onto site by utility company representatives.

B. Other existing utilities, uncovered by demolition, shall be removed to points of entry, and capped or plugged. Meters and related equipment shall be removed by the Contractor and turned over to the utility companies.

D. Use of explosives will not be permitted.

E. Electrical service shall be maintained for duration of construction to insure complete operation of existing building. All electrical bills shall be paid for by the Owner.

3.02 PREPARATION

A. Verify the existing plant life and features designated to remain as tagged or identified.

3.02 DEMOLITION
A. Perform demolition work to cause as little inconvenience to adjacent occupied building areas as possible.

B. Items Required for reinstallation:
   1. Carefully remove, store and protect materials and equipment scheduled for reinstallation.

C. Items to be retained by Owner:
   1. Carefully remove, store and protect materials and equipment scheduled to be retained by the Owner. Deliver and store as directed by the Owner.

3.04 DISPOSITION OF MATERIAL

A. Except where noted otherwise, immediately remove demolished materials from the site.

B. Do not burn or bury any materials on site.

C. Remove debris, rock, and extracted plant life from site and dispose of legally and properly.

3.05 CLEANUP

A. Debris shall be removed from the site daily and premises kept neat and clean.

B. All salvage belongs to the Owner unless specifically stated otherwise.

C. Prevent spillage during removal activities. Pavements and areas adjacent to the site shall be kept clean and free from mud, dirt and debris at all times.

END OF SECTION
PART 1 GENERAL

1.01 RELATED DOCUMENTS
   A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SECTION INCLUDES
   A. Concrete Block.
   B. Mortar and Grout.
   C. Reinforcement and Anchorage.
   D. Flashings.
   E. Accessories.

1.03 RELATED REQUIREMENTS
   A. Section 03 20 00 - Concrete Reinforcing: Reinforcing steel for grouted masonry.
   B. Section 04 05 11 - Mortar and Masonry Grout.
   C. Section 06 10 00 - Rough Carpentry: Nailing strips built into masonry.
   D. Section 07 84 00 - Firestopping: Firestopping at penetrations of fire-rated masonry and at top of fire-rated walls.
   E. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

1.04 REFERENCE STANDARDS
   A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures and Related Commentaries; American Concrete Institute International; 2011.
   F. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2014.
   H. ASTM C140/C140M - Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units; 2014.
1.05 CERTIFICATIONS
A. Contractor shall furnish certified statements to the Architect, attesting that masonry materials meet specification requirements. Certificates shall be signed by material manufacturers and include name and location of project, name and address of Contractor and date and quantity of shipment.
B. Certifications shall include test reports of masonry materials by a laboratory approved by the Architect, for conformance with specification requirements; at the Contractor's expense.

1.06 SUBMITTALS
A. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
B. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.
C. Test Reports: Concrete masonry manufacturer's test reports for units with integral water repellent admixture.

1.07 QUALITY ASSURANCE
A. Comply with provisions of ACI 530/530.1/ERTA, except where exceeded by requirements of the contract documents.
B. Fire Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

1.08 DELIVERY, STORAGE, AND HANDLING
A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.
B. cracked, chipped and spalled masonry units shall be immediately removed from job-site.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS
A. Concrete Block: Comply with referenced standards and as follows:
   1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depth of 8 inches.
   2. Special Shapes: Provide non-standard blocks configured for corners, lintels, headers, control joint edges, movement joints, and other detailed conditions.
   3. Load-Bearing Units: ASTM C90, normal weight.
      a. Exposed Faces: Manufacturer's standard color and texture where indicated.
      b. Pattern: Vertical single score.
      c. Faces to Receive Plaster: Where units are indicated to receive a direct application of plaster, provide textured-face units made with gap graded aggregates.

2.02 MASONRY LINTELS
A. Masonry Lintels: Prefabricated or built in place masonry lintels made from bond beam concrete masonry units with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built in place lintels until cured.

2.03 MORTAR AND GROUT MATERIALS
A. Masonry Cement: ASTM C91/C91M, Type N.
B. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
C. Hydrated Lime: ASTM C207, Type S.
D. Mortar Aggregate: ASTM C144.
E. Grout Aggregate: ASTM C404.

2.04 REINFORCEMENT AND ANCHORAGE

A. Reinforcing Steel: ASTM A615/A615M, Grade 40 (40,000 psi), deformed billet bars; galvanized.

B. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.

C. Single Wythe Joint Reinforcement: Truss or ladder type; ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3; 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.

D. Multiple Wythe Joint Reinforcement: Truss type; fabricated with moisture drip; ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/153M, Class B; 0.1483 inch side rods with 0.1483 inch cross rods; width as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage on each exposure.

E. Strap Anchors: Bent steel shapes configured as required for specific situations, 1-1/4 in width, 0.105 in thick, lengths as required to provide not more than 1 inch and not less than 1/2 inch of mortar coverage from masonry face, corrugated for embedment in masonry joint, hot dip galvanized to ASTM A 153/A 153M, Class B.

F. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not more than 1 inch and not less than 1/2 inch of mortar coverage from masonry face.

1. Concrete frame: Dovetail anchors of bent steel strap, nominal 1 inch width x 0.024 in thick, with trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.

G. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.

2.05 FLASHINGS

A. Plastic Flashings: Sheet polyolefin laminated to polypropylene; 40 mil thick.

B. Flashing Sealant/Adhesives: Silicone, polyurethane, or silyl-terminated polyether/polyurethane or other type required or recommended by flashing manufacturer; type capable of adhering to type of flashing used.

2.06 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.

B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; ____ inch wide by maximum lengths available.

C. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.07 MORTAR AND GROUT MIXES

A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.

1. Masonry below grade and in contact with earth: Type S.

2. Interior, loadbearing masonry: Type N.

B. New Mortar for Old Brick: Proportioned by volume only; not more than 20 percent of the total volume of Portland cement and lime combined shall be Portland cement.

1. Sand: Match original mortar as closely as possible in color, size, and texture, without use of other additives.

2. Repointing Mortar: Use proportions from 1 part lime to 2 parts sand with no Portland cement, up to 2 parts Portland cement to 3 parts lime to 6 parts sand.

C. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

D. Admixtures: Add to mixture at manufacturer’s recommended rate and in accordance with manufacturer’s instructions; mix uniformly.

E. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION
A. Verify that field conditions are acceptable and are ready to receive masonry.
B. Verify that related items provided under other sections are properly sized and located.
C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION
A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COURSING
A. Establish lines, levels, and coursing indicated. Protect from displacement.
B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
C. Concrete Masonry Units:
   1. Bond: Running.
   2. Coursing: One unit and one mortar joint to equal 8 inches.

3.04 PLACING AND BONDING
A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
B. Lay hollow masonry units with face shell bedding on head and bed joints.
C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
D. Remove excess mortar and mortar smears as work progresses.
E. Interlock intersections and external corners, except for units laid in stack bond.
F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
G. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.
H. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.05 REINFORCEMENT AND ANCHORAGE - GENERAL
A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
C. Place continuous joint reinforcement in first and second joint below top of walls.
D. Lap joint reinforcement ends minimum 6 inches.
E. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.
3.06 MASONRY FLASHINGS
   A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted as required.
   B. Extend plastic, laminated, EPDM, and _____ flashings to within 1/4 inch of exterior face of masonry.

3.07 GROUTED COMPONENTS
   A. Lap splices minimum 24 bar diameters.
   B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
   C. Place and consolidate grout fill without displacing reinforcing.
   D. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

3.08 CONTROL AND EXPANSION JOINTS
   A. Do not continue horizontal joint reinforcement through control or expansion joints.
   B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
   C. Size control joints as indicated on drawings; if not shown, 3/4 inch wide and deep.

3.09 CUTTING AND FITTING
   A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.
   B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.10 PARGING
   A. Dampen masonry walls prior to parging.
   B. Scarify each parging coat to ensure full bond to subsequent coat.
   C. Parge masonry walls in two uniform coats of mortar to a total thickness of 3/4 inch.
   D. Steel trowel surface smooth and flat with a maximum surface variation of 1/8 inch per foot.
   E. Strike top edge of parging at 45 degrees.

3.11 FIELD QUALITY CONTROL
   A. An independent testing agency will perform field quality control tests and prepare reports. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.
      1. Place grout only after inspectors have verified compliance of grout spaces and grades, sizes, and locations of reinforcement.
   B. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C140/C140M for conformance to requirements of this specification.
   C. Mortar Tests: Test each type of mortar in accordance with ASTM C780, testing with same frequency as masonry samples.

3.12 CLEANING
   A. Remove excess mortar and mortar droppings.
   B. Clean soiled surfaces with cleaning solution.

3.13 PROTECTION
   A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION
PART 1 - GENERAL

1.01 GENERAL

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 WORK INCLUDED

A. Types of work in this section include rough carpentry for:
   1. Miscellaneous blocking
   2. Wood framing

1.03 RELATED WORK SPECIFIED ELSEWHERE:

A. Section 09 21 16 - Gypsum-based Assemblies

1.04 DEFINITIONS:

A. Rough carpentry includes carpentry work not specified as part of other sections and which is generally not exposed, except as otherwise indicated.

1.05 SUBMITTAL:

A. Product Data: Submit manufacturer's specifications and installation instructions for materials listed below:

   1. Underlayment.

B. Material Certificates: Where dimensional lumber is provided to comply with minimum allowable unit stresses, submit listing of species and grade selected for each use, and submit evidence of compliance with specified requirements. Compliance may be in form of a signed copy of applicable portion of lumber producer's grading rules showing design values for selected species and grade. Design values shall be as approved by the Board of Review of American Lumber Standards Committee.

C. Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storing, installation and finishing of treated material.

   1. Preservative Treatment: For each type specified, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained and conformance with applicable standards.

   2. For water-borne treatment include statement that moisture content of treated materials was reduced to levels indicated prior to shipment to project site.

   3. Fire-Retardant Treatment: Include certification by treating plant that treated material complies with specified standard and other requirements.

1.06 PRODUCT HANDLING:
PART 1 - GENERAL

1.01 GENERAL

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 WORK INCLUDED

A. This Section includes prefabricated metal-plate-connected wood trusses of the following types: Gable-shaped trusses.

B. Related Sections: The following sections contain requirements that relate to this Section:

1. Roof sheathing is specified in Section 06100 - "Rough Carpentry."

1.03 DEFINITIONS

A. Prefabricated metal-plate-connected wood trusses include planar structural units consisting of metal-plate-connected members that are fabricated from dimension lumber and that have been cut and assembled prior to delivery to the project site.

1.04 SUBMITTALS

A. General: Provide submittals in accordance with Conditions of Contract and Division 01 Specification Sections.

B. Product data for lumber, metal connector plates, hardware, fabrication process, and fasteners.

C. Wood treatment data as follows including chemical treatment manufacturer's instructions for handling, storing, installation, and finishing of treated material:

1. Certification by treating plant that required fire-retardant treatment complies with specified standard and other requirements, and by metal connector plate manufacturer that fire-retardant formulation is approved for use with metal connector plates for truss exposure indicated.

2. Material test reports from qualified independent testing laboratory indicating and interpreting test results relative to compliance of fire-retardant-treated wood products with requirements indicated.

D. Shop drawings indicating species, species group, sizes, and stress grades of lumber to be used; pitch, span, camber, configuration, and spacing for each type of truss required; type, size, material, finish, design values, and location of metal connector plates; and bearing details.

1 To the extent engineering design considerations are indicated as fabricator's responsibility, include design analysis indicating loading, assumed allowable stress, stress diagrams and calculations, and other information needed for review that have been signed and sealed by a qualified professional engineer who is responsible for their preparation.
E. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction evidencing compliance of fire-retardant-treated wood with specified requirements and building code in effect for Project.

1.05 QUALITY ASSURANCE

A. TPI Standards: Comply with applicable requirements and recommendations of the following Truss Plate Institute (TPI) publications:

3. "Commentary and Recommendations for Handling and Erecting Wood Trusses."
4. "Commentary and Recommendations for Bracing Wood Trusses."
5. "Quality Standard for Metal Plate Connected Wood Trusses."

B. Connector Plate Manufacturer’s Qualifications: A manufacturer that is a member of TPI and that complies with TPI quality control procedures for manufacture of connector plates published in TPI "Quality Standard for Metal Connector Plate Manufacture."


D. Single-Source Engineering Responsibility: Provide trusses engineered by the metal plate connector manufacturer to support superimposed dead and live loads indicated, with design approved and certified by a qualified professional engineer.

E. Engineer Qualifications: A professional engineer legally authorized to practice in the Commonwealth of Virginia and experienced in providing engineering services of the kind indicated that have resulted in the installation of metal-plate-connected wood trusses similar to those of this Project and with a record of successful in-service performance.

F. Fabricator’s Qualifications: A firm that complies with the following requirements for quality control and is experienced in prefabricating metal-plate-connected wood trusses similar to those of this Project that have a record of successful in-service performance:

1. Fabricator shall be a participant in a recognized quality assurance program that involves inspection by SPIB; Timber Products Inspection, Inc.; Truss Plate Institute; or other independent inspection and testing agency acceptable to Architect and authorities having jurisdiction.


1.06 DELIVERY, STORAGE, AND HANDLING

A. Handle and store trusses with care and comply with manufacturer’s instructions and TPI recommendations to avoid damage from bending, overturning, or other cause which trusses are not designed to resist or endure.

1. Keep prefabricated wood trusses dry at all times. Protect against exposure to weather and contact with damp or wet surfaces. Stack trusses off ground, pavements or slabs on dunnage or
blocking and provide weatherproof coverings; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar material materials.

2. For prefabricated wood trusses pressure treated with waterborne chemicals, provide sticker between adjacent stacked or stored trusses to provide air circulation.

1.07 SEQUENCING AND SCHEDULING

A. Time delivery and erection of trusses to avoid extended on-site storage and to avoid delaying work of other trades whose work must follow erection of trusses.

PART II - PRODUCTS

2.01 CONNECTOR PLATE MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide metal connector plates by one of the following:

1. Alpine Engineered Products, Inc.
2. Bemax of Florida, Inc.
3. Clary Corporation.
4. Computrus, Inc.
5. Gang-Nail Systems, Inc.
6. Hydro-Air Engineering, Inc.
7. Inter-Lock Steel Co., Inc.
8. Metal-Lock, Inc.
10. TEE-Lok Corp.
11. Truss Connectors of America.

2.02 LUMBER

A. Factory mark each piece of lumber with type, grade, mill, and grading agency.

B. Lumber Standard: Manufacture lumber to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee’s (ALSC) Board of Review.

C. Inspection Agencies: Inspection agencies and the abbreviations used to reference them to lumber grades and species include the following:

1. SPIB - Southern Pine Inspection Bureau.

D. Minimum nominal sizes are indicated, except as shown by detail dimensions.

E. Provide dressed lumber, S4S, manufactured to actual sizes required by PS 20 to comply with requirements indicated below:

1. Moisture Content: Seasoned, with 19 percent maximum moisture content at time of dressing and shipment for sizes 2 inches or less in nominal thickness, unless otherwise indicated.
2. Grade for Chord Members: At truss design engineer’s option, either "Select Structural" or "No. 1."

3. Grade for Web Members: As selected by the truss design engineer.


2.03 METAL CONNECTOR PLATES

A. General: Fabricate connector plates from metal complying with requirements indicated in this article.

B. Hot-Dip Galvanized Steel Sheet: Structural (physical) quality steel sheet complying with ASTM A 446, Grade A; zinc coated by hot-dip process to comply with ASTM A 525, Designation G60; minimum coated metal thickness indicated but not less than 0.036 inch.

2.04 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where truss members are exposed to weather or to high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of AISI Type 304 stainless steel.


E. Lag Bolts: ANSI B18.2.1.

F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and where indicated, flat washers.

2.05 METAL FRAMING ANCHORS

A. Provide Simpson Hurricane ties as shown on the drawings.

B. General: Provide metal framing anchors of type, size, metal, and finish indicated that comply with requirements specified including the following:

1. Current Evaluation/Research Reports: Provide products for which reports exist from a model code organization acceptable to authorities having jurisdiction that evidence compliance of metal framing anchors for application indicated with the building code in effect for this Project.

2. Allowable Design Loads: Provide products for which manufacturer publishes allowable design loads that are determined from empirical data or by rational engineering analysis and that are demonstrated by comprehensive testing performed by a qualified independent testing laboratory.

B. Galvanized Steel Sheet: Steel sheet zinc-coated by hot-dip process on continuous lines prior to fabrication to comply with ASTM A 525 for Coating Designation G60 and with ASTM A 446, Grade A
(structural quality); ASTM A 526 (commercial quality); or ASTM A 527 (lock-forming quality); as standard with manufacturer for type of anchor indicated.

2.06 FABRICATION

A. Cut truss members to accurate lengths, angles, and sizes to produce close-fitting joints with wood-to-wood bearing in assembled units.

B. Fabricate metal connector plates to size, configuration, thickness, and anchorage details required to withstand design loadings for types of joint designs indicated.

C. Assemble truss members in design configuration indicated using jigs or other means to ensure uniformity and accuracy of assembly with joints closely fitted to comply with tolerances specified in TPI "Quality Standard for Metal Plate Connected Wood Trusses." Position members to produce design camber indicated.

D. Connect truss members by means of metal connector plates accurately located and securely fastened to each side of wood members by means indicated or approved by truss design engineer.

PART III - EXECUTION

3.01 INSTALLATION

A. General: Erect and brace trusses to comply with applicable requirements of referenced TPI standards.

B. Locate trusses to allow for passage of vertical ducts, flues and similar items. Space trusses to provide for alignment of access panels and stairs, light fixtures and similar items as indicated on drawings.

   1. Upon approval of the Architect, adjust spacing of trusses to accommodate locations of plumbing, mechanical and electrical services, access doors and stairs, light fixtures and similar items that penetrate plane of trusses.

C. Where trusses do not fit, return them to fabricator and replace with trusses of correct size; do not alter trusses in the field.

D. Erect trusses with plane of truss webs vertical (plumb) and parallel to each other, located accurately at design spacings indicated.

E. Hoist trusses in place by means of lifting equipment suited to sizes and types of trusses required, exercising care not to damage truss members or joints by out-of-plane bending or other causes.

F. Anchor trusses securely at all bearing points to comply with methods and details indicated.

G. Install permanent bracing and related components to enable trusses to maintain design spacing, withstand live and dead loads including lateral loads, and to comply with other indicated requirements.

   1. As a minimum, permanent bracing for roof trusses shall consist of the bottom chord, web and vertical cross bracing recommended by the referenced Truss Plate Institute commentary and recommendations.

H. Do not cut, notch, modify or remove any truss members.

END OF SECTION
A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber providing for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.

1. For lumber pressure treated with waterborne chemicals, sticker between each course to provide air circulation.

1.07 PROJECT CONDITIONS:

A. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of nailers, blocking, and similar supports to allow attachment of other work.

PART 2 - PRODUCTS

2.01 LUMBER, GENERAL:

A. Lumber Standards: Manufacture lumber to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee’s (ALSC) Board of Review.

B. Inspection Agencies: Inspection agencies and the abbreviations used to reference with lumber grades and species include the following:

1. NLGA - National Lumber Grades Authority (Canadian).
2. SPIB - Southern Pine Inspection Bureau.
3. WCLIB - West Coast Lumber Inspection Bureau.
4. WWPA - Western Wood Products Association.

C. Grade Stamps: Factory-mark each piece of lumber with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.

1. For exposed lumber apply grade stamps to ends or back of each piece, or omit grade stamps entirely and issue certificate of grade compliance from inspection agency in lieu of grade stamp.

D. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

1. Provide dressed lumber, S4S, unless otherwise indicated.
2. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing and shipment for sizes 2" or less in nominal thickness, unless otherwise indicated.

2.02 DIMENSION LUMBER:

A. For light framing (2" to 4" thick, 2" to 4" wide) provide the following grade and species:

1. Standard grade.
2. Any species of specified grade.

2.03 MISCELLANEOUS LUMBER:
A. Provide wood for support or attachment of other work including rooftop equipment curbs and support bases, nailers, blocking and similar members. Provide lumber of sizes indicated, worked into shapes shown, and as follows:

2.04 CONSTRUCTION PANELS:


B. Trademark: Factory-mark each construction panel with APA trademark evidencing compliance with grade requirements.

C. Concealed APA Performance-Rated Panels: Where construction panels will be used for the following concealed types of applications, provide APA Performance-Rated Panels complying with requirements indicated for grade designation, span rating, exposure durability classification, edge detail (where applicable) and thickness.

D. Plywood Backing Panels: For mounting electrical or telephone equipment, provide fire-retardant treated plywood panels with grade designation, APA C-D PLUGGED INT with exterior glue, in thickness indicated, or, if not otherwise indicated, not less than 15/32".

2.05 MISCELLANEOUS MATERIALS:

A. Fasteners and Anchorages: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable specifications for nails staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.

1. Where rough carpentry work is exposed to weather, in ground contact, or in areas of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).

B. Building Paper: ASTM D 226, Type I; asphalt saturated felt, non-perforated, 15-lb. type.

2.06 WOOD TREATMENT BY PRESSURE PROCESS:

A. Preservative Treatment: Where lumber or plywood is indicated as "Trt-Wd" or "Treated," or is specified herein to be treated, comply with applicable requirements of AWPA Standards C2 (Lumber and C9 (Plywood) and of AWPB Standards listed below. Mark each treated item with the AWPB Quality Mark Requirements.

1. Pressure-treat above-ground items with water-borne preservatives to comply with AWPB LP-2. After treatment, kiln-dry lumber and plywood to a maximum moisture content, respectively, of 19 percent and 15 percent. Treat indicated items and the following:

   a. Wood nailers, curbs, equipment support bases, blocking, and similar members in connection with roofing, flashing, vapor barriers and waterproofing.

   b. Wood sleepers, blocking and similar concealed members in contact with masonry or concrete.

2. Complete fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces with heavy brush coat of same chemical used for treatment and to
comply with AWPA M4. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

PART 3 - EXECUTION

3.01 INSTALLATION, GENERAL:

A. Discard units of material with defects which might impair quality of work, and units which are too small to use in fabricating work with minimum joints or optimum joint arrangement.

B. Set carpentry work to required levels and lines, with members plumb and true to line and cut and fitted.

C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

D. Countersink nail heads on exposed carpentry work and fill holes.

E. Use common wire nails, except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; predrill as required.

3.02 WOOD NAILERS, BLOCKING AND SLEEPERS:

A. Provide wherever shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.

A. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.

3.03 APPLICATION OF PRESERVATIVE TREATMENT

A. All lumber in contact with concrete, concrete masonry or concealed in walls for use as blocking shall be treated lumber.

B. All lumber used in roofing shall be treated lumber.

END OF SECTION
SECTION 06 20 00
FINISH CARPENTRY

PART 1 GENERAL

1.01 GENERAL

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 RELATED DOCUMENTS

A. The Drawings and general provisions of the Contract, including the General and Supplementary General Conditions and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.03 SECTION INCLUDES

A. Finish carpentry items.
B. Wood casings and moldings.
C. Hardware and attachment accessories.

1.04 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Support framing, grounds, and concealed blocking.
B. Section 09 91 23 - Interior Painting: Painting and finishing of finish carpentry items.

1.05 REFERENCE STANDARDS

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards; 2014.

1.06 SUBMITTALS

A. Product Data:
B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
   1. Provide the information required by AWI/AWMAC/WI (AWS).
   2. Include certification program label.

1.07 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
   1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
B. Quality Certification: Provide AWI (QCP) inspection report and quality certification of completed work.
   1. Provide labels or certificates indicating that the work complies with requirements of AWI/AWMAC/WI (AWS) Grade or Grades specified.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protect work from moisture damage.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Quality Grade: Unless otherwise indicated provide products of quality specified by AWI/AWMAC/WI (AWS) for Custom Grade.
B. Interior Woodwork Items:
1. Moldings, Bases, Casings, and Miscellaneous Trim: Clear white pine; prepare for paint finish.
2. Stairs, Balustrades, and Handrails: Clear fir; prepare for stained finish.

2.02 WOOD-BASED COMPONENTS
   A. Wood fabricated from old growth timber is not permitted.

2.03 FABRICATION
   A. Shop assemble work for delivery to site, permitting passage through building openings.
   B. When necessary to cut and fit on site, provide materials with ample allowance for cutting.
      Provide trim for scribing and site cutting.

PART 3 EXECUTION

3.01 INSTALLATION
   A. Install work in accordance with AWI/AWMAC/WI (AWS) requirements for grade indicated.
   B. Set and secure materials and components in place, plumb and level.
   C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

3.02 TOLERANCES
   A. Maximum Variation from True Position: 1/16 inch.
   B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

END OF SECTION
SECTION 07 31 00
FIBER GLASS ASPHALT ROOFING SHINGLES

PART 1 - GENERAL

1.01 GENERAL

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 WORK INCLUDED

A. The Contractor shall furnish all labor, materials, tools, scaffolding, equipment and supervision to properly apply the fiberglass asphalt shingle roof in accordance with the drawings and specifications.

B. Furnish all labor, materials, services and equipment necessary to complete the installation of a roofing system including vapor barrier, roof insulation, roofing membrane, all as detailed on the Drawings and specified in this Section to include Fiber Glass Asphalt Shingles over entire building.

1.03 QUALIFICATIONS

A. Work shall be installed by a manufacturer's approved and qualified installer who shall be responsible for the entire roof and flashing.

1.04 WARRANTY

A. Fiberglass asphalt shingle roofing shall have twenty year limited manufacturer's warranty and 2-year in workmanship.

1.05 INSPECTION OF ROOF DECKS

A. The roofing contractor shall examine all roof decks on which his work is to be applied and shall notify the Architect in writing, prior to starting work, of any defects which he considers detrimental to the proper installation of his materials.

1.06 STORAGE OF MATERIALS

A. All roofing materials and accessories shall be kept dry at all times, during storage and installation.

B. Insulation shall be raised above deck or ground level on wood pallets and covered with waterproof tarpaulins.

1.07 SUBMITTALS

A. SAMPLES: Contractor shall submit samples of all roofing products and color samples for Architect's approval prior to ordering materials.

B. SHOP DRAWINGS: Contractor shall submit shop drawings of all flashing, hip, valley and roof edge details prior to fabricating.
B. ROOFING WARRANTEE: Roof shall be warranted for twenty-five years (materials and labor). Contractor shall submit a copy of the roofing warranty.

PART 2 - MATERIALS

2.01 FIBERGLASS BASED ASPHALT ROOFING SHINGLES

A. Roofing shingles shall be type "Landmark Series, Class A, 25-year limited warranty shingle as manufactured by Certainteed. Roofing shingles shall meet ASTM E 108, Class A, ASTM D 3161, ASTM D 3018, Type 1, ASTM D 228, ASTM D 3462, UL 790, Class A and UL 997. Roof shingles shall be treated with #M Algae Block.

B. Color shall match existing roofing shingles on housing units

C. Ridge shingles shall be fiber-cement Shingles as manufactured by the Supradur Corp or approved equal. Color shall match existing roof on adjacent structure, as approved by Architect.

D. Asphalt impregnated felt underlayment shall be 30 pound felt as manufactured by the Celotex Corporation, or approved equal. Fasteners shall be of sufficient length and holding power as required on shingle wrapper for securement of the material.

E. Shingle underlayment shall be Celo-Guard shingle underlayment and shall be applied at all hips, valleys, eave edges, rake edges, and as a non-exposed flashing sheet for vent pipes. Material for underlayment of shingle: nonperforated, 15 lbs per 100 sq. ft. asphalt saturated felts, 36 or 32 inches in width conforming to ASTM D-266-68. The felt shall be attached directly to the wood decking with large flat head galvanized roofing nails.

