



PROJECT MANUAL FOR:

**WILDWOOD HOUSING AUTHORITY
SANDMAN TOWERS
ELEVATOR MODERNIZATION**

3700 New Jersey Avenue
Wildwood, NJ 08260

FOR:

Wildwood Housing Authority
3700 New Jersey Avenue
Wildwood, NJ 08260

ARCHITECT

Manders Merighi Portadin Farrell Architects, LLC
1138 East Chestnut Avenue #4
Vineland, NJ 08360

Project Number 20.069

June 30, 2020

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WHA – SANDMAN TOWERS ELEVATOR MODERNIZATION

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The Wildwood Housing Authority

**REQUEST FOR BIDS
PUBLIC WORKS PROJECT
Bid Advertisement**

NOTICE is hereby given that sealed bids will be received by the Wildwood Housing Authority for:

ELEVATOR MODERNIZATION

Sandman Towers

3700 New Jersey Ave, Wildwood, NJ 08260

Drawings and Specifications (electronic format only) can be obtained from the Architect's ShareFile site at <https://mmpfa.sharefile.com> but ONLY after the bidder has been added to the official bidders list.

To be added to the bidders list please send an email with your First Name, Last Name, Company Name, Contact Information, and a primary contact Email to Mrs. Arlene Feaster at afeaster@mmpfa.com. If you do not receive a response within 2 hours, resubmit your request. Once added to the bidders list, if you are not already in our system you will receive an email from ShareFile with instructions on setting up your account for which you will need to create your own unique password. If you have used our ShareFile previously your prior email and password remains valid. Once added to the bidders list and validated with ShareFile, you will be granted access to the project's bid documents folder. Note: You MUST establish an account with our ShareFile site in order to access the electronic bid documents. They will not be distributed by any other means.

Documents will be available beginning Tuesday, June 30, 2020. Questions regarding the bid must be made via email to Mrs. Arlene Feaster at afeaster@mmpfa.com. Subject: **SANDMAN TOWERS - ELEVATOR MODERNIZATION.**

Bids must be sealed and delivered to the Office of Manders Merighi Portadin Farrell Architects, 1138 East Chestnut Avenue – Building #4, Vineland, NJ on or before date and time indicated below. See instructions for the submission of bids under the **Special Notice** included in this advertisement. **No bids shall be received after the time designated in the advertisement.** The Housing Authority does not accept electronic (e-mail) submission of bids.

The envelope to bear the following information:

Title: **SANDMAN TOWERS – ELEVATOR MODERNIZATION**
Name and Address of the Bidder
Bid Date: **Thursday, July 16, 2020**
Time: **1:00 p.m.**

The bid opening process will begin on the above advertised date at 2:00 p.m., one hour after the deadline for receipt of bids in at the office of the Architect. On this date and time, the Executive Director of the Housing Authority shall publicly open all bids.

The bids must be accompanied by a Bid Guarantee in the amount of 10% of the bid, but not more than \$20,000.00 and may be certified or cashier's check payable to the order of the Wildwood Housing Authority or a bid bond for a like sum executed by a surety company authorized to be in business in the State of New Jersey. The successful bidder will be required to furnish a Performance Bond and Labor and Material Payment Bond in the amount of 100% of the contract price. Consent of Surety from an approved Surety Company must also be submitted with the Bid. Please be advised that any bidder who fails to submit a "Consent of Surety" with the bid can anticipate that the bid submitted will be automatically rejected. No bid may be withdrawn for a period of 60 days after the opening date.

All proposals are subject to the requirements of all state and federal laws and Wildwood Housing Authority ordinances affecting the same.

Persons or firms bidding on equipment that requires installation by the contractor are advised those provisions/ requirements of the Davis Bacon Act, HUD, and Wildwood Housing Authority will apply to and be part of all such contracts.

This contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968 including HUD Minority and Women's Business Enterprise Opportunity goals.

Bidders must be pre-qualified by the New Jersey Department of Treasury, Division of Building and Construction. Each bid must be accompanied by an affidavit so certifying, if applicable.

Bidders are required to comply with the requirements of P.L. 1975, c.127, (Affirmative Action Requirements of the State of New Jersey) and P.L. 77, c.33. Pursuant to Chapter 33 of the New Jersey laws of 1977, each bidder must submit with his bid, a Public Disclosure Information Statement. All contractors and subcontractors must submit a copy of their NJ Business Registration Certificate that is issued by the NJ Department of Treasury/Division of Revenue with the bid packet. To obtain further information regarding the Certificate, visit the State's web site @ www.state.nj.us/treasury/revenue/busregcert.htm or by calling them at (609)-292-1730.

Special Notice - Office of the Executive Director

The Housing Authority during this emergent time, is currently closed and there is no guarantee the offices will be opened by the advertised submission date. As the Executive Director of the Housing Authority, I am providing this Special Notice concerning the submission and opening of bids.

Submission of Bids

All potential bidders are to send their responses through the US Postal Service or other recognized delivery service that provides certification of delivery to the sender or hand deliver bids directly to the office of **Manders Merighi Portadin Farrell Architects, LLC**, 1138 East Chestnut Avenue, Building #4, Vineland NJ 08360 prior to the bid date and time between the hours of 10:00 a.m. and 1:00 p.m.

Opening of Bids—Online Live Streaming

To ensure there is “**social distancing**” amongst all parties in the bid opening, the bid opening will be conducted via online live streaming. The names of the vendors and their prices will be announced on the online live streaming which may be viewed by the general public and interested parties on the advertised bid date and time.

To access the online streaming go to:

<https://global.gotomeeting.com/join/730099501>

You can also dial in using your phone.

(For supported devices, tap a one-touch number below to join instantly.)

United States: +1 (786) 535-3211

- One-touch: <tel:+17865353211,,730099501#>

Access Code: 730-099-501

Please do not plan on attending the public opening in person.

