



**SOLICITATION #2023 – 3004**  
**PROJECT MANUAL**

**STANLEY ROWE BUILDING A  
FIRE PUMP REPLACEMENT AND  
GENERATOR**

**835 POPLAR STREET – CINCINNATI, OH**

**\* \* \* \* \***

**OWNED BY**

**CINCINNATI METROPOLITAN HOUSING AUTHORITY  
1627 WESTERN AVENUE  
CINCINNATI, OH 45214**

**\* \* \* \* \***



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**INVITATION FOR BID  
SOLICITATION NUMBER 2023-3004**

On **February March 9**, at 10:00 a.m., the Cincinnati Metropolitan Housing Authority (CMHA) will receive, open and read aloud all bids on the project heretofore described as:

**Project Name: Stanley Row Tower A – Fire Pump and Generator Replacement**

**Contact:** All questions concerning this solicitation are to be directed in writing via email at [michael.koch@cintimha.com](mailto:michael.koch@cintimha.com). Responses to questions received prior to 4:00pm (local time) on March 1, 2023 will be posted as an addendum to the CMHA website at <http://www.cintimha.com/business-opportunities.aspx>. Responses for questions received after this date and time will be posted at CMHA's discretion. It is the responsibility of all bidders to monitor the website and review all addenda posted associated with this bid.

**Proposals shall be delivered to:** Cincinnati Metropolitan Housing Authority  
1627 Western Ave  
Cincinnati, Ohio 45214

This project is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended. Preference may be given in accordance with 24 CFR 135 and the CMHA procurement policy.

On **February 13, 2023**, bidders may purchase the project manual from **ARC Document Solutions, 7157 Kemper Road Cincinnati, Ohio 45242** for a non-refundable fee (cash, Visa, personal check or money order). The project manual must be ordered in advance from ARC Document Solutions by calling **(513) 326-2300**. For a list of plan holders, go to [www.e-arc.com](http://www.e-arc.com). You may review a set of documents at no charge, at the CMHA, 1627 Western Avenue, Cincinnati, Ohio 45214, Phone: (513) 333-0670 during the hours of 9:00 a.m.- 4:00 p.m., Monday thru Friday or download nonscale copies from the CMHA website <http://www.cintimha.com/business-opportunities.aspx>.

There will be an optional **pre-bid walk through on February 21, 2023 at 1:30 P.M.** Meet at 835 Poplar St., Cincinnati, OH 45214.

CINCINNATI METROPOLITAN HOUSING AUTHORITY  
Gregory D. Johnson, MS, PHM, EDEP, Chief Executive Officer

**Advertisement Dates:** February 13, 2023 and February 20, 2023.

**BID FORM**

SOLICITATION #: 2023-3004

Stanley Row Tower A – Fire Pump and Generator Replacement

TO THE CINCINNATI METROPOLITAN HOUSING AUTHORITY (CMHA)

Ladies and/or Gentlemen:

1. In submitting this bid, it is understood that the right is reserved by the Cincinnati Metropolitan Housing Authority to reject any and all bids. If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within **90** days after the opening thereof, or at any time thereafter before this bid is withdrawn, the undersigned agrees to execute and deliver a contract in the prescribed form and furnish the required bond and insurance certifications no later than 10 days after the "Notice of Intent".
2. Security in the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) in the form of \_\_\_\_\_ is submitted herewith in accordance with the Specifications.
3. Attached hereto is an affidavit in proof that the undersigned has not entered into any collusion with any person in respect to this bid or any other bid or the submitting of bids for the contract for which this bid is submitted. Also attached is a completed Form HUD-5369-A, Representations, Certifications, and Other Statements of Bidders.
4. Work under this Contract will begin immediately upon the successful Contractor's receipt of a "Notice to Proceed" from CMHA. "Notice to Proceed" will follow the completion of an executed contract.

5. **ADDENDA**

Bidder acknowledges receipt of the following Addenda:

ADDENDUM NO. \_\_\_\_\_ DATED \_\_\_\_\_  
 ADDENDUM NO. \_\_\_\_\_ DATED \_\_\_\_\_  
 ADDENDUM NO. \_\_\_\_\_ DATED \_\_\_\_\_

6. **BASIS OF CONTRACT AWARD**

CMHA intends to award this contract for **Solicitation No. 2023-3004** titled "**Stanley Row – Tower A Fire Pump and Generator Replacement**", to the responsible bidder submitting the LOWEST "TOTAL BID" complying with these Public Bid Specifications, Drawings and Addenda, if any, provided the Contractor's, bid is reasonable and it is in the best interest of CMHA to accept it. The LOWEST "TOTAL BID" will be the bid reflecting the lowest dollar amount in the "TOTAL BID".

The undersigned having familiarized themselves with the local conditions affecting the cost of the work, and with the Drawings and Specifications, issued and Addenda, if any thereto, as prepared by the Development Division of the Cincinnati Metropolitan Housing Authority, propose to furnish all labor, materials, equipment, permits and services required to complete the work identified herein at the prices listed below.

7. **CONTRACT TIME**

The contract performance period from the "Notice to Proceed" until substantial completion, will be 180 **calendar days** for the "Total Bid".

8. **BID AMOUNT - TOTAL**

The total Bid Amount is for all work indicated in the Specification, Drawings and Addendums including allowances and attic stock.

**TOTAL BID SUM OF (WORDS)**

\_\_\_\_\_ **DOLLARS.**

**TOTAL BID SUM OF (FIGURES) \$** \_\_\_\_\_.

**NOTE:** The Total Bid Amount shall be shown in both words and figures; in case of discrepancy, the amount in words shall govern. To be valid bid, the bid form must be filled out in it's entirety with all certifications and affidavits. It must be submitted with and is part of the Bid Documents.

The penalty for making false statements in any offer is prescribed in 19 U.S.C. 1001.

Date: \_\_\_\_\_ 2023

Company: \_\_\_\_\_

Address: \_\_\_\_\_

By: \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Title: \_\_\_\_\_

Fed. Tax ID: \_\_\_\_\_

(Signature of Bidder)

**NOTE: LATE BIDS WILL NOT BE RECEIVED. THE LOBBY CLOCK ESTABLISHES THE TIME FOR THE BID OPENING.**

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

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

# Representations, Certifications, and Other Statements of Bidders

## Public and Indian Housing Programs

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### 1. Certificate of Independent Price Determination

#### (a) The bidder certifies that--

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### 2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

#### 4. Organizational Conflicts of Interest Certification

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

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

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

#### 5. Bidder's Certification of Eligibility

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

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

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

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

#### 6. Minimum Bid Acceptance Period

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

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

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

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

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

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

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

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

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

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

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

(Check the block applicable to you)

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

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

The bidder represents and certifies that it:

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

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

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

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

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

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

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

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

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

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

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

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

- (1) Obtain identical certifications from the proposed subcontractors;
- (2) Retain the certifications in its files; and
- (3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

**Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities**

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

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

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

The bidder certifies that:

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

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

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

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

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

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

**13. Bidder's Signature**

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

\_\_\_\_\_  
(Signature and Date)

\_\_\_\_\_  
(Typed or Printed Name)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Company Address)

**NON COLLUSIVE AFFIDAVIT**

State of \_\_\_\_\_)

ss

County of \_\_\_\_\_)

\_\_\_\_\_, being first sworn, deposes:

and says that he is \_\_\_\_\_ of \_\_\_\_\_  
(sole owner, partner, etc.) (Firm Name)

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

Signature of Bidder: \_\_\_\_\_  
(If Individual)

Signature of Bidder: \_\_\_\_\_  
(If Partnership)

Signature of Bidder: \_\_\_\_\_  
(If Corporation)

Subscribed and sworn to before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

\_\_\_\_\_, My commission expires \_\_\_\_\_, 20\_\_\_\_  
Notary Public

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**DISCLOSURE OF LOBBYING ACTIVITIES**

**Certification for Contracts, Grants, Loans  
and  
Cooperative Agreements**

The undersigned certifies, to the best of his or her knowledge and belief that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement.
  
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL "Disclosure Form to Report Lobbying," in accordance with its instructions.
  
3. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

Executed this \_\_\_\_\_ date of \_\_\_\_\_, 20\_\_\_\_\_.

By \_\_\_\_\_  
(signature)  
\_\_\_\_\_  
(type or print name)  
\_\_\_\_\_  
(title, if any)

Covered Action: \_\_\_\_\_  
(type and identify program, project or activity)

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

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

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

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

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

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

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

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

#### **10. Assurance of Completion**

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

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

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

[ ] (3) a 20 percent cash escrow;

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

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

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

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

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

#### **11. Preconstruction Conference (applicable to construction contracts)**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(k) The IHA [ ] does [ ] 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.

## SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

These conditions are a supplement to the HUD 5369 Instructions to Bidders and provide information to help clarify articles of that document. Any articles or paragraphs not specifically mentioned shall remain as printed in HUD 5369 without change.

1. Add to Paragraph 1, subparagraph b:
  - i. The bid documents required for the complete bid package shall consist of the following (all shall be signed originals):
    1. Bid Form
    2. Bid Bond
    3. Non Collusive Affidavit
    4. HUD Form 2530
    5. Disclosure of Lobbying Activities
    6. HUD 5369A
    7. MBE Forms
    8. Section 3 Forms
    9. Contract
    10. Wage Decision Form
2. Add to paragraph 2 subparagraph a
  - a. All questions are to be received in writing. Oral questions will not be accepted. Oral clarifications will not be provided.
  - b. Responses to all written questions will be posted as addendum on the CMHA website at [www.cintimha.com](http://www.cintimha.com).
3. Add to paragraph 4 subparagraph b.1.
  - b.1 Bidders shall indicate receipt of addendum on Bid Form. No other acknowledgement is required.
4. Add to paragraph 4,subparagraph a:
  - a. Ability to demonstrate a minimum of 7 years experience as a general contractor, performing work of like scope and material, for the period immediately preceding commencement of this CMHA Project for work of the size and type of this CMHA Project.

CMHA, in its sole and absolute discretion, will consider a request for a waiver of the 7 year experience requirement, if the contractor can establish that it has successfully undertaken and completed such a number of projects of similar scope and complexity in a lesser number of years so as to confer upon that contractor the same or more experience as other bidders have achieved in 7 or more years of experience.
5. Add to paragraph 5, subparagraph g:
  - g. No bid shall be withdrawn for a time period of two hundred and ten (210) calendar days from the bid opening. The foregoing limitation upon withdrawal of bids prior to opening shall be subject to the right of withdrawal of a bid made in

error as provided by Section 9.31, Ohio Revised Code, to the extent that such statutory provision is applicable.

6. Add to paragraph 10, subparagraphs a, b and c:

- a. All bid guarantees to be a minimum of 10% of the bid amount.
- b. All bid bonds be a shall be issued by Surety Companies licensed to issue bonds in the State of Ohio and listed in Federal Register Circular #570. The current power of attorney for the person who signs for any surety company shall be attached to such bid bond.
- c. The CMHA will have the right to retain the bid security of bidders to whom an award is being considered until either (a) the contract has been executed and bonds, if required, have been executed, (b) the specified time has elapsed so that bids may be withdrawn, or (c) all bids have been rejected.

7. Add paragraph 13. Minority Business Enterprise:

It is the goal of CMHA to obtain 20 percent minority business participation on this project.

8. Add paragraph 14. Lead Based Paint:

Any contractor awarded a contract for modernization shall comply with 24 CFR (Code of Federal Regulations) Part 35 prohibiting the use of lead based paint.

9. Add paragraph 15. Sales Tax Exemption:

The contractor shall take whatever steps required by law to relieve the owner from payment of excise tax and Ohio sales tax on materials, specialties and equipment for contractor to take any part of such action shall constitute the responsibility of the contractor to make such tax payments as within the scope of this contract. The owner is tax exempt, and upon request will provide a statement to that effect.

10. Add paragraph 16. Liquidated Damages

This project has liquidated damages, as specified in paragraph 16.1 of the CMHA General Terms and Conditions in this contract, which may be charged against contractors who do not complete work on time.

11. Add paragraph 17. Pre-Bid Conference

A pre-bid conference for all prospective contractors will be held as indicated on the Invitation of Bids. Questions will not be received or answered at the pre-bid conference. All questions are to be submitted in writing and responses will be posted as addendum to the CMHA website at [www.cintimha.com](http://www.cintimha.com).

Before presenting a bid, the contractor is advised to have visited the site and be thoroughly familiar with the scope of work and the conditions under which it will be executed. Failure to do so will not release contractor of his obligation to furnish all material and labor necessary to carry out all provisions of the contract.

12. Add paragraph 18. Definitions

Addenda are written or graphic instruments issued by the CMHA prior to the execution of the Contract, which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections.

A Bid is a complete and properly signed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be in Alternate Bids.

An Alternate Bid or Alternate is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted. Any alternates accepted by the owner shall be accepted in the order in which they are listed in the form of Bid.

A Unit Price is an amount stated in the Bid as a price per unit of measure for materials, equipment or services or a portion of the Work as described in the Bidding Documents, and to be utilized at CMHA's sole discretion.

13. Add paragraph 19. Form and Style of Bids

- a). Bids shall be submitted on the form included in the Bidding Documents.
- b). All blanks on the Bid Form shall be filled in by typewriter or manually in ink.
- c). Where so indicated by the makeup of the Bid Form, sums shall be expressed in both words and figures, and in case of discrepancy between the two, the amount written in words shall govern.
- d). The signer of the Bid must initial interlineations, alterations and erasures.
- e). All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change."
- f). Each copy of the Bid shall include the legal name of the Bidder and a statement that the Bidder is a sole proprietor, partnership, corporation or other legal entity. Each copy shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further give the state of incorporation. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.

END OF SECTION

**Previous Participation Certification**

U.S. Department of Housing And Urban Development  
Office of Housing /Federal Housing Commissioner

U.S. Department of Agriculture  
Farmers Home Administration

OMB Approval No. 2502-0118  
(exp 11/30/2012)

<b>Part I To be completed by Principals of Multifamily Projects. See Instructions Reason for Submitting Certification</b>			<b>For HUD HQ/FmHA use only</b>			
1. Agency Name and City where the application is filed			2. Project Name, Project Number. City and Zip Code contained in the application			
3. Loan or Contract Amount	4. Number of Units or Beds	5. Section of Act	6. Type of Project (check one)			
			<input type="checkbox"/> Existing <input type="checkbox"/> Rehabilitation <input type="checkbox"/> Proposed (New)			
<b>List of all proposed Principal Participants and attach organization chart for all organizations.</b> 7. Names and addresses of All Known Principals and Affiliates (people, business & organizations) proposing to participate in the project described above. (list names alphabetically; last, first, middle initial)			8. Role of Each Principal in Project	9. Expected % Owner Ship Interest in Project	10. Social Security or IRS Employer Number	

Certifications: I (meaning the individual who signs as well as the corporations, partnerships or other parties listed above who certify) hereby apply to HUD or USDA FmHA, as the case maybe, for approval to participate as a principal in the role and project listed above based upon my following previous participator record and this Certification. Verify that neither you n any of your principals or affiliates have ever been fou to be in noncompliance with any applicable fair housi and civil rights requirements in 24 CFR 5.105 (a). If you or any of your principals or affiliates have been found to be in noncompliance with any such requirements, attach a signed statement explaining the relevant facts, circumstances, and resolution, if any. I certify that all the statements made by me are true, complete and correct to the best of my knowledge and belief and are made in good faith, including the data contained in Schedule A and Exhibits signed by me at attached to this form. **Warning:** HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. I further certify that:

- insured project of HUD, USDA FmHA and State and local government housing finance agencies in which I have been or am now a principal.
- 2. For the period beginning 10 years prior to the date of this certification, and except as shown by me on the certification.
  - a. No mortgage on a project listed by me has ever been in default, assigned to the Government or foreclosed, nor has mortgage relief by the mortgagee been given;
  - b. I have not experienced defaults or noncompliances under any Conventional Contract or Turnkey Contract of Sale in connection with a public housing project;
  - c. To the best of my knowledge, there are no unresolved findings raised as a result of HUD audits, management reviews or other Governmental investigations concerning me or my projects;
  - d. There has not been a suspension or termination of payments under any HUD assistance contract in which I have had a legal or beneficial interest;
  - e. I have not been convicted of a felony and am not presently, to my knowledge, the subject of

- complaint or indictment charging a felony. (A felony is defined as any offense punishable by imprisonment for a term exceeding one year, but does not include any offense classified as a misdemeanor under the laws of a State and punishable by imprisonment of two years or less);
- f. I have not been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency.
- g. I have not defaulted on an obligation covered by a surety or performance bond and have not been the subject of a claim under an employee fidelity bond.
- 3. All the names of the parties, known to me to be principals in this project(s) in which I propose to participate, are listed above.
- 4. I am not a HUD/FmHA employee or a member of a HUD/FmHA employee's immediate household as defined in Standards of Ethical Conduct for Employees of the Executive Branch in 5 C.F.R. Part 2635 (57 FR 35006) and HUD's Standard of Conduct in 24 C.F.R. Part \_ and USDA's Standard of Conduct in 7 C.F.R. Part \_ Subpart B.

- 5. I am not a principal participant in an assisted or insured project as of this date on which construction has stopped for a period in excess of 20 days or which has been substantially completed for more than 90 days and documents for closing, including final cost certification have not been filed with HUD or FmHA
- 6. To my knowledge I have not been found by HUD or FmHA to be in noncompliance with any applicable fair housing and civil rights requirements in 24 CFR 5.10\_ (a).
- 7. I am not a Member of Congress or a Resident Commissioner nor otherwise prohibited or limited by law from contracting with the Government of the United States of America.
- 8. Statements above (if any) to which I cannot certify have been deleted by striking through the words with a pen. I have initialed each deletion (if any) and have attached a true and accurate signed statement (if applicable) to explain the facts and circumstances which I think helps to qualify me as a responsible principal for participation in this project.

Schedule A contains a listing of every assisted or

Typed or Printed Name of Principal	Signature of Principal	Certification Date (mm/dd/yyyy)	Area Code and Telephone No.
This form was prepared by (Please print name)			Area Code and Telephone No.

**Schedule A: List of Previous Projects and Section 8 Contracts.** By my name below is the complete list of my previous projects and my participation history as a principal; in Multifamily Housing programs of HUD/FmHA, State, and Local Housing Finance Agencies. **Note:** Read and follow the instruction sheet carefully. Abbreviate where possible. Make full disclosure. Add extra sheets if you need more space. Double check for accuracy. If you have no previous projects write, by your name, "**No previous participation, First Experience.**"

1. List each Principal's Name (list in alphabetical order, last name first)	2. List Previous Projects (give the I.D. number, project name, city location, & government agency involved if other than HUD)	3. List Principals' Role(s) (indicate dates participated, and if fee or identity of interest participant)	4. Status of Loan (current, defaulted, assigned, or foreclosed)	5. Was Project ever in Default, during your participation?		6. Last Mgmt. and/or Physical Inspctn Rating and Date
				Yes	No If "Yes," explain	

**Part II – For HUD Internal Processing Only**

Received and checked by me for accuracy and completeness; recommend approval or transferral to Headquarters as checked below:

Date (mm/dd/yyyy)	Telephone Number and Area Code	<input type="checkbox"/> A. No adverse information	<input type="checkbox"/> C. Disclosure or Certification problem
Staff	Processing and Control	<input type="checkbox"/> B. Name match in System	<input type="checkbox"/> D. Other, our memorandum is attached
Supervisor	Director of Housing/Director, Multifamily Division	Approved <input type="checkbox"/> Yes <input type="checkbox"/> No	Date (mm/dd/yyyy)



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

Carefully read these instructions and the applicable regulations. A copy of those regulations published at 24 C.F.R. 200.210 to 200.245 can be obtained from the Multifamily Housing Representative at any HUD Office. Type or print neatly in ink when filling out this form. Mark answers in all blocks of the form. If the form is not filled completely, it will delay approval of your application.

Attach extra sheets as you need them. Be sure to indicate "Continued on Attachments" wherever appropriate. Sign each additional page that you attach if it refers to you or your record. If you have many projects to list (20 or more) and expect to be applying frequently for participation in HUD projects, you should consider filing a Master List. See Master List instructions below under "Instructions for Completing Schedule A."

**Carefully read the certification before you sign it.** Any questions regarding the form or how to complete it can be answered by your HUD Office Multifamily Housing Representative.

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

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

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

## Who Must Sign and File Form HUD-2530:

Form HUD-2530 must be completed and signed by all parties applying to become principal participants in HUD multifamily housing projects, including those who have no previous participation. The form must be signed and filed by all principals and their affiliates who propose participating in the HUD project. Use a separate form for each role in the project unless there is an identity of interest.

Principals include all individuals, joint ventures, partnerships, corporations, trusts, nonprofit organizations, any other public or private entity, that will participate in the proposed project as a sponsor, owner, prime contractor, turnkey developer, managing agent, nursing home administrator or operator, packager, or consultant. Architects and attorneys who have any interest in the project other than an arms length fee arrangement for professional services are also considered principals by HUD.

In the case of partnerships, all general partners regardless of their percentage interest and limited partners having a 25 percent or more interest in the partnership are considered principals. In the case of public or private corporations or governmental entities, principals include the president, vice president, secretary, treasurer and all other executive officers who are directly responsible to the board of directors, or any equivalent governing body, as well as all directors and each stockholder having a 10 percent or more interest in the corporation.

Affiliates are defined as any person or business concern that directly or indirectly controls the policy of a principal or has the power to do so. A holding or parent corporation would be an example of an affiliate if one of its subsidiaries is a principal.

**Exception for Corporations** – All principals and affiliates must personally sign the certificate except in the following situation. When a corporation is a principal, all of its officers, directors, trustees and stockholders with 10 percent or more of the common (voting) stock need not sign personally if they all have the same record to report. The officer who is authorized to sign for the corporation or agency will list the names and title of those who elect not to sign. However, any person who has a record of participation in HUD projects that is separate from that of his or her organization must report that activity on this form and sign his or her name. The objective is full disclosure.

**Exemptions** – The names of the following parties do not need to be listed on form HUD-2530: Public Housing Agencies, tenants, owners of less than five condominium or cooperative units and all others whose interests were acquired by inheritance or court order.

**Where and When Form HUD-2530 Must Be Filed:** The original of this form must be submitted to the HUD Office where your project application will be processed at the same time you file your initial project application. This form must be filed with applications for projects, or when otherwise required in the situations listed below:

- Projects to be financed with mortgages insured under the National Housing Act (FHA).
- Projects to be financed according to Section 202 of the Housing Act of 1959 (Elderly and Handicapped).
- Projects in which 20 percent or more of the units are to receive a subsidy as described in 24 C.F.R. 200.213.
- Purchase of a project subject to a mortgage insured or held by the Secretary of HUD.

Purchase of a Secretary-owned project. Proposed substitution or addition of a principal, or principal participation in a different capacity from that previously approved for the same project.

Proposed acquisition by an existing limited partner of an additional interest in a project resulting in a total interest of 25 percent or more, or proposed acquisition by a corporate stockholder of an additional interest in a project resulting in a total interest of 10 percent or more.

Projects with U.S.D.A., Farmers Home Administration, or with state or local government housing finance agencies that include rental assistance under Section 8 of the Housing Act of 1937. For projects of this type, form HUD-2530 should be filed with the appropriate applications directly to those agencies.

**Review of Adverse Determination:** If approval of your participation in a HUD project is denied, withheld, or conditionally granted on the basis of your record of previous participation, you will be notified by the HUD Office. You may request reconsideration by the HUD Review Committee. Alternatively, you may request a hearing before a Hearing Officer. Either request must be made in writing within 30 days from your receipt of the notice of determination.

If you do request re consideration by the Review Committee and the reconsideration results in an adverse determination, you may then request a hearing before a Hearing Officer. The Hearing Officer will issue a report to the Review Committee. You will be notified of the final ruling by certified mail.

## Specific Line Instructions:

**Reason for submitting** this Certification: e.g., refinance, management, change in ownership, transfer of physical assets, etc.

**Block 1:** Fill in the name of the agency to which you are applying. For example: HUD Office, Farmers Home Administration District office, or the name of a State or local housing finance agency. Below that, fill in the name of the city where the office is located.

**Block 2:** Fill in the name of the project, such as "Greenwood Apts." If the name has not yet been selected, write "Name unknown." Below that, enter the HUD contract or project identification number, the Farmers Home Administration project number, or the State or local housing finance agency project or contract number. Include **all** project or contract identification numbers that are relevant to the project. Also enter the name of the city in which the project is located, and the ZIP Code of the site location.

**Block 3:** Fill in the dollar amount requested in the proposed mortgage, or the annual amount of rental assistance requested.

**Block 4:** Fill in the number of apartment units proposed, such as "40 units." For hospital projects or nursing homes, fill in the number of beds proposed, such as "100 beds."

**Block 5:** Fill in the section of the Housing Act under which the application is filed.

**Block 7:** Definitions of all those who are considered principals and affiliates are given above in the section titled "Who Must Sign and File...."

**Block 8:** Beside the name of each principal, fill in the role that each will perform. The following are possible roles that the principals may perform: Sponsor, Owner, Prime Contractor, Turnkey Developer, Managing Agent, Packager, Consultant, General Partner, Limited Partner (include percentage), Executive Officer, Director, Trustee, Major Stockholder, or Nursing Home Administrator. Beside the name of each affiliate, write the name of the person or firm of affiliation, such as "Affiliate of Smith Construction Co."

**Block 9:** Fill in the percentage of ownership in the proposed project that each principal is expected to have. Also specify if the participant is a general or limited partner. Beside the name of those parties who will not be owners, write "None."

**Block 10:** Fill in the Social Security Number or IRS employer number of every party listed, including affiliates.

**Instructions for Completing Schedule A:**

Be sure that Schedule A is filled-in completely, accurately and the certification is properly dated and signed, because it will serve as a legal record of your previous experience. All Multifamily Housing projects involving HUD/FmHA, and State and local Housing Finance Agencies in which you have previously participated **must** be listed. Applicants are reminded that previous participation pertains to the individual principal within an entity as well as the entity itself. A newly formed company may not have previous participation, but the principals within the company may have had extensive participation and disclosure of that activity is required. To avoid duplication of disclosure, list the project and then the entities or individuals involved in that project. You may use the name or a number code to denote the entity or individual that participated. The number code can then be used in column 3 to denote role.

**Column 2** List the project or contract identification of each previous project. **All previous projects must be included or your certification cannot be processed.** Include the name of all projects, the cities in which they are located and the government agency (HUD, USDA-FmHA or State or local housing finance agency) that was involved. At the end of your list of projects, draw a straight line across the page to separate your record of projects from that of others signing this form who have a different record to report.

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

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

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

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

**Column 3** List the role(s) of your participation, dates participated, and if fee or identity of interest with owners.

**Column 4** Indicate the current status of the loan. Except for current loans, the date associated with the status is required. Loans under a workout arrangement are considered assigned. An explanation of the circumstances surrounding the status is required for all non-current loans.

**Column 5** Explain any project defaults during your participation.

**Column 6** Enter the latest Management and/ or Physical Inspection Review rating. If either of the ratings are below average, the report issued by HUD is required to be submitted along with the applicant's explanation of the circumstances surrounding the rating.

**No Previous Record:** Even if you have never participated in a HUD project before, you must complete form HUD-2530. If you have no record of previous projects to list, fill in your name in column 1 of Schedule A, and write across the form by your name – "No previous participation, first experience."

**Master List System:** If you expect to file this form frequently and you have a long list of previous projects to report on Schedule A, you should consider filing a Master List. By doing so, you will avoid having to list all your previous projects each time you file a new application.

To make a Master List, use form HUD2530. On page 1, in block 1, enter (in capital letters) the words "Master List." In blocks 2 through 6 enter in "N.A." meaning Not Applicable. Complete blocks 7 through 10.

In the box below the statement of certification, fill in the names of all parties who wish to file a Master List together (type or print neatly).

Beside each name, every party must sign the form. In the box titled "Proposed Role," fill in "N.A." Also, fill in the date you sign the form

and provide a telephone number where you can be reached during the day. No determinations will be made on these certificates.

File one copy of the Master List with each HUD Office where you do business and mail one copy to the following address:

**HUD-2530 Master List  
Participation and Compliance  
Division – Housing  
U.S. Department of Housing and  
Urban Development 451 Seventh  
Street, S.W. Washington, D.C. 20410**

Once you have filed a Master List, you do not need to complete Schedule A when you submit form HUD-2530. Instead, write the name of the participant in column 1 of Schedule A and beside that write "See Master List on file." Also give the date that appears on the Master List that you submitted. Below that, report all changes and additions that have occurred since that date. Be sure to include any mortgage defaults, assignments or foreclosures not listed previously.

**If you have withdrawn from a project** since the date the Master List was filed, be sure to name the project. Give the project identification number, the month and year your participation began and/or ended.

**Certification:**

After you have completed all other parts of form HUD-2530, including Schedule A, read the Certification carefully. In the box below the statement of certification, fill in the name of all principals and affiliates (type or print neatly). Beside the name of each principal and affiliate, each party must sign the form, with the exception in some cases of individuals associated with a corporation (see "Exception for Corporations" in the section of the instructions titled "Who Must Sign and File form

HUD-2530"). Beside each signature, fill in the role of each party (the same as shown in block 8). In addition, each person who signs the form should fill in the date that he or she signs, as well as providing a telephone number where he or she can be reached during business hours. By providing a telephone number where you can be reached, you will help to prevent any possible delay caused by mailing and processing time in the event HUD has any questions.

If you cannot certify and sign the certification as it is printed because some statements do not correctly describe your record, use a pen and strike through those parts that differ with your record, then sign and certify to that remaining part which does describe you or your record.

Attach a signed letter, note or an explanation of the items you have struck out on the certification and report the facts of your correct record. Item A(2)(e) relates to felony convictions within the past 10 years. If you have been convicted of a felony within 10 years, strike out all of A(2)(e) on the certificate and attach your statement giving your explanation. A felony conviction will not necessarily cause your participation to be disapproved unless there is a criminal record or other evidence that your previous conduct or method of doing business has been such that your participation in the project would make it an unacceptable risk from the underwriting standpoint of an insurer, lender or governmental agency.



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## **1. ARTICLE I CONTRACTOR'S RESPONSIBILITIES**

- 1.1.** The Contractor shall perform the Work in a workmanlike manner, consistent with the standards of skill and care exercised by entities licensed to perform (where required by Applicable Law) and regularly performing comparable work in the same or similar locality under the same or similar circumstances.
  - 1.1.1.** Furthermore, Contractor agrees to adhere to CMHA's quality standards as outlined in the Contract Documents; this includes, but is not necessary limited to, CMHA's Gold Standards of performance.
- 1.2.** The Contractor shall perform the Work in accordance with the Contract Documents.
- 1.3.** The Contractor shall furnish all labor, services, materials, tools, equipment, superintendence, and transportation necessary for performance of the Work.
  - 1.3.1.** Contractor shall also furnish all necessary water, heat, light, and power not made available to the Contractor by CMHA.
- 1.4.** The Contractor shall perform on the site and with its own organization, work equivalent to at least {12%} (unless otherwise indicated) of the total amount of work to be performed under the order.
  - 1.4.1.** This percentage may reduce by a supplemental agreement to this Construction Contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be the advantage of CMHA.
- 1.5.** At all times during performance of this Construction 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 whose qualifications and experience are satisfactory to CMHA and has authority to act on behalf of the Contractor.
- 1.6.** The Contractor shall be responsible for all damages, including, but not limited to, damages to persons or property, that occur as a result of the Contractor's breach of this Construction Contract, fault or negligence.
  - 1.6.1.** The Contractor shall take proper safety and health precautions to protect the Work, the workers, the public, and the property of others.
  - 1.6.2.** The Contractor shall hold and save CMHA, including CMHA's officers, employees, consultants, and agents, free and harmless from damages, claims, demands, suits and liabilities of any nature, including but not limited to, all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, caused by the Contractor's breach of this Construction Contract, fault, negligence or performance of the Work.
  - 1.6.3.** The Contractor shall also be responsible for all storage, protection and cleaning of materials delivered and Work performed on the Project, until Contract Completion and acceptance of the entire Project by CMHA, except for any completed unit of Work which may have not been accepted under the Construction Contract.
- 1.7.** The Contractor shall lay out the work from base lines and bench marks indicated in the drawings and be responsible for all lines, levels, and measurements of all work executed under the Contract Documents.
  - 1.7.1.** The Contractor shall verify the lines, bench marks, figures and dimensions indicated in the Contract Documents before laying out the work and will be held responsible for any resulting errors resulting from its failure to do so.
- 1.8.** The Contractor shall confine all operations (including storage of materials) on CMHA's premises to areas authorized or approved by the Contracting Officer.
- 1.9.** The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials.
  - 1.9.1.** After completing the Work and before final inspection, the Contractor shall:
    - A.** Remove from the premises all scaffolding, equipment, tools, materials (including rejected materials) that are not the property of CMHA and rubbish caused by its work;
    - B.** Leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer;
    - C.** Perform all specified tests; and
    - D.** Deliver the installation in complete and operating conditions.
- 1.10.** The Contractor must perform the Work so as to not interfere with, disturb, hinder, or delay the services of separate consultants or the work of separate contractors.



- 1.10.1.** The Contractor must cooperate and coordinate fully with all separate consultants and separate contractors and must freely share all of the Contractor's Project-related information with them to facilitate the timely and proper performance of the Work and of the services and work of the separate consultants and separate contractors.
- 1.10.2.** The Contractor must afford every separate consultant and separate Contractor proper and safe access to the Site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of their services and work.
- 1.10.3.** If the Contractor damages the property or work of any separate consultant or separate Contractor caused by Contractor or by failure to perform the Work with due diligence, delays, interferes with, hinders, or disrupts the services of any separate consultant or separate Contractor who suffers additional expense and damage as a result, the Contractor is responsible for that damage, injury, or expense.
- 1.10.4.** The intent of 1.10 is to benefit any separate consultants and separate contractors and to demonstrate that the separate consultants or separate contractors are intended third-party beneficiaries of Contractor's obligations under the Contract.
- 1.11.** If the proper execution or result of any part of the Work depends upon work performed or services provided by CMHA, a separate consultant, or a separate Contractor, the Contractor must inspect that other work and appropriate instruments of service, and promptly report to CMHA in writing any defects or deficiencies in that other work or services that render it unavailable or unsuitable for the proper execution and results of the Work.
  - 1.11.1.** The Contractor's failure to inspect and promptly report any issues in writing will constitute an acceptance of the other work and services as fit and proper for integration with the Contractor's Work unless in the opinion of CMHA's Project Manager and/or Construction Contract Administrator the defects and deficiencies in the other work and appropriate instruments of service were not reasonably discoverable at the time of the Contractor's inspection.
- 1.12.** The Contractor shall not delay the Work on account of any claim, dispute, or action between the Contractor and CMHA or the Contractor a Separate Consultant or Separate Contractor.
- 1.13.** The Contractor shall complete all portions of Work in the sequence in the Construction Progress Schedule.
- 1.14.** The Contractor shall develop and keep a Construction Progress Schedule and prepare and keep current a schedule of submittals that is coordinated with the Construction Progress Schedule for CMHA's acceptance.
- 1.15.** The Project's regular work hours shall be between 8:00 am and 5:00 pm, or as determined and approved by CMHA.
  - 1.15.1.** The Contractor may modify the regular work hours only if Contractor receives written authorization from CMHA's Project Manager and/or Construction Contract Administrator.
- 1.16.** The Contractor shall coordinate the Work with the activities and responsibilities of the Project's architect or engineer ("A/E"), CMHA and Contractor's surety to meet the contractual dates for Substantial Completion and Contract Completion.
- 1.17.** The Contractor shall remove any snow and ice as may be required for reasonably safe access to the Project, including, without limitation, building entries, driveways, parking lots, and sidewalks.
- 1.18.** The Contractor shall keep a daily log containing a record of weather, number of workers on Site for the Contractor, identification of equipment, Work accomplished, problems encountered and other similar relevant data.
- 1.19.** The Contractor hereby represents and agrees that, prior to submitting its bid or quote to perform the Work on the Project, it has had a competent person carefully and diligently review each part of the Contract Documents, including the Divisions of the Specifications and parts of the Drawings that are not directly applicable to the Work.
  - 1.19.1.** Contractor further represents and agrees that, based upon its careful and diligent review of the Contract Documents, that it is not aware of any conflicts, inconsistencies, errors, or omissions in the Contract Documents for which it has not notified CMHA or the A/E.
  - 1.19.2.** If there are any such conflicts, inconsistencies, errors, or omissions in the Contract Documents, the Contractor will:
    - A.** Provide the labor, equipment, or materials of the better quality or greater quantity of Work; and/or
    - B.** Comply with the more stringent requirements.

- 1.19.3.** The Contractor will not be entitled to any additional compensation for any conflicts, inconsistencies, errors, or omissions that would have been discovered by such careful and diligent review.
- 1.20.** The Contractor hereby represents and agrees that the Project is a public project involving public funds.
  - 1.20.1.** The Contractor further understands that CMHA expects and requires that each Contractor adhere to the highest ethical and performance standards.
  - 1.20.2.** Accordingly, Contractor hereby pledges and agrees that:
    - A.** It will act at all times with absolute integrity and truthfulness in its dealings with CMHA and the A/E;
    - B.** It will use its best efforts to cooperate with CMHA and the A/E and all other contractors and consultants on the Project and at all times will act with professionalism and dignity in its dealings with CMHA, the A/E, and other contractors;
    - C.** It will assign only competent supervisors and workers to the Project, each of whom is fully qualified to perform the tasks that are assigned to him/her; and
    - D.** It has read, understands and will comply with the terms of the Contract Documents.
- 1.21. Emergency**
  - 1.21.1.** In the event of an emergency affecting the safety of the Project, other property, or individuals, the Contractor, without special instructions or authorization, shall act to prevent the threatened damage, injury, or loss.
  - 1.21.2.** If the Contractor believes that it is entitled to an adjustment of the Contract Sum or Contract Times, or both, on account of its actions in response to any emergency, the Contractor may request a Change Order by giving written notice no later than 48-hours after the emergency.

## **2. ARTICLE II HOUSING AUTHORITY RIGHTS AND RESPONSIBILITIES**

- 2.1.** CMHA shall designate a Project Manager and/or Construction Contract Administrator for the Project.
- 2.2.** CMHA shall have access to the Work and Site at all times, whether the Project is in preparation or progress.
- 2.3.** CMHA is not responsible for construction means, methods, manners, techniques, sequences, procedures, or for safety precautions and programs in connection with the Work, or for the Contractor's failure to carry out the Work in conformity with the Contract Documents.
- 2.4.** Upon the date indicated in the Notice to Proceed, CMHA shall provide the Site to the Contractor in a condition to permit the Contractor to perform the Work.
  - 2.4.1.** If the Site provided by CMHA is not in a condition to permit the Contractor to perform the Work, Contractor shall notify CMHA's Project Manager and/or Construction Contract Administrator within 48 hours of the Notice to Proceed and identify the conditions which are preventing Contractor from performing the Work.

## **3. ARTICLE III A/E'S DUTY, RESPONSIBILITY AND AUTHORITY**

- 3.1.** The A/E for this Contract and any successor shall be designated in writing by CMHA.
- 3.2.** The A/E's duties and responsibilities may include, but shall not be limited to:
  - 3.2.1.** Attend and conduct the Construction Progress Meetings.
  - 3.2.2.** Making periodic visits to the work site and on the basis of his/her on-site inspections, issuing written reports to CMHA which shall include all observed deficiencies.
    - A.** The A/E shall electronically send a copy of the report to CMHA and to the Contractor's designated representative at the site.
  - 3.2.3.** Making modifications in drawings and technical specifications and assisting the Contracting Officer in the preparation of Change Orders and other Contract Modifications for issuance to the Contracting Officer.
  - 3.2.4.** The A/E may authorize minor changes or alterations in the Work that are consistent with the intent of the Contract Documents and do not involve adjustment of the Contract Sum or Contract Times, or both.
    - A.** The A/E has no authority to authorize the Contractor to perform additional or extra Work for which the Contractor may seek adjustment of the Contract Sum or the Contract Time, or both.
  - 3.2.5.** Reviewing and making recommendations with respect to:

- A. The Contractor's Construction Progress Schedules;
- B. The Contractor's shop and detailed drawings; and
- C. The Contractor's price breakdown and progress payment estimates.

**3.2.6.** Assisting in inspections, signing Certificates of Substantial Completion and Contract Completion, and making recommendations with respect to acceptance of work completed under the Contract; and

**3.2.7.** Approve or certify applicable forms required under the Contract Documents.

### **3.3. Site Visits and Observation**

**3.3.1.** The A/E shall notify, advise, and consult with CMHA and protect CMHA against Defective Work throughout completion of the Project, which includes the Correction Period, and for such time period CMHA may extend A/E's services.

A. The A/E should designate a field representative, subject to CMHA's approval, to attend meetings, to observe and check the progress and quality of the Work, and to take action as necessary or appropriate to achieve conformity with the Contract Documents.

B. The A/E shall have its consultants attend to the Project at intervals required by its agreement or required by CMHA.

**3.3.2.** The A/E is authorized to disapprove or reject Defective Work. The A/E shall immediately notify CMHA any time the A/E disapproves or rejects an item of Work.

**3.3.3.** The A/E is not responsible for construction means, methods, manners, techniques, sequences, procedures, or for work safety precautions and programs in connection with the Work, or for the Contractor's failure to carry out the Work in conformity with the Contract Documents.

### **3.4. Testing and Inspection Services**

**3.4.1.** Unless otherwise specified in the Contract Documents, CMHA shall apply for, secure, and pay for the costs of structural testing and special inspections under the Ohio Building Code; testing including geotechnical analysis, environmental testing and analysis, concrete, masonry, structural steel, reinforcing steel, welding, bolts, steel connections, HVAC systems and controls, plumbing and piping, air, and water balancing and testing, or other testing, or approvals required by Applicable Law.

### **3.5. A/E Review and Approval of Work**

**3.5.1.** Any information the Contractor submits to the A/E is for the sole purpose of determining whether the Work and information is generally consistent with the Contract's intent, and will not relieve the Contractor of its sole responsibility for the performance, preparation, completeness, and accuracy of the Work and information.

**3.5.2.** By reviewing information submitted by the Contractor, A/E is not taking on responsibility for construction means, methods, manners, techniques, sequences, procedures, or for work safety precautions and programs in connection with the Work.

### **3.6. Limitation of A/E's Authority**

**3.6.1.** The A/E shall serve as the technical representative for CMHA with respect to architectural, engineering, and design matters related to the Work performed under the Contract.

**3.6.2.** Subject to the Contractor's responsibility under ARTICLE I, the A/E may provide direction on Contract performance.

**3.6.3.** Such direction shall be within the scope of the Contract and may not be of a nature which:

- A. Institutes additional work outside of the scope of the Contract;
- B. Constitutes a change;
- C. Causes an increase or decrease in the cost of the Contract;
- D. Alters the Construction Progress Schedule;
- E. Changes any of the other express terms or conditions of the Contract;
- F. Accepts any defective or non-conforming services, Work, or vendor-furnished items;
- G. Makes any settlements on CMHA's behalf;
- H. Assumes any responsibilities of the Contractor or Subcontractors; or
- I. Binds CMHA to any authorizations under, modifications of, or amendments to the Contract Documents other than as expressly provided A/E'S DUTY, RESPONSIBILITY AND AUTHORITY.

- 3.7.** The Contractor acknowledges and agrees that CMHA's legal counsel may from time to time provide legal services to the Project and that in doing so may communicate with the A/E, as CMHA's representative on the Project.
- 3.7.1.** The Contractor agrees that such communications will be privileged communications and, if there is a Claim contemplated or pending, any written communications will be protected by the attorney client privilege and considered confidential work product.

## **4. ARTICLE IV PRECONSTRUCTION ACTIVITIES**

### **4.1. Pre-construction Conference**

- 4.1.1.** Within ten (10) calendar days, unless otherwise indicated by CMHA, of Contract execution, and prior to the commencement of work, the Contractor shall attend a preconstruction conference with CMHA representatives; CMHA's A/E, and other interested parties convened by CMHA.
- A.** The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the Contract.
- B.** CMHA will provide the Contractor with the date, time, and place of the conference.

### **4.2. Certificate of Insurance**

- 4.2.1.** Before commencing work, the Contractor and each Subcontractor shall furnish CMHA with certificates of insurance showing the minimum insurance coverage is in force and will insure all operations under the Contract.

### **4.3. Building and Trade Permits, Licenses and Codes**

- 4.3.1.** The Contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules, and regulations.
- A.** Notwithstanding the requirement of the Contractor to comply with the drawings and specifications in the Contract, all Work installed shall comply with all applicable laws, ordinances, codes, rules, and regulations, as may be amended by any waivers.
- B.** Before installing the Work, the Contractor shall examine all drawings and the specifications for compliance with applicable laws, ordinances, codes, rules, and regulations bearing on the work and shall immediately report, in writing, any discrepancy it may discover to the CMHA's Project Manager and/or Construction Contract Administrator and the A/E.
- i.** If required by any governing jurisdiction, CMHA will modify the Contract by change order so that the Work on the Project will conform to the applicable laws, ordinances, codes, rules, and regulations.
- C.** If the Contractor installs any Work that does not comply with all applicable laws, ordinances, codes, rules, and regulations before providing notice hereunder to CMHA and receiving direction from CMHA, Contractor shall be responsible for all costs resulting from any removal, demolishing, and disposing of any Work that must be replaced or repaired.
- 4.3.2.** Notwithstanding the provisions below, the Contractor shall secure and pay for all permits, fees, and licenses necessary for the proper execution and completion of Work.
- A.** Where CMHA 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.

### **4.4. Plan Approval and Permits**

- 4.4.1.** The A/E shall facilitate the required structural, plumbing, HVAC, and electrical plan reviews during the design phase, as required by the governing jurisdiction for securing an overall building permit to start construction.
- 4.4.2.** The Contractor shall schedule and attend all intermediate and final inspections required for any permit applicable to the Work or any governing jurisdiction.
- 4.4.3.** The Contractor shall schedule with the State Fire Marshal or local fire authority for the life safety inspection for occupancy permits.
- 4.4.4.** The Contractor shall give the A/E and CMHA reasonable notice of the dates and times for any inspections.