2.02 ACCESSORIES

A. All accessories and materials shall be provided, whether listed or not, as necessary to install complete roofing system in order to meet manufacturer's warranty requirements.

B. Additional accessories shall include:

1. Roofing nails shall be corrosion resistant as required by code. Staples shall not be used.

2. Roof vents as indicated on drawings shall be of the following:

   a. Continuous soffit type as indicated on drawings

   b. Continuous ridge type as indicated on drawings.

C. Metal flashing and gutters are specified elsewhere.

PART 3 - EXECUTION

3.01 GENERAL

A. The roofing shall be installed in strict accordance with manufacturer's instructions, in the conventional manner after the complete building has been erected. All accessories and materials shall be provided, whether listed or not, as necessary to install complete roofing system in order to meet manufacturer's warranty requirements.
B. Flashing, where required, shall be aluminum.

C. The asphalt shingle and roll roofing shall be applied to the roof deck with large head galvanized roofing nails. Manufacturer's directions shall govern the location and number of nails in each.

### 3.02 SUBSURFACE PREPARATION

A. Surfaces to be covered with asphalt shingle or roll roofing shall be smooth and free from defects of every description. All such surfaces shall be clean of dirt, rubbish and other foreign materials before the roofing is started. All projecting nails shall be set flush to the roof sheathing. Surface shall be dry before applying any roofing material.

B. The construction of the roof decking shall be completed before shingle roofing work is started. Roof surfaces shall be smooth, firm, dry, and free from loose boards, large cracks, and projecting ends that might injure the roofing. Vents and other projections through roofs shall be flashed and secured in position. Projecting nails shall be driven firmly home.

### 3.04 ROOF ACCESSORIES

A. Roof vents and other opening in the roof shall be properly installed to prevent water from entering the building.

B. Closure of roof openings and penetrations shall be constructed by Roofing Contractor and shall be warranted.

END OF SECTION
PART 1 - GENERAL

1.01 GENERAL

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 WORK INCLUDED

A. This section includes sealants with related primers.

B. Materials and methods of application for sealing, as specified herein, shall be coordinated with requirements described in other sections and as shown.

C. Materials shall be prepared and applied in strict accordance with manufacturer's printed instructions, as modified by specification requirements.

1.03 CERTIFICATION

A. Contractor shall furnish certificates from the manufacturers attesting that materials meet specification requirements.

1.04 SPECIALTY SUBCONTRACTOR

A. Application shall be by a Specialty Subcontractor.

1.05 SUBMITTALS:

A. SAMPLES: Prior to delivery of sealants to the project site a one-cartridge representative sample of each type specified shall be furnished. The sample containers shall include the same information on the label as specified for containers delivered to the site.

B. Joints: Before work is started, a sample of each type of joint shall be sealed where directed. The samples shall show the materials, workmanship, bond, and color of materials as specified or selected for the work. The materials, workmanship, bond, and color throughout the project shall match that of the approved sample joint.

C. Samples of primers (one pint); bond breakers (lin. ft.); and backing materials (lin. ft.) shall be submitted for identification, and labeled as to materials and use.

1.06 DELIVERY AND STORAGE

A. Materials shall be delivered to the project site in the manufacturers’ original unopened containers. The materials cartons and/or shipping containers shall include the following information on the labels: supplier, name of material, formula or specification number, lot number, color, date of manufacture, mixing instructions, shelf life, and curing time when applicable at the standard conditions for laboratory tests.

B. Materials shall be carefully handled and stored to prevent inclusion of foreign materials, or exposure to temperatures exceeding 90 degrees F. Components outdated as indicated by shelf life shall not be used.
1.07 ENVIRONMENTAL CONDITIONS

A. The ambient temperature shall be within the limits of 40 and 90 degrees F. when the sealants are applied.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Caulking shall be two-part Thiokol Polysulfide Liquid Polymer base sealant, installed in accordance with manufacturer's directions. Color shall best match adjoining materials.

B. Primers shall be as recommended by the sealant manufacturer, shall not stain contact surfaces, and shall be compatible with sealants used.

C. Bond breakers shall be as recommended by sealant manufacturer for joint conditions.

D. Backup material shall be resilient urethane or polyvinylchloride foam. Sponge of vinyl or rubber, polyvinylprene tubes or beads or polyisobutylene extrusions. Tube or rod stock, when used, shall be rolled into the joint cavity. Backing materials shall be non-oil, non-staining, non-absorbent and non-asphaltic premolded composition fillers, compatible with sealant; as recommended by sealant or caulking manufacturer. Backing materials shall be wider than width of joint or space in which placed.

E. Produce the closest possible match to adjacent materials.

PART 3 EXECUTION

3.01 INSTALLATION

A. Caulking shall be installed where indicated on Drawings, and elsewhere as required to ensure weather-tightness of the building.

B. Blind caulk where possible.

C. Exterior joints around perimeters of frames, fascias, and any wood trim where they meet masonry walls.

D. In addition to where noted above, provide caulk at the following areas:

1. At all building accessories where they meet walls and adjacent materials.

3.02 PREPARATION

A. The surfaces and joints to receive sealants shall be dry and cleaned of dust, dirt, oil, grease and other substances detrimental to sealant adhesion. Surface coatings and treatments shall be completely removed from contract areas, prior to application of sealants by etching or similar methods, or else the surface areas should be masked prior to adhering of those materials.

B. Protective coating and treatments shall be removed by a solvent that does not leave any residue or stain the contact surfaces.
C. Joints shall be cleaned out, full width and depth. Joints to receive sealant, shall have a depth not greater than 1/2 inch the width, minimum 1/4 by 1/4 inch joint.

D. Laitance, efflorescence and loose mortar shall be removed from the joint cavities.

3.03 APPLICATION

A. Masking tape shall be used on surface edges of joint cavities to prevent staining or smears on materials difficult to clean. Tape shall be removed as soon as possible after application of sealants.

B. Bond breakers shall be placed on the bottom of joint cavities and other surfaces, as recommended by the sealant manufacturer, and to prevent adhesion of the sealant at third surface contact.

C. Primer shall be used on masonry units, wood, or other porous surfaces in accordance with instructions furnished with the sealant. Primer shall be applied to the joint surfaces to be sealed. Surfaces adjacent to joints shall not receive primer.

D. The back or bottom of joints constructed deeper than specified shall be packed tightly with backup material.

E. Sealant shall be forced into the joints mechanically, with pressure to expel all air and provide a solid filling. Surface shall be filled slightly convex. Joints adjacent to painted work shall be sealed before final coat of paint is applied.

F. Joints shall be filled to within specified depth from the surface with specified backing material and remainder of joint then filled with sealant. Material shall be tooled and finished flush with adjacent surface, unless otherwise specified.

3.04 CLEANING

A. Surface of materials adjacent to sealed joints shall be cleaned free of smears or other soiling due to sealing operations as work progresses.

END OF SECTION 07900
PART 1 - GENERAL

1.01 GENERAL

A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 WORK INCLUDED

A. Furnish all labor and materials necessary for the complete installation of all doors and frames as indicated on the Drawings and as specified in this section.

B. All work shall conform to applicable codes and fire ordinances. Contractor shall be responsible to insure that all doors meet the required fire ratings prior to installation.

1.03 RELATED WORK SPECIFIED ELSEWHERE:

A. Sealants: Section 07900

B. Paint: Section 09900

1.04 WORKMANSHP

A. Finished door installation shall be strong and rigid, square in frame, neat in appearance, free from defects, waves, scratches, cuts, dents, ridges, holes, warp, or buckle. Molded members shall be clean cut, straight, and true, with joints cope or mitered, well formed and in true alignment. The Architect/Owner may reject any doors which do not in his opinion meet the highest standard of construction.

1.05 WARRANTY

A. All materials and workmanship shall be guaranteed against defects for a period of one year from date of substantial completion of building. Door closers shall be guaranteed by the manufacturer for five years from date of shipment.

1.06 SUBMITTALS

A. Contractor shall submit shop drawings indicating the location of each door, elevation of each type of door, details of construction, marks to be used to identify the doors, and location and extent of preparations for hardware.

B. Submit samples of metal door materials with specified finishes.

C. Sample of face veneers with factory finish shall be submitted for approval.

D. Sample of solid woods and milling profiles with factory finish shall be submitted for approval.

1.07 QUALITY ASSURANCE

A. Quality Standards: Provide wood flush doors complying with the following standards:
2. NWWDA Quality Marking: Mark each door with NWWDA Wood Flush Door Certification Hallmark certifying compliance with applicable requirements of NWWDA I.S. 1 Series. Manufacturers not participating in NWWDA Hallmark Program may substitute a certificate of compliance in lieu of marking individual doors.

PART 2 - PRODUCTS

2.01 INTERIOR WOOD DOORS

A. Doors shall be stave core doors SCLC (Structural Composite lumber core), or PC20 Particle Board core, 1-3/4 inch thick as approved by the Architect. Doors shall have face veneers of stain grade birch, selected for grain and color, premium grade with stain grade finish. 

B. Interior doors shall be completely machined, sized and finished by the door manufacturer. This shall include sizing, beveling two edges, mortising for hinges, locks and drilling for all hardware, except that applied by surface mounting. Templates for hardware shall be furnished by the Hardware Contractor. Doors shall receive Algoma "UNIVAR" system finish RA-100.

C. Doors shall be packaged by door manufacturer in heavy Kraft cartons. After hanging, they shall be protected until all other work is completed.

D. All doors shall carry a written guarantee for life of original installation providing for replacement, rehanging and refinishing at no cost to the Owner of any door which shall become defective due to delamination, warpage or other defects of manufacture. Warpage in excess of 1/4" shall be considered a defect under terms of this guarantee.

2.02 METAL DOOR FRAMES

A. Metal door frames shall be 16 gage steel, roll-formed, welded joints with integral stops and rebates. Jamb shall set on finished floor.

B. Frames shall have heavy gage reinforcement for hardware. All frames, except those that receive weatherstripping, shall be drilled to receive silencers in jamb.

C. Frames shall be shop primed to receive paint. Primer shall be rust inhibitive enamel or paint complying with ASTM A224.1.

D. Frames shall be reinforced to receive all countersunk hardware and shall have cups made of No. 14 gauge metal for lock bolts and strikes. Reinforce frames for door closers and brackets.

E. Frames shall have minimum three adjustable corrugated anchors each jamb. Also provide a floor anchor on each jamb.

F. All frames shall be set in their proper places with the use of expansion bolts or "Ramset" type powder-actuated fastener, prior to the erection of adjacent partitions. At completion, each frame shall be plumb, in true alignment, ready for attaching hardware.

G. Frames shall be provided with temporary steel bottom spreader for protection during shipping and storage.

H. All metal door frames in masonry walls shall receive 7'-0" high door and have a 4" high header to fit
masonry coursing. All door frames in gypsum / stud partitions shall have 2” high head.

2.03 HARDWARE

A. All holes in doors and frames shall be drilled and tapped at the factory, ready to attach finish hardware. Templates for this purpose shall be furnished by the Hardware Contractor. Drill three holes on lock jamb part of all interior door frames for rubber bumper door silencers, to be provided by Hardware Contractor. Provide plastic plugs to keep holes clear during construction.

2.04 DOOR FINISH

A. Wood doors shall be prepped to receive paint.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install doors where shown on the Drawings and indicated in the Door Schedule.

B. Doors shall be installed plumb, square and true. All hardware alignments shall be flush and provide full clearance for penetration of locks, latches and bolts.

C. Interior doors shall be undercut to insure operation and ventilation. Undercut at tile floors shall be 3/16”.

D. Install wood doors and metal frames where shown on the Drawings.

E. Doors shall be installed plumb, square and true. All hardware alignments shall be flush and provide full clearance for penetration of locks, latches and bolts.

F. Provide hardware as required.

3.02 SEALANTS

A. All door frames shall be sealed with caulking per specifications. A continuous bead of sealant shall be applied around all door frames where they abut the building.

3.03 PAINTING AND FINISHING

A. Paint doors in accordance with finishes as described in Section 09900 of this specification.

B. After all welds and joints are ground smooth, the doors frames and special frames shall be thoroughly cleaned all oil, grease and other impurities, Bonderized, and then given a bake-on coat of grey zinc chromate rust inhibitive primer.
C. Door fabricator shall supply ample quantities of pre-finished door finish to permit touch up as required by General Contractor / Painting subcontractor after installation.

END OF SECTION 08100
PART 1 GENERAL

1.01 RELATED DOCUMENTS
A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SECTION INCLUDES
A. Performance criteria for gypsum board assemblies.
B. Non load bearing metal stud wall framing.
C. Metal channel ceiling framing.
D. Acoustic insulation.
E. Gypsum sheathing.
F. Gypsum wallboard.
G. Joint treatment and accessories.
H. Water-resistive barrier over exterior wall sheathing.
I. Acoustic (sound-dampening) wall and ceiling board.

1.03 RELATED REQUIREMENTS
A. Section 06 10 00 - Rough Carpentry: Wood blocking product and execution requirements.
C. Section 07 21 00 - Thermal Insulation: Acoustic insulation.
D. Section 07 92 00 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.
E. Section 09 22 16 - Non-Structural Metal Framing.
F. Section 09 90 00 - Painting

1.04 REFERENCE STANDARDS
F. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.
G. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2014.
O. ASTM E413 - Classification for Rating Sound Insulation; 2010.
P. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association; 2013.

1.05 SUBMITTALS
A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.

1.06 QUALITY ASSURANCE
A. Installer Qualifications: Company specializing in performing gypsum board application and finishing, with minimum 10 years of documented experience.
B. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.
   1. STC-Rated Assemblies: Indicated by design designations from GA-600, "Fire Resistance Design Manual."

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES
A. Provide completed assemblies complying with ASTM C840 and GA-216.
B. Interior Partitions, Indicated as Acoustic: Provide completed assemblies with the following characteristics:
   1. Acoustic Attenuation: STC of 45-49 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.

2.02 METAL FRAMING MATERIALS
A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
   1. Studs: "C" shaped with flat or formed webs with knurled faces.
   2. Runners: U shaped, sized to match studs.
   3. Ceiling Channels: C-shaped.
   5. Resilient Furring Channels: 1/2 inch depth, for attachment to substrate through one leg only.
B. Exterior Non-Loadbearing Studs and Furring for Application of Gypsum Board: As specified in Section 09 22 16.
C. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
D. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.

2.03 BOARD MATERIALS
A. Manufacturers - Gypsum-Based Board:
B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Glass mat faced gypsum panels as defined in ASTM C1658/C1658M, suitable for paint finish, of the same core type and thickness may be substituted for paper-faced board.
   3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   4. Thickness:
   5. Mold Resistant Paper Faced Products:

C. Abuse Resistant Wallboard:
   1. Application: High-traffic areas indicated.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   3. Type: Fire resistance rated Type X, UL or WH listed.
   5. Edges: Tapered.

D. Backing Board For Wet Areas: One of the following products:
   1. Application: Surfaces behind tile in wet areas including tub and shower surrounds, shower ceilings.

E. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Ceilings, unless otherwise indicated.
   2. Thickness: 5/8 inch.

F. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
   1. Application: Exterior sheathing, unless otherwise indicated.
   2. Edges: Square.

2.04 ACCESSORIES
A. Acoustic Insulation: ASTM C665; preformed glass fiber, friction fit type, unfaced. Thickness: 3 1/2” inch.
B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
C. Water-Resistive Barrier: .
D. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
   1. Types: As detailed or required for finished appearance.
E. Joint Materials: ASTM C475 and as recommended by gypsum board manufacturer for project conditions.
   1. Tape: 2 inch wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
   2. Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
F. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inch in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion resistant.
G. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion resistant.

PART 3 EXECUTION
3.01 EXAMINATION
A. Verify that project conditions are appropriate for work of this section to commence.
3.02 FRAMING INSTALLATION
   A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
   B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
   C. Studs: Space studs at 16 inches on center.
      1. Extend partition framing to structure where indicated and to ceiling in other locations.
      2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
      3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.
   D. Standard Wall Furring: Install at concrete walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.
      1. Orientation: Horizontal.
   E. Blocking: Install wood blocking for support of:

3.03 ACOUSTIC ACCESSORIES INSTALLATION
   A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
   B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
      1. Place continuous bead at perimeter of each layer of gypsum board.
      2. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.04 BOARD INSTALLATION
   A. Comply with ASTM C 840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
   B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   C. Double-Layer Non-Rated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.
   D. Fire-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
   E. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
      1. Paper-Faced Sheathing: Immediately after installation, protect from weather by application of water-resistant barrier.
   F. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of non-rated double-layer assemblies, which may be installed by means of adhesive lamination.

3.05 INSTALLATION OF TRIM AND ACCESSORIES
   A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
      1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
   B. Corner Beads: Install at external corners, using longest practical lengths.
   C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.06 JOINT TREATMENT
   A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
      1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
3. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.
4. Level 0: Temporary partitions.

B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.

C. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

3.07 TOLERANCES
   A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION
SECTION 09 65 19
RESILIENT TILE FLOORING

PART 1 GENERAL

1.01 RELATED DOCUMENTS
A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SECTION INCLUDES
A. Resilient tile flooring.
B. Installation accessories:
   1. Adhesives and adhesive encapsulators.

1.03 RELATED REQUIREMENTS
A. Section 01 74 19 - Construction Waste Management and Disposal.
B. Section 07 92 00 - Joint Sealants.
C. Section 07 95 13 - Expansion Joint Cover Assemblies.

1.04 REFERENCE STANDARDS

1.05 SUBMITTALS
A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
B. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

1.06 DELIVERY, STORAGE, AND HANDLING
A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
B. Store all materials flat off of the floor in an acclimatized, weather-tight space between 65 to 85 degrees F (18 to 29 degrees C).

1.07 FIELD CONDITIONS
A. Acclimate material at jobsite between 65 to 85 degrees F (18 to 29 degrees C) and 35 percent to 85 percent relative humidity for 48 hours prior to installation. Temperature and relative humidity should also be maintained at the same levels during installation, and after installation.
B. Keep away from heating and cooling ducts and direct sunlight.
C. Close areas to traffic during installation of flooring and accessories.

1.08 QUALITY ASSURANCE
A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

PART 2 PRODUCTS

2.01 RESILIENT TILE FLOORING
A. Luxury Vinyl Plank and Tile:
   1. Pattern: see drawings.
   2. Color: see drawings.

2.02 ACCESSORIES
A. Moldings, Transition and Edge Strips: Same material as flooring.
B. Adhesive and Adhesive Encapsulators:

PART 3 EXECUTION

3.01 PREPARATION

A. Flooring installation should not begin until all site conditions have been assessed, testing has been completed and subfloor conditions are approved.

B. Prepare per manufacturer's written instructions, Section 01 70 00, and as follows:
   1. Prepare substrates to ensure proper adhesion of Luxury Vinyl Plank & Tile.

3.02 INSTALLATION

A. Installation per manufacturer's written instructions, Section 01 70 00, and as follows:
   1. Layout shall be specified by Architect, Designer or End User.
   2. Follow layout and ensure installation reference lines are square.
   3. Field tiles shall be installed with directional arrows on back aligned in the same direction, or may be installed in quarter-turned fashion.
   4. Check cartons for and do not mix dye lots.
   5. Expansion Joints: Locate expansion, isolation, and other moving joints prior to installation.
      a. Do not fill expansion, isolation, and other moving joints with patching compound or cover with resilient flooring.
      b. Install movement joint systems per manufacturer's instructions and per Section 07 92 00 and Section 07 95 13.
   6. Adhesives: Adhere flooring to substrate using the full spread method resulting in a completed installation without gaps, voids, raised edges, bubbles or any other surface imperfections.
      a. Select appropriate adhesive, trowel and follow manufacturer's instructions.
      b. Periodically spot-check transfer of adhesive to back of tile during installation.
      c. Roll floor with a 100 pound roller to ensure proper transfer of adhesive and bonding.
      d. Protect floor from traffic per manufacturer's instructions.
      e. Do not wet mop floor until the adhesive has properly set per written instructions.

3.03 CLEANING

A. Waste Management per Section 01 70 00 and Section 01 74 19, and as follows:
   1. Coordinate material reclamation program with manufacturer, if applicable.
      a. Store and return cartons and pallets to manufacturer or recycler for reuse or recycling.

B. Provide progress cleaning per manufacturer's written instructions, Section 01 70 00, and as follows:
   1. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the work.
      a. Clean and protect completed construction until Date of Substantial Completion.
      b. During installation, remove wet adhesive from surface of flooring per manufacturer's instructions.
   2. Site: Maintain project site free of waste materials and debris.

C. Provide final cleaning immediately prior to Date of Substantial Completion inspection per manufacturer's written instructions and Section 01 70 00.
   1. Protection: Remove manufacturer's and other installed protection immediately prior to Date of Substantial Completion inspection, unless required otherwise.
   2. Clean floor with a neutral 6-8 pH cleaner.

3.04 MAINTENANCE

A. Initial maintenance per flooring manufacturer’s written instructions and as follows:
   1. Allow the adhesive to cure for at least 48 hours prior to wet cleaning the floor.
   2. Sweep, dust mop or vacuum the floor thoroughly to remove all loose dirt, dust, grit and debris.
3. Remove any dried adhesive residue from the surface with Black Scuff and Adhesive Remover or mineral spirits applied to a clean, lint-free cloth.
4. Damp mop the floor using a cleaner recommended by the flooring manufacturer.
5. If necessary, scrub the floor using an auto scrubber or rotary machine (300 rpm or less) with a cleaner recommended by the flooring manufacturer. Maintain the proper dilution ratio and use the appropriate scrubbing brush or pad.
6. Thoroughly rinse the entire floor with fresh, clean water. Remove the dirty residue with a wet-vacuum or clean mop and allow the floor to dry completely.

3.05 PROTECTION

A. Protect materials from construction operations until Date of Substantial Completion or Owner occupancy, whichever occurs first.
   1. Protect finished floor from abuse and damage by using heavy non-staining kraft paper, drop cloths or equivalent. Use additional, non-damaging protective materials as needed.
   2. Light foot traffic on a newly installed floor can be permitted after 24 hours.
   3. Keep heavy traffic and rolling loads off the newly installed LVT flooring for 48 hours.
   4. Protect the floor from rolling traffic by covering with protective boards.

END OF SECTION
PART 1 GENERAL

1.01 RELATED DOCUMENTS:
   A. The Drawings, General Conditions of Construction Contract (HUD 5370) and applicable portions of all Division 1 sections of these specifications shall apply to all work under this section of the Specifications.

1.02 SECTION INCLUDES
   A. Surface preparation.
   B. Field application of paints, stains, and varnishes.
   C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
   D. Do Not Paint or Finish the Following Items:
      1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
      2. Items indicated to receive other finishes.
      3. Items indicated to remain unfinished.
      4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
      5. Floors, unless specifically indicated.
      7. Concealed pipes, ducts, and conduits.

1.03 RELATED REQUIREMENTS

1.04 DEFINITIONS
   A. Conform to ASTM D16 for interpretation of terms used in this section.

1.05 REFERENCE STANDARDS

1.06 SUBMITTALS
   A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
   B. Product Data: Provide complete list of products to be used, with the following information for each:
      1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
      2. MPI product number (e.g. MPI #47).
      3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
      4. Manufacturer's installation instructions.
   C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches (216 by 279 mm) in size, illustrating range of colors available for each finishing product specified.
      1. Where sheen is specified, submit samples in only that sheen.
   D. Certification: By manufacturer that paints and finishes comply with VOC limits specified.
   E. Manufacturer's Instructions: Indicate special surface preparation procedures.
1.07 QUALITY ASSURANCE
   A. Applicator Qualifications: Company specializing in performing the type of work specified with a minimum of 5 years experience and approved by manufacturer.

1.08 DELIVERY, STORAGE, AND HANDLING
   A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
   B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
   C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.09 FIELD CONDITIONS
   A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
   B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
   C. Do not apply materials when relative humidity exceeds 85 percent; at temperatures less than 5 degrees F (3 degrees C) above the dew point; or to damp or wet surfaces.
   D. Minimum Application Temperatures for Paints: 50 degrees F (10 degrees C) for interiors unless required otherwise by manufacturer's instructions.
   E. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS
   A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
   B. Primer Sealers: Same manufacturer as top coats.

2.02 PAINTS AND FINISHES - GENERAL
   A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
      1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
      2. Supply each paint material in quantity required to complete entire project's work from a single production run.
      3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
   B. Flammability: Comply with applicable code for surface burning characteristics.
   C. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.
   D. Colors: To be selected from manufacturer's full range of available colors.
      1. Selection to be made by Architect after award of contract.
      2. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.

2.03 PRIMERS
   A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
      1. Bonding Primer, Water Based; MPI #17.
2.04 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
B. Patching Material: Latex filler.
C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.
B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
D. Test shop-applied primer for compatibility with subsequent cover materials.
E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.
   2. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
C. Remove or repair existing paints or finishes that exhibit surface defects.
D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
E. Seal surfaces that might cause bleed through or staining of topcoat.
F. Masonry:
G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
H. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.
I. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.
J. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
D. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.
E. Sand wood and metal surfaces lightly between coats to achieve required finish.
F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.
3.04 FIELD QUALITY CONTROL
   A. See Section 01 40 00 - Quality Requirements, for general requirements for field inspection.
   B. Owner will provide field inspection.

3.05 CLEANING
   A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION
   A. Protect finishes until completion of project.
   B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION
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 insulating the following plumbing piping services:
      1. Domestic cold-water piping.
      2. Domestic hot-water piping.

1.3 ACTION SUBMITTALS
   A. Product Data: For each type of product indicated. Include thermal conductivity, water-vapor permeance thickness, and jackets (both factory- and field-applied, if any).

1.4 QUALITY ASSURANCE
   A. Installer Qualifications: Skilled mechanics who have successfully completed an apprenticeship program or another craft training program certified by the Department of Labor, Bureau of Apprenticeship and Training.
   B. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84 by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.
      1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.

1.5 DELIVERY, STORAGE, AND HANDLING
   A. Packaging: Insulation material containers shall be marked by manufacturer with appropriate ASTM standard designation, type and grade, and maximum use temperature.
   B. Materials shall be maintained in a dry environment and protected from weather at all times.

1.6 COORDINATION
   A. Coordinate clearance requirements with piping Installer for piping insulation application.
1.7 SCHEDULING

A. Schedule insulation application after pressure testing systems and, where required, after installing and testing heat tracing. Insulation application may begin on segments that have satisfactory test results.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS

A. Comply with requirements in "Piping Insulation Schedule, General" and "Indoor Piping Insulation Schedule" articles for where insulating materials shall be applied.

B. Products shall not contain asbestos, lead, mercury, or mercury compounds.

C. Mineral-Fiber, Preformed Pipe Insulation:

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Fibrex Insulations Inc.; Coreplus 1200.
   b. Johns Manville; Micro-Lok.
   c. Knauf Insulation; 1000-Degree Pipe Insulation.
   d. Manson Insulation Inc.; Alley-K.
   e. Owens Corning; Fiberglas Pipe Insulation.

2. Type I, 850 Deg F Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, with factory-applied ASJ-SSL. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

2.2 INSULATING CEMENTS


1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Ramco Insulation, Inc.; Super-Stik.

2.3 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.

B. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   b. Eagle Bridges - Marathon Industries; 225.
d. Mon-Eco Industries, Inc.; 22-25.

2. For indoor applications, adhesive shall have a VOC content of 80 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

3. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."


1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   b. Eagle Bridges - Marathon Industries; 225.
   d. Mon-Eco Industries, Inc.; 22-25.

2. For indoor applications, adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

3. Adhesive shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.4 MASTICS

A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.