Paul Dice, Executive Director
Wildwood Housing Authority

SECTION 000100 - INSTRUCTIONS TO BIDDERS

1.1 PROPOSALS

- A. Sealed bids shall be received by the contracting unit, hereinafter referred to as "Owner", in accordance with public advertisement as required by law, with a copy of said notice being attached hereto and made a part of these specifications.
- B. Sealed bids will be received by the designated representative at the time, date and location as stated in the Notice to Bidders, and at such time and place will be publicly opened and read aloud.
- C. Any bid prepared and submitted in accordance with the provisions described herein may be considered informal by the Owner, who reserves the right to waive any informalities in the bid or reject any and all bids, including alternate bids. Any bid received after the time and date specified may not be considered. No bidder shall withdraw a bid within sixty (60) days after actual date of the opening thereof.
- D. Bids are requested on the items stated in the Form of Proposal for the project. The prices shall cover all cost of any nature incidental to and growing out of the work. In explanation, but not in limitation thereof, these costs shall include the cost of all work, labor, materials, equipment, transportation, and all else necessary to perform and complete the project in the manner and within the time required, all incidental expenses in connection therewith, all costs on account of loss by damage or destruction of the project, and any additional expenses for unforeseen difficulties encountered, for settlement of damages and for replacement of defective work and materials. Conditions, limitations, or provisions attached to the proposal by the bidder may cause its rejection. Any changes, whiteouts, strikeouts, etc. in the bid must be initialed in ink by the person signing the bid.
- E. Before submitting his proposal, the bidder shall be familiar with the Drawings, Specifications, and other Documents that will form part of the Contract, shall have investigated in detail the sites of the project and shall have made such examination thereof, as may be necessary to satisfy himself in regard to the character and amount of work involved. He shall have satisfied himself also that he can secure the necessary labor and equipment and that the materials he proposes to use will comply with the requirements thereof and can be obtained by him in the quantities and at the time required. The failure or omission of any Bidder to do any of the foregoing shall in no way relieve the Bidder from any obligation in respect to his Bid.
- F. Bidders are cautioned to carefully read the complete set of Drawings and Specifications to acquaint themselves with any requirements therein necessitating installation work by one Contractor of materials or equipment furnished by another Contractor or the Owner and required to complete the entire project.
- G. Attention is directed to the fact that these Specifications include a complete set of Bidding and Contract forms. These are for the convenience of Bidders and are not to be detached from the Specifications, filled out, or executed. Separate copies of bid forms are furnished for that purpose. Submit **two** forms with the bid and one to be retained by the bidder for his records. NOTE: All forms or papers required to be submitted with the bids shall be signed, witnessed, and/or sworn to.
- H. Each bid proposal form must give the full business address, business phone, fax, e-mail if available, the contact person of the bidder, and be signed by an authorized representative as follows:

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Bids by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and designation of the person signing.

Bid by corporations must be signed in the legal name of the corporation, followed by the name of the State in which incorporated and must contain the signature and designation of the president, secretary or other person authorized to bind the corporation in the matter.

Bids by sole proprietorship shall be signed by the proprietor. When requested, satisfactory evidence of the authority of the officer signing shall be furnished.

- I. Bidder should be aware of the following statutes that represent "Truth in Contracting" laws:
 - N.J.S.A 2C:21-34, et. seq. governs false claims and representations by bidders. It is a serious crime for the bidder to knowingly submit a false claim and/or knowingly make material misrepresentation.
 - N.J.S.A 2C:27-10, et. seq. provides that a person commits a crime if said person offers a benefit to a public servant for an official act performed or to be performed by a public servant, which is a violation of official duty.
 - N.J.S.A 2C:27-11, et. seq. provides that a bidder commits a crime if said person, directly or indirectly, confers or agrees to confer any benefit not allowed by law to a public servant.Bidder should consult the statutes or legal counsel for further information.

1.2 BID SECURITY AND BONDING REQUIREMENTS

- A. **BID GUARANTEE:** Bidder shall submit with the bid a certified check, cashier's check or bid bond in the amount of ten (10%) percent of the total price bid, but not in excess of \$20,000.00 payable unconditionally to the Owner. When submitting a Bid Bond, it shall contain Power of Attorney for full amount of Bid Bond from a surety company authorized to do business in the State of New Jersey and acceptable to the Owner. The check or bond of the unsuccessful bidder(s) shall be returned pursuant to N.J.S.A. 40A:11-24a. The check or bond of the bidder to whom the contract is awarded shall be retained until a contract is executed and the required performance bond or other security is submitted. The check or bond of the successful bidder shall be forfeited if the bidder fails to enter into a contract pursuant to N.J.S.A. 40A:11-21. Failure to submit a Bid Guarantee shall result in rejection of the bid.
- B. **CONSENT OF SURETY:** Bidder shall submit with the bid a Certificate (Consent of Surety) with Power of Attorney for full amount of bid price from a Surety Company authorized to do business in the State of New Jersey and acceptable to the Owner stating that it will provide said bidder with a Performance Bond in the full amount of the bid. The Surety Company must have a Best's rating of B+ or better, and a Best's Financial Category of VII or larger, the minimum ratings and the financial size categories are those listed for the Surety Company in the most current issues of Best's Key Rating Guide, Property-Casualty, published by the A.M. Best Company, Oldwick, NJ.
 1. Submission of a Performance Bond, if required for this bid, is a condition precedent to a contract award. After receipt of such a performance bond and other submissions required by the bid specifications, the bid will be accepted and a signed contract and a purchase order will be forwarded to the successful bidder.
 2. **The Authority will not be responsible for any expenditure of monies or other expenses incurred by the Bidder unless the Bidder has received a**

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signed contract and a purchase order.

This certificate shall be obtained in order to confirm that the bidder to whom the contract is awarded will furnish Performance and Payment Bonds from an acceptable surety company on behalf of said bidder, any or all subcontractors or by each respective subcontractor or by any combination thereof which results in performance security equal to the total amount of the contract, pursuant to N.J.S.A. 40A:11-22.