- A. The Contractor shall pay for all initial inspections and re-inspections required as a result of Contractor's failure to receive approval for its Work.

#### **4.5. Trade Permits and Licenses**

- 4.5.1. The Contractor shall secure and pay the fees for any permit, inspection, or license applicable to the Contractor's particular trade.
- 4.5.2. Local Permits:
  - A. The Contractor shall secure and pay the fees for any permits, inspections, licenses, capacity charges, or tap fees required by local authorities having jurisdiction over the Project.
    - i. The Contractor shall give the A/E and CMHA reasonable notice of the date(s) arranged for inspections.
- 4.5.3. [National Pollutant Discharge Elimination System \(NPDES\) Storm Water General Permit](#):
  - A. The A/E shall secure the NPDES general permit by submitting a [Notice of Intent \(NOI\)](#) application form to the Ohio Environmental Protection Agency at least 45 days prior to the start of construction.
    - i. The Contractor shall be a co-permittee, if required under Applicable Law.
  - B. The A/E shall prepare and certify the storm water pollution prevention plan to provide sedimentation and erosion controls at the Project. The A/E shall prepare and process the required [Notice of Termination \(NOT\)](#) prior to Contract Completion.

### **5. ARTICLE V CONSTRUCTION REQUIREMENTS**

#### **5.1. Commencement of Work on Site**

- 5.1.1. Unless CMHA agrees otherwise in writing, the Construction Stage will commence with CMHA issuing the Notice to Proceed and will terminate upon CMHA issuing a Certificate of Contract Completion to the Contractor. The Certificate of Contract Completion will be issued in accordance with the requirements of the Contract Documents and will not occur until after CMHA issues a Certificate of Substantial Completion, a Certificate of Occupancy is issued for the Project, and the Contractor has completed all items on the punch list delivered to Contractor by CMHA as provided in Article IX. The time period for Contract Completion is provided in Section 9.8.
- 5.1.2. Notice to Proceed:
  - A. The Contractor shall begin work upon the date indicated in a written Notice to Proceed from CMHA or its designee.
    - i. The Contractor shall not begin work prior to receiving such notice.
  - B. Typically, the Notice to Proceed shall be issued within 180 days of CMHA Board of Commissioner Approval.
  - C. If the Notice to Proceed is not issued within 180 days of CMHA Board of Commissioner Approval, CMHA may, in its sole discretion, terminate the Contract without recourse from the Contractor.

#### **5.2. Environmental Controls**

- 5.2.1. The Contractor shall protect its Work and materials from damage from water, moisture, and other weather, including damage from water run-off from other property or structures, and damage from heat, cold, and humidity.
- 5.2.2. Contractor is not authorized to use permanent HVAC system without express written authorization from CMHA.
- 5.2.3. Until the permanent HVAC system is complete and available for use:
  - A. The Contractor shall make arrangements and pay for installation and maintenance of temporary heating, cooling and ventilating systems; and
  - B. The Contractor shall pay the costs incurred in operating the temporary heating, cooling and ventilating systems.
- 5.2.4. When the permanent HVAC system is complete and available for use:
  - A. The Contractor shall start up and maintain operation of the permanent HVAC system, including filters, and promptly remove temporary heating, cooling and ventilating systems.
  - B. If the Project consists entirely of new construction, the Contractor shall pay the costs of energy consumed in operating the permanent HVAC system until Substantial Completion.

**5.2.5.** From the date of Substantial Completion, CMHA shall pay the cost of operating the permanent HVAC system for the occupied portion of the Project.

**5.2.6.** Use of the permanent HVAC system during construction shall not change, modify or reduce the Contractor's warranty and service obligations under the Contract Documents.

### **5.3. Construction Procedures**

**5.3.1.** The Contractor is solely responsible for and has control over all construction means, methods, techniques, sequences, and procedures, for safety precautions and programs in connection with the Work, and for coordinating all portions of the Work.

**5.3.2.** If the Contract Documents give instructions that affect construction means, methods, manners, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety of them and, except as expressly stated herein, be fully and solely responsible for the jobsite safety of the means, manners, methods, techniques, sequences, or procedures.

**5.3.3.** If the Contractor determines that the means, methods, manners, techniques, sequences, or procedures specified in the Contract Documents may not be safe, the Contractor shall give timely written notice to CMHA.

**A.** The Contractor shall not proceed with that portion of the Work without further written instructions from CMHA.

**5.3.4.** Additional Contractor Responsibilities:

**A.** The Contractor shall lay out and coordinate all lines, levels, elevations, and measurements for all of the Work, coordinate and verify existing conditions, and notify the A/E and CMHA of discrepancies and conflicts before proceeding with installation or excavation.

**B.** The Contractor shall perform all cutting, fitting, or patching required for the Work and shall not endanger the Project by cutting, excavating, or otherwise altering the Project or any part of it.

**C.** If the Design requires sleeves for completing the specified Work, the Contractor and all Subcontractors shall coordinate to furnish and install the sleeves.

**i.** The Contractors are responsible for the exact location of and size of all holes and openings required to be formed or built for the Work.

**D.** The Contractor's patching shall match and blend with the existing adjacent surfaces.

**E.** In addition to the items herein, The Contractor is responsible for all items in REF\_Ref449941734 \h CONTRACTOR'S RESPONSIBILITIES.

### **5.4. Utilities**

#### **5.4.1. Availability and Use of Utilities**

**A.** If CMHA has existing access to utilities, CMHA shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and service as specified herein so long as the utility use does not interfere with CMHA's operations.

**i.** 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 CMHA or where the utility is produced by CMHA, at reasonable rates as determined by CMHA.

**ii.** The Contractor shall carefully conserve any utilities furnished by CMHA without charge.

**B.** The Contractor, at its expense and in a manner satisfactory to CMHA, 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.

**i.** Before final acceptance of the Work by CMHA, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

**5.4.2.** The Contractor shall comply with the requirement of the Ohio Revised Code, including ORC.

**A.** In addition, before starting excavation or trenching, the Contractor shall determine the location of any underground utilities and notify any public authority or utility having jurisdiction over the Project and secure any required approval.

**5.4.3.** The Contractor shall give CMHA at least two (2) business days advance notice of excavation of underground utilities registered with the Ohio Underground Utility Protection Services ("OUPS") and underground utilities shown on the drawings and Specifications who are not registered member of OUPS.

- A. The Owner of an underground utility is required within 48 hours' notice to stake, mark, or otherwise designate the location for its utilities in the construction area together with its approximate depth.
- B. In the event that any underground utility owner fails to timely perform, the Contractor shall notify the A/E and contact CMHA regarding the failure of the underground utility to timely perform its work.

**5.4.4. Water and Drainage**

- A. The Contractor shall provide water necessary for the Work until the permanent plumbing system is available for use.
- B. The Contractor shall provide all temporary drainage and all dewatering necessary for the Work and shall employ pumps, trenches, drains, sumps, and any other equipment necessary or required to provide satisfactory working conditions for the protection, execution, and completion of the Project. The Contractor shall be responsible for determining the specific means and methods to be used for dewatering.
- C. The Contractor shall make arrangements and pay for installation and maintenance of temporary plumbing systems until the permanent plumbing system is available for use.
- D. When the permanent plumbing system is complete and available for use:
  - i. The Contractor shall start up and maintain operation of the permanent plumbing systems, and make arrangements and pay for removal of temporary plumbing systems.
  - ii. If the Project consists entirely of new construction, the Contractor shall pay the costs of water consumed and sewage charges until Substantial Completion.
  - iii. If the Project is a renovation of an existing building or structure, addition(s) to an existing building or structure, or any combination of new construction and renovation work that does not allow separate metering of utilities, CMHA shall pay the costs of water consumed and sewage charges.
    - (a) If separate metering of utilities is available, the Contractor and CMHA will pay the costs of their respective use.
- E. After the date of Substantial Completion, CMHA shall pay the costs of water consumed and sewage charges for the occupied portion of the Project.
- F. Use of the permanent plumbing system during construction shall not change, modify, or reduce the Contractor's warranty and service obligations under the Contract Documents.

**5.4.5. Electric Service**

- A. The Contractor shall provide temporary light and power; pay the charges for temporary electric service, installation, and removal if required.
- B. If the Project consists entirely of new construction, the Contractor shall pay the cost of energy consumed until Substantial Completion.
- C. If the Project is a renovation of an existing building or structure, addition(s) to an existing building or structure, or any combination of new construction and renovation work that does not allow separate metering of utilities, CMHA shall pay the cost of energy consumed.
  - i. If separate metering of utilities is available, the Contractor and CMHA will pay the costs of their respective use.
- D. From the date of Substantial Completion, CMHA shall pay the cost of energy consumed for the occupied portions of the Project.
- E. Use of the permanent electrical system during construction shall not change, modify, or reduce the Contractor's warranty and services obligations under the Contract Documents.

**5.4.6. Payment of Utility Services**

- A. Unless otherwise expressly stated in the Contract Documents, Contractor shall reimburse CMHA the cost of utility services during the Construction Period.
- B. Unless otherwise expressly stated in the Contract Documents, payment for reimbursement of CMHA for the cost of utility services during the Contract Period shall be made directly to CMHA.
  - i. If payment is not received, CMHA may deduct the cost of utility services from payments otherwise due to the Contractor.
  - ii. If the payments otherwise due to the Contractor are not sufficient to fully reimburse CMHA, either Contractor or its surety shall make whatever payments are necessary to fully reimburse CMHA.
- C. Process for Payment:

- i. Reimbursement from the Contactor shall be performed on a quarterly basis unless a more frequent payment schedule is agreed upon between CMHA and the contractor prior to start of the project.

**5.4.7. Hoisting Facilities**

- A. The Contractor shall erect and maintain any hoisting equipment required for its Work.
- B. If the electric service requirements of hoisting facilities differ from that available at the Site, the Contractor shall provide and pay for all necessary connections.
- C. If a permanent elevator is identified in the Contract Documents to be used for hoisting materials or personnel during construction, the Contractor shall furnish an extended warranty and service contract in effect until the expiration of the Correction Period.

**5.4.8. Interruption of Existing Services**

- A. Whenever it becomes necessary to interrupt existing services in use by CMHA or its tenants, including, but not limited to, sewer, water, gas, steam lines, electric, telephone, and cable service, the Contractor shall continue the associated Work on a non-stop 24-hour per day basis until that Work is completed and the service restored, or perform the associated Work at an alternate time as required by and in coordination with CMHA.
- B. Before beginning that Work, the Contractor shall apply in writing to, and receive approval in writing from CMHA to establish a time when interruption of the service will cause a minimum of interference with the activities of CMHA and its tenants.

**5.5. Construction Supervision**

- 5.5.1. Unless waived by CMHA in writing, the Contractor shall provide continuous supervision at the Site through a competent project manager or superintendent when any Work is being performed.

- A. The Contractor's project manager or superintendent shall not be involved with any work for Contractor other than the Project.

- 5.5.2. The Contractor's project manager and superintendent shall each have responsibility and authority to act on behalf of the Contractor.

- A. All communication to the Contractor's project manager and superintendent shall be binding as if given directly by the Contractor.

- 5.5.3. The Contractor shall submit an outline of the qualifications and experience of the Contractor's proposed project manager and superintendent, including references, to CMHA no later than two (2) business days after request from CMHA.

- A. For all Subcontracts in excess of \$200,000 and for all other Subcontracts requested by CMHA, the Contractor shall submit an outline of the qualifications and experience of the Subcontractor's proposed project manager and proposed superintendent, including references, to CMHA no later than two (2) business days after CMHA's request.

- B. CMHA may reject the Contractor or Subcontractor's proposed project manager and/or proposed superintendent.

- i. If CMHA does not notify the Contractor of the rejection within thirty (30) calendar days after receiving the required information, it shall then indicate that CMHA does not have an objection, but does not affect CMHA's rights under the Contract Documents or any other provision relative to the project manager or superintendent.

- C. If CMHA rejects the Contractor or Subcontractor's proposed project manager or proposed superintendent, the Contractor shall replace, or cause the Subcontractor to replace the project manager or superintendent (as appropriate) with someone acceptable to CMHA at no additional cost.

- 5.5.4. If CMHA does not object the proposed project manager or superintendent, the Contractor and its Subcontractor shall not replace their respective project managers and superintendents without prior written approval of CMHA.

**5.6. Construction Progress Schedule**



- 5.6.1.** The Contractor shall, no later than seven (7) calendar days of the issuance of the Notice to Proceed or another period of time determined by the CMHA, prepare and submit to CMHA for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the Work, the dates on which the Contractor contemplates starting and completing the several salient features of the Work (including acquiring labor, materials, and equipment).
- A.** 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.
- i.** The Chart must be in a Critical Path Method (CPM) format.
- B.** If the Contractor fails to submit a schedule, that is acceptable to CMHA, within the time prescribed, CMHA may withhold approval of progress payments or take other remedies under the Contract until Contractor submits the required schedule that is acceptable to CMHA.
- 5.6.2.** The Contractor shall monitor the Work for conformance with the Construction Progress Schedule and shall initiate revisions as required herein.
- 5.6.3.** The Contractor shall enter the actual progress on the Construction Progress Schedule as required by CMHA, and after each update, Contractor shall immediately deliver three copies of the annotated Construction Progress Schedule to CMHA.
- A.** If CMHA determines, upon the basis of inspection conducted, herein that the Contractor is not meeting the approved Construction Progress Schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by CMHA, without additional cost to CMHA.
- B.** If the Contractor is not meeting the approved Construction Progress Schedule, CMHA 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 CMHA deems necessary to demonstrate how the approved rate of progress will be regained.
- 5.6.4.** Failure of the Contractor to comply with the requirements of CMHA shall be grounds for a determination by CMHA that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the Contract.
- A.** Upon making this determination, CMHA may terminate the Contractor's right to proceed with the work, or any separable part of it.
- 5.6.5.** Unless otherwise agreed to in writing, the Contractor shall develop the Construction Progress Schedule using commercially available, personal computer software acceptable to CMHA and shall submit all baseline and updated schedules to CMHA in the schedule's native format.
- A.** This submission shall be in both electronic and paper format.
- 5.6.6.** The Construction Progress Schedule shall not exceed the time limits under the Contract Documents, shall provide for reasonable, efficient, and economical execution of the Project and shall relate to the entire project to the extent required by the Contract Documents.
- A.** In the event that a Construction Progress Schedule submitted by Contractor shows a completion date that extends beyond the Contract Time permitted to Contractor in the Contract Documents, such Construction Progress Schedule shall not be deemed to modify the Contract Time permitted in the Contract Documents. The Contract Time can only be changed by a properly executed Change Order.
- 5.6.7.** The Contractor shall use the Construction Progress Schedule to plan, organize, and execute the Project, record and report actual performance and progress, and show how it plans to coordinate and complete all remaining work by Contract Completion within applicable Milestones.
- A.** The Project participants shall use the Construction Progress Schedule as a tool for scheduling and reporting sequences and/or the progress of the Work.
- B.** The Contractor shall provide a clear graphics legend and other data including without limitation Milestone dates, constraints, and other items required by the Project and CMHA.
- C.** Each submission shall show CMHA's Project number and Project name, and provide a signature approval and date line for the Contractor.
- 5.6.8.** The Contractor shall provide the following in each Construction Progress Schedule:
- A.** Activity identification and description of each activity broken down to a maximum duration that is appropriate for the activity;

- B.** Contractor or Subcontractor performing each task;
  - C.** Contractor's resources and crew size for each activity; and
  - D.** Provide early start, early finish, late start, late finish dates.
- 5.6.9.** Each Construction Progress Schedule shall show predecessor activities and successor activities for each activity, entry free float, total float and percentage of completion, and identify the appropriate predecessors and successors for all related activities.
- 5.6.10.** The Construction Progress Schedule shall show all submittal dates, review and approval durations for coordination drawings, Shop Drawings, other action submittals and mock-up Work.
- 5.6.11.** The Contractor shall submit the initial and all updates of the Construction Progress Schedule in graphic and tabular form to CMHA.
  - A.** With each monthly Construction Progress Schedule update, the Contractor shall include a list of all changes to the previously approved baseline schedule or monthly updated schedule.
- 5.6.12.** The Construction Progress Schedule shall be managed using early start dates and early finish dates.
  - A.** The Contractor must exhaust all existing float before claiming additional time for a Change Order.
- 5.6.13.** The Contractor's failure to submit and properly maintain an approved Construction Progress Schedule may result in withholding payment in accordance with the Contract Documents.
- 5.6.14.** For each Progress Meeting, the Contractor shall provide a 2-6 week look-ahead schedule, as appropriate for the Project.
- 5.6.15.** On a monthly basis, the Contractor shall prepare and submit to CMHA a written report describing:
  - A.** Activities begun or finished during the preceding month;
  - B.** Activities in progress and expected completion;
  - C.** Activities to be started or finished in upcoming month including, without limitation, the Contractor's workforce size and total resource hours associated with those activities;
  - D.** Recommendations for adjusting the Construction Progress Schedule to meet Milestone dates, the Substantial Completion date and the Contract Completion date; and
  - E.** Other information requested by CMHA.
- 5.6.16.** If it is apparent that the Contractor may be unable to meet Critical Path activities, Milestone completion dates, the Substantial Completion date(s) or the Contract Completion date, CMHA shall direct the Contractor to submit within three (3) business days a Recovery Plan to avoid or minimize a delay in the Project.
- 5.6.17.** A Recovery Plan shall include, without limitation, adjustments to one or more of the following:
  - A.** Workforce
  - B.** Hours per shift
  - C.** Shifts per workday
  - D.** Workdays per week
  - E.** Equipment
  - F.** Activity logic
- 5.6.18.** If CMHA approves the Recovery Plan, the Contractor shall prepare a revised Construction Progress Schedule within three (3) business days to CMHA.
  - A.** If CMHA rejects the Recovery Plan, the Contractor shall submit, within three (3) days of CMHA's rejection, an alternate Recovery Plan to CMHA in writing for review and in accordance the Contract Documents.
- 5.6.19.** The Contractor shall update the Construction Progress Schedule on a monthly basis, or other interval as approved by CMHA, in accordance with the Contract Documents.
  - A.** The Contractor shall submit a tabular copy showing all changes to the previously approved schedule including, without limitation, logic, float, and actual start date of activities.
    - i.** The original or initially approved Construction Progress Schedule and all subsequent Construction Progress Schedules submitted by the Contractor, and accepted by CMHA, shall serve as an affirmation that the Contractor agrees to meet the applicable requirements and updated Construction Progress Schedule.
  - B.** The Contractor's failure to timely submit updated Construction Progress Schedules as deemed necessary by CMHA may result in withholding payments in.

### **5.7. Progress Meetings**

- 5.7.1.** Unless otherwise indicated in writing, CMHA shall schedule weekly Progress Meetings for the Contractor and other persons involved in the Project as deemed necessary for coordination of the Work by CMHA, including Contractor's Subcontractors on the Project.
- A.** The purpose of the Progress Meeting is to review progress on the Project during the previous week, discuss anticipated progress during the following weeks, review critical operations, and discuss critical problems.
- 5.7.2.** The Contractor shall be represented at every Progress Meeting by a person authorized with signatory authority to make decisions regarding possible modifications of the Contract Documents or Construction Progress Schedule.
- A.** CMHA shall notify the Contractor and other persons involved in the Project of the time and place of the Progress Meeting that shall thereafter be the same day and hour of the week for the duration of the Project, unless CMHA notifies the Contractor and other Persons involved in the Project of a different day and hour at least two (2) business days in advance.
- B.** The Contractor shall have any of its Subcontractors attend the Progress Meeting as determined by the Contractor, or as requested by CMHA.
- C.** Unless otherwise indicated in writing, CMHA shall prepare a written report of each Progress Meeting and distribute the report to the A/E and the Contractor.
- D.** If any person in attendance objects to anything in a report of a Progress Meeting, the person shall notify CMHA and any other affected person in writing explaining the objections within seven (7) calendar days of receipt of the Progress Meeting report.
- E.** The report of each Progress Meeting shall reflect any objection made to the report of the previous Progress Meeting and any response.

### **5.8. Project Coordination**

- 5.8.1.** If determined needed by CMHA, the Contractor or Subcontractor(s), the Contractor shall prepare Coordination Drawings for any Coordination Area.
- A.** The Contractor shall prepare the Coordination Drawings with Computer-Aided Design ("CAD") or Building Information Modeling ("BIM") software acceptable to CMHA.
- B.** The Coordination Drawings shall show the all affected work, including without limitation, plan and elevation dimensions.
- 5.8.2.** After the Contractor completes the Coordination Drawings, the Contractor shall forward a copy of the Coordination Drawings to CMHA.
- A.** The A/E shall report any concerns in writing to the Coordination Participants within fourteen (14) calendar days after receiving the Coordination Drawings.

### **5.9. Additional Tests and Inspections**

- 5.9.1.** If the A/E or CMHA determines that any portion of the Work requires special inspection, testing, or approval not otherwise required under the Contract Documents, the A/E and/or CMHA shall order such inspection, testing, or approval.
- 5.9.2.** If the special inspection, testing, or approval reveals Defective Work, the Contractor shall pay all associated costs and will not be entitled to any related adjustment of the Contract Times.
- A.** Those costs may include without limitation:
- i.** The cost of special inspection, testing, or approval;
  - ii.** The cost of additional special inspections, testing, or approvals, to evaluate Remedial Work;
  - iii.** The cost of correcting Defective Work; and
  - iv.** All related CMHA-incurred fees and charges of contractors, engineers, architects, attorneys, and other professionals.
- 5.9.3.** CMHA may deduct the costs described under the Contract Documents from payments then or thereafter due the Contractor.
- A.** If payments then or thereafter due to the Contractor are not sufficient to cover those amounts, the Contractor or its surety shall immediately pay the amount of the insufficiency to CMHA.

- 5.9.4. If the special inspection, testing, or approval reveals that the Work complies with the Contract Documents, and the Contractor believes that it is entitled to an adjustment of the Contract Sum or Contract Times, or both, on account of the special inspection, testing, or approval, the Contractor may file a Claim by requesting a Change Order by giving written notice within seven (7) calendar days after the special inspection, testing, or approval.
- 5.9.5. If the Contractor is aware of the need of an inspection, testing, or approval, or of a need to have any inspection, testing, or approval completed by a particular time to avoid delay, then the Contractor shall timely communicate such information to CMHA.
- 5.9.6. Except as described in Additional Tests and Inspections, CMHA shall pay for any inspection, testing, or approval that did not become a requirement until after award of the Contract.
- 5.9.7. The Contractor shall coordinate with and give CMHA reasonable notice of the anticipated dates of all inspections, testing, or approvals.

**5.10. Review of Contract Documents**

- 5.10.1. Before starting each portion of the Work, the Contractor shall carefully study and compare the various Contract Documents relative to that portion of the Work, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the Site affecting it.
- 5.10.2. If the Contractor finds any perceived ambiguity, conflict, error, omission, or discrepancy on or between any of the Contract Documents, or between any of the Contract Documents and any Applicable Law, the Contractor, before proceeding with the Work, shall promptly submit a Request for Information ("RFI") to CMHA for an interpretation or clarification.
  - A. Before submitting any RFI, the Contractor shall carefully review the Contract Documents to ensure that the Contract Documents do not answer the RFI.
  - B. If Contractor indicates that the information requested in the RFI affects the critical path of the Project's Construction Progress Schedule and attaches the portion of the Project's Construction Progress Schedule that verifies that the information requested in the RFI affects the critical path, CMHA shall make all reasonable efforts to respond to the RFI within seven (7) business days of receiving the RFI.
- 5.10.3. If the Contractor believes that it is entitled to an adjustment of the Contract Sum or Contract Times, or both, on account of clarifications or instructions issued in response to a RFI, the Contractor may submit a Claim by requesting a Change Order by giving notice within three (3) business days of receiving the RFI response.
- 5.10.4. If Contractor does not notify CMHA in accordance with 5.10.3 or any other section that addresses adjustments to the Contract Sum and Contract Time, the Contractor will have accepted the RFI response without an adjustment to the Contract Sum or Contract Time and irrevocably waives his right to submit or request an adjustment to the Contract Sum and/or Contract Time.
- 5.10.5. **Frivolous RFI**
  - A. If the Contractor submits a frivolous RFI, as determined by CMHA, Contractor shall be liable to CMHA for the costs related to the review and response of the RFI.
    - i. CMHA may deduct the costs described herein from payments then or thereafter due the Contractor.
    - ii. If payments then or thereafter due to the Contractor are not sufficient to cover CMHA's costs, the Contractor or its surety shall immediately pay the amount of the insufficiency to CMHA.
  - B. Frivolous RFIs may be returned unanswered.
- 5.10.6. Delays caused by improper or frivolous RFI's are the sole responsibility of the Contractor who shall waive the Contractor's right to seek adjustments to the Contract Sum and Contract Time.

**5.11. Site Investigation and Conditions Affecting the Work**

- 5.11.1. 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:
  - A. Conditions bearing upon transportation, disposal, handling, and storage of materials;
  - B. The availability of labor, water, electric power and roads;
  - C. Uncertainties of weather, river stages, tides, or similar physical conditions at the site;

- D. The conformation and conditions of the ground; and
- E. The character of equipment and facilities needed preliminary to and during work performance.
- 5.11.2. 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 CMHA, as well as from the drawings and specifications made part of this contract.
  - A. Any failure of the Contractor Site Investigation and Conditions Affecting the Work will not relieve the Contractor from responsibility for properly estimating or properly evaluating the difficulty and cost of successfully performing the Work without additional expense to CMHA.
- 5.11.3. CMHA assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by CMHA.
  - A. Nor does CMHA assume responsibility for any understanding reached or representations made concerning conditions which can affect the Work by any of its officers or agents before execution of this Contract, unless that understanding or representation is expressly stated in this Contract.
- 5.12. **Protection of the Project**
  - 5.12.1. The Contractor shall protect the Project from weather and maintain the Work and all materials, apparatus, and fixtures free from injury or damage until Substantial Completion of the Work.
    - A. The Contractor shall at all times cover or protect the Work and materials.
    - B. The Contractor, at its own expense, shall remove, and replace with new, any Work damaged as a result of the Contractor's failure to provide coverage or protection.
    - C. After the date of Substantial Completion of the Work, CMHA is responsible for protecting and maintaining all materials, apparatus, and fixtures for the occupied portion of the Project from injury or damage.
  - 5.12.2. The Contractor shall protect the Project and existing or adjacent property from damage at all times and shall erect and maintain necessary barriers, lateral support, furnish and keep lighted necessary danger signals at night, and take reasonable precautions to prevent injury or damage to individuals or property.
  - 5.12.3. **Temporary Heating**
    - A. The Contractor shall provide and pay for temporary heating, covering, and enclosures necessary to protect all Work and materials against damage by dampness and cold, to dry out the Work, and to facilitate the completion of Work.
    - B. Any permanent heating equipment used by Contractor or Subcontractors shall be turned over to CMHA in the condition and at the time required by the specifications.
  - 5.12.4. The Contractor shall not load, or permit any part of the Project to be loaded, in any manner that endangers the Project, or any proportion thereof.
    - A. The Contractor shall not subject any part of the Project or existing or adjacent property to stress or pressure that endangers the Project or property.
  - 5.12.5. **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 sites, 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.
      - i. 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 specifically directed by CMHA.
    - 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.
      - i. 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 CMHA, 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.
  - i. This, however, shall not be construed to require the refinishing or reconstruction of dissimilar finishes previously exposed, or finished surfaces in good condition, but in different plans or on different levels when brought together by the removal of intervening work, unless such refinishing or reconstruction is specified in the plans or specifications.
- I. The Contractor shall give all required notices to any adjoining or adjacent property owner or other party before commencement of any Work.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA, from and against all claims, (whether alleged or proven), demands, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs arising out of or related to the 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 CMHA 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.
  - i. If the Contractor fails or refuses to repair the damage promptly, CMHA may have the necessary Work performed and charge the cost to the Contractor.

**5.12.6. Vibration, Noise, and Dust Control**

- A. The Contractor shall provide controls/barriers for vibrations, noise, and dust control in occupied buildings as required by the construction operations.
- B. The Contractor will not be permitted to exhaust or release unfiltered air, dust, construction debris, or other undesirable products into the exterior atmosphere or into occupied areas of the building.
  - i. CMHA may limit or stop the Work if the Contractor does not maintain proper air-quality standards.
  - ii. Such stoppage may result in a charge to the Contractor.
- C. In certain occupied buildings, tasks might be of such a nature that noise and vibration cannot be tolerated.
  - i. In such spaces and as approved by CMHA, Work may be scheduled for other than normal working hours.
  - ii. The Contractor is cautioned that weekend or overtime work, if required, shall be performed at no additional cost.
  - iii. Permission to work other than standard hours shall be received from CMHA prior to the occurrence.
  - iv. Weekend or overtime Work shall be reflected in the Construction Progress Schedule.
- D. The Contractor is responsible for vibration control and control of transmission of noise arising from the Work.
- E. Principal considerations that shall be given to noise and vibrations control are:

- i. Noise control in compliance with Occupational Safety and Health Administration (OSHA) shall be for all areas of the facility, including equipment rooms, boiler rooms, and fan rooms.
- ii. Vibration control to limit sound produced by construction equipment, and for protection of the equipment existing in the building and the building structure.
- iii. Vibration control to provide for the maximum usefulness of the facility by keeping levels of vibration within ranges conducive to peaceful enjoyment of residential living or work or other uses for which the facility was designed

**5.13. General Warranty - Materials, Equipment and Workmanship**

**5.13.1.** The Contractor warrants to CMHA and A/E that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise.

- A.** The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit.
- B.** Work, materials, or equipment not conforming to these requirements may be considered defective.
- C.** The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage.
- D.** If required by the A/E, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**5.13.2.** To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA from and against all claims, (whether alleged or proven), demands, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, arising out of or relating to the Contractor's breach of any warranty obligations.

- A.** The Contractor's obligation shall be joint and several.

**5.13.3. Additional Warranties**

- A.** The Contractor gives the Owner the following additional warranties:
  - i. If the Contractor's Work includes all or part of the exterior roofing system, provided that the A/E has designed the roofing system to be weather tight, the Contractor warrants that the roofing system will be weather tight; and
  - ii. If the Contractor's Work includes all or part of the exterior wall system, provided that the A/E has designed the wall system to be weather tight, the Contractor warrants that the wall system will be weather tight.
    - (a)** Weather tight shall mean the roofing and/or wall system does not permit any infiltration of water in any form that would have any adverse effect on the Owner's operations or the Project.

**5.13.4.** The Contractor shall, prior to Contract Completion and as a condition precedent to final payment to Contractor, assign to CMHA all manufacturer's warranties related to the materials and labor used in the Work and further agrees to perform the Work in such manner as to preserve any and all such manufacturer's warranties and deliver to the A/E the warranties, project manual, operating procedures, and other materials related to each of the building systems and materials included in the Contractor's Work and as required by the Specifications.

**5.13.5.** Upon notice of the breach of any of the warranties or guarantees identified herein, or any other warranties or guarantees under the Contract Documents, the Contractor, in addition to any other requirements in the Contract Documents, shall commence to correct such breach and all damage resulting therefrom within two (2) business days from written notice thereof, thereafter use its best efforts to correct such breach and damage to the satisfaction of CMHA and A/E, and, except when an extension of time is granted in writing by CMHA, correct such breach and damage to the satisfaction of CMHA within thirty (30) calendar days of such notice, or such other time as provided in the notice; provided, however, that if such notice is given after final payment the 2-day period shall be extended to seven (7) calendar days.

- A. If the Contractor fails to commence to correct such breach and damage, or to correct such breach or damage as provided above, the Owner, without prejudice to any of its other rights or remedies at law or under the Contract Documents, may correct the breach without further notice to Contractor.
  - B. The Contractor shall pay the Owner's reasonable costs and expenses incurred in connection with the or related to such correction and/or breach, including without limitation the Owner's administrative, legal, and consulting expenses and additional service fees of the A/E.
  - C. The foregoing warranties and obligations of the Contractor shall survive final payment and/or termination of the Contract and shall not be limited by any other terms contained in the Contract Documents.
  - D. If the Contractor fails to pay the Owner any amounts due hereunder, the Contractor shall pay the Owner, in addition to the amounts due, a late payment fee of one and one-half percent (1.5%) per month for each month or part thereof that the payments are not paid when due.
- 5.13.6.** Contractor shall bring to or store at the Site only the materials and equipment required for the Work.
- A. If possible, materials and equipment should be installed in their final positions when brought to the Site.
- 5.13.7.** All equipment, material, and articles furnished under this Contract shall be of the most suitable grade for the purpose intended, unless otherwise specifically provided in this Contract.
- A. 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.
  - B. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of, and as approved by CMHA in writing, is equal to that named in the specifications, unless otherwise specifically provided in this Contract so long as Contractor has submitted a substitution request to CMHA.
  - C. If the substituted material has not been approved by CMHA in writing, the substituted material may be considered Defective Work by CMHA or A/E.
- 5.13.8. Approval of Equipment and materials**
- A. The Contractor shall obtain CMHA's approval of the machinery and mechanical and other equipment to be incorporated into the work.
    - i. When requesting approval, the Contractor shall furnish to CMHA 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
    - ii. When required by this contract or by CMHA, the Contractor shall also obtain CMHA's approval of the material or articles which the Contractor contemplates incorporating into the work.
    - iii. When requesting approval, the Contractor shall provide full information concerning the material or articles.
    - iv. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.
  - B. When required by the specifications or CMHA, the Contractor shall submit appropriately marked samples (and certificates related to them) for approval at the Contractor's expense, with all shipping charges prepaid.
    - i. 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.
  - C. Certificates shall be submitted electronically in triplicate, describing each sample submitted for approval and certifying that the material, equipment or accessory complies with contract requirements.
    - i. The certificates shall include the name and brand of the product, name of manufacturer, and the location where produced.
  - D. Approval of a sample shall not constitute a waiver of CMHA's right to demand full compliance with contract requirements.



- i. Materials, equipment and accessories may be rejected for cause even though samples have been approved.
- E. 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.
  - i. CMHA may require laboratory test reports on items submitted for approval or may approve materials on the basis of data submitted in certificates with samples.
  - ii. Check tests will be made on materials delivered for use only as frequently as CMHA determines necessary to insure compliance of materials with the specifications.
  - iii. 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.
- F. After approval, samples will be kept in the Project office until completion of work.
  - i. They may be built into the work after a substantial quantity of the materials they represent has been built in and accepted.
- G. **Requirements concerning lead-based paint**
  - i. The Contractor shall comply with the requirements concerning lead-based paint contained in the Lead-Based Paint Poisoning Prevention Act.

#### **5.13.9. Substitutions**

- A. If the Contractor provides approved Substitutions that require changes to the Contract Documents, the Contractor shall be solely responsible for the additional costs incurred as a result, including without limitation changes to the design by the A/E.
- B. CMHA shall consider Requests for Substitutions after the bid opening only when the Contractor can conclusively demonstrate CMHA the following conditions:
  - i. The specified Basis of Design Components, Acceptable Components, or previously approved Substitutions through no fault of the Contractor are not available; or
  - ii. The specified Basis of Design Components, Acceptable Components, or previously approved Substitutions will not perform as designed or intended.
- C. The Contractor's incorporation of unapproved Substitutions in the Work shall constitute Defective Work.
- D. If the Contractor provides an unacceptable Component, the Contractor shall be solely responsible for the costs of coordination and modification required.

#### **5.14. Specifications and Drawings for Construction**

- 5.14.1. The Contractor shall keep on the work site a stamped, permit set of the drawings and specifications and shall at all times give CMHA access thereto.
  - A. 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.
  - B. In case of difference between drawings and specifications, the specifications shall govern.
  - C. In case of a discrepancy in the figures, in the drawings, or in the specifications, the matter shall be promptly submitted to CMHA, who shall promptly make a determination in writing.
  - D. Any adjustment by the Contractor without such determination shall be at its own risk and expenses.
  - E. CMHA shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.
- 5.14.2. 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 CMHA is intended.
- 5.14.3. Where "shown," "indicated", "detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this Contract unless otherwise stated, the word "provided" as used herein shall be understood to mean "provide complete in one place" that is "furnished and installed".
- 5.14.4. "Shop Drawings" means drawings, submitted to CMHA by the Contractor, subcontractor or any lower tier subcontractor, showing in detail, 1) the proposed fabrication and assembly of structural elements and 2) the installations (i.e., form, fit, and attachment details) of materials of equipment.

- A. 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.
  - B. CMHA may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.
- 5.14.5. 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.
- A. Shop Drawings submitted to the A/E without evidence of the Contractor's approval may be returned for resubmission.
  - B. CMHA will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate CMHA's reasons therefore.
  - C. Any Work done before such approval shall be at the Contractor's risk.
  - D. Approval by the A/E 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 approved variations.
- 5.14.6. 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.
- A. If the A/E approves any such variation and CMHA concurs, CMHA 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.
- 5.14.7. It shall be the responsibility of the Contractor to make timely requests to CMHA for such large scale and full size drawings, color schemes, and other additional information, not already in possession, which shall be required in the planning and production of the work.
- A. Such requests may be submitted as the need arises, but each such request shall be filed with ample time to permit appropriate action to be taken by all parties involved so as to avoid delay.
- 5.14.8. The Contractor shall electronically submit to CMHA for approval (unless otherwise indicated) all shop drawings as called for under the various headings of the specifications.
- A. As required by CMHA, the Contractor, upon completing the work under this Contract, shall furnish a complete set of drawings as finally approved.
  - B. These drawings show all changes and revisions made up to the time the work is completed and accepted.
- 5.14.9. Specifications and Drawings for Construction shall be included in all Subcontracts at any tier.
- A. It shall be the responsibility of the Contractor to ensure that all shop drawings prepared by Subcontractors are submitted to CMHA.
- 5.15. As Built Drawings**
- 5.15.1. "As-built drawings," 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.
- A. "As-built drawings" shall be synonymous with "Record Drawings".
- 5.15.2. As required by CMHA, the Contractor shall provide CMHA accurate information to be used in the preparation of permanent as-built drawings.
- A. 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.
- 5.15.3. As Built Drawings shall be included in all subcontracts at any tier.
- 5.15.4. It shall be the responsibility of the Contractor to ensure that all As-Built Drawings prepared by Subcontractors are submitted to CMHA.
- 5.16. Project Document Maintenance and Submittal**
- A. During Construction**
    - i. The Contractor shall maintain in good order at a secure location on the Site:

- (a) A complete copy of all Contract Documents; Shop Drawings, Product Data, samples and similar required submittals; manufacturer operating and maintenance instructions; certificates; warranties; RFIs and responses thereto; and other Project-related documents, all marked currently and accurately to record field changes and selections made during construction and to show actual installation where installation varies from Work as originally shown, including the exact location and depth of underground utility lines; and
  - (b) A set of Drawings as approved by any applicable jurisdiction and Specifications.
- B. Before submitting each Contract Payment Request, the Contractor shall record all changes on the Contract Documents, neatly in a contrasting color, noting new information not shown on the original Contract Documents.
  - i. Failure to record all changes may cause payment to be withheld or delayed by CMHA.
- C. The Contractor shall keep a record of changes made to the Specifications, noting particularly any approved variation from manufacturer's installation instructions and recommendations.
- D. If the Contractor uses Shop Drawings to indicate as-built conditions, the Contractor shall cross-reference the Shop Drawing sheet numbers to the corresponding sheet numbers on the Contract Documents.
  - i. The Contractor shall note related numbers where applicable.

**5.16.2. Before Contract Completion**

- A. The Contractor, as a condition precedent to execution of the Certificate of Contract Completion and final payment, shall organize the As-Built Documents into manageable sets, bind the sets with durable paper cover sheets, and deliver the As-Built Documents to CMHA.
- B. The Contractor's As-Built Documents submission shall include, but is not limited to:
  - i. Certificate of Occupancy;
  - ii. Inspection certificates for pressure piping, elevator, boiler, electrical, plumbing or piping purification, etc.
  - iii. Letter of Approval from the local fire authority or State Fire Marshal for the fire suppression system;
  - iv. Operation and Maintenance Manuals, organized into suitable sets of manageable size;
  - v. Indexed data bound in individual binders, with pocket folders for folded sheet information and appropriate identification marked on the front and the spine of each binder;
  - vi. Neatly and accurately marked sets of As-Built Documents, and other Contract Documents reflecting the actual construction of the Project;
  - vii. Detailed Drawings reflecting the exact location of any concealed utilities, mechanical or electrical systems, and components;
  - viii. Assignment to CMHA of all warranties and guarantees, including the most-recent address and telephone number of any Subcontractors or manufacturers;
  - ix. An affidavit to certify that all Subcontractors have been paid in full for all Work performed or materials furnished for the Project;
  - x. A final lien waiver for both the Contractor and all Subcontractors of any tier;
  - xi. Final certified payroll reports; and
  - xii. An affidavit to certify that the Contractor and each of its Subcontractors, regardless of tier, have complied with all requirements of ORC.
- C. By submitting the As-Built Documents to CMHA, the Contractor certifies that its As-Built Documents are complete, correct, and accurate.

**5.17. Temporary Buildings and Transportation of Materials**

- 5.17.1.** Temporary buildings (e.g., storage sheds, shops, offices, sanitary facilities) and utilities may be erected by the Contractor only with the approval of CMHA and shall be built with labor and materials furnished by the Contractor without expense to CMHA.
  - A. 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.
  - B. With the written consent of CMHA, the buildings and utilities may be abandoned and need not be removed.

**5.17.2.** The Contractor shall, as directed by CMHA, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by CMHA.

- A.** 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.
- B.** When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage.
- C.** The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

**5.18. Facilities**

**5.18.1.** The Contractor shall provide and maintain in a clean condition:

- A.** Suitable facilities, including temporary facilities, equipment, services, and enclosed storage for its use at the Site;
- B.** Adequate space, equipment, and furnishings to conduct progress meetings, and store approved documents and permits; and
- C.** Adequate sanitary facilities for use by all Persons at the Site.

**5.19. Progress Cleaning**

**5.19.1.** The Contractor shall remove all waste materials, rubbish, and mud attributable to the Work in accordance with the Specifications, if applicable, and to an appropriate disposal location at, or near, the Site.

**5.19.2.** The Contractor shall perform weekly broom cleaning of hard flooring surfaces in the area of the Work.

**5.19.3.** The Contractor shall remove, at the end of each working day or more frequently, as appropriate, for the Project, all waste materials and rubbish from the disposal location at, or near, the Site.

**5.19.4.** The Contractor shall remove, as appropriate for the Project or as the A/E or CMHA directs, any waste materials or rubbish from areas adjacent to the Project.

**5.19.5.** The Contractor shall dispose of waste materials, rubbish, and construction debris in a lawful manner in approved recycling facilities or landfills and record of such disposal shall be available upon written request of CMHA.

**5.19.6.** If the Contractor fails to clean up during the progress of the Work, CMHA may clean up on behalf of the Contractor and at the Contractor's expense.

- A.** If the Contractor fails to maintain the areas adjacent to the Project clean and free of waste materials and rubbish, CMHA may also direct the local jurisdiction responsible for the area to have the area cleaned to its satisfaction at the Contractor's expense.
- B.** CMHA may deduct the cleaning costs from payments then or thereafter due the Contractor.
  - i.** If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to CMHA.

**5.19.7.** The Contractor shall remove excavated material and spoil to a suitable off-site location approved by CMHA.

- A.** If CMHA designates a location on its property for disposal or storage of clean topsoil and/or subsoil in the Contract Documents, the Contractor shall remove such materials to the designated location.

**5.20. Use of Premises**

**5.20.1.** The Contractor shall use corridors, stairs, and elevators as designated by CMHA and only during those times that are designated by CMHA.

- A.** The Contractor shall exercise extreme care to not exceed the carrying capacity of elevators or damage the cab interior in any way.

**5.20.2.** Loitering or wandering through interior of buildings or exterior grounds outside the limits of the Work will not be permitted.

**5.20.3.** The Contractor shall confine its apparatus, materials, and the operations of its workers to the limits indicated by law, ordinances, permits and the directions of CMHA.

**5.20.4.** Unless expressly required or approved by CMHA, no signs or advertising of any kind will be permitted on or about the Site, except those appearing on trucks and trailers.

**5.20.5. CMHA Use of Premises / Possession Prior to Completion**

- A.** CMHA shall have the right to take possession of or use any completed or partially completed part of the Work.

- i. Before taking possession of or using any work, CMHA shall furnish the Contractor a list of items of Work remaining to be performed or corrected on those portions of the Work that CMHA intends to take possession of or use.
- ii. However, failure of CMHA to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the Contract.
- iii. CMHA's possession or use shall not be deemed acceptance of Work under the Contract.
- B. While CMHA has such possession or use, the Contractor shall be relieved of the responsibility for:
  - i. The loss of or damage to the Work resulting from CMHA's possession or use, notwithstanding the terms herein;
  - ii. All maintenance costs on the areas occupied; and
  - iii. Furnishing heat, light, power, and water used in the areas occupied without proper remuneration therefore.
- C. If requested by the Contractor and if prior possession or use by CMHA delays the progress of the Work or causes additional expense to the Contractor, an equitable adjustment shall be made in the Contract Sum, the Contract Time, or both, and the Contract shall be modified in writing accordingly.

**5.21. Smoking and Tobacco Products**

**5.21.1.** Smoking is not permitted at any property under construction, unless CMHA has a specifically designated area for smoking, and is not permitted within 50 feet of any entrance of a CMHA owned building.

- A. This prohibition applies to new construction and rehabilitation.
- B. The Contractor shall enforce these restrictions on any individual employed by the Contractor, or a Subcontractor.