1. For indoor applications, use mastics that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below-ambient services.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   b. Vimasco Corporation; 749.

2. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
3. Service Temperature Range: Minus 20 to plus 180 deg F.
4. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.

C. Vapor-Barrier Mastic: Solvent based; suitable for indoor use on below-ambient services.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
2. Water-Vapor Permeance: ASTM F 1249, 0.05 perm at 35-mil dry film thickness.
3. Service Temperature Range: 0 to 180 deg F.

2.5 SEALANTS

A. Joint Sealants:

1. Joint Sealants for Cellular-Glass and Phenolic Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

   b. Eagle Bridges - Marathon Industries; 405.
   d. Mon-Eco Industries, Inc.; 44-05.
   e. Pittsburgh Corning Corporation; Pittseal 444.

   2. Materials shall be compatible with insulation materials, jackets, and substrates.
   3. Permanently flexible, elastomeric sealant.
   4. Service Temperature Range: Minus 100 to plus 300 deg F.
   5. Color: White or gray.
   6. For indoor applications, sealants shall have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
   7. Sealants shall comply with the testing and product requirements of the California Department of Health Services’ "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

B. ASJ Flashing Sealants, and Vinyl, PVDC, and PVC Jacket Flashing Sealants:

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:


   2. Materials shall be compatible with insulation materials, jackets, and substrates.
   3. Fire- and water-resistant, flexible, elastomeric sealant.
   4. Service Temperature Range: Minus 40 to plus 250 deg F.
   6. For indoor applications, sealants shall have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
   7. Sealants shall comply with the testing and product requirements of the California Department of Health Services’ "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
2.6 FACTORY-APPLIED JACKETS

A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:

1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.
3. FSK Jacket: Aluminum-foil, fiberglass-reinforced scrim with kraft-paper backing; complying with ASTM C 1136, Type II.

2.7 TAPES

A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. ABI, Ideal Tape Division; 428 AWF ASJ.
   b. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0836.
   c. Compac Corporation; 104 and 105.
   d. Venture Tape; 1540 CW Plus, 1542 CW Plus, and 1542 CW Plus/SQ.

2. Width: 3 inches.
3. Thickness: 11.5 mils.
5. Elongation: 2 percent.
6. Tensile Strength: 40 lbf/inch in width.
7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.

2.8 SECUREMENTS

A. Bands:

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. ITW Insulation Systems; Gerrard Strapping and Seals.
   b. RPR Products, Inc.; Insul-Mate Strapping and Seals.

2. Stainless Steel: ASTM A 167 or ASTM A 240/A 240M, Type 304; 0.015 inch thick, 1/2 inch wide with wing seal.

B. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.

C. Wire: 0.062-inch soft-annealed, galvanized steel.

1. 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:
PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.
   1. Verify that systems to be insulated have been tested and are free of defects.
   2. Verify that surfaces to be insulated are clean and dry.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION
A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.
B. Mix insulating cements with clean potable water.

3.3 GENERAL INSTALLATION REQUIREMENTS
A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.
B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.
C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
E. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.
F. Keep insulation materials dry during storage, application and finishing.
G. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
H. Install insulation with least number of joints practical.
I. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.
   1. Install insulation continuously through hangers and around anchor attachments.
   2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
   3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
   4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.
J. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

K. Install insulation with factory-applied jackets as follows:
   1. Draw jacket tight and smooth.
   2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
   3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 4 inches o.c.
      a. For below-ambient services, apply vapor-barrier mastic over staples.
   4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
   5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.

L. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.

M. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

N. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

3.4 PENETRATIONS

A. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.

3.5 GENERAL PIPE INSULATION INSTALLATION

A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.

B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:
   1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity unless otherwise indicated.
   2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.
   3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.
   4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever
is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.

5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below-ambient services, provide a design that maintains vapor barrier.

C. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes. Shape insulation at these connections by tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

3.6 INSTALLATION OF MINERAL-FIBER INSULATION

A. Insulation Installation on Straight Pipes and Tubes:
   1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
   2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
   3. For insulation with factory-applied jackets on above-ambient surfaces, secure laps with outward clinched staples at 6 inches o.c.
   4. For insulation with factory-applied jackets on below-ambient surfaces, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Fittings and Elbows:
   1. Install preformed sections of same material as straight segments of pipe insulation when available.
   2. When preformed insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

C. Insulation Installation on Valves and Pipe Specialties:
   1. Install preformed sections of same material as straight segments of pipe insulation when available.
   2. When preformed sections are not available, install mitered sections of pipe insulation to valve body.
   3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
   4. Install insulation to flanges as specified for flange insulation application.

3.7 PIPING INSULATION SCHEDULE, GENERAL

A. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.

B. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:
   1. Underground piping.
2. Chrome-plated pipes and fittings unless there is a potential for personnel injury.

3.8 INDOOR PIPING INSULATION SCHEDULE

A. Domestic Cold and Hot Water:

1. Insulation shall be the following:

   a. Mineral-Fiber, Preformed Pipe Insulation, Type I: 1 inch thick.

END OF SECTION 15085
PART 1 - GENERAL

1.1 SUMMARY
A. Section includes insulating the following HVAC piping systems:
   1. Heating hot-water piping, indoors.

1.2 ACTION SUBMITTALS
A. Product Data: For each type of product indicated.

1.3 QUALITY ASSURANCE
A. Surface-Burning Characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.
   1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.

PART 2 - PRODUCTS

2.1 INSULATION MATERIALS
A. Products shall not contain asbestos, lead, mercury, or mercury compounds.
B. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
C. Mineral-Fiber, Preformed Pipe Insulation:
   1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. Fibrex Insulations Inc.; Coreplus 1200.
      b. Johns Manville; Micro-Lok.
      c. Knauf Insulation; 1000-Degree Pipe Insulation.
      d. Manson Insulation Inc.; Alley-K.
      e. Owens Corning; Fiberglas Pipe Insulation.
   2. Type I, 850 deg F Materials: Mineral or glass fibers bonded with a thermosetting resin. Comply with ASTM C 547, Type I, Grade A, with factory-applied ASJ. Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.
2.2 ADHESIVES

A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated unless otherwise indicated.

B. Mineral-Fiber Adhesive: Comply with MIL-A-3316C, Class 2, Grade A.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   b. Eagle Bridges - Marathon Industries; 225.
   d. Mon-Eco Industries, Inc.; 22-25.

2. For indoor applications, use adhesive that has a VOC content of 80 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

3. Use adhesive that complies with the testing and product requirements of the California Department of Health Services’ “Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers,” including 2004 Addenda.


1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   b. Eagle Bridges - Marathon Industries; 225.
   d. Mon-Eco Industries, Inc.; 22-25.

2. For indoor applications, use adhesive that has a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

3. Use adhesive that complies with the testing and product requirements of the California Department of Health Services’ “Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers,” including 2004 Addenda.

2.3 MASTICS

A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-PRF-19565C, Type II.

1. For indoor applications, use mastics that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Vapor-Barrier Mastic: Water based; suitable for indoor use on below-ambient services.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
2. Water-Vapor Permeance: ASTM E 96/E 96M, Procedure B, 0.013 perm at 43-mil dry film thickness.
3. Service Temperature Range: Minus 20 to plus 180 deg F.
4. Solids Content: ASTM D 1644, 58 percent by volume and 70 percent by weight.

2.4 SEALANTS

A. FSK and Metal Jacket Flashing Sealants:
   1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      b. Eagle Bridges - Marathon Industries; 405.
      c. Foster Brand, Specialty Construction Brands, Inc., a business of H. B. Fuller Company; 95-44.
      d. Mon-Eco Industries, Inc.; 44-05.
   2. Materials shall be compatible with insulation materials, jackets, and substrates.
   3. Fire- and water-resistant, flexible, elastomeric sealant.
   4. Service Temperature Range: Minus 40 to plus 250 deg F.
   5. Color: Aluminum.
   6. For indoor applications, use sealants that have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
   7. Use sealants that comply with the testing and product requirements of the California Department of Health Services’ “Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers,” including 2004 Addenda.

B. ASJ Flashing Sealants, and Vinyl, PVDC, and PVC Jacket Flashing Sealants:
   1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   2. Materials shall be compatible with insulation materials, jackets, and substrates.
   3. Fire- and water-resistant, flexible, elastomeric sealant.
   4. Service Temperature Range: Minus 40 to plus 250 deg F.
   6. For indoor applications, use sealants that have a VOC content of 420 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
   7. Use sealants that comply with the testing and product requirements of the California Department of Health Services’ “Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers,” including 2004 Addenda.
2.5 FACTORY-APPLIED JACKETS

A. Insulation system schedules indicate factory-applied jackets on various applications. When factory-applied jackets are indicated, comply with the following:

1. ASJ: White, kraft-paper, fiberglass-reinforced scrim with aluminum-foil backing; complying with ASTM C 1136, Type I.
2. ASJ-SSL: ASJ with self-sealing, pressure-sensitive, acrylic-based adhesive covered by a removable protective strip; complying with ASTM C 1136, Type I.
3. Vinyl Jacket: White vinyl with a permeance of 1.3 perms when tested according to ASTM E 96/E 96M, Procedure A, and complying with NFPA 90A and NFPA 90B.

2.6 TAPES

2.7 TAPES

A. ASJ Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. ABI, Ideal Tape Division; 428 AWF ASJ.
   b. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0836.
   c. Compac Corporation; 104 and 105.
   d. Venture Tape; 1540 CW Plus, 1542 CW Plus, and 1542 CW Plus/SQ.

2. Width: 3 inches.
3. Thickness: 11.5 mils.
5. Elongation: 2 percent.
6. Tensile Strength: 40 lbf/inch in width.
7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.

2.8 SECUREMENTS

A. Bands:

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. ITW Insulation Systems; Gerrard Strapping and Seals.
   b. RPR Products, Inc.; Insul-Mate Strapping, Seals, and Springs.

2. Stainless Steel: ASTM A 167 or ASTM A 240/A 240M, Type 304 or Type 316; 0.015 inch thick, 3/4 inch wide with wing seal or closed seal.
3. Aluminum: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 3/4 inch wide with wing seal or closed seal.

B. Staples: Outward-clinching insulation staples, nominal 3/4-inch-wide, stainless steel or Monel.
PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine substrates and conditions for compliance with requirements for installation tolerances and other conditions affecting performance of insulation application.
   1. Verify that systems to be insulated have been tested and are free of defects.
   2. Verify that surfaces to be insulated are clean and dry.
   3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION
A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.

3.3 GENERAL INSTALLATION REQUIREMENTS
A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of piping including fittings, valves, and specialties.
B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of pipe system as specified in insulation system schedules.
C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
E. Install multiple layers of insulation with longitudinal and end seams staggered.
F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.
G. Keep insulation materials dry during application and finishing.
H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
I. Install insulation with least number of joints practical.
J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.
   1. Install insulation continuously through hangers and around anchor attachments.
   2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
   3. Install insert materials and install insulation to tightly join the insert. Seal insulation to insulation inserts with adhesive or sealing compound recommended by insulation material manufacturer.
   4. Cover inserts with jacket material matching adjacent pipe insulation. Install shields over jacket, arranged to protect jacket from tear or puncture by hanger, support, and shield.
K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

L. Install insulation with factory-applied jackets as follows:

1. Draw jacket tight and smooth.
2. Cover circumferential joints with 3-inch-wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 4 inches o.c.
   a. For below-ambient services, apply vapor-barrier mastic over staples.
4. Cover joints and seams with tape, according to insulation material manufacturer's written instructions, to maintain vapor seal.
5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.

M. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.

N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.

O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

3.4 INSTALLATION OF MINERAL-FIBER PREFORMED PIPE INSULATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Secure each layer of preformed pipe insulation to pipe with wire or bands and tighten bands without deforming insulation materials.
2. Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
3. For insulation with factory-applied jackets on above-ambient surfaces, secure laps with outward-clinched staples at 6 inches o.c.
4. For insulation with factory-applied jackets on below-ambient surfaces, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive as recommended by insulation material manufacturer and seal with vapor-barrier mastic and flashing sealant.

B. Insulation Installation on Pipe Flanges:

1. Install preformed pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with mineral-fiber blanket insulation.
4. Install jacket material with manufacturer's recommended adhesive, overlap seams at least 1 inch, and seal joints with flashing sealant.

C. Insulation Installation on Pipe Fittings and Elbows:
1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed insulation elbows and fittings are not available, install mitered sections of pipe insulation, to a thickness equal to adjoining pipe insulation. Secure insulation materials with wire or bands.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed sections of same material as straight segments of pipe insulation when available.
2. When preformed sections are not available, install mitered sections of pipe insulation to valve body.
3. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
4. Install insulation to flanges as specified for flange insulation application.

3.5 FIELD-APPLIED JACKET INSTALLATION

A. Where FSK jackets are indicated, install as follows:

1. Draw jacket material smooth and tight.
2. Install lap or joint strips with same material as jacket.
3. Secure jacket to insulation with manufacturer’s recommended adhesive.
4. Install jacket with 1-1/2-inch laps at longitudinal seams and 3-inch-wide joint strips at end joints.
5. Seal openings, punctures, and breaks in vapor-retarder jackets and exposed insulation with vapor-barrier mastic.

END OF SECTION 15088
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. Aboveground domestic water pipes, tubes, and fittings inside buildings.

1.3 ACTION SUBMITTALS

A. Product Data: Pipe, tubes and fittings.

1.4 FIELD CONDITIONS

A. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary water service according to requirements indicated:
   1. Notify Owner no fewer than two days in advance of proposed interruption of water service.
   2. Do not interrupt water service without Owner's written permission.

PART 2 - PRODUCTS

2.1 PIPING MATERIALS

A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

B. Potable-water piping and components shall comply with NSF 14 and NSF 61. Plastic piping components shall be marked with "NSF-pw."

2.2 COPPER TUBE AND FITTINGS

A. Hard Copper Tube: ASTM B 88, Type L water tube, drawn temper.

B. Cast-Copper, Solder-Joint Fittings: ASME B16.18, pressure fittings.


D. Copper Pressure-Seal-Joint Fittings:
1. 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:
   a. Elkhart Products Corporation.
   b. NIBCO Inc.
   c. Viega.

2. Fittings for NPS 2 and Smaller: Wrought-copper fitting with EPDM-rubber, O-ring seal in each end.
3. Fittings for NPS 2-1/2 to NPS 4: Cast-bronze or wrought-copper fitting with EPDM-rubber, O-ring seal in each end.

2.3 PIPING JOINING MATERIALS
   A. Solder Filler Metals: ASTM B 32, lead-free alloys.
   B. Flux: ASTM B 813, water flushable.

PART 3 - EXECUTION

3.1 PIPING INSTALLATION
   A. Install domestic water piping level without pitch and plumb.
   B. Install piping concealed from view and protected from physical contact by building occupants unless otherwise indicated and except in equipment rooms and service areas.
   C. Install piping to permit valve servicing.
   D. Install piping free of sags and bends.
   E. Install fittings for changes in direction and branch connections.
   F. Install unions in copper tubing at final connection to each piece of equipment, machine, and specialty.
   G. Install thermometers on outlet piping from each water heater.
   H. Install sleeves for piping penetrations of walls, ceilings, and floors.
   I. Install escutcheons for piping penetrations of walls, ceilings, and floors.

3.2 JOINT CONSTRUCTION
   A. Ream ends of pipes and tubes and remove burrs.
   B. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.
   C. Soldered Joints for Copper Tubing: Apply ASTM B 813, water-flushable flux to end of tube. Join copper tube and fittings according to ASTM B 828 or CDA's "Copper Tube Handbook."
D. Pressure-Sealed Joints for Copper Tubing: Join copper tube and pressure-seal fittings with tools recommended by fitting manufacturer.

3.3 HANGER AND SUPPORT INSTALLATION
A. Comply with the following requirements for pipe hanger, support products:
   1. Vertical Piping: MSS Type 8 or 42, clamps.
   2. Individual, Straight, Horizontal Piping Runs:
      a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
      b. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
      c. Longer Than 100 Feet if Indicated: MSS Type 49, spring cushion rolls.
   3. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
   4. Base of Vertical Piping: MSS Type 52, spring hangers.
B. Support vertical piping and tubing at base and at each floor.
C. Rod diameter may be reduced one size for double-rod hangers, to a minimum of 3/8 inch.
D. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
   1. NPS 3/4 and Smaller: 60 inches with 3/8-inch rod.
   2. NPS 1 and NPS 1-1/4: 72 inches with 3/8-inch rod.
   3. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.
   4. NPS 2-1/2: 108 inches with 1/2-inch rod.
   5. NPS 3 to NPS 5: 10 feet with 1/2-inch rod.
E. Install supports for vertical copper tubing every 10 feet.

3.4 CONNECTIONS
A. When installing piping adjacent to equipment and machines, allow space for service and maintenance.

3.5 FIELD QUALITY CONTROL
A. Perform the following tests and inspections:
   1. Piping Inspections:
      a. Do not enclose, cover, or put piping into operation until it has been inspected and approved by authorities having jurisdiction.
      b. During installation, notify authorities having jurisdiction at least one day before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction:
         1) Roughing-in Inspection: Arrange for inspection of piping before concealing or closing in after roughing in and before setting fixtures.
2) Final Inspection: Arrange for authorities having jurisdiction to observe tests specified in "Piping Tests" Subparagraph below and to ensure compliance with requirements.

c. Reinspection: If authorities having jurisdiction find that piping will not pass tests or inspections, make required corrections and arrange for reinspection.
d. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

2. Piping Tests:

   a. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.
   b. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit a separate report for each test, complete with diagram of portion of piping tested.
   c. Leave new, altered, extended, or replaced domestic water piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.
   d. Cap and subject piping to static water pressure of 50 psig above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow it to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.
   e. Repair leaks and defects with new materials, and retest piping or portion thereof until satisfactory results are obtained.
   f. Prepare reports for tests and for corrective action required.

B. Domestic water piping will be considered defective if it does not pass tests and inspections.

C. Prepare test and inspection reports.

3.6 CLEANING

A. Clean and disinfect potable domestic water piping as follows:

   1. Purge new piping and parts of existing piping that have been altered, extended, or repaired before using.
   2. Use purging and disinfecting procedures prescribed by authorities having jurisdiction; if methods are not prescribed, use procedures described in either AWWA C651 or AWWA C652 or follow procedures described below:

      a. Flush piping system with clean, potable water until dirty water does not appear at outlets.
      b. Fill and isolate system according to either of the following:

         1) Fill system or part thereof with water/chlorine solution with at least 50 ppm of chlorine. Isolate with valves and allow to stand for 24 hours.
         2) Fill system or part thereof with water/chlorine solution with at least 200 ppm of chlorine. Isolate and allow to stand for three hours.

      c. Flush system with clean, potable water until no chlorine is in water coming from system after the standing time.
      d. Repeat procedures if biological examination shows contamination.
      e. Submit water samples in sterile bottles to authorities having jurisdiction.

B. Clean interior of domestic water piping system. Remove dirt and debris as work progresses.
3.7 PIPING SCHEDULE

A. Aboveground domestic water piping, shall be the following:

1. Hard copper tube, ASTM B 88, Type L; cast- or wrought-copper, solder-joint fittings; and soldered joints or copper pressure-seal-joint fittings; and pressure-sealed joints.

END OF SECTION 15140
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Pipe, tube, and fittings.

1.3 PERFORMANCE REQUIREMENTS

A. Components and installation shall be capable of withstanding the following minimum working pressure unless otherwise indicated:


1.4 ACTION SUBMITTALS

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

1.5 QUALITY ASSURANCE

A. Piping materials shall bear label, stamp, or other markings of specified testing agency.


1.6 PROJECT CONDITIONS

A. Interruption of Existing Sanitary Waste Service: Do not interrupt service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:

1. Notify Owner no fewer than two days in advance of proposed interruption of sanitary waste service.
2. Do not proceed with interruption of sanitary waste service without Owner's written permission.
PART 2 - PRODUCTS

2.1 PIPING MATERIALS
   A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, fitting materials, and joining methods for specific services, service locations, and pipe sizes.

2.2 ABS PIPE AND FITTINGS
   A. Solid-Wall ABS Pipe: ASTM D 2661, Schedule 40.
   B. Cellular-Core ABS Pipe: ASTM F 628, Schedule 40.
   C. ABS Socket Fittings: ASTM D 2661, made to ASTM D 3311, drain, waste, and vent patterns.
   D. Solvent Cement: ASTM D 2235.
      1. ABS solvent cement shall have a VOC content of 325 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
      2. Solvent cement shall comply with the testing and product requirements of the California Department of Health Services’ "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 3 - EXECUTION

3.1 PIPING INSTALLATION
   A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on coordination drawings.
   B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
   C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
   D. Install piping to permit valve servicing.
   E. Install piping at code required slopes.
   F. Install piping free of sags and bends.
   G. Install fittings for changes in direction and branch connections.
   H. Make changes in direction for soil and waste drainage and vent piping using appropriate branches, bends, and long-sweep bends. Sanitary tees and short-sweep 1/4 bends may be used on vertical stacks if change in direction of flow is from horizontal to vertical. Use long-turn, double Y-branch and 1/8-bend fittings if two fixtures are installed back to back or side by side with common drain pipe. Straight tees, elbows, and crosses may be used on vent lines. Do not change direction of flow
more than 90 degrees. Use proper size of standard increasers and reducers if pipes of different sizes are connected. Reducing size of drainage piping in direction of flow is prohibited.

I. Install aboveground ABS piping according to ASTM D 2661.

J. Do not enclose, cover, or put piping into operation until it is inspected and approved by authorities having jurisdiction.

K. Install escutcheons for piping penetrations of walls, ceilings, and floors.

3.2 JOINT CONSTRUCTION

A. Plastic, Nonpressure-Piping, Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
2. ABS Piping: Join according to ASTM D 2235 and ASTM D 2661 Appendixes.

3.3 HANGER AND SUPPORT INSTALLATION

A. Comply with the following requirements for pipe hanger and support devices and installation:

1. Install carbon-steel pipe hangers for horizontal piping in noncorrosive environments.
2. Install carbon-steel pipe support clamps for vertical piping in noncorrosive environments.
3. Vertical Piping: MSS Type 8 or Type 42, clamps.
4. Install individual, straight, horizontal piping runs:
   a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
5. Base of Vertical Piping: MSS Type 52, spring hangers.

B. Support horizontal piping and tubing within 12 inches of each fitting and coupling.

C. Support vertical piping and tubing at base and at each floor.

D. Rod diameter may be reduced one size for double-rod hangers, with 3/8-inch minimum rods.

E. Install hangers for ABS piping with the following maximum horizontal spacing and minimum rod diameters:

1. NPS 1-1/2 and NPS 2: 48 inches with 3/8-inch rod.
2. NPS 3: 48 inches with 1/2-inch rod.
3. NPS 4 and NPS 5: 48 inches with 5/8-inch rod.

F. Install supports for vertical ABS piping every 48 inches.

G. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.4 CONNECTIONS

A. Connect drainage and vent piping to the following:
1. Plumbing Fixtures: Connect drainage piping in sizes indicated, but not smaller than required by plumbing code.
2. Plumbing Fixtures and Equipment: Connect atmospheric vent piping in sizes indicated, but not smaller than required by authorities having jurisdiction.
3. Install test tees (wall cleanouts) in conductors near floor and floor cleanouts with cover flush with floor.

B. Where installing piping adjacent to equipment, allow space for service and maintenance of equipment.

3.5 FIELD QUALITY CONTROL

A. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction.

1. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
2. Final Inspection: Arrange for final inspection by authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.

B. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.

C. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.

D. Test sanitary drainage and vent piping according to procedures of authorities having jurisdiction or, in absence of published procedures, as follows:

1. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
2. Leave uncovered and unconcealed new, altered, extended, or replaced drainage and vent piping until it has been tested and approved. Expose work that was covered or concealed before it was tested.
3. Roughing-in Plumbing Test Procedure: Test drainage and vent piping except outside leaders on completion of roughing-in. Close openings in piping system and fill with water to point of overflow, but not less than 10-foot head of water. From 15 minutes before inspection starts to completion of inspection, water level must not drop. Inspect joints for leaks.
4. Finished Plumbing Test Procedure: After plumbing fixtures have been set and traps filled with water, test connections and prove they are gastight and watertight. Plug vent-stack openings on roof and building drains where they leave building. Introduce air into piping system equal to pressure of 1-inch wg. Use U-tube or manometer inserted in trap of water closet to measure this pressure. Air pressure must remain constant without introducing additional air throughout period of inspection. Inspect plumbing fixture connections for gas and water leaks.
5. Repair leaks and defects with new materials and retest piping, or portion thereof, until satisfactory results are obtained.
6. Prepare reports for tests and required corrective action.

3.6 CLEANING AND PROTECTION

A. Clean interior of piping. Remove dirt and debris as work progresses.

B. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
C. Place plugs in ends of uncompleted piping at end of day and when work stops.

D. Exposed ABS Piping: Protect plumbing vents exposed to sunlight with two coats of water-based latex paint.

3.7 PIPING SCHEDULE

A. Flanges and unions may be used on aboveground pressure piping unless otherwise indicated.

B. Aboveground, soil and waste piping shall be the following:
   1. Solid-wall ABS pipe, ABS socket fittings, and solvent-cemented joints.

C. Aboveground, vent piping shall be the following:
   1. Solid-wall ABS pipe, ABS socket fittings, and solvent-cemented joints.

END OF SECTION 15150
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 pipe and fitting materials and joining methods for the following:
   1. Hot-water heating piping.

1.3 ACTION SUBMITTALS
A. Product Data: For each type of the following:
   1. Pressure-seal fittings.

1.4 INFORMATIONAL SUBMITTALS
A. Field quality-control reports.

1.5 QUALITY ASSURANCE

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS
A. Hydronic piping components and installation shall be capable of withstanding the following minimum working pressure and temperature unless otherwise indicated:
   1. Hot-Water Heating Piping: 150 psi at 200 deg F.

2.2 COPPER TUBE AND FITTINGS
A. Drawn-Temper Copper Tubing: ASTM B 88, Type L.
B. Annealed-Temper Copper Tubing: ASTM B 88, Type K.
C. DWV Copper Tubing: ASTM B 306, Type DWV.
1. 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:
   a. Anvil International, Inc.
   b. Star Pipe Products.
   c. Victaulic Company.

2. Grooved-End Copper Fittings: ASTM B 75, copper tube or ASTM B 584, bronze casting.
3. Grooved-End-Tube Couplings: Rigid pattern unless otherwise indicated; gasketed fitting. Ductile-iron housing with keys matching pipe and fitting grooves, EPDM gasket rated for minimum 230 deg F for use with housing, and steel bolts and nuts.

E. Copper or Bronze Pressure-Seal Fittings:

1. 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:
   a. NIBCO INC.
   b. Viega.

2. Housing: Copper.
3. O-Rings and Pipe Stops: EPDM.
4. Tools: Manufacturer's special tools.
5. Minimum 200-psig working-pressure rating at 250 deg F.

F. Copper, Mechanically Formed Tee Option: For forming T-branch on copper water tube.

1. 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:
   a. T-DRILL Industries Inc.

G. Wrought-Copper Unions: ASME B16.22.

2.3 STEEL PIPE AND FITTINGS

A. Cast-Iron Threaded Fittings: ASME B16.4; Classes 125 and 250 as indicated in "Piping Applications" Article.


C. Malleable-Iron Unions: ASME B16.39; Classes 150, 250, and 300 as indicated in "Piping Applications" Article.

D. Cast-Iron Pipe Flanges and Flanged Fittings: ASME B16.1, Classes 25, 125, and 250; raised ground face, and bolt holes spot faced as indicated in "Piping Applications" Article.