Failure to submit a consent of surety form shall result in rejection of the bid.

- C. **PERFORMANCE BOND:** Bidder shall simultaneously with the delivery of the executed contract, submit an executed bond in the amount of one hundred (100%) percent of the acceptable bid as security for the faithful performance of this contract.

The performance bond provided shall not be released until final acceptance of the whole work and then only if any liens or claims have been satisfied. The surety on such bond or bonds shall be a duly authorized surety company authorized to do business in the State of New Jersey pursuant to N.J.S.A. 17:31-5.

Failure to submit this with the executed contract shall be cause for declaring the contract null and void pursuant to N.J.S.A. 40A: 11-22.

- D. **LABOR AND MATERIAL (PAYMENT) BOND:** Bidder shall with the delivery of the performance bond submit an executed payment bond to guarantee payment to laborers and suppliers for the labor and material used in the work performed under the contract.

Failure to submit a labor and material bond with the performance bond shall be cause for declaring the contract null and void.

- E. **MAINTENANCE BOND:** Upon acceptance of the work by the Owner, the contractor shall submit a maintenance bond (N.J.S.A. 40A:11-16.3) in an amount not to exceed one hundred (100%) percent of the project costs guaranteeing against defective quality of work or materials for the period of 1 year.

1.3 POWER OF ATTORNEY

- A. Attorneys-in-fact who sign bid bonds or payment bonds and performance bonds must file with each bond a certified and effective dated copy of their Power of Attorney to sign said bonds.

1.4 AWARD OF CONTRACT:

- A. Award, if made, will be to the lowest responsible, qualified bidder. In such case where alternate bids will be considered, the low bidder will be determined based on the combined amount of the base bid plus the alternate bid, or bids, which will be included in the contract awarded.
- B. In the event there is a discrepancy between the prices written in words and those written in figures, the prices written in words shall govern.
- C. Award made to a Bidder not a resident of the State shall require the Bidder to designate a proper agent in the State on whom service can be made in the event of litigation.
- D. The Bidder to whom the contract is awarded shall be required to execute said Contract and obtain the Performance Bond and within seven (7) days from the date when the Notice of Award of Contract is delivered to the Bidder.

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- E. The Owner, within seven (7) days of receipt of the Performance Bond, Payment Bond and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party and executed duplicate of the Agreement.
- F. The Notice to Proceed shall be issued within seven (7) days of the execution of the Agreement by the Owner. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement between the Owner and Contractor.
- G. The Owner reserves the right to reject any or all bids in whole or in part, or to waive informality in the bidding, as may be permitted by law.
- H. The Bidder to whom the contract is awarded shall be required to execute said Contract within ten (10) days after notification of award of Contract to him.

1.5 FORM OF CONTRACT

- A. Contracts will be let on American Institute of Architect's Document A101, Standard Form of Agreement Between the Owner and the Contractor where the Basis of payment is a Stipulated sum, 2007 Edition.

1.6 EXAMINATION OF SITE, DRAWINGS, ETC.:

- A. Each Bidder shall visit the site of the proposed work and fully acquaint himself with the conditions as they exist so that he may fully understand the facilities, difficulties, and restrictions attending the execution of the work under this Contract. The bidder must certify by affidavit his compliance with site examination. Use the form provided.
- B. **On either July 6 & 7, 2020 between 9:00am and 2:00pm SCHEDULED site visits can be arranged for all bidders. To arrange a site visit, please email Ms. Melissa Wheeler at mwheeler@wildwoodhousing.org or call 609-729-0220 ext. 1102 to confirm an appointment.** Scheduled times for bidders to visit the project site will be made to preclude large group gatherings. Please be available for any time between the hours stated above for the site visit. You will receive an email confirmation of your time to visit the site. All attendees of this site visit must wear a suitable face covering and maintain social distancing.
- C. Bidders shall also thoroughly examine and be familiar with the Drawings and Specs. The failure or omission of any bidder to receive or examine any form, instrument or document, or to visit the site and acquaint himself with conditions existing there shall in no way relieve any bidder from obligation with respect to his bid. By submitting a bid, the bidder agrees and warrants that he has examined the site, the Drawings and Specifications and, where the Specifications require in any part of the work a given result to be produced, that the Specifications and Drawings are adequate, and the required result can be produced under the Drawings and Specifications. No claim for any extra will be allowed because of alleged impossibilities in the production of the results specified or because of unintentional errors or conflicts in the Drawings and Specifications.

1.7 DRAWINGS AND SPECIFICATIONS:

- A. The project shall be performed in accordance with the requirements of the Drawings and Specifications subject to modification as provided in General Conditions. The Drawings and Specifications are intended to complement and supplement each other.

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- B. Any work required by either of them and not by the other shall be performed even though omitted on others. Should any work be required which is not also denoted in the Specifications or on the Drawings because of an obvious omission, but which is, nevertheless, necessary for the proper completion of or performance of the project, such work shall be performed as fully as if it were described and delineated.
- C. Should the specifications and/or drawings disagree in themselves or with each other, the better quality or quantity of work shall be provided.
- D. Large scale details shall govern small scale Drawings.
- E. Where the work is indicated in detail on only a portion of a drawing, this work shall apply to other like portions of the area of work.
- F. Throughout the Specifications and Drawings, references are made to nominal, not actual, sizes of commercial materials. In all such cases, Contractor shall supply materials in their commercial sizes in accordance with recognized and accepted standards as intended. Only if accurately dimensioned, or if particularly specified, will sizes other than usual commercial sizes be required.
- G. Whenever a material, article or piece of equipment is identified on the Drawing or in the Specifications by reference to manufacturer's or vendor's name, trade name, catalog number or the like, it is so identified for the purpose of establishing a standard, and any material, article, or piece of equipment of other manufacturers or vendors which will perform equally or better the duties imposed by the general design will be considered equally acceptable provided the material, article, or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance and function. It shall not be purchased or installed without the Architect's written approval.
- H. In general, the Owner/Architect will neither approve nor disapprove particular products prior to the opening of the bids; such products will be considered when offered by successful Contractor for incorporation into the work.