**5.22. Correction of the Work**

**5.22.1. Before Substantial Completion**

- A. If the Contractor provides Defective Work or fails or neglects to perform the Work in accordance with the Construction Progress Schedule, CMHA or the A/E may issue a written notice to the Contractor and Contractor's Surety directing the Contractor to correct the Defective Work or recover schedule deficiencies.
  - i. Unless otherwise specified in that written notice, the Contractor shall begin to correct the Defective Work and recover the schedule deficiencies within no more than three (3) business days after CMHA issues the written notice.
- B. If the Contractor fails to commence and diligently pursue correction of Defective Work or recovery of schedule deficiencies within three (3) business days of Contractor's receipt of written notice from CMHA or the A/E, CMHA may correct the Defective Work or take action to recover schedule deficiencies without giving further notice to the Contractor or Contractor's Surety.

**5.22.2. During the Correction Period**

- A. If CMHA issues a notice during the Correction Period, CMHA may correct the Defective Work itself without giving further notice to the Contractor or Contractor's Surety if the Contractor fails to:
  - i. Notify CMHA in writing of the Contractor's intent to correct the Defective Work within three (3) business days after CMHA issues the notice; and
  - ii. Thereafter promptly commence and diligently pursue correction of Defective Work.
- B. *The Correction Period:*
  - i. Commences in accordance with 23.1.41;
  - ii. Relates only to the Contractor's specific obligation and opportunity to correct the Work during the Correction Period;
  - iii. Does not establish a period of limitation with respect to any of the Contractor's other obligations under the Contract Documents;
  - iv. Has no relationship to the time within which CMHA may seek to enforce the Contract; and
  - v. Does not establish a period of limitation with respect to the commencement of litigation to establish the Contractor's liability under the Contract or otherwise.
- C. *After the Correction Period:*

- i. CMHA may correct, at the Contractor's expense, the Defective Work without giving further notice to the Contractor or Contractor's Surety if the Contractor or Contractor's surety fails to
  - (a) Notify CMHA in writing of the intent to correct the Defective Work; and
  - (b) Promptly commence and diligently pursue correction of Defective Work.

**5.22.3. After Substantial Completion**

- A. In addition to the Contractor's other obligations under the Contract Documents, if any of the Work is found to be Defective Work after Substantial Completion, the Contractor shall correct it promptly after receipt of written notice from CMHA to do so, unless CMHA has previously acknowledged and accepted the Defective Work in writing.
- B. CMHA may send a copy of the written notice to the Contractor's Surety, but are not obligated to do so.

**5.22.4. Emergency Correction of Defective Work**

- A. Notwithstanding any other provision of the Contract, if in CMHA's opinion the Defective Work presents a threat of imminent harm or danger to people, property, or the environment, CMHA may order the Contractor to immediately correct Defective Work or CMHA may correct the Defective Work, at Contractor's expense, itself without any prior notice to the Contractor or Contractor's Surety.

**5.22.5. Responsibility for Costs of Correction**

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA, from and against all claims, (whether alleged or proven), demands, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, associated with the correction of Defective Work and the recovery of schedule deficiencies.
- B. Those costs and damages may include, but are not limited to:
  - i. The related fees and charges of contractors, engineers, architects, attorneys, and other professionals; and
  - ii. The cost of correcting or replacing adjacent work.
- C. CMHA may deduct those costs and damages from payments then or thereafter due the Contractor.
  - i. If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to CMHA.

## **6. ARTICLE VI SUBCONTRACTORS**

**6.1. Evaluation and Approval**

- 6.1.1. When submitting its Bid, the Contractor shall submit a Subcontractor and Material Supplier Declaration form through which the Contractor identifies its Subcontractor.
  - A. Provide list of subcontractors and material supplier and equipment with bid.
- 6.1.2. Within ten (10) calendar days after the Notice to Proceed, the Contractor shall submit to CMHA, an **updated** Subcontractor and Material Supplier Declaration form.
- 6.1.3. If CMHA rejects any proposed Subcontractor, the Contractor shall propose a replacement Subcontractor with no adjustment of the Contract Sum.
  - A. The proposed replacement will also be evaluated by CMHA.
- 6.1.4. The Contractor's failure to timely submit the information regarding a proposed Subcontractor may result in withholding payment to Contractor.

**6.2. Suspension/Debarment**

- 6.2.1. 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 program by any agency of the United States Government or the State of Ohio.

**6.3. Contractor's Responsibility**

- 6.3.1. 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, and is responsible for scheduling and coordinating the Work of the Subcontractors.

- 6.3.2. The Contractor is fully responsible for any delay, interference, disruption, or hindrance attributable to the Contractor's Subcontractors.
- 6.3.3. The Contractors shall require that each of its Subcontractors have a competent supervisor at the Site whenever the Subcontractor is performing Work.
- 6.3.4. The Contractor shall bind its Subcontractors to the terms and conditions of the Contract Documents, so far as applicable to the Work of the Subcontractor, and shall not agree to any provision, which seeks to bind CMHA with terms inconsistent with or at variance from the Contract Documents.
- 6.3.5. The Contractor will not be relieved of its full responsibility for Subcontractors and their performance of the Work by:
  - A. The participation of CMHA, HUD, or the A/E in the processes described under ARTICLE VI SUBCONTRACTORS or other related provisions of the Contract Documents; or
  - B. CMHA's rejection of a Subcontractor or failure to reject a Subcontractor.

#### **6.4. Mandatory Contract Provisions/Forms**

- 6.4.1. 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 in the work of Subcontractors.
- 6.4.2. CMHA reserves the right to reassign accepted agreements
- 6.4.3. Nothing contained in this Contract shall create any contractual relationship between any Subcontractor and CMHA or between the Subcontractor and HUD.
- 6.4.4. The Contractor must include in the contract with its Subcontractors the applicable labor provisions and prevailing wages as was provided to the Contractor by CMHA.
- 6.4.5. No less than ten (10) calendar days before the Work is to be performed by a Subcontractor, or within a shorter period as mutually agreed by the Contractor and CMHA, the Contractor shall submit to CMHA a complete copy of the executed Subcontract between the Contractor and Subcontractor.

#### **6.5. Replacement of Subcontractors**

- 6.5.1. The Contractor shall not replace any Subcontractor after execution of the Subcontract without prior written approval of CMHA.
- 6.5.2. The Contractor shall not add any subcontractors after the Contract Execution without updating the Material supplier and subcontractor form or prior to written approval of CMHA.

#### **6.6. Contingent Assignment of Subcontract**

- 6.6.1. The Contractor hereby assigns its Agreement with each Subcontractor to CMHA provided that the assignment is effective only after termination of the Contract by CMHA and only for those agreements that CMHA accepts by notifying Contractor and applicable Subcontractor in writing.

#### **6.7. Prompt Payment of Subcontracts**

- 6.7.1. The Contractor shall make payments to the Subcontractor in accordance with Applicable Law, including ORC that include, without limitation, the requirements under 6.7 - Prompt Payment of Subcontracts.
- 6.7.2. If a Subcontractor requests payment in time to allow the Contractor to include the request in its Contractor Payment Application Request the Contractor, within ten (10) calendar days after receipt of payment from CMHA, shall pay to the:
  - A. Subcontractor, an amount equal to the percentage of completion of the Subcontractors contract allowed by CMHA for the amount of labor or work performed;
  - B. Material Supplier, an amount that is equal to all or a portion of the invoice for materials which represents the materials furnished by the material supplier
- 6.7.3. The Contractor may reduce the amount paid by any retainage provision contained in the Contract, invoice, or purchase order between the Contractor and Subcontractor and may withhold amounts that may be necessary to:
  - A. Resolve disputed liens or claims involving the Work or labor performed by the Subcontractor; or
  - B. Account for failure of the Subcontractor to perform its obligations under its agreement with the Contractor required under ORC
- 6.7.4. **Labor Payments**
  - A. Within ten (10) calendar days of receipt of payment from CMHA, the Contractor shall pay Subcontractor in the following manner:

- i. Partial payments to the Subcontractor for labor performed under either a Unit Price or lump sum Subcontract shall be made at the rate of 92 percent of the amount invoiced through the Subcontractor's request for payment that shows the Work of the Subcontractor is 50% complete.
- ii. After the Work of the Subcontractor is 50 percent complete, as evidenced by payments of at least 50 percent of the total amount due under the Subcontract, no additional funds shall be retained from payments for labor.

**6.7.5. Material Payment**

**A. Required by ORC for payment to Contractor by CMHA**

- i. The Contractor shall pay the Subcontractor at the rate of 95% of the invoice cost, not to exceed the scheduled value in a unit price or lump sum Subcontract, for materials delivered to the Site, or other offsite storage location approved by CMHA, provided the Subcontractor provides the information required with its request for payment.
- ii. The Contractor shall pay the Subcontractor at the rate of 100% of the scheduled value for materials incorporated into the Project.

**6.7.6.** If Contractor fails to comply with the payment provisions set forth, the Contractor shall pay to the applicable Subcontractor, in addition to any payment due, interest in the amount of 18 percent per annum of the payment due, beginning the eleventh day following the receipt of payment from CMHA and ending on the date of full payment of the payment due plus interest.

**6.7.7.** If CMHA receives a Claim Affidavit from a Subcontractor, Subcontractor shall proceed in accordance with Applicable Law, including Ohio Revised Code.

**6.7.8.** Laborers, Subcontractors, and Material Suppliers may secure payment rights in accordance with Applicable Law, including Ohio Revised Code.

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

**6.8.1.** 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 solicitations lists;
- B.** Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential resources
- 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;

**6.8.2.** Establishing delivery schedule, where the requirements of the Contract permit, which encourages participation by small and minority businesses and women's business enterprises; and

**6.8.3.** 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

## **7. ARTICLE VII PAYMENTS**

**7.1. CMHA Obligation**

**7.1.1.** CMHA shall pay the Contractor the price as provided in the Contract.

**7.2. Forms**

**7.2.1.** Unless expressly authorized to the contrary, Contractor must use appropriate CMHA forms.

**7.3. Step One – Pencil Application**

**7.3.1.** The purpose of a pencil application is assisting the Contractor in identifying any potential error or omission in the pay application.

- A.** If submitted timely (as set forth below) CMHA will review and help identify any potential issues. However, the CMHA Construction Administrator's approval or suggestion does not guarantee approval of the payment application by the CMHA.

**7.3.2.** The Contractor shall initially submit a Pencil Application by no later than the 15<sup>th</sup> of each month.

- A.** The CMHA Construction Administrator will review the Pencil Application, and make any suggested corrections and return to the Contractor in approximately two (2) business days.



**7.3.3.** The Contractor shall then submit the final payment application to the CMHA Construction Administrator by the 23<sup>rd</sup> of each month.

**7.3.4.** Failure to submit a pencil application may result in a significant delay in payment.

**7.4. Progress Payments**

**7.4.1.** CMHA shall make progress payments approximately every forty-five (45) calendar days as the work proceeds on estimates of Work accomplished which meets the standards of quality established under the Contract, as approved by CMHA.

**A.** Subject to CMHA's written determination and approval more frequent payments may be made to contractors which are qualified as small businesses.

**7.4.2.** Before the first progress payment under this contract, the Contractor shall furnish, in such detail as requested by CMHA, 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.

**A.** The breakdown shall be approved by CMHA and must be acceptable to HUD.

**B.** If the contract covers more than one Project, the Contractor shall furnish a separate breakdown for each.

**C.** 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 Sum.

**D.** The Contractor shall prorate its overhead and profit over the construction period of the Contract.

**7.4.3.** The Contractor shall submit, on forms provided by CMHA, periodic estimates showing the value of the work performed during each period based upon the approved breakdown of the Contract Sum.

**A.** Such estimates shall be submitted not later than nine (9) calendar days in advance of the date set for payment and are subject to correction and revision as required.

**B.** The estimates must be approved by the CMHA prior to payment.

**C.** If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each.

**D.** Each payment application should include affidavits for the Contractor, Sub Contractors and Material Suppliers. Lien waivers should be submitted as proof of payment for the prior payment application affidavits.

**7.4.4.** Along with each request for progress payments and the required estimates, the Contractor shall furnish the following certification, or payment shall not be made:

**A.** I hereby certify, to the best of my knowledge and belief, that:

**i.** The amounts requested are only for performance in accordance with the specifications, terms,

**ii.** 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

**iii.** 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.

**7.5. Allowances**

**7.5.1.** The Contract Sum includes the Allowances (if any) identified in the Contract.

**7.5.2.** All allowances include the costs to the Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes.

**7.6. Unit Prices**

**7.6.1.** Where the Contract provides that all or a part of the Work is to be Unit Price Work, initially that Contract Sum will include for all Unit Price Work:

**A.** An amount equal to the sum of the established Unit Prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Contract.

**B.** The Contractor's fee on that Unit Price Work.

**7.6.2.** The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Sum.

A. CMHA will determine the actual quantities and classifications of Unit Price Work performed by the Contractor.

**7.6.3.** Before final payment, an appropriate Change Order will be issued to reconcile the Contract Sum so that it reflects actual amount due to the Contractor on account of Unit Price Work actually performed.

**7.7. Schedule of Values**

**7.7.1.** Within seven (7) calendar days after issuance of Letter of Intent or other period as mutually agreed by the Contractor and CMHA, the Contractor shall submit to CMHA a Schedule of Values on a form provided for by CMHA, with separate amounts shown for labor and materials for each branch of Work.

A. The Contractor shall clearly indicate on the Schedule of Values, but is not necessarily limited to, the cost of payment and performance bond(s), permit costs, the amount(s) allocated, including separate items for the Contractor's Fee (Overhead and Profit), and the amount(s) of labor and materials, as appropriate.

**7.7.2.** The grand total shown on the Schedule of Values shall equal the total Contract Sum.

**7.7.3.** CMHA may use the approved Schedule of Values to determine cost or credit to CMHA resulting from any change in the Work.

A. The first items shall be a breakdown of the General Conditions Cost.

B. The amounts for labor and materials shall accurately reflect the cost for each item.

i. The Contractor shall clearly indicate on the Schedule of Values, the amount(s) allocated, including separate items for Contractor's Fee (overhead and profit), for each Section 3 certified Business used in the performance of the Work.

ii. Contractor's Fee shall be included in the totals for labor and materials.

C. If the material allocation exceeds 55 percent of the Contract Sum, the Contractor shall provide, upon request, sufficient information to support the higher percentage.

D. Subcontract Work shall show amounts for labor and materials.

i. Fringe benefits shall be shown as a part of labor costs.

E. When more than one major structure is included in the Work, the Contractor shall subdivide the Schedule of Values accordingly, with cost details for each structure shown separately.

F. The line items shall be coordinated with line items in the Construction Progress Schedule, which may require division of items of Work by area of the Project by floor, phase, or other appropriate area.

G. Mechanical and electrical Work shall be included in separate line items for all major pieces of equipment, and group smaller equipment items by type.

H. Line items shall be included for each Allowance, Punch List Work, Project Record Document Submittals, delivery of attic stock, and specified demonstrations and training.

**7.7.4.** CMHA may return the Schedule of Values to the Contractor for re-submittal if it does not meet the requirements or contains insufficient items or details of the Work, or approve the Schedule of Values if CMHA determines that it conforms to section 7.7

**7.7.5.** No payment shall be made until the CMHA has approved the Contractor's Schedule of Values.

**7.8. Labor Payments/Retainage**

**7.8.1.** Partial payments to the Contractor for labor performed under either a Unit Price or lump sum Contract shall be made at the rate of 90 percent of the amount invoiced through the Contractor Payment Request.

**7.9. Material Payments/Retainage**

**7.9.1.** CMHA shall pay the Contractor at the rate of 100 percent of the scheduled value for materials incorporated into the Project.

**7.9.2.** CMHA shall pay the Contractor at the rate of 90 percent of the invoice cost, not to exceed the scheduled value in a Unit Price or lump sum Contract, for materials delivered to the Site, or other off-Site storage location approved by CMHA provided the Contractor provides the following information with the Contractor Payment Request:

A. A list of the fabricated materials consigned to the Project, giving the place of storage, together with copies of invoices, in order to verify quantity and cost; and

B. A certification of materials stored off-site, prepared by the Contractor and signed by CMHA to evidence that the materials are in conformity with the Specifications and have been tagged with the Project name and number for delivery to the Project.

**7.9.3.** CMHA shall pay the balance of the scheduled value when the materials are incorporated into and become a part of the Project.

**7.9.4.** When payment is allowed for materials delivered to the Site or other approved off-site storage location but not yet incorporated into the Project, the materials are the property of CMHA.

**7.9.5.** CMHA may, at its sole discretion, retain any material not ultimately incorporated into the Project or return it to the Contractor for credit of an amount proportionate to the value of the extra materials.

**7.9.6. Release of Retainage**

A. When the Contractor has achieved Substantial Completion of all Work, and there is no other reason to retain funds; upon request of the Contractor, the funds retained in connection with that Work shall be released and paid to the Contractor, withholding only that amount necessary to assure faithful completion in the sole discretion of CMHA, including but not limited to compliance with CLOSEOUT.

**7.10. Payments Withheld**

**7.10.1.** CMHA may withhold funds from or may assess Liquidated Damages against a Contractor Payment Request.

**7.10.2.** CMHA may decline to approve any Contractor Payment Request or part thereof, or nullify any previous Contractor Payment Request, in whole or in part, to the extent necessary in CMHA's sole opinion to protect CMHA from loss because of:

- A. Defective Work not remedied;
- B. Overpayment of any schedule of values line item without prior approval of related change order by Contracting Officer;
- C. Overpayment due to calculation error;
- D. Damage caused by the Contractor;
- E. Reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- F. Reasonable evidence that the Work will not be completed within the Contract Times, and that the unpaid balance would not be adequate to cover damages under the Contract Documents for the anticipated delay;
- G. Failure to comply with Applicable Law including, but not limited to, the requirements of ORC.

**7.11. Payment Request**

**7.11.1.** The Contractor and each of its Subcontractors, regardless of tier, shall execute a Payment Release Affidavit to certify that the Contractor and each of its Subcontractors, regardless of tier, have complied with all applicable requirements of ORC, and to certify that all of its Subcontractors have been paid in full for all Work performed or materials furnished under the Contract.

**7.11.2.** CMHA shall pay Contractor in approximately forty-five (45) calendar days from the date of acceptance of the Payment Request.

**7.11.3.** The Contractor, as a condition precedent to final payment, shall complete all requirements of the Contract Documents.

**7.11.4.** Acceptance of final payment by the Contractor or a Subcontractor constitutes the payee's waiver of all claims against CMHA except those previously made in writing and identified by that payee as unsettled at the time of the final Contractor Payment Request.

## **8. ARTICLE VIII CONTRACT MODIFICATIONS**

**8.1. Changes in the Work**

**8.1.1.** Except as provided, no order, statement or conduct of CMHA shall be treated as a change or entitle the Contractor to an equitable adjustment.

**8.1.2.** Only CMHA's Contracting Officer has authority to modify any term or condition of this Contract.

A. Any Contract modification shall be authorized in writing.

**8.1.3.** The Contracting Officer may modify the contract unilaterally:

- A. Pursuant to a specific authorization stated in a Contract clause; or
- B. For administrative matters which do not change the rights or responsibilities of the parties.

**8.1.4.** All other Contract Modifications shall be in the form of supplemental agreements signed by the Contractor and CMHA.

- A. If notice of any change affecting the Contract is required by the provision of any Bond, notice is the Contractor's responsibility.

**8.1.5.** Except as expressly stated herein, the Contractor's failure to obtain prior written authorization from CMHA for a change in the Work constitutes a waiver by the Contractor of an adjustment to the Contract Sum or Contract Time or both.

**8.1.6.** The Contractor shall perform all changes in the Work under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly with the change unless otherwise provided in the Change Order or order for a minor change in the Work.

**8.1.7. HUD Approval**

- A. When a proposed modification requires the approval of HUD prior to its issuance; such modification shall not be effective until the required approval is received by CMHA.

**8.2. Change Order**

**8.2.1.** CMHA may order changes in the Work without invalidating the Contract and such change in Work may be accomplished, by Change Order or an order for a minor change in the Work.

**8.2.2.** CMHA 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, but not limited to, changes:

- A. In the specifications (including drawings and designs);
- B. In the method or manner of performance of the Work;
- C. CMHA-furnished facilities, equipment, materials, services, or site; or
- D. Directing the acceleration of the Work.

**8.2.3.** If any change 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, CMHA shall make an equitable adjustment and modify the Contract in writing.

- A. However, except for an adjustment based on defective specifications, no proposal for any change shall be allowed for any costs incurred more than twenty (20) calendar days before the Contractor gives written notice as required.
- B. In the case of defective specifications for which CMHA is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specification.

**8.2.4.** The Contractor must assert its right to an adjustment within thirty (30) calendar days after:

- A. Receipt of a written change order, or
- B. The furnishing of a written notice by submitting a written statement describing the general nature and the amount of the proposal.

**8.2.5.** If the facts justify it, CMHA may, in its sole discretion, extend the period for submission.

**8.3. Change Order Directive**

**8.3.1.** A Change Order Directive is a written order prepared by CMHA directing a change in the Work and may, if necessary, state a proposed basis for adjustment, if any, of Contract Sum or Contract Time, or both.

**8.3.2.** A Change Directive shall be used to direct a change in the Work in the absence of a total agreement on the terms of a Change Order and shall only be used in the absence of total agreement on the terms of a Change Order concerning the associated change of the Work.

**8.3.3.** Upon receipt of a Change Directive, the Contractor shall promptly proceed with the change in the Work involved.

**8.3.4.** Within fourteen (14) calendar days after receiving the Change Directive, the Contractor shall respond with a Change Order Proposal for adjustment of the Contract Sum or Contract Time or both.

**8.3.5.** If the Contractor does not respond to the Change Directive as required above, CMHA shall determine the adjustments, if any, of the Contract Sum and Contract Times.

- A. If the Contractor does not agree with CMHA's determination, the Contractor shall initiate a claim within ten (10) calendar days of the date on which CMHA issues the determination, and the Contractor's failure to do so shall constitute an irrevocable waiver the Claim.

**8.3.6.** If CMHA and the Contractor agree on the adjustment of the Contract Sum and/or Contract Time associated with the Change Order Directive, CMHA shall prepare an appropriate Change Order.

**8.4. Change Order Procedure**

**8.4.1.** Any Change Order Request must be in writing and submitted by the Contractor to CMHA in accordance with the Notice Provision.

**8.4.2.** The Contractor's cost of preparing and providing Proposals is included in the Contract Sum.

**8.4.3.** If CMHA Agrees with Change Order Proposal:

- A. CMHA shall prepare each Change Order, attach the supporting documentation, and issue the Change Order to the Contractor for signature.
- B. Within three (3) business days after issuance of Change Order to Contractor, Contractor must sign the Change Order and resubmit to CMHA.
- C. Change Order is not approved until CMHA's Contracting Officer signs the Change Order.

**8.4.4.** If CMHA disagrees with Change Order Proposal or Contracting Officer doesn't Approve Change Order:

- A. CMHA will notify Contractor in writing with reasons; and
- B. Contractor has fourteen (14) calendar days to modify the Change Order Request or invoke ARTICLE XI DISPUTE RESOLUTION/CLAIM PROCEDURE.

**8.4.5.** Failure to reach an agreement on any proposal shall be a dispute under ARTICLE XI DISPUTE RESOLUTION/CLAIM PROCEDURE herein.

- A. Nothing in Change Order Procedure, however, shall excuse the Contractor from proceeding with the contract change pursuant to an issued Change Directive.

**8.5. Change Order Proposal**

**8.5.1.** 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:

**A.** Direct Costs:

- i. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost)
- ii. Transportation and delivery costs associated with materials
- iii. Labor breakdowns by hours or unit costs (identified with specific Work to be performed)
- iv. Construction equipment exclusively necessary for the change
- v. Costs of preparation and/ or revision to shop drawings resulting from the change
- vi. Worker's Compensation and Public Liability Insurance
- vii. Employment taxes under FICA and FUTA
- viii. Bond Costs

**B.** Indirect Costs:

- i. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.

**C.** Profit:

- i. The amount of profit shall be negotiated and may vary according to the nature, extent, and complexity of the work required by the change.
- ii. The allow-ability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms, in effect on the date of this Contract.
- iii. The Contractor shall not be allowed a profit on the profit received by any subcontractor.
- iv. Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs.
- v. 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.

**8.5.2.** 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.

**8.5.3.** CMHA shall act on proposals within thirty (30) calendar days after their receipt, or notify the Contractor of the date such action will be taken.

**8.5.4.** By signing a Change Order, the Contractor irrevocably certifies that the elements of a Change Order described herein are completely satisfied, and waives all rights, if any, to seek further adjustment of the Contract Sum or Contract Times, or both, at a later date with respect to the associated change in the Work, including without limitation on account of the “cumulative impact” of the associated change in the Work in combination with in one or more of the other changes in the Work.

**8.5.5.** No Proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this Contract.

Except in an emergency endangering life or property, no change shall be made by the Contractor without a prior written authorization from CMHA’s Contracting Officer. When the Change Order is signed by the Contractor and CMHA’s Contracting Officer, the fully executed Change Order modifies the Contract Documents and authorizes and directs the Contractor to proceed, and the Contractor shall promptly proceed with the associated change in the Work.

### **8.6. Differing Site Conditions**

**8.6.1.** The Contractor shall promptly, and before the conditions are disturbed, give a written notice to CMHA of:

**A.** Subsurface or latent physical conditions at the site which differ from those indicated in this contract; or

**B.** 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.

**i.** Written notice of the condition shall be given immediately to CMHA.

**C.** The Contractor’s failure to give notice of the Differing Site Condition as required shall constitute an irrevocable waiver of any associated claim.

**8.6.2.** CMHA shall investigate the site conditions promptly after receiving the notice.

**A.** 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.

**B.** If the conditions do materially so differ and cause an increase or decrease in 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 CMHA within ten (10) calendar days after receipt of such instructions and, in any event, before proceeding with the work.

**C.** An equitable adjustment in the Contract price, the delivery schedule, or both shall be made under this.

**8.6.3.** No request by Contractor for an equitable adjustment to the Contract under Differing Site Conditions shall be allowed, unless the Contractor has given the written notice required; provided that the time prescribed for giving written notice may be extended by CMHA.

**8.6.4.** If CMHA determines that the Contractor has not encountered a Differing Site Condition and the Contractor does not agree with that determination, the Contractor must initiate a Claim within ten (10) calendar days of the date that CMHA issues its determination.

### **8.7. Minor Changes in the Work**

**8.7.1.** CMHA may order minor changes in the Work not involving adjustment of the Contract Sum or extension of the Contract Times and not inconsistent with the intent of the Contract Documents.

**A.** Those changes shall be effected by written order issued to the Contractor.

**8.7.2.** The Contractor shall promptly carry out each order for a minor change in the Work if the Contractor agrees that the order does not involve adjustment of the Contract Sum and Contract Times.

**8.7.3.** If the Contractor reasonably believes that it would be entitled to an adjustment of the Contract Sum or Contract Times, or both, on account of an order for a minor change in the Work, the Contractor, within three (3) business days after receiving the order, shall give CMHA written notice of the Contractor's position, and not proceed with the subject Work without first receiving a Change Order related to it.

**8.7.4.** The Contractor waives its right to an adjustment of the Contract Sum or Contract Times on account of an order for a minor change in the Work by:

- A. Starting the Work that is the subject of the order for a minor change in the Work; or
- B. Failing to give the notice described within three (3) business days after receiving the order for a minor change in the Work.

## **8.8. Change Order Cost or Credit Determination**

### **8.8.1. General**

- A. The maximum cost or credit resulting from a change in the Work shall be determined as described below.
  - i. Proposals shall include the information required.
  - ii. A Unit Price Proposal shall only be valid when incorporated into the Contract by Change Order.
  - iii. The maximum cost or credit includes all compensation for impact costs.
    - (a) Additional costs for impacts shall not be allowed.
- B. The Contractor shall not assign any portion of the Work to another Person whereby the Contractor would benefit directly or indirectly from the double application of charges for overhead or profit.
- C. CMHA may require notarized invoices for material costs and may audit the records of the Contractor and Subcontractors.
- D. For each change in the Work, the Contractor shall furnish a detailed Proposal itemized on the Proposal Worksheet Summary Form published by CMHA through which the Contractor shall document the related changes in the Contract Sum.
  - i. Any Subcontractor pricing shall also be itemized on the Proposal Worksheet Summary Form.
- E. Section 8.8.2 Pricing Criteria establishes the exclusive and maximum amount that CMHA shall pay for any Change Order, including, but not limited to, all amounts for interference with, delay, hindrance, disruption, or impact of the Work
  - i. These Pricing Criteria also govern the value of deduct Change Orders and the Contractor's entitlement to additional compensation or damages through the Claims and dispute resolution processes on account of changes in the Work.
  - ii. In order to expedite the review and approval process, Proposals shall be prepared in the categories and order listed in - Pricing Criteria.

### **8.8.2. Pricing Criteria**

#### **A. Contractor Personnel Costs**

- i. The Contractor's on-Site management (including supervision and administrative personnel) are not subject to State or Federal Prevailing Wage Rates.
- ii. These costs will be calculated on an hourly basis according to the rates acceptable to CMHA.
- iii. In no event will the Contractor be entitled to an increase in the Contract Sum on account of Contractor Personnel Costs unless the Contractor actually incurs additional Contractor Personnel Costs solely on account of the associated change in the Work.

#### **B. Labor**

- i. Field labor directly involved in the Work based upon the actual rate of pay to the worker.
- ii. If the Project is subject to payment of prevailing wage rates, field labor shall be paid according to the applicable classification of labor as established in the applicable prevailing wage determination.
- iii. In no event will the Contractor be entitled to an increase in the Contract Sum on account of labor costs unless the Contractor actually incurs additional labor costs solely on account of the associated change in the Work.
- iv. Under no conditions will the increase exceed those additional labor costs the Contractor actually incurs.

- v. The cost for supervision above the level of working forepersons (such as general forepersons, superintendent, project manager, etc.) is included in the adjustment Contractor Personnel Costs.

**C. Fringes**

- i. Fringe benefit credit for labor is only allowable for prevailing wage fringe benefits including, but not limited to, Health and Welfare, vacation, apprenticeship training, and certain types of pension plans.
- ii. Each fringe benefit for which credit is requested shall be calculated on an hourly basis and listed as a separate line item.
- iii. The Contractor shall submit documentation supporting the calculation of the amounts for each fringe benefit for each worker classification, including labor provided by Subcontractors.

**D. Allowable Payroll Expenses**

- i. Allowable payroll expenses for labor including payroll taxes as well as other benefits that are required by Applicable Law, shall each be a separate line item.

**E. Equipment Rentals**

- i. All charges for certain non-owned heavy or specialized equipment at up to 100 percent of the documented rental cost
- ii. No rental charges shall be allowed for hand tools, minor equipment, simple scaffolds, etc. Downtime due to repairs, maintenance and weather delays shall not be allowed.
- iii. Contractor shall submit copies of actual paid invoices to substantiate rental costs.

**F. Owned Equipment**

- i. All charges for certain heavy or specialized equipment owned by the Contractor or Subcontractor performing the Work at up to 100 percent of the cost listed by the current edition of the Associated Equipment Distributors' *AED Green Book* heavy equipment rental rates.
- ii. No recovery shall be allowed for hand tools, minor equipment, simple scaffolds, etc.
- iii. The longest period of time that the equipment is to be required for the Work shall be the basis for the pricing.
- iv. Downtime due to repairs, maintenance, and weather delays shall not be allowed.

**G. Trucking**

- i. A reasonable delivery charge or per-mile trucking charge for delivery of required materials or equipment
- ii. Charges for use of a pick-up truck shall not be allowed.

**H. Materials**

- i. The actual cost (including all discounts, rebates or related credits) of all materials incorporated into the changed Work
- ii. Documentation shall show costs, quantities, or Unit Prices of all items, as appropriate.
- iii. The cost or credit for reusable materials shall be limited to 33 percent of the material cost for each use.

**I. Contractor's General Conditions Costs**

- i. The Contractor's General Conditions Costs to the extent attributable to an associated change in the Contract Time for achievement of Final Acceptance resulting from the change in Work
- ii. In no event shall the Contract Sum adjustment per day of Contract Time adjustment exceed an amount equal to **(1)** the sum of the General Conditions Costs line items in the Contractor's Schedule of Values approved by CMHA, **(2)** divided by the total number of days of the original Contract Time for achievement of Final Acceptance.
- iii. The Contractor shall:
  - (a)** Exclude the bond premium from the Schedule of Values for the purposes of the calculation; and
  - (b)** Include the actual adjustment of the Bond Premium attributable to an associated change in the Contract Sum.
- iv. If the Contractor purchases Builder's Risk insurance for the Project, the Contract shall:
  - (a)** Exclude the Builder's Risk insurance premium from the Schedule of Values for the purposes of the calculation; and



- (b) Include the actual adjustment of the Builder's Risk insurance premium attributable to an associated change in the Contract Sum.

**J. Subcontractor Overhead and Profit**

- i. Adjustment of the Contract Sum on account of a change in Subcontractor-performed Work shall include the Subcontractor's aggregate overhead and profit allowance equal to 15 percent of the sum of the Subcontractor's costs that are associated with that changed Work.
- ii. The allowance applies to each Subcontractor tier.
- iii. The allowance covers:
  - (a) The costs required to schedule and coordinate the Work
  - (b) Telephone
  - (c) Telephone charges
  - (d) Facsimile
  - (e) Telegrams
  - (f) Postage
  - (g) Photos
  - (h) Photocopying
  - (i) Hand tools
  - (j) Simple scaffolds (one level high)
  - (k) Tool breakage
  - (l) Tool repairs
  - (m) Tool replacement
  - (n) Tool blades
  - (o) Tool bits
  - (p) Home office estimating and expediting
  - (q) Home office clerical and accounting support
  - (r) Home office labor (management, supervision, engineering)
  - (s) All other home office expense, legal services, travel, and parking expenses
- iv. An exception is allowed for shop or engineering labor, which shall not be subject to Prevailing Wage rates for steel fabricators, sheet metal fabricators, and sprinkler system fabricators performing work off-site.
  - (a) Recovery for these matters shall be allowed on an hourly basis.
- v. An exception is allowed for field supervision labor, for those portions of the Change Order Work that will be performed, or was performed, at times when the superintendent is not required to be on site, including but not limited to overtime hours due to acceleration and\ extensions of the Contract Times.
  - (a) Recovery for this matter will be allowed on an hourly basis.

**K. Contractor's Fee**

- i. Adjustment of the Contract Sum on account of a change in the Work shall include an allowance for the Contractor's Fee equal to 10 percent of the sum of the costs that are associated with that changed Work.

**L. Miscellaneous**

- i. Adjustment of the Contract Sum on account of a change in Work may include the following costs with no allowance for Contractor's Fee or Subcontractor overhead and profit.
- ii. The premium portion only for approved overtime (labor and fringes)
- iii. The straight time portion is included.

**8.8.3. Costs that shall not be reimbursed for Change Order Work include the following**

- A. Voluntary employee deductions including, but not limited to, deductions for charitable donations or U.S. savings bonds
- B. Employee profit sharing

**8.9. Time Extension**

- 8.9.1.** Every adjustment of the Contract Times associated with any change in the Work shall be determined as provided herein, which establishes the Contractor's maximum entitlement for any change in the Work, including without limitation all adjustments for interference, delay, hindrance, or disruption of the Work.
- 8.9.2.** This also governs time adjustments for deduct Change Orders and the Contractor's entitlement to additional time through the claims and dispute resolution processes on account of changes in the Work.
- 8.9.3.** The Contractor shall substantiate all changes in the Contract Times with:
- A.** A written description of the nature of the interference, disruption, hindrance or delay;
  - B.** Identification of Persons and events responsible for the interference, disruption, hindrance or delay;
  - C.** Date, or anticipated date, of commencement of the interference, disruption, hindrance or delay;
  - D.** Identification of activities by schedule activity number and name on the Construction Progress Schedule, which may be affected by the interference, disruption, hindrance or delay, or new activities created by the interference, disruption, hindrance or delay and the relationship with existing activities;
  - E.** Anticipated duration of the interference, disruption, hindrance or delay and of any remobilization period;
  - F.** Specific number of days of extension requested and specific number of days for remobilization requested;
  - G.** Recommended action to avoid or minimize any future interference, disruption, hindrance or delay; and
  - H.** A detailed written proposal for an increase in the Contract Sum which would fully compensate the Contractor for all costs of acceleration of the Work needed to completely overcome the associated delay, if any.
- 8.9.4.** A Change Order may authorize extension of the Contract Time for specific elements, while maintaining milestone dates for unaffected elements.
- A.** Such a Change Order may also authorize an appropriate adjustment to Liquidated Damages.
- 8.9.5. Critical Path**
- A.** Time extensions shall depend upon the extent to which the Work on the critical path of the Construction Progress Schedule is affected.
- 8.9.6.** A Change Order granting a time extension may provide that the Contract Times shall be extended for only elements so interfered with, disrupted, hindered, or delayed and related remobilization and that shall not be altered and may further provide for adjustment of Liquidated Damages.

## **9. ARTICLE IX CONSTRUCTION CLOSEOUT**

### **9.1. Final Cleaning**

- 9.1.1.** Before requesting the Substantial Completion inspection of the Work, the Contractor shall clean the Site, remove waste materials and rubbish attributable to the Project, and restore the property to an acceptable condition so that upon Substantial Completion, the premises are ready for occupancy by CMHA.
- 9.1.2.** If the Contractor performs any Work after final cleaning, the Contractor shall clean the affected area as provided above so that upon Substantial Completion, the premises are ready for occupancy by CMHA.
- 9.1.3.** Final cleaning shall be done to the reasonable satisfaction of CMHA.

### **9.2. Inspection and Construction of the Work**

- 9.2.1.** 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.
- A.** All work is subject to CMHA inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the Contract.
- 9.2.2.** CMHA inspections and tests are for the sole benefit of CMHA and do not:
- A.** Relieve the Contractor of responsibility for providing adequate quality control measures;
  - B.** Relieve the Contractor of responsibility for loss or damage of the material before acceptance;
  - C.** Constitute or imply acceptance; or
  - D.** Affect the continuing rights of CMHA after acceptance of the completed work.

**9.2.3.** The presence or absence of the CMHA 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.

**A.** All instructions and approvals with respect to the work shall be given to the Contractor by CMHA.

**9.2.4.** 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 CMHA.

**A.** CMHA 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 re-inspection or retest necessary.

**B.** CMHA 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.

### **9.3. Routine Inspections**

**9.3.1.** CMHA may conduct routine inspections of the construction Site on a daily basis.

**9.3.2.** The Contractor shall, without charge, replace or correct Work found by CMHA not to conform to contract requirements, unless Contracting Officer decides that it is in its interest to accept the Work with an appropriate adjustment in Contract Sum.

**A.** The Contractor shall promptly segregate and remove rejected material from the premises.

**9.3.3.** If the Contractor does not promptly replace or correct rejected Work, CMHA may:

**A.** By Contract or otherwise, replace or correct the Work and charge the cost to the Contractor; or

**B.** Terminate for default the Contractor's right to proceed.

**9.3.4.** If any work requiring inspection is covered up without approval of CMHA, it must, if requested by the Contracting Officer, be uncovered at the expense of the Contractor.

**A.** If at any time before final acceptance of the entire work, CMHA 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.

**B.** 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.

**C.** 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.

### **9.4. Substantial Completion**

**9.4.1.** Contractor's Punch List

**A.** When the Contractor considers the Work, or a designated portion thereof, Substantially Complete the Contractor shall inspect the Work and prepare a list of Defective Work and incomplete or unacceptable Work ("Contractor's Punch List").

**B.** The Contractor shall list all items of Work not in compliance with the Contract Documents, including items the Contractor is requesting to be deferred.

**i.** The Contractor shall proceed to correct all items listed on the Contractor's Punch List and certify that the incomplete items listed on the Contractor's Punch List are to its knowledge an accurate and complete list by signing the Contractor's Punch List.

**ii.** The Contractor's failure to include an item on the Contractor's Punch List shall not alter the Contractor's responsibility to complete the Work in accordance with the Contract Documents.

**iii.** The Contractor shall submit the signed Contractor's Punch List to CMHA together with a request for a Substantial Completion inspection of the Work.

**9.4.2. Substantial Completion Inspection**

**A.** The Contractor shall notify CMHA, 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.

**i.** If CMHA and/or the A/E determine that the state of preparedness is as represented, CMHA will promptly arrange for the inspection.

- ii. Unless otherwise specified in the Contract, CMHA shall accept, as soon as practicable after completion and inspection, all work required by the Contract or that portion of the Work that CMHA determines and designates can be accepted separately.
- iii. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or CMHA's right under any warranty or guarantee.
- B. Within three (3) business days after receipt of the request for the Substantial Completion inspection of the Work, CMHA shall notify the Contractor of acceptance or rejection of the request, stating reasons for any rejection.
  - i. Within seven (7) calendar days after its acceptance of the Contractor's request, CMHA and/or the A/E shall conduct the Substantial Completion inspection to determine whether the Work, or designated portion, is in conformity with the Contract Documents and Substantially Complete.
  - ii. If CMHA and/or the A/E determines that the Work is Substantially Complete, within three (3) business days after the Substantial Completion inspection, CMHA and/or the A/E shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion and include a list of Defective, incomplete, or unacceptable Work ("CMHA's Punch List").
  - iii. CMHA's Punch List shall include:
    - (a) The items on the Contractor's Punch List that are not yet completed or corrected as of the date of the Substantial Completion inspection; and
    - (b) Comments from CMHA regarding the Punch List and other issues related to the Project.
  - iv. CMHA shall submit the Certificate of Substantial Completion to the Contractor for their written acceptance.
    - (a) Upon their acceptance and consent of the Contractor's Surety, and subject to CMHA's right to withhold payment, CMHA shall release retainage.
  - v. CMHA and/or the A/E's failure to include an item on CMHA's Punch List shall not alter the Contractor's responsibility to complete the Work in accordance with the Contract Documents.
  - vi. If CMHA subsequently determines that the Work is not Substantially Complete, CMHA may request compensation for related expenses.
    - (a) CMHA may deduct the additional expenses from payments then or thereafter due the Contractor.
    - (b) If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to CMHA. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA, from and against all claims, (whether alleged or proven), demands, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, associated with the failure of the Contractor to timely and properly complete the Punch List items.

#### **9.4.3. Completion of Punch List Items**

- A. The Contractor shall complete all items on the CMHA's Punch List prior to date for Contract Completion.
- B. After completing all items on the CMHA's Punch List, the Contractor shall provide a written request for Final Inspection of the Work.
  - i. If Work on the Punch List cannot be timely completed, the Contractor shall submit a change order request MODIFICATIONS.
  - ii. Within three (3) business days after receipt of the request for the Final Inspection of the Work, CMHA and/or the A/E shall complete a Final Inspection of the Work for compliance with the Contract Documents.
  - iii. If multiple inspections of items on CMHA's Punch List are required due to the Contractor's failure to properly and timely complete them, the Contractor shall pay any additional costs incurred by the A/E and CMHA resulting from any attendant delay.
    - (a) CMHA may deduct those additional costs from payments then or thereafter due the Contractor.

- (b) If payments then or thereafter due the Contractor are not sufficient to cover those amounts, the Contractor shall immediately pay the amount of the insufficiency to CMHA. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA, from and against all claims, (whether alleged or proven), demands, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, related to multiple inspections by CMHA of items on the Punch List due to the Contractor's failure to properly and timely complete the Punch List.

#### **9.5. Demonstration and Training, Operating Appurtenances**

- 9.5.1. The Contractor, as a condition precedent to execution of the Certificate of Contract Completion and final payment, shall perform demonstration and training of CMHA's maintenance personnel as specified in the Contract Documents.
- 9.5.2. The Contractor, as a condition precedent to execution of the Certificate of Contract Completion and final payment, shall organize and submit operating appurtenances and loose items related to operation and maintenance of the completed Project to CMHA, including, but not limited to:
  - A. Keys to door and window hardware, panels, and other devices not directly provided to CMHA from the manufacturer;
  - B. Operating handles, levers, cranks, specialized wrenches or drivers, remote controls, and similar items; and
  - C. Extra materials (e.g., attic stock).

#### **9.6. Acceptance of Defective Work**

- 9.6.1. Defective Work may only be knowingly accept by CMHA in writing instead of CMHA requiring its removal or correction, in which case the Contract Sum must be equitably reduced to account for the reduction in benefit of the Work received by CMHA on account of the Defective Work.
  - A. CMHA may only accept Defective Work though a deduct Change Order that makes explicit reference to Acceptance of Defective Work
- 9.6.2. None of the following will constitute acceptance of Defective Work, a release of the Contractor's obligation to perform the Work in accordance with the Contract, or a waiver of any rights set forth in the Contract or otherwise provided by Applicable Law:
  - A. Observations or inspections by CMHA or the A/E;
  - B. The making of any payment;
  - C. Substantial Completion or the issuance of a Certificate of Substantial Completion;
  - D. Partial Occupancy and CMHA's use or occupancy of the Work or any part of it;
  - E. Contract Completion or the issuance of a partial or final Certificate of Contract Completion;
  - F. Any review or approval of a submittal;
  - G. Any inspection, test, or approval by other Persons; or
  - H. Any correction of Defective Work by CMHA.

#### **9.7. Building Commissioning**

- 9.7.1. If the Project scope includes building commissioning, the Contractor shall participate in the Commissioning Process, as prescribed in the Contract Documents.
- 9.7.2. The Contractor shall permit the A/E, CMHA, or a third-party Commissioning Agent ("CxA") if applicable, access to commission performance based equipment, fixtures, and/or systems (e.g., HVAC, fire protection, smoke evacuation, fume hoods, emergency power, etc.), prior to Substantial Completion.
- 9.7.3. The A/E, CMHA, or CxA if applicable, shall promptly notify, in writing, the Contractor of any deficiency identified during the Commissioning Process.
- 9.7.4. To facilitate the Commissioning Process, the Contractor shall submit 4 sets of Operation and Maintenance manuals for dynamic and engineered systems to CMHA and CxA, if applicable, for approval. This submission shall occur within 30 days of obtaining approval of all related Contractor submittals required by the Contract Documents.