E. Wrought Cast- and Forged-Steel Flanges and Flanged Fittings: ASME B16.5, including bolts, nuts, and gaskets of the following material group, end connections, and facings:
   2. End Connections: Butt welding.
   3. Facings: Raised face.

F. Grooved Mechanical-Joint Fittings and Couplings:
1. 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:

2. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

   a. Anvil International, Inc.
   b. Central Sprinkler Company.
   c. Star Pipe Products.
   d. Victaulic Company.

3. Joint Fittings: ASTM A 536, Grade 65-45-12 ductile iron; ASTM A 47/A 47M, Grade 32510 malleable iron; ASTM A 53/A 53M, Type F, E, or S, Grade B fabricated steel; or ASTM A 106/A 106M, Grade B steel fittings with grooves or shoulders constructed to accept grooved-end couplings; with nuts, bolts, locking pin, locking toggle, or lugs to secure grooved pipe and fittings.

4. Couplings: Ductile- or malleable-iron housing and EPDM or nitrile gasket of central cavity pressure-responsive design; with nuts, bolts, locking pin, locking toggle, or lugs to secure grooved pipe and fittings.

### 2.4 JOINING MATERIALS

A. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.

1. ASME B16.21, nonmetallic, flat, asbestos free, 1/8-inch maximum thickness unless otherwise indicated.

   a. Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
   b. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.

B. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.

C. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer unless otherwise indicated.

D. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.

E. Brazing Filler Metals: AWS A5.8/A5.8M, BCuP Series, copper-phosphorus alloys for joining copper with copper; or BAg-1, silver alloy for joining copper with bronze or steel.

F. Welding Filler Metals: Comply with AWS D10.12M/D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

G. Gasket Material: Thickness, material, and type suitable for fluid to be handled and working temperatures and pressures.

### 2.5 DIELECTRIC FITTINGS

A. General Requirements: Assembly of copper alloy and ferrous materials with separating nonconductive insulating material. Include end connections compatible with pipes to be joined.

B. Dielectric Unions:
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   a. A.Y. McDonald Mfg. Co.
   b. Capitol Manufacturing Company.
   c. Central Plastics Company.
   d. Hart Industries International, Inc.
   e. Jomar International, Ltd.
   f. Matco-Norca.
   g. Watts Regulator Co.
   h. Zurn Industries, LLC; AquaSpec Commercial Faucet Products.

2. Description:
   b. Pressure Rating: 150 psig.
   c. End Connections: Solder-joint copper alloy and threaded ferrous.

PART 3 - EXECUTION

3.1 PIPING APPLICATIONS
   A. Hot-water heating piping, aboveground, NPS 2 and smaller, shall be any of the following:
      1. Type L, drawn-temper copper tubing, wrought-copper fittings, and soldered joints.
      2. Schedule 40, Grade B, Type 96 steel pipe; Class 150, malleable-iron fittings; cast-iron flanges and flange fittings; and threaded joints.
   B. Safety-Valve-Inlet and -Outlet Piping for Hot-Water Piping: Same materials and joining methods as for piping specified for the service in which safety valve is installed with metal-to-plastic transition fittings for plastic piping systems according to piping manufacturer's written instructions.

3.2 PIPING INSTALLATIONS
   A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.
   B. Install piping in concealed locations unless otherwise indicated and except in equipment rooms and service areas.
   C. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.
   D. Install piping to permit valve servicing.
   E. Install piping free of sags and bends.
   F. Install fittings for changes in direction and branch connections.
   G. Select system components with pressure rating equal to or greater than system operating pressure.
H. Install branch connections to mains using mechanically formed tee fittings in main pipe, with the branch connected to the bottom of the main pipe. For up-feed risers, connect the branch to the top of the main pipe.

I. Install valves according to Section 230523 "General-Duty Valves for HVAC Piping."

J. Install unions in piping, NPS 2 and smaller, adjacent to valves, at final connections of equipment, and elsewhere as indicated.

K. Comply with requirements in Section 230553 "Identification for HVAC Piping and Equipment" for identifying piping.

L. Install sleeves for piping penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 230517 "Sleeves and Sleeve Seals for HVAC Piping."

M. Install escutcheons for piping penetrations of walls, ceilings, and floors. Comply with requirements for escutcheons specified in Section 230518 "Escutcheons for HVAC Piping."

3.3 HANGERS AND SUPPORTS

A. Comply with requirements in Section 230529 "Hangers and Supports for HVAC Piping and Equipment" for hanger, support, and anchor devices. Comply with the following requirements for maximum spacing of supports.

B. Comply with requirements in Section 230548 "Vibration and Seismic Controls for HVAC" for seismic restraints.

C. Install the following pipe attachments:
   1. Adjustable steel clevis hangers for individual horizontal piping less than 20 feet long.
   2. Adjustable roller hangers and spring hangers for individual horizontal piping 20 feet or longer.
   3. Pipe Roller: MSS SP-58, Type 44 for multiple horizontal piping 20 feet or longer, supported on a trapeze.
   4. Spring hangers to support vertical runs.

D. Install hangers for steel piping with the following maximum spacing and minimum rod sizes:
   1. NPS 3/4: Maximum span, 7 feet.
   2. NPS 1: Maximum span, 7 feet.
   3. NPS 1-1/2: Maximum span, 9 feet.
   4. NPS 2: Maximum span, 10 feet.
   5. NPS 2-1/2: Maximum span, 11 feet.
   6. NPS 3 and Larger: Maximum span, 12 feet.

3.4 PIPE JOINT CONSTRUCTION

A. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

B. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

C. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA’s "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32.
D. Brazed Joints: Construct joints according to AWS’s "Brazing Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8/A5.8M.

E. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.

F. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

G. Grooved Joints: Assemble joints with coupling and gasket, lubricant, and bolts. Cut or roll grooves in ends of pipe based on pipe and coupling manufacturer’s written instructions for pipe wall thickness. Use grooved-end fittings and rigid, grooved-end-pipe couplings.

3.5 TERMINAL EQUIPMENT CONNECTIONS

A. Sizes for supply and return piping connections shall be the same as or larger than equipment connections.

B. Install control valves in accessible locations close to connected equipment.

C. Install bypass piping with globe valve around control valve. If parallel control valves are installed, only one bypass is required.

D. Install ports for pressure gages and thermometers at coil inlet and outlet connections. Comply with requirements in Section 230519 "Meters and Gages for HVAC Piping."

3.6 FIELD QUALITY CONTROL

A. Prepare hydronic piping according to ASME B31.9 and as follows:

1. Leave joints, including welds, uninsulated and exposed for examination during test.
2. Provide temporary restraints for expansion joints that cannot sustain reactions due to test pressure. If temporary restraints are impractical, isolate expansion joints from testing.
3. Flush hydronic piping systems with clean water; then remove and clean or replace strainer screens.
4. Isolate equipment from piping. If a valve is used to isolate equipment, its closure shall be capable of sealing against test pressure without damage to valve. Install blinds in flanged joints to isolate equipment.
5. Install safety valve, set at a pressure no more than one-third higher than test pressure, to protect against damage by expanding liquid or other source of overpressure during test.

B. Perform the following tests on hydronic piping:

1. Use ambient temperature water as a testing medium unless there is risk of damage due to freezing. Another liquid that is safe for workers and compatible with piping may be used.
2. While filling system, use vents installed at high points of system to release air. Use drains installed at low points for complete draining of test liquid.
3. Isolate expansion tanks and determine that hydronic system is full of water.
4. Subject piping system to hydrostatic test pressure that is not less than 1.5 times the system’s working pressure. Test pressure shall not exceed maximum pressure for any
vessel, pump, valve, or other component in system under test. Verify that stress due to pressure at bottom of vertical runs does not exceed 90 percent of specified minimum yield strength or 1.7 times the "SE" value in Appendix A in ASME B31.9, "Building Services Piping."

5. After hydrostatic test pressure has been applied for at least 10 minutes, examine piping, joints, and connections for leakage. Eliminate leaks by tightening, repairing, or replacing components, and repeat hydrostatic test until there are no leaks.

6. Prepare written report of testing.

C. Perform the following before operating the system:

1. Open manual valves fully.
2. Inspect pumps for proper rotation.
3. Set makeup pressure-reducing valves for required system pressure.
4. Inspect air vents at high points of system and determine if all are installed and operating freely (automatic type), or bleed air completely (manual type).
5. Set temperature controls so all coils are calling for full flow.

END OF SECTION 15181
SECTION 15414
RESIDENTIAL PLUMBING FIXTURES

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. Bathtubs.
2. Faucets.
3. Lavatories.
5. Toilet seats.
7. Waste fittings.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for lavatories.
2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

PART 2 - PRODUCTS

2.1 BATHTUBS

A. Bathtubs.

1. Fixture: Owner furnished, Contractor installed.
2. Faucet, Filler Spout, Shower Head, Diverter: Owner furnished, Contractor installed.
5. Waste Fittings:
   b. Drain: Stainless steel or chrome-plated brass, removable strainer.
   c. Overflow: Chrome-plated-brass escutcheon with toggle drain-plug device.
   d. Drain Piping: NPS 1-1/2 cast-brass overflow, P-trap, and waste.
2.2 **LAVATORIES**

A. Lavatories.

1. Fixture: Owner furnished, Contractor installed.
2. Faucet: Owner furnished, Contractor installed.

2.3 **WATER CLOSETS**

A. Water Closets

1. Fixture: Owner furnished, Contractor installed.
2. Toilet Seat: Owner furnished, Contractor installed.
3. Supply Fittings:
   b. Supply Piping: Chrome-plated-brass pipe or chrome-plated-copper tube matching water-supply piping size. Include chrome-plated wall flange.
   c. Stop: Chrome-plated-brass, one-quarter-turn, ball-type or compression stop with inlet connection matching water-supply piping type and size.
   d. Riser:
      1) Size: NPS 1/2.
      2) Material: Chrome-plated, soft-copper flexible tube riser.
      3) Operation: Wheel handle.

2.4 **SUPPLY FITTINGS**

A. NSF Standard: Comply with NSF/ANSI 61, "Drinking Water System Components - Health Effects," for faucet materials that will be in contact with potable water.

B. Standard: ASME A112.18.1/CSA B125.1.

C. Lavatory and Kitchen Sink Supply Fittings:

1. Supply Piping: Chrome-plated-brass pipe or chrome-plated-copper tube matching water-supply piping size. Include chrome-plated wall flange.
2. Stops: Chrome-plated-brass, one-quarter-turn, ball-type or compression stop with inlet connection matching water-supply piping type and size.
   a. Operation: Wheel handle.
3. Risers:
   c. Material: Chrome-plated, soft-copper flexible tube riser.

2.5 **WASTE FITTINGS**

A. Standard: ASME A112.18.2/CSA B125.2.
B. Drain: Pop-up type with NPS 1-1/4 straight tailpiece as part of faucet for standard lavatories.

C. Drain: Strainer cup type with NPS 1-1/2 straight tailpiece for standard kitchen sink.

D. Trap:
   1. Size: NPS 1-1/2 by NPS 1-1/4 for lavatories.
   2. Size: NPS 1-1/2 for kitchen sinks.
   3. Material: Chrome-plated, two-piece, cast-brass trap and swivel elbow with 0.032-inch-thick brass tube to wall; and chrome-plated-brass or -steel wall flange.
   4. Material: ASTM F 409 ABS or PVC two-piece trap and waste to wall and wall flange.

2.6 GROUT


B. Characteristics: Nonshrink; recommended for interior and exterior applications.

C. Design Mix: 5000-psi, 28-day compressive strength.

D. Packaging: Premixed and factory packaged.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine roughing-in of water-supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before plumbing-fixture installation.

B. Examine walls, floors, cabinets, and counters for suitable conditions where fixtures will be installed.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install plumbing fixtures level and plumb according to roughing-in drawings.

B. Install floor-mounted water closets on closet flange attachments to drainage piping.

C. Install counter-mounting fixtures in and attached to casework.

D. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.

E. Install toilet seats on water closets.

F. Install traps on fixture outlets.
   1. Exception: Omit trap on fixtures with integral traps.

G. Set bathtubs in leveling bed of cement grout.
H. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deep-pattern escutcheons if required to conceal protruding fittings.

I. Seal joints between plumbing fixtures, counters, floors, and walls using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color.

### 3.3 CONNECTIONS

A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.

B. Comply with water piping requirements specified in Section 15140 "Domestic Water Piping."

C. Comply with soil and waste piping requirements specified in Section 15150 "Sanitary Waste and Vent Piping."

### 3.4 ADJUSTING

A. Operate and adjust plumbing fixtures and controls. Replace damaged and malfunctioning fixtures, fittings, and controls.

### 3.5 CLEANING AND PROTECTION

A. After completing installation of plumbing fixtures, inspect and repair damaged finishes.

B. Clean plumbing fixtures, faucets, and other fittings with manufacturers' recommended cleaning methods and materials.

C. Do not allow use of plumbing fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION 15414
SECTION 16060
GROUNDING AND BONDING

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 grounding and bonding systems and equipment.

1.3 ACTION SUBMITTALS

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

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1. Burndy; Part of Hubbell Electrical Systems.
2. Dossert; AFL Telecommunications LLC.
3. ERICO International Corporation.
4. Fushi Copperweld Inc.
5. Galvan Industries, Inc.; Electrical Products Division, LLC.
6. Harger Lightning and Grounding.
7. ILSCO.
9. Robbins Lightning, Inc.
10. Siemens Power Transmission & Distribution, Inc.

2.2 SYSTEM DESCRIPTION

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. Comply with UL 467 for grounding and bonding materials and equipment.

2.3 CONDUCTORS

A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.

B. Bare Copper Conductors:
4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch in diameter.
5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.

2.4 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel; 3/4 inch by 10 feet.

PART 3 - EXECUTION

3.1 APPLICATIONS

A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.

3.2 GROUNDING AT THE SERVICE

A. Equipment grounding conductors and grounding electrode conductors shall be connected to the ground bus. Install a main bonding jumper between the neutral and ground buses.

3.3 EQUIPMENT GROUNDING

A. Install insulated equipment grounding conductors with all feeders and branch circuits.

B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:

1. Feeders and branch circuits.
2. Lighting circuits.
3. Receptacle circuits.

C. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.

3.4 INSTALLATION

A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

B. Ground Bonding Common with Lightning Protection System: Comply with NFPA 780 and UL 96 when interconnecting with lightning protection system. Bond electrical power system ground directly to lightning protection system grounding conductor at closest point to electrical service.
grounding electrode. Use bonding conductor sized same as system grounding electrode conductor, and install in conduit.

C. Ground Rods: Drive rods until tops are 2 inches below finished floor or final grade unless otherwise indicated.

1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
2. For grounding electrode system, install at least two rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes, and connect to the service grounding electrode conductor.

D. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.

1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.

3.5 FIELD QUALITY CONTROL

A. Perform tests and inspections. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer’s written instructions.

END OF SECTION 16060
PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Building wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.

1.2 COORDINATION

A. Set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

2. General Cable Corporation.

B. Multiconductor Cable: Type NM Cable

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

A. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

3.3 INSTALLATION OF CONDUCTORS AND CABLES

A. Conceal cables in finished walls, ceilings, and floors.

3.4 CONNECTIONS

A. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

END OF SECTION 16120
PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Receptacles and associated device plates.
   2. Snap switches.

1.2 DEFINITIONS

A. GFCI: Ground-fault circuit interrupter.

B. Pigtail: Short lead used to connect a device to a branch-circuit conductor.

1.3 COORDINATION

A. Receptacles for Owner-Furnished Equipment: Match plug configurations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers:

   1. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).

2.2 STRAIGHT BLADE RECEPTACLES

A. Convenience Receptacles, Residential Grade, 125 V, 20 A: 5-20R.

2.3 GFCI RECEPTACLES

A. General Description: Straight blade, non-feed-through type.

B. Duplex GFCI Convenience Receptacles, Residential Grade, 125 V, 20 A
2.4 SNAP SWITCHES

A. Switches, Residential

2.5 WALL PLATES

A. Single and combination types to match corresponding wiring devices.

2.6 FINISHES

1. As selected by Architect.

PART 3 - EXECUTION (NOT APPLICABLE)

END OF SECTION 16140
SECTION 16511
INTERIOR LIGHTING

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. Interior lighting fixtures, lamps, and ballasts.
   B. Related Sections:
      1. Section 262726 "Wiring Devices" for incandescent lamps.

1.3 ACTION SUBMITTALS
   A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include
      data on features, accessories, and finishes.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR LIGHTING FIXTURES AND COMPONENTS
   A. Incandescent Fixtures: Comply with UL 1598. Where LER is specified, test according to
      NEMA LE 5A.

PART 3 - EXECUTION

3.1 INSTALLATION
   A. Lighting fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.
   B. Comply with NFPA 70 for minimum fixture supports.
   C. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and
      Cables."

END OF SECTION 16511
January 18, 2017

Kelso & Easter, Inc.
100 West Franklin Street, Suite 400
Richmond, VA 23220

ATTN: Monica Flippen, NOMA, CSI
Vice President

RE: Asbestos Abatement Plan
Richmond Redevelopment and Housing Authority (RRHA)
Fire Damaged Building
2305 – 2315 Ambrose Street
Richmond, Virginia
FEI Project Number: FEI-17AL010

Dear Ms. Flippin:

France Environmental, Inc. (FEI) has completed the Asbestos Abatement Specification sections for the Asbestos Abatement Project at the above referenced residential building. Please find enclosed with this letter the Asbestos Abatement Project Specifications. Should you have any questions regarding these specifications, please contact me at (804) 716-0560.

Respectfully Submitted,

FRANCE ENVIRONMENTAL, INC.

Derek D. Dambacher, REA
Senior Project Manager

Enclosures: Asbestos Abatement Specifications
ASBESTOS ABATEMENT PLAN

RICHMOND REDEVELOPMENT AND HOUSING AUTHORITY (RRHA)
FIRE DAMAGED BUILDING UNITS
2305 – 2315 AMBROSE STREET
RICHMOND, VIRGINIA

PREPARED FOR:

KELSO & EASTER, INC.
100 WEST FRANKLIN STREET, SUITE 400
RICHMOND, VA 23220

PREPARED BY:

FRANCE ENVIRONMENTAL, INC.
7834 FOREST HILL AVENUE, SUITE 7
RICHMOND, VIRGINIA 23225
(804) 716.0560 (PHONE)
(804) 918.7098 (FAX)

DEREK D. DAMBACHER, REA
SENIOR PROJECT MANAGER

FEI PROJECT NO. FEI-17AL010

JANUARY 18, 2017
## ASBESTOS ABATEMENT PLAN

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#### SECTION 13281  ASBESTOS AIR MONITORING/TESTING

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### APPENDICES

APPENDIX A – ASBESTOS SURVEY LABORATORY RESULTS
PART 1 GENERAL

1.1 SUMMARY OF WORK

A. RELATED DOCUMENTS: General provisions of the Contract and requirements specified in the Division 1 sections apply to this work.

B. SCOPE OF WORK: Removals and relocations shall include all work required and inferred to be consistent with the drawings and as necessary to provide completed work starting with the conditions existing prior to commencing work.

C. SPECIFICATION: This section of the specification covers the removal of asbestos-containing building materials (ACBM). At all times an Asbestos Abatement Supervisor and Asbestos Project Monitor shall be on site and available while asbestos abatement is taking place. All abatement work shall be done in strict accordance with the specifications. The contractor shall field verify all materials, quantities, locations, and field conditions prior to submitting their bid proposal. Compliance with all applicable Federal, State, and local procedures, and methods for preparation, execution, cleanup, disposal, and safety are absolutely required. This compliance is the sole responsibility of the Contractor.

D. ASBESTOS-CONTAINING MATERIALS TO BE REMOVED: The following building materials shall be removed by the asbestos abatement contractor:

1. Asbestos-containing floor tile, mastic and any incidental materials including, but not limited to, carpet mastic and leveling compound to the original concrete floor. (Approximately 6,000 square feet). There are multiple layers of new floor tile found on top of the original asbestos containing floor tile and mastic that will need to be removed together.

2. Asbestos-containing white interior and exterior window and door caulking material throughout the building on all perimeter windows and doors. (approximately 1,600 linear feet)

E. ASBESTOS-CONTAINING MATERIALS TO REMAIN IN PLACE: Building Materials determined to be asbestos-containing by analytical results to remain in place during this project include the following:

1. None.

F. Sequence of Work: The contractor shall follow the general sequence of events as described below.

1. Preparation of the asbestos work area(s).
2. Containment of the asbestos work area(s).
4. Encapsulation of the work area(s).
5. Removal of the containment materials.

1.2 DESCRIPTION

A. Furnish all labor, materials, services, insurance, and equipment in accordance with the most stringent requirements of EPA and OSHA and all other applicable regulatory agencies, to complete the removal of asbestos-containing materials as described in the Summary of Work.

1.3 SUBMITTAL REQUIREMENTS

A. Pre-work Submittal

1. NOTICES: Submit notices required by federal, state, and local regulations together with proof of timely transmittal to agency requiring the notice.

2. PERMITS: Submit copies of current valid permits required by state and local regulations, including arrangements for storage, transportation, and disposal of contaminated material. Dumpsite must conform to EPA regulation 40 CFR 61.

3. LICENSES: Submit copies of all state and local licenses and permits necessary to carry out the work including but not limited to contractor license, supervisor licenses, and worker licenses.

4. CONTAINMENT AREAS: Show on Contract Drawings or an 8-1/2" x 11" plan of the containment areas (numbered sequentially), including the locations and quantity of negative air pressure equipment, the location of all decontamination chambers, entrances, and emergency exits from the work areas.

5. EQUIPMENT: Submit manufacturer's certification that vacuums, negative pressure equipment, respirators, and air supply equipment meet all requirements of OSHA and EPA. Include descriptions of any equipment to be employed not previously discussed.

6. WORKER TRAINING: The Contractor shall submit a list of the persons who will be employed by him and his subcontractors in the removal work. Present evidence that workers have received proper training required by regulations and the medical examinations required by OSHA 29 CFR 1926.1101.

7. LOGS: Submit specimen copies of daily progress log and visitors' log.

   a. Visitor's Log: The Contractor shall maintain a visitors’ log at the work place and require all persons visiting the site to sign the log. The log should provide space for the following information:

       1) Name, organization represented, date, time, and purpose of visit.
       2) Certificate of release signed and filed with Contractor that those who enter the work environment have been informed of the hazards of asbestos.

   b. Daily Log: The Contractor shall maintain a daily job log, which shall be maintained by the Project Superintendent. The log shall have daily entries describing the progress and location of the work, any special conditions encountered, records of testing, amount removed, names of
workers entering and exiting the containment areas, and any other pertinent data.

8. **NOTICES TO SUPPLIERS:** Copies of notices sent to suppliers of rental equipment and vehicles informing them of the nature of the use of their equipment.

9. **MATERIAL SAFETY DATA SHEET:** Submit a Safety Data Sheet, or equivalent for each material proposed for use on the work in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200). Include a separate attachment for each sheet indicating the specific worker protective equipment proposed for use with the material indicated and/or manufacturer's specification.

**B. CLOSE-OUT SUBMITTALS**

1. Submit copies of the fully completed Waste Shipment Records (WSR) as documentation of compliance with NESHAP 61.150 (d) (3) and (4).
2. Submit OSHA compliance air monitoring records conducted during the work.
3. Submit copies of the daily progress log.
4. Submit copies of Visitors' Log.

**1.4 TERMINOLOGY (Definitions)**

A. **ABATEMENT:** Procedure to control fiber release from asbestos-containing building materials.

B. **FOR THIS PROJECT:**

1. **Removal** - All herein specified procedures necessary to remove asbestos-containing materials from an area and dispose of the materials at an acceptable site in an acceptable manner.
2. **Post-Removal Surface Encapsulation** - Procedures necessary to coat surfaces from which asbestos-containing materials have been removed to control any residual fiber release.
3. **Abatement Activities** - Any activity requiring respiratory protection as per this project manual, which disturbs or has the potential to disturb any asbestos-containing building material. This includes, but is not limited to, the following activities: precleaning, installing polyethylene, ACBM removal, encapsulation, and enclosure.

C. **ACBM OR ACM:** Asbestos-containing building materials or asbestos-containing materials.

D. **AIR LOCK:** A system for permitting ingress or egress without permitting air movement from a contaminated area into an uncontaminated area, typically consisting of two (2) curtained doorways at least three (3) feet apart.

E. **AIR MONITORING:** The process of measuring the fiber content of a specific volume of air in a stated period of time. For this project, NIOSH Analytical Method 7400 shall be used. When "aggressive" air sampling is specified, blowers/fans are used to disperse settled fibers into the air during sampling.
F. **AMENDED WATER**: Water to which a surfactant has been added to reduce water surface tension and thereby provide a more rapid penetration.

G. **AUTHORIZED VISITOR**: The Building Owner, the Building Owner’s representative, the Architect/Engineer’s personnel, or a representative of any regulatory or other agency having jurisdiction over the project.

H. **BARRIER**: Any surface that inhibits air and fiber movement from the work area to non-work areas. Can be comprised of one or a combination of several materials, including but not limited to plywood, polyethylene sheeting, duct tape, and spray-poly. A critical barrier is one that seals any opening (such as doorways, vents, windows, penetrations) between the work area and non-work area.

I. **BUILDING OWNER**: The Owner or his authorized representative.

J. **CURTAINED DOORWAY**: Device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms, typically constructed by placing three overlapping sheets of opaque 6-mil polyethylene over an existing or temporarily framed doorway, securing each along the top of the doorway, securing the vertical edge of one sheet along one vertical side of the doorway, and securing the vertical edge of the other sheet along the opposite vertical side of the doorway.

K. **DECONTAMINATION ENCLOSURE SYSTEM**: A series of connected rooms, with air locks between any two adjacent rooms, for the decontamination of workers and/or materials and equipment, constructed or moved onto site.

L. **EQUIPMENT DECONTAMINATION UNIT**: Decontamination enclosure system for materials and equipment, typically consisting of a designated area of the work area (wash-down station), a washroom, a holding room, a container room, and an uncontaminated area.

M. **GROSS ABATEMENT AREA**: An asbestos removal area that is sealed and fully contained in polyethylene. Workers enter the abatement area through a decontamination enclosure system.

N. **PERSONNEL DECONTAMINATION UNIT**: A decontamination enclosure system for workers, typically consisting of a designated area of the work area (gross contaminant removal station), an equipment room, an air lock, a shower, an air lock, and a clean room.

1. **Equipment Room**: A contaminated area or room in the personnel decontamination enclosure system with provisions for storage of contaminated clothing and equipment.
2. **AIR LOCK**
3. **Shower Room**: A room between the two (2) air locks in the personnel decontamination enclosure system with hot and cold running water suitably arranged for complete showering during decontamination.
4. AIR LOCK
5. Clean Room: An uncontaminated area or room that is part of the worker decontamination unit with provisions for storage of workers’ street clothes and protective equipment.

O. FIXED OBJECT: A unit of equipment or furniture in the work area that cannot be removed from the work area without dismantling.

P. HEPA FILTER: A high efficiency particulate air (HEPA) filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 microns in length.

Q. HEPA VACUUM EQUIPMENT: High efficiency particulate air filtered vacuuming equipment with a filter system capable of collecting and retaining asbestos fibers. Filters should be of 99.97% efficiency for retaining fibers greater than 0.3 microns in length.

R. NEGATIVE AIR PRESSURE EQUIPMENT: A local exhaust system, capable of maintaining constant, low velocity airflow through the Decontamination Unit and into the Work Area from adjacent uncontaminated areas and exhausting that air outside the building through HEPA filters.