1.8 REVISIONS, ADDENDA & CLARIFICATIONS TO BID DOCUMENTS:

- A. Should a bidder find during examination of the Drawings and Specifications, or after examination of the site, any discrepancies, omissions, ambiguities, or conflicts in or among the documents, or be in doubt as to their meaning, the Architect shall be notified not later than three (3) business days before bid opening date, and where information sought is not clearly indicated or specified, the Architect will issue a written clarification to any person who has received a bid packet. The written clarification will then become part of the Bidding Documents.

1.9 INTERPRETATION OF CONTRACT DOCUMENTS:

- A. No oral interpretation and/or clarification of the meaning of the specifications for any goods and services will be made to any bidder. Such requests shall be in writing, addressed to the Owner's representative stipulated in the specification. In order to be given consideration, a written request must be received at least seven (7) business days prior to the date fixed for the opening of the bid for goods and services.

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- B. All interpretations, clarifications and any supplemental instructions will be in the form of written addendum to the specifications and will be distributed to all prospective bidders. All addenda so issued shall become part of the specification and bid documents and shall be acknowledged by the bidder in the bid. The Owner's interpretations or corrections thereof shall be final.

1.10 SUBSTITUTIONS:

- A. Brand names and/or descriptions used in these specifications are to acquaint bidder with the types of goods and services desired and will be used as a standard by which goods and services offered as equivalent will be evaluated.
- B. Variations between the goods and services described and the goods and services offered are to be fully identified and described by the bidder on a separate sheet and submitted with the bid proposal form. Vendor literature WILL NOT suffice in explaining exceptions to these specifications. In the absence of any exceptions by the bidder, it will be presumed and required that the goods and services as described in the bid specification be provided or performed.
- C. It is the responsibility of the bidder to document and/or demonstrate the equivalency of the goods and services offers. The Owner reserves the right to evaluate the equivalency of the goods and services.
- D. In submitting its bid, the bidder certifies that the goods and services to be furnished will not infringe upon any valid patent or trademark and that the unsuccessful bidder shall, at its own expense, defend any and all actions or suits charging such infringement, and will save the Owner harmless from any damages resulting from such infringement.
- E. Only manufactured products of the United States, wherever available, shall be used pursuant to N.J.S.A. 40A: 11-18.
- F. The contractor shall guarantee any or all goods and services supplied under these specifications. Defective or inferior goods shall be replaced at the expense of the contractor. The contractor will be responsible for return freight or restocking charges.

1.11 COMPLIANCE WITH LAWS:

- A. Contractor shall comply with all laws and regulations governing the project. Referenced in these specifications to laws and regulations are for the convenience of the parties only. Owner and Contractor shall be bound by all amendments, revisions, repeals or adoptions of laws and regulations even though not enumerated in these specifications. If a law or regulation referred to in these specifications has been amended, revised, repealed or otherwise changed, it shall be Contractor's obligation to conform to the changed version, even though an older version or repealed version is referenced in these specifications.
- B. All proposals are subject to the requirements of all state and federal laws and **Wildwood Housing Authority** ordinances affecting the same. Persons or firms bidding on equipment that requires installation by the contractor are advised those provisions/ requirements of the Davis Bacon Act, HUD, and **Wildwood Housing Authority** will apply to and be part of all such contracts.

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This contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968 including HUD/MHA/WHA Minority and Women's Business Enterprise Opportunity goals.

Contractor shall keep an accurate record showing the name, craft or trade and actual hourly rate paid to each worker employed by him in connection with the project. The record shall be preserved for a period of three years from the date of payment. Contractor shall further post the prevailing wage rates for each craft and classification involved in the project in prominent and easily accessible places at the site of work and at such other places as are used by employer to pay workers.

Before Owner shall make final payment, Contractor shall provide to the Owner a Payroll Verification Affidavit, on the form attached, for each payroll period stating the wages then due to any and all workers for wages on account of the project. The affidavit shall certify that Contractor has paid wages in accordance with the applicable Prevailing Wage Law.

- C. Contractor shall comply with the provisions of all state and federal laws governing civil rights and discrimination and, in particular, the New Jersey Civil Rights Act, the Equal Opportunities Law and the Law Against Discrimination, N.J.S.A. 10:1-1, et. seq.; 2-1 et. seq. and 5-1 et. seq. In addition, Contractor shall comply with the Affirmative Action Law and regulations, N.J.S.A 10:5-31 and N.J.A.C. 17:27-1.1, et. seq. See attached Exhibit A.
- D. After notification of award, but prior to signing the contract, the contractor shall submit to the public agency compliance officer and the Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (Division) an initial project workforce report (Form AA201) provided to the public agency by the Division for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7.

The contractor shall also submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of the contract to the Division and to the public agency compliance officer. The contractor shall also cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

- E. Contractor shall be required to provide with its bid a Non-Collusion Certificate form pursuant to NJSA 52:34-15.

1.12 INDEMNIFICATION:

- A. Bidder shall indemnify and hold harmless the Owner from all claims, suits or actions, and damages or costs of every name and description to which the Owner may be subjected or put by reason of injury to the person or property of another, or the property of the Owner, resulting from negligent acts or omissions on the part of the contractor, the contractor's agents, servants or subcontractors in the delivery of goods and services, or in the performance of the work under the contract.

1.13 MISCELLANEOUS PROVISIONS:

- A. A written request for the withdrawal of a bid will be granted if received by the Owner before any bid has been opened. Upon proper request and identification, bids may be withdrawn as follows:
 - 1. At any time prior to the designated time for opening of bids.
 - 2. Provided the Proposal has not been accepted by the Owner, at any time

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subsequent to the expiration period during which the bidder has agreed not to withdraw his proposal.