#### **9.8. Contract Completion**

- 9.8.1. Partial Contract Completion

- A. When items of Work cannot be completed until a subsequent date, CMHA shall prepare a partial Certificate of Contract Completion that shall include a detailed list of the deferred Work and the date(s) by which the Contractor will complete that Work.
- B. CMHA shall submit the partial Certificate of Contract Completion to Contractor for their written acceptance. Upon their acceptance of the partial Certificate of Contract Completion and consent of the Contractor's Surety, CMHA may release payment to the Contractor, as determined in the sole discretion of CMHA.

**9.8.2. Final Contract Completion**

- A. Contract Completion shall occur no later than 180 calendar days from the date of Substantial Completion.
- B. When all items on CMHA's Punch List have been completed to the satisfaction of CMHA, all requirements of the Contract Documents have been completed, and the provisions have been fulfilled, CMHA shall prepare and recommend execution of final Contract payment.
- C. The date that CMHA executes the final Certificate of Contract Completion or issues Contract payment, whichever is later, is the date of Contract Completion.
- D. Nothing in Contract Completion shall constitute a waiver of CMHA's ability to pursue damages as the result of any breach of the Contract by the Contractor or Liquidated Damages.

## **10. ARTICLE X SUSPENSION AND TERMINATION**

**10.1. Suspension of the Work**

- 10.1.1.** 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 CMHA.
- 10.1.2.** If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted by an act of CMHA in the administration of this Contract, or by CMHA'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.
  - A. However, no adjustment shall be made 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.
- 10.1.3.** A Claim shall not be allowed:
  - A. For any costs incurred more than twenty (20) calendar 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
  - B. 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 no later than the date of final payment under the Contract.
- 10.1.4.** If CMHA suspends the Work under ARTICLE X SUSPENSION AND TERMINATION and the Contractor submits a proper Payment Request, subject to all other provisions of the Contract Documents, the Contractor shall be entitled to payment of compensation due under the Contract Documents for the Work performed before the suspension based upon the Schedule of Values.
- 10.1.5.** CMHA, without prejudice to any other right or remedy it may have, may order the Contractor in writing to suspend, delay, or interrupt the performance of the Work in whole or in part for such period as CMHA may determine for any of the following reasons:
  - A. Defective Work;
  - B. The Contractor is causing undue risk of damage to any part of the Project or adjacent area;
  - C. The Contractor fails to furnish or perform the Work in such a way that the complete Work will conform to the requirements of the Contract Documents; or

- D. Any other cause CMHA reasonably believes justifies suspension.
  - i. CMHA's exercise of its right to suspend the Work shall not entitle Contractor to any adjustment of the Contract Sum, Contract Time or both.

**10.1.6.** Upon receipt of the notice of suspension, the Contractor shall cease Work on the suspended activities and take all necessary or appropriate steps to limit disbursements and minimize respective costs.

- A. The Contractor shall furnish a report to CMHA within five (5) business days of receiving the notice of suspension, describing the status of the Work, including, but not limited to, results accomplished, resulting conclusions, and other information as CMHA may require.

**10.1.7.** CMHA's right to stop the Work shall not give rise to any duty to exercise the right for the benefit of the Contractor or any other party, and CMHA's exercise or failure to exercise the right shall not prejudice any of CMHA's other rights including the right to suspend the Work in the future under the same or similar circumstances.

## **10.2. Termination for Convenience**

**10.2.1.** CMHA, through 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 CMHA.

- A. 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 termination becomes effective.

**10.2.2.** Upon delivery of the notice of termination for convenience, the Contractor shall immediately proceed with performance of the following duties in accordance with instructions from CMHA:

- A. Cease operations as specified in the notice;
- B. Place no further orders and enter into no further subcontracts for materials, labor, services, or facilities, except as necessary to complete continued portions of the Project;
- C. Terminate all subcontracts and orders to the extent they are related to the Work terminated;
- D. Proceed with Work not terminated; and
- E. Take actions that may be necessary, or that CMHA may direct, for the protection and preservation of the terminated Work.
  - i. Failure to do so may lead to Contractor's liability for actual damages as a result of Contractor's failure to protect the Work.

**10.2.3.** If the performance of the work is terminated, either in whole or in part, CMHA shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by CMHA of a properly presented claim setting out in detail:

- A. The total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor;
- B. The cost 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 CMHA to the Contractor or by the Contractor to the Subcontractor or supplier;
- C. The cost of preserving and protecting the work already performed until CMHA or assignee takes possession thereof or assumes responsibility therefore; and
- D. An amount constituting a reasonable profit on the value of the work performed by the Contractor.

**10.2.4.** CMHA will act on the Contractor's claim within sixty (60) calendar days (unless CMHA deems in writing that additional time is needed for review) of receipt of the Contractor's claim.

**10.2.5.** Any disputes are expressly made subject to the provisions of this Contract.

**10.2.6.** If CMHA terminates the Work the termination shall not affect the rights or remedies of CMHA against the Contractor then existing or which may thereafter accrue.

**10.2.7.** Notwithstanding, if CMHA terminates the Work but there exists an event of Contractor's default, the Contractor shall be entitled to receive only such amounts as it would be entitled to receive following the occurrence of an event of default as provided for below.

**10.3. Termination for Cause/Default**

**10.3.1.** If the Contractor materially breaches this Contract, including without limitation, 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, CMHA 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.

- A.** In this event, CMHA 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.
- B.** The Contractor and its sureties shall be liable for any damage to CMHA 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.
  - i.** This liability includes any increased costs incurred by CMHA in completing the Work.
- C.** Other examples of material breaches of the Contract include but are not limited to:
  - i.** Refusal to remedy defective work;
  - ii.** Failure to supply enough properly skilled workers or proper materials;
  - iii.** Failure to provide revised Construction Progress Schedule or Recovery Plan;
  - iv.** Failure to properly make payment to Subcontractors or Consultants; or
  - v.** Disregarding laws, ordinances, or rules, regulations, or orders of a public authority with jurisdiction over the Project.

**10.3.2.** If CMHA intends to exercise its termination right, CMHA shall issue not less than five (5) business days written notice to the Contractor and the Contractor's Surety in accordance with ORC.

- A.** Notwithstanding any provision of the Contract to the contrary, the issuance of a 3-Day Notice is not a condition precedent to CMHA's exercise of its rights and CMHA's decision to not issue a 3-Day Notice will not prejudice CMHA's rights under this.

**10.3.3.** If the Contractor fails to satisfy the requirements set forth in the 5-Day Notice within fifteen (15) calendar days of receipt of the 5-Day Notice or as otherwise specified in the notice, CMHA may declare the Contractor in default, terminate the Contract, and employ upon the Work the additional force or supply materials or either as appropriate, and remove Defective Work.

**10.3.4.** 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 CMHA.

**10.3.5.** If the Contract is terminated, the Contractor's Surety may perform the Contract.

- A.** If the Contractor's Surety does not commence performance of the Contract within ten (10) calendar days of the date of Contract termination, CMHA may complete the Work by means that CMHA deems appropriate.
  - i.** CMHA may take possession of and use all materials, facilities, and equipment at the Site or stored off-site, for which CMHA has paid.
- B.** If CMHA notifies the Contractor's surety that the Contractor is in default or terminates the Contract, the surety will promptly and in not less than twenty-one (21) calendar days investigate the claimed material default or termination.
  - i.** If CMHA gives a notice of default and then terminates the Contract, the surety shall complete its investigation within twenty-one (21) calendar days of the notice of default.
    - (a)** As part of such investigation, the surety shall visit the offices of the Contractor, A/E and CMHA to review the available project records.



- ii. If the surety proposes to take over the Work, the surety shall do so no later than the expiration of such 21-day period or ten (10) calendar days after the date CMHA terminates the Contract, whichever is later.
  - iii. If CMHA terminates the Work, and the surety proposes to provide a replacement contractor, the replacement contractor shall be fully capable of performing the Work in accordance with the Contract Documents, including meeting all the requirements of the Contract Documents.
    - (a) If the Contractor is terminated, the replacement contractor shall not be the Contractor.
  - iv. The surety will provide the Owner with the results of its investigation, including any written report or documents.
- C. Termination for Cause/Default is in addition to CHMA's other rights under the Contract Documents and is not intended to create any rights of the surety, including but not limited to the right to take over the Contractor's obligations.

**10.3.6.** If the Contract is terminated for cause, the Contractor shall not be entitled to further payment.

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA, from and against all claims, (whether alleged or proven), demands, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, arising out of or related the costs incurred by CMHA to finish the Work following termination of the Contractor for cause.
- B. If the unpaid balance of the Contract Sum exceeds the costs of finishing the Work, including without limitation the fees and charges of engineers, architects, attorneys, and other professionals and court costs, and other damages incurred by CMHA and not expressly waived, the Contractor or Surety shall immediately pay the amount of insufficiency to CMHA.
- C. This obligation for payment shall survive termination of the Contract.

**10.3.7.** If the Contractor's Surety performs the Work, the provisions of the Contract Documents govern the Surety's performance, with the Surety in place of Contractor in all provisions including, but not limited to, provisions for payment for the Work, and provisions of the right of CMHA to complete the Work.

**10.3.8.** If CMHA terminates the Contract, the termination shall not affect any rights or remedies of CMHA against the Contractor then existing or which may thereafter accrue.

- A. CMHA's retention or payment of funds due to the Contractor shall not release the Contractor or the Contractor's Surety from liability for performance of the Work in accordance with the Contract Documents.

**10.4. Contractor Insolvency**

**10.4.1. Bankruptcy of Contractor**

- A. If the Contractor files a voluntary petition in bankruptcy or has an involuntary petition in bankruptcy filed against it, the Contractor, the Contractor as the debtor-in-possession, or the trustee of the Contractor's bankruptcy estate shall notify CMHA in writing within five (5) days of such filing and file a motion to assume or reject the Contract within twenty (20) calendar days after the filing of the petition and shall diligently prosecute that motion to conclusion so as to obtain an order granting or denying that motion within forty-five (45) calendar days after the filing of the petition.
- B. The failure of the Contractor to file and prosecute that motion Contractor shall constitute a material breach of the Contract by the Contractor as time is of the essence with respect to Contractor's performance of all terms of this Contract.
- C. The Contractor agrees to the granting of relief from the automatic stay of the Bankruptcy Code, to permit CMHA to terminate the Contract for cause in such instance and issue and serve all notices necessary to terminate the Contract or arising out of termination of the Contract and to take any other action necessary to terminate the Contract.

**10.4.2. Receivership or Assignment for the Benefit of Creditors**

- A. If the Contractor makes a general assignment for the benefit of creditors or if a receiver is appointed for all or a substantial part of Contractor's business or property, CMHA shall serve written notice to the Contractor and Contractor's Surety stating that any failure of the Contractor to provide adequate assurance of continued performance shall be considered a rejection of the Contract, which shall result in termination of the Contract for cause.
- B. Termination of the Contract need not be evidenced by an order of any court.

#### **10.5. General**

- 10.5.1.** "Claim," as used in ARTICLE XI DISPUTE RESOLUTION/CLAIM PROCEDURE, 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, additional time, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract.
- 10.5.2.** 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.
- 10.5.3.** A voucher, invoice, application for payment, or other routine request for payment that is permitted under the Contract Documents and is not in dispute when submitted, is not a Claim.
- 10.5.4.** The submission may be converted to a Claim by complying with the requirements of ARTICLE XI DISPUTE RESOLUTION/CLAIM PROCEDURE, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.
- 10.5.5.** Except for disputes arising under ARTICLE XIX LABOR STANDARDS, 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 ARTICLE XI DISPUTE RESOLUTION/CLAIM PROCEDURE.
- 10.5.6.** All Claims by the Contractor shall be made in writing and submitted to CMHA for a written decision.
  - A. A claim by CMHA against the Contractor shall be subject to a written decision by the Contracting Officer.

#### **10.6. Initiation of a Claim**

- 10.6.1.** Every Claim shall accrue upon the date of occurrence of the event giving rise to the Claim.
- 10.6.2.** Except as provided, the Contractor shall initiate every Claim by giving written notice of the Claim to CMHA within ten (10) calendar days after occurrence of the event giving rise to the Claim, with the following exceptions:
  - A. The 10-day time limit on initiating a Claim arising from the response of an RFI by CMHA begins to run on the date of the response.
  - B. The 10-day time limit on initiating a Claim arising from CMHA's determination concerning a Differing Site Condition begins to run on the date of the determination .
- 10.6.3.** The Contractor's written notice of a Claim shall provide the following information:
  - A. Nature and anticipated amount of the impact, including all costs for any interference, disruption, hindrance, or delay, which shall be calculated and be a fair and reasonably accurate assessment of the damages suffered or anticipated by the Contractor;
  - B. Identification of the circumstances responsible for causing the impact, including, but not limited to, the date or anticipated date, of the commencement of any interference, disruption, hindrance, or delay;
  - C. Identification of activities on the Construction Progress Schedule that will be affected by the impact or new activities that may be created and the relationship with existing activities;
  - D. Anticipated impacts and anticipated duration of any interference, disruption, hindrance, delay, or impact, and any remobilization period; and
  - E. Recommended action to avoid or minimize any interference, disruption, hindrance, delay, or impact.
- 10.6.4.** The Contractor's failure to initiate a Claim as and when required shall constitute the Contractor's irrevocable waiver of the Claim.

#### **10.7. Substantiation of Claims General**

- 10.7.1.** Within thirty (30) calendar days after the initiation of a Claim, the Contractor shall submit three (3) copies of all information and statements required to substantiate a Claim and all other information that the Contractor believes substantiates the Claim.

- 10.7.2.** The Contractor shall substantiate all of its Claims by providing the following minimum information:
- A.** A narrative of the circumstances, which gave rise to the Claim, including without limitation the start date of the event or events and the actual or anticipated finish date;
  - B.** Detailed identification of the Work affected by the event giving rise to the Claim;
  - C.** Copies of the Contractor's daily log for each day of impact;
  - D.** Copies of relevant correspondence and other information regarding or supporting Contractor's entitlement;
  - E.** Copies of any and all information related to the Contractor's costs, including all job cost reports, bid take offs, and other financial information related to the Contractor's Claim;
  - F.** The notarized Certification of a Claim

**10.8. Substantiation of Claims for increase of the Contract Sum**

- 10.8.1.** In addition to the minimum information required by Contractor, the Contractor shall substantiate each Claim for an increase of the Contract Sum with:
- A.** Written documentation of the actual additional direct and indirect costs to the Contractor due to the event giving rise to the Claim;
  - B.** A written statement from the Contractor that the increase requested is the entire increase in the Contract Sum associated with the Claim; and
  - C.** The general substantiation documentation.

**10.9. Substantiation of Claims for Extension of the Contract Time**

- 10.9.1.** In addition to the minimum information required by Contractor, the Contractor shall substantiate each Claim for an extension of the Contract Times with:
- A.** Written documentation of the actual delay to the critical path of the Construction Progress Schedule due to the event giving rise to the Claim;
  - B.** A detailed written Proposal for an increase in the Contract Sum that would fully compensate the Contractor for all costs of acceleration of the Work needed to completely overcome the associated delay, A written statement from the Contractor that the extension requested is the entire extension of the Contract Times associated with the Claim; and
  - D.** The general substantiating documentation.

- 10.9.2.** In addition, if adverse weather conditions are the basis for a Claim for additional time, the Contractor shall document the Claim with data substantiating that weather conditions were abnormal for the period, could not have been reasonably anticipated, and had an adverse effect on a critical element of the scheduled construction.

**10.10. Certification of a Claim**

- 10.10.1.** The Contractor shall certify each Claim within thirty (30) calendar days after initiating the Claim or before Contract Completion, whichever is earlier, by providing the notarized Certification of a Claim specified below, signed and dated by the Contractor:
- A.** *"The undersigned Contractor certifies that the Claim is made in good faith; that the supporting data is accurate and complete to the best of the Contractor's knowledge and belief; that the amount requested is a fair, reasonable, and necessary adjustment for which the Contractor believes that CMHA is liable; and that the undersigned is duly authorized to certify the Claim on behalf of the Contractor."*

**10.11. Delay and Delay Damage Limitations**

- 10.11.1.** Subject to other provisions of the Contract, the Contractor will be entitled to an extension of the Contract Times on account of delay in the commencement or progress of Work on the critical path of the Construction Progress Schedule caused by acts of unforeseeable Nature or the public enemy, acts of the government not arising from the Contractor's failure to comply with Applicable Law, fires, floods, epidemics, weather, and labor disputes beyond the Contractor's control.
- 10.11.2.** Notwithstanding any other provision of the Contract Documents to the contrary, the Contractor shall not be entitled to an increase in the Contract Sum, or an extension of the Contract Times, or both:
- A.** On account of the impact of any normal adverse weather on any of the Work or on account of the impact of any abnormal adverse weather on Work not on the critical path;
  - B.** To the extent that a delay occurs concurrently with a delay attributable to the Contractor; or

- C. On account of the delay of any Work not on the critical path.
  - i. When the Contractor is prevented from completing any part of the Work on the critical path within the Contract Time due to weather conditions, provided the Contractor properly initiates a Claim, the Contract Time will be extended by one (1) day for each work day lost due to weather that delays Work on the critical path in excess of those in the following table:

Month	Number of Workdays Lost Due To Weather
January	8
February	8
March	7
April	6
May	5
June	4
July	4
August	4
September	5
October	6
November	6
December	6

- 10.11.3. Notwithstanding any other provision of the Contract Documents to the contrary, the Contractor shall not be entitled to an increase in the Contract Sum or any type of damages on account of a delay in the commencement or progress of Work on the critical path unless:
  - A. The delay is caused by CMHA; and
  - B. The delay was not authorized or permitted under the Contract.

- 10.11.4. Notwithstanding any other provision of the Contract Documents to the contrary, the Contractor shall not be entitled to an increase in the Contract Sum or any type of damages arising from a delay in the commencement or progress of any the Work caused by the occurrence or non-occurrence of an event beyond CMHA’s control such as acts of Nature or the public enemy, acts of the government, fires, floods, epidemics, labor disputes, unusual delivery delays, weather, or damages caused by the Contractor.

**10.12. Derivative Claims**

- 10.12.1. Notwithstanding any other provision of the Contract to the contrary, if CMHA prosecutes a claim, suit, or appeal against a Separate Consultant or Separate Contractor to recover damages the Contractor suffers on account of the acts or neglects of a Separate Consultant or Separate Contractor or person or entity for whom either is legally responsible, CMHA’s liability to the Contractor shall not exceed the amount CMHA actually recovers from the Separate Consultant or Separate Contractor on account of those damages less the costs CMHA incurs recovering them. CMHA is not obligated to prosecute any such claim, suit, or appeal.

**10.13. Claim Decision**

- 10.13.1. CMHA shall, within sixty (60) calendar days (unless otherwise requested), decide Claims submitted by Contractor or notify the Contractor of the date by which the decision will be made.
- 10.13.2. The Contracting Officer’s decision shall be final with respect to Claims by Contractor unless the Contractor:
  - A. Appeals in writing to a higher level at CMHA in accordance with the CMHA’s policy and procedures;
  - B. Refers the appeal to an independent mediator or arbitrator; or
  - C. Files suit in a court of competent jurisdiction. Such suit must be filed within fifteen (15) calendar days (unless a different time period is identified in the Claim Decision) after receipt of CMHA’s decision.

- 10.13.3. 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 CMHA.

**10.14. Audit of a Claim**

- 10.14.1. All Claims submitted by Contractor shall be subject to audit at any time following filing of the Claim by Contractor, whether or not the Claim is part of any lawsuit.
- 10.14.2. The audit may be performed by employees of CMHA or by a consultant engaged by CMHA.
- 10.14.3. The audit may begin upon 10-days’ notice to the affected Contractor or affected Subcontractor.

**10.14.4.** The Contractor shall cooperate with the request.

**10.14.5. Failure of the Contractor or Subcontractor to produce sufficient records to allow CMHA to audit and verify a Claim shall constitute an irrevocable waiver of the Claim or portion of the Claim that could not be completely audited.**

**10.14.6.** The Contractor shall make available to CMHA all Contractor and Subcontractor documents related to the Claim including, without limitation, the following documents:

- A.** Daily time sheets and superintendent's daily reports;
- B.** Union agreements, if any, and employer agreements;
- C.** Insurance, welfare, fringes, and benefits records;
- D.** Payroll tax returns;
- E.** Material invoices, purchase orders, Subcontracts, and all material and supply acquisition contracts;
- F.** Material cost distribution worksheets;
- G.** Equipment records (list of Contractor equipment, rates, etc.);
- H.** Vendor rental agreements and Subcontractor invoices;
- I.** Subcontractor payment certificates;
- J.** Canceled checks (payroll and vendors);
- K.** Job cost report;
- L.** Job payroll ledger;
- M.** General ledger, general journal, (if used) and all subsidiary ledgers and journals together with all supporting documentation pertinent to entries made in these ledgers and journals;
- N.** Cash disbursements journal;
- O.** Financial statements for all years reflecting operations on the Project;
- P.** Income tax returns for all years reflecting operations on the Project;
- Q.** Depreciation records on all equipment utilized whether the records are maintained by the Contractor, its accountant, or others;
- R.** If a source other than depreciation records is used to develop costs for the Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all other source documents;
- S.** All documents that reflect the Contractor's actual profit and overhead during the years the Project was being performed;
- T.** All documents related to the preparation of the Contractor's Bid, including the final calculations on which the Bid was based, unless the documents are placed in escrow under provisions of the Instructions to Bidders;
- U.** All documents that relate to the Claim together with all documents that support the amount of damages as to the Claim;
- V.** Worksheets used to prepare the Claim establishing the cost components for items of the Claim including, but not limited to, labor, fringes, benefits and insurance, materials, equipment, Subcontractors, and all documents that establish the periods of time, individuals involved, the hours and rate of pay for the individuals; and
- W.** All other documents required by CMHA to reasonably review the Claim.

**10.15. False Certification of a Claim**

**10.15.1.** If the Contractor falsely certifies all or any part of a Claim, the portion of the Claim falsely certified shall be denied, and may be sufficient cause for CMHA to exclude Contractor from future contracting opportunities as permitted by law.

**10.15.2.** The Contractor shall not knowingly present or cause to be presented to the Owner a false or fraudulent Claim.

- A.** Knowingly shall have the same meaning as in [the Federal False Claims Act](#).

**10.15.3.** If the Contractor knowingly presents or causes to be presented a false or fraudulent Claim, then the Contractor shall be liable to the Owner for the same civil penalty and damages as the United States Government would be entitled to recover and shall also indemnify and hold the Owner harmless from all costs and expenses, including Owner's attorneys' and consultants' fees and expenses incurred in investigating and defending against such Claim and in pursuing the collection of such penalty, damages and fees and expenses.

## **11. ARTICLE XII WARRANTY**

### **11.1. Warranty of Title**

**11.1.1.** 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.

### **11.2. Warranty of Construction**

**11.2.1.** In addition to any other warranties in this Contract, the Contractor warrants 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.

- A.** Work not conforming to those requirements, including Substitutions not properly approved and authorized, may be considered Defective Work.
- B.** If required by CMHA, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**11.2.2.** The Contractor shall remedy, at the Contractor's expense, any Work that does not conform to the requirements of the Contract Documents, or any Defective Work.

- A.** In addition, the Contractor shall remedy, at the Contractor's expense, any damage to CMHA-owned or controlled real or personal property when the damage is the result of:
  - i.** Any action or inaction by Contractor;
  - ii.** The Contractor's failure to conform to Contract requirements; or
  - iii.** Any defects of equipment, material, workmanship or design furnished by the Contractor.

**11.2.3.** The Contractor shall restore any work damaged in fulfilling the terms and conditions of Warranty of Construction.

- A.** The Contractor's Warranty with respect to work repaired or replaced shall be extended for a period of not less than one year, beyond the original Warranty period required under the Contract, of repair or replacement.

**11.2.4.** CMHA shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect or damage.

- A.** If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, CMHA shall have the right to replace, repair or otherwise remedy the failure, defect, or damage at the Contractor's expense.

**11.2.5.** 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:

- A.** Obtain all warranties that would be given in normal commercial practice;
- B.** Require all warranties to be executed in writing, for the benefit of CMHA; and
- C.** Enforce all warranties for the benefit of CMHA.

**11.2.6.** If the Contractor or a Subcontractor recommends a particular product, material, system, or item of equipment for incorporation into the Project and CMHA accepts that recommendation, the above Warranty shall include a warranty from the Contractor to CMHA that the recommended product, material, system, or item of equipment is fit and appropriate for the associated purpose.

### **11.3. Warranty Walk-through Contractor**

**11.3.1.** At CMHA's request, Contractor shall perform a walkthrough of the property no earlier than three months prior to the expiration of any Warranty.

- A. If Contractor is unavailable for the Warranty walk-thru, the Warranty shall be extended until the time Contractor is available.

## **12. ARTICLE XIII BONDS**

### **12.1. Bid Bond/Guaranty**

**12.1.1.** The Contractor shall provide to CMHA a Bid Guaranty in the form of either:

- A. A Bond for 10% of the Bid; or
- B. A certified check, cashier's check or letter of credit revocable only at the option of CMHA and shall be in the amount of 10% of the Bid.

**12.1.2.** The Bid Guaranty shall be conditioned to:

- A. Provide that Contractor will, after award, enter into a contract with CMHA in accordance with the bid, plans, details, and specifications.
- B. If the Bidder fails to enter into the Contract and CMHA awards Contract to next lowest bidder, the Bidder and the Surety on the Bidder's Bid are liable to CMHA for the lesser of either:
  - i. The difference between the Bidder's Bid amount and the bid amount of the next lowest bidder; or
  - ii. For a penal sum of the Bond in the amount of 10% of the Bidder's Bid.
- C. If CMHA does not award the Contract to the next lowest bidder but resubmits the Project for bidding, the Bidder failing to enter into the Contract and the Surety on the Bidder's Bond are liable to CMHA for a penal sum on the Bond not to exceed 10% of the amount of the Bidder's Bid amount.

**12.1.3.** Where CMHA accepts a Bid but the Bidder fails or refuses to enter into a Contract in accordance with the Contract Documents included with the Bid, including the plans, details, and specifications, within ten (10) calendar days after Notice of Intent, the Bidder and Surety on any Bond are liable for the amount of the difference between the amount of the Bidder's Bid and the amount of the Bid from next lowest Bidder.

**12.1.4.** All Bid Guaranties shall be payable to CMHA, be for the benefit of CMHA and be deposited with CMHA.

### **12.2. Payment and Performance Bond**

**12.2.1.** In addition to any other requirements in the Contract Documents, Contract Commencement does not occur until CMHA receives a Payment and Performance Bond.

**12.2.2.** Contractor shall, within ten (10) calendar days of CMHA's delivery of signed Contract to Contractor, unless otherwise specified by CMHA in writing, deliver to CMHA a payment and performance bond with a penal sum in the amount of 100% of the Contract Sum (which includes all acceptable alternates).

**12.2.3.** The Payment and Performance Bond shall contain the following a condition that indemnifies CMHA against all damages suffered by CMHA as a result of the failure of Contractor to perform the Work in accordance with the requirements of the Contract Documents, including, the plans, details, and specifications, and the Payment and Performance Bond shall state that Contractor shall pay all lawful claims of Subcontractors, material suppliers, and laborers for labor performed or material furnished in carrying forward, performing or completing the Contract.

**12.2.4.** All Bonds requirement by the Contract shall be obtained from companies holding certificates of authority as acceptable sureties and shall be listed on the U.S Treasury Circular 570 (T-List).

- A. Each company shall be licensed to do business in Ohio and satisfactory to CMHA.

**12.2.5.** The Contractor shall submit with each executed Bond:

- A. A certified copy of the authority to act (power of attorney) of the agent signing the Bond on behalf of the Surety, and
- B. A current signed Certificate of Compliance issued by the Ohio Department of Insurance demonstrating that Surety is licensed to do business in Ohio.

**12.2.6.** If the Contract Sum increases at any time such that it exceeds the sum of the Bond, the Contractor shall cause the penal sum of the Bond to be increased such that the sum equals one-hundred percent of the increased Contract Sum.

**12.2.7.** Any time Contractor increases the sum of the Bond, the Contractor shall deliver to CMHA written consent of the affected Surety confirming the increased penal sum of the Bond.

- A. CMHA's receipt of that written consent is a condition precedent to CMHA's obligation to pay the Contractor for any portion of the Work associated with the increase.

- 12.2.8. If notice of any change affecting the Contract is required by any Surety or by the provision of any Bond, the Contractor shall provide that notice.

### 13. ARTICLE XIV INSURANCE

#### 13.1. Contractor's General Insurance Requirements

- 13.1.1. Throughout the performance of the Work or longer as may be described below, the Contractor and each Subcontractor shall obtain, pay for and keep in force, the minimum insurance coverage.
- 13.1.2. On a case-by-case basis, CMHA and Contractor may mutually agree to adjust the insurance requirements for any particular subcontractor.
- 13.1.3. All insurance shall be carried with companies which are financially responsible and admitted to do business in the State of Ohio.
- A. If any such insurance is due to expire prior to Contract Completion, the Contractor (including Subcontractors, as applicable) shall not permit the coverage to lapse and shall furnish evidence of coverage to the Contracting Officer.
  - B. 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 thirty (30) calendar days prior written notice has been given to CMHA.

#### 13.2. Minimum Coverage Requirements

##### 13.2.1. Workers' Compensation:

- A. In accordance with the State of Ohio Workers' Compensation laws

##### 13.2.2. Commercial General Liability

- A. With a combined single limit for bodily injury and property damage of not less than \$1,000,000 per occurrence unless otherwise specified by CMHA in writing, to protect the Contractor and each subcontractor against claims for bodily injury or death and damage to the property of others.
- B. This shall cover the use of all equipment, hoists, and vehicles on the site(s) not covered by Automobile Liability.
- C. If the Contractor has a "claims made" policy, then the following additional requirements apply:
  - i. The policy must provide a "retroactive date" which must be on or before the execution date of the Contract; and
  - ii. The extended reporting period may not be less than five years following the completion date of the Contract.

##### 13.2.3. Employers Liability Coverage

- A. Unless otherwise specified by CMHA in writing, the Contractor shall maintain employer's liability coverage with:
  - i. An each accident limit of not less than \$1,000,000;
  - ii. A disease each-employee limit of not less than \$1,000,000; and
  - iii. A disease policy limit of not less than \$1,000,000.

##### 13.2.4. Automobile Liability

- A. On owned and non-owned motor vehicles used on the site(s) or in connection therewith for a combined single limit for bodily injury and property damage of not less than \$ 1,000,000 per occurrence.

##### 13.2.5. Builder's Risk Insurance

- A. Before commencing Work, the Contractor shall furnish CMHA 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.
  - i. The Builder's Risk Insurance shall be for the benefit of the Contractor and CMHA as their interests may appear and each shall be named in the policy or policies as an insured.
  - ii. The Contractor if installing equipment supplied by CMHA shall carry insurance on such equipment from the time the Contractor takes possession thereof until the Contract work is accepted by CMHA.



- iii. 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.
  - iv. It need not be carried on landscape work.
  - v. 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 CMHA.
  - vi. The Contractor may terminate this insurance on buildings as of the date CMHA issues a Certificate of Contract Completion.
- B.** The amount of Builder's Risk coverage shall not be less than the total completed value of the Project, including the value of permanent fixtures and decorations, with a deductible of not more than \$25,000 per occurrence.
- i. Contractor shall be responsible for paying all deductibles for any and all claims made under the Builder's Risk policy; and,
  - ii. Any deductible over the amount specified in this provision shall be authorized in writing by CMHA.
- C.** Coverage shall include a provision to pay the reasonable extra costs of acceleration and expediting temporary and permanent repairs to, or permanent replacement of, damaged property.
- i. This shall include overtime wages and the extra costs of "express" or other means of expedited transportation and/or delivery of supplies necessary to the repair or replacement.
- D.** Coverage shall include "soft costs endorsement" including, but not limited to, the reasonable extra costs of the A/E and reasonable Contractor extension or acceleration costs.
- E.** Coverage shall include material in transit or stored in off-site and identified for the Project.
- F.** Coverage shall waive all rights between CMHA, Contractor, and Subcontractors at any tier, for damages caused by fire or any other perils to the extent of actual recovery of any insurance proceeds under the policy.
- G.** Coverage shall include appropriate sub-limits for installation coverage.
- H.** Coverage shall include provisions for mechanical or electrical breakdown, or boiler system testing.
- I.** Coverage shall include temporary structures and scaffolding, along with collapse coverage.
- J.** Coverage shall be primary to all other applicable insurance.
- K.** The Builder's Risk policy shall specifically permit partial occupancy by CMHA prior to Contract Completion and coverage shall remain in effect until CMHA issues a Certificate of Contract Completion.
- L.** The Contractor's tools and equipment shall not be covered under the Builder's Risk policy.
- i. It is the Contractor's sole responsibility to maintain insurance coverage for tools and equipment used on the Project, which shall be included in its Overhead (a component of Contractor's Fee) and not included as a separate item in Contractor's Schedule of Values.
- M.** If Contractor is involved solely in the installation of material and equipment and not in new building construction, the Contractor shall purchase and maintain a Builder's Risk, Builder's Risk-renovations, or installation floater insurance policy that complies with the requirements of Article XIV.
- 13.2.6. Umbrella/Excess Liability**
- A.** The Contractor may employ an umbrella/excess liability policy to achieve the above required minimum coverage.
- B.** Unless otherwise specified by CMHA in writing, for Construction Contracts in excess \$1,000,000, the Contractor shall maintain umbrella/excess liability coverage with a limit of not less than \$2,000,000 (in addition to the above-required limits) if the Work (or Work to be performed by the Subcontractor) includes any of the following:
- i. Brick/block masonry;
  - ii. Exterior caulking/sealant;
  - iii. Cast-in-place or precast concrete;
  - iv. Damp proofing/waterproofing;
  - v. Electrical;
  - vi. Elevator;
  - vii. Exterior glass and/or glazing;

- viii. Exterior marble, granite, and/or other stonework;
  - ix. Miscellaneous metals;
  - x. Plaster/stucco;
  - xi. Plumbing;
  - xii. HVAC;
  - xiii. Roofing and/or sheet metal;
  - xiv. Scaffolding;
  - xv. Spray-on fireproofing;
  - xvi. Sprinkler and/or fire protection; or
  - xvii. Structural steel and/or metal deck.
- C. Unless otherwise specified by CMHA in writing, the Contractor shall maintain umbrella/excess liability coverage with a limit of not less than \$5,000,000 (in addition to the above-required limits) if the Work (or the Work to be performed by the Subcontractor) includes any of the following:
- i. Caissons and/or piles;
  - ii. Major Demolition;
  - iii. Excavation and/or utility work;
  - iv. Sheeting, shoring, and/or underpinning;
  - v. Window washing equipment; or
  - vi. Wrecking.

**13.2.7. Professional Liability – Contractor**

- A. Unless otherwise specified by CMHA in writing, the Contractor shall maintain professional liability insurance (including without limitation for sprinkler and/or fire protection and other design-build work included in the Work) without design-build exclusions with a limit not-less than \$1,000,000 each claim and an annual-aggregate limit of not less than \$2,000,000.
- B. The professional liability policy shall have an effective date on or before the date that the Contractor first started to provide any Project-related services.
- C. Upon submission of the associated certificate of insurance and at each policy renewal, the Contractor shall advise CMHA in writing of any actual or alleged claims that may erode the professional liability limits.
- D. The Contractor shall maintain the professional liability insurance in effect for no less than 5 years after the earlier of the termination of the Contract or Substantial Completion of all Work.

**13.2.8. Additional Property Insurance**

- A. For any demolition, blasting, excavating, tunneling, shoring, or similar operations, the Contractor shall provide and maintain Property Damage Liability insurance with a limit of liability equal to the limit as specified in the applicable provisions of ARTICLE XIV INSURANCE.

**13.2.9. Equipment Coverage**

- A. CMHA will not insure or be liable for damage to any Contractor or Subcontractor owned, leased, rented, or borrowed tools, equipment, or vehicles.
- B. The Contractor and Subcontractors are solely responsible for maintaining all insurance necessary to cover their tools, equipment, and vehicles.

**13.3. Waivers of Subrogation**

- 13.3.1.** To the fullest extent permitted by applicable laws, the Contractor waives all rights against CMHA and its agents and employees for damages to the extent covered by any insurance, except rights to the proceeds of that insurance.

- A. All policies shall accomplish the waiver of subrogation by endorsement or otherwise.

- 13.3.2.** CMHA and Contractor waive all rights against each other for damages caused by fire or other perils to the extent actual recovery of any insurance proceeds under any property insurance or Builder’s Risk insurance applicable to the Work.

## **14. ARTICLE XV INDEMNIFICATION**

- 14.1.** To the fullest extent permitted by Applicable Law, the Contractor shall indemnify, defend, and hold harmless the Indemnified Parties from and against all claims, costs, damages, losses, fines, penalties, and expenses (including but not limited to all fees and charges of attorneys and other professionals, and all court, arbitration, or other dispute-resolution costs) arising out of or in connection with the Project.
- 14.2.** The Contractor's indemnification obligation under ARTICLE XV INDEMNIFICATION exists regardless of whether or not and the extent to which the claim, damage, loss, fine, penalty, or expense is caused by a party indemnified under ARTICLE XV INDEMNIFICATION.
- 14.2.1.** Nothing in ARTICLE XV INDEMNIFICATION obligates the Contractor to indemnify any individual or entity from and against the consequences of that individual or entity's own negligence.
- 14.3.** The Contractor's obligations under ARTICLE XV INDEMNIFICATION shall not extend to the liability of the A/E, A/E's consultants, agents, representatives, or employees for negligent preparation or approval of Drawings, Specifications, Change Orders, opinions, and other responsibilities of the A/E, except to the extent covered by the Contractor's insurance.
- 14.4.** In claims against an Indemnified Party by any direct or indirect employee (or the survivor or personal representative of that employee) of the Contractor or a person or entity for whom the Contractor may be liable, the indemnification obligation under ARTICLE XV INDEMNIFICATION will not be limited by a limitation on the amount or type of damages, compensation, or benefits payable under workers' compensation acts, disability benefit acts, or other employee benefits acts.
- 14.5.** The Contractor's indemnification obligation under ARTICLE XV INDEMNIFICATION will survive termination of the Contract and Date for Contract Completion.
- 14.6.** CMHA may deduct from the Contract Sum any claims, losses, fines, penalties, and expenses for which the Contractor is liable under ARTICLE XV INDEMNIFICATION.
- 14.6.1.** If those claims, damages, losses, fines, penalties and expenses exceed the unpaid balance of the Contract Sum, the Contractor shall immediately pay the difference to CMHA.

## **15. ARTICLE XVI DAMAGES**

### **15.1. Liquidated Damages**

- 15.1.1.** If the Contractor fails reach Substantial Completion within the Contract Time for Substantial Completion, including any properly approved extension for the Contract Time for Substantial Completion, the Contractor shall pay to CMHA as Liquidated Damages, the sum identified in the table under 16.1.4..
- A.** Liquidated Damages for the Date for Contract Completion and any Milestone Dates in the Contract, not including Substantial Completion, shall be assessed on in accordance
- B.** To the extent that the Contractor's delay or non-performance is excused under another clause in this Contract, Liquidated Damages shall not be due CMHA.
- C.** The Contractor remains liable for damages caused other than by delay.
- 15.1.2.** If CMHA terminates the Contractor's right to proceed, the resulting damage will consist of Liquidated Damages incurred until the Date of Contract Completion, together with any increased costs incurred by CMHA in completing the Work.
- 15.1.3.** If CMHA does not terminate the Contractor's right to proceed, the resulting damage will consist of Liquidated Damages incurred until the Date of Contract Completion.
- 15.1.4.** If the Contractor fails to achieve a Milestone Date, excluding the Date for Substantial Completion, within the associated Contract Time, the Contractor shall (at CMHA's option) pay to or credit CMHA the Liquidated Damages per day sum determined according to the following schedule for each day that the Contractor fails to achieve a Milestone within the associated Contract Time.

<b>Contract Sum</b>	<b>Liquidated Damages per day</b>
Less than \$100,000	\$200
From \$100,000 to \$500,000	\$400
From \$500,000.01 to \$1,000,000	\$500
From \$1,000,000.01 to \$3,000,000	\$750
More than \$3,000,000	\$1,000

**15.1.5.** If the Contractor simultaneously fails to achieve two or more Milestones, including the Date for Substantial Completion, CMHA shall be entitled to recover the sum of the associated Liquidated Damages per day rates.

**15.1.6.** The Liquidated Damages described are only intended to compensate CMHA for the direct damages it incurs as a result of the Contractor’s failure to achieve the Milestones, including the Date for Substantial Completion, within their associated Contract Times.

**15.1.7.** The Liquidated Damages described are not intended to compensate CMHA for any damages CMHA incurs on account of:

- A.** Any claims attributable to the Contractor that are brought by others including Separate Consultants and Separate Contractors; or
- B.** Any failure of the Contractor to timely, properly, and completely perform the Contract other than the failure to achieve the Milestones, including the Date for Substantial Completion, within their associated Contract Times.

**15.1.8.** The parties acknowledge that the above-listed Liquidated Damages per day sums are not penalties, and they each irrevocably waive the right (if any) to challenge the validity and enforceability of those Liquidated Damages per day sums.

- A.** Notwithstanding any other provision of the Contract Documents to the contrary, if a court determines that the Liquidated Damages per day sums or their application are void and unenforceable, CMHA shall be entitled to recover the actual damages that it incurs on account of the Contractor’s failure to achieve the Date for Substantial Completion and/or one or more of the Milestones within the applicable Contract Times.

**15.1.9.** In addition to other rights that CMHA may have relative to the Liquidated Damages, CMHA may deduct the Liquidated Damages from the Contract Sum as the damages accrue.

- A.** If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall immediately pay the amount of the insufficiency to CMHA. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA, from and against all claims, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, associated with the failure of the Contractor to timely and properly reimburse CMHA for any Liquidated Damages.

**15.2. Mutual Waiver of Consequential Damages**

**15.2.1.** Except as provided Liquidated Damages, CMHA and Contractor each waive against the other all Claims for consequential damages that may arise out of or relate to this Contract.

- A.** CMHA’s waiver includes Claims for loss of use, income, profit, revenue, financing, cost of capital, business and reputation, management and employee productivity, and consequential damages arising from termination of the Contract or related to insolvency.
- B.** The Contractor’s waiver includes:
  - i.** Claims for unabsorbed home-office overhead;
  - ii.** Any other form of overhead in excess of that specifically provided for;
  - iii.** Delay damages except as otherwise specifically provided for;
  - iv.** Increased cost of funds for the Project;
  - v.** Lost opportunity to work on other projects;
  - vi.** Losses of financing, business, and reputation;
  - vii.** Loss of profit except anticipated profit, arising directly from properly performed Work;
  - viii.** Loss of bonding capacity; and
  - ix.** Consequential damages arising from termination of the Contract or related to insolvency.

**15.2.2.** Notwithstanding Section 16.2.1, this Section 16.2:

- A.** Does not apply to any damages that would be covered by insurance provided in connection with the Project if the Contract did not include Section 16.2.1 ;
- B.** Does not apply to the Contractor's indemnity obligations for third-party claims against the Indemnified Parties even if those claims are for damages that Section 16.2.1 would otherwise preclude;
- C.** Does not preclude CMHA's recovery of Liquidated Damages; and
- D.** Does not apply to Claims for damages arising from CMHA's or the Contractor's gross negligence or willful misconduct.

**15.3.** This ARTICLE 16 shall survive termination of the Contract.

## **16. ARTICLE XVII EQUAL OPPORTUNITY**

**16.1. Prohibition Against Discrimination**

**16.1.1.** During the performance of this Contract, the Contractor agrees as follows:

- A.** 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.
  - i.** Such action shall include, but not be limited to:
    - (a)** Employment;
    - (b)** Upgrading;
    - (c)** Demotion;
    - (d)** Transfer
    - (e)** Recruitment or recruitment advertising;
    - (f)** Layoff or termination;
    - (g)** Rates of pay or other forms of compensation; and
    - (h)** 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 CMHA that explain ARTICLE XVII EQUAL OPPORTUNITY.
- D.** The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor; state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, or handicap.
- E.** The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under ARTICLE XVII EQUAL OPPORTUNITY, 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](#), [the Rehabilitation Act of 1973, as amended](#), and by rules, regulations, and orders of the Secretary of Labor, pursuant thereto.
  - i.** 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 ARTICLE XVII EQUAL OPPORTUNITY or any rule regulations, or order of the Secretary of Labor, this contract may be canceled, terminated or suspended in whole or in part, and the Contractor may be declared ineligible for further Government Contracts, or Federally assisted construction contracts under the procedures authorized, in [Executive Order 11246, as amended](#).

- i. 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, including the following as provided by ORC:
  - (a) In the event Contractor fails to comply with these nondiscrimination provisions, CMHA shall deduct from the amount payable to the Contractor a forfeiture of the statutory penalty pursuant to ORC for each person who is discriminated against or intimidated.
  - (b) The Contract may be terminated or suspended in whole or in part by CMHA and all money due hereunder may be forfeited in the event of a subsequent violation of the foregoing nondiscrimination provisions.
  - (c) The Contractor shall include the terms and conditions of ARTICLE XVII EQUAL OPPORTUNITY in every Subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor under [Executive Order 11246, as amended](#), so that these terms and conditions will be binding upon each Subcontractor or vendor.
  - (d) 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 litigations to protect the interests of the United States.
- I. Compliance with the requirements of ARTICLE XVII EQUAL OPPORTUNITY shall be to the maximum extent consistent with, but not in derogation of compliance with the Indian Self-Determination and Education Assistance Act and the Indians Preference clause of this Contract.
- J. The Contractor shall cooperate fully with the States Equal Opportunity Coordinator (EOC), with any other official or agency of the state or federal government that seeks to eliminate unlawful employment discrimination, and with all other state and federal efforts to assure equal employment practices under the Contract.