S. NIOSH: National Institute for Occupational Safety and Health.

T. ON-SITE REPRESENTATIVE: Owner’s full-time representative responsible for air monitoring and site observation. Also referred to as Project Monitor.

U. PLASTICIZING: Procedures necessary using polyethylene sheeting, adhesives, and/or taping to seal an area airtight.

V. POST REMOVAL ENCAPSULATION: A liquid material which can be applied to surfaces from which asbestos-containing materials have been removed to control the possible release of residual asbestos fibers, either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components (penetrating encapsulant).

W. SURFACTANT: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

X. WET CLEANING/WIPING: The process of eliminating contamination from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as asbestos-contaminated waste.

1.5 CODES AND REGULATIONS

A. GENERAL APPLICABILITY OF CODES, REGULATIONS, AND STANDARDS: Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, all applicable codes, regulations, and standards have the same force and effect (and are made a part of the contract documents by reference) as if copied directly into the contract documents, or as if published copies are bound herewith.
B. **FEDERAL REGULATIONS:** Those which govern asbestos abatement work or hauling and disposal of asbestos waste materials include but are not limited to the following:

1. US Department of Labor, Occupational Safety and Health Administration, (OSHA), including but not limited to:

   a. **Asbestos Regulations** - Title 29, Part 1910, Section 1001 of the Code of Federal Regulations
   b. **Respiratory Protection** - Title 29, Part 1910, Section 134 of the Code of Federal Regulations
   c. **Construction Industry** - Title 29, Part 1926, Section 1101 of the Code of Federal Regulations
   d. **Access to Employee Exposure & Medical Records** - Title 29, Part 1910, Section 20 of the Code of Federal Regulations
   e. **Hazard Communication** - Title 29, Part 1910, Section 1200 of the Code of Federal Regulations
   f. **Specifications for Accident Prevention Signs and Tags** - Title 29, Part 1910, Section 145 of the Code of Federal Regulations

2. US Environmental Protection Agency (EPA) including but not limited to:

   **Worker Protection Rule**
   40 CFR Part 763, Subpart G
   CPTS 62044, FLR 2843-9
   Federal Register, Vol. 50, No. 134, 7/12/85
   P28530-28540

   c. **Asbestos Hazard Emergency Response Act (AHERA)** - 40 CFR Part 763

3. US Department of Transportation (DOT) including but not limited to:

   a. **Hazardous Substances: Final Rule** - Regulation 49 CFR, Parts 171 and 172

C. **STATE AND LOCAL REGULATIONS:** Abide by all state and local regulations which govern asbestos abatement work or hauling and disposal of asbestos waste materials, including but not limited to:

1. Virginia Department of Labor and Industry

   a. **Licensed Asbestos Contractor Notification, Asbestos Project Permits, and Permit Fees Regulations** - 16 VAC 25-20

2. Virginia Department of Environmental Quality
a. **Solid Waste Regulations 9 VAC 20-81-620**

D. **STANDARDS:** Those which discuss asbestos abatement work or hauling and disposal of asbestos waste materials are not limited to the following:

1. American National Standards Institute (ANSI)
   
a. Fundamentals Governing the Design and Operation of Local Exhaust Systems, Publication Z9.2-79
   
b. Practices for Respiratory Protection, Publication Z88.2-80

E. **EPA GUIDANCE DOCUMENTS:** Those that discuss asbestos abatement work or hauling and disposal of asbestos waste materials are listed below only for the Contractor's information. These documents do not describe the work and are not a part of the work of this contract.


1.6 **ASBESTOS ABATEMENT PHASING**

A. Asbestos abatement work shall be scheduled and coordinated with the Facility, Contractor, and Project Monitor. The Contractor is responsible for coordinating with the Project Monitor a minimum of 48 hours in advance of site mobilization. No abatement work shall commence on this project unless the Owner's Project Monitor is present.

B. The computer server room will remain in operation and must remain accessible to the Owner at all times during the project.

PART 2 **EQUIPMENT AND MATERIALS**

2.1 **PERSONNEL PROTECTION REQUIREMENTS**

A. Prior to commencement of work, the workers shall be instructed and shall be knowledgeable on the hazards of asbestos exposure, use and fitting of respirators, protective clothing, decontamination procedures, and all aspects of asbestos work procedures; workers shall have medical examinations.

B. The Contractor acknowledges that he alone is responsible for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard for each phase of operation.

C. Provide workers with personally issued and marked respiratory equipment approved by NIOSH.

D. Where not in violation of NIOSH and OSHA requirements, the contractor shall provide, as a minimum, the following respirator protection for each phase of operation:
1. **Precleaning/Wet Wiping of Area**: NIOSH-approved half-face dual cartridge respirators equipped with HEPA cartridges.

2. **Plastic Installation**: NIOSH-approved half-face dual cartridge respirators equipped with HEPA cartridges.

3. **Asbestos Removal**: NIOSH-approved half-face dual cartridge respirators equipped with HEPA cartridges. If mastic solvents are to be utilized on site, appropriate respiratory protection is required in accordance with the manufactures recommendation.

4. **Plastic Removal**: NIOSH-approved half-face dual cartridge respirators equipped with HEPA cartridges.

5. **Loading Waste Material on Truck / Dumpster (outside work area)**: NIOSH-approved half-face dual cartridge respirators equipped with HEPA cartridges.

6. **Unloading Bags at Landfill**: NIOSH-approved half-face dual cartridge respirators equipped with HEPA cartridges.

E. The above schedule is the minimum respiratory protection acceptable. Should any condition, for any reason, be encountered where the exposure level, after application of the appropriate protection factor of the respiratory equipment in use, exceeds 0.01 f/cc, substitute respiratory equipment with protection factors that reduce worker exposure levels below 0.01 f/cc.

F. No visitors shall be allowed in work areas, except as authorized by the Owner.

G. Provide workers with sufficient sets of disposable protective full-body clothing. Such clothing shall consist of full-body coveralls, footwear, and headgear. Provide eye protection and hard hats as required by applicable safety regulations. Reusable type protective clothing and footwear intended for reuse shall be left in the Contaminated Equipment Room until the end of the asbestos abatement work at which time shall be disposed of as asbestos waste. Disposable clothing shall not be allowed to accumulate and shall be disposed of as contaminated waste.

H. Provide authorized visitors and the Owner’s Project Monitor with suitable protective clothing, headgear, footwear, and gloves as described above whenever they are required to enter the work area.

2.2 MATERIALS

A. Deliver all materials in the original packages, containers, or bundles bearing the name of the manufacturer and the brand name.

1. Store all materials subject to damage off the ground, away from wet or damp surfaces, and under cover sufficient to prevent damage or contamination.

2. Damaged or deteriorating materials shall not be used and shall be removed from the premises. Material that becomes contaminated with asbestos shall be disposed of in accordance with applicable regulations.

B. **PLASTIC SHEETING**: A minimum of 6-mil thickness shall be used unless otherwise specified. Flame retardant polyethylene sheeting shall be used where applicable to comply with fire code requirements.
C. **TAPE**: Capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water, duct tape, poly prep tapes or approved equal.

D. **ADHESIVES**: Capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.

E. **CAULKS**: Not Applicable.

F. **SURFACTANT**: Shall consist of 50% polyoxyethylene ether and 50% of polyoxyethylene ester, or equivalent, and shall be mixed with water to provide a concentration of one ounce of surfactant to 5 gallons of water. Prior to bidding, the Contractor shall be responsible for verifying that the surfactant is compatible with the materials to be removed and their substrates. If found to be incompatible, the Contractor shall supply suitable wetting agents at no extra cost to the Owner.

G. **IMPERMEABLE CONTAINERS**: Suitable to receive and retain any asbestos-containing or contaminated materials until disposal at an approved site. The containers shall be labeled in accordance with OSHA Regulation 29 CFR 1926.1101 and NESHAP Regulation 40 CFR 61, Subpart M. Containers must be both air and watertight and must be resistant to damage and rupture.

H. **WARNING LABELS AND SIGNS**: As required by OSHA regulations 29 CFR 1926.1101.

I. **GLOVE BAGS**: Shall meet the specifications of OSHA regulation 29 CFR 1926.1101(g)(5)(ii)(A).

J. **ENCAPSULANTS**: Removal or “lock-down” encapsulants shall not be solvent-based and shall not be flammable.

K. **MASTIC REMOVER**: Shall be commercially available product formulated for the removal of mastics, shall have closed cup flashpoint of 140 degrees F. or higher, (NFPA Class III), shall contain no chlorinated compounds, and shall contain no compounds which could render the waste as hazardous waste for disposal.

L. **OTHER MATERIALS**: Provide all other materials, such as, but not limited to lumber, plywood, nails, and hardware, which may be required to properly prepare and complete this project.

2.3 **TOOLS AND EQUIPMENT**

A. Provide suitable tools for asbestos removal.

1. **Water Sprayer**: Airless or a low-pressure sprayer for amended water application as applicable.
2. **Air-Purifying Equipment**: High Efficiency Particulate Air Filtration Systems (HEPA) shall comply with ANSI Z9.2-79. No air movement system or air
equipment should discharge asbestos fibers outside the work area. Thus, the negative air unit shall be equipped with a three filter bank with the last being the HEPA filter capable of removing 99.97% of fibers >0.3 μ (microns).

3. **Paint/Encapsulant Sprayer**: Airless.

4. **Scaffolding**: As required to accomplish the specified work and meet all applicable safety regulations.

5. **Vacuums**: Use HEPA type meeting the requirements of OSHA regulation 29 CFR 1926.1101.

6. Other tools and equipment as necessary.

### PART 3 EXECUTION OF ABATEMENT

#### 3.1 POSTING OF THE PROJECT

A. Post warning signs at all approaches to the regulated area to comply with OSHA regulation 29 CFR 1926.1101 and in compliance with all other Federal, State, and local requirements.

B. As required by OSHA regulations 29 CFR 1926.1101, warning shall bear the following information:

   **DANGER**

   **ASBESTOS**

   **MAY CAUSE CANCER**

   **CAUSES DAMAGE TO LUNGS**

   **AUTHORIZED PERSONNEL ONLY**

C. If applicable, warning signs shall also include the following statement:

   **WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA**

D. Remove signs upon completion of abatement

#### 3.2 WORK AREA PREPARATION

A. If required, the Contractor shall coordinate with the facility to shut down electric power to work areas. The Contractor may use existing electrical service to the building for temporary electrical power during abatement work.

B. The Contractor shall coordinate with the facility to shut down or isolate heating, cooling, and ventilating air systems to the work areas.

C. Before the work is begun, and unless otherwise specified, the Owner shall remove from work areas, all removable items and equipment not located on the asbestos
material as specified. Owner shall later replace furniture and movable objects only after the Project Monitor specifies the area is safe for reoccupancy.

3.3 WORK AREAS - WORK BY CONTRACTOR

A. Preclean fixed objects within the work area, first using HEPA vacuum equipment and then wet cleaning methods as appropriate, and completely enclose with minimum 6-mil thick plastic sheeting sealed with tape. Mechanical equipment which is still operable and used to run the daily operations of the building systems shall not be included in the work area. This equipment shall be properly vented in accordance with the manufacturer’s specifications.

B. Prior to commencing abatement work, shut down and isolate heating, cooling, and ventilating air systems to prevent contamination and fiber dispersal to other areas of the building. Seal any vents within the work area with tape and 6-mil plastic sheeting.

C. Clean work areas where debris or visible dust is present and in areas where floor materials are not being removed. Clean the work area first using HEPA vacuum equipment and then wet cleaning methods as appropriate. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not use HEPA vacuum equipment on wet surfaces unless units are specially constructed for wet/dry use. Do not use amended water on gypsum board or other material that would be damaged by the wetting agent. HEPA vacuum or damp sponge with regular water would be appropriate.

D. Seal off all openings, including but not limited to windows, corridors, doorways, skylights, ducts, grilles, diffusers, and any other penetrations of the work areas, with 6-mil plastic sheeting sealed with tape (Critical Barriers).

E. Prepare areas undergoing abatement in accordance with the following requirements. Areas undergoing multiple removal operations shall be prepared in accordance with the most stringent requirements as follows:

1. **Vinyl Floor Tile/Mastic**: The negative pressure containment shall consist, at a minimum, of critical barriers over windows, doors, and openings (i.e. HVAC diffusers, returns, exhaust fans, etc.). A two-stage decontamination unit with a wash station may be used in place of a three-stage decontamination unit with a shower provided the vinyl floor tile and mastic is removed in a manner that it is not deemed friable. The critical barriers and splash guards shall be constructed with 6-mil polyethylene sheeting. Vinyl floor tile and mastic shall be removed in accordance with Section 13280 - Paragraph 3.15. If the vinyl floor tile and mastic is removed in a manner where it would be deemed friable (as determined by the Project Monitor), then a Decontamination Enclosure System is required in accordance with Section 13280 - Paragraph 3.4 and additional State and Federal notification requirements would apply.

2. **White Interior and Exterior Door and Window Caulking**: Establish a work area from the floor level, which will protect individuals from the dangers of falling objects. A drop cloth shall be used on the interior/exterior of the
building to catch any debris. The asbestos-containing materials shall be removed intact if possible then residual materials hand scraped and disposed of as asbestos-containing waste. Barricade tape shall be used to demarcate the regulated areas. A sufficient number of competent personnel shall be used to restrict unauthorized personnel from entering the regulated areas while asbestos abatement is being performed.

F. Maintain and mark emergency exits from the work areas, or establish alternate exits satisfactory to the local fire marshal.

3.4 DECONTAMINATION ENCLOSURE SYSTEMS

A. GENERAL: The Contractor shall use portable decontamination units acceptable to EPA and OSHA, connected to the work area with framed-in or accordion tunnels, if necessary, and line the tunnels with plastic, sealed with tape at all joints in the plastic, or shall construct decontamination units on-site.

B. ACCESS: In all cases, access to contained areas shall be through an air lock. In all cases, access between any two rooms within the decontamination enclosure system shall be through an air lock.

C. WORKER DECONTAMINATION ENCLOSURE SYSTEM: Construct a worker decontamination enclosure system contiguous to the work area consisting of one totally enclosed chambers as follows:

1. An equipment room with two (2) curtained doorways, one to the work area and one to the clean room, via an air lock.
2. A clean room with one curtained doorway into the equipment room (via an air lock) and one entrance or exit to noncontaminated areas of the building. The clean room shall have sufficient space for storage of the workers’ street clothes, towels, and other noncontaminated items.

D. EQUIPMENT DECONTAMINATION ENCLOSURE SYSTEM: Provide or construct an equipment decontamination enclosure system consisting of one totally enclosed chambers as follows:

1. The worker decontamination enclosure system may also be used as the Equipment Decontamination Enclosure System.

3.5 MAINTENANCE OF DECONTAMINATION ENCLOSURES

A. At the beginning of each work shift and throughout removal, all seals and curtained doorways shall be inspected, and if not found in proper condition, repaired immediately.

B. Respiratory equipment shall be cleaned, repaired, and sanitized after each use.

C. Soap and shampoo shall be in the showers at all times.

D. Fresh towels shall be available at all times.
E. All areas shall be kept clean and in order.

F. Provide a disposal bag for contaminated filters in the shower room.

G. Provide storage for wet and dry towels.

H. Ensure that the drainage filtering systems are kept clean and operable at all times.

I. At the end of each decontamination period, the shower, air locks, and clean room shall be cleaned and dried.

J. At the end of each work shift: the two air locks and the shower shall be thoroughly disinfected; the filter bag (if applicable) shall be returned to the equipment room for disposal; the equipment room and first air lock shall be thoroughly HEPA vacuumed and wet cleaned.

3.6 SEPARATION OF WORK AREAS FROM NONWORK AREAS

A. The Contractor shall coordinate with the facility to close off work areas from building occupants, if applicable.

3.7 WORKER PROTECTION - TO BE POSTED IN CLEAN AND EQUIPMENT ROOMS

A. All workers and authorized personnel, in order to enter the work area, shall:

1. Remove all clothing, unless it is to remain in the equipment room for eventual disposal.
2. Don protective clothing (coveralls, gloves, boots, etc.).
3. Don the appropriate respiratory protection, following all training procedures and manufacturer's instructions. Hood shall be worn over respirator straps.

B. All workers and authorized personnel, in order to leave the work area, shall:

1. Remove gross (visible) contamination from themselves and their equipment.
2. Enter the equipment room and, keeping respirator in place, remove all protective clothing, including gloves and boots. Place contaminated clothing in the bag(s) provided. Store gloves and/or boots in their respective areas.
3. Still wearing the respirator, proceed to the first air lock. Once inside, ensure all curtained doorways behind are properly closed.
4. Respirator still in place, move into the shower room and rinse off thoroughly. If wearing dual cartridge respirators, make sure the cartridges are completely soaked before removing the respirator and disposing of cartridges in the container provided. Pass respirators into the second air lock (between shower and the clean room).
5. Complete showering, thoroughly soaping, and shampooing.
6. Proceed to the clean room, dry off, dress, and return respirator to the storage area.
7. No smoking, eating, or drinking shall be allowed inside decontamination enclosures.

3.8 COMMUNICATIONS
A. Provide an electronic communications system suitable for inside or outside, and inter-room communications, in order to monitor all activities within the work area and to readily transfer messages from one location to another.

B. If readily achievable, a viewing window shall be installed to facilitate observation of the work area.

3.9 FIRE EXITS

A. Designate and maintain emergency and fire exits from the work area in accordance with local codes and regulations. All exits shall be clearly marked with fluorescent tape or red enamel and shall be clearly visible from any part of the work area.

3.10 SECURITY

A. Coordinate with the facility regarding security requirements for negative air exhaust locations and comply with facility requirements as it applies to building security.

3.11 LOCATION AND ACTIVATION OF NEGATIVE AIR PRESSURE

A. Maintain negative pressure system in the work areas during all asbestos abatement work for which gross abatement techniques are specified or required.


C. Provide one spare exhaust unit per three units at all times. Spare exhaust units shall be of the same size and capacity as the largest operating units.

D. Suspend electrical cords off the floor and out of workers' way to protect the cords from damage from traffic, sharp objects, and pinching. Do not fasten cords with staples, and do not hang cords from nails or suspend with wire.

E. Provide number of exhaust units in each work area to provide at least one air change every 15 minutes in all locations of the work areas.

F. Locate units so that make-up air enters the work area primarily through the decontamination facility and traverses the work area as much as possible. Use Section J.3 of the EPA document, Guidance for Controlling Friable Asbestos-Containing Materials in Buildings, "Purple Book", June 1985. It is recommended units be relocated, within the work area, during the removal process to ensure proper air changes within the immediate work area.

G. Provide additional make-up air openings as shall be necessary to effectively move air through the work area and to avoid creating too high a pressure differential that would damage or cause "blown-in" of temporary barriers and plastic coverings. Provide inlets by making openings in the plastic sheeting near the ceiling and as far as possible from the exhaust units. Provide self-closing polyethylene flaps over the openings to prevent backflow of air from the contained area to the outside.
H. Provide minimum number of auxiliary make-up air openings to maintain negative pressure. A negative pressure in excess of 0.02 inches of water differential shall be maintained.

I. Vent all exhaust units to the outside of the building. Provide flexible or rigid duct as necessary to provide exterior venting and proper location of exhaust units. Ducts shall be completely sealed, in good repair, and protected from possible damage within the work area.

J. After the work area has been prepared, the decontamination facility set up, and the exhaust units installed, start the units (one at a time if more than one is provided). Visually check the direction of air movement through the openings in the barriers, and verify movement of air in all locations of the work areas by use of ventilation smoke tubes. Adjust the location of exhaust units, or provide additional exhaust units for the work area if the test indicates inadequate or improper air movement.

K. After removal has begun, maintain operation of exhaust units continuously to maintain a constant negative pressure until decontamination of the work area is complete. Do not turn units off at the end of the work shift or when removal operations temporarily stop.

L. Change filters in exhaust units in accordance with manufacturer's recommendations and Paragraph J.3.2.2.1 of the EPA document, Guidance for Controlling Friable Asbestos-Containing Materials in Buildings, "Purple Book", June 1985 or when there is obvious loss of negative pressure.

M. When a final inspection and the results of the final air monitoring tests indicate an acceptable level of airborne fibers, remove and dispose of prefilters and shut off the exhaust units. If the exhaust units are to be used in another work area, leave the final filter in place and seal all intake openings to the unit to prevent contamination due to asbestos fibers collected on the final filter. If the exhaust units are not to be used in other work areas, remove the final filter and dispose of as contaminated waste.

N. If dismantling operations result in visible dust on surfaces, replace filters, restart exhaust units, reclean surfaces and perform additional area air monitoring (at Contractor's expense) until the level of airborne fibers is acceptable as specified.

O. Dispose of all filters as asbestos-contaminated waste material as specified.

3.12 EQUIPMENT REMOVAL PROCEDURES

A. Clean external and internal surfaces of all nonfixed equipment and/or objects by thoroughly wet wiping and/or rinsing, before moving such items into the Equipment Decontamination Unit for final cleaning and removal to uncontaminated areas.

B. Objects and equipment removed shall be stored in areas designated by the Owner.
3.13 VISUAL INSPECTIONS

A. Upon completion of each phase of work area activities and four hours before the next phase work activities are to begin, notify the Project Monitor that the work area is ready for inspection.

B. The Contractor shall not begin the next work activities until the Project Monitor has inspected the area and any deficiencies have been corrected.

C. The Project Monitor with the Contractor present will perform the following minimum schedule of inspections.

1. Prior to the initiation of any site activities (document condition of existing site).
2. After area pre-cleaning and prior to preparation of work area with plastic sheeting.
3. After work area preparation with plastic sheeting and prior to start of abatement.
4. After fine cleaning and before encapsulation.
5. After Final Clearance and all barriers are removed.

3.14 GROSS REMOVAL OPERATIONS

A. Any housings, grills, vents, or penetrations concealing asbestos-containing materials shall be removed to provide access to the materials.

B. Spray asbestos-containing materials with amended water, using spray equipment capable of providing a “mist” application to reduce the release of fibers. Saturate the material sufficiently to wet it to the substrate without causing excessive dripping. The use of high RPM power equipment, pressure washers, or hydroblasters shall not be acceptable. Remove the saturated asbestos material in small sections from all areas. Material drop shall not exceed fifteen feet (15’). For heights up to fifty feet (50’), provide inclined chutes to intercept drop. For heights exceeding fifty feet (50’), provide enclosed, dust proof chutes. Material shall not be allowed to dry before placing in sealable polyethylene bags of 6-mil minimum thickness. All material shall be removed thoroughly and totally. Nylon fiber brushes shall be used to clean asbestos fibers from rough surfaces. No asbestos-containing material is to remain for any reason. Any contaminated material capable of puncturing the polyethylene bags shall be packaged separately.

C. Maintain work areas free of accumulated asbestos-containing materials at all times. Keep waste materials wet until enclosed in sealed plastic bags.

D. Seal all polyethylene bags airtight. Move the bagged material to the wash-down station adjacent to the equipment decontamination enclosure. Once inside the washroom, the bags shall be wet cleaned or HEPA vacuumed and passed into the holding room. Single bagged material shall be placed in a clean bag or into a lined drum. At no time shall a removal worker pass the curtained doorway between the holding room and the container room.
E. Ensure all disposal containers are properly labeled in conformance with 29 CFR 1926.1101 and 40 CFR 61. Refer to Section 13280, Paragraph 1.5 - Codes and Regulations of this section.

F. The Contractor shall mobilize truck and/or dumpster to entrance of staging area to load out asbestos-containing materials (double bagged). This load out procedure shall be conducted in a manner to avoid public view. The Contractor shall maintain this load out practice at all times during load out.

3.15 ASBESTOS VINYL FLOOR TILE/MASTIC REMOVAL

C. The building owner shall remove all appliances and furniture from the working area prior to the removal of asbestos vinyl floor tile and mastic.

D. Prepare the area in accordance with Section 13280 - Paragraph 3.3.

E. Remove non-asbestos binding strips or other restrictive molding from doorways, walls, etc., clean and dispose of as non-asbestos waste.

F. Vinyl floor tile and mastic, which is being removed in areas undergoing friable abatement, may be removed in manners that may deem the vinyl floor tile and mastic friable. Vinyl floor tile and mastic being removed in areas not undergoing friable removal shall be removed in accordance with the following:

1. Mist floor with amended water using an airless sprayer or detergent solution, so that entire surface is wet but not saturated to prevent excess water from entering the photo studio on the floor level below. Do not allow to puddle or run off to other areas. Cover with sheet polyethylene to allow humidity to release tile from floor. Allow time for humidity and water or removal encapsulant to loosen tiles prior to removal.

2. Remove loose tiles and wrap manageable stacks of tiles in two layers of 6-mil polyethylene. Continue wetting during removal and take care not to break the tiles.

3. Tiles, which do not come loose after saturation, will be removed using methods that minimize the breakup of individual tiles. Continue wetting during removal.

4. Sanding of the tiles or adhesive is not permitted.

G. The adhesive shall be removed by wet scraping. The adhesive shall be removed such that, when completed, there are no remaining ridges or undulations of adhesive and no further preparation is required for the floor to be retiled.

H. All refuse shall be disposed of as asbestos-containing waste in accordance with Section 13280 - Paragraph 3.17 (Disposal Of Asbestos-Containing Waste).

I. Ensure all disposal containers are properly labeled in conformance with 29 CFR 1926.1101 and 40 CFR 61. Refer to Section 13280 - Paragraph 1.5 (Codes and Regulations) of this section.
3.16 GLOVE BAGS

A. This method must comply with OSHA requirements for a negative pressure work area environment. At all times the contractor will utilize two workers during glovebagging operations, one of which will act as support personnel.

B. Glove bags may only be used in accordance with these specifications or approval from the Asbestos Project Designer.

A. Abatement Contractor shall be required to arrange equipment to protect it with sealed polyethylene sheeting tape and/or adhesive. The Contractor shall rope off an area at least twenty-five feet (25') on all sides of glove bag work location to restrict personnel movement during the removal process and post the proper caution signs.

B. Clean and protect all floors, and walls, as necessary, within the work area with 6-mil polyethylene sheeting, tape and/or adhesives. As a minimum, extend polyethylene one foot (1') horizontally in all directions for each vertical foot from floor to material height.

C. If fiber levels found on the personal samples during glove bag removal exceed 0.01 f/cc and methods to reduce the excess prove futile, the Contractor shall remove the insulation under "gross removal" conditions with full plastic sheeting, decontamination unit, negative air filtration, etc. at the discretion of the Project Monitor.

D. Using approved glove bags in strict accordance with the Manufacturer's Instructions, workers in full protective body clothing and dual cartridge respirators may begin removal of pipe insulation as per the following, or Manufacturer's Instructions. In case of conflict, the more stringent provisions shall apply:

1. Cut the sides of the glove bag to fit the size of pipe you will be working on and insert the tools you will need into the attached tool pocket.
2. Attach the glove bag to the working area by folding the open edges together and sealing with staples and tape. Any additional support which may be necessary to support the weight of the debris shall be provided.
3. Seal the edges of the glove bag around the working area with tape or adjustable straps to form a tight seal. Slice open the side port to allow entry of the wetting tube and HEPA vacuum hose. Insert the nozzle from the portable sprayer, seal around it with tape, and thoroughly wet the area to be removed.
4. Conduct a smoke test on each installed glove bag to ensure the bag is completely sealed. Seal any breaches within the bag.
5. Insert arms into the armholes and gloves and proceed to remove the asbestos from the elbow, valve fitting or pipe. At locations where the insulation rests directly on pipe hangers or supports, the Contractor shall resupport the pipe by shimming with wood blocks or other suitable materials. Continue wetting the material as required. Thoroughly wet the remaining pipe and insulation and wash down the inside of the glove bag. Scrub or brush any remaining suspect insulation material from the pipe or fitting.
6. The tools shall be pulled through one of the glove inserts, thus turning the gloves inside-out. Twist, tape around the twist, and cut through the tape to remove the glove with the tools. This glove may then be placed into the next
glovebag. When glove bag operations are complete, clean tools by cleaning any residual materials from tools and disposing of glovebag and water as contaminated waste.