- B. Unless a proposal is formally withdrawn, it shall be deemed open for acceptance until the Contract Agreement has been executed by both parties thereto or until the Owner manifests that he does not intend to accept the Proposal Notice of acceptance of a Proposal shall not constitute rejection of any other Proposal.
- C. The successful bidder shall not assign, transfer, convey, sublet, or otherwise dispose of the contract or any part thereof to anyone without the written consent of the Owner.
- D. Should any differences arise between the contracting parties as to the meaning or intent of these instruction or Specifications, the Owner or his designated representative's decision is to be final and conclusive.
- E. The successful bidder agrees that he will make no claim for additional payment or any other concession because of any misinterpretation or misunderstanding of the contract on his part, or of any failure to fully acquaint himself with any conditions relating to the contract.

1.14 PRIME CONTRACTS

- A. Pursuant to Section 16 of P.L. 1971, c.198 (c.40A:11-16), bidders must identify the subcontractors to whom it will subcontract the furnishing prime subcontracting in its bid submission.

1.15 PRICING INFORMATION FOR PREPARATION OF BIDS

- A. The Owner is exempt from any local, state, or federal sales, use or excise tax.
- B. Contractor shall be responsible for obtaining any applicable permits or licenses from any government entity that has jurisdiction to require the same. The cost of all permits will be paid for by the Owner.

1.16 NON-COLLUSION AFFIDAVIT:

- A. Pursuant to NJSA 52: 34-15, bidder shall submit with his bid Non-Collusion Affidavit on form as bound herein. More than one proposal on one contract from an individual, a firm or partnership, corporation, or an association under the same of different names will not be considered. Reasonable ground for believing that the Bidder is interested in more than one proposal for the same work will cause the rejection of all proposals in which there is reason for believing that collusion exists among any of the Bidders. Participants in any collusion will not be considered in future proposals.

1.17 AFFIDAVIT OF NO-DEFAULT

- A. Bidder shall submit with his bid an Affidavit of Non-Default on form as bound herein. This form must be signed by all principals who will work on this contract. Principals may all use, sign and file the same form; or they may choose to file separate forms. Principals include all individuals, joint ventures, partnerships, corporate, trusts, non-profit organizations, or any other public or private entity that will participate in the contract as a prime contractor.

In case of partnerships, all general partners, regardless of their percentage interest, and limited partners have a 25% or more interest in the partnership, as considered principals.

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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% or more interest in the corporation.

Exceptions for Corporations – All principals must personally sign the certificate except in the following situation: When a corporation or public agency is a principal, all of its officers, directors, commissioners, trustees, and stockholders with 10% 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 titles of those who elect not to sign. However, any person who has information to report which is substantially different from that of his or her organization, must report that activity on this form and sign his or her name.

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

Attach a signed explanation of the terms you have struck out on the certification and All proposals are subject to the requirements of all state and federal laws and Wildwood Housing Authority ordinances affecting the same.

Persons or firms bidding on equipment that requires installation by the contractor are advised those provisions/ requirements of the Davis Bacon Act, HUD, and **Wildwood Housing Authority** will apply to and be part of all such contracts.

1.18 STATUTORY AND OTHER REQUIREMENTS

- A. Mandatory Affirmative Action Certification: No firm may be issued a contract unless it complies with the affirmative action provision of N.J.S.A. 10:5-31 et. seq. and N.J.A.C. 17:27-1 et. seq. The following information summarizes the full, required regulatory text, which is included as Appendix A of this bid specification.
1. Goods and Services (including professional services) Contracts
Each contractor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:
 - i. A photocopy of a valid letter that the contractor is operating under an existing Federally approved or sanctioned affirmative action program (good for one year from the date of the letter); or
 - ii. A photocopy of a Certificate of Employee Information Report approval, issued in accordance with N.J.A.C. 17:27-4; or
 - iii. A photocopy of an Employee Information Report (Form AA 302) provided by the Division and distributed to the public agency to be completed by the contractor in accordance with N.J.A.C. 17:27-4.

For information on the requirements of the Affirmative Action Law, contact:

Division of Contract Compliance & Equal Employment Opportunity in Public Contracting
Department of Treasury
State of New Jersey
PO Box 209
Trenton, NJ 08625-0209

SECTION 000100 - INSTRUCTIONS TO BIDDERS

609-292-5473

Email: www.state.nj.us/treasury/contract_compliance/ccmail/html

2. Maintenance/Construction Contracts: After notification of award, but prior to signing the contract, the contractor shall submit to the public agency compliance officer and the Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (Division) an initial project workforce report (Form AA201) provided to the public agency by the Division for distribution to and completion by the contract, in accordance with N.J.A.C. 17:27-7.

The contractor shall also submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of the contract to the Division and to the public agency compliance officer. The contractor shall also cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job programs for outreach and training of minorities and women.

- B. Federal Occupational Safety and Health Act of 1970: The vendor or contractor guarantees that all materials, supplies and equipment as listed on any bid, request for proposal, quotation, contract or purchase order, furnished or delivered to the Owner meet the requirements, specifications and standards as provided for under the Federal Occupational Safety and Health Act of 1970, as amended from time to time and enforced as of the date thereof.
- C. Safety Standards: The bidder should be aware, if awarded the contract that they will be responsible for any and all subcontractors, as well as themselves, that they are required to comply with all applicable local, state and federal safety, health and environmental regulations, including provisions for protecting the Owner's employees and the public from construction hazards.

The Owner retains the right to have Owner's safety representatives inspect any construction project taking place on the Owner's property or through the Owner's auspices. The Owner reserves the right to stop work if an imminent hazard exists. The costs, if any, created by a work stoppage due to unsafe conditions, will be borne by the contractor responsible for the unsafe condition.