### **17. ARTICLE XVIII SECTION 3**

- 17.1.** In order to promote Employment, Training, and Contracting Opportunities for Low-Income Persons, the Contractor shall participate in CMHA's Section 3 Program.
- 17.2.** 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.
  - 17.2.1.** 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.
- 17.3.** The parties to this Contract agree to comply with HUD's regulations in [24 CFR](#), which implement Section 3.
  - 17.3.1.** As evidence by the execution of the Contract, the parties to this Contract certify that they are under no contractual or other impediments that would prevent them from complying with the regulations.
- 17.4.** 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 narrative advising the labor organization or workers' representative of the Contractor's commitments, and will post copies of this notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice.
  - 17.4.1.** The notice shall describe the 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 will begin.

- 17.5.** The Contractor agrees to include ARTICLE XVIII SECTION 3 in every subcontract subject to compliance with regulations in [24 CFR](#), and agrees to take appropriate action, as provided in an applicable provision of the Subcontract or in ARTICLE XVIII SECTION 3, upon a finding that the Subcontractor is in violation of the regulations in [24 CFR](#).
- 17.5.1.** 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](#).
- 17.6.** 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](#) require employment opportunities to be directed, were not filled to circumvent the Contractor's obligations under [24 CFR](#).
- 17.7.** Noncompliance with HUD's regulations in [24 CFR](#) may result in sanctions, termination of this Contract for default, and debarment or suspension from future HUD assisted contracts.
- 17.8. Section 3 Reporting Requirements**
- 17.8.1.** Monthly Section 3 Compliance Reports are to be submitted to the Economic Inclusion Coordinator.
- 17.8.2.** These reports should include a listing of the Contractor's current local workforce, any new hiring or subcontracting that has occurred, along with identifying information on all new hires and all subcontractors.
- 17.9.** The Contractor shall cooperate fully with requests for additional Section 3 information and documentation **as needed by** CMHA or the Contracting Authority.

## **18. ARTICLE XIX LABOR STANDARDS**

- 18.1. Compliance with [Davis Bacon and Related Acts](#) requirements**
- 18.1.1.** All rulings and interpretations of the [Davis Bacon and Related Acts](#) contained in 29 CFR are herein incorporated by reference in this Contract.
- 18.2. Minimum Wages**
- 18.2.1.** 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, 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.
- A.** Contributions made or costs reasonably anticipated for bona fide fringe benefits under 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](#); 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.
- B.** 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](#).
- C.** 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.
- D.** The wage determination (including any additional classification and wage rates conformed under [29 CFR](#) and the [Davis-Bacon poster \(WH-1321\)](#) shall be posted at all times by the Contractor and its Subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.
- 18.2.2.** 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.

- A. HUD shall approve any additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met:
  - i. The work to be performed by the classification requested is not performed by a classification in the wage determination;
  - ii. The classification is utilized in the area by the construction industry; and
  - iii. The proposed wage rate, including bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- B. 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.
  - i. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within thirty (30) calendar 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.
- C. In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator of the Wage and Hour Division for determination.
  - i. The Administrator or an authorized representative, will issue a determination within thirty (30) calendar 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 was necessary.
- D. The wage rate (including fringe benefits where appropriate) 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.

**18.2.3.** 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.

**18.2.4.** 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.

- A. 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.

**18.3. Withholding of Funds**

**18.3.1.** 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.

- A. 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.



- B. HUD or its designee may, after written notice to the Contractor or Subcontractor, issue payment to the respective employees to whom they are due.

**18.4. Payrolls and Basic Records**

**18.4.1.** 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.

**A.** Such records shall contain:

- i. The name, address, and social security number of each such worker;
- ii. His or her correct classification
- iii. Hourly rates of wages paid
  - (a) Including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in the [Davis-Bacon Act](#);
- iv. Daily and weekly number of hours worked;
- v. Deductions made; and
- vi. Actual wages paid.

**B.** Whenever the Secretary of Labor has found, under [29 CFR](#), 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 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.

- i. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

**18.4.2.** The Contractor shall submit 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.

**A.** The payrolls submitted shall set out accurately and completely all of the information required to be maintained.

**B.** This information may be submitted in any form desired.

- i. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

**C.** 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).

- i. 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 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 from the full wages earned, other than permissible deductions as set forth in [29 CFR](#); 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 in to the Contract.

- ii. 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".

- iii. The falsification of any of the above certifications may subject the Contractor or Subcontractor to civil or criminal prosecution under Title 18 and Title 31 of the United States Code.

**18.4.3. Records**

- A. The Contractor or Subcontractor shall make the records 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.
- B. 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.
- C. 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](#).

**18.5. Apprentices & Trainees**

**18.5.1.** Apprentices will be permitted to work at less than 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 ninety (90) calendar 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.

- A. 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.
  - i. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.
  - ii. 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.
- B. Where a Contractor is performing construction on a project in a locality other than that in which 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.
- C. 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.
  - i. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program.
  - ii. 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.
  - iii. 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.
- D. 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.

**18.5.2. Trainees**

- A. Except as provided for in [29 CFR](#), 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.
- B. 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.

- C. 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.
  - i. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program.
  - ii. 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.
  - iii. 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.
  - iv. 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.
- D. 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 until an acceptable program is approved.

**18.5.3. Equal Employment Opportunity**

- A. The utilization of apprentices, trainees, and journeymen shall be in conformity with the equal employment opportunity requirements of [Executive Order 11246, as amended](#) and [29 CFR](#).

**18.6. Compliance with Copeland Act requirements**

- 18.6.1. The requirements of [29 CFR](#), which are hereby incorporated by reference in this Contract

**18.7. Contract Termination; Debarment**

- 18.7.1. A breach of ARTICLE XIX LABOR STANDARDS may be grounds for termination of the Contract and for debarment as a Contractor and a subcontractor.

**18.8. Disputes Concerning Labor Standards**

- 18.8.1. Disputes arising out of the labor standards provisions of Disputes Concerning Labor Standards shall not be subject to ARTICLE XI DISPUTE RESOLUTION/CLAIM PROCEDURE of this contract.

- A. Such disputes shall be resolved in accordance with the procedures of the Department of Labor.

- 18.8.2. Disputes within the meaning of Disputes Concerning Labor Standards include disputes between the Contractor (or any of its Subcontractors) and CMHA, HUD, the U.S. Department of Labor, or the employees or their representatives.

**18.9. Certification of Eligibility**

- 18.9.1. 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 virtue of the [Davis-Bacon Act](#) or [29 CFR](#).

- 18.9.2. 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 the [Davis-Bacon Act](#) or [29 CFR](#).

- 18.9.3. The penalty for making false statements is prescribed in the U. S. Criminal Code [18 U.S.C.](#)

**18.10. Contract Work Hours and Safety Standards Act**

- 18.10.1. As used in 19.10 - Contract Work Hours and Safety Standards Act, the terms "laborers" and "mechanics" include watchmen and guards.

**18.10.2. Overtime Requirements**

- A. 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 pay for all hours worked in excess of 40 hours in such workweek.

**18.10.3. Violation; liability for unpaid wages; Liquidated Damages**

- A. In the event of any violation, the Contractor and any Subcontractor responsible therefor shall be liable for the unpaid wages.
- B. 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.
- C. Such liquidated damages shall be computed with respect to each individual laborer or mechanic (including watchmen and guards) employed in violation, 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.

**18.10.4. Withholding for unpaid wages and liquidated damages**

- A. 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.

**18.11. Subcontracts**

- 18.11.1. The Contractor or Subcontractor shall insert in any Subcontracts all the provisions contained in Subcontracts, 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.
- 18.11.2. The prime Contractor shall be responsible for the compliance by any Subcontractor or lower tier Subcontractor with all these provisions.

**18.12. Non-Federal Prevailing Wage Rates**

- 18.12.1. 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:
  - A. The applicable wage rate determined by the Secretary of Labor pursuant to the [Davis-Bacon Act \(40 U.S.C.\)](#) 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.

**19. ARTICLE XX HEALTH, SAFETY AND ACCIDENT PREVENTION**

**19.1. General Contractor Requirements**

- 19.1.1. In performing this Contract, the Contractor shall:
  - A. Take reasonable precautions to ensure safety of individuals on the Project;
  - B. Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
  - C. Protect the lives, health, and safety of other persons;
  - D. Prevent damage to property, materials, supplies, and equipment; and
  - E. Avoid work interruptions.
- 19.1.2. For these purposes, the Contractor shall:
  - A. Comply with regulations and standards issued by the Secretary of Labor .
    - i. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act; and

- B. Include the terms of ARTICLE XX HEALTH, SAFETY AND ACCIDENT PREVENTION in every Subcontract that such terms will be binding on each Subcontractor.
- C. The Contractor shall be responsible for its Subcontractors' compliance with the provisions of ARTICLE XX HEALTH, SAFETY AND ACCIDENT PREVENTION.
  - i. The Contractor shall take such action with respect to any Subcontract as CMHA, the Secretary of Housing or Secretary of Labor shall direct as a means of enforcing such provisions.
- D. 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 diseases or damages to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by [29 CFR](#);
- E. The Contractor shall pay any fine or cost incurred because of Contractor's violation, or alleged violation, of any Applicable Law.

**19.2. Notification of Non-Compliance Procedure**

**19.2.1.** To the extent CMHA is aware of Contractor's noncompliance with the safety requirements in the Contract, CMHA shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. However, CMHA's failure to notify Contractor of noncompliance with any applicable safety requirements, does not relieve Contractor of any obligation to comply with safety requirements for the Project.

**A.** 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.

**19.2.2.** After receiving the notice, the Contractor shall immediately take corrective action.

**19.2.3.** If the Contractor fails or refuses to take corrective action promptly, CMHA may issue an order stopping all or part of the work until satisfactory corrective action has been taken.

**19.2.4.** The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under Section 20.2.

**19.3. Safety Plan**

**19.3.1.** The Contractor is responsible for designing and implementing its own site-specific safety plan, including compliance with OSHA regulations and such plan shall meet or exceed CMHA's site-specific safety plan (if any).

**19.3.2.** Before starting any Work, the Contractor shall submit to CMHA a copy of the Contractor's site-specific safety plan and safety manuals.

**19.4. Safety Data Sheets**

**19.4.1.** The Contractor shall identify any material it uses at the Site with a Safety Data Sheet ("SDS") meeting the requirements of OSHA's Hazardous Communication Standard.

**19.4.2.** The Contractor shall maintain a notebook containing all of its applicable SDSs.

**A.** This notebook shall be kept at the Site for the duration of the Project.

**19.5. Hazardous Materials**

**19.5.1. Prohibition Against Hazardous Materials**

**A.** The Contractor shall not introduce Hazardous Materials to the Project

**19.5.2. Work Stoppage Due to Hazardous Materials**

**A.** If the Contractor encounters material the Contractor reasonably believes to be, or contain, a Hazardous Material that has not been rendered harmless, the Contractor shall immediately stop Work in the affected area and verbally report the condition to CMHA, and within one (1) business day deliver written notice of the condition to CMHA.

**B.** CMHA will promptly determine the necessity of CMHA retaining a qualified environmental consultant to evaluate the suspected Hazardous Material and to issue a related written report.

**i.** Where appropriate, CMHA will engage a licensed abatement contractor to remove the material or render it harmless as directed.

**C.** The Contractor shall resume Work in the affected area upon written notice from CMHA that:

- i.** The suspect material was evaluated and found not to be or contain a Hazardous Material; or
- ii.** The suspect material has been removed or rendered harmless.



- D. If the Contractor knowingly or negligently proceeds with the Work in an area where a Hazardous Material exists and has not been rendered harmless, the Contractor shall be solely responsible for all related claims, damages, losses, and expenses, including, but not limited to, attorneys' fees, arising out of or resulting from performing the Work in the affected area. Further, to the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA, from and against all claims, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, associated with Contractor knowingly or negligently proceeds with the Work in an area where a Hazardous Material exists and has not been rendered harmless.
- E. The term "rendered harmless" means that the level of exposure is less than any applicable exposure standards set forth in Applicable Law.

#### **19.6. Fires or Hot-Work**

**19.6.1.** Contractor shall not burn any fires on the Site(s).

- A. The Contractor shall notify the Project Manager twenty-four (24) hours before the start of non-routine or non-recurring hot-work.
  - i. Use of sources of fire, flame or sparks and flammable materials shall be kept to an absolute minimum.
  - ii. At the beginning of the Project, the Contractor shall inform the Project Manager of its intent to use blowtorches, welding apparatus or similar exposed flame and sparking devices.
  - iii. Similar notice shall be given in regard to the use of flammable liquids, adhesives, and cleaners.
- B. The Contractor shall furnish an appropriate number of fire extinguishers (minimum of 1), which shall be within the immediate areas where work is being done at all times.
  - i. The extinguisher shall be adequate and suitable for the class of fire likely to be caused by the Contractor's operations.

#### **19.7. Explosives and Blasting**

**19.7.1.** The Contractor shall not conduct blasting on, or bring explosives to the Work Site without written approval of CMHA and other authorities with jurisdiction.

**19.7.2.** The Contractor shall perform all blasting, storing, and handling of explosives as required under Applicable Law.

**19.7.3.** The Contractor shall carry appropriate liability insurance coverage, as required by the Contract Documents, for its blasting and explosives storage and handling operations.

- A. Immediately upon request, the Contractor shall deliver evidence of that insurance to CMHA.

## **20. ARTICLE XXI CONTRACT DOCUMENTS AND CONTRACT RECORDS**

### **20.1. Examination and Retention of Contractor's Records**

**20.1.1.** CMHA, HUD, or the Comptroller of the United States, or any of their duly authorized representatives shall, until three (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.

**20.1.2.** The Contractor agrees to include in first-tier Subcontracts under this Contract a clause substantially the same as 21.1.1.

- A. "Subcontract," as used in Examination and Retention of Contractor's Records, excludes purchase orders not exceeding \$10,000.

**20.1.3.** The periods of access and examination for records relating to (1) appeals under ARTICLE XI DISPUTE RESOLUTION/CLAIM PROCEDURE 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 CMHA, 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.

**20.1.4.** To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA, from and against all claims, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, arising out of or related to any dispute regarding what Person or Persons should be given access to the documents under Section 21.1.

**20.1.5.** The right of inspection, audit, and reproduction extends to all documents necessary to permit CMHA, or its agents, to perform a complete evaluation of all of the Contractor's costs related to the Project, including, but not limited to, the cost of pricing data submitted along with the computations and projections used therein.

**20.1.6.** If the Contract has been terminated, in whole or in part, the records relating to the Work terminated shall be made available to CMHA for a period of six (6) years from the date of termination.

**20.2. Examination and Audit of Contractor's Records**

**20.2.1.** CMHA may examine all books, records, documents and other data of the Contractor and its Subcontractors related to the bidding, pricing, or performance of the Work for any purpose, including, but not limited to, evaluating any Contractor Payment Request, Proposal, Modification, or Claim.

**20.2.2.** The above referenced materials shall be made available at the office of the Contractor or Subcontractor, as applicable, at all reasonable times for inspection, audit, and reproduction until the expiration of six (6) years after the date of Substantial Completion of all Work.

**A.** The Contractor shall maintain, and require its Subcontractors to maintain, complete and accurate business records at its principal place of business.

**i.** If the principal place of business is greater than 50 miles from the Site, the Contractor shall timely make records available, and shall require its Subcontractors to timely make records available, at the office of CMHA upon request for the records.

**B.** To the extent that the Contractor or Subcontractor, as applicable, informs CMHA in writing that any documents provided to CMHA are trade secrets, CMHA shall treat these documents, to the extent permitted by law, as trade secrets of the Contractor or Subcontractor, as applicable.

**i.** To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify, defend and hold harmless CMHA, from and against all claims, costs, losses, and damages, including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs, arising out of or related to any dispute regarding what Person or Persons should be given access to the documents under Section 21.2.

**20.2.3.** The right of inspection, audit, and reproduction extends to all documents necessary to permit adequate evaluation of the cost of pricing data submitted along with the computations and projections used therein.

**20.2.4.** If the Contract has been terminated, in whole or in part, the records relating to the Work terminated shall be made available to CMHA for a period of six (6) years from the date of termination.

**20.2.5.** Records that relate to disputes, litigation, or settlement of Claims arising out of the performance of the Work shall be made available until the dispute, litigation or Claims have been finally decided or settled.

**20.3. Ownership of Contract Documents**

**20.3.1.** CMHA shall have exclusive ownership of, all proprietary interest in, and the right to full and exclusive possession of all information, materials and documents discovered or produced by Contractor pursuant to the terms of this Contract, including but not limited to reports, memoranda, drawings or letters concerning the research and reporting tasks of this Contract.

**20.3.2.** For data other than computer software, the Contractor grants to CMHA and others acting on its behalf, a paid-up, nonexclusive, irrevocable, world-wide license in such copyrighted data to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly by or on behalf of CMHA.

**20.3.3.** CMHA alone owns the Contractor's Documents and the Contract Documents and every right, title, and interest therein.

**20.3.4.** The Contractor must execute and deliver and cause its agents and subcontractors to execute and deliver, to CMHA any transfers, assignments, documents or other instruments necessary to vest in CMHA the complete right, title, interest in and ownership of the Contractor's Documents.

**20.3.5.** The Contractor may retain copies of the Contractor's Documents and the Contract Documents for information, reference, and performance of the Work.

**20.3.6.** The submission or distribution of the Contractor's Documents or the Contract Documents to meet official regulatory requirements or for similar purposes in connection with the Project is not a waiver of CMHA's reserved rights in the Contractor's Documents.

**A.** Any unauthorized use of the Contractor's Documents or the Contract Documents shall be at the sole risk of the entity making the unauthorized use.

**20.4. Intent of Contract Documents**

**20.4.1.** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of Work by the Contractor.

**20.4.2.** The Contract Documents are complementary, and what is required by one is binding as if required by all.

**20.4.3.** The Contractor shall provide all labor materials necessary for the entire completion of the Work described in the Contract Documents and reasonably inferable to produce the intended results.

**20.4.4.** The Drawings govern dimensions, details, and location of the Work.

**A.** The Specifications govern the quality of materials and workmanship.

**20.4.5.** The organization of the Specifications in divisions, sections, and articles, and the arrangement of Drawings shall not restrict the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

**20.4.6.** Unless otherwise defined in the Contract Documents, words that have well known technical or construction industry meanings are used within those recognized meanings.

**20.5. Use of Electronic Files**

**20.5.1.** CMHA and Contractor reasonably expect that they will provide Electronic Files to each other to facilitate the design and construction of the Project consistent with current practices and customs in the construction industry.

**20.5.2.** CMHA and Contractor acknowledge that the use of Electronic Files involves risks not generally associated with the use of paper documents.

**A.** Those risks may include, but not be limited to, alteration (inadvertent or intentional) and deterioration, both of which may not be apparent through casual observation.

**20.5.3.** In the event of a discrepancy between information contained in a paper version of a document and the Electronic File of that document, the paper will govern.

**20.5.4.** Use of Electronic Files does not relieve the Contractor of its responsibility for the preparation, completeness, or accuracy of the Contractor's Documents.

**20.6. Order of Precedence**

**20.6.1.** In the event of any inconsistency or conflict within any of the Contract Documents, the Contractor shall provide the better quality of Work and comply with the stricter requirement.

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

**A.** In the event of such a conflict, applicable federal law, regulation, and Executive Order shall prevail.

**21.**

**22.**

**23. ARTICLE XXII MISCELLANEOUS**

**23.1. Assignment**

**23.1.1.** The Contractor shall not assign or transfer any interest in this Contract; except that Claims for monies due or to become due from CMHA under the Contract may be assigned to a bank, trust company, or other financial institution.

**A.** Such assignments of claims shall only be made with the written concurrence of CMHA.

**B.** 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 CMHA.

**23.1.2.** Assignment of Antitrust Claims:



- A. By signing the Agreement, the Contractor assigns, conveys and transfers to CMHA any right, title, and interest to any claims or causes of action it may have or acquire under state or federal antitrust laws relating to any goods, products, or services purchased, procured, or rendered to CMHA pursuant to the Contract.

**23.1.3.** CMHA and Contractor each bind themselves, their successors, assigns and legal representatives, to the other party to this Contract and to the successors, assigns, and legal representatives of the other party with respect to the Contract.

**23.2. Contractor Performance Evaluation**

**23.2.1.** CMHA may evaluate the Contractor's Performance at any time including without limitation during the progress of the Work, at the completion of a phase of the Project, and/or completion of the Project.

**23.2.2.** CMHA shall retain the evaluation.

- A. The Contractor may request a copy of the completed evaluation(s).
  - i. If the Contractor wishes to comment or take exception to any rating or remark, the Contractor must send a response in writing to CMHA within thirty (30) calendar days of Contract Completion and/or Termination.
- B. CMHA may use the evaluation(s) in determining the responsibility of the Contractor for award of future contracts.
- C. Poor evaluations may lead to a determination that Contractor is not responsible and therefore ineligible for award of future contracts for a period of not less than one year.
- D. CMHA may request information from the Contractor for use in evaluating the A/E's performance.
  - i. If information is requested, the Contractor shall comply in a timely and responsive manner.
- E. If a breach of the Contract is committed by the Contractor or is attributable to a Subcontractor, that breach will be used in the responsibility analysis of the Contractor and Subcontractor (where applicable) for future contracts or subcontracts for a period of five (5) years after the date of the breach unless said breach results in Contractor being placed on debarment list, then for the period provided therein.

**23.3. Prohibition Against Liens**

**23.3.1.** The Contractor is prohibited from placing a lien on CMHA's property.

- A. This prohibition shall apply to all Subcontractors at any tier and all materials suppliers.

**23.4. Conflict of Interest**

**23.4.1. Interest of Members of Congress**

- A. 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.

**23.4.2. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees**

- A. No member, officer, or employee of CMHA, 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 CMHA 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.

**23.5. Limitation on Payments Made to Influence Certain Federal Financial Transactions**

**23.5.1.** The Contractor agrees to comply with 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:

- A. The awarding of any Federal contract;
- B. The making of any Federal grant;
- C. The making of any Federal loan;
- D. The entering into of any cooperative agreement; or
- E. The modification of any Federal Contract, grant, loan, or cooperative agreement.

**23.5.2.** 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.

**23.6. Procurement of Recovered Materials**

**23.6.1.** In accordance with 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) [40 CFR](#) that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition.

- A.** 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:
- i.** Are not reasonably available in a reasonable period of time;
  - ii.** 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
  - iii.** Are only available at an unreasonable price.

**23.6.2.** 22.6.1 shall apply to items purchased under this contract where:

- A.** The Contractor purchases in excess of \$10,000 of the item under this contract; or
- B.** During the preceding:
- 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.

**23.7. Royalties and Patents**

**23.7.1.** The Contractor shall pay all royalties and license fees and assume all costs incident to the use, in the performance of the Work or the incorporation in the Work, of any design, inventions, process, product, or device that is the subject of patent rights or copyrights held by others.

- A.** Contractor shall defined all suits or claims for infringement of any patent rights or copyrights and shall save CMHA harmless from loss on account thereof; except that CMHA shall be responsible for all such loss when a particular design, process, or the product of a particular manufacturer or manufacturers is specified and the Contractor has no reason to believe that the specified design, process, or product is an infringements.
- B.** If, however, the Contractor has reason to believe that any design, process or product specified is an infringement of a patent or copyright, the Contractor shall promptly notify the Contracting Officer.
- i.** Failure to give such notice shall make the Contractor responsible for resultant loss.

**23.8. Contract Time for Substantial Completion**

The Contractor shall have the Work Substantially Complete within 180 calendar days of the date for commencement of the Work established in the Notice to Proceed issued by CMHA. If a Notice to Proceed is not issued, the date for commencement of the Work shall be the effective date of the Contract.

**23.9. Other Contracts**

**23.9.1.** CMHA may undertake or award other contracts for additional work at or near the site of the Work under this contract.

**23.9.2.** The Contractor shall fully cooperate with the other contractors and with CMHA 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 CMHA.

**23.9.3.** The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by CMHA employees.

**23.10. Drug-Free Workplace**

**23.10.1.** Each contractor shall be enrolled in and in good standing and shall require all subcontractors with whom the Contractor is in contract for the public improvement to be enrolled in and be in good standing in the Bureau of Workers' Compensation's Drug-Free Workplace Program or a comparable program approved by the Bureau that meets the requirements specified in the Revised Code prior to a subcontractor providing labor at the Project site of the public improvement.

**23.11. Energy Efficiency and Sustainability Requirements**

**23.11.1.** 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 for the State in which the work under the contract is performed.

**23.11.2.** If the Project is designed and constructed under the Leadership in Energy and Environmental Design ("LEED") Rating System developed by the U.S. Green Building Council or another rigorous rating system used to facilitate achievement of sustainability goals for the Project, the Contractor shall provide submittals certifying achievement of sustainable designed rating system criteria for verification by the Green Building Certification Institute or other third party in accordance with the Contract Documents.

**23.12. Clean Air and Water**

**23.12.1.** The Contractor shall comply with the Clean Air Act, as amended [42 USC](#), the Federal Water Pollution Control Water Act, as amended [33 U.S.C.](#), and standards issued pursuant thereto in the facilities in which this Contract is to be performed.

**23.13. Public Relations**

**23.13.1.** Public relations or publicity about the Project shall be solely within the control of and consent of CMHA.

**23.13.2.** Contractor shall submit to CMHA all advertising and publicity related matter relating to this Contract, including without limitation, information provided in social media, wherein CMHA's name is mentioned or language used from which the connection of CMHA's name may, in CMHA's judgment, be inferred or implied.

**A.** Contractor shall not publish or use such advertising and publicity matters without prior express written consent of CMHA.

**23.14. Governing Law**

**23.14.1.** This Contract shall be governed and construed exclusively by its terms and by the laws of the State of Ohio and any suit filed to enforce any term of this Contract shall be filed only in a court of competent jurisdiction in Hamilton County, Ohio.

**23.14.2.** The parties to this Contract shall comply with applicable law.

**23.15. Written Notice**

**23.15.1.** Notice under the Contract Documents shall be validly given if:

**A.** Delivered personally to a member of the organization for whom the notice is intended.

**23.16. Taxes**

**23.16.1.** Parties acknowledge that CMHA is a tax exempt entity and Contractor must use tax exemption status for all purchases made for the Project in which tax exemption is permitted under law.

**23.17. Computing Time**

**23.17.1.** When the Contract Documents refer to a period of time by a number of days, the period shall be computed to exclude the first and include the last day of the period.

**A.** If the last day of the period falls on a Saturday or Sunday, or a legal holiday, that day shall be omitted from the computation and the period shall end on the next business day.

**23.17.2.** Except as excluded, the Contract Times and all other periods referred to in the Contract Documents includes Saturdays, Sundays, and all days defined as legal holidays below.

**23.17.3.** The standard workdays for the Work are Monday through Friday, excluding legal holidays.

**23.17.4.** The Legal Holidays are as follows:

- A.** New Year's Day
- B.** Martin Luther King Jr. Day
- C.** President's Day
- D.** Memorial Day
- E.** Independence Day

- F. Labor Day
- G. Columbus Day
- H. Veterans Day
- I. Thanksgiving Day
- J. Christmas Day

**23.18. Time is of the Essence**

**23.18.1.** All time limits set forth in the Contract Documents are of the essence.

- A. By signing this Contract, Contractor acknowledges that the Contract Times are reasonable, taking into consideration the usual weather and other conditions prevailing in the locality of the Project.
- B. By signing the Construction Progress Schedule, the Contractor acknowledges that the specified Milestone dates and the Date for Substantial Completion are reasonable, taking into consideration the usual weather and other conditions prevailing in the locality of the Project.

**23.18.2.** The Notice to Proceed establishes the date for commencement of the Work.

**23.18.3.** The Contractor acknowledges that it may be subject to interference, disruption, hindrance, or delay in the progress of the Work from any cause.

- A. The sole remedy for such interference, disruption, hindrance, or delay shall be an extension of the Contract Time MODIFICATIONS, unless otherwise required by law.

**23.19. Extent of Contract**

**23.19.1.** The Contract Documents represent the entire and integrated agreement between CMHA and the Contractor and supersede all prior negotiations, representations, or agreement, either written or oral.

**23.19.2.** This Contract may be executed in any number of counterparts, each of which shall be regarded as original and all of which constitute but one and the same instrument.

**23.19.3.** The captions and headings in this Contract are for convenience only and in no way define, limit, or describe the scope or intent of any of the provisions or sections hereof.

**23.20. Severability**

**23.20.1.** If any provision of this Contract is determined by a court having jurisdiction to be unenforceable to any extent, the rest of the provisions of this Contract will remain enforceable to the fullest extent permitted by law.

**23.21. Facsimile/Electronic Mail Signature**

**23.21.1.** Any party hereto may deliver a copy of its counterpart signature page of any Contract Documents via email, fax, or web-based project management software.

**23.21.2.** Each party shall be entitled to rely upon a scanned or facsimile signature of the other party in such a manner as if such a signature were an original.

**23.22. No Third Party Interest**

**23.22.1.** Except as expressly provided herein, no person or entity, other than CMHA and Contractor, will have any right or interest under the Contract, and the Contract does not create a contractual relationship of any kind between any persons or entities other than CMHA and the Contractor.

**23.23. No Waiver**

**23.23.1.** The failure of CMHA or Contractor to insist on anyone or more instances upon strict performance of any one or more of the provisions of the Contract or to exercise any rights under the Contract or provided by law will not be construed as a waiver or relinquishment of that provision or of the right to subsequently demand strict performance or exercise the right and the rights will continue unchanged and remain in full force and effect.

**23.24. Assignment of Antitrust Claims**

**23.24.1.** By signing this Contract, the Contractor conveys, assigns and transfers to CMHA any right, title, and interest in any claims or causes of action it may have or acquire under state or federal antitrust laws relating to any goods, products, or services purchased, procured, or rendered to CMHA pursuant to this Contract.

**23.25. Survival of Obligations**

**23.25.1.** All representations, indemnity obligations, warranties, guarantees, and other expressed continuing obligations under the Contract, will survive final payment, completion and acceptance of the Work, and termination or completion of the Contract.

**23.26. Force Majeure**

**23.26.1.** Neither party shall be liable for failure to perform if such failure is caused by conditions beyond its control including, but not limited to, Acts of God, Government restrictions (including the denial or cancellation of any export or other necessary license), wars, and/or insurrections.

**23.27. Privacy**

**23.27.1.** The Contractor agrees to Comply with the [Privacy Act of 1974](#) (the Act) and the agency rules and regulations issued under the Act and any Personal information collected, used, or acquired in connection with this Contract shall be protected against unauthorized use, disclosure, modification or loss.

**23.27.2.** Contractor shall ensure that its directors, officers, employees, subcontractors or agents use personal information solely for the purposes of accomplishing the services set forth herein.

**23.27.3.** Contractor agrees not to release, divulge, publish, transfer, sell or otherwise make known to unauthorized persons personal information without express written consent of CMHA or otherwise required by law.

**23.27.4.** Contractor agrees to indemnify and hold harmless CMHA for any damages related to Contractor's unauthorized use of personal information.

**23.28. Contractor Status**

**23.28.1.** It is understood that the Contractor is an independent contractor and is not to be considered an employee of CMHA, or assume any right, privilege or duties of an employee.

**24. ARTICLE XXIII DEFINITIONS AND TERMINOLOGY**

**24.1.** Whenever used in the Contract Documents, the terms listed below will have the meanings meaning ascribed which are applicable to both the singular and the plural and the male and female gender thereof:

**24.1.1. Abandonment**

**A.** A willful decision by the Contractor suspending the progress of the work for an uninterrupted period of three (3) or more consecutive days (excluding weekends and holidays) and such suspension was not requested by CMHA and not caused by natural occurrences or acts of God.

**24.1.2. Acceptable Component**

**A.** A component listed in the Specifications after the Basis of Design Component.

**24.1.3. Addenda**

**A.** Written or graphic instruments issued prior to the opening of Bids that clarify, correct, or change the Bidding requirements or the Contract Documents.

**24.1.4. Agreement**

**A.** The form provided by CMHA, including all of its exhibits, that, when completed and signed by the Contractor and CMHA is evidence of the execution of the Contract.

**24.1.5. Allowance**

**A.** An amount budgeted for during the Bidding process for an item that has yet to be specified or defined and for which no exact dollar amount is available.

**24.1.6. Alternate**

**A.** A change in the proposed Project scope, which may include alternate materials or methods of construction and an amount stated on the Bid form to be added or deducted from the Base-Bid if the corresponding Alternate is incorporated into the Contract.

**24.1.7. Applicable Law**

**A.** All federal, state, and local codes, statutes, ordinances, and regulations that apply to the performance of the Work.

**24.1.8. Architect/Engineer (A/E)**

**A.** The person or other entity engaged by the CMHA to perform architectural, engineering, design, and other services related to the work as provided for in the Contract.

**B.** When CMHA uses an engineer to act in this capacity, the terms "architect" and "engineer" shall be synonymous.

**24.1.9. Asbestos**

- A. Any material that contains more than one percent (1%) asbestos fiber and is friable or is releasing asbestos fibers into the air above current action levels established by OSHA

**24.1.10. As-Built Documents**

- A. Drawings, addenda, Specifications, executed Change Orders and other elements of the Contract Documents which the Contractor annotates and otherwise modified to indicate changes made during the construction process, the location of concealed and buried items, and other information useful to CMHA throughout the life of the completed Project.

**24.1.11. Base-Bid**

- A. The amount stated in a Bid as the sum for which the Bidder offers to perform the Work in a particular trade or other category, which is described in the Contract Documents, excluding Alternates.

**24.1.12. Basis of Design**

- A. A document that records the concepts, calculations, decisions, and product selections used to meet CMHA's Project Requirements and to satisfy applicable regulatory requirements, standards, and guidelines.
- B. The document includes both narrative descriptions and lists of individual items that support the design process.

**24.1.13. Basis of Design Component**

- A. A component listed first in the Specifications.

**24.1.14. Bid**

- A. The written offer of a Bidder submitted on the prescribed CMHA Bid Form setting forth the prices for the Work to be performed.

**24.1.15. Bidder**

- A. The person that submits a Bid.

**24.1.16. Bid Form**

- A. A form furnished by CMHA with the proposed Contract Documents that is to be completed, signed, and submitted containing the Bidder's Bid.

**24.1.17. Bid Guaranty**

- A. A bid bond or other instrument of security authorized by [24 CFR](#) submitted with the Bid to provide assurance that the Bidder will execute the Agreement.

**24.1.18. Bond**

- A. Bid, performance and payment bonds and other instruments of security submitted by the Contractor to assure that the Contractor will perform the Work of the Contract, including making payment to Subcontractors and Material Suppliers.

**24.1.19. Building Information Model (BIM)**

- A. A digital representation of physical and functional characteristics of a facility and a shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle; defined as existing from earliest conception to demolition.
  - i. It describes the process of designing a building collaboratively using one coherent system of computer models rather than as separate sets of drawings.

**24.1.20. Building Permit**

- A. The term building permit as used in the Contract Documents shall mean any and all permits required to comply with local and state building codes.

**24.1.21. Certificate of Completion or Certificate of Contract Completion**

- A. A form, issued by CMHA, that documents the Contractors achievement of Contract Completion.

**24.1.22. Certificate of Substantial Completion**

- A. A form, issued by CMHA, which is used to document:
  - i. That the Contractor has achieved Substantial Completion of the Work or a designated portion of the Work; and
  - ii. The date on which the associated Substantial Completion of the Work was achieved.

**24.1.23. Change Order**

- A. A document recommended by the A/E and executed by CMHA and the Contractor that modifies the Contract and authorizes an addition, deletion, or revision in the work and an adjustment in the Contract Sum or the Contract Time or both.

**24.1.24. Change Order Request**

- A. A CMHA prescribed form issued after execution of the Contract requesting a Change Order from the Contractor(s), which may initiate a Change Order to modify the Contract.

**24.1.25. Claim**

- A. A demand or assertion, initiated by written notice as prescribe in the Contract Documents, by the Contractor or CMHA seeking an adjustment of Contract Sum or Contract Time or both, or other relief with respect to the terms of the Contract.

**24.1.26. Claim Affidavit**

- A. A sworn document used in conjunction with filing a lien, which contains a claim on the funds that are due to a Contractor, in favor of a person supplying labor, materials or services for the value of labor, materials, or services supplied.

**24.1.27. Construction**

- A. The term used to include new construction, reconstruction, renovation, restoration, rehabilitation, major repair, demolition and all similar work upon buildings and ancillary facilities, including any draining, dredging, grading or similar work upon real property.

**24.1.28. Construction Progress Schedule**

- A. The critical path schedule for performance of the Contract; showing the time for completing the Work within the Contract Times; the planned sequence for performing the various components of the Work; the interrelationship between the activities of the Contractor, A/E, and CMHA; and the Contractor's resource and cost loading information; as periodically updated during the performance of the Work.

**24.1.29. Contract**

- A. The contract entered into between the Contractor and CMHA.
- B. It includes:
  - i. The Bid;
  - ii. The Bid Bond;
  - iii. The Performance and Payment Bond or Bonds or other assurance of completion;
  - iv. The Certifications, Representations, and Other Statements of Bidders;
  - v. The HUD General Conditions of the Contract for Construction;
  - vi. The CMHA Construction Contract General Terms and Conditions;
  - vii. The applicable wage rate determinations from the U.S. Department of Labor;
  - viii. Any special conditions included elsewhere in the contract;
  - ix. The specifications; and
  - x. Drawings
- C. It includes all formal changes to any of those documents by addenda, Change Order or modification.

**24.1.30. Contract Documents**

- A. Collectively, the documents that constitute the substance of the Contract including, but not limited to:
  - i. The Bid;
  - ii. The Bid Bond;
  - iii. The Performance and Payment Bond or Bonds or other assurance of completion;
  - iv. The Certifications, Representations, and Other Statements of Bidders;
  - v. The HUD General Conditions of the Contract for Construction;
  - vi. The CMHA Construction Contract General Terms and Conditions;
  - vii. The applicable wage rate determinations from the U.S. Department of Labor;
  - viii. Any special conditions included elsewhere in the contract;
  - ix. The specifications; and
  - x. Drawings
- B. It includes all formal changes to any of those documents by addenda, Change Order or modification.

**24.1.31. Contract Commencement Date**

- A. The date established in the Notice to Proceed issued by CMHA to the Contractor to mark the start of the Work and the beginning of the running of the Contract Time. If a Notice to Proceed is not issued, the Contract Commencement Date shall be the effective date of the Contract.

**24.1.32. Contract Completion Date**

- A. The date by which the Work must be finally complete
- B. The Contract Completion Date is established in Section 9.8 herein.

**24.1.33. Contract Sum**

- A. The Contractor's entire compensation for the Contractor's proper, timely, and complete performance of the Work and is subject to adjustment as provided in the Contract.

**24.1.34. Contract Time**

- A. The periods stipulated in the Agreement for the achievement of associated Milestones and Substantial Completion, in consecutive days, beginning on the date established by the Notice to Proceed, including adjustments authorized by executed Change Orders.

**24.1.35. Contractor**

- A. The person or other entity entering into the Contract with CMHA to perform all of the work required under the Contract.

**24.1.36. Contractor Payment Application Request**

- A. The form furnished by CMHA that is to be used by the Contractor in requesting payments and which, when signed by the Contractor, shall serve as an affidavit that payments requested are in proportion to the Work completed as shown on the Schedule of Values.

**24.1.37. Contractor's Documents**

- A. All Project-related documents, including those in electronic form, prepared by the Contractor and its Subcontractors.

**24.1.38. Contractor's Fee**

- A. The portion of the Contract Sum attributable to the aggregate of the Contractor's profit and home-office overhead related to the Contractor's proper, timely, and complete performance of the Work.

**24.1.39. Contractor's Punch List**

- A. A document prepared by the Contractor that consists of a list of items of Work to be completed or corrected by the Contractor as a condition precedent to Contract Completion.

**24.1.40. Coordination Drawings**

- A. Drawings and Electronic Files prepared by the Contractor to demonstrate how multiple-system and interdisciplinary work will be coordinated.
- B. Clash reports generated by BIM authoring software may be included in the Coordination Drawing submittals if applicable.

**24.1.41. Correction Period**

- A. A period of one-year commencing on the date of Substantial Completion of the Work or a designated portion of the Work which CMHA has agreed to take Partial Occupancy.

**24.1.42. Day**

- A. A calendar day of twenty-four (24) hours measured from midnight to midnight, unless otherwise expressly specified to mean a business day.

**24.1.43. Defective Work**

- A. Work that:
  - i. Does not conform to the Contract Documents;
  - ii. Does not meet the requirements of any applicable statute, rule or regulation, inspection, reference standard, test or approval;
  - iii. Has been damaged prior to the A/E's recommendation of final payment, unless responsibility for the protection thereof has been expressly assumed by CMHA; or
  - iv. That is not free from defects in workmanship, materials or equipment during the period of any warranty or guarantee

**24.1.44. Differing Site Condition**

- A. Subsurface or latent physical conditions at the site which differ materially from those indicated in this Contract; or



- B. 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 Documents.

**24.1.45. Drawings**

- A. The drawings enumerated in the schedule of drawings contained in the Specifications and as described in the Contract Documents; and
- B. Graphic portions of the Contract Documents, showing the design, type of construction, location, dimension, and character of the Work to be provided by the Contractor, which generally includes plans, elevations, sections, details, schedules, diagrams, notes, and text.

**24.1.46. Electronic File**

- A. Information maintained in a computer system or format that is intended to facilitate a Person's use and manipulation of the information including but not limited to Word, Excel, PDF, Primavera, CAD, and BIM files all in their native format.

**24.1.47. Enclosure, Permanent**

- A. The condition in which the permanent exterior walls and roofs are in place, insulated, weatherproof and weather-tight, and permanent windows and entrances are in place

**24.1.48. Enclosure, Temporary**

- A. The condition in which the permanent exterior walls and roofs are in place, insulated, weatherproof and weather-tight, and windows and entrances are provided with suitable temporary enclosures

**24.1.49. Estimated Construction Cost**

- A. The sum of the Estimated Contract Cost amounts published in the Solicitation, as modified by Addenda, for a phase of the Project.

**24.1.50. Estimated Contract Cost**

- A. The estimated amount for the Contract published in the Solicitation, including the Base Bid estimate and the estimates of selected Alternates, if any, as modified by Addenda.

**24.1.51. Extra Materials**

- A. Materials required by the Contract Documents that are not incorporated into the Project but are given to CMHA to be used for future maintenance or repairs.

**24.1.52. Final Inspection**

- A. The final review of the Work of the Contractor by the A/E and CMHA to determine whether issuance of the Certificate of Contract Completion will be issued by CMHA.

**24.1.53. Frivolous RFI**

- A. RFI's that request information that is evident in the Contract Documents and/or RFI's that do not comply with the definition of an RFI as indicated below.

**24.1.54. General Conditions**

- A. CMHA's General Conditions currently in effect, which may be modified by the CMHA from time to time.

**24.1.55. General Conditions Costs**

- A. General Conditions Costs include only the Contractor's costs to provide the general conditions Work including without limitation the costs of all of the following Site related items:
  - i. Scheduling and coordinating the Work;
  - ii. Telephone;
  - iii. Telephone charges;
  - iv. Facsimile;
  - v. Telegrams;
  - vi. Postage
  - vii. Photos
  - viii. Photocopying;
  - ix. Hand tools;
  - x. Simple scaffolds (one level high);
  - xi. Tool breakage;
  - xii. Tool repairs;

- xiii. Tool replacement;
- xiv. Tool blades;
- xv. Tool bits; and
- xvi. Pre-approved travel, lodging, and parking costs

**B. General Conditions Costs also include:**

- i. Bond premiums; and
- ii. Premiums for Builder's Risk insurance, if the Contractor is required to purchase a Builder's Risk insurance policy for the Project.

**24.1.56. Hazardous Materials**

- A.** Any material, substance, pollutant, or contaminant that is defined, regulated, referenced, or classified in the Comprehensive Environmental Response, Compensation and Liability Act, Federal Water Pollution Control Act, the Resource Conservation and Recovery Act, Clean Air Act, Hazardous Materials Transportation Uniform Safety Act, Toxic Substances Control Act, or any other Applicable Law relating to any hazardous, toxic, or dangerous waste, substance, or material.
- B.** Any substance or material that, after release into the environment or upon exposure, ingestion, inhalation, or assimilation, either directly from the environment or directly by ingestion through food chains, will, or may reasonably be anticipated to, cause death, disease, behavior abnormalities, cancer or genetic abnormalities and specifically includes but is not limited to asbestos, polychlorinated biphenyls ("PCBs"), radioactive materials, including radon and naturally occurring radio nuclides, natural gas, natural gas liquids, liquefied natural gas, synthetic gas, oil, petroleum and petroleum-based derivatives and urea formaldehyde.

**24.1.57. HUD**

- A.** 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.
- B.** HUD has agreed, subject to the provisions of an Annual Contributions Contract (ACC), to provide financial assistance to CMHA, which includes assistance in financing the work to be performed under this Contract.
- C.** As defined elsewhere in Contract Documents, the determination of HUD may be required to authorize changes in the work or for release of funds to CMHA for payment to the Contractor.
- D.** Notwithstanding HUD's role, nothing in this Contract shall be construed to create any contractual relationship between Contractor and HUD.

**24.1.58. Indemnified Parties**

- A.** CMHA, the A/E, other Separate Consultants, and their respective officials, officers, consultants, agents, representatives, and employees, in both individual and official capacities.

**24.1.59. Install**

- A.** Put into use or place in final position, complete and ready for intended service or use.

**24.1.60. Liquidated Damages**

- A.** A sum established in the Contract Documents, pursuant to the statutory delay forfeiture authorized under ORC and federal regulations, to be paid to CMHA due to the Contractor's failure to complete the Work within the Contract Time for achievement of Substantial Completion, or any applicable portion of the Work on or prior to any Milestone date stated on the Contract Documents.

**24.1.61. Material Supplier**

- A.** A Person under a contract with the Contractor to furnish materials or supplies in furtherance of the Work, including all such Persons in any tier.
- B.** Material Supplier does not include any Separate Contractor unless expressly assigned in writing to the Contractor by CMHA and accepted by the Contractor.