7. When the job has been completed, remove the spray nozzle, insert the HEPA vacuum nozzle, and turn on the HEPA vacuum to remove air from the bag. With the air removed from the glove bag, squeeze the bag tightly as close to the top as possible and twist seal and tape to keep the asbestos material safely at the bottom of the bag. Turn off the HEPA vacuum, remove the hose from the side port, and seal the side port with tape.

8. Cut and remove the glove bag from the working area and place it into a second 6-mil polyethylene bag. Move bags to holding area or disposal storage unit.

9. Mist surface of protective polyethylene and carefully fold inward. Proceed to HEPA vacuum the work area for any residual materials and seal the exposed edges and piping with the an appropriate encapsulant sealant.

E. Testing shall be in accordance with Section 13281.

F. If final testing results indicate readings less than 0.01 f/cc, all seals, plastic, debris and decontamination enclosures shall be removed and disposed of as contaminated waste.

G. If testing results indicate fiber levels of 0.01 f/cc or greater, the work area shall remain sealed and demarcated until less than 0.01 f/cc is attained.

H. All cleaning shall be accomplished using wet methods and/or HEPA vacuuming equipment.

I. Reestablish objects moved by the contractor to temporary locations in the course of the work, in their proper positions.

3.17 DISPOSAL OF ASBESTOS-CONTAINING MATERIAL AND ASBESTOS CONTAMINATED WASTE

A. As the work progresses, and to prevent exceeding available storage capacity on site, workers from uncontaminated areas in full protective clothing and dual cartridge respirators shall enter the equipment decontamination unit and place the appropriate supply of specified containers within the container room. Workers in the holding room shall be passed empty containers for receiving bagged material. Full sealed containers from the holding room shall be passed back into the container room for storage. Ensure all curtained doorways are closed. Ensure that all containers are sealed properly before removing for transport and disposal. At no time shall a removal worker pass the curtained doorway between the holding room and the container room. Drums will not be required if Contractor uses sealed bins or enclosed trucks to store and transport double-bagged waste. Approval must be obtained from the Asbestos Designer prior to employment of this method.

1. **LABEL REQUIREMENTS:** Provide labels affixed to all asbestos waste containers:

   a. Warning labels as required by OSHA regulation 40 CFR 1926.1101 as follows:
b. Informational labels as required by NESHAP regulation 40 CFR 61, Subpart M with the name of the waste generator and the location at which the waste was generated. If handwritten, use, at a minimum, indelible ink to legibly record the required information.

B. Vehicles used for transporting asbestos-containing materials to disposal sites shall have a completely enclosed, lockable storage compartment if drum requirement is to be deleted. Storage compartments shall be plasticized and sealed with a minimum of one (1) layer of 6-mil polyethylene on the sides and top and two (2) layers of 6-mil polyethylene on the floor. The compartments shall be thoroughly wet cleaned and/or HEPA vacuumed following the disposal of each load of material at the dumpsite. At the conclusion of the project (or before transport vehicles are used for other purposes), the polyethylene shall be properly removed and disposed of as contaminated waste. After this is accomplished, compartments shall once again be wet cleaned and/or HEPA vacuumed in order to eliminate all debris prior to reuse of the vehicles. Rented vehicles shall receive clearance inspection prior to being returned to the rental company. All plastic sheeting, tape, cleaning material, including mops and sponges, clothing, filters, and all other contaminated disposable materials shall be packaged, labeled, and disposed of as asbestos-containing waste.

1. **TRANSPORT SIGN REQUIREMENTS**: Provide signs during waste transport and disposal as follows:

   a. As required by the US Department of Transportation, 49 CFR 171 and 172, warning signs shall display the following:

   RQ HAZARDOUS

   SUBSTANCE

   SOLID, NOS

   ORM-E, NA 9188

   (ASBESTOS)
b. As required by NESHAPS, 40 CFR 61, Subpart M, mark vehicle used to transport asbestos-containing waste material during the loading and unloading of the waste so that the signs are visible as follows:

DANGER
ASBESTOS DUST HAZARDS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

C. Dispose of materials at an authorized disposal site in accordance with the requirements of federal, state, and local disposal authorities.

D. Workers unloading waste material at the disposal site shall be dressed in full-body protective clothing and half-face negative pressure dual cartridge respirators.

3.18 GROSS CLEANUP

A. Remove all visible accumulations of asbestos-containing materials and debris by HEPA vacuums, sponging, etc. Wet clean all surfaces within the work area.

B. The entire work area shall be totally, visibly clean. The Contractor shall notify the Owner’s Project Monitor of the time the work area will be subject for visual inspection. This inspection shall be certified by the Contractor and will be verified by the representative using the "Certification of Visual Inspection" found in the Testing Section.

3.19 POST-REMOVAL ENCAPSULATION OF AFFECTED AREAS

A. The work area shall have passed visual inspection prior to post-removal encapsulation.

B. An approved encapsulant shall be applied, using airless spraying equipment, to all areas of the project where asbestos-containing materials have been removed. Encapsulant shall be colored for ready visibility.

C. ENCAPSULANTS

1. The encapsulant shall be compatible with the replacement material as per manufacturer advice and approval by the Designer.

2. If any encapsulant is incompatible with the substrate, the Contractor shall be fully responsible for providing an alternate encapsulant that is compatible, at no additional cost to the Owner.

3. Upon completion of encapsulation of surfaces from which asbestos has been removed, the Contractor shall inform the on-site representative that the area is ready for compliance monitoring.

3.20 RE-ESTABLISHMENT OF OBJECTS AND SYSTEMS
A. Fixtures, equipment, or objects relocated by the Contractor to storage areas designated by the Owner shall be reestablished under this contract as to their exact position and material shape. Contractor assumes full responsibility for damage to objects on premises.

END OF SECTION 13280
PART 1 - GENERAL

1.1 TESTING/AIR MONITORING

A. Throughout the entire removal and cleaning operations, air monitoring will be conducted by an accredited Project Monitor to ensure Contractor compliance with EPA and OSHA regulations, excluding personnel samples required by OSHA, and any additional applicable state and local government regulations. Air monitoring results gathered by the Owner’s Project Monitor will not be used by the Contractor to verify OSHA compliance. Air monitoring for OSHA compliance by the Contractor shall be conducted according to the method prescribed by 29 CFR 1926.1101, Appendix A or applicable state or local regulations.

B. Air monitoring shall be conducted by a Project Monitor licensed by the Virginia Department of Professional and Occupational Regulation pursuant to the requirements of Title 54.1, Chapter 5 of the Code of Virginia.

C. Air monitoring will be performed by an independent Project Monitoring Firm. Selection of and payment to the Project Monitor will be made by the Owner.

D. The Contractor shall be responsible for providing personal monitoring of his employees as per OSHA 1926.1101. Any testing required by Contractor in addition to that listed below and all costs of any retesting necessitated by failure to pass compliance monitoring shall be paid for by Contractor.

E. Monitoring Prior to Actual Removal: The project monitor will provide area monitoring and establish the reference baseline ambient fiber concentrations 72 hours prior to the masking and sealing operations for each removal site. A volume of air sufficient to obtain a limit of quantification of 0.01 fibers/cc shall be secured. Field blanks shall be secured in accordance with the latest revision of the NIOSH 7400 Method.

F. Monitoring During Asbestos Removal: The Project Monitor will provide environmental and work area monitoring during exposure to airborne concentrations of asbestos. This monitoring will be performed daily at the discretion of the Project Monitor.

1. If monitoring outside the asbestos control area shows airborne concentrations exceeding the reference baseline ambient fiber concentration and is due to the abatement contractor’s work practices or breach in the containment, the Contractor shall stop all work, notify the Owner immediately, identify and correct the condition(s) causing the increase.

2. PCM fiber counting shall be completed and results reviewed by the Project Monitor within 24 hours after conducting sampling. The Project Monitor shall notify the Contractor and the Owner immediately of any exposures to
asbestos fibers greater than or equal to 0.01 fibers/cc.

3. The services of a Project Monitor will be employed by the Owner to perform laboratory analysis of the air samples. A microscope and technician will be set up at the job site, or samples will be sent daily by overnight mail, so that verbal/faxed reports on air samples can be obtained within 24 hours of conducting sampling. A complete record, certified by the testing laboratory, of all air monitoring tests and results will be furnished to the Owner's Representative, the Owner, and the Contractor.

G. **Final Compliance Monitoring:** Final Compliance Monitoring shall be conducted and analyzed by Phase Contrast Microscopy (PCM). The Owner’s Project Monitor will conduct final air clearance monitoring. Sampling shall start after the following:

1. HEPA vacuuming and wet cleaning of all surfaces of the work area must have been conducted.
2. All visible accumulations of asbestos-containing waste material must have been removed from the work area, as determined by the Contractor's Supervisor and Owner’s Project Monitor.
3. First polyethylene layer must have been removed from walls and floors.
4. Completion of a satisfactory visual inspection by the Project Monitor.
5. The area completely covered by a spray encapsulant.
6. All surfaces within the regulated area shall be completely dry, spray applied encapsulant shall be completely dry.

H. **Clearance Criteria:** All samples will have a concentration of airborne fibers at or below 0.01 fibers/cc by Phase Contrast Microscopy (PCM). If the final clearance samples do not meet the minimum clearance requirements, re-cleaning and re-sampling must be accomplished. The Contractor shall pay for the additional cost of re-sampling and re-analysis. The method of sampling and analysis will be the same as that used for the first set of samples.

I. **Certification of Visual Inspection:** The following Certification of Visual Inspection shall be completed by the Contractor and Project Monitor following completion of removal work, cleanup, and his visual inspection of the work area. The Certification of Visual Inspection shall be provided to the Owner upon completion of the job.
CERTIFICATION OF VISUAL INSPECTION

Building: 

Project Number: 

Specific Area: 

In accordance with Section 13281 - Asbestos Abatement, the Contractor hereby certifies that he has visually inspected the work area (all surfaces including pipes, beams, ledges, walls, ceiling and floor, decontamination unit, sheet plastic, etc.) and has found no dust, debris, or residue.

By: (Signature) __________________ Date: __________________

(Print Name) __________________ Title: __________________

Company Name: 

ABATEMENT INSPECTOR’S CERTIFICATION

The Abatement Inspector hereby certifies that he has accompanied the Contractor on his visual inspection and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor’s certification above is a true and honest one.

The final air sampling has been completed and the sample results are in accordance with the Contract Documents. The final air samples were analyzed by: PCM or TEM.

Clearance air sample numbers are: 

By: (Signature) __________________ Date: __________________

(Print Name) __________________ Title: __________________

Final Air Clearance Passed the Clearance Criteria of (<0.01 f/cc) by PCM Analysis: 
Final Air Clearance Passed the Clearance Criteria of (<70 structures/mm²) by TEM Analysis: 
Final Air Clearance Failed the Clearance Criteria of (>0.01 f/cc) by PCM Analysis: 
Final Air Clearance Failed the Clearance Criteria of (>70 structures/mm²) by TEM Analysis: 

FRANCE ENVIRONMENTAL
7834 Forest Hill Avenue, Suite 7
Richmond, Virginia 23225
Phone: 804-716-0560

END OF SECTION
FACSIMILE TELECOPY TRANSMISSION

To: Joe France
France Environmental Inc.

Fax #: 

Email: FranceEnvironmental@gmail.com, jfrance@franceenv.com, arichmond@franceenv.com, abaird@franceenv.com, mleonard@franceenv.com, kpittman@franceenv.com, ddambacher@franceenv.com, FJanson@franceenv.com, momenthous@franceenv.com, 

From: John S. Shearwood
AmeriSci Job #: 117011254

Subject: PLM 48 hour Results
Client Project: 17AL010; RRHA; 2305-2315
Ambros St, Richmond, VA

Date: Wednesday, January 11, 2017
Time: 19:20:16

Number of Pages: 10
(including cover sheet)

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Boston • Los Angeles • New York • Richmond
# PLM Bulk Asbestos Report

**France Environmental Inc.**  
**Attn:** Joe France  
7834 Forest Hill Ave  
Suite 7  
Richmond, VA 23225  

**Date Received:** 01/11/17  
**Date Examined:** 01/11/17  
**AmeriSci Job #:** 117011254  
**P.O. #:**  
**RE:** 17AL010; RRHA; 2305-2315 Ambros St, Richmond, VA  

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<td>Location: 12x12 Gray FT/Black Mastic; 2305 - Floor</td>
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**Analyst Description:** Gray, Homogeneous, Non-Fibrous, Floor Tile  
**Asbestos Types:** Chrysotile 2.0 %  
**Other Material:** Non-fibrous 98 %

| A1               | 117011254-01L2 | Yes             | 5 % (by CVES) by John S. Shearwood on 01/11/17 |
| 1                | Location: 12x12 Gray FT/Black Mastic; 2305 - Floor |

**Analyst Description:** Black, Homogeneous, Non-Fibrous, Mastic  
**Asbestos Types:** Chrysotile 5.0 %  
**Other Material:** Cellulose 2 %, Non-fibrous 93 %

| A2               | 117011254-02L1 | NA/PS          |       |
| 1                | Location: 12x12 Gray FT/Black Mastic; 2307 - Floor |

**Analyst Description:** Bulk Material  
**Asbestos Types:**  
**Other Material:**

| A2               | 117011254-02L2 | NA/PS          |       |
| 1                | Location: 12x12 Gray FT/Black Mastic; 2307 - Floor |

**Analyst Description:** Bulk Material  
**Asbestos Types:**  
**Other Material:**

| A3               | 117011254-03L1 | NA/PS          |       |
| 1                | Location: 12x12 Gray FT/Black Mastic; 2309 - Floor |

**Analyst Description:** Bulk Material  
**Asbestos Types:**  
**Other Material:**

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See Reporting notes on last page
# PLM Bulk Asbestos Report

17AL010; RRHA; 2305-2315 Ambros St, Richmond, VA

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**Analyst Description:** Bulk Material

**Asbestos Types:**

**Other Material:**

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**Analyst Description:** Black, Homogeneous, Non-Fibrous, Cove Base

**Asbestos Types:**

**Other Material:** Cellulose Trace, Non-fibrous 100%

(by CVES)  
by John S. Shearwood  
on 01/11/17

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**Analyst Description:** Beige/Brown/Black, Homogeneous, Non-Fibrous, Mastic

**Asbestos Types:**

**Other Material:** Cellulose 1 %, Non-fibrous 99%

(by CVES)  
by John S. Shearwood  
on 01/11/17

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**Analyst Description:** Black, Homogeneous, Non-Fibrous, Cove Base

**Asbestos Types:**

**Other Material:** Cellulose Trace, Non-fibrous 100%

(by CVES)  
by John S. Shearwood  
on 01/11/17

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by John S. Shearwood  
on 01/11/17

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**Analyst Description:** Black, Homogeneous, Non-Fibrous, Cove Base

**Asbestos Types:**

**Other Material:** Cellulose Trace, Non-fibrous 100%

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<td>Location: 4&quot; Black Covebase/Mastic; 2309 - Wall</td>
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<td></td>
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<td>A7 3</td>
<td>117011254-07</td>
<td>Yes</td>
<td>3 %</td>
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<td>A8 3</td>
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<td>A10 4</td>
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<td>Other Material: Cellulose Trace, Non-fibrous 100 %</td>
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See Reporting notes on last page
### PLM Bulk Asbestos Report
17AL010; RRHA; 2305-2315 Ambros St, Richmond, VA

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<tr>
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<td>Asbestos Types:</td>
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<td>Other Material: Non-fibrous 100 %</td>
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<td>A13 5</td>
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<tr>
<td>Other Material: Cellulose 3 %, Non-fibrous 97 %</td>
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See Reporting notes on last page
# PLM Bulk Asbestos Report

17AL010; RRHA; 2305-2315 Ambros St, Richmond, VA

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<tr>
<th>Client No. / HGA</th>
<th>Lab No.</th>
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<td>by John S. Shearwood on 01/11/17</td>
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<td>Location: Drywall/Joint Compound; 2307 - Wall</td>
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<td>by John S. Shearwood on 01/11/17</td>
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<td>by John S. Shearwood on 01/11/17</td>
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<td>by John S. Shearwood on 01/11/17</td>
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<td></td>
<td>by John S. Shearwood on 01/11/17</td>
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<td>Location: Pipe/Elbow Insulation; 2309 - Attic</td>
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<td>by John S. Shearwood on 01/11/17</td>
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<td><strong>Analyst Description:</strong> Gray/Beige, Heterogeneous, Fibrous, Bulk Material</td>
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<td><strong>Asbestos Types:</strong> Other Material: Cellulose Trace, Fibrous glass 25 %, Non-fibrous 75 %</td>
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See Reporting notes on last page
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<th>Client No. / HGA</th>
<th>Lab No.</th>
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<td>by CVES</td>
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<td>Location: Pipe/Elbow Insulation; 2309 - Attic</td>
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<td>by John S. Shearwood on 01/11/17</td>
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<td>A19</td>
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<td>Yes</td>
<td>2 %</td>
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<td>by John S. Shearwood on 01/11/17</td>
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<td>Location: 12x12 Beige FT/Mastic; Mechanical Room</td>
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<td>by John S. Shearwood on 01/11/17</td>
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<td>NA/PS</td>
<td>by CVES</td>
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<td>Location: 12x12 Beige FT/Mastic; Mechanical Room</td>
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<td>8</td>
<td>Location: Beige Ceiling Plaster; 2307 - Ceiling</td>
<td></td>
<td>by John S. Shearwood on 01/11/17</td>
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</table>

See Reporting notes on last page
# PLM Bulk Asbestos Report

**17AL010; RRHA; 2305-2315 Ambros St, Richmond, VA**

<table>
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<tr>
<th>Client No. / HGA</th>
<th>Lab No.</th>
<th>Asbestos Present</th>
<th>Total % Asbestos</th>
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<td>No</td>
<td>NAD</td>
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<td>Location: Beige Ceiling Plaster; 2309 - Ceiling</td>
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<tr>
<td>Analyst Description: Gray/Brown, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material</td>
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<tr>
<td>Asbestos Types: Other Material: Cellulose 3 %, Non-fibrous 97 %</td>
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| A23 8            | 117011254-23 | No               | NAD              |
| Location: Beige Ceiling Plaster; 2309 - Ceiling |
| Analyst Description: Gray/Brown, Heterogeneous, Non-Fibrous, Cementitious, Bulk Material |
| Asbestos Types: Other Material: Cellulose 3 %, Non-fibrous 97 % |
| (by CVES) by John S. Shearwood on 01/11/17 |

**Reporting Notes:**

* NAD = no asbestos detected, Detection Limit <1%, Reporting Limits: CVES = 1%, 400 Pt Ct = 0.25%, 1000 Pt Ct = 0.1%; "Present" or NVA = "No Visible Asbestos" are observations made during a qualitative analysis; NA = not analyzed; NA/PS = not analyzed / positive stop; PLM Bulk Asbestos Analysis by EPA 600/R-93/116 per 40 CFR 763 (NVLAP Lab Code 101904-0) and ELAP PLM Analysis Protocol 198.1 for New York friable samples which includes quantitation of any vermiculite observed (198.6 for NOB samples) or EPA 400 pt ct by EPA 600/M4-82-020 (NYSDOH ELAP Lab # 10984); CA ELAP Lab # 2508; Note: PLM is not consistently reliable in detecting asbestos in floor coverings and similar NOB materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos-containing in New York State (also see EPA Advisory for floor tile, FR 59, 146, 38970, 8/1/94). NIST Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the laboratory. This PLM report relates ONLY to the items tested.

Reviewed By: [Signature]

**Date:** 1/11/17
**CHAIN OF CUSTODY RECORD**

<table>
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<tr>
<th>Project Name: RXA1</th>
<th>Sample to Lab Via: Adhered</th>
<th>Report To: France Environmental, Inc.</th>
<th>Sample Type:</th>
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<td>Project Address: 2305.2315 Ambros St</td>
<td>Date Sent to Lab: 1-1-17</td>
<td>Project Manager:</td>
<td>Asbestos - PCM</td>
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<tr>
<td>Richmond, VA</td>
<td>Date Sampled: 1-1-17</td>
<td>Address: 7834 Forest Hill Avenue, Ste. 7</td>
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<tr>
<td>Project Number: 17AC010</td>
<td>Turn-Around Time: 48 hour</td>
<td>City/State/Zip: Richmond, VA 23225</td>
<td>Asbestos - Bulk</td>
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<tr>
<td>Client Name: Kebo &amp; Elton</td>
<td>Report Via: Verbal, Fax</td>
<td>Telephone: Work: 804.716.0560 Fax: 804.918.7098</td>
<td>Lead-In-Air</td>
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<td>Field Inspector: Danschke, Mavis</td>
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<td>Lead - Wipe</td>
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<tr>
<td></td>
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<td>Other</td>
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**LABORATORY SUBMITTED TO:**

- AmerSci Richmond (ACCT #: 11647)
  13635 Genito Road
  Midlothian, Virginia 23112
  804.763.1200

- Schneider Laboratories, Inc. (ACCT #: 2763)
  2512 West Cary Street
  Richmond, Virginia 23220-5117
  804.353.6778

X FIRST POSITIVE STOP

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<th>Sample Number</th>
<th>Sample Description</th>
<th>Sample Location</th>
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<td>l</td>
<td>2307 - floor</td>
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<td>4&quot; black grooved/mastic</td>
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<td>A6</td>
<td>l</td>
<td>2307 - wall</td>
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<td>10&quot; double window crank</td>
<td>2307 - window</td>
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<td>l</td>
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<td>l</td>
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<td>2307 - stairs</td>
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</tr>
</tbody>
</table>

Relinquished by: [Signature]  Date: 1-1-17  Time: RECEIVED

Accepted by: 

Date: 

Time: 

Additional Remarks: 

Jan 17 2017 

Sampler Signature: 

By: [Signature]
CHIAN OF CUSTODY RECORD

Project Name: REHA

Project Address: 2305-2315 Ambros St
Richmond, VA

Sample to Lab Via: Delivered

Report To: France Environmental, Inc.

Sample Type:
- Asbestos - PCM
- Asbestos - TEM
- Asbestos - Bulk
- Lead-in-Air
- Lead - Wipe
- Lead - TCLP
- Lead - Bulk
- Other

Date Sent to Lab: 1-10-17

Date Sampled: 1-10-17

Address: 7834 Forest Hill Avenue, Ste. 7

City/State/Zip: Richmond, VA 23225

Telephone:
Work: 804.716.0560
Fax: 804.918.7098

Project Number: 17AL010

Client Name: Kelso F. Griffin

Field Inspector: Danbachel Morris

Turn-Around Time: 48 hours

Report Via:
- X U.S. Mail
- Overnight
- Electronic - France Distribution List

LABORATORY SUBMITTED TO:

- Ameriscl Richmond (ACCT #: 11647)
  13635 Genito Road
  Midlothian, Virginia 23112
  804.763.1200

- Schneider Laboratories, Inc. (ACCT #: 2763)
  2512 West Cary Street
  Richmond, Virginia 23220-5117
  804.353.6778

X FIRST POSITIVE STOP

Sample Group | Sample Number | Sample Description | Sample Location
--------------|---------------|--------------------|-------------------
A18           |               | Pipe elbow insulation | 2305-Attic
A19           |               | 12x12 beige Pl/Sheer | Mechanical Room
A20           |               | "                       | Mechanical Room
A21           |               | Beige Ceiling plaster  | 2307 Ceiling
A22           |               |                        | 2305 Ceiling
A23           |               |                        | 2309 Ceiling

Relinquished by: [Signature] Date: 1-10-17 Time: RECEIVED

Accepted by: [Signature] Date: [Blank] Time: [Blank]

Additional Remarks: JAN 11 2017

Sampler Signature: [Signature]
CONSTRUCTION DOCUMENTS FOR:
FIRE DAMAGE RESTORATION FOR WHITCOMB COURT APARTMENTS
2305-2315 AMBROSE STREET
RICHMOND, VIRGINIA 23261

OWNER: RICHMOND REDEVELOPMENT & HOUSING AUTHORITY
901 CHAMBERLAYNE PARKWAY
RICHMOND, VIRGINIA 23222
(804) 780-4200

ENGINEER (STRUCTURAL): DANIELS & ASSOCIATES
2112 WEST LABURNUM AVE., SUITE 202
RICHMOND, VIRGINIA 23227
(804) 553-1283

ARCHITECT: KELSO & EASTER, INC.
100 WEST FRANKLIN STREET, SUITE 400
RICHMOND, VIRGINIA 23220
(804) 788-0338

ENGINEER (MEP): LU + SMITH ENGINEERS
4094 DOMINION BLVD., SUITE A
GLEN ALLEN, VIRGINIA 23060
(804) 925-2600

ARCHITECTURAL REPAIR ELEVATIONS
A3.01

ARCHITECTURAL NEW WORK ELEVATIONS
A3.02

ARCHITECTURAL INSURANCE ELEVATIONS
A3.02B

ELEVATIONS & DETAILS
A2.03

NEW WORK & REPAIRS FLOOR PLANS
A2.01B

INSURANCE NEW WORK & REPAIRS FLOOR PLANS
A2.02

INSURANCE NEW WORK & REPAIRS FLOOR PLANS
A2.02B

NEW WORK & REPAIRS FLOOR PLANS
A2.01

DEMOLITION FLOOR PLANS
A1.01

DEMOLITION FLOOR PLANS
A1.02

DEMOLITION FLOOR PLANS - INSURANCE
A1.02B

SITE PLAN, KEY PLAN AND GENERAL FLOOR PLANS
A0.01

INTERIOR ELEVATION
ELEVATION SHEET
ELEVATION NUMBER
REFERENCED SHEET
REFERENCED SHEET

EXTERIOR ELEVATION
SCHEDULE OF DRAWINGS
SHEET NUMBER
SCHEDULE OF DRAWINGS
SYMBOL LEGEND

LEGENDS, ABBREVIATIONS AND NOTES
P-1

CEILING ELEVATION MARK
8'-0" (ABOVE SEA LEVEL)
CEILING ELEVATION MARK
8'-0"

CONTAINMENT WALL
PER CODE
PER CODE

LEGENDS, NOTES, SCHEDULES AND DETAILS
P-1A

PER CODE
PER CODE
UNDERSIDE OF ROOF SHEATHING

MECHANICAL FLOOR PLANS
SCHEDULES AND DETAILS
M-1A

MECHANICAL FLOOR PLANS (INSURANCE SCOPE)
M-1

ROOF FRAMING PLAN AND DETAILS
A4.01

FOOTING PLAN - PLUMBING
S1.01

GENERAL PROJECT NOTES
SCOPE OF WORK

ELECTRICAL FLOOR PLANS
E-1

SPECIFICATIONS
E-2

PANEL SCHEDULES
E-3

E-4

E-4

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DEMOLITION FLOOR PLANS - INSURANCE
A1.02B
**GENERAL CONSTRUCTION NOTES:**

1. The General Contractor shall be responsible for site security, safety measures, and control during the entire process. All tools and materials shall be secured and supervised at all times.

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**DEMONSTRATION NOTES:**

1. All areas enclosed in select demonstrations shall be accomplished with a clean, dry, and true with true and flush surfaces area completion.