- D. Americans with Disabilities Act of 1990: Discrimination on the basis of disability in contracting for the purchase of goods and services is prohibited. Bidders are required to read Americans with Disabilities language that is included as Appendix A of this specification and agree that the provisions of Title II of the Act are made a part of the contract. The contractor is obligated to comply with the Act and to hold the owner harmless.
- E. Stockholder Disclosure: N.J.S.A. 52:25-24.2 provided that no corporation or partnership shall be awarded any contract for the performance of any work or the furnishing of any goods and services, unless, prior to the receipt of the bid or accompanying the bid of said corporation or partnership. Bidders shall submit a statement setting forth the names and addresses of all stockholders in the corporation or partnership who own ten percent or more of its stock of any class, or of all individual partners in the partnership who own ten percent or greater interest therein. The included Statement of Ownership shall be completed and attached to the bid proposal. This requirement applies to all forms of corporations and partnerships, including, but not limited to, limited partnerships, limited liability corporations limited liability partnerships and Subchapter S corporations. Failure to submit a stockholder disclosure document shall result in rejection of the bid.
- F. Proof of Business Registration: N.J.S.A 52:32-44 requires that each bidder (contractor) submit proof of business registration with the bid proposal Proof of registration shall be a

SECTION 000100 - INSTRUCTIONS TO BIDDERS

copy of the bidder's Business Registration Certificate (BRC). A BRC is obtained from the NJ Division of Revenue. Information on obtaining a BRC is available on the internet at www.nj.gov/njbgs or by phone at (609) 292-1730. N.J.S.A. 52:32-44 imposes the following requirements on contractors and all subcontractors that **knowingly** provide goods or perform services for a contractor fulfilling this contract:

1. The contractor shall provide written notice to its subcontractors and suppliers to submit proof of business registration to the contractor.
2. Prior to receipt of final payment from a contracting agency, a contractor must submit to the contracting agency an accurate list of all subcontractors or attest that none was used.
3. During the term of this contract, the contractor and its affiliates shall collect and remit to the Director, NJ Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A 54:32b-1 et. seq.) on all sales of tangible personal property delivered into this State.

Any contractor, subcontractor or supplier who fails to provide proof of business registration information shall be liable to a penalty of \$15 for each day of violation, not to exceed \$50,000 for each business registration not properly provided or maintained under a contract with a contracting agency. Information on the law and its requirements is available by calling (609) 292-9292.

- G. New Jersey Worker and Community Right to Know Act: The manufacturer or supplier of chemical substances or mixtures shall label them in accordance with the NJ Worker and Community Right to Know Law (N.J.S.A. 34:5A-1 et. seq., and N.J.A.C. A 8:59-2 et. seq.). Containers that the law and rules require to be labeled shall show the Chemical Abstracts Service number of all the components and the chemical name. Further, all applicable Material Safety Data Sheets (MSDS) - hazardous substance fact sheet - must be furnished.
- H. Non-Collusion Affidavit: The Affidavit shall be properly executed and submitted with the bid proposal.
- I. This contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968 including HUD/MHA/WHA Minority and Women's Business Enterprise Opportunity goals.
- J. Persons or firms bidding on equipment that requires installation by the contractor are advised those provisions/ requirements of the Davis Bacon Act, HUD, and Wildwood Housing Authority will apply to and be part of all such contracts.

END OF SECTION

SECTION 000110 – CONTRACTOR’S PROPOSAL

BID PROPOSAL FORM

To: WILDWOOD HOUSING AUTHORITY
c/o Manders Merighi Portadin Farrell Architects, LLC
1138 East Chestnut Ave. Bldg. 4
Vineland, NJ 08360

Re: **WHA – Sandman Towers Elevator Modernization**
3700 New Jersey Avenue
Wildwood, NJ 08260

The Bid will not be accepted after **1:00 pm prevailing time on Thursday July 16, 2020** and shall be publicly opened and read at **2:00 pm**.

(Name of Firm Submitting Bid)

ATTACH BID SECURITY HERE:

The amount of the bid proposal security to be submitted with this proposal shall be in accordance with Article II of the Instructions to Bidders and shall be made payable to Wildwood Housing Authority.

TO WHOM IT MAY CONCERN:

_____ hereby proposes to furnish all labor, materials, tools, equipment, and services necessary to perform and complete the **WHA – Sandman Towers Elevator Modernization** in accordance with the Contract Documents and will agree to complete the work within **two hundred forty (240) calendar days**, beginning from the date of Notice to Proceed with the work.

For the total **Base Bid** Amount of:

_____ DOLLARS
(Amount in Written Words)

\$ _____
(Amount written in figures)

THIS SHALL BE KNOWN AS THE BASE BID.

DEDUCT ALTERNATE NO. 1 – ROOF TOP HVAC UNIT

DEDUCT all work associated with RTU-1 and guardrails as specified in Section 010300 - Alternates.

_____ DOLLARS
(Amount in Written Words)

\$ _____

SECTION 000110 – CONTRACTOR’S PROPOSAL

The price must be written in words as well as figures. In case of a discrepancy, the words shall govern.

Name and business address of bidder to whom all formal notices are to be sent.

The Wildwood Housing Authority reserves the right to accept or reject any and all bids as it deems in its best interest.

The undersigned will enter and execute a contract with the Wildwood Housing Authority based upon these Bid Proposal Forms, without delay upon notice of award on contract, and will not withdraw this Proposal prior to sixty (60) days following the date of the opening of bid.