**24.1.62. Milestone**

- A.** A principal event specified in the Contract relating to an intermediate completion date or time prior to Substantial Completion of all Work.

**24.1.63. Modification**

- A.** A written amendment to the Contract signed by both parties;
- B.** A Change Order;

- C. A Change Directive; or
- D. An order for a minor change in the Work.

**24.1.64. Notice of Commencement**

- A. A notice prepared by CMHA identifying the Project, the Contractors, the Surety for each Contractor, and the name CMHA's representative upon whom a Claim Affidavit may be served.

**24.1.65. Notice of Intent to Award**

- A. A written notice provided by CMHA to the apparent successful Bidder stating that upon satisfactory compliance with all conditions precedent for execution of a Contract within the time specified CMHA intends to execute a Contract with the Bidder.

**24.1.66. Notice to Proceed**

- A. A written notice provided by CMHA authorizing the Contractor to proceed with the Work and establishing the date(s) for commencement and completion of the Work.

**24.1.67. ORC**

- A. The Ohio Revised Code.

**24.1.68. Owner**

- A. The Cincinnati Metropolitan Housing Authority or its instrumentality or affiliate for whom the Project is being constructed.

**24.1.69. Owner's Project Requirements**

- A. A written document that details the functional requirements of the Project and the expectations of how it will be used and operated
- B. These include project goals, measureable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.

**24.1.70. Partial Occupancy**

- A. The condition that occurs when CMHA occupies or uses a portion of the Project prior to Contract Completion, partial occupancy is approved by authorities having jurisdiction, and items of Work cannot be completed until a subsequent date.

**24.1.71. Person**

- A. An individual, corporation, business trust, estate, partnership, association, or other public or private entity.

**24.1.72. Phase**

- A. A separation in the Work of the Project by sequence or time intervals, which may include separate contractors for each Phase.

**24.1.73. Plan Holder**

- A. A prospective Bidder that received a set of Contract Documents prior to the bid opening.

**24.1.74. Product Data**

- A. Manufacturer's standard illustrations, schedules, diagrams, performance charts, instructions, and brochures that illustrate physical appearance, size, and other characteristics of materials and equipment.

**24.1.75. PHA**

- A. A Public Housing Authority which at all times shall mean the Cincinnati Metropolitan Housing Authority unless otherwise specified in the Contract Documents.

**24.1.76. Project**

- A. The entire project, whether construction or rehabilitation, the work for which is provided for in whole or in part under the Contract Documents.

**24.1.77. Project Manager**

- A. An employee of CMHA assigned to the Project and authorized to perform specific responsibilities.
- B. A Project Manager may also be referred to as a Construction Manager or Construction Contract Administrator.

**24.1.78. Project Record Documents**

- A. Electronic files and printed documents of all nature prepared by the A/E, which incorporate the information shown on the Contractor's As-Built Documents.
- B. They consist of:

- i. The “Record Drawings”;
- ii. Certificate of Substantial Completion;
- iii. Certificate of Contract Completion (as complete);
- iv. Contractor’s Warranty;
- v. Manufacturers’ Warrantees, certificate(s) of occupancy, approved shop drawings and other action submittals;
- vi. Proposal Requests;
- vii. Requests for Interpretation;
- viii. Addenda;
- ix. Change Orders;
- x. Balancing Reports; and
- xi. The final version of the approved Construction Progress Schedule

**24.1.79. Proposal**

- A. The offer of a Contractor to perform the Work set forth in a Proposal Request.

**24.1.80. Provide**

- A. Furnish and install, complete and ready for intended use.

**24.1.81. Punch List**

- A. A document listing items of Work requiring correction or completion by the Contractor as a condition precedent to Contract Completion.

**24.1.82. Record Drawings**

- A. Synonymous to As-Build Drawings; and,
- B. The Drawings, which have been revised by the A/E to show the changes made during the construction process, conformed to represent the Work as executed by the Contractor.

**24.1.83. Request for Interpretation/Information (RFI)**

- A. A written request to CMHA or the A/E seeking an interpretation or clarification of the Contract Documents.

**24.1.84. Samples**

- A. Physical examples, color selection items, field samples, and mock-ups furnished by the Contractor to illustrate functional and aesthetic characteristics of products, materials, equipment, or workmanship and establish criteria by which the Work shall be judged.

**24.1.85. Schedule of Values**

- A. A full, accurate, and detailed statement furnished by the Contractor reflecting a defined breakdown of the Contract Sum.

**24.1.86. Separate Consultant**

- A. A Person engaged by CMHA to provide Project-related professional services other than the services under this Contract.
- B. The term includes the Separate Consultant’s authorized representatives, successors, assigns, and sub-consultants regardless of tier.

**24.1.87. Separate Contract**

- A. The contract between CMHA and a Separate Consultant or a Separate Contractor.

**24.1.88. Separate Contractor**

- A. A Person under contract CMHA to provide Project related work other than the Work under this Contract.
- B. The term includes the Separate Contractor’s authorized representatives, successors, assigns, and subcontractors regardless of tier.

**24.1.89. Shop Drawings**

- A. Drawings, diagrams, illustrations, and schedules specifically prepared for the Project provided by the Contractor or a Subcontractor to illustrate some portion of the Work.
- B. Shop Drawings are not Contract Documents.
- C. Shop Drawings on equipment shall include a written statement from the manufacturer of the equipment certifying the equipment is in compliance with the Contract Documents.

**24.1.90. Site**

A. The location designated for the Project.

**24.1.91. Specifications**

A. The written description of the technical requirements for construction and includes the criteria and tests for determining whether the requirements are met.

**24.1.92. Stage**

A. A distinct period in the life cycle of a facility from concept through construction, to use and deconstruction or demolition.

B. Typical Stages include Program Verification, Schematic Design, Design Development, Construction Documents, Bidding and Award stages; and the Construction, which includes Construction and Closeout activities.

**24.1.93. Subcontract**

A. Any contract or agreement between the Contractor and a Subcontractor for performance of a portion of the Work.

**24.1.94. Subcontract Form**

A. The Subcontract Form prescribed CMHA and required for use by Contractor when engaging Subcontractors.

**24.1.95. Subcontractor**

A. A Person who undertakes to perform any part of the Work on the Project under a contract with a Contractor or with any Person other than the State, including all such Persons in any tier.

B. The term "Subcontractor" includes Material Suppliers, but does not include any Separate Contractor unless expressly assigned in writing to the Contractor by CMHA and accepted by the Contractor.

**24.1.96. Supplementary Conditions**

A. Amendments to the CMHA Construction Contract General Terms and Conditions, issued as a separate document, prescribed by CMHA, which describes conditions of the Contract unique to a particular Project, which may include:

i. Provisions regarding the assignment of responsibility for refuse removal;

ii. Safety and security precautions and programs;

iii. Temporary Project facilities and utilities;

iv. Weather and fire protection;

v. Scaffolding and equipment;

vi. Materials and services to be used commonly by the Contractor and Subcontractors and requiring the Contractor to provide assistance in the utilization of any applicable equipment system;

vii. Preparation of operation and maintenance manuals; and

viii. Training of CMHA personnel for operation and maintenance of the Project

B. The CMHA Construction Contract General Terms and Conditions shall not be superseded or amended by Drawings and Specifications, unless so provided in Supplementary Conditions.

**24.1.97. Surety**

A. A Person providing a Bid Guaranty or a Bond to a Bidder or a Contractor, as applicable, to indemnify CMHA against all direct and consequential damages suffered by failure of the Bidder to execute the Contract, or of the Contractor to perform the Contract and to pay all lawful claims of Subcontractors, Material Suppliers and laborers, as applicable.

**24.1.98. Substantial Completion**

A. The stage in the progress of the Work when the Work (or designated portion of the Work for which CMHA has agreed to take Partial Occupancy) is sufficiently complete in accordance with the Contract that CMHA can utilize the Work for its intended use, as determined by CMHA.

B. The issuance of a certificate of occupancy or partial certificate of occupancy (if applicable) is a condition precedent to the achievement of Substantial Completion.

**24.1.99. Substitution**

A. An article, device, material, equipment, form of construction, or other item, proposed by a prospective Bidder prior to the bid opening and approved by the A/E by Addendum, for incorporation or use in the Work as being functionally and qualitatively equivalent to essential attributes of a Basis of Design or Acceptable Component specified in the proposed Contract Documents.

**24.1.100. Unit Price**

- A. The cost of providing a unit of Work including labor, materials, services, and associated expenses.

**24.1.101. Work**

- A. The labor, materials, workmanship, manufacture or fabrication of components, equipment, and services, individually or collectively which are required by the Contract Documents, to be performed, installed, or provided by the Contractor for the Project.
- B. The furnishing of all material, labor, detailing, layout, supplies, plants, tools, scaffolding, transportation, temporary construction, superintendence, demolition, and all other services, facilities and items reasonably necessary for the full and proper performance and completion of the requirements of the Project as set forth in the Contract Documents, and items reasonably inferable therefrom and consistent therewith for the proper execution and completion of the construction and other services required by the Contract Documents, whether provided or to be provided by the Contractor or a Subcontractor, or any other entity for whom the Contractor is responsible, and whether or not performed or located on or off of the Site.

WAGE DETERMINATION

- A. The Prevailing Wages shall be paid for a legal day’s work to laborers, workmen or mechanics engaged in work under this Contract, at the site of the Project, in the trade or occupation listed.
- B. The Project falls under the residential construction type.
- C. The Wage Determinations provided shall be closely monitored by the contractor/bidder/quoter for any modifications until the actual construction work begins locking in the wage determination for the duration of the contract. Wage determinations and modifications can be monitored and obtained at [www.wdol.gov](http://www.wdol.gov). Failure to include the current wage determination will not relieve the contractors of potential wage liabilities.
- D. It shall be the Prime Contractor’s responsibility to verify the accuracy of the reported wages, including his subcontractors.
- E. It shall be the Prime Contractor’s responsibility to include the applicable Prevailing Wages and the Fair Labor Standards Provision in all contracts with Sub-Contractors on the project.
- F. It shall be the Contractors responsibility to be certain that all the classifications needed to accomplish the contract fall underneath one of the classifications listed on the Wage Determination provided in the scope of work.
- G. In the event that a required classification is not listed, a contractor may submit a request for an additional classification. Remember the request is not valid unless the Department of Labor approves it. There will be no justification for an adjustment to a contract price due to an increased wage rate. The contractor should have been aware of any particular skilled trades that were not included in the original wage determination and thus accepted any risk that DOL would “conform” a pay rate higher than what they estimated when they priced their proposal. The contractor is responsible to propose wage/benefit rates that “bear a reasonable relationship” to the other classifications and rates listed on the wage determination.
- H. The following pages are the Prevailing Rates of Wages as ascertained by the State or other Agency for this Project.
- I. Listed below is a checklist of items required for Wage and Hour Compliance.
- J. Remember, prompt correction of deficiencies is essential. Failure to correct in a timely manner will be the withholding of payments on your contract until the deficiencies are corrected. For your convenience listed below is a checklist of items required:

- Appointment of Paymaster
- Equal Employment Opportunity Affirmative Action Policy Statement (*EEOAAPS*)
- Equal Employment Opportunity Compliance Certificate (*EEOCC*)
- Letter of Understanding
- Weekly certified payrolls that include:
  - Contractor’s Name
  - Contractor’s Address
  - Payroll #
  - Week Ending Date
  - Project and Location
  - Contract or Purchase Order No.
  - Name of Employee
  - Social Security Number/Address of Employee
  - No. of Exemptions
  - Work Classification
  - Calendar Days
  - Hours Worked
  - Total Hours
  - Rate of Pay
  - Gross Amount Earned
  - Taxes or Write 1099 across columns if employee files his own taxes
  - Statement of Compliance (*back page of the payroll sheet*)
  - One of the boxes checked indicating if fringes benefits are paid in cash or approved program
  - Contractor’s Signature certifying payroll
- General and Subcontractors form (*if applicable*)
- Employment Utilization Report (*upon completion*)
- Section 3 Form (*if applicable*)

Signature \_\_\_\_\_ Date \_\_\_\_\_

Note: Bids may not be accepted if this form is not acknowledged and signed.



**Minority Business Enterprise (MBE)  
&  
Women Business Enterprise (WBE)  
Participation**

Contract/PO#: \_\_\_\_\_ Project Description: \_\_\_\_\_

**The contractor agrees to make its best effort to expend at least 20% of the total dollar amount of the Contract on Minority Business Enterprises (MBE), an entity with at least 51% ownership interest by a minority in business), and at least 5% of the Contract to a Women Business Enterprises (WBE), an entity with a least 51% ownership interest by a woman in business. Any questions regarding CMHA's MBE/WBE Program should be directed to Jacquetta Brown at 513-977-5683 or to [Section3@cintimha.com](mailto:Section3@cintimha.com).**

**Using Best Efforts to Achieve MBE/WBE Goals:** Prior to award of Contract, the Contractor will submit documents in support of its best efforts to achieve the above stated MBE/WBE participation. Best efforts may be established by documenting that the Contractor:

- Has made efforts to identify appropriate MBE/WBE contractors through community contacts or MBE and WBE associations
- Has contacted CMHA's Economic Inclusion Coordinator to help identify potential MBE/WBE companies appropriate for the project
- Has contacted and solicited bids/quotes from selected MBE/WBE companies

**Notification of MBE/WBE Participation:** Contractors agrees to promptly complete and return all required reports confirming MBE/WBE participation, including Proposed, Amended, and Final MBE/WBE Participation Forms. If requested by CMHA, Contractor agrees to submit proof of payment made to each MBE/WBE subcontractor listed on the MBE/WBE Participation Form (see attached).

**Waiver of MBE/WBE Participation Goals:** Request for complete or partial waiver of the contractor's MBE/WBE participation goals must be made in writing, stating all details in the request, the circumstances, and all relevant information. The request must be accompanied by a record of all efforts taken by the bidder/proposer to locate MBE/WBEs, solicit MBE/WBEs, seek assistance from CMHA's Economic Inclusion Coordinator, or seek help from other community/business resources or technical assistance agencies. CMHA will respond in writing to the Waiver Request within five (5) business days upon receipt.

Company Name \_\_\_\_\_

Contact Person \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_



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**Contractor's MBE/WBE Participation Report Form**

Contract/PO#: \_\_\_\_\_ Project Description: \_\_\_\_\_

Please list below the names of all firmly committed MBE and WBE subcontractors that will work on the project, their MBE/WBE Status, the dollar amount, and the percentage of total contract amount that will be performed by the entities. The MBE/WBE participation can include subcontracts or purchases of services, materials and supplies directly related to the contract.

(Please check one)      \_\_\_\_\_ Proposed                      \_\_\_\_\_ Amended                      \_\_\_\_\_ Final

Name of Subcontractor(s)	MBE	WBE	\$ Dollar Amount	% of Contract Amount
<b>Total <u>MBE</u> Dollar Amount and Percentage of Contract Amount</b>				
<b>Total <u>WBE</u> Dollar Amount and Percentage of Contract Amount</b>				

Company Name \_\_\_\_\_

Contact Person (print) \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

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**Prospective Business Vendor:**

Enclosed, you will find a variety of forms regarding Section 3 (Housing & Urban Development Opportunities Act of 1968, as amended). Please complete and attach the Section 3 forms with your bid submission. **Failure to submit the appropriate forms may jeopardize the proposal/bid up to and including the possibility of said proposal/bid being deemed non-responsive**

**Anyone claiming to be a Section 3 Business Concern shall be required, as set forth by procedure, to provide evidence of such status. Section 3 Business Concerns claiming Section 3 Preference status must meet that status at the time the bid, quote or proposal is submitted to CMHA.**

**Section 3 Required Forms:**

- 1) Section 3 Assurance of Compliance & Section 3 Clause
- 2) Section 3 Action Plan
- 3) Section 3 Certification for Preference
- 4) Preference Category Acknowledgement S3 Residents

If you need any assistance or help regarding Section 3, feel free to contact us. We look forward to assisting you with Section 3 implementation.

**[Section3@cintimha.com](mailto:Section3@cintimha.com)**



**CMHA**  
**Section 3 Assurance of Compliance Form**

**Training, Employment, and Contracting Opportunities for Section 3 Residents and Section 3 Business Concerns**

- A. The project assisted 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. 170u. Section 3 requires that to the *greatest extent feasible, newly created opportunities* that are generated by the awarding of this contract be given to:
- Section 3 Workers (25% minimum goal of labor hours) upon their qualifications.
  - Section 3 Business Concerns (10% of total construction subcontracting dollar amount awarded – based upon their qualifications).
  - Section 3 Business Concerns (3% of total non-construction subcontracting dollar amount awarded- based upon their qualifications).
- B. Notwithstanding any other provision of this contract, the applicant shall carry out the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary set forth in 24 CFR Part 75, and all applicable rules and orders of the Secretary issued thereunder prior to the execution of this contract. The requirements of said regulations include but are not limited to development and implementation of a Section 3 Action Plan/Strategy for utilizing Section 3 Business Concerns; the making of a good faith effort, as defined by the regulation, to provide training, employment and business opportunities required by Section 3; and incorporation of the “Section 3 Clause” specified by Section 75.9 and 75.17 of the regulations in all contracts for work in connection with the project. The applicant and recipient agency, certifies and agrees that it is under no contractual or other disability which would prevent it from complying with these requirements.
- C. Compliance with the provision of Section 3, the regulations set forth in 24 CFR Part 75, and all applicable rules and orders of the Secretary issued thereunder prior to approval by the Government of the application of this contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant, its contractors and subcontractors, its successors, and assigns to the sanctions specified by the contract, and to such sanctions as are specified by 24 CFR Section 75.

Applicant: \_\_\_\_\_

Signature: \_\_\_\_\_

Address: \_\_\_\_\_

Date: \_\_\_\_\_

## Section 3 Clause

***All Section 3 covered contracts shall include the following clause (referred to as the "Section 3 Clause"):***

- A. The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, [12 U.S.C. 1701u](#) (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.
- B. The parties to this contract agree to comply with HUD's regulations in 24 CFR part 75, 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 75 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 75, 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 75. 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 75.
- 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 75.9 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR part 75.9
- F. Noncompliance with HUD's regulations in 24 CFR part 75 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.
- G. In the event of a determination by the Executive Director or his/her designee that the Contractor is not in compliance with the section 3 clause or any rule, regulation, or report submission requirements of the CMHA, this contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further CMHA contracts for a period of one to three years.



## Contractor Section 3 Action Plan Submission

The Section 3 Action Plan is a requirement for contracting opportunities with CMHA. The Section 3 Action Plan must indicate/describe the proposed strategies for achieving the Section 3 training and/or employment goals, and subcontracting numerical goals, when and if **newly created opportunities** are generated upon awarding of contracts. **Failure to submit the Section 3 Action plan may jeopardize the proposal/bid up to and including the possibility of said proposal/bid being deemed non-responsive.**

Please review the Section 3 Action Plan information attached. **All Sections need to be completed and signed.** This information will help to assist you in formulating your Section 3 Action Plan. You will need to address each question and check the appropriate boxes in regards to how your company will strive to achieve Section 3 Compliance to the “**greatest extent feasible**”.

Please identify individual(s) responsible for planning, implementing and tracking the projects' Section 3 training, employment and/or contracting goals:

**Name(s):** \_\_\_\_\_

**Contact Info:** \_\_\_\_\_

**Title(s):** \_\_\_\_\_

**Section 3 i ©-“µ© i a°/Training Opportunity Strategies**

Please check any and all efforts from the below mentioned categories that your company will utilize to recruit, solicit, encourage, facilitate and hire Section 3 + «§i ® šaŸ( šŒi °; Ÿi ;œŸa° + «§i ® when new hiring/training opportunities are generated through the awarding of the contract. **Some of the items will be mandatory as indicated with \*\*.** Your šŒsa«³ ; ŸŒ© i a° is still needed, so please check accordingly.

***The Section 3 Action Plan is subject to audit at anytime during the awarding of the contract through the duration of the contract by the Section 3 Compliance Coordinator.***

**\*\* Commit that the company and/or subcontractors as a result of the contract, % of th i š > «®«±® will be Section 3 + «§i ®.**

**\*\* Contact the CMHA Section 3 Compliance Coordinator regarding i ©-“µ© i a° and training opportunities.**

**\*\* Provide the CMHA Section 3 Compliance Coordinator with a monthly report listing all i ©-“µ© i a° and training opportunities.**

**\*\* Post notice (placards) at the worksite where the work is being done, indicating any i ©-“µ© i a° and training opportunities**

Facilitate or co-facilitate Hiring Halls within close proximity to where the work is being done for Section 3 + «§i ® šaŸ( šŒs.

Contact/Meet with Resident Associations informing them of new training and i ©-“µ© i a° opportunities.

\*\*\* Advertise new training and i ©-“µ© i a° opportunities in community and diversity newspapers/websites.

Sponsor or participate in job informational meetings or job fairs in the neighborhood or service area of the Section 3 covered project.

Establish an internal training program (pre-apprenticeship) that is consistent with Dept. of Labor requirements to provide Section 3 + «§i ® šaŸ( šŒi °; Ÿi ;œŸa° + «§i ® with the opportunity to learn skills and job requirements.

Distribute flyers to CMHA owned sites indicating the number and types of jobs that will be offered with contact information.

Maintain a file of eligible qualified Section 3 + «§i ® šaŸ( šŒi °; Ÿi ;œŸa° + «§i ® for future employment opportunities.

Incorporate into contract (after selection of bidders but prior to the execution of contracts), a negotiated provision for a specific number of Section šaŸ( šŒi °; Ÿi ;œŸa° + «§i ® to be trained and/or employed during the contract.

Other:

\_\_\_\_\_

***Note: You are required to the provide opportunities to “the greatest extent feasible” in order to comply with the requirements of Section 3. In the event that you are not able to hire/train and/or contract with Section 3 Residents and/or Section 3 Business Concerns, you will be required to document why you were unable to meet the numerical goals.***

Signature: \_\_\_\_\_

Date: \_\_\_\_\_



**Section 3 Subcontracting Opportunity Strategies**

Please check any and all efforts from the below mentioned categories that your company will utilize to recruit, solicit, encourage, facilitate and contract with Section 3 Business Concerns when new subcontracting opportunities are generated through the awarding of the contract. **Some of the items will be mandatory as indicated with \*\*.** Your acknowledgement is still needed, so please check accordingly.

***The Section 3 Action Plan is subject to audit at anytime during the awarding of the contract through the duration of the contract by the Section 3 Compliance Coordinator.***

**\*\* Commit that when subcontracting occurs, 10% of the total dollar amount subcontracted out by the company and/or by subcontractors will go to Section 3 Business Concerns.**

**\*\* Contact the CMHA Section 3 Compliance Coordinator regarding all new subcontracting opportunities.**

**\*\* Provide the CMHA Section 3 Compliance Coordinator with a monthly report listing all subcontracting opportunities.**

Advertise new contracting opportunities in community and diversity newspapers/websites.

Maintain a file of eligible qualified Section 3 Business Concerns for future contracting opportunities.

Incorporate into contract (after selection of bidders but prior to the execution of contracts), a negotiated provision for a specific amount of work to be contracted with Section 3 Business Concern(s) during the contract.

Sponsor or participate in minority, women, small business expositions and or conferences in the Cincinnati, Ohio area to network and promote contracting opportunities with Section 3 Business Concerns.

Outreach to business assistance agencies, minority contracting associations, community organizations, to network and promote contracting opportunities with Section 3 Business Concerns.

Contact/Meet with Resident Associations informing them of new contracting opportunities.

Outreach to trade/labor organizations to network and promote contracting opportunities with Section 3 Business Concerns.

Host/Facilitate workshops geared to Section 3 Business concerns on contracting procedures and opportunities.

Become an active mentor to Section 3 Business Concerns.

Other:

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***Note: You are required to provide opportunities to "the greatest extent feasible" in order to comply with the requirements of Section 3. In the event that you are not able to hire/train and/or contract with Section 3 Residents and/or Section 3 Business Concerns, you will be required to document why you were unable to meet the numerical goals.***

Signature: \_\_\_\_\_

Date: \_\_\_\_\_



Cincinnati Metropolitan Housing Authority Section 3
CERTIFICATION FOR PREFERENCE

Please note that a contract with Cincinnati Metropolitan Housing Authority is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended AND to the Section 3 Action Plan submitted with the proposal for this project.

Type of Business: Corporation Partnership Sole Proprietorship Joint Venture LLC MBE WBE (check all that apply)

Business Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_ Phone: \_\_\_\_\_ Email: \_\_\_\_\_

You self-certify that your business is, documented within the last six months a Section 3 Business Concern based on one of the below eligibility criteria's.. (Check the one that qualifies your business):

Category 1

51 percent or more owned and controlled by low- or very low-income persons (based on household income under HUD-income limits); or

Category 2

75 percent or more of the business labor hours to perform the business are performed by low-very low income persons; or

Category 3

51 percent owned and controlled by current residents of public housing or Section 8-assisted housing.

OR

My business does not meet the Section 3 eligibility criteria and wishes to forgo Section 3 preferences in the awarding of this contract, but understand that we are still responsible for meeting Section 3 compliance.

"I hereby certify that the information provided on this form is true and correct, and understand any falsification of any of the information could subject me to punishment under the law."

Signature \_\_\_\_\_ Date \_\_\_\_\_

Authorized Signer

Title: \_\_\_\_\_

If you would like more information or to register your business in the Section 3 program, please call Jacquetta Brown, at (513) 977-5683, or send an email to Section3@Cintimha.com.

Section 3 is a provision of the Housing and Urban Development (HUD) Act of 1968 that helps foster local economic development, neighborhood economic improvement, and individual self-sufficiency. The Section 3 program requires that recipients of certain HUD financial assistance, to the greatest extent feasible, provide job training, employment, and contracting opportunities for low-or very-low income residents in connection with projects and activities in their neighborhoods.

**CONTRACT BOND**  
(O.R.C. § 153.57)

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned ("Contractor"), as principal, and \_\_\_\_\_, as surety, are hereby held and firmly bound unto the **insert Owner's Name** ("Owner") as obligee, in the penal sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_), for the payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH that whereas, the above-named principal did on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_, enter into a contract with the Owner for \_\_\_\_\_ related to \_\_\_\_\_ ("Project"), which said contract is made a part of this bond the same as though set forth herein:

Now, if the said Contractor shall well and faithfully do and perform the things agreed by the Contractor to be done and performed according to the terms of said contract; and shall pay all lawful claims of subcontractors, materialmen, and laborers, for labor performed and materials furnished in the carrying forward, performing, or completing of said contract; we agreeing and assenting that this undertaking shall be for the benefit of any materialman or laborer having a just claim, as well as for the obligee herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said surety hereby stipulates and agrees that no modifications, omissions, or additions in or to the terms of the said contract or in or to the plans or specifications therefore shall in any wise affect the obligations of said surety on its bond, and does hereby waive notice of any such modifications, omissions or additions to the terms of the contract or to the work or to the specifications.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
(PRINCIPAL)

\_\_\_\_\_  
(SURETY)

By: \_\_\_\_\_

By: \_\_\_\_\_

Printed Name & Title: \_\_\_\_\_  
\_\_\_\_\_

Printed Name & Title: \_\_\_\_\_  
\_\_\_\_\_

Surety's Address: \_\_\_\_\_  
\_\_\_\_\_

Surety's Telephone Number: \_\_\_\_\_

Surety's Fax Number: \_\_\_\_\_

\_\_\_\_\_  
NAME OF SURETY'S AGENT

Surety's Agent's Address: \_\_\_\_\_  
\_\_\_\_\_

Surety's Agent's Telephone Number: \_\_\_\_\_

Surety's Agent's Fax Number: \_\_\_\_\_

**BID BOND**

KNOWN ALL MEN BY THESE PRESENTS, that we:

\_\_\_\_\_  
(Insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principle, and:

\_\_\_\_\_  
(Insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of:

\_\_\_\_\_ as Surety, hereinafter called the

Surety, are held and firmly bound unto:

\_\_\_\_\_  
(Insert full name and address or legal title of Owner)

hereinafter called the Obligee, in the sum of:

\_\_\_\_\_ DOLLARS

(In Words)

\$ \_\_\_\_\_

for payment of which sum, well and truly to be made, we hereby jointly bind ourselves, our heirs, executors, administrators, successors and assigns. The CONDITION OF THIS OBLIGATION IS SUCH, that whereas, the Principal has submitted the accompanying bid, dated:

\_\_\_\_\_ 20 \_\_\_\_\_ for \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

NOW, THEREFORE, if the Obligee shall accept the Bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such Bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference between the amount specified in said Bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bond, then this obligation shall be null and void, otherwise to remain in full force and effect.

SIGNED SEALED AND DATED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20 \_\_\_\_\_

\_\_\_\_\_  
WITNESS

\_\_\_\_\_  
PRINCIPAL

BY \_\_\_\_\_

\_\_\_\_\_  
SURETY

BY \_\_\_\_\_

Note: In lieu of such bond, the Bidder shall include with his proposal, a Certified Check, Bank Draft, or U.S. Government Bond at par value, payable to the Obligee.

Certified Check for \_\_\_\_\_

DOLLARS - ON \_\_\_\_\_ BANK OF \_\_\_\_\_

\_\_\_\_\_ DEPOSITED HERewith

\_\_\_\_\_  
BIDDER

BY \_\_\_\_\_

\_\_\_\_\_  
TITLE

CINCINNATI METROPOLITAN HOUSING AUTHORITY

AND

---

Contractor

Contract No. 2023-3004

This Contract is made and entered into between the CINCINNATI METROPOLITAN HOUSING AUTHORITY, hereinafter referred to as "Owner" and the below named, hereinafter referred to as "CONTRACTOR."

Contractor's name General Contractor

Contractor address General Contractor Address

### 1. PURPOSE AND BACKGROUND

OWNER is the 17<sup>th</sup> largest public housing authority in the United States. OWNER's Asset Management Portfolio of properties are owned and operated by OWNER.

The purpose of this contract is for the Contractor to provide construction services at OWNER's San Marco property further described in Exhibit A.

### 2. STATEMENT OF WORK

The Contractor shall furnish the personnel, material, and/or services and otherwise do all things necessary for or incidental to the performance of the work set forth in Exhibit A.

Exhibit B contains the General Terms and Conditions governing work to be performed under this contract, the nature of the working relationship between OWNER and the Contractor, and specific obligations of both parties.

### 3. APPLICABLE DOCUMENTS

This contract includes all relevant terms in Solicitation 2023-3004: Stanley Row - Tower A Fire Pump and Generator Replacement, the Contractor's submitted Proposal and all documents, policies, and documents incorporated by reference. All documents, sections, exhibits, clauses, terms and provisions of this Performance Based Contract shall be read so as to be consistent to all extent practicable. In the event that any document, section, clause, exhibit, term or provision of this Contract conflicts with any provision of any of the above mentioned applicable document, the provision of the instruments listed below shall take precedence in the following order:

- A. Applicable Federal and State of Ohio statutes and regulations
- B. This Instrument (Performance Based Contract)
- C. Solicitation 2023-3004
- D. The Contractor's Proposal
- E. Other Documents incorporated by reference (if applicable)

#### 4. PERIOD OF PERFORMANCE

Subject to other Contract provisions, the period of performance under this Contract is 180 days and shall be from as indicated in the Notice to Proceed, unless sooner terminated or extended as provided herein.

#### 5. COMPENSATION AND PAYMENT

Billing and payment shall be accomplished in accordance with the Contract. OWNER shall pay an amount not to exceed the amounts listed in the Exhibit C, Performance Requirement Summary, for the performance of all things necessary for, or incidental to the performance of work as set forth in Exhibit A, the Statement of Work. Contract Award Amount of \$ \_\_\_\_\_.

Payment shall be contingent upon review and acceptance of the Contractor's Deliverables by OWNER. Compensation for services shall be based on Exhibit C, Performance Requirement Summary.

OWNER will pay Contractor within 45 days of receipt of properly completed invoices or acceptance of deliverable, whichever is later. Invoices shall be submitted to the Construction Manager or designated not more often than monthly. The invoice shall reference Contract No 2023-3004, describe and document to OWNER's satisfaction as description of the deliverable accepted by OWNER and the fixed price cost per deliverable. OWNER may, in its sole discretion, withhold payments claimed by Contractor for services rendered if Contractor fails to satisfactorily comply with any term or condition of this Contract. Invoices shall be sent to 1627 Western Ave., Cincinnati, OH 45214

#### 6. WARRANTIES

Contractor warrants that its services and materials provided will be of good quality and consistent with the professional skill and care ordinarily provided by professionals performing the same or similar service and such services and materials shall be provided in accordance with generally accepted industry standards.

At all times Contractor shall comply with all applicable federal, state and local laws, rules, regulations, ordinances and codes and obtain any licenses or permits required to provide the services under this Contract.

7. UNIFORMS

OWNER shall provide ID Badges for contractors working on OWNER Properties. No employee of the Contractor will be allowed on OWNER properties unless said employee possesses identification that person is an employee/contractor of \*\*General Contractor\*\*.

9. EXECUTIVE REVIEW

This Contract shall be subject to the written approval of OWNER's authorized representative and shall not be binding until so approved.

IN WITNESS WHEREOF, this PROFESSIONAL SERVICES AGREEMENT has been executed by OWNER and \_\_\_\_\_ to take effect on \_\_\_\_\_.

Contractor

Date

CINCINNATI METROPOLITAN  
HOUSING AUTHORITY

General Contractor

By: \_\_\_\_\_

By: \_\_\_\_\_

\_\_\_\_\_  
DATE

\_\_\_\_\_  
DATE



SOLICITATION NO. 2023-3004  
EXHIBIT A  
STATEMENT OF WORK

---

Contractor is to provide construction services as outlined in Solicitation 2023-3004:

1. Fire pump replacement.
2. Generator replacement.

**Exhibit E**

**CONTRACTOR ACKNOWLEDGEMENT**

I acknowledge receipt of the Contract No. 2023-3004 and the following exhibits:

<b>EXHIBIT</b>	<b>INITIAL</b>
Exhibit A: Statement of Work	
Exhibit B: General Conditions for Construction Contracts	
Exhibit C: Performance Requirement Summary	
Exhibit D: Davis Bacon Wage Determination	

Contractor accepts the terms and conditions of the Contract and attached Exhibits A-D.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

SECTION 21-05-00 - COMMON WORK RESULTS FOR FIRE SUPPRESSION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Piping materials and installation instructions common to most piping systems.
2. Mechanical sleeve seals.
3. Sleeves.
4. Escutcheons.
5. Grout.
6. Concrete bases.
7. Supports and anchorages.

1.2 DEFINITIONS

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe chases, unheated spaces immediately below roof, and spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
- B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
- C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
- D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in chases.
- E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

1.3 SUBMITTALS

- A. Welding certificates.

1.4 QUALITY ASSURANCE

- A. Steel Support Welding: Qualify processes and operators according to AWS D1.1, "Structural Welding Code--Steel."
- B. Steel Pipe Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."

2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
- C. Electrical Characteristics for Fire-Suppression Equipment: Equipment of higher electrical characteristics may be furnished provided such proposed equipment is approved in writing and connecting electrical services, circuit breakers, and conduit sizes are appropriately modified. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.

## PART 2 - PRODUCTS

### 2.1 PIPE, TUBE, AND FITTINGS

- A. Refer to individual Division 21 piping Sections for pipe, tube, and fitting materials and joining methods.
- B. Pipe Threads: ASME B1.20.1 for factory-threaded pipe and pipe fittings.

### 2.2 JOINING MATERIALS

- A. Refer to individual Division 21 piping Sections for special joining materials not listed below.
- B. Pipe-Flange Gasket Materials: ASME B16.21, nonmetallic, flat, asbestos-free, 1/8-inch maximum thickness unless thickness or specific material is indicated.
- C. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
- D. Brazing Filler Metals: AWS A5.8, BCuP Series or BAg1, unless otherwise indicated.
- E. Welding Filler Metals: Comply with AWS D10.12.

### 2.3 MECHANICAL SLEEVE SEALS

- A. Description: Modular sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve.
- B. Sealing Elements: EPDM or NBR interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
- C. Pressure Plates: Stainless steel. Include two for each sealing element.
- D. Connecting Bolts and Nuts: Stainless steel length required to secure pressure plates to sealing elements. Include one for each sealing element.

### 2.4 SLEEVES

- A. Galvanized-Steel Sheet: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint.
- B. Steel Pipe: ASTM A 53, Type E, Grade B, Schedule 40, galvanized, plain ends.

- C. Cast Iron: Cast or fabricated "wall pipe" equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- D. Stack Sleeve Fittings: Manufactured, cast-iron sleeve with integral clamping flange. Include clamping ring and bolts and nuts for membrane flashing.
  - 1. Underdeck Clamp: Clamping ring with set screws.

## 2.5 ESCUTCHEONS

- A. Description: Manufactured wall and ceiling escutcheons and floor plates, with an ID to closely fit around pipe, tube, and insulation of insulated piping and an OD that completely covers opening.
- B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with polished chrome-plated finish.
- C. One-Piece, Cast-Brass Type: With set screw.
  - 1. Finish: Polished chrome-plated and rough brass.
- D. Split-Casting, Cast-Brass Type: With concealed hinge and set screw.
  - 1. Finish: Polished chrome-plated and rough brass.

## 2.6 GROUT

- A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
  - 1. Characteristics: Post-hardening, volume-adjusting, non-staining, non-corrosive, nongaseous, and recommended for interior and exterior applications.
  - 2. Design Mix: 5000-psi, 28-day compressive strength.
  - 3. Packaging: Premixed and factory packaged.

## PART 3 - EXECUTION

### 3.1 PIPING SYSTEMS - COMMON REQUIREMENTS

- A. Install piping according to the following requirements and Division 21 Sections specifying piping systems.
- B. 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.
- C. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas.

- D. 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.
- E. Install piping to permit valve servicing.
- F. Install piping at indicated slopes.
- G. Install piping free of sags and bends.
- H. Install fittings for changes in direction and branch connections.
- I. Install piping to allow application of insulation.
- J. Select system components with pressure rating equal to or greater than system operating pressure.
- K. Install escutcheons for penetrations of walls and floors.
- L. Install sleeves for pipes passing through concrete and masonry walls, gypsum-board partitions, and concrete floor slabs.
- M. Aboveground, Exterior-Wall Pipe Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
  - 1. Install steel pipe for sleeves smaller than 6 inches in diameter.
  - 2. Install cast-iron "wall pipes" for sleeves 6 inches and larger in diameter.
  - 3. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.
- N. Underground, Exterior-Wall Pipe Penetrations: Install cast-iron "wall pipes" for sleeves. Seal pipe penetrations using mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
  - 1. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.
- O. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials. Refer to Division 07 Section "Penetration Firestopping" for materials.
- P. Verify final equipment locations for roughing-in.
- Q. Refer to equipment specifications in other Sections of these Specifications for roughing-in requirements.

### 3.2 PIPING JOINT CONSTRUCTION

- A. Join pipe and fittings according to the following requirements and Division 21 Sections specifying piping systems.
- B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- D. 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.
- E. 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.
- F. 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.
- G. Welded Joints: Construct joints according to AWS D10.12, using qualified processes and welding operators according to Part 1 "Quality Assurance" Article.
- H. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

### 3.3 CONCRETE BASES

- A. Concrete Bases: Anchor equipment to concrete base according to equipment manufacturer's written instructions.
  - 1. Construct concrete bases of dimensions indicated, but not less than 4 inches larger in both directions than supported unit.
  - 2. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of the base.
  - 3. Install epoxy-coated anchor bolts for supported equipment that extend through concrete base, and anchor into structural concrete floor.
  - 4. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 5. Install anchor bolts to elevations required for proper attachment to supported equipment.
  - 6. Install anchor bolts according to anchor-bolt manufacturer's written instructions.
  - 7. Use 3000-psi, 28-day compressive-strength concrete and reinforcement as specified in Division 03 Section "Miscellaneous Cast-in-Place Concrete."

3.4 ERECTION OF METAL SUPPORTS AND ANCHORAGES

- A. Refer to Division 05 Section "Metal Fabrications" for structural steel.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor fire-suppression materials and equipment.
- C. Field Welding: Comply with AWS D1.1.

3.5 ERECTION OF WOOD SUPPORTS AND ANCHORAGES

- A. Cut, fit, and place wood grounds, mailers, blocking, and anchorages to support, and anchor fire-suppression materials and equipment.
- B. Select fastener sizes that will not penetrate members if opposite side will be exposed to view or will receive finish materials. Tighten connections between members. Install fasteners without splitting wood members.
- C. Attach to substrates as required to support applied loads.

3.6 GROUTING

- A. Mix and install grout for fire-suppression equipment base bearing surfaces, pump and other equipment base plates, and anchors.
- B. Clean surfaces that will come into contact with grout.
- C. Provide forms as required for placement of grout.
- D. Avoid air entrapment during placement of grout.
- E. Place grout, completely filling equipment bases.
- F. Place grout on concrete bases and provide smooth bearing surface for equipment.
- G. Place grout around anchors.
- H. Cure placed grout.

END OF SECTION 21-05-00



## SECTION 21-05-13 - COMMON MOTOR REQUIREMENTS FOR FIRE SUPPRESSION EQUIPMENT

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes general requirements for single-phase and polyphase, general-purpose, horizontal, small, and medium, squirrel-cage induction motors for use on ac power systems up to 600 V and installed at equipment manufacturer's factory or shipped separately by equipment manufacturer for field installation.

#### 1.2 COORDINATION

- A. Coordinate features of motors, installed units, and accessory devices to be compatible with the following:
  - 1. Motor controllers.
  - 2. Torque, speed, and horsepower requirements of the load.
  - 3. Ratings and characteristics of supply circuit and required control sequence.
  - 4. Ambient and environmental conditions of installation location.

### PART 2 - PRODUCTS

#### 2.1 GENERAL MOTOR REQUIREMENTS

- A. Comply with requirements in this Section except when stricter requirements are specified in fire suppression equipment schedules or Sections.
- B. Comply with NEMA MG 1 unless otherwise indicated.

#### 2.2 MOTOR CHARACTERISTICS

- A. Duty: Continuous duty at ambient temperature of 40 deg C and at altitude of 3300 feet (1000 m) above sea level.
- B. Capacity and Torque Characteristics: Sufficient to start, accelerate, and operate connected loads at designated speeds, at installed altitude and environment, with indicated operating sequence, and without exceeding nameplate ratings or considering service factor.

#### 2.3 POLYPHASE MOTORS

- A. Description: NEMA MG 1, Design B, medium induction motor.
- B. Efficiency: Energy efficient, as defined in NEMA MG 1.

- C. Service Factor: 1.15.
- D. Multispeed Motors: Variable torque.
  - 1. For motors with 2:1 speed ratio, consequent pole, single winding.
  - 2. For motors with other than 2:1 speed ratio, separate winding for each speed.
- E. Rotor: Random-wound, squirrel cage.
- F. Bearings: Regreasable, shielded, antifriction ball bearings suitable for radial and thrust loading.
- G. Temperature Rise: Match insulation rating.
- H. Insulation: Class F.
- I. Code Letter Designation:
  - 1. Motors 15 HP and Larger: NEMA starting Code F or Code G.
  - 2. Motors Smaller than 15] HP: Manufacturer's standard starting characteristic.
- J. Enclosure Material: Cast iron for motor frame sizes 324T and larger; rolled steel for motor frame sizes smaller than 324T.

#### 2.4 POLYPHASE MOTORS WITH ADDITIONAL REQUIREMENTS

- A. Motors Used with Reduced-Voltage and Multispeed Controllers: Match wiring connection requirements for controller with required motor leads. Provide terminals in motor terminal box, suited to control method.
- B. Motors Used with Variable Frequency Controllers: Ratings, characteristics, and features coordinated with and approved by controller manufacturer.
  - 1. Windings: Copper magnet wire with moisture-resistant insulation varnish, designed and tested to resist transient spikes, high frequencies, and short time rise pulses produced by pulse-width modulated inverters.
  - 2. Energy- and Premium-Efficient Motors: Class B temperature rise; Class F insulation.
  - 3. Inverter-Duty Motors: Class F temperature rise; Class H insulation.
  - 4. Thermal Protection: Comply with NEMA MG 1 requirements for thermally protected motors.

#### 2.5 SINGLE-PHASE MOTORS

- A. Motors larger than 1/20 hp shall be one of the following, to suit starting torque and requirements of specific motor application:
  - 1. Permanent-split capacitor.
  - 2. Split phase.
  - 3. Capacitors start, inductor run.
  - 4. Capacitors start, capacitor run.
- B. Multispeed Motors: Variable-torque, permanent-split-capacitor type.

- C. Bearings: Prelubricated, antifriction ball bearings or sleeve bearings suitable for radial and thrust loading.
- D. Thermal Protection: Internal protection to automatically open power supply circuit to motor when winding temperature exceeds a safe value calibrated to temperature rating of motor insulation. Thermal-protection device shall automatically reset when motor temperature returns to normal range.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 21-05-13

SECTION 21—05-48 - VIBRATION AND SEISMIC CONTROLS FOR FIRE-SUPPRESSION PIPING AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes the following:
  - 1. Isolation pads.
  - 2. Isolation mounts.
  - 3. Restrained elastomeric isolation mounts.
  - 4. Restraining braces.

1.2 DEFINITIONS

- A. IBC: International Building Code.
- B. ICC-ES: ICC-Evaluation Service.

1.3 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Fire Protection Piping and Equipment shall withstand the effects of earthquake motions determined according to NFPA 13 and ASCE/SEI 7 Seismic Design Category C.

1.4 SUBMITTALS

- A. Product Data: For each product indicated.
- B. Delegated-Design Submittal: For vibration isolation and seismic-restraint calculations and details indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- C. Welding certificates.
- D. Qualification Data: For professional engineer.

1.5 QUALITY ASSURANCE

- A. Comply with seismic-restraint requirements in the IBC and NFPA 13 unless requirements in this Section are more stringent.
- B. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."