2. The General Contractor shall be responsible for all site security, safety measures, and control during the entire process. All tools and materials shall be secured and supervised at all times.

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**NOTE:** FLOOR PLANS ON PRECEDING SHEETS WILL ONLY DEPICT AREA WITH THE EXTENTS OF WORK.
DEMOLITION KEYNOTES:

1. SCRAP EXISTING DAMAGED PAINT FROM WOOD, HARDWARE, AND FURNITURE.
2. CHECK WINDOWS FOR SCREENS AND OTHER OPERATIONAL REPAIRS NEEDED.
3. REMOVE DAMAGED WINDOW SHAPES AND HARDWARE.
4. REMOVE EXISTING DAMAGED STAIR RAIL, REPLACE ANY DAMAGE TO STAIRS, PREP TO RECEIVE NEW HAND RAIL.
5. REPLACE EXISTING RUBBER STAIR TREADS.
6. SAVAGE EXISTING EXHAUST FAN FOR FUTURE INSTALLATION.
7. PATCH CONCRETE BLOCK AND REATTACH EXISTING HARDWARE.
8. PATCH CONCRETE BLOCK AND PREP TO RECEIVE NEW PAINT.
9. REMOVE EXISTING DAMAGED WINDOW, FRAME, AND SCREEN.
10. PREP AREA TO RECEIVE NEW WINDOW UNIT IF NEEDED.
INSURANCE DEMO KEYNOTES:

- REMOVE ROOF STRUCTURE, PREPARE TO RECEIVE NEW PLYMOULDED TRUSSES, SEE STRUCTURAL DRAWINGS FOR LOCATION OF NEW TRUSSES.
- REMOVE ALL ROOFING DOWN TO FOY MOULDING, REMOVE ALL PROGRAMMATIC DESIGNING, INSULATION AND FIRE RATING MATERIALS, PLASTER, CEILING TILES, ELECTRICAL (NOT AIR CONDITIONING UNITS WHICH STRUCTURE IS UNAFFECTED), TALKING CHIMNEY TO REPAIR DEBRIS, PREP TO RECEIVE NEW FINISH.
- REMOVE GUTTER AND ANY DAMAGED ATTACHMENTS, PREP TO RECEIVE NEW FINISH.
- REPAIR DAMAGED GUTTER DEBRIS.
- REMOVE FLOOR TILES AND WALL BASE, THROUGHOUT, NOTE TO A/D.
- REMOVE DAMAGED WALL TILES AT BATHROOM SURROUND, SCRAP WALL SURROUND TO RECEIVE NEW TILES.
- REMOVE DAMAGED RADIATOR, PREP CONNECTIONS TO RECEIVE NEW, NOTE TO A/D.
- NOTE: INVESTIGATE THE CONDITION OF WOOD FRAME THAT HAS RECEIVED PRE-MATURE DAMAGE TO DETERMINE THAT DESTRUCTIVE MATERIALS ARE NOT PRESENT.

- REMOVE EXISTING DAMAGED DOOR, HARDWARE AND ADJACENT AREAS OF FRAMING, PREPARE RECOMMENDABLE MATERIALS TO RECEIVE NEW WOOD DOOR FOR NOTES ON SHEET A/E.
- REMOVE EXISTING DAMAGED DOOR AND FRAME, PREPARE NEW DOOR OPENING TO RECEIVE NEW WOOD DOOR PER NOTES ON SHEET A/E.
- REMOVE EXISTING DAMAGED WOODWORK, FRAMING AND SURROUNDING, PREP AREA TO RECEIVE NEW WOODWORK TO RECEIVE NEW FINISH.
- REMOVE NON-WORKING SMOKE DETECTORS.

- REMOVE ALL DAMAGED TOILET PLUMBING FACILITIES, TOILET, URINALS AND ALL ASSOCIATED METER TO REPLACE NEW.
- REMOVE SHELVING, CLOSET RODS AND ALL CLOSET ACCESSORIES incorporated with new shelving, closet rod and closet accessories.
- SCRAP CEILING AND PREPARE FOR NEW FINISH.
- REMOVE GLASS AND INSULATION, PREP FOR NEW CEILING.
DEMOLITION KEYNOTES:

1. Remove existing damaged paint from wood, hardware.
2. Check windows for broken and proper operation, repair/replace as necessary, remove damaged window hardware.
3. Remove existing damaged stair rail, repair any damage to stairs, prep to receive new handrail.
4. Replace existing rubber stair treads.
5. Salvage existing exhaust fan for future installation.
6. Patch concrete block and reattach existing hardware.
7. Patch concrete block and prep to receive new paint.
8. Remove existing damaged window, screen, and screens, prep area to receive new window unit in unit.
CONSTRUCTION KEYNOTES (INSURANCE)

1. INSTALL NEW ZIPPO-Trues to replace existing damaged roof trusses, install new roof sheathing, install roof drip edge, install roof valley, install roof valley drain and valley flashing, install new roof shingles, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
2. INSTALL NEW GUTTERS, downspouts, and related hardware, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
3. INSTALL NEW PUMPS, downspouts, and related hardware, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
4. INSTALL NEW FENCES, downspouts, and related hardware, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
5. INSTALL NEW CHIMNEYS, downspouts, and related hardware, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
6. INSTALL NEW CEMENT, downspouts, and related hardware, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
7. INSTALL NEW WINDOWS, downspouts, and related hardware, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
8. INSTALL NEW DOORS, downspouts, and related hardware, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
9. INSTALL NEW LIGHT FIXTURES, downspouts, and related hardware, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
10. INSTALL newepaper, downspouts, and related hardware, install new roof trusses, install new roof sheathing, install new roof valley, install new roof valley drain and valley flashing.
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REFER TO STRUCTURAL DWGS FOR NEW ROOF STRUCTURE
**PLAN KEYNOTES:**

1. Connect existing pipe insulation and sheet metal boxes in the bathroom that have not been salvaged.
2. Remove residual in bathroom, smoke damage to provide replacement water. Field verify.
3. Contact pipe and sheet metal shall be tested, cleaned, and repaired/wrapped. Paper cover to maintain insulation integrity. Field verified.
4. Piping above ceiling to be newly insulated. Refer to insulation schedule on sheet M-1.

**PLAN GENERAL NOTES:**

1. Remove existing pipe insulation and sheet metal boxes in the bathroom that have not been salvaged.
2. Remove residual in bathroom; smoke damage to provide replacement water. Field verify.
3. Contact pipe and sheet metal shall be tested, cleaned, and repaired/wrapped. Paper cover to maintain insulation integrity. Field verified.
4. Piping above ceiling to be newly insulated. Refer to insulation schedule on sheet M-1.
**KEY NOTES:**

1. All horizontal pipes run in attic space under ceiling insulation, see detail.
2. Exhaust fan to be mounted in-between joists and routed with aluminum ductwork to soffit cap. Place ceiling insulation over top of ductwork and exhaust fan.

**PLAN NOTES:**

1. Remove existing pipes, pipe insulation, radiators, and sheet metal boxes in the bathroom that have not been demolished.
2. Provide main hot water piping loop in the attic with reverse return and down feed risers to radiators with 3/4" runouts to second and first floor.
3. Provide all piping supports as required.
4. Paint all exposed pipes and pipe supports.

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**Mechanical 1st Floor Plan**

**Mechanical 2nd Floor Plan**
PLUMBING LEGEND

- **BE** - Bearing
- **DE** - Demolition
- **EC** - Existing
- **I** - Inlet
- **O** - Outlet
- **PL** - PLUMBING
- **P** - Piping
- **R** - Riser
- **SM** - Supply Main
- **SS** - Sanitary Sewer
- **S** - Storm Sewer
- **T** - Trap
- **V** - Vent
- **W** - Waste
- **P** - Pump
- **F** - Filter
- **P** - Pressure
- **G** - Gauge
- **D** - Diameter
- **H** - Height
- **L** - Length
- **W** - Width
- **B** - Basis
- **C** - Connection
- **E** - End
- **F** - Foot
- **T** - Tonne
- **M** - Meter
- **G** - Gallon
- **K** - Kilogram
- **CM** - Centimeter
- **MM** - Millimeter
- **IN** - Inch
- **Ft** - Foot
- **H** - Hour
- **Min** - Minute
- **Sec** - Second
- **A** - Angle
- **Rad** - Radian
- **deg** - Degree
- **%** - Percent
- **V** - Voltage
- **A** - Amperage
- **Ohm** - Ohm
- **W** - Watt
- **K** - Kilowatt
- **VTR** - Voltage Transformer
- **VSC** - Voltage Stabilizer

**PLUMBING GENERAL NOTES:**

1. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL MATERIALS AND EQUIPMENT REQUIRED FOR THIS WORK. THE CONTRACTOR SHALL ENSURE THAT ALL WORK IS PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS ATTACHED HERETO.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE, 2006 EDITION, AND ALL APPLICABLE LOCAL CODES AND REGULATIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION AND MAINTENANCE OF ALL PLUMBING SYSTEMS, INCLUDING THE INSTALLATION OF ALL PIPE, FITTINGS, VALVES, AND APPURTENANCES.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
5. ANY ADDITIONAL MATERIALS OR LABOR REQUIRED TO COMPLETE THE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
6. NO CHANGES TO THE PLUMBING SYSTEMS OR EQUIPMENT SHOWN ON THE PLANS OR DRAWINGS SHALL BE MADE WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT AND THE OWNER.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK RELATED TO THE INSTALLATION AND MAINTENANCE OF ALL PLUMBING SYSTEMS, INCLUDING THE INSTALLATION OF ALL PIPE, FITTINGS, VALVES, AND APPURTENANCES.
8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.

**PLUMBING SPECIFICATIONS:**

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**INSURANCE SCOPE NOTES:**

- **PLUMBING LEGEND**
  - **BE** - Bearing
  - **DE** - Demolition
  - **EC** - Existing
  - **I** - Inlet
  - **O** - Outlet
  - **PL** - PLUMBING
  - **P** - Piping
  - **R** - Riser
  - **SM** - Supply Main
  - **SS** - Sanitary Sewer
  - **S** - Storm Sewer
  - **T** - Trap
  - **V** - Vent
  - **W** - Waste
  - **P** - Pump
  - **F** - Filter
  - **P** - Pressure
  - **G** - Gauge
  - **D** - Diameter
  - **H** - Height
  - **L** - Length
  - **W** - Width
  - **B** - Basis
  - **C** - Connection
  - **E** - End
  - **F** - Foot
  - **T** - Tonne
  - **M** - Meter
  - **G** - Gallon
  - **K** - Kilogram
  - **CM** - Centimeter
  - **MM** - Millimeter
  - **IN** - Inch
  - **Ft** - Foot
  - **H** - Hour
  - **Min** - Minute
  - **Sec** - Second
  - **A** - Angle
  - **Rad** - Radian
  - **deg** - Degree
  - **%** - Percent
  - **V** - Voltage
  - **A** - Amperage
  - **Ohm** - Ohm
  - **W** - Watt
  - **K** - Kilowatt
  - **VTR** - Voltage Transformer
  - **VSC** - Voltage Stabilizer

**PLUMBING LEGEND**

- **BE** - Bearing
- **DE** - Demolition
- **EC** - Existing
- **I** - Inlet
- **O** - Outlet
- **PL** - PLUMBING
- **P** - Piping
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- **W** - Watt
- **K** - Kilowatt
- **VTR** - Voltage Transformer
- **VSC** - Voltage Stabilizer
GUARANTEE: THIS CONTRACTOR SHALL GUARANTEE THE WORK FOR A PERIOD OF ONE YEAR AFTER Replacement Pipes Shown in all Units
2305, 2307 and 2309
Except Manufacturer’s Model Numbers of Fixtures and Equipment Which are Different from the Agency Scope Notes:

1. No Change

BUILDING HEIGHT:

Revision No.

EXISTING BUILDING USE AND OCCUPANCY:

(D)

ADJUSTMENT: THIS CONTRACTOR SHALL INCLUDE IN HIS BID A RETURN VISIT TO THE SITE AT A TIME

(E)

WALL CLEANOUT

ADJUSTING AND START-UP:

(F)

PROVIDE ACRYLIC SNAP-ON OR STENCILED LABELS WITH DIRECTIONAL ARROWS FOR ALL PLUMBING DETAIL OR PLAN NO.

(G)

HANGERS: HANGERS, BRACES AND RESTRAINTS SHALL ADEQUATELY SUPPORT THE SYSTEMS AND MATERIALS USED SHALL BE NEW AND FIRST RATE IN QUALITY. CARE SHALL BE TAKEN WITH REFERENCE THE ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATIONS OF WALLS, ROOMS, ETC.

(H)

DEBRIS ASSOCIATED WITH THIS WORK FROM THE SITE.

2. No Change

THE CONTRACTOR SHALL PROVIDE NECESSARY OFFSETS, TRANSITIONS, PIPE ROUTING, SUPPORT AND APPURTENANCES. ALL WORK SHALL BE FREE FROM DEFECTS.

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### PLUMBING FIXTURE/SPECIALTIES SCHEDULE (INSURANCE SCOPE)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
<th>FIXTURE</th>
<th>CONNECTIONS</th>
<th>HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAV-1</td>
<td>ELONGATED WATER CLOSET, FLOOR-MOUNTING, TANK, NO-HUB, ACRYLIC MATERIAL.</td>
<td>ACRYLIC MATERIAL</td>
<td>3/4&quot;</td>
<td>10&quot;</td>
</tr>
<tr>
<td>TUB</td>
<td>TUB - AMERICAN STANDARD 2390.202 OR 2390.202, BATHTUB FAUCET - DELTA #134900 SERIES WITH SCALD-GUARD COMPLETE WITH TRIM</td>
<td>DELTA #134900 SERIES</td>
<td>1-1/2&quot;</td>
<td>12&quot;</td>
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### PLUMBING PIPING MATERIALS

<table>
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<tr>
<th>MATERIAL</th>
<th>Diameter</th>
<th>Insulation</th>
<th>Brand</th>
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<tbody>
<tr>
<td>PVC - SOLID CORE</td>
<td>3&quot;</td>
<td>1&quot; FIBERGLASS, ASJ</td>
<td>CISPI 301</td>
</tr>
<tr>
<td>NO-HUB CAST IRON</td>
<td>1-1/2&quot;</td>
<td>TYPE L COPPER, INSULATED</td>
<td>ASTM B88</td>
</tr>
<tr>
<td>3&quot; AND SMALLER</td>
<td>1&quot;</td>
<td>STANDARD SYSTEM</td>
<td>ASTM D 1785 &amp; ASTM D 2665</td>
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</tbody>
</table>

NOTES:

1. INSTALL PIPING USING WROUGHT OR CAST FITTINGS AND SOLDER JOINTS USING 95-5 TIN-ANTIMONY SOLDER.
2. PROVIDE MANUFACTURER'S DISTRIBUTION INSTALLED PER WRITTEN DOCUMENTATION FOR PRIMING MULTIPLE TRAPS FROM THE SAME TRAP PRIMER.
3. SET DISCHARGE TEMPERATURE AT 105º WITH CHECKSTOPS.
4. PROVIDE MANUFACTURED PRODUCTS AS REQUIRED FOR COMPLIANCE WITH ICE A117.1 - ACCESSIBLE AND UNACCESSIBLE BUILDINGS.

**GENERAL NOTES:**

A. THROUGH PENETRATION ASSEMBLIES AT RATED WALLS SHALL BE COMPATIBLE WITH PIPING MATERIALS.
B. SUPPLY PIPING SHALL CONFORM TO THE REQUIREMENTS OF NSF 61.
C. PIPE AND FITTINGS FOR A GIVEN SYSTEM SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
D. PIPE FITTINGS FOR A GIVEN SYSTEM SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
E. SOLVENT CEMENT AND PRIMER SHALL COMPLY WITH REQUIREMENTS FOR LOW VOC CONTENT.
EXISTING GAS LINE TO REMAIN.

INSPECT, CLEAN AND CAP ALL EXISTING PIPING TO KITCHEN SINK. CONTRACTOR TO SALVAGE AND CLEAN EXISTING SINK PRIOR TO REINSTALLING.

CONTRACTOR SHALL FIELD VERIFY EXISTING ATTIC PIPING.

CONTRACTOR SHALL FIELD VERIFY EXISTING ROOF OPENING AND COORDINATE LOCATION WITH NEW ROOF.

REMOVE EXISTING LAVATORY AND ALL ASSOCIATED APPURTENANCES. TEMPORARY CAP ALL CONNECTIONS.

REMOVE EXISTING BATHTUB AND ALL ASSOCIATED APPURTENANCES. TEMPORARY CAP ALL CONNECTIONS.

REMOVE EXISTING WATER CLOSET AND ALL ASSOCIATED APPURTENANCES. TEMPORARY CAP ALL CONNECTIONS.

EXISTING PIPING TO REMAIN. PIPING SHOWN FOR REFERENCE ONLY.
PLAN KEY NOTES:

EXISTING GAS PIPING TO REMAIN.

EXIST. WATER HEATER TO REMAIN.

EXIST. GAS PIPE TO REMAIN.

REMOVE EXISTING KITCHEN SINK AND ALL ASSOCIATED APPURTENANCES. TEMPORARY CAP SANITARY PIPING BELOW FLOOR.

REMOVE EXISTING LAVATORY AND ALL ASSOCIATED APPURTENANCES.

REMOVE EXISTING BATHTUB AND ALL ASSOCIATED APPURTENANCES.

GENERAL DEMOLITION NOTES:

A - REMOVE ALL SANITARY, VENT, DOMESTIC WATER ABOVE FINISHED FLOOR THROUGHOUT THE BUILDING AS SHOWN ON PLAN, INCLUDING PIPE RISERS, VALVES, HANGERS & SUPPORTS.

B - CONTRACTOR SHALL FIELD VERIFY ALL PIPING SIZES AND LOCATIONS.

REMOVE EXISTING WATER CLOSET AND ALL ASSOCIATED APPURTENANCES.

REMOVE EXISTING WASHER BOX AND ALL ASSOCIATED APPURTENANCES.

NOT USED EX. VENT THROUGH ROOF.

REMOVE WALL CLEAN OUT AND ALL ASSOCIATED APPURTENANCES.

REMOVE EXISTING HOSE BIBB.
PLAN KEYNOTES:
- SEE ATTIC PIPING DETAIL OS-SWITCH P.
- CONTRACTOR SHALL COORDINATE VENT THROUGH NEW ROOF OPENING.
- CONTRACTOR SHALL CLEAN EXISTING SINK PRIOR TO INSTALL ON NEW KITCHEN COUNTER.

SEE ATTIC PIPING DETAIL OS-SWITCH P.
PLM KEY NOTES:
A. CONTRACTOR SHALL FIELD VERIFY EXISTING ROOF OPENING.
B. SEE ATTIC PIPE INSULATION DETAIL ON SHEET P.02
C. CONTRACTOR SHALL COORDINATE SHUT OFF VALVES ACCESS PANEL LOCATION WITH OTHER TRADES (SEE ARCHITECTURAL DRAWING).

GENERAL NOTES:
A. ALL PIPING SHOWN SHALL BE CONCEALED IN WALL OR ABOVE CEILING.
Contact Information:
LuSmith Engineers
100 West Franklin Street, Suite 400
Richmond, Virginia 23220
p: 804.925.2600  f: 804.925.2600
www.LSEngineers.net

Electrical Legend

CIRCUIT BREAKER, FUSIBLE AND NON-FUSIBLE.

DPL METER DISCONNECT SWITCH, FUSIBLE AND NON-FUSIBLE.

EVS GROUND FA! CIRCUIT BREAKER.

FPA FUSE.

GFI GROUND FAULT PROTECTED.

HVR HEATER.

LTP ATM. TRANSFER SWITCH.

MCT MAIN CIRCUIT BREAKER.

MINIMUM CIRCUIT AMPACITY.

REI LIGHTING EQUIPMENT INSTALLATION.

REE RECEPTACLE.

TP METER DISCONNECT SWITCH, FUSIBLE AND NON-FUSIBLE.

VOLTS.

LIGHTING.

ABBREVIATIONS:

3Ø THREE PHASE.

1Ø SINGLE PHASE.

DPL DISCONNECT.

ATP AUTOMATIC TRANSFER SWITCH.

CIR CIRCUIT BREAKER.

COP COOP.

B/W BLACK/WHITE.

W/W WHITE/WHITE.

FRN FRONT.

BLK BACK.

ROD GROUND ROD.

RCP GROUND ROD.

CBL CABLE.

RUN PULL BOX.

PLUG PLUG.

SFC SURFACE MOUNT.

İNC ORTHODOX.

cheme.

2. FOLLOW THE WIRING METHODS INDICATED IN THE ELECTRICAL CODING UNLESS OTHERWISE NOTED IN THE DRAWINGS, THEY REPRESENT MARIA CAPABILITIES OF THE WORKMANSHIP INDICATED.

3. ALL CABLE CONSTRUCTIONS ARE TO BE USED FOR APPROXIMATE LOCATIONS. SPECIFIED LOCATIONS ARE TO BE USED FOR CONCLUSIONS OF LABELS OR MARKERS APPLIED TO THE UNIT.

4. PROVIDE AN APPROPRIATE MATERIALSangers FOR ALL CONSTRUCTIONS INDICATED WHERE APPROPRIATE.

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LIGHT FIXTURE SCHEDULE

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<th>LOCATION</th>
<th>SCHEDULE DATE</th>
<th>CODE</th>
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<tbody>
<tr>
<td>1</td>
<td>20 SPACE</td>
<td>CIRCUIT</td>
<td>5/2/19</td>
<td>MLO</td>
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<td>2</td>
<td>1</td>
<td>SURFACE MOUNT EXTERIOR FIXTURE</td>
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Electrical Service Riser Diagram

One Line Diagram

Electrical Floor Plans

Specifications

XFMR Transformer Details

Schedule and Volts

Sheet List Table

CADD File:

SURF. MTD

NEW PANEL 'A'

CONTACT INFORMATION:

Whitcomb Court

RHA Fire Damaged Units

100 West Franklin Street, Suite 400

2012 IBC CODES:

1. LITERATURE FROM THE SUPPLIER WILL BE PROVIDED (SEE NOTE 1)

2. OPERATION FROM THE SUPPLIER TO REDUCE THE ELECTRICAL GROUND UNLESS OTHERWISE NOTED ON THE DRAWINGS. TYPICAL MOUNTING LOCATIONS OF ALL CONNECTIONS WITH OTHER TRADES SUPPLYING EQUIPMENT TO AVOID CONFLICTS.

3. PROVIDE THE ELECTRICAL LEGEND.

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Lighting:

- AREA LIGHTING

- CEILING MOUNT INTERIOR FIXTURE

- WALL MOUNT EXTERIOR LED FIXTURE

- DRAWING WITH OTHER TRADES PRIOR TO ACTUAL INSTALLATION. DRAWING WITH OTHER TRADES PRIOR TO ACTUAL INSTALLATION. DRAWING WITH OTHER TRADES PRIOR TO ACTUAL INSTALLATION. DRAWING WITH OTHER TRADES PRIOR TO ACTUAL INSTALLATION. DRAWING WITH OTHER TRADES PRIOR TO ACTUAL INSTALLATION.
SPECIAL AND HEAVY-DUTY TYPE RECEPTACLES SHALL BE PROVIDED AS SUITABLE FOR THE INTENDED USE.

ABOVE FINISHED FLOOR.

OTHERWISE NOTED.

LIGHT SWITCHES

SECTION 16120 - WIRE AND CABLE (600 VOLTS AND BELOW)

A. ALL METALLIC CONDUITS SHALL TERMINATE WITH INSULATED THROAT CONNECTORS OR PLASTIC BUSHINGS TO PROTECT WIRING INSULATION BEFORE WIRING TERMINAL BOXES.

B. GROUNDING CONDUCTORS SHALL BE INSTALLED WHEREVER WIRING IS INSTALLED IN ALL RACEWAYS. NO EXCEPTIONS!

C. PVC RACEWAYS SHALL BE ALLOWED BELOW FLOOR SLAB AND SITE ELECTRICAL ONLY. PVC NOT ALLOWED ABOVE FINISHED FLOOR OR FINISHED GRADE.

D. FLEXIBLE LIQUID-TIGHT CONDUIT SHALL BE USED FOR CONNECTIONS TO ALL MOTORS, DRY-TYPE TRANSFORMERS AND ANY EQUIPMENT WHERE REQUIRED IN FURRED SPACES.

E. CONDUIT MAY BE RUN EXPOSED IN MECHANICAL EQUIPMENT AND UTILITY SPACES. ELSEWHERE, IT SHALL BE CONCEALED ABOVE CEILINGS, IN SHAFTS, AND IN FLOOR SLABS.

IN GENERAL, CONDUITS 2 INCHES OR LARGER, AND CONDUIT IN FLOOR SLABS SHALL BE HEAVY WALL RIGID TYPE. THE MINIMUM SIZE CONDUIT USED SHALL BE 3/4 INCH. LARGER SIZES SHALL BE USED PER FILL REQUIRED BY THE NATIONAL ELECTRICAL CODE.

SECTION 16130 - TERMINAL BOXES

A. COMPLETE SHOP DRAWINGS AND ENGINEERING DATA ON ALL EQUIPMENT AND MATERIALS TO BE USED IN THE WORK OF THIS DIVISION SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS AND ENGINEERING DATA IN ACCORDANCE WITH THE SPECIFICATIONS.

B. COMPLETE PRODUCT, ALL COMPONENTS USED IN THE CONSTRUCTION OF SUCH EQUIPMENT SHALL BE LABELED OR LISTED BY UL.

C. OWNER'S UNDERWRITER'S LABEL AND LISTING

D. OWNER'S UNDERWRITER'S LABEL AND LISTING

E. OWNER'S UNDERWRITER'S LABEL AND LISTING

F. OWNER'S UNDERWRITER'S LABEL AND LISTING

G. OWNER'S UNDERWRITER'S LABEL AND LISTING

H. OWNER'S UNDERWRITER'S LABEL AND LISTING

I. OWNER'S UNDERWRITER'S LABEL AND LISTING

J. OWNER'S UNDERWRITER'S LABEL AND LISTING

K. OWNER'S UNDERWRITER'S LABEL AND LISTING

L. OWNER'S UNDERWRITER'S LABEL AND LISTING

M. OWNER'S UNDERWRITER'S LABEL AND LISTING

N. OWNER'S UNDERWRITER'S LABEL AND LISTING

O. OWNER'S UNDERWRITER'S LABEL AND LISTING

P. OWNER'S UNDERWRITER'S LABEL AND LISTING

Q. OWNER'S UNDERWRITER'S LABEL AND LISTING

R. OWNER'S UNDERWRITER'S LABEL AND LISTING

S. OWNER'S UNDERWRITER'S LABEL AND LISTING

T. OWNER'S UNDERWRITER'S LABEL AND LISTING

U. OWNER'S UNDERWRITER'S LABEL AND LISTING

V. OWNER'S UNDERWRITER'S LABEL AND LISTING

W. OWNER'S UNDERWRITER'S LABEL AND LISTING

X. OWNER'S UNDERWRITER'S LABEL AND LISTING

Y. OWNER'S UNDERWRITER'S LABEL AND LISTING

Z. OWNER'S UNDERWRITER'S LABEL AND LISTING

Annex D: Checklist to Submit to City of Richmond

Section C. General Requirements for Life Project

Table 1: General Requirements for Life Project

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Specification</th>
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<tr>
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<td>Requirements</td>
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<tr>
<td>Life Project</td>
<td>Specifications</td>
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Annex E: Electrical Specifications

Section B. Codes Requirements

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Annex F: General Requirements for Life Project

Table 1: General Requirements for Life Project

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Annex G: Electrical Specifications

Section B. Codes Requirements

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Appendix H: Electrical Code Requirements

Section B. Codes Requirements

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## Panelboard Schedule

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<th>PHASE C</th>
<th>PHASE D</th>
<th>PHASE E</th>
<th>PHASE F</th>
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**TOTAL CONNECTED KVA:**

**TOTAL CONNECTED AMPS:**

**Lighting Feeder Demand = 125% Per 2011 NEC 210.19(A)(1)**

**Receptacle Demand Load Per 2011 NEC Table 220.44**

---

**Date:**

**Checked:**

**Seal:**

---

**RICHMOND, VIRGINIA 23220**

---

**4924 Dominion Blvd, STE A**

---

**RRHA FIRE DAMAGED UNITS**

---

**2015-2019 AMBURG STREET**

---

**RICHMOND, VIRGINIA 23201**

---

**RICHMOND, VIRGINIA 23261**

---

**No.:**

**Date:**

**Revision:**

---

**Panel Schedules:**

---

**Sheet No.:**

**E-3**
E.C. shall provide new LED light fixture. E.C. shall reuse existing lighting controls and circuit.

E.C. to disconnect, dismantle and properly dispose of existing unit panel. E.C. to provide and install new 125A MLO, 120/240V-1Ø panel. New panel shall match the same characteristics and AIC ratings as panel that was demolished.