This ____ day of _____ 2020

Signature of Owner or Partner

Typed or Printed Name and Title

Business Name of Bidder

Address, including zip code

Telephone Number

SECTION 000110 – CONTRACTOR’S PROPOSAL

SURETY FORM

N.J.S. 40A:11-22 provides in pertinent part that where a Contracting unit requires a Performance Bond, the contracting unit must require from all bidders a certificate from a surety company stating that the surety company will provide the Contractor with a Performance Bond. A Performance Bond will be required from the successful bidder on this project, and consequently, all bidders shall submit, with their bid, a Certificate in substantially the following form:

To: WILDWOOD HOUSING AUTHORITY
3700 New Jersey Avenue
Wildwood, NJ 08260

RE: _____
(Contractor)

(Project)

This is to certify that the _____
(Surety Company)

will provide to _____
(Contractor)

(Address)

Statutory Payment and Performance Bond in the event that said contractor is awarded a contract for the above project.

(Authorized signature of Surety Company)

(Title)

A CERTIFICATE OF SURETY MUST BE SIGNED BY AN AUTHORIZED AGENT OR REPRESENTATIVE OF A SURETY COMPANY AND NOT BY THE INDIVIDUAL OR COMPANY SUBMITTING THE BID.

(Surety Company Name) _____

(Address)

(Telephone Number)

STOCKHOLDER DISCLOSURE CERTIFICATION

Name of Business: _____

I certify that the list below contains the names and home addresses of all stockholders holding 10% or more of the issued and outstanding stock of the undersigned.

OR

I certify that no one stockholder owns 10% or more of the issued and outstanding stock of the undersigned.

Check the box that represents the type of business organization:

- | | | |
|---|--|--|
| <input type="checkbox"/> Partnership | <input type="checkbox"/> Corporation | <input type="checkbox"/> Sole Proprietorship |
| <input type="checkbox"/> Limited Partnership | <input type="checkbox"/> Limited Liability Corporation | <input type="checkbox"/> Limited Liability Partnership |
| <input type="checkbox"/> Subchapter S Corporation | | |

Sign and notarize the form below, and, if necessary, complete the stockholder list below.

Stockholders:

Name: _____ Name: _____

Home Address: _____ Home Address: _____

Name: _____ Name: _____

Home Address: _____ Home Address: _____

(Signature)

(Type or print name of affiant)

Subscribed and sworn before me this ___ day of _____, 2020

Notary Public

State of _____

My Commission expires: _____

EXHIBIT B

MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
N.J.S.A. 10:5-31 et.seq. (P.L. 1975, C.127)
N.J.A.C. 17:27

CONSTRUCTION CONTRACTS
(REVISED 4/10)

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

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability nationality or sex. Except with respect to affectional or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, 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 age, race, creed, color, national origin, ancestry, marital status, sex, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor, where applicable, will send to each labor union or representative of workers with which it has as collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et. seq. as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring workers in each construction trade, the contractor or subcontractor agrees to attempt in good faith to employ minority or female workers in each construction trade consistent with the applicable employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Division may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B, and C, as long as the Affirmative Action Office is satisfied that the contractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Affirmative Action office, that its percentage of active "card carrying" members who are minority and female workers is equal to or greater than the applicable employment goal prescribed by N.J.A.C. 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

SECTION 000110 – CONTRACTOR’S PROPOSAL

- A. If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq. , as supplemented and amended from time to time and the Americans with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and female workers consistent with affording equal employment opportunities as specified with this chapter, the contractor or subcontractor agrees to be prepared to hire minority and female workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to immediately take said action if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.
- B. If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:
- (1) To notify the Public Agency Compliance Officer, the Division, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3. of its workforce needs, and request referral of minority and women workers;
 - (2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;
 - (3) Prior to commencement of work, to request the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;
 - (4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;
 - (5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and non-discrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;
 - (6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:
 - i The contractor or subcontractor shall interview the referred minority or women worker.
 - ii. If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles

SECTION 000110 – CONTRACTOR’S PROPOSAL

set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Division. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.

- iii. The name of any interested women or minority individual shall be maintained on a waiting list and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Division, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.
 - iv. If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing with the reasons for the determination, maintain a copy in its files, and send a copy to the Public Agency Compliance Officer and to the Division
- (7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract and on forms made available by the Division and submitted promptly to the Division upon request.

- (C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the hiring hall or apprenticeship provisions in any applicable collective bargaining agreement or hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women of the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of the preceding provisions (B) above it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Division an initial project workforce report (Form AA201) electronically provided by the public agency by the Division, through its website, for distribution to an completion by the contractor, in accordance with N.J.A.C. 17:27.

The contractor agrees to submit a copy of the Monthly Project workforce Report once a month thereafter for the duration of this contract to the Division and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job programs for outreach and training of minority and women.

SECTION 000110 – CONTRACTOR’S PROPOSAL

- (D) The contractor and its subcontractors shall furnish such reports or other documents to the Division of Public Contracts Equal Employment Opportunity Compliance as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Public Contracts Equal Employment Opportunity Compliance for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code (NJAC 17:27)**.

Submitted By:

Name of Firm:

Upon notification of award of Contract, Contractor shall complete the Initial Project Workforce Report

By: _____

Title: _____

Date: _____

Subscribed and sworn before me this ____ day of _____, 2020.

Signature of Notary Public

State of _____

My Commission expires: _____

BUSINESS REGISTRATION CERTIFICATE

Contractors and Subcontractors shall be registered with the New Jersey Department of Treasury, Division of Revenue as applicable pursuant to the provisions of P.L. 2004, c.57 (N.J.S.A. 52:32-44) known as “Business Registration of Public Contractors” effective September 1, 2004 including all amendments thereto. A copy of the Contractor’s Business Registration Certificate shall be submitted accompanying the bid. Whenever a bid requires the listing of (named) Subcontractors, the Business Registration Certificate of the named Subcontractors must also be provided accompanying the bid, along with the Business Registration Certificate of the Contractor.

In submitting this bid, the undersigned hereby acknowledges the requirements of Public Laws governing “Business Registration of Public Contractors”, and hereby certifies that the Contractor and all listed Subcontractors are registered with the New Jersey Department of Treasury, Division of Revenue, and that proof of Business Registration is provided herewith.