- C. Seismic-restraint devices shall have horizontal and vertical load testing and analysis and shall bear anchorage preapproval OPA number from OSHPD, preapproval by ICC-ES, or preapproval by another agency acceptable to authorities having jurisdiction, showing maximum seismic-restraint ratings. Ratings based on independent testing are preferred to ratings based on calculations. If preapproved ratings are not available, submittals based on independent testing are preferred. Calculations (including combining shear and tensile loads) to support seismic-restraint designs must be signed and sealed by a qualified professional engineer.

## PART 2 - PRODUCTS

### 2.1 VIBRATION ISOLATORS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - 1. Amber/Booth Company, Inc.
  - 2. Kinetics Noise Control.
  - 3. Mason Industries.
  - 4. Vibration Eliminator Co., Inc.
  - 5. Vibration Mountings & Controls, Inc.
- D. Pads: Arranged in single or multiple layers of sufficient stiffness for uniform loading over pad area, molded with a nonslip pattern and galvanized-steel base plates, and factory cut to sizes that match requirements of supported equipment.
  - 1. Resilient Material: Oil- and water-resistant neoprene or rubber.
- E. Mounts: Double-deflection type, with molded, oil-resistant rubber, hermetically sealed compressed fiberglass, or neoprene isolator elements with factory-drilled, encapsulated top plate for bolting to equipment and with base plate for bolting to structure. Color-code or otherwise identify to indicate capacity range.
  - 1. Materials: Cast-ductile-iron or welded steel housing containing two separate and opposing, oil-resistant rubber or neoprene elements that prevent central threaded element and attachment hardware from contacting the housing during normal operation.
  - 2. Neoprene: Shock-absorbing materials compounded according to the standard for bridge-bearing neoprene as defined by AASHTO.
- F. Restrained Mounts: All-directional mountings with seismic restraint.
  - 1. Materials: Cast-ductile-iron or welded steel housing containing two separate and opposing, oil-resistant rubber or neoprene elements that prevent central threaded element and attachment hardware from contacting the housing during normal operation.
  - 2. Neoprene: Shock-absorbing materials compounded according to the standard for bridge-bearing neoprene as defined by AASHTO.

## 2.2 SEISMIC-RESTRAINT DEVICES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. Amber/Booth Company, Inc.
  - 2. California Dynamics Corporation.
  - 3. Hilti, Inc.
  - 4. Kinetics Noise Control.
  - 5. Mason Industries.
  - 6. Unistrut; Tyco International, Ltd.
- C. General Requirements for Restraint Components: Rated strengths, features, and applications shall be as defined in reports by an evaluation service member of ICC-ES an agency acceptable to authorities having jurisdiction.
  - 1. Structural Safety Factor: Allowable strength in tension, shear, and pullout force of components shall be at least four times the maximum seismic forces to which they will be subjected.
- D. Channel Support System: MFMA-3, shop- or field-fabricated support assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end and other matching components and with corrosion-resistant coating; and rated in tension, compression, and torsion forces.
- E. Hanger Rod Stiffener: Steel tube or steel slotted-support-system sleeve with internally bolted connections to hanger rod.
- F. Bushings for Floor-Mounted Equipment Anchor Bolts: Neoprene bushings designed for rigid equipment mountings and matched to type and size of anchor bolts and studs.
- G. Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.
- H. Mechanical Anchor Bolts: Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488. Minimum length of eight times diameter.

## PART 3 - EXECUTION

### 3.1 VIBRATION-CONTROL AND SEISMIC-RESTRAINT DEVICE INSTALLATION

- A. Equipment Restraints:
  - 1. Install resilient bolt isolation washers on equipment anchor bolts where clearance between anchor and adjacent surface exceeds 0.125 inch.

2. Install seismic-restraint devices using methods approved by an evaluation service member of ICC-ES an agency acceptable to authorities having jurisdiction providing required submittals for component.
- B. Piping Restraints:
1. Comply with requirements in MSS SP-127 and NFPA 13.
  2. Space lateral supports a maximum of 40 feet o.c., and longitudinal supports a maximum of 80 feet o.c.
  3. Brace a change of direction longer than 12 feet.
- C. Install seismic-restraint devices using methods approved by an evaluation service member of ICC-ES an agency acceptable to authorities having jurisdiction] providing required submittals for component.
- D. Install bushing assemblies for anchor bolts for floor-mounted equipment, arranged to provide resilient media between anchor bolts and mounting hole in concrete base.
- E. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.
- F. Drilled-in Anchors:
1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
  2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
  3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
  4. Set anchors to manufacturer's recommended torque, using a torque wrench.
  5. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.

### 3.2 ACCOMMODATION OF DIFFERENTIAL SEISMIC MOTION

- A. Install flexible connections in piping where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where the connections terminate with connection to equipment that is anchored to a different structural element from the one supporting the connections as they approach equipment. Comply with requirements in Division 21 Section "Water-Based Fire-Suppression Systems" for piping flexible connections.

END OF SECTION 21-05-48

## SECTION 21-12-00 - FIRE-SUPPRESSION STANDPIPES

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Pipes, fittings, and specialties.
2. Fire-protection valves.
3. Fire-department connections.
4. Fire pump test connections.
5. Alarm devices.
6. Pressure gages.

##### B. Related Sections:

1. Division 21 Section "Wet Standpipe Systems" to remove and replace the existing fire pump, valves, and associated piping for the new fire pump.
2. Division 21 Section "Electric-Drive, Centrifugal Fire Pump and Jockey Pump" and controllers.

#### 1.2 SYSTEM DESCRIPTIONS

- A. Existing Class I Standpipe System Fire Pump Replacement: Including extending new piping to connections to the existing risers that presently serve the NPS 2-1/2 hose connections on each floor.
- B. It is assumed that the existing city water-supply flow rate and pressure are capable of supplying the required water demand for the new fire pump and existing standpipe system.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Fire-Suppression Standpipe System Component: Listed for 175-psig minimum working pressure.
- B. Delegated Design: Design fire-suppression standpipes, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- C. Seismic Performance: Fire-suppression standpipes shall withstand the effects of earthquake motions determined according to NFPA 13 and ASCE/SEI 7 Seismic Design Category C.

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For fire-suppression standpipes. Include plans, elevations, sections, details, and attachments to other work.



1. Wiring Diagrams: For power, signal, and control wiring.
- C. Qualification Data: For qualified Installer.
- D. Approved Standpipe Drawings: Working plans, prepared according to NFPA 14, that have been approved by authorities having jurisdiction, including hydraulic calculations if applicable.
- E. Welding certificates.
- F. Field Test Reports and Certificates: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 14. Include "Contractor's Material and Test Certificate for Aboveground Piping" and "Contractor's Material and Test Certificate for Underground Piping."
- G. Field quality-control reports.
- H. Operation and maintenance data.

#### 1.5 QUALITY ASSURANCE

- A. Installer Qualifications:
  1. Installer's responsibilities include designing, fabricating, and installing fire-suppression standpipes and providing professional engineering services needed to assume engineering responsibility. Base calculations on results of fire-hydrant flow test.
- B. Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.
- C. 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.
- D. NFPA Standards: Fire-suppression standpipe equipment, specialties, accessories, installation, and testing shall comply with NFPA 14, "Installation of Standpipe and Hose Systems."

### PART 2 - PRODUCTS

#### 2.1 PIPING MATERIALS

- A. Comply with requirements in "Piping Schedule" Article for applications of pipe, tube, and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.

#### 2.2 STEEL PIPE AND FITTINGS

- A. Standard Weight, Schedule 40 Black-Steel Pipe: ASTM A 53/A 53M, Type E or Grade B. Pipe ends may be factory or field formed to match joining method.
- B. Standard-Weight, Black-Steel Pipe Nipples: ASTM A 733, made of ASTM A 53/A 53M, seamless steel pipe with threaded ends.

- C. Galvanized and Uncoated, Gray-Iron Threaded Fittings: ASME B16.4, Class 125, standard pattern.
- D. Steel Flanges and Flanged Fittings: ASME B16.5, Class 150.
- E. Steel Welding Fittings: ASTM A 234/A 234M and ASME B16.9.

### 2.3 PIPING JOINING MATERIALS

- A. Metal, Pipe-Flange Bolts and Nuts: ASME B18.2.1, carbon steel unless otherwise indicated.
- B. 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.

### 2.4 LISTED FIRE-PROTECTION VALVES

- A. General Requirements:
  - 1. Valves shall be UL listed or FM approved.
  - 2. Minimum Pressure Rating: 175 psig.

### 2.5 PRESSURE GAGES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 1. AMETEK; U.S. Gauge Division.
  - 2. Ashcroft Inc.
  - 3. Brecco Corporation.
  - 4. WIKA Instrument Corporation.
- B. Standard: UL 393.
- C. Dial Size: 3-1/2- to 4-1/2-inch diameter.
- D. Pressure Gage Range: 0 to 250 psig.
- E. Water System Piping Gage: Include "WATER" or "AIR/WATER" label on dial face.

### 2.6 ESCUTCHEONS

- A. General: Manufactured floor, and wall escutcheons and floor plates.
- B. One-Piece, Cast-Brass Escutcheons: rough-brass] finish with setscrews.
- C. Split-Casting, Cast-Brass Escutcheons: rough-brass finish with concealed hinge and set-screw.
- D. Split-Plate, Stamped-Steel Escutcheons: exposed-rivet hinge.
- E. One-Piece Floor Plates: Cast-iron flange with holes for fasteners.

- F. Split-Casting Floor Plates: Cast brass with concealed hinge.

## 2.7 SLEEVES

- A. Cast-Iron Wall-Pipe Sleeves: Cast or fabricated of cast iron and equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.
- B. Galvanized-Steel-Sheet Sleeves: 0.0239-inch (0.6-mm) minimum thickness; round tube closed with welded longitudinal joint.
- C. Galvanized-Steel-Pipe Sleeves: ASTM A 53/A 53M, Type E, standard weight, zinc coated, plain ends.

## 2.8 SLEEVE SEALS

- A. Manufacturers: Subject to compliance with requirements, [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:
  - 1. Advance Products & Systems, Inc.
  - 2. Calpico, Inc.
  - 3. Metraflex, Inc.
  - 4. Pipeline Seal and Insulator, Inc.
- B. Description: Modular sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve.
  - 1. Sealing Elements: EPDM-rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
  - 2. Pressure Plates: Carbon steel].
  - 3. Connecting Bolts and Nuts: Stainless steel of length required to secure pressure plates to sealing elements.

## 2.9 GROUT

- A. Standard: ASTM C 1107, Grade B, posthardening and volume adjusting, dry, hydraulic-cement grout.
- B. Characteristics: Non shrink and recommended for interior and exterior applications.
- C. Design Mix: 5000-psi (34-MPa), 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

## PART 3 - EXECUTION

### 3.1 WATER-SUPPLY CONNECTIONS

- A. **Connect fire** pump piping to existing building's standpipe systems as indicated.

### 3.2 PIPING INSTALLATION

- A. Locations and Arrangements: Drawing plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated, as far as practical.
  - 1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect before deviating from approved working plans.
- B. Piping Standard: Comply with requirements in NFPA 14 for installation of fire-suppression standpipe piping.
- C. Install seismic restraints on piping. Comply with requirements in NFPA 13 for seismic-restraint device materials and installation.
- D. Install listed fittings to make changes in direction, branch takeoffs from mains, and reductions in pipe sizes.
- E. Install alarm devices in piping systems.
- F. Install hangers and supports for standpipe system piping according to NFPA 14. Comply with requirements in NFPA 13 for hanger materials.
- G. Install pressure gages on fire pump inlet and outlet connections. Include pressure gages with connection not less than NPS 1/4 and with soft metal seated globe valve, arranged for draining pipe between gage and valve. Install gages to permit removal and install where they will not be subject to freezing.
- H. Fill existing wet-type standpipe system piping with water.

### 3.3 JOINT CONSTRUCTION

- A. Install flanges, flanged fittings, unions, nipples, and transition and special fittings that have finish and pressure ratings same as or higher than system's pressure rating for aboveground applications unless otherwise indicated.
- B. Install unions adjacent to each valve in pipes NPS 2 (DN 50) and smaller.
- C. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.
- D. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- E. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.
- F. Flanged Joints: Select appropriate gasket material in size, type, and thickness suitable for water service. Join flanges with gasket and bolts according to ASME B31.9.
- G. 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.

2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.
- H. Welded Joints: Construct joints according to AWS D10.12M/D10.12, using qualified processes and welding operators according to "Quality Assurance" Article.
  1. Shop weld pipe joints where welded piping is indicated. Do not use welded joints for galvanized-steel pipe.
- I. Dissimilar-Material Piping Joints: Make joints using adapters compatible with materials of both piping systems.

### 3.4 VALVE AND SPECIALTIES INSTALLATION

- A. Install listed fire-protection valves, trim and drain valves, specialty valves and trim, controls, and specialties according to NFPA 14 and authorities having jurisdiction.
- B. Install listed fire-protection shutoff valves supervised-open, located to control sources of water supply except from fire-department connections. Install permanent identification signs indicating portion of system controlled by each valve.
- C. Install check valve in each water-supply connection.
- D. Install fire pump test connection as shown.

### 3.5 ESCUTCHEON INSTALLATION

- A. Install escutcheons for penetrations of walls and floors.
- B. Escutcheons for New Piping:
  1. Piping with Fitting or Sleeve Protruding from Wall: One-piece, deep pattern.
  2. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One piece, cast brass with polished chrome-plated finish with setscrew.
  3. Bare Piping in Unfinished Service Spaces: One piece, cast brass with polished chrome-plated finish with setscrew.

### 3.6 SLEEVE INSTALLATION

- A. General Requirements: Install sleeves for pipes and tubes passing through penetrations in floors, partitions, and walls.
- B. Sleeves are not required for core-drilled holes.
- C. Cut sleeves to length for mounting flush with both surfaces unless otherwise indicated.
- D. Install sleeves in new partitions, slabs, and walls as they are built.
- E. For exterior wall penetrations above grade, seal annular space between sleeve and pipe using joint sealants appropriate for size, depth, and location of joint. Comply with requirements for joint sealants in Division 07 Section "Joint Sealants."

- F. Seal space outside of sleeves in concrete slabs and walls with grout.
- G. Install sleeves that are large enough to provide 2-inch annular clear space between sleeve and pipe or pipe insulation unless otherwise indicated.
- H. Install sleeve materials according to the following applications:
  - 1. Sleeves for Piping Passing through Concrete Floor Slabs: Molded PE or Galvanized-steel pipe.
  - 2. Sleeves for Piping Passing through Concrete Floor Slabs of Mechanical Equipment Areas or Other Wet Areas: Stack sleeve fittings.
    - a. Extend sleeves 2 inches above finished floor level.
    - b. For pipes penetrating floors with membrane waterproofing, extend cast-iron sleeve fittings below floor slab as required to secure clamping ring if ring is specified. Secure flashing between clamping flanges. Install section of cast-iron soil pipe to extend sleeve to 2 inches above finished floor level. Comply with requirements for flashing in Division 07 Section "Sheet Metal Flashing and Trim."
  - 3. Sleeves for Piping Passing through Exterior Concrete Walls:
    - a. Cast-iron wall pipe sleeves for pipes NPS 6 and larger.
    - b. Install sleeves that are large enough to provide 2-inch annular clear space between sleeve and pipe or pipe insulation when sleeve seals are used.
- I. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials. Comply with requirements for firestop materials and installations in Division 07 Section "Penetration Firestopping."

### 3.7 SLEEVE SEAL INSTALLATION

- A. Install sleeve seals in sleeves in exterior concrete walls at water-service piping entries into building.
- B. Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble sleeve seal components and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### 3.8 IDENTIFICATION

- A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 14.
- B. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification specified in Division 26 Section "Identification for Electrical Systems."

### 3.9 FIELD QUALITY CONTROL

- A. Testing shall be done by a third party.
- B. Fire-suppression standpipe system will be considered defective if it does not pass tests and inspections.

- C. Prepare test and inspection reports.

3.10 PIPING SCHEDULE

- A. Wet-type, fire-suppression standpipe piping 6 NPS, shall be of the following:
  - 1. Standard-Schedule 40, black-steel pipe with plain ends; steel welding fittings; and welded joints.
- B. Jockey pump piping shall be of the following.
  - 1. Standard Schedule 40 black steel pipe with threaded ends and fitting.

END OF SECTION 21-12-00

SECTION 213113 - ELECTRIC-DRIVE, CENTRIFUGAL FIRE PUMPS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Packaged skid mounted in-line horizontal split case fire pump.
2. Jockey Pump.
3. Fire-pump accessories and specialties.

1.2 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Fire pumps shall withstand the effects of earthquake motions determined according to ASCE/SEI 7 Seismic Design Category C.

1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

B. Pump Equipment, Accessory, and Specialty Pressure Rating: 175 psig minimum unless higher pressure rating is indicated.

1.3 SUBMITTALS

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

B. Shop Drawings: For fire pumps, motor drivers, and fire-pump accessories and specialties. Include plans, elevations, sections, details, and attachments to other work.

C. Seismic Qualification Certificates: For fire pumps, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

D. Product Certificates: For each fire pump, from manufacturer.

E. Source quality-control reports.

F. Field quality-control reports.

G. Operation and maintenance data.



1.4 QUALITY ASSURANCE

- 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. NFPA Compliance: Comply with NFPA 20, "Installation of Stationary Pumps for Fire Protection."

1.5 COORDINATION

- A. Coordinate sizes and locations of concrete bases with actual equipment provided.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR CENTRIFUGAL FIRE PUMPS

- A. Description: Factory-assembled and -tested fire-pump and driver unit.
- B. Base: Fabricated and attached to fire-pump and driver unit with reinforcement to resist movement of pump during seismic events when base is anchored to building substrate.
- C. Finish: Red paint applied to factory-assembled and -tested unit before shipping.

2.2 HORIZONTALLY MOUNTED, SINGLE-STAGE, SPLIT-CASE FIRE PUMPS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide a Peerless Pump, Inc. Model 6AEF14A skid mounted fire pump complete with factory installed valves, piping, wiring, and controls with a single point power connection as shown on drawings or a comparable product by one of the following:
  - 1. Bell & Gossett
  - 2. Armstrong
- B. Pump:
  - 1. Standard: UL 448, for split-case pumps for fire service.
  - 2. Casing: Axially split case, cast iron with ASME B16.1 pipe-flange connections.
  - 3. Impeller: Cast bronze, statically and dynamically balanced, and keyed to shaft.
  - 4. Wear Rings: Replaceable bronze.
  - 5. Shaft and Sleeve: Steel shaft with bronze sleeve.
    - a. Shaft Bearings: Grease-lubricated ball bearings in cast-iron housing.
    - b. Seals: Stuffing box with minimum of four rings of graphite-impregnated braided yarn and bronze packing gland.
  - 6. Mounting: Pump and driver shafts are horizontal, with pump and driver, valves, controllers, and jockey pump on same base.
- C. Coupling: Flexible and capable of absorbing torsional vibration and shaft misalignment. Include metal coupling guard.

D. Driver:

1. Standard: UL 1004A.
2. Type: Electric motor; NEMA MG 1, polyphase Design B.

E. Capacities and Characteristics:

1. See schedule on drawings.
2. Pump-Start, Pressure-Switch Setting: Determined by Sprinkler Contractor.

2.3 IN-LINE, SINGLE-STAGE, JOCKEY PUMP

A. Basis-of-Design Product: Subject to compliance with requirements, provide Grundfos Model CR3-6 mounted on concrete base as shown on drawings or a comparable product by one of the following:

1. Bell & Gossett
2. Armstrong

B. Pump:

1. Standard: UL 448, for inline pumps for fire service.
2. Casing: Inline, cast iron with ASME B16.1 pipe-flange connections.
3. Impeller: Cast bronze, statically and dynamically balanced, and keyed to shaft.
4. Wear Rings: Replaceable bronze.
5. Shaft and Sleeve: Steel shaft with bronze sleeve.
  - a. Shaft Bearings: Grease-lubricated ball bearings in cast-iron housing.
  - b. Seals: Stuffing box with minimum of four rings of graphite-impregnated braided yarn and bronze packing gland.
6. Mounting: Pump and driver shafts are horizontal, with pump and driver, valves, controllers, and jockey pump on same base.

C. Coupling: Flexible and capable of absorbing torsional vibration and shaft misalignment. Include metal coupling guard.

D. Driver:

1. Standard: UL 1004A.
2. Type: Electric motor; NEMA MG 1, polyphase Design B.

E. Capacities and Characteristics:

1. See schedule on drawings.
2. Pump-Start, Pressure-Switch Setting: Determined by Sprinkler Contractor.

2.4 FIRE-PUMP ACCESSORIES AND SPECIALTIES

A. Automatic Air-Release Valves: Comply with NFPA 20 for installation in fire-pump casing.

- B. Circulation Relief Valves: UL 1478, brass, spring loaded; for installation in pump discharge piping.
- C. Relief Valves: Description: UL 1478, bronze or cast iron, spring loaded; for installation in fire-suppression water-supply piping.
- D. Gate Valves: 1" and 8" diameter, complying with NFPA 20, UL and FM listed for fire protection systems.
- E. Butterfly Valves: 6" diameter, complying with NFPA 20, UL and FM listed for fire protection systems.
- F. Check Valves: 1" and 6" diameter, complying with NFPA 20, UL and FM listed for fire protection systems.
- G. Suction Control Valves: 6" diameter, complying with NFPA 20, UL and FM listed for fire protection systems.
- H. Inlet Fitting: Eccentric tapered reducer at pump suction inlet.
- I. Outlet Fitting: Concentric tapered reducer at pump discharge outlet.
- J. Discharge Cone: Closed or open type.
- K. Hose Valve Manifold Assembly:
  - 1. Standard: Comply with requirements in NFPA 20.
  - 2. Header Pipe: ASTM A 53/A 53M, Schedule 40, galvanized steel with ends threaded according to ASME B1.20.1.
  - 3. Header Pipe Fittings: ASME B16.4, galvanized cast-iron threaded fittings.
  - 4. Automatic Drain Valve: UL 1726.
  - 5. Manifold:
    - a. Test Connections: Comply with UL 405 except provide outlets without clappers instead of inlets.
    - b. Body: Flush type, brass, or ductile iron, with number of outlets required by NFPA 20.
    - c. Nipples: ASTM A 53/A 53M, Schedule 40, galvanized-steel pipe with ends threaded according to ASME B1.20.1.
    - d. Adapters and Caps with Chain: Brass or bronze, with outlet threaded according to NFPA 1963 and matching local fire-department threads.
    - e. Escutcheon Plate: Brass or bronze; rectangular.
    - f. Hose Valves: UL 668, bronze, with outlet threaded according to NFPA 1963 and matching local fire-department threads.
    - g. Exposed Parts Finish: Polished Rough brass.
    - h. Escutcheon Plate Marking: Equivalent to "FIRE PUMP TEST."

## 2.5 GROUT

- A. Standard: ASTM C 1107, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- B. Characteristics: Nonshrink and recommended for interior and exterior applications.

- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

## 2.6 SOURCE QUALITY CONTROL

- A. Testing: All testing shall be done by a third party.
  - 1. Verification of Performance: Rate fire pumps according to UL 448.
- B. Fire pumps will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine equipment bases and anchorage provisions, with Installer present, for compliance with requirements and for conditions affecting performance of fire pumps.
- B. Examine roughing-in for fire-suppression piping systems to verify actual locations of piping connections before fire-pump installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Fire-Pump Installation Standard: Comply with NFPA 20 for installation of fire pumps, relief valves, and related components.
- B. Equipment Mounting: Install fire pumps on concrete bases. Comply with requirements for concrete bases specified in Division 03 Section "Miscellaneous Cast-in-Place Concrete."
  - 1. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
  - 2. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete floor.
  - 3. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 4. Install anchor bolts to elevations required for proper attachment to supported equipment.
- C. Install fire-pump suction and discharge piping equal to or larger than sizes required by NFPA 20.
- D. Support piping and pumps separately so weight of piping does not rest on pumps.
- E. Install valves that are same size as connecting piping. Comply with requirements for fire-protection valves specified in Division 21 Section "Fire-Suppression Standpipes" and Division 21 Section "Wet-Pipe Sprinkler Systems."

- F. Install pressure gages on fire-pump suction and discharge flange pressure-gage tapings. Comply with requirements for pressure gages specified in Division 21 Section "Fire-Suppression Standpipes" and Division 21 Section "Wet-Pipe Sprinkler Systems."
- G. Install piping hangers and supports, anchors, valves, gages, and equipment supports according to NFPA 20.
- H. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not factory mounted. Furnish copies of manufacturers' wiring diagram submittals to electrical Installer.
- I. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.
- J. Engage a factory-authorized service representative to perform startup service.
  - 1. Complete installation and startup checks according to manufacturer's written instructions.

### 3.3 ALIGNMENT

- A. Align split-case pump and driver shafts after complete unit has been leveled on concrete base, grout has set, and anchor bolts have been tightened.
- B. After alignment is correct, tighten anchor bolts evenly. Fill base plate completely with grout, with metal blocks and shims or wedges in place. Tighten anchor bolts after grout has hardened. Check alignment and make required corrections.
- C. Align piping connections.
- D. Align pump and driver shafts for angular and parallel alignment according to HI 1.4 and to tolerances specified by manufacturer.

### 3.4 CONNECTIONS

- A. Comply with requirements for piping and valves specified in Division 21 Section "Fire-Suppression Standpipes" Division 21 Section "Wet-Pipe Sprinkler Systems." Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Install piping adjacent to pumps and equipment to allow service and maintenance.
- C. Connect relief-valve discharge to drainage piping or point of discharge.
- D. Connect fire pumps to their controllers.

### 3.5 IDENTIFICATION

- A. Identify system components. Comply with requirements for fire-pump marking according to NFPA 20.

3.6 FIELD QUALITY CONTROL

- A. Test each fire pump with its controller as a unit. Comply with requirements for electric-motor-driver fire-pump controllers specified in Division 21 Section "Controllers for Fire-Pump Drivers."
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections.
  - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:
  - 1. After installing components, assemblies, and equipment including controller, test for compliance with requirements.
  - 2. Test according to NFPA 20 for acceptance and performance testing.
  - 3. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
  - 4. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
  - 5. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Components, assemblies, and equipment will be considered defective if they do not pass tests and inspections.
- F. Prepare test and inspection reports.
- G. Furnish fire hoses in number, size, and length required to reach storm drain or other acceptable location to dispose of fire-pump test water. Hoses are for tests only and do not convey to Owner.

3.7 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain fire pumps.

END OF SECTION 21-31-13

## SECTION 213900 - CONTROLLERS FOR FIRE-PUMP DRIVERS

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Full-service, reduced controllers rated 600 V and less.
2. Limited-service controllers rated 600 V and less.
3. Remote alarm panels.

##### B. Related Sections:

1. Division 21 Section "Pressure-Maintenance Pumps" for pressure-maintenance-pump (jockey-pump) controllers.

#### 1.2 DEFINITIONS

- A. ATS: Automatic transfer switches.
- B. ECM: Electronic control module.
- C. MCCB: Molded-case circuit breaker.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Fire-pump controllers and alarm panels shall withstand the effects of earthquake motions determined according to ASCE/SEI 7, Seismic Design Category C.
  1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."

#### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each type of product indicated. Include dimensioned plans, elevations, sections, details, and attachments to other work, including required clearances and service spaces around controller enclosures.
  1. Detail equipment assemblies and indicate dimensions, weights, loads, method of field assembly, components, and location and size of each field connection.
  2. Schematic and Connection Diagrams: For power, signal, alarm, and control wiring and for pressure-sensing tubing.
- C. Qualification Data: For qualified testing agency.

- D. Seismic Qualification Certificates: For each type of product indicated, from manufacturer.
- E. Manufacturer's factory test reports of fully assembled and tested equipment.
- F. Source quality-control reports.
- G. Field quality-control reports.
- H. Operation and maintenance data.

#### 1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain fire-pump controllers and all associated equipment from single source or producer.
- B. 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.
- C. Comply with standards of authorities having jurisdiction pertaining to materials and installation.
- D. Comply with NFPA 20 and NFPA 70.
- E. IEEE Compliance: Fabricate and test enclosed controllers according to IEEE 344 to withstand seismic forces defined in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."

### PART 2 - PRODUCTS

#### 2.1 FULL-SERVICE PUMP CONTROLLER

- A. Fire Pump Controller Basis-of-Design Product: Subject to compliance with requirements, provide ASCO Power Technologies, LP; Firetrol Mark III-Model FTA1930-AMB solid state soft start fire pump controller with power transfer switch or comparable product by one of the following:
  - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
  - 2. Hubbell Incorporated; Hubbell Industrial Controls.
  - 3. Joslyn Clark Corporation.
  - 4. Master Control Systems, Inc.
  - 5. Metron, Inc.
- B. General Requirements for Full-Service Controllers:
  - 1. Comply with 20, NFPA 70, and UL218 standards.
  - 2. Listed by an NRTL for electric-motor driver for fire-pump service.
  - 3. Combined automatic and non-automatic operation.
  - 4. Factory assembled, wired, and tested; continuous duty rated.
  - 5. Service Equipment Label: NRTL labeled for use as service equipment.
- C. Components included for Full-Service Controllers:
  - 1. Microprocessor controller with USB, & serial data points



2. Digital display for status and alarms
3. Standard NFPA alarm contacts (pump running, loss of phase, and phase reversal)
4. CTSI – Built-in low suction switch
5. Automatic Transfer Switch for use with emergency generator
6. Casing relief valve, 3/4" NPT, 300 PSI.
7. Automatic air release valve, 1/2"NPT, 300 PSI.
8. Set of suction and discharge gauges, (-15 to 300 PSI)
9. Hose valve test header 6" (300# Grooved) x 4 -way with four 2-1/2" NPT angle hose valves with caps and chains.

D. Method of Starting:

1. Pressure-switch actuated.
  - a. Water-pressure-actuated switch and pressure transducer with independent high- and low-calibrated adjustments responsive to water pressure in fire-suppression piping.
  - b. System pressure recorder, electric ac driven, with spring backup.
  - c. Programmable minimum-run-time relay to prevent short cycling.
  - d. Programmable timer for weekly tests.
2. Magnetic Controller: Primary-resistor type.
3. Solid-State Controller: Reduced-voltage type.
4. Emergency Start: Mechanically operated start handle that closes and retains the motor RUN contactor independent of all electric or pressure actuators.

E. Method of Stopping: Automatic and nonautomatic shutdown after automatic starting.

F. Capacity: Rated for fire-pump-driver horsepower and short-circuit-current (withstand) rating equal to or greater than short-circuit current available at controller location.

G. Method of Isolation and Overcurrent Protection: Interlocked isolating switch and nonthermal MCCB; with a common, externally mounted operating handle, and providing locked-rotor protection.

H. Door-Mounted Operator Interface and Controls:

1. Monitor, display, and control the devices, alarms, functions, and operations listed in NFPA 20 as required for drivers and controller types used.
2. Method of Control and Indication:
  - a. Microprocessor-based logic controller, with multiline digital readout.
  - b. Keypad interface.
  - c. LED alarm and status indicating lights.
3. Local and Remote Alarm and Status Indications:
  - a. Controller power on.
  - b. Motor running condition.
  - c. Loss-of-line power.
  - d. Line-power phase reversal.
  - e. Line-power single-phase condition.
4. Audible alarm, with silence push button.

5. Nonautomatic START and STOP push buttons or switches.
  
- I. Jockey Pump Controller Basis-of-Design Product: Subject to compliance with requirements, provide Firetrol Model FTA560F controller with circuit breaker, starter, 24VAC control transformer, 0-600 solid state pressure transducer, OFF-AUTO push buttons, and a NEMA 2 polycarbonate enclosure.
  1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
  2. Hubbell Incorporated; Hubbell Industrial Controls.
  3. Joslyn Clark Corporation.
  4. Master Control Systems, Inc.
  5. Metron, Inc.
  
- J. ATS:
  1. Complies with NFPA 20, UL 218, and UL 1008.
  2. Integral with controller as a listed combination fire-pump controller and power transfer switch.
  3. Automatically transfers fire-pump controller from normal power supply to alternate power supply in event of power failure.
  4. Allows manual transfer from one source to the other.
  5. Alternate-Source Isolating and Disconnecting Means: Integral molded-case switch, with an externally mounted operating handle.
  6. Alternate-Source Isolating and Disconnecting Means: Mechanically interlocked isolation switch and circuit breaker rated at a minimum of 115 percent of rated motor full-load current, with an externally mounted operating handle; circuit breaker shall be provided with nonthermal sensing, instantaneous-only short-circuit over current protection to comply with available fault currents.
  7. Local[ and Remote] Alarm and Status Indications:
    - a. Normal source available.
    - b. Alternate source available.
    - c. In normal position.
    - d. In alternate position.
    - e. Isolating means open.
  8. Audible alarm, with silence push button.
  9. Non-automatic (manual, nonelectric) means of transfer.
  10. Engine test push button.
  11. Start generator output contacts.
  12. Timer for weekly generator tests.

## 2.2 REMOTE ALARM PANELS

1. Basis-of-Design Product: Subject to compliance with requirements, provide ASCO Power Technologies, LP; Firetrol Alarm Panel or product by one of the following:
2. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
3. Hubbell Incorporated; Hubbell Industrial Controls.
4. Joslyn Clark Corporation.
5. Master Control Systems, Inc.
6. Metron, Inc.

- B. General Requirements for Remote Alarm Panels: Factory assembled, wired, and tested.
- C. Supervisory and Normal Control Voltage: 120-V ac; single source.
- D. Audible and Visual Alarm and Status Indications:
  - 1. Driver running.
  - 2. Loss of phase.
  - 3. Phase reversal.
  - 4. Supervised power on.
  - 5. Common trouble on the controller.
  - 6. Controller connected to alternate power source.
- E. Audible and Visual Alarm and Status Indications: Manufacturer's standard indicating lights; push-to-test button.
  - 1. Engine running.
  - 2. Controller main switch turned to the off or manual position.
  - 3. Supervised power on.
  - 4. Common trouble on the controller or engine.
  - 5. Common pump room trouble
  - 6. Controller connected to alternate power source.
- F. Audible alarm, with silence push button.

### 2.3 ENCLOSURES

- A. Fire-Pump Controllers, ATS, and Remote Alarm Panels: NEMA 250, to comply with environmental conditions at installed locations and NFPA 20.
  - 1. Indoor Locations Subject to Dripping Noncorrosive Liquids: Type 2 (IEC IP11).
- B. Enclosure Color: Manufacturer's standard "fire-pump-controller red".
- C. Nameplates: Comply with NFPA 20; complete with capacity, characteristics, approvals, listings, and other pertinent data.
- D. Floor stands, 12 inches high, for floor-mounted controllers.

### 2.4 SOURCE QUALITY CONTROL

- A. Testing: Test and inspect fire-pump controllers according to requirements in NFPA 20 and UL 218.
  - 1. Verification of Performance: Rate controllers according to operation of functions and features specified.
- B. Fire-pump controllers will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports.

### PART 3 - EXECUTION

#### 3.1 CONTROLLER INSTALLATION

- A. Install controllers within sight of their respective drivers.
- B. Connect controllers to their dedicated pressure-sensing lines.
- C. Wall-Mounting Controllers: Install controllers on walls with disconnect operating handles not higher than 79 inches above finished floor, and bottom of enclosure not less than 12 inches above finished floor unless otherwise indicated. Bolt units to wall or mount on lightweight structural-steel channels bolted to wall. For controllers not on walls, provide freestanding racks complying with Division 26 Section "Hangers and Supports for Electrical Systems."
- D. Floor-Mounting Controllers: Install controllers on 4-inch nominal-thickness concrete bases, using floor stands high enough so that the bottom of enclosure cabinet is not less than 12 inches above finished floor. Comply with requirements for concrete bases specified in Division 03 Section "Miscellaneous Cast-in-Place Concrete."
  - 1. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
  - 2. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base, and anchor into structural concrete floor.
  - 3. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 4. Install anchor bolts to elevations required for proper attachment to supported equipment.
- E. Seismic Bracing: Comply with requirements specified in Division 26 Section "Vibration and Seismic Controls for Electrical Systems."
- F. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
- G. Comply with NEMA ICS 15.

#### 3.2 REMOTE ALARM PANEL INSTALLATION

- A. Install panels on walls with tops not higher than 72 inches above finished floor unless otherwise indicated. Bolt units to wall or mount on lightweight structural-steel channels bolted to wall. For panels not on walls, provide freestanding racks complying with Division 26 Section "Hangers and Supports for Electrical Systems."

#### 3.3 POWER WIRING INSTALLATION

- A. Install power wiring between controllers and their services or sources, and between controllers and their drivers. Comply with requirements in NFPA 20, NFPA 70, and Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."
- B. Comply with NECA 1.

### 3.4 CONTROL AND ALARM WIRING INSTALLATION

- A. Install wiring between controllers and remote devices and facility's central monitoring system. Comply with requirements in NFPA 20, NFPA 70, and Division 26 Section "Control-Voltage Electrical Power Cables."
- B. Install wiring between remote alarm panels and controllers. Comply with requirements in NFPA 20, NFPA 70, and Division 26 Section "Control-Voltage Electrical Power Cables."
- C. Install wiring between controllers and the building's fire-alarm system. Comply with requirements specified in Division 28 Section "Digital, Addressable Fire-Alarm System."
- D. Bundle, train, and support wiring in enclosures.
- E. Connect remote manual and automatic activation devices where applicable.

### 3.5 IDENTIFICATION

- A. Comply with requirements in NFPA 20 for marking fire-pump controllers.
- B. Identify system components, wiring, cabling, and terminals. Comply with requirements for identification in NFPA 20 and as specified in Division 26 Section "Identification for Electrical Systems."

### 3.6 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. All testing shall be done by a third party.
  - 1. Inspect Each Component:
    - a. Inspect wiring, components, connections, and equipment installations. Test and adjust components and equipment.
    - b. Test insulation resistance for each element, component, connecting supply, feeder, and control circuits.
    - c. Test continuity of each circuit.
  - 2. Verify Each Electric-Driver Controller:
    - a. Verify that voltages at controller locations are within plus 10 or minus 1 percent of motor nameplate rated voltages, with motors off. If outside this range for any motor, notify Construction Manager and Owner before starting the motor(s).
    - b. Test each motor for proper phase rotation.
  - 3. Operational Test: After electrical circuitry has been energized, start units to confirm proper unit operation.
  - 4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Field Acceptance Tests:

1. Do not begin field acceptance testing until suction piping has been flushed and hydrostatically tested and the certificate for flushing and testing has been submitted to Construction Manager, Owner, and authorities having jurisdiction.
2. Prior to starting, notify authorities having jurisdiction of the time and place of the acceptance testing.
3. Engage manufacturer's factory-authorized service representative to be present during the testing.
4. Perform field acceptance tests as outlined in NFPA 20.

- D. Controllers will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports.
- F. Perform startup service.
- G. Complete installation and startup checks according to manufacturer's written instructions.

### 3.7 ADJUSTING

- A. Adjust controllers to function smoothly and as recommended by manufacturer.
- B. Set field-adjustable switches, auxiliary relays, time-delay relays, and timers.
- C. Program microprocessors for required operational sequences, status indications, alarms, event recording, and display features. Clear events memory after final acceptance testing and prior to Substantial Completion.
- D. Set field-adjustable pressure switches.

### 3.8 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain controllers and remote alarm panels, and to use and reprogram microprocessor-based controls within this equipment.

END OF SECTION 21-39-00

## SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes:
1. Sleeves for raceways and cables.
  2. Sleeve seals.
  3. Grout.
  4. Common electrical installation requirements.

#### 1.2 SUBMITTALS

- A. Product Data: For sleeve seals.

### PART 2 - PRODUCTS

#### 2.1 SLEEVES FOR RACEWAYS AND CABLES

- A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral water stop, unless otherwise indicated.
- C. Sleeves for Rectangular Openings: Galvanized sheet steel.
1. Minimum Metal Thickness:
    - a. For sleeve cross-section rectangle perimeter less than 50 inches and no side more than 16 inches, thickness shall be 0.052 inch .
    - b. For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches and 1 or more sides equal to, or more than, 16 inches, thickness shall be 0.138 inch.

#### 2.2 SLEEVE SEALS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Advance Products & Systems, Inc.

- b. Calpico, Inc.
  - c. Metraflex Co.
  - d. Pipeline Seal and Insulator, Inc.
  - e. Link Seal
- 2. Sealing Elements: EPDM interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
  - 3. Pressure Plates: Carbon steel. Include two for each sealing element.
  - 4. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

### 2.3 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, non-staining, mixed with water to consistency suitable for application and a 30-minute working time.

## PART 3 - EXECUTION

### 3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange, and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

### 3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.



- D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.
- F. Extend sleeves installed in floors 2 inches above finished floor level.
- G. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable, unless indicated otherwise.
- H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
  - 1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
- I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Division 07 Section "Joint Sealants."
- J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials. Comply with requirements in Division 07 Section "Penetration Firestopping."
- K. Aboveground, Exterior-Wall Penetrations: Seal penetrations using **steel** pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- L. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

### 3.3 SLEEVE-SEAL INSTALLATION

- A. Install to seal exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### 3.4 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."



## SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

### 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.
  - 3. Sleeves and sleeve seals for cables.
  - 4. 2 hour rated wiring.

#### 1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

#### 1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

### PART 2 - PRODUCTS

#### 2.1 CONDUCTORS AND CABLES

- A. Copper Conductors: Comply with NEMA WC 70.
- B. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN.
- C. Multiconductor Cable: Comply with NEMA WC 70 for metal-clad cable, Type MC with ground wire.

#### 2.2 CONNECTORS AND SPLICES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Hubbell Power Systems, Inc.
  - 3. O-Z/Gedney; EGS Electrical Group LLC.
  - 4. Tyco Electronics Corp.
- C. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.
- D. 2 Hour cables or wiring system: for life safety and emergency systems, UL 2196 Certified, ICC listed.
  - 1. Power cables- RHW-2-hour fire resistive Cables in conduit
  - 2. MC Cables – 2-hour fire resistive rating.

Manufactures

- 1. Lifeline
- 2 Draka

SLEEVES FOR CABLES

- E. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- F. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral water stop, unless otherwise indicated.
- G. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."

2.3 SLEEVE SEALS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- C. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - 1. Advance Products & Systems, Inc.
  - 2. Calpico, Inc.
  - 3. Metraflex Co.
  - 4. Pipeline Seal and Insulator, Inc.

5. Link-Seal

- D. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and cable.
1. Sealing Elements: EPDM interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
  2. Pressure Plates: Carbon steel. Include two for each sealing element.
  3. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper feeders smaller than No. 4 AWG; copper or aluminum for feeders No. 4 AWG and larger. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. 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

- A. Exposed Feeders: Type THHN-THWN, single conductors in raceway.
- B. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN-THWN, single conductors in raceway.
- C. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- D. Exposed Branch Circuits: Type THHN-THWN, single conductors in raceway.
- E. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway or Metal-clad cable, Type MC.
- F. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- G. Class 1 Control Circuits: Type THHN-THWN, in raceway.
- H. Class 2 Control Circuits: Type THHN-THWN, in raceway.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.

- B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, which will not damage cables or raceway.
- D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members and follow surface contours where possible.
- E. Support cables according to Division 26 Sections "Hangers and Supports for Electrical Systems."
- F. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems."
- G. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- H. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
  - 1. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.
- I. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

### 3.4 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping."
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- D. Cut sleeves to length for mounting flush with both wall surfaces.
- E. Extend sleeves installed in floors 2 inches above finished floor level.
- F. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and cable unless sleeve seal is to be installed or unless seismic criteria require different clearance.
- G. Seal space outside of sleeves with grout for penetrations of concrete and masonry.

- H. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at cable penetrations. Install sleeves and seal with firestop materials as required for wall or floor rating.

### 3.5 SLEEVE-SEAL INSTALLATION

- A. Install to seal underground exterior-wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for cable material and size. Position cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### 3.6 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Division 07 Section "Penetration Firestopping."

### 3.7 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.
- B. Tests and Inspections:
  - 1. After installing conductors and cables and before electrical circuitry has been energized, test feeder conductors and conductors feeding the critical equipment and services for compliance with requirements.
  - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
  - 3. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in cables and conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner.
    - a. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each splice 11 months after date of Substantial Completion.
    - b. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
    - c. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
- C. Test Reports: Prepare a written report to record the following:

1. Test procedures used.
  2. Test results that comply with requirements.
  3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- D. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION 260519



## SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes methods and materials for grounding systems and equipment.

#### 1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

#### 1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with UL 467 for grounding and bonding materials and equipment.

### PART 2 - PRODUCTS

#### 2.1 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:
  - 1. Solid Conductors: ASTM B 3.
  - 2. Stranded Conductors: ASTM B 8.
  - 3. Tinned Conductors: ASTM B 33.
  - 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.

## 2.2 CONNECTORS

- A. Listed and labeled by a nationally recognized testing laboratory acceptable to authorities having jurisdiction for applications in which used, and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, bolted pressure-type, with at least two bolts.
  - 1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions.

## 2.3 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad; 3/4-inch by 10 feet in diameter.

## 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.
- B. Underground Grounding Conductors: Install bare copper conductor, as indicated on drawings. Bury at least 24 inches below grade.
- C. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.
- D. Conductor Terminations and Connections:
  - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  - 2. Underground Connections: Welded connectors, except at test wells and as otherwise indicated.
  - 3. Connections to Ground Rods at Test Wells: Bolted connectors.
  - 4. Connections to Structural Steel: Welded connectors.

### 3.2 EQUIPMENT GROUNDING

- A. 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. Three-phase motor and appliance branch circuits.
4. Flexible raceway runs.