E.C. shall replace existing light fixture. E.C. shall provide new exterior LED light fixtures. E.C. shall provide and install all new conduit and wiring. Conduit runs shall be tight and level to building. E.C. shall reuse existing circuitry and lighting controls.

E.C. to provide new switches, receptacles and light fixtures. E.C. shall provide all wiring from devices back to panel serving area.
ATTACHMENT B
Bid Form
BID FORM

DATE: ___________________________

PROJECT: 2305-2315 Ambrose Street

Project Code:

To: Richmond Redevelopment and Housing Authority

In compliance with and subject to your Invitation for Bids and the documents therein specified, all of which are incorporated herein by reference, the undersigned bidder proposes to furnish all labor, equipment, and materials and perform all work necessary for construction of this project, in accordance with the Plans and Specifications dated October 31, 2018, and the Addenda noted below, as prepared by Kelso & Easter, Richmond, Virginia for the consideration of the following amount:

BASE BID:

PART A. Insurance related (T1.01, A0.01, A1.01B, A2.01B, A2.02B, A3.02B, S1.01, M-1, M-2, E-1, E-2, E-3, E-4, P-1, P-2, P-3 and P-4)

PART A= ___________________________________________ Dollars $ ___________

PART B. Agency Improvements: (T1.01, A1.01, A2.01, A2.02, A2.03, A3.01, A4.01, M-1A, M-2A, P-1A, P-2A, P-3A, P-4A)

PART B= ___________________________________________ Dollars $ ___________

Lump sum price for construction of the building complete, and in accordance with the Plans and Specifications:

TOTAL Part A & B= ___________________________________________ Dollars $ ___________

The bidder has relied upon the following public historical climatological records:
National Weather Service of the National Oceanic and Atmospheric Administration in Wakefield, VA as reporting for Richmond, VA.

The undersigned understands that time is of the essence and agrees that the time for Substantial Completion of the entire project shall be 120 consecutive calendar days from the date of commencement of the Work as specified in the Notice to Proceed, and Final Completion shall be achieved within 30 consecutive calendar days after the date of Substantial Completion as determined by the A/E.

Acknowledgment is made of receipt of the following Addenda:

RRHA
2305-2315 Ambrose St
If notice of acceptance of this bid is given to the undersigned within 30 days after the date of opening of bids, or any time thereafter before this bid is withdrawn, the undersigned will execute and deliver a contract in the prescribed form within 10 days after the contract has been presented to him for signature. The required payment and performance bonds, on the forms prescribed, shall be delivered to the Owner along with the signed Contract.

Immigration Reform and Control Act of 1986: The undersigned certifies that it does not and will not during the performance of the Contract for this project violate the provisions of the Federal Immigration Reform and Control Act of 1986, which prohibits employment of illegal aliens.

DISQUALIFICATION OF CONTRACTORS: By signing this bid or proposal, the undersigned certifies that this Bidder or any officer, director, partner or owner is not currently barred from bidding on contracts by any Agency of the Commonwealth of Virginia, or any public body or agency of another state, or any agency of the federal government, nor is this Bidder a subsidiary or affiliate of any firm/corporation that is currently barred from bidding on contracts by any of the same. We have attached an explanation of any previous disbarment(s) and copies of notice(s) of reinstatement(s).

Either the undersigned or one of the following individuals, if any, is authorized to modify this bid prior to the deadline for receipt of bids by writing the modification and signing his name on the face of the bid, on the envelope in which it is enclosed, on a separate document, or on a document which is telefaxed to the Owner or by sending the Owner a telegraphic message:

________________________________________________________________________

I certify that the firm name given below is the true and complete name of the bidder and that the bidder is legally qualified and licensed by the Commonwealth of Virginia, Department of Commerce, State Board for Contractors, to perform all Work included in the scope of the Contract.

Virginia License No. ____________________ Bidder ____________________ (Name of Firm)
Contractor Class ____________________ By ____________________ (Signature)
Specialty ____________________

RRHA
2305-2315 Ambrose St
Valid until __________________________

(Typed Name)

FEIN/SSN: ____________________________  Title ____________________________

If Partnership (List Partners' Names)  If Corporation, affix Corporate Seal &
list State of Incorporation

____________________________________  State: ____________________________

____________________________________  (Affix Seal)

____________________________________

____________________________________

Business Address:

____________________________________

____________________________________

____________________________________

____________________________________

Telephone # __________________________

FAX # __________________________

END OF SECTION
ATTACHMENT C
Pre-Bid Question From
Prebid Question Form
Richmond Redevelopment and Housing Authority
2305-2315 Ambrose Street – Whitcomb Court
Richmond, Virginia
IFB #
(Use separate form for each question)

Date: ____________________________

The following question concerns Drawing sheet number (__________________________).

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

The following question concerns Drawing sheet number (__________________________).

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

All responses to questions will be made by Addendum.

Question Submitted by:

Name _______________________________________________ Organization ____________________________

Phone Number __________________________ Fax Number __________________________

email Form to:
Procurement
Director, Maintenance Operations
Richmond Redevelopment & Housing Authority

End of Prebid Question Form
ATTACHMENT D

STATEMENT OF BIDDER'S QUALIFICATION

All questions must be answered and the data given must be clear and comprehensive. This statement must be notarized. If necessary, questions may be answered on separate attached sheets. The Bidder may submit any additional information he desires.

1. Name of Bidder.

2. Permanent main office address, including City, State, Zip Code, Phone Number and Fax Number.

3. When organized?

4. If incorporated, where incorporated?

5. How many years have you been engaged in business under your present firm or trade name?

6. Contracts on hand: (Schedule these, showing gross amount of each contract and the appropriate anticipated dates of completion). See attached

7. General character of work performed by your company.

8. Has the bidder/offeror ever failed to complete any work awarded to your firm? If so, where and why?

9. Has your firm ever defaulted on a contract? If so, where and why?

10. List the more important contracts recently completed by your firm, stating approximate gross cost for each, and the month and year completed.

11. List your major equipment available for the performance of this Contract.

12. Describe your firm's experience in work similar in nature to this project. Provide a listing of at least three (3) current or recent accounts, either commercial or government (e.g., another public or housing project of similar dollar value) that your company is servicing, has serviced, or has provided similar
services. Include a short description of the project, timeline, and dollar value. Also provide contact information including the company name, contact person name, telephone number and email address.

1. Project Description: 

   Timeline/Dates of Service: 

   Dollar Value: 

   Company Name: 

   Contact Person Name: 

   Contact Person Telephone Number: 

   Contact Person Email Address: 

2. Project Description: 

   Timeline/Dates of Service: 

   Dollar Value: 

   Company Name: 

   Contact Person Name: 

   Contact Person Telephone Number: 

   Contact Person Email Address: 

3. Project Description: 

   Timeline/Dates of Service: 

   Dollar Value: 

   Company Name: 

   Contact Person Name: 

   Contact Person Telephone Number: 

   Contact Person Email Address: 

13. List the background and experience of the principal members of your organization including the officers.

14. Your firm is required, upon request, to fill out a detailed financial statement and furnish any other information that may be required by the Richmond Redevelopment and Housing Authority (RRHA). Do
you agree to provide such information upon request?

15. Has your firm ever been a party to or otherwise involved in any action or legal proceedings involving matters related to allegations of discrimination based on race, color, nationality, sex, or religion? If so, give full details.

16. Has your firm ever been accused of discrimination based upon race, color, nationality, sex, or religion in any action or legal proceeding, including any proceeding related to any Federal Agency? If so, give full details.

17. The undersigned hereby authorizes and requests any person, firm or corporation to furnish any information requested by in verification of the recitals comprising this Statement of Bidder's Qualifications.

Dated at this _____ day of ________________, 20_____

__________________________________________
(Name of Contractor)

By: _______________________________________

Title: _____________________________________

State of _____________ )

) ss.

County of _____________ )

__________________________________________, being duly sworn, deposes and says he is ________________________________

of ________________________________________ and that the answers to the

(Name of Organization)

foregoing questions and all statements therein contained are true and correct.

Subscribed and sworn before me this _________ day of ______________, 20___

My Commission Expires ________________________________
ATTACHMENT E

NON-COLLUSIVE AFFIDAVIT

State of __________________________
County of __________________________

________________________________, being first duly sworn, deposes and says that:

1. He is ________________________________________________________________
   (Owner, Partner, Officer, Representative or Agent)
   of _________________________________________________________________
   the Bidder that has submitted the attached bid;

2. He is fully informed respecting the preparation and contents of the attached bid and of all pertinent circumstances respecting such bid;

3. Such bid is genuine and is not a collusive or sham bid;

4. Neither the said Bidder nor any of its officers, partners, owners, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly with any other bidder, firm or person to submit a collusive or sham bid in connection with the contract for which the attached bid has been submitted or to refrain from bidding in connection with such contract, or has in any manner, directly or indirectly, sought by unlawful agreement or collusion or communication or conference with any other bidder, firm or person to fix the price or prices in the bid price or the bid price of any other bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the Richmond Redevelopment and Housing Authority or any person interested in the proposed contract; and

5. The price or prices in the attached bid are fair and proper and are not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

________________________________
(Name)

________________________________
(Title)

Subscribed and sworn to before me
this ______ day of _____________, 20____

________________________________
(My Commission Expires ______________________)
ATTACHMENT F

CERTIFICATE OF NON-SEGREGATED FACILITIES

The Bidder certifies that he does not maintain or provide for its employees any segregated facilities at any of its establishments, and that he does not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The Bidder certifies further that he will not maintain or provide for its employees any segregated facilities at any of its establishments, and that he 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 will be a violation of the Equal Opportunity clause in any contract resulting from acceptance of the bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, 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 which 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. The Bidder agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in its files.

Date_____________________, 20______

__________________________________________
(Name of Bidder)

Official Address

__________________________________________

By ________________________________

Title ________________________________
ATTACHMENT G

SECTION III
COMPLIANCE CLAUSE AND COMMITMENT FORM

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).

Definitions

Low Income Person as used above means a resident of the Richmond Metropolitan Area at or below 80% of medium income as shown in the Income Table below.

Economic Opportunities as used above means contracts with (a) that is fifty-one percent (51%) or more owned by Section 3 residents; (b) whose permanent, full-time employees include persons, at least thirty percent (30%) of whom are currently Section 3 residents, or within three years of the date of first employment with the business concern were Section 3 residents; or (c) that provides evidence of a commitment to subcontract in excess of twenty-five percent (25%) of the dollar award of all subcontracts to be awarded to business concerns that meet the qualifications set forth in (a) or (b).

Applicability

This Contract plus all Subcontracts.

Reporting

The Contractor will be required to report all new hires employed as a result of this Contract and to determine and report whether or not any of these new hires may be defined as low income persons based upon the above stated definition and by employing the income table below. For Subcontracts the Contractor will be responsible for requiring the Subcontractor to (a) report all new hires employed as a result of this Contract and to determine and report whether or not any of these new hires may be defined as low income persons based upon the above stated definition and by employing the income table below and (b) determine whether or not the Subcontractor may be defined as a low income person or a Section III Business based on the above stated definitions and income table below. These requirements apply to any tier of Subcontractors.
INCOME TABLE

This table shows 80% of median income for Richmond Metropolitan Area for the designated number of persons in a family.

<table>
<thead>
<tr>
<th>Income Limit Category</th>
<th>1 Person</th>
<th>2 Person</th>
<th>3 Person</th>
<th>4 Person</th>
<th>5 Person</th>
<th>6 Person</th>
<th>7 Person</th>
<th>8 Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Low (50%) Income Limits</td>
<td>$29,150</td>
<td>$33,300</td>
<td>$37,450</td>
<td>$41,600</td>
<td>$44,950</td>
<td>$48,300</td>
<td>$51,600</td>
<td>$54,950</td>
</tr>
<tr>
<td>Extremely Low (30%) Income Limits</td>
<td>$17,500</td>
<td>$20,000</td>
<td>$22,500</td>
<td>$25,100</td>
<td>$29,420</td>
<td>$33,740</td>
<td>$38,060</td>
<td>$42,380</td>
</tr>
<tr>
<td>Low (80%) Income Limits</td>
<td>$46,600</td>
<td>$53,250</td>
<td>$59,900</td>
<td>$66,550</td>
<td>$71,900</td>
<td>$77,200</td>
<td>$82,550</td>
<td>$87,850</td>
</tr>
</tbody>
</table>
Minority Business and Section 3 Participation
Commitment Form

Project Name:

It is the policy of Richmond Redevelopment and Housing Authority (“RRHA”) to encourage Minority and Section 3 participation in all contracts. To implement this policy, RRHA shall encourage Minority and Section III participation through subcontracting, or other methods in contracting. You must complete this form, indicating the percentage of this Contract that will be subcontracted to Minority and Section 3 Businesses and Section 3 Individuals.

Minority Participation:
For the purpose of this commitment, the term “Minority Business” means a business at least 51 percent of which is owned and controlled by minority group members or, in the case of a publicly-owned business, at least 51 percent of the stock of which is minority owned, and the business is controlled by minority group members. For the purpose of the preceding sentence, “Minority Group Members” are citizens of the United States who are African-American, Hispanics, Asians, Pacific Islanders and American Indians.

Please indicate the percentage of minority business participation for this project. This refers to the percentage of the total dollar value of the Contract that will be subcontracted to minority firms.

_______________ Percent *

To be considered a “minority business”, the business must be so certified by the Commonwealth of Virginia Department of Minority Business Enterprise, City of Richmond or any other local, state, or federal agency that certifies businesses as a minority business.

Section 3 Participation:
For the purpose of this commitment, the term “Section 3” refers to Section 3 businesses and Section 3 individuals based on the definitions below:

Definitions:
Low Income Person as used above means a resident of the Richmond Metropolitan Area at or below 80% of medium income as shown in the Income Table below.

Economic Opportunities as used above means contracts with (a) businesses owned 51% or more by residents of Richmond metropolitan area at or below 80% of medium income or (b) business whose full-time employees are made up of at least 30% residents of Richmond metropolitan area at or below 80% of medium income. Such businesses are referred to as Section 3 Business.
**Income Table**

This table shows 80% of median income for Richmond Metropolitan Area for the designated number of persons in a family.

<table>
<thead>
<tr>
<th></th>
<th>1 person</th>
<th>2 persons</th>
<th>3 persons</th>
<th>4 persons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$46,600</td>
<td>$53,250</td>
<td>$59,900</td>
<td>$66,550</td>
</tr>
<tr>
<td>5 persons</td>
<td>$71,900</td>
<td>$77,200</td>
<td>$82,550</td>
<td>$87,850</td>
</tr>
</tbody>
</table>

To be considered a “Section 3 business or Section 3 individual”; the business must provide documentation supporting the income level of the employees and individuals.

Please indicate the percentage of Section 3 participation for this project. This refers to the percentage of the total dollar value of the Contract that will be available for Section 3 opportunities.

| Percent * |

*RRHA will consider Minority and Section 3 participation in awarding this Contract. RRHA reserves the right to approve or disapprove any subcontractor list or individual.

**FAILURE TO COMPLETE THIS FORM MAY RESULT IN YOUR BID/OFFEROR BEING DECLARED NON-RESPONSIVE THUS ELIMINATING YOUR FIRM FROM CONSIDERATION FOR THIS PROJECT.**

The undersigned hereby certifies that he or she has read the terms of this commitment form and is authorized to bind the prospective bidder/offeror to the commitment herein set forth.

<table>
<thead>
<tr>
<th>Firm’s Name</th>
<th>Name of Authorized Officer – printed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Date</th>
<th>Signature of Authorized Officer – signed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION III COMPLIANCE FORM

__________________________
Contractor

__________________________
Address

__________________________
City, State, Zip Code

Subject: Statement of compliance with Section III Clause

Gentlemen:

In accordance with the provisions stated herein I will make a "good faith effort" to provide opportunities for the training and employment to qualified low-income residents in the area in which this project is located (Richmond Metropolitan Area). This clause and reporting requirements will be incorporated into any lower tier contracts.

Attached is the report form to disclose the number of positions available for employment. We will comply and seek out the low-income persons for any open positions. Notices shall be posted in conspicuous places available to employees and applicants for any open positions.

Sincerely submitted,

__________________________
Typed Signature and Title

__________________________
Signature

__________________________
Date signed
CERTIFICATION FOR BUSINESS CONCERNS SEEKING SECTION 3
PREFERENCE IN CONTRACTING AND DEMONSTRATION OF CAPABILITY

Name of Business ____________________________________________

Address of Business __________________________________________

Type of Business:  __Corporation  __Partnership
                 __Sole Proprietorship  __Joint Venture

Attached is the following documentation as evidence of status:

**For Business claiming status as a Section 3 resident-owned enterprise:**
  __Copy of resident lease  __Copy of receipt of public assistance
  __Copy of evidence of participation in a public assistance program
  __Other evidence

**For Business entity as applicable:**
  __Copy of Articles of Incorporation
  __Assumed Business Name Certificate
  __List of owners/stockholders and % ownership of each
  __Organization chart with names and titles and brief function statement
  __Certificate of Good Standing
  __Partnership Agreement
  __Corporation Annual Report
  __Latest Board minutes appointing officers
  __Additional documentation

**For Business claiming Section 3 status by subcontracting 25 percent of the dollar awarded to Section 3 business:**
  __List of subcontracted Section 3 business (es) and subcontract amount

**For business claiming Section 3 status, claiming at least 30 percent of their workforce are currently Section 3 residents or were Section 3 eligible residents within 3 years of date of first employment with the business:**
  __List of all current full-time employees
  ___PHA/IHA Residential lease less than 3 years from day of employment
  __List of employee claiming Section 3 status
  ___Other evidence of Section 3 status less than 3 years from date of employment

Evidence of ability to perform successfully under the terms and conditions of the proposed contract:
  __Current financial statement
  __Statement of ability to comply with public policy
  __List of owned equipment
  __List of all contracts for the past two years
Authorizing Name (Business) ___________________________ Date ____________

Authorizing Signature (Business) ___________________________

Authorizing Name (Attested by) ___________________________ Date ____________

Authorizing Signature (Attested by) ___________________________
ATTACHMENT H

HUD Form 5370 – General Conditions for Construction Contracts

(Pages 1 – 19)
**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.

<table>
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<th>Clause</th>
<th>Page</th>
<th>Administrative Requirements</th>
<th>Page</th>
</tr>
</thead>
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<td>27. Payments</td>
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<td>4. Other Contracts</td>
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<td>28. Contract Modifications</td>
<td>10</td>
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<td>5. Preconstruction Conference and Notice to Proceed</td>
<td>3</td>
<td>29. Changes</td>
<td>10</td>
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<td>6. Construction Progress Schedule</td>
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<td>30. Suspension of Work</td>
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<td>7. Site Investigation and Conditions Affecting the Work</td>
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<td>31. Disputes</td>
<td>11</td>
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<tr>
<td>8. Differing Site Conditions</td>
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<td>32. Default</td>
<td>11</td>
</tr>
<tr>
<td>9. Specifications and Drawings for Construction</td>
<td>4</td>
<td>33. Liquidated</td>
<td>12</td>
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<tr>
<td>10. As-Built Drawings</td>
<td>5</td>
<td>34. Termination of Convenience</td>
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<tr>
<td>11. Material and Workmanship</td>
<td>5</td>
<td>35. Assignment of Contract</td>
<td>12</td>
</tr>
<tr>
<td>12. Permits and Codes</td>
<td>5</td>
<td>36. Insurance</td>
<td>12</td>
</tr>
<tr>
<td>13. Health, Safety, and Accident Prevention</td>
<td>6</td>
<td>37. Subcontracts</td>
<td>13</td>
</tr>
<tr>
<td>17. Temporary Buildings and Transportation Materials</td>
<td>7</td>
<td>41. Interest of Members of Congress</td>
<td>15</td>
</tr>
<tr>
<td>18. Clean Air and Water</td>
<td>7</td>
<td>42. Interest of Members, Officers, or Employees of Former Members, Officers, or Employees</td>
<td>15</td>
</tr>
<tr>
<td>19. Energy Efficiency</td>
<td>7</td>
<td>43. Limitations on Payments Made to Influence</td>
<td>15</td>
</tr>
<tr>
<td>20. Inspection and Acceptance of Construction</td>
<td>7</td>
<td>44. Royalties and Patents</td>
<td>15</td>
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<tr>
<td>21. Use and Possession Prior to</td>
<td>8</td>
<td>45. Examination and Retention of Contractor's Records</td>
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</tr>
<tr>
<td>22. Warranty of Title</td>
<td>8</td>
<td>46. Labor Standards-Davis-Bacon and Related Acts</td>
<td>15</td>
</tr>
<tr>
<td>23. Warranty of</td>
<td>8</td>
<td>47. Non-Federal Prevailing Wage Rates</td>
<td>19</td>
</tr>
<tr>
<td>24. Prohibition Against</td>
<td>8</td>
<td>48. Procurement of Recovered</td>
<td>19</td>
</tr>
</tbody>
</table>
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 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.

(j) "Work" means materials, workmanship, and manufacture and fabrication of components.

2. Contractor's Responsibility for Work

(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.
(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;

(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 inspections 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 assures 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 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" or "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 laboror 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. 205, 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 impose and 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 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 refinish 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 refinish 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 Act Act, as amended, 33 U.S.C. 1251 et seq., and standards issued pursuant thereto in the facilities in which this contract is to be performed.

19. Energy Efficiency

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

20. Inspection and Acceptance of Construction

(a) Definitions. As used in this clause -

(1) "Acceptance" means the act of an authorized representative of the PHA by which the PHA approves and assumes ownership of the work performed under this contract. Acceptance may be partial or complete.

(2) "Inspection" means examining and testing the work performed under the contract (including, when appropriate, raw materials, equipment, components, and intermediate assemblies) to determine whether it conforms to contract requirements.

(3) "Testing" means that element of inspection that determines the properties or elements, including functional operation of materials, equipment, or their components, by the application of established scientific principles and procedures.

(b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. All work is subject to PHA inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

(c) PHA inspections and tests are for the sole benefit of the PHA and do not: (1) relieve the Contractor of responsibility for providing adequate quality control measures; (2) relieve the Contractor of responsibility for loss or damage of the material before acceptance; (3) constitute or imply acceptance; or, (4) affect the continuing rights of the PHA after acceptance of the completed work under paragraph (j) below.

(d) The presence or absence of the PHA inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specifications without the Contracting Officer's written authorization. All instructions and approvals with respect to the work shall be given to the Contractor by the Contracting Officer.

(e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The PHA may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The PHA shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.
(f) The PHA may conduct routine inspections of the construction site on a daily basis.

(g) The Contractor shall, without charge, replace or correct work found by the PHA not to conform to contract requirements, unless the PHA decides that it is in its interest to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

(h) If the Contractor does not promptly replace or correct rejected work, the PHA may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor, or (2) terminate for default the Contractor’s right to proceed.

(i) If any work requiring inspection is covered up without approval of the PHA, it must, if requested by the Contracting Officer, be uncovered at the expense of the Contractor. If at any time before final acceptance of the entire work, the PHA considers it necessary or advisable, to examine work already completed by removing or tearing it out, the Contractor, shall on request, promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray all the expenses of the examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the Contracting Officer shall make an equitable adjustment to cover the cost of the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

(j) The Contractor shall notify the Contracting Officer, in writing, as to the date when in its opinion all or a designated portion of the work will be substantially completed and ready for inspection. If the Architect determines that the state of preparedness is as represented, the PHA will promptly arrange for the inspection. Unless otherwise specified in the contract, the PHA shall accept, as soon as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines and designates can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the PHA’s right under any warranty or guarantee.

21. Use and Possession Prior to Completion

(a) The PHA shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the PHA intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relive 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 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;

(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.

(g) 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.


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 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 prepared 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) to 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 cost claims.

(k) The PHA shall not; (1) determine or adjust any claims for payment or disputes arising there under between the Contractor and its subcontractors or material suppliers; or, (2) withhold any moneys for the protection of the subcontractors or material suppliers. The failure or refusal of the PHA to withhold moneys from the Contractor shall in no wise impair the obligations of any surety or sureties under any bonds furnished under this contract.

28. Contract Modifications

(a) Only the Contracting Officer has authority to modify any term or condition of this contract. Any contract modification shall be authorized in writing.

(b) The Contracting Officer may modify the contract unilaterally (1) pursuant to a specific authorization stated in a contract clause (e.g., Changes); or (2) for administrative matters which do not change the rights or responsibilities of the parties (e.g., change in the PHA address). All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and the Contracting Officer.

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

29. Changes

(a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract including changes:

(1) In the specifications (including drawings and designs);
(2) In the method or manner of performance of the work;
(3) PHA-furnished facilities, equipment, materials, services, or site; or,
(4) Directing the acceleration in the performance of the work.

(b) Any other written order or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contracting Officer 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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form HUD-5370 (1/2014)
(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 \[ \text{Contracting Officer insert amount}\] 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 therefor; (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 \[ \text{Contracting Officer insert amount}\]
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 notices 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 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.


(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. 450a) 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 or 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 manufacturer 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 conforming with 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (VH-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.

(ii) 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.

(iii) 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.

(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 rates 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).


(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 thereof 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.


(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.
ATTACHMENT I
HUD 5369
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 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 (b)(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 bond bid 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 disbursement 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/570/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 bond 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 [ ] 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.
ATTACHMENT J

General Decision – VA190139 Residential

(Page 1 – 5)
General Decision Number: VA190139 01/04/2019  VA139

Superseded General Decision Number: VA20180150

State: Virginia

Construction Type: Residential

Counties: Henrico and Richmond* Counties in Virginia.

*INDEPENDENT CITY

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

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

Modification Number    Publication Date
0                      01/04/2019

* BRVA0001-002 02/01/2018

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ENGI0147-012 05/01/2018

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<td>Cranes 90 tons &amp; over capacity; Tower &amp; Climbing</td>
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<td>Cranes with Controls 100 ft. above ground</td>
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<tr>
<td>Cranes under 90 tons</td>
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SUVA2012-017 08/08/2014

https://www.wdol.gov/whd/govcontracts/VA139.dvb?v=0
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<td>IRONWORKER, ORNAMENTAL</td>
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<td>ROOFER</td>
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<td>SHEET METAL WORKER, Includes HVAC Duct Installation</td>
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<tr>
<td>TRUCK DRIVER: Dump Truck</td>
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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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.

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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