### 3.3 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 Rods: Drive rods until tops are 2 inches below 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.
- C. Test Wells: Ground rod driven through drilled hole in bottom of handhole. Handholes are specified in Division 26 Section "Underground Ducts and Raceways for Electrical Systems," and shall be at least 12 inches (300 mm) deep, with cover.
  1. Test Wells: Install at least one test well for each service, unless otherwise indicated. Install at the ground rod electrically closest to service entrance. Set top of test well flush with finished grade or floor.
- 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.
  2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install so vibration is not transmitted to rigidly mounted equipment.
  3. Use exothermic-welded connectors for outdoor locations, but if a disconnect-type connection is required, use a bolted clamp.
- E. Grounding and Bonding for Piping:
  1. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes, using a bolted clamp connector or by bolting a lug-type connector to a pipe flange, using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
  2. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
  3. Bond each aboveground portion of gas piping system downstream from equipment shutoff valve.
- F. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.

### 3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections and prepare test reports:
  - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
  - 2. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at ground test wells.
    - a. Measure ground resistance not less than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    - b. Perform tests by fall-of-potential method according to IEEE 81.
- B. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Architect promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526

## SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes:
  - 1. Hangers and supports for electrical equipment and systems.
  - 2. Construction requirements for concrete bases.

#### 1.2 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.

#### 1.3 SUBMITTALS

- A. Product Data: For steel slotted support systems.
- B. Shop Drawings: Show fabrication and installation details and include calculations for the following:
  - 1. Trapeze hangers. Include Product Data for components.
  - 2. Steel slotted channel systems. Include Product Data for components.
  - 3. Equipment supports.
- C. Welding certificates.

#### 1.4 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with NFPA 70.

## 2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Allied Tube & Conduit.
    - b. Cooper B-Line, Inc.; a division of Cooper Industries.
    - c. ERICO International Corporation.
    - d. GS Metals Corp.
    - e. Thomas & Betts Corporation.
    - f. Unistrut; Tyco International, Ltd.
    - g. Wesanco, Inc.
  3. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
  4. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
  5. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
  6. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel and malleable-iron hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened Portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.

- a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) Hilti Inc.
    - 2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
    - 3) MKT Fastening, LLC.
    - 4) Simpson Strong-Tie Co., Inc.; MasterSet Fastening Systems Unit.
2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened Portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
- a. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - b. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
    - 2) Empire Tool and Manufacturing Co., Inc.
    - 3) Hilti Inc.
    - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
    - 5) MKT Fastening, LLC.
3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
  4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
  5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
  6. Toggle Bolts: All-steel springhead type.
  7. Hanger Rods: Threaded steel.

## 2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
- B. Materials: Comply with requirements in Division 05 Section "Metal Fabrications" for steel shapes and plates.

### 3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as scheduled in NECA 1, where its Table 1 lists maximum spacings less than stated in NFPA 70. Minimum rod size shall be 1/4 inch in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  - 1. Secure raceways and cables to these supports with single-bolt conduit clamps using spring friction action for retention in support channel.
- D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.

### 3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT, IMC, and RMC may be supported by openings through structure members, as permitted in NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb.
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To New Concrete: Bolt to concrete inserts.
  - 2. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 3. To Existing Concrete: Expansion anchor fasteners.
  - 4. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches thick.
  - 5. To Steel complying with MSS SP-69 Spring-tension clamps.
  - 6. To Light Steel: Sheet metal screws.



- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

### 3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Comply with installation requirements in Division 05 Section "Metal Fabrications" for site-fabricated metal supports.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- C. Field Welding: Comply with AWS D1.1/D1.1M.

### 3.4 CONCRETE BASES

- A. Construct concrete bases of dimensions indicated but not less than **4 inches (100 mm)** larger in both directions than supported unit, and so anchors will be a minimum of 10 bolt diameters from edge of the base.
- B. Use **3000-psi**, 28-day compressive-strength concrete. Concrete materials, reinforcement, and placement requirements indicated on project drawings.
- C. Anchor equipment to concrete base.
  - 1. Place and secure anchorage devices. Use supported equipment manufacturer's setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 2. Install anchor bolts to elevations required for proper attachment to supported equipment.
  - 3. Install anchor bolts according to anchor-bolt manufacturer's written instructions.

### 3.5 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
  - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529

## SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.
- B. See Division 26 Section "Underground Ducts and Raceways for Electrical Systems" for exterior duct banks and manholes, and underground handholes, boxes, and utility construction.

#### 1.2 SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, details, and attachments to other work.

#### 1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. Comply with NFPA 70.

### PART 2 - PRODUCTS

#### 2.1 METAL CONDUIT AND TUBING

- A. Rigid Steel Conduit: ANSI C80.1.
- B. IMC: ANSI C80.6.
- C. EMT: ANSI C80.3.
- D. FMC: Zinc-coated steel.
- E. LFMC: Flexible steel conduit with PVC jacket.
- F. Fittings for Conduit (Including all Types and Flexible and Liquid tight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.

1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886.
2. Fittings for EMT: Steel set screw or compression type.

## 2.2 NONMETALLIC CONDUIT AND TUBING

- A. ENT: NEMA TC 13.
- B. RNC: NEMA TC 2, Type EPC-40-PVC, unless otherwise indicated.
- C. LFNC: UL 1660.
- D. Fittings for ENT and RNC: NEMA TC 3; match to conduit or tubing type and material.
- E. Fittings for LFNC: UL 514B.

## 2.3 METAL WIREWAYS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Cooper B-Line, Inc.
  2. Hoffman.
  3. Square D; Schneider Electric.
- C. Description: Sheet metal sized and shaped as indicated, NEMA 250, Type 1, unless otherwise indicated.
- D. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- E. Wireway Covers: Hinged type.
- F. Finish: Manufacturer's standard enamel finish.

## 2.4 NONMETALLIC WIREWAYS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  1. Hoffman.
  2. Lamson & Sessions; Carlon Electrical Products.

- C. Description: PVC plastic, extruded and fabricated to size and shape indicated, with snap-on cover and mechanically coupled connections with plastic fasteners.
- D. Fittings and Accessories: Include couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

## 2.5 SURFACE RACEWAYS

- A. Surface Metal Raceways: Galvanized steel with snap-on covers. Manufacturer's standard enamel finish in color.
- B. See Editing Instruction No. 1 in the Evaluations for cautions about naming manufacturers and products. Retain one of two subparagraphs and list of manufacturers below. See Division 01 Section "Product Requirements."
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Thomas & Betts Corporation.
    - b. Walker Systems, Inc.; Wiremold Company (The).
    - c. Wiremold Company (The); Electrical Sales Division.
- C. Surface Nonmetallic Raceways: Two-piece construction, manufactured of rigid PVC with texture and color selected by Architect from manufacturer's standard colors.
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - a. Butler Manufacturing Company; Walker Division.
    - b. Enduro Systems, Inc.; Composite Products Division.
    - c. Hubbell Incorporated; Wiring Device-Kellems Division.
    - d. Lamson & Sessions; Carlon Electrical Products.
    - e. Panduit Corp.
    - f. Walker Systems, Inc.; Wiremold Company (The).
    - g. Wiremold Company (The); Electrical Sales Division.

## 2.6 BOXES, ENCLOSURES, AND CABINETS

- A. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- B. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.

- C. Nonmetallic Outlet and Device Boxes: NEMA OS 2.
- D. Nonmetallic Floor Boxes: Nonadjustable, round.
- E. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- F. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, galvanized with cover.
- G. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
  - 1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
- H. Cabinets:
  - 1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
  - 2. Hinged door in front cover with flush latch and concealed hinge.
  - 3. Key latch to match panelboards.
  - 4. Metal barriers to separate wiring of different systems and voltage.
  - 5. Accessory feet where required for freestanding equipment.

## PART 3 - EXECUTION

### 3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
  - 1. Exposed Conduit: Rigid steel conduit.
  - 2. Concealed Conduit, Aboveground: Rigid steel conduit
  - 3. Underground Conduit rigid steel conduit encased.
  - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
  - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
- B. Comply with the following indoor applications, unless otherwise indicated:
  - 1. Exposed, Not Subject to Physical Damage: EMT.
  - 2. Exposed, Not Subject to Severe Physical Damage: EMT.
  - 3. Exposed and Subject to Severe Physical Damage: Rigid steel conduit. Includes raceways in the following locations:
    - a. Mechanical rooms.
  - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
  - 5. Damp or Wet Locations: Rigid steel conduit.
  - 6. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, nonmetallic in damp or wet locations.

C. Minimum Raceway Size: 3/4-inch trade size.

D. Raceway Fittings: Compatible with raceways and suitable for use and location.

1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.

### 3.2 INSTALLATION

A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.

B. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

C. Complete raceway installation before starting conductor installation.

D. Support raceways as specified in Division 26 Section "Hangers and Supports for Electrical Systems."

E. Arrange stub-ups so curved portions of bends are not visible above the finished slab.

F. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.

G. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.

H. Raceways Embedded in Slabs:

1. Run conduit larger than 1-inch trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
3. Change from ENT to RNC, Type EPC-40-PVC, rigid steel conduit, or IMC before rising above the floor.

I. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.

J. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of pull wire.

K. Raceways for Optical Fiber and Communications Cable: Install as follows:

1. 3/4-Inch Trade Size and Smaller: Install raceways in maximum lengths of 50 feet.
2. 1-Inch Trade Size and Larger: Install raceways in maximum lengths of 75 feet.
3. Install with a maximum of two 90-degree bends or equivalent for each length of raceway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes

or terminations at distribution frames or cabinets where necessary to comply with these requirements.

L. Install raceway sealing fittings at suitable, approved, and accessible locations and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:

1. Where conduits pass from warm to cold locations, such as boundaries of refrigerated spaces.
2. Where otherwise required by NFPA 70.

M. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block and install box flush with surface of wall.

N. Set metal floor boxes level and flush with finished floor surface.

O. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

### 3.3 INSTALLATION OF UNDERGROUND CONDUIT

#### A. Direct-Buried Conduit:

1. Excavate trench bottom to provide firm and uniform support for conduit. Prepare trench bottom as specified in Division 31 Section "Earth Moving" for pipe less than 6 inches in nominal diameter.
2. Install backfill as specified in Division 31 Section "Earth Moving."
3. After installing conduit, backfill and compact. Start at tie-in point, and work toward end of conduit run, leaving conduit at end of run free to move with expansion and contraction as temperature changes during this process. Firmly hand tamp backfill around conduit to provide maximum supporting strength. After placing controlled backfill to within 12 inches of finished grade, make final conduit connection at end of run and complete backfilling with normal compaction as specified in Division 31 Section "Earth Moving."
4. Install manufactured duct elbows for stub-ups at poles and equipment and at building entrances through the floor, unless otherwise indicated. Encase elbows for stub-up ducts throughout the length of the elbow.
5. Install manufactured rigid steel conduit elbows for stub-ups at poles and equipment and at building entrances through the floor.
  - a. Couple steel conduits to ducts with adapters designed for this purpose and encase coupling with 2 inches of concrete.
  - b. For stub-ups at equipment mounted on outdoor concrete bases, extend steel conduit horizontally a minimum of 60 inches from edge of equipment pad or foundation. Install insulated grounding bushings on terminations at equipment.
6. Warning Planks: Bury warning planks approximately 12 inches above direct-buried conduits, placing them 24 inches o.c. Align planks along the width and along the centerline of conduit.

3.4 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

END OF SECTION 260533



## SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Identification for raceways.
2. Identification of power and control cables.
3. Identification for conductors.
4. Underground-line warning tape.
5. Warning labels and signs.
6. Instruction signs.
7. Equipment identification labels.
8. Miscellaneous identification products.

#### 1.2 SUBMITTALS

- ##### A. Product Data: For each electrical identification product indicated.

#### 1.3 QUALITY ASSURANCE

- ##### A. Comply with ANSI A13.1.
- ##### B. Comply with NFPA 70.
- ##### C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- ##### D. Comply with ANSI Z535.4 for safety signs and labels.
- ##### E. Adhesive-attached labeling materials, including label stocks, laminating adhesives, and inks used by label printers, shall comply with UL 969.

### PART 2 - PRODUCTS

#### 2.1 POWER RACEWAY IDENTIFICATION MATERIALS

- ##### A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.
- ##### B. Colors for Raceways Carrying Circuits at 600 V or Less:
1. Black letters on an orange field.
  2. Legend: Indicate voltage and system or service type.

- C. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- D. Snap-Around Labels for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- E. Snap-Around, Color-Coding Bands for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- F. Write-On Tags: Polyester tag, 0.010 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
  - 1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
  - 2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

## 2.2 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Colors for Raceways Carrying Circuits at 600 V and Less:
  - 1. Black letters on an orange field.
  - 2. Legend: Indicate voltage and system.
- C. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- D. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches wide; compounded for outdoor use.

## 2.3 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Write-On Tags: Polyester tag, **0.010 inch** thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.

1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
  2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.
- D. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- E. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

#### 2.4 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.
- D. Write-On Tags: Polyester tag, 0.010 inch thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
1. Marker for Tags: Permanent, waterproof, black ink marker recommended by tag manufacturer.
  2. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

#### 2.5 FLOOR MARKING TAPE

- A. 2-inch- wide, 5-mil pressure-sensitive vinyl tape, with black and white stripes and clear vinyl overlay.

#### 2.6 UNDERGROUND-LINE WARNING TAPE

- A. Tape:
- B.
1. Recommended by manufacturer for the method of installation and suitable to identify and locate underground electrical and control cable & conduits lines.
  2. Printing on tape shall be permanent and shall not be damaged by burial operations.

3. Tape material and ink shall be chemically inert, and not subject to degrading when exposed to acids, alkalis, and other destructive substances commonly found in soils.

C. Color and Printing:

1. Comply with ANSI Z535.1 through ANSI Z535.5.
2. Inscriptions for Red-Colored Tapes: EMERGENCY LINE, HIGH VOLTAGE.
3. Inscriptions for Orange-Colored Tapes: CONTROL CONDUIT.

2.7 WARNING LABELS AND SIGNS

A. Comply with NFPA 70 and 29 CFR 1910.145.

B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.

C. Baked-Enamel Warning Signs:

1. Preprinted aluminum signs punched or drilled for fasteners, with colors, legend, and size required for application.
2. 1/4-inch grommets in corners for mounting.
3. Nominal size, 7 by 10 inches.

D. Metal-Backed, Butyrate Warning Signs:

1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch galvanized-steel backing; and with colors, legend, and size required for application.
2. 1/4-inch grommets in corners for mounting.
3. Nominal size, 10 by 14 inches.

E. Warning label and sign shall include, but are not limited to, the following legends:

1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES."

2.8 INSTRUCTION SIGNS

A. Engraved laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.

1. Engraved legend with black letters on white face.
2. Punched or drilled for mechanical fasteners.
3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

- B. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.
- C. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.

## 2.9 EQUIPMENT IDENTIFICATION LABELS

- A. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.
- B. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch.
- C. Stenciled Legend: In nonfading, waterproof, [black] <Insert color> ink or paint. Minimum letter height shall be 1 inch.

## 2.10 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Paint: Comply with requirements in Division 09 painting Sections for paint materials and application requirements. Select paint system applicable for surface material and location (exterior or interior).
- B. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws, or stainless-steel machine screws with nuts and flat and lock washers.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- B. Apply identification devices to surfaces that require finish after completing finish work.
- C. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- D. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- E. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot maximum intervals in straight runs, and at 25-foot maximum intervals in congested areas.

- F. Underground-Line Warning Tape: During backfilling of trenches install continuous underground-line warning tape directly above line at 6 to 8 inches below finished grade. Use multiple tapes where width of multiple lines installed in a common trench or concrete envelope exceeds 16 inches overall.
- G. Painted Identification: Comply with requirements in Division 09 painting Sections for surface preparation and paint application.

### 3.2 IDENTIFICATION SCHEDULE

- A. Accessible Raceways and Metal-Clad Cables, 600 V or Less, for Service, Feeder, and Branch Circuits More Than 30A, and 120V to ground: Install labels at 10-foot maximum intervals.
- B. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
  - 1. Emergency Power.
  - 2. Power.
- C. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
  - 1. Color-Coding for Phase Identification, 600 V or Less: Use colors listed below for ungrounded feeder and branch-circuit conductors.
    - a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
    - b. Colors for 208/120-V Circuits:
      - 1) Phase A: Black.
      - 2) Phase B: Red.
      - 3) Phase C: Blue.
    - c. Colors for 480/277-V Circuits:
      - 1) Phase A: Brown.
      - 2) Phase B: Orange.
      - 3) Phase C: Yellow.
    - d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent unwinding. Locate bands to avoid obscuring factory cable markings.
- D. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.
- E. Auxiliary Electrical Systems Conductor Identification: Identify field-installed alarm, control, and signal connections.

1. Identify conductors, cables, and terminals in enclosures and at junctions, terminals, and pull points. Identify by system and circuit designation.
  2. Use system of marker tape designations that is uniform and consistent with system used by manufacturer for factory-installed connections.
  3. Coordinate identification with Project Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual.
- F. Locations of Underground Lines: Identify with underground-line warning tape for power, lighting, communication, and control wiring and optical fiber cable.
1. Limit use of underground-line warning tape to direct-buried cables.
  2. Install underground-line warning tape for both direct-buried cables and cables in raceway.
- G. Workspace Indication: Install floor marking tape to show working clearances in the direction of access to live parts. Workspace shall be as required by NFPA 70 and 29 CFR 1926.403 unless otherwise indicated. Do not install at flush-mounted panelboards and similar equipment in finished spaces.
- H. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels.
1. Comply with 29 CFR 1910.145.
  2. Identify system voltage with black letters on an orange background.
  3. Apply to exterior of door, cover, or other access.
  4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
    - a. Power transfer switches.
    - b. Controls with external control power connections.
    - c. New disconnect switches
- I. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
- J. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch-high letters for emergency instructions at equipment used for power transfer and emergency operations.
- K. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. Labeling Instructions:
    - a. Indoor Equipment:

- b. Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- high letters on 1-1/2-inch-high label; where two lines of text are required, use labels 2 inches high.
- c. Outdoor Equipment: Engraved, laminated acrylic or melamine label 4 inches high.
- d. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
- e. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

END OF SECTION 260553



## SECTION 26 32 13 - ENGINE GENERATORS

### PART 1 - GENERAL

#### 1.1 SUMMARY

A. This Section includes packaged engine-generator sets for emergency power supply with the following features:

1. Diesel engine.
2. Unit-mounted cooling system.
3. Unit-mounted control and monitoring.
4. Outdoor enclosure.

#### B. Related Requirements

1. It is the intent of this specification to secure an engine-driven generator set that has been prototype tested, factory built, production-tested, and site-tested together with all accessories necessary for a complete installation as shown on the plans and drawings and specified herein.
2. Any exceptions to the published specifications shall be subject to the approval of the engineer and submitted minimum 10 days prior to the closing of the bid with a line-by-line summary description of all the items of compliance, any items that have been omitted or have been taken exception to, and a complete description of all deviations.
3. It is the intent of this specification to secure a generator set system that has been tested during design verification, in production, and at the final job site. The generator set will be a commercial design and will be complete with all of the necessary accessories for complete installation as shown on the plans, drawings, and specifications herein. The equipment supplied shall meet the requirements of the National Electrical Code and applicable local codes and regulations.
4. All equipment shall be new and of current production by an international, power system manufacturer of generators, transfer switches, and paralleling switchgear. The manufacturer shall be a supplier of a complete and coordinated system. There will be single-source responsibility for warranty, parts, and service through a factory-authorized representative with factory-trained technicians.

#### 1.2 SUBMITTALS

##### A Action Submittals

1. Product Data
  - a The submittal shall include prototype test certification and specification sheets showing all standard and optional accessories to be supplied, schematic wiring diagrams,
  - b dimension drawings, and interconnection diagrams identifying by terminal number each required interconnection between the generator set, and the remote annunciator panel if it is included elsewhere in these specifications.
2. Shop Drawings
3. Samples

B Informational Submittal

1. Certificates
  - a The generator set shall be listed to UL 2200 or submitted to an independent third-party certification process to verify compliance as installed.
2. Test and Evaluation Reports
3. Manufacturer's Instruction
4. Source Quality Control Submittals
5. Field or Site Quality Control
6. Manufacturer's Report
7. Special Procedure Submittal
8. Qualification Statement

C Closeout Submittal

1. Maintenance Contracts
2. Operation And Maintenance Data
3. Bonds
4. Warranty Documentation
5. Record Documentation
6. Software

D Maintenance Material Submittals

1. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
2. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Manufacturer Qualifications: A qualified manufacturer. Maintain, within 200 miles of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- D. Comply with ASME B15.1.
- E. Comply with NFPA 37.
- F. Comply with NFPA 70.
- G. Comply with UL 2200.

H. Engine Exhaust Emissions: Comply with applicable state and local government requirements.

I. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at critical locations due to sound emitted by generator set including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.

#### 1.4 PROJECT CONDITIONS

A. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:

1. Relative Humidity: 0 to 95 percent.
2. Altitude: Sea level to 1000 feet.

#### 1.5 WARRANTY

A. Manufacturer's Warranty

1. The generator set shall include a standard warranty covering one (1) year or 2000 hours, whichever occurs first, to guarantee against defective material and workmanship in accordance with the manufacturer's published warranty from the date of initial startup.
2. The generator set manufacturer and its distributor shall maintain a 24-hour parts and service organization. This organization shall regularly engage in maintenance contract programs to perform preventive maintenance and service on equipment similar to that specified. A service agreement shall be available and shall include system operation under simulated operating conditions; adjustment to the generator set, transfer switch, and switchgear controls as required, and certification in the owner's maintenance log of repairs made and functional tests performed on all systems.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

C. Basis-of-Design Kohler Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:

1. Caterpillar; Engine Div.
2. Generac Power Systems, Inc.
3. Onan/Cummins Power Generation; Industrial Business Group.

## 2.2 ENGINE-GENERATOR SET

- A. Factory-assembled and -tested, engine-generator set.
- B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.
- C. Capacities and Characteristics:
  - A Equipment
    - 1. The generator set shall be a Kohler model 125REOZJG with a 4R13X alternator. It shall provide 160.00 kVA and 128.00 kW when operating at 120/208 volts, 60 Hz, 0.80 power factor. The generator set shall be capable of a 130°C Standby @40C rating while operating in an ambient condition of less than or equal to 104 °F and a maximum elevation of 1000 ft above sea level. The standby rating shall be available for the duration of the outage.
  - B Engine
    - 1. The minimum 4.5-liter displacement engine shall deliver a minimum of 197 HP at a governed engine speed of 1800 rpm, and shall be equipped with the following:
      - a. Electronic isochronous governor capable of 0.25% steady-state frequency regulation
      - b. 12-volt positive-engagement solenoid shift-starting motor
      - c. 65-ampere automatic battery charging alternator with a solid-state voltage regulation
      - d. Positive displacement, full-pressure lubrication oil pump, cartridge oil filters, dipstick, and oil drain
      - e. Dry-type replaceable air cleaner elements for normal applications
      - f. Engine-driven or electric fuel-transfer pump including fuel filter and electric solenoid fuel shutoff valve capable of lifting fuel.
      - g. The turbocharged engine shall be fueled by diesel
      - h. The engine shall have a minimum of 4 cylinders and be liquid-cooled
    - 2. The engine shall be EPA certified from the factory.
    - 3. The generator must accept rated load in one-step.
  - C Cooling System
    - 1. The engine shall be liquid-cooled by a closed loop, unit mounted radiator rated to operate the generator set at full load at an ambient temperature of 50 degrees C (122 degrees F). The radiator fan and other rotating engine parts shall be guarded against accidental contact.
  - D Standard Air Cleaner
    - 1. The air cleaner shall provide engine air filtration which meets the engine manufacturer's specifications under typical operating conditions.
  - E Battery
    - 1. Each genset requires a maintenance free BCI group 24 battery which must meet the engine manufactures' specifications for the ambient conditions specified in Part 1 Project Conditions and shall comply with the NFPA requirements for engine cranking cycles. This battery shall be rated according to SAE Standards J-537 with a minimum cold cranking amp of 650 amps and a minimum reserve capacity of 120 Minutes at 80F. The battery plates shall be constructed of a Calcium-Lead alloy to provide long waterless op-

- eration and extended battery life. The battery must contain a handle to aid in lifting and the case must be constructed of polypropylene to resist breakage and extend service life.
2. Battery rack and battery cables capable of holding the manufacturer's recommended batteries shall be supplied.

F Housing

1. Level 2 Sound Attenuated Enclosure
    - a The generator set shall be supplied with a Level 2 Sound Attenuated Enclosure that is UL2200 listed, providing a sound level of 73.6 dB(A) while the generator is operating at 100% load at 7 meters (23 feet) using acoustic insulation and acoustic-lined inlet hoods, and constructed from high strength, low alloy 14-gauge galvanized steel. The acoustic insulation used shall meet UL 94 HF1 flammability classification. The enclosure shall be manufactured from bolted panels to facilitate service, future modifications, or field replacement. The enclosure shall use a vertically louvered air inlet and outlet hood with 90-degree angle to discharge air up and reduce noise. The enclosure shall have an integral rodent guard and skid end caps. The snow load rating shall be 70 lbs./ sq. ft. or greater.
    - b The enclosure components and skid shall be cleaned with a two-stage alkaline cleaning process to remove grease, grit, and grime from parts. Components shall then be subjected to a Zirconium-based conversion coating process to prepare the metal for electrocoat (e-coat) adhesion. All enclosure parts shall receive an 100% epoxy primer electrocoat (e-coat) with high-edge protection. Following the e-coat process, the parts shall be finish coated with powder baked paint for superior finish, durability, and appearance with a Power Armor™ industrial finish that provides heavy duty durability in harsh conditions, and is fade-, scratch- and corrosion-resistant.
    - c The enclosure must surpass a 3,000-hour salt spray corrosion test per ASTM B-1117.
    - d Enclosures will be finished in the manufacturer's standard color.
    - e The enclosures shall allow the generator set to operate at full load based on the cooling capability of the genset. The enclosure will account for no more than a 5°C derating of the ambient cooling capability of the generator.
    - f Enclosures shall be equipped with sufficient side and end doors to allow access for operation, inspection, and service of the unit and all options. Minimum requirements are two doors per side. When the generator set controller faces the rear of the generator set, an additional rear facing door is required. Access to the controller and main line circuit breaker shall meet the requirements of the National Electric Code.
    - g The enclosure shall be furnished with latches, hinges, and hardware on the external panels of the enclosure. Access doors shall be rubber sealed to prevent water intrusion and to minimize noise.
    - h Doors shall be equipped with lockable latches. Locks shall be keyed alike. Door locks shall be recessed to minimize potential of damage to door/enclosure.
    - i A duct between the radiator and air outlet shall be provided to prevent re-circulation of hot air.
    - j The complete exhaust system shall be internal to the enclosure.
- The critical silencer shall be fitted with a tailpipe and rain cap.

G Fuel oil storage

1. Double Wall Secondary Containment Sub-base Fuel Tank
  - a The generator set shall be supplied with a sub-base fuel tank of sufficient capacity to hold 316 gallons of diesel fuel.
  - b The sub-base fuel system shall be listed under UL 142, subsection entitled Special Purpose Tanks EFVT category, and will bear their mark of UL Approval according to their particular classification.

- c The above ground steel secondary containment rectangular tank for use as a subbase for diesel generators is manufactured and intended to be installed in accordance with the Flammable and Combustible Liquids Code—NFPA 30, the Standard for Installation and Use of Stationary Combustible Engine and Gas Turbines—NFPA 37, and Emergency and Standby Power Systems—NFPA 110.
- d The primary tank shall be rectangular in shape and constructed in clam shell fashion to ensure maximum structural integrity and allow the use of a full throat fillet weld.
- e Steel Channel Support System. Reinforced steel box channel for generator support, with a load rating of 5,000 lbs. per generator mounting hole location. Full height gussets at either end of channel and at generator mounting holes shall be utilized.
- f Exterior Finish. The sub-base tank exterior finish shall be Power Armor Plus™, a polyurea-textured rubberized coating.
- g Normal venting shall be sized in accordance with the American Petroleum Institute Standard No 2000, Venting Atmospheric and Low-Pressure Storage Tanks not less than 1-1/4" (3 cm.) nominal inside diameter.
- h The emergency vent opening shall be sized to accommodate the total capacity of both normal and emergency venting and shall be not less than that derived from NFPA 30, table 2-8, and based on the wetted surface area of the tank. The wetted area of the tank shall be calculated on the basis of 100 percent of the primary tank. The vent is to be spring pressure operated: opening pressure is 0.5/psig and full opening pressure is 2.5 psig. The emergency relief vent is to be sized to accommodate the total venting capacity of both normal and emergency vents.
- i There shall be a 2" NPT opening within the primary tank and lockable manual fill cap.
- j A direct reading, UL listed, magnetic fuel level gauge with a hermetically sealed, vacuum tested dial, to eliminate fogging, shall be provided.
- k A float switch for remote or local annunciation of a (50% standard) low fuel level condition shall be supplied.
- l High fuel level switch – A fuel level switch will be installed in the tank and the contacts will close when the fuel level reaches 90%.
- m Decal – The fuel tank will be equipped with a combustible liquids decal.
- n Fuel fill option – The fuel fill is equipped with a 5 gallon above ground fill/spill container that contains fuel over spills that may occur during fill-ups and the normal vent will be extended to 12' above the grade.
- o Inner Tank Leak Alarm Kit – Includes one light, one horn remote annunciator panel, leak alarm switch and wiring. This kit is intended when the inner tank has leaked into the outer tank, thus indicating a need for a replacement tank.
- p Fuel fill option – The fuel fill is equipped with a 5 gallon above ground fill/spill container that contains fuel over spills that may occur during fill-ups and will automatically shut off fuel to the tank when the tank becomes 95% full.
  
- q Fuel fill option – The fuel fill is equipped with a 5 gallon above ground fill/spill container that contains fuel over spills that may occur during fill-ups and the normal vent will be extended to 12' above the grade.
- r Inner Tank Leak Alarm Kit – Includes one light, one horn remote annunciator panel, leak alarm switch and wiring. This kit is intended when the inner tank has leaked into the outer tank, thus indicating a need for a replacement tank.

Fuel fill option – The fuel fill is equipped with a 5 gallon above ground fill/spill container that contains fuel over spills that may occur during fill-ups and will automatically shut off fuel to the tank when the tank becomes 95% full.

D. Fuel: Fuel oil, Grade DF-2.

E. Rated Engine Speed: 1800 rpm.

F. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm (11.4 m/s).

G. Lubrication System: The following items are mounted on engine or skid:

1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances. Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.
4. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.

H. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity.

I. Governor: Adjustable isochronous, with speed sensing.

J. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine-generator-set mounting frame and integral engine-driven coolant pump.

1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
2. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.

K. Muffler/Silencer: Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.

1. Minimum sound attenuation of 25 dB at 500 Hz.
2. Sound level measured at a distance of 10 feet (3 m) from exhaust discharge after installation is complete shall be [85] dBA or less.

L. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.

M. Starting System: 12-V electric, with negative ground.

1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.
2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
3. Cranking Cycle: As required by NFPA 110 for system level specified.
4. Battery: Adequate capacity within ambient temperature range specified in Part 1 "Project Conditions" Article to provide specified cranking cycle at least twice without recharging.
5. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
  - a. Battery Charger: Current-limiting, automatic-equalizing, and float-charging type. Unit shall comply with UL 1236.

## 2.3 CONTROL AND MONITORING

### A. Controller

1. Advanced Power Management 402 (APM402) Generator Set Controller
  - a. The generator set controller shall be a microprocessor-based control system that will provide automatic starting, system monitoring, and protection.
  - b. The controller shall be mounted on the generator set and shall have integral vibration isolation. The controller shall be prototype and reliability tested to ensure operation in the conditions encountered.
2. Codes and Standards
  - a. The generator set controller shall meet NFPA 110 Level 1 requirements and shall include an integral alarm horn as required by NFPA.
  - b. The controller shall meet NFPA 99 and NEC requirements.
  - c. The controller shall be UL 508 recognized.
3. Applicability
  - a. The controller shall be a standard offering in the manufacturer's controller product line.
  - b. The controller's environmental specification shall be: -40°C to 70°C operating temperature range and 5-95% humidity, non-condensing.
4. Controller Buttons, Display, and Components
  - a. The generator set controller shall include the following features and functions:
    - i. Master Control Push Buttons – the buttons shall be tactile-feel membrane with an indicator light to initiate the following functions:
      1. Run Mode – when in Run mode the generator set shall start.
      2. Off/Reset Mode – when in Off/Reset mode, the generator set shall not accept any remote start commands and shall be capable of resetting all faults, allowing for the restarting of the generator set after a shutdown.
      3. Auto Mode – when in Auto mode, the generator set shall be ready to accept a signal from a remote device.
    - ii. Emergency Stop Switch – the latch type stop switch shall be red in color with a “mushroom” type head. Depressing the stop button will immediately stop the generator set and lockout the generator set for any automatic remote starting.
    - iii. Alarm Horn – the horn sounds when any faults or warnings are present. The horn shall also sound when the controller is not in the Auto mode.



- iv. Push Button/Rotary Selector Dial – the dial shall be used for selection of all menus and sub-menus. Rotating the dial moves through the menus, pushing the dial selects the menu and function/features in the menu.
  - v. Display – the digital display shall be alphanumeric, with 2 lines of data and approximately 24 characters. The display shall have back lighting for ease of operator use in high and low light conditions. The display shall enter a sleep mode to reduce the demand on the battery when the generator set is not running, and the rotary dial is not in use for a period of time. The generator will wake up from sleep mode when the generator set starts, or the rotary dial is in use.
  - vi. Fault Light – the controller shall have an annunciator fault light that glows red for faults and yellow for warnings. The warning light will also illuminate when not in Auto.
  - vii. Alarm Silence/Lamp Test Button – when this button is held, it shall test all controller lamps. This button will also silence the alarm horn when the unit is not Auto or has a fault.
  - viii. Mini-USB Connection – the controller shall have a mini-USB connection port for a PC connection that is accessible on the front of the control panel without having to open any electrical enclosure panels on the generator. This connection shall allow a certified technician to service the generator controller using a dedicated PC program. The program shall allow for servicing of generator set parameters, faults diagnostics and viewing of controller information. The program shall allow for uploading of software and firmware as well as downloading of parameter settings and the event log.
5. Controller Engine Control Features and Functions
- a. User-programmable time delay for engine start.
  - b. User-programmable time delay engine cool down.
  - c. Capability to start and run at user-adjustable idle speed during warm-up for a selectable time-period until engine reaches preprogrammed temperature.
  - d. The idle function including engine cooldown at idle speed.
  - e. Output with adjustable timer for an ether injection starting system.
  - f. Programmable cyclic cranking that can adjust on time, off time, and number of cycles.
6. Controller Alternator Control Features and Functions
- a. Patented High-speed RMS Digital Voltage Regulation – the system shall have integral microprocessor-based voltage regulator system that provides + 0.5% voltage regulation no-load to full load with three phase sensing. A separate voltage regulator is not acceptable. The digital voltage regulator shall be applicable to single- or three-phase systems. The system shall be prototype tested and control variation of voltage to frequency. The voltage regulator shall be adjustable at the controller with maximum + 10% adjustable of nominal voltage.
  - b. Alternator Thermal Overload Protection – the system shall have integral alternator overload and short circuit protection matched to each alternator for the particular voltage and phase configuration.
7. Other Control Features and Functions
- a. Event Logging – the controller keeps a record of up to 1,000 events with date and time locally for warning and shutdown faults. This event log can be downloaded onto a PC through the service program.
8. Control Monitoring Requirements

- a. The generator controller shall display and monitor the following engine and alternator functions.
  - i. The following generator set functions shall be monitored:
    1. All output voltages - single phase, three phase, line to line, and line to neutral
    2. All single phase and three phase currents
    3. Output frequency
    4. kVA total and per phase
    5. kW hours
  - ii. Engine parameters listed below shall be monitored (engine dependent):
    1. Engine Speed
    2. Oil Pressure
    3. Coolant Temperature
    4. Battery Voltage
    5. Runtime Hours
    6. Fuel Pressure or Level
    7. Fuel Consumption Rate
  - iii. Operational records shall be stored in the control beginning at system startup
    1. Total Run Time Hours
    2. Total Loaded Hours
    3. Total kW Hours
    4. Number of Starts
  - iv. For maintenance and service purposes, the controller shall store and display on demand the information:
    1. Generator Model
    2. Generator Serial Number
    3. Controller Serial Number
9. Generator Set Warning, Shutdown Alarm and Status
  - a. The generator set shall have alarms and status indication lamps that show Non-Automatic Status, Warning, and Shutdown conditions. The controller shall indicate with a warning lamp and/or alarm, and on the digital display screen any shutdown, warning, or engine fault condition that exists in the generator set system.
  - b. Conditions, as a minimum, resulting in generator shutdown (engine dependent):
    - i. AC Sensing Loss
    - ii. Alternator Protection
    - iii. ECM Address Conflict
    - iv. ECM Communications Loss
    - v. ECM DTCs
    - vi. Emergence Stop
    - vii. Overspeed
    - viii. Under speed
    - ix. High Coolant Temperature
    - x. kW Overload
    - xi. Locked Rotor
    - xii. Loss of Fuel
    - xiii. Low Coolant Level
    - xiv. Low Engine Oil Level
    - xv. Low Fuel Level
    - xvi. Low Oil Pressure
    - xvii. No Coolant Temperature Signal

- xviii. No Oil Pressure Signal
  - xix. Over crank
  - xx. Over frequency
  - xxi. Underfrequency
  - xxii. Overvoltage
  - xxiii. Undervoltage
  - c. Conditions, as a minimum, resulting in generator warning (generator will continue to operate) (engine dependent):
    - i. AC Sensing Loss (short period of time)
    - ii. Battery Charger Communication Loss
    - iii. Battery Charger Fault
    - iv. Battery Fault
    - v. Critical High Fuel Level
    - vi. High Fuel Level
    - vii. Low Fuel Level or Pressure
    - viii. Fuel Tank Leak
    - ix. Ground Fault
    - x. High Battery Voltage
    - xi. Low Battery Voltage
    - xii. Low Cranking Voltage
    - xiii. High Coolant Temperature
    - xiv. Low Coolant Temperature
    - xv. Low Engine Oil Level
    - xvi. Low Oil Pressure
    - xvii. Not in Auto
    - xviii. Speed Sensor Fault
    - xix. ECM DTCs
10. Inputs and Outputs
- a. Standard Dedicated User Inputs – the controller shall have dedicated inputs for:
    - i. Two-Wire Input
      - 1. Remote Engine Start
    - ii. Digital Input - Fixed
      - 1. Auxiliary Fault (Shutdown)
      - 2. Remote Emergency Stop
    - iii. Digital Input – Programmable
      - 1. 3 Dry Contact
  - b. Standard Dedicated User Outputs – the controller shall have dedicated outputs for:
    - i. Relay Driver Output - Programmable
      - 1. 1 Relay
  - c. Optional Configurable User Inputs and Outputs
    - i. User Configurable Inputs
      - 1. 2 Dry Contact Digital
    - ii. User Configurable Relay Outputs
      - 1. 5 NO/NC Relays
11. Communications
- a. CAN
    - i. If the generator set engine is equipped with an ECM, the controller shall communicate with the ECM for control, monitoring, diagnosis, and meet SAE J1939 standards.
  - b. Modbus®

- i. Isolated for Modbus devices

#### SCHEDULE 1 - Generator Overcurrent and Fault Protection

1. The generator shall be provided with a factory installed; 100% rated line circuit breaker rated at 400.00 amperes that is UL489 listed. Line circuit breakers shall be sized for the rated ampacity of the loads served by the breaker per the NEC.
2. The circuit breaker(s) shall incorporate an electronic trip device with the following characteristics:
  - a. Adjustable long-time delay
  - b. Adjustable short time delay
  - c. Instantaneous
3. Load side lugs shall be provided from the factory. The line circuit breaker shall include auxiliary contacts, shunt trip, undervoltage trip, alarm switch, and overcurrent switch functionality. Load side breaker connections made at the factory shall be separated from field connections.
4. The shunt trip device shall be connected to trip the generator breaker when the generator-set is shut down by other protective devices.
5. When GFI is required per the NEC, additional neutrals shall be factory installed, and the alarm indication shall be integrated with the generator-set alarms.
6. Barriers to provide segregation of wiring from an emergency source to emergency loads from all other wiring and equipment, if required by the NEC, shall be provided.

#### SCHEDULE 2 - Alternator

1. The alternator shall be salient-pole, brushless, 2/3-pitch, with 4 bus bar provision for external connections, self-ventilated, with drip-proof construction and amortisseur rotor windings, and skewed for smooth voltage waveform. The ratings shall meet the NEMA standard (MG1-32.40) temperature rise limits. The insulation shall be class H per UL1446, and the varnish shall be a vacuum pressure impregnated, fungus resistant epoxy. Temperature rise of the rotor and stator shall be limited to 130°C Standby @40C. The PMG based excitation system shall be of brushless construction controlled by a digital, three phase sensing, solid- state, voltage regulator. The AVR shall be capable of proper operation under severe nonlinear loads and provide individual adjustments for voltage range, stability, and volts-per-hertz operations. The AVR shall be protected from the environment by conformal coating. The waveform harmonic distortion shall not exceed 5% total RMS measured line-to-line at full rated load. The TIF factor shall not exceed 50.
2. The alternator shall have a maintenance-free bearing, designed for 40000-hour B10 life. The alternator shall be directly connected to the flywheel housing with a semi-flexible coupling between the rotor and the flywheel.
3. The generator shall be inherently capable of sustaining at least 300% of rated current for at least 10 seconds under a 3-phase symmetrical short circuit without the addition of separate current-support devices.
4. Motor starting performance and voltage dip determinations shall be based on the complete generator set. The generator set shall be capable of supplying 405.00 LRVVA for starting motor loads with a maximum instantaneous voltage dip of 35%, as measured by a digital RMS transient recorder in accordance with IEEE Standard 115. Motor starting performance and voltage dip determination that does not account for all components af-

fecting total voltage dip, i.e., engine, alternator, voltage regulator, and governor will not be acceptable. As such, the generator set shall be prototype tested to optimize and determine performance as a generator set system.

### SCHEDULE 3 - Vibration Isolation

Vibration isolators shall be provided between the engine-alternator and heavy-duty steel base.

#### 2.1 Accessories

- A. The generator shall be supplied with a thermostatically controlled strip heater to prevent the accumulation of moisture and dampness and to maintain the stator windings above the dew point. The heater shall be wired to be “on” at all times that the generator set is not operating.
- B. The generator set shall be supplied with a 10-ampere automatic float/equalize battery charger capable of charging both lead-acid and ni-cad type batteries, with the following features:
  - i. Automatic 3-stage float to equalization charge
  - ii. Voltage regulation of 1% from no to full load over 10% AC input line voltage variations
  - iii. Battery charging current Ammeter and battery voltage voltmeter with 5% full-scale accuracy.
  - iv. LED lamp for power ON indication
  - v. Current limited during engine cranking, short circuit, and reverse polarity conditions
  - vi. Temperature compensated for ambient temperatures for -40°C to 60°C.
  - vii. Alarm circuit board featuring alarm contacts for low battery voltage, high battery voltage, and battery charger malfunction.
  - viii. UL 1012 Listed
  - ix. CSA Certified
- C. Enclosure shall have an external emergency stop button that is recessed in the enclosure panel for protection.
- D. Skid end caps – Steel plates will be installed on each end of the skid to close in and make the ends of the skid flush.
- E. The generator set shall be furnished with rodent guards to prevent rodent intrusion and protect internal components.
- F. Block Heater - The block heater shall be thermostatically controlled, 1,500-watt, 110-120 VAC - single phase, to maintain manufacturers recommended engine coolant temperature to meet the start-up requirements of NFPA 99 and NFPA 110, Level 1.
- G. Supply flexible fuel lines to provide a flexible connection between the engine fuel fittings and the fuel supply tank piping and for the fuel return lines from the injector pump per engine manufacturer’s recommendations. Flex line shall have a protective steel wire braid to protect the hose from abrasion.
- H. Remote annunciator panel – The remote annunciator shall meet NFPA 110, Level 1 requirements and enable remote viewing of the generator status. The panel shall be connected to the generator controller via either network communication wires or via hard wired connections. Options shall be available to provide ATS source availability, contactor position, and loaded or unloaded test for up to four transfer switches. The panel shall have the capability to be either flush-mounted or surface-mounted. The annunciator shall meet UL508 requirements.
- I. Battery rack and battery cables capable of holding the manufacturer's recommended batteries shall be supplied.
- J. The generator set shall be provided with a run relay which shall provide a three-pole, double-throw relay with 10-amp/ 250 VAC contacts to indicate that the generator is running. The run

relay dry contacts can be used for energizing or de-energizing customer devices while the generator is running (e.g., louvers, indicator lamps, etc.)

## 2.1 FIELD QUALITY CONTROL

### A. Perform tests and inspections and prepare test reports.

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

### B. Tests and Inspections:

1. Perform tests recommended by manufacturer and each electrical test and visual and mechanical inspection for "AC Generators and for Emergency Systems" specified in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, single-step full-load pickup test.
3. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
  - a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
  - b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
  - c. Verify acceptance of charge for each element of the battery after discharge.
  - d. Verify that measurements are within manufacturer's specifications.
4. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
5. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.
6. Exhaust-System Back-Pressure Test: Use a manometer with a scale exceeding **40-inch wg (120 kPa)**. Connect to exhaust line close to engine exhaust manifold. Verify that back pressure at full-rated load is within manufacturer's written allowable limits for the engine.
7. Exhaust Emissions Test: Comply with applicable government test criteria.
8. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100 percent step-load increases and decreases and verify that performance is as specified.
9. Harmonic-Content Tests: Measure harmonic content of output voltage under 25 percent and at 100 percent of rated linear load. Verify that harmonic content is within specified limits.
10. Noise Level Tests: Measure A-weighted level of noise emanating from generator-set installation, including engine exhaust and cooling-air intake and discharge, at [**four**] locations [**on the property line**], and compare measured levels with required values.

### C. Coordinate tests with tests for transfer switches and run them concurrently.

- D. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
- E. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
- F. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- G. Remove and replace malfunctioning units and **[retest]** **[reinspect]** as specified above.
- H. Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.
- I. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.

## 2.2 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators. Refer to Division 01 Section "Demonstration and Training."

END OF SECTION 26 32 13