Name of Bidder _____

By: _____
Authorized Representative (Name & Title)

Signature

Date

NON-COLLUSION AFFIDAVIT

State of New Jersey)
)ss.
County of)

_____, being duly sworn according to law on my oath depose and says:

1. The he/she is _____ Partner/officer of the firm of _____

The party making the foregoing Qualifications, that such Qualifications is genuine and not collusive or sham; that said proposer has not colluded, conspired, connived or agreed, directly or indirectly, with any proposer or person, to put in a sham qualifications or to refrain from proposing, and has not, in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the qualifications price of affiant or of any other proposer, or to secure any advantage against the **Wildwood Housing Authority**, or any person interested in the proposed contract; and that all statements in said qualifications are true.

2. The Proposer further certifies that he/she has not been convicted or found liable for any act prohibited by state or federal law involving conspiracy or collusion with respect to proposing or bidding on any public contract within the last three years. Such act or conviction does not automatically disqualify a proposer, but may be grounds for administrative suspension or grounds for consideration by **WHA** as to whether **WHA** should decline to award a contract to such a proposer on the basis of a lack of responsibility. If the proposer has been convicted of any act prohibited by state or federal law involving collusion with respect to proposing or bidding on any public contract within the past three years, proposer should attach an explanation of the circumstances surrounding that conviction.

FIRM NAME:

By: _____
Signature of Proposer if the Proposer is an Individual

Signature of Partner if the Proposer is a Partnership

Signature of Officer if the Proposer is a Corporation

Subscribed and sworn before me this ___ day of _____, 2__.

Signature of Notary Public

State of _____

My Commission expires: _____

NO MATERIAL CHANGE OF CIRCUMSTANCES

CERTIFICATE

I, _____, being of full age do hereby certify that:

I am a(n) owner, partner, shareholder or officer of the company set forth below and am duly authorized to execute this affidavit on its behalf.

A statement as to the financial ability, adequacy of plant and equipment, organization and prior experience of the bidder, has been submitted to the Department of Treasury within the last six (6) months preceding the date of opening of bids for this contract.

I certify that there has been no material adverse change in the qualification except:

_____.

I certify that the foregoing statements are true. I am aware that if any of the foregoing statements are willfully false, I am subject to punishment.

SEAL

NAME TITLE

COMPANY

This certification may be treated for all purposes as a sworn statement made under oath as equivalent affirmation and subject to the provisions of N.J.S.A. 2C:23-1 through N.J.S.A. 2C:23-3, inclusive and relevant sequential sections, and if applicable, 13 U.S.C. 1001, et seq.

SECTION 000110 – CONTRACTOR’S PROPOSAL

SUBCONTRACTOR’S DISCLOSURE STATEMENT

The _____ *(Name of Bidding Company)*

Please Check One! _____ will sub-contract a portion of this project.
 _____ will not sub-contract any portion of this project.

Authorized Agent _____ Title _____

Signature of Bidder _____ Date _____

If the bidder is not going to subcontract any portion of this project, the bidder need not complete any further part of this document.

If the bidder will subcontract any of the work, the bidder must do the following:

- Provide the name, address and other pertinent information about the subcontractor;
- If the cost of the work by the subcontractor shall exceed the amounts listed below, the bidder shall provide in the bid package submission the following documents:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<u>Estimated Value of Contract – Subcontractor</u>	<i>For Subcontractors in the any of the four major branches (Structural Steel, HVACR, Plumbing and Electrical) and C099-Elevator, if needed.</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor’s Registration Certificate	
\$6,000 through \$17,499	Contractor’s Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form	
\$20,000 or more	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form Notice of Classification Total Amount of Uncompleted Contracts -- Certified	

Please list subcontractor(s) on the following pages. Bidders may make extra copies of the following pages.

** Failure to identify the names and addresses of any subcontractors required to be named in the bid, or to submit the appropriate documents for each such subcontractor, may be cause for the bid to be rejected as being non-responsive.*

SECTION 000110 – CONTRACTOR’S PROPOSAL

1. Sub-Contractor for C029 - STRUCTURAL STEEL AND ORNAMENTAL IRON WORK

Name of Subcontracting Company _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-Mail _____ FEIN No: _____

Authorized Agent _____ Title _____

Will the cost of sub-contract exceed \$20,000.00?

_____ Yes Estimated Value of Contract \$ _____

_____ No Estimated Value of Contract \$ _____

If checked **yes**, the sub-contractor must be pre-qualified to perform the work. The bidder must provide in the bid package the following:

- The subcontractor’s Notice of Classification,
- The subcontractor’s Total Amount of Uncompleted Contracts; and
- Other documents that are required:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<u>Estimated Value of Contract – Subcontractor</u>	<i>For Subcontractors in the any of the four major branches (Structural Steel, HVACR, Plumbing and Electrical) and C099-Elevator, if needed.</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor’s Registration Certificate	
\$6,000 through \$17,499	Contractor’s Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form	
\$20,000 or more	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form Notice of Classification Total Amount of Uncompleted Contracts -- Certified	

Certification of Equipment

The _____ hereby certifies the above named Name of Bidding Company subcontractor has the personnel, equipment, experience, financial and sufficient means to complete their portion of the contract in full accordance with the bid specifications.

Authorized Agent (Print) -- Bidder

Signature of Authorized Agent—Bidder

SECTION 000110 – CONTRACTOR’S PROPOSAL

2. Sub-Contractor for C032 – HVACR WORK

Name of Subcontracting Company _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-Mail _____ FEIN No: _____

Authorized Agent _____ Title _____

Will the cost of sub-contract exceed \$20,000.00?

_____ Yes Estimated Value of Contract \$ _____

_____ No Estimated Value of Contract \$ _____

If checked **yes**, the sub-contractor must be pre-qualified to perform the work. The bidder must provide in the bid package the following:

- The subcontractor’s Notice of Classification,
- The subcontractor’s Total Amount of Uncompleted Contracts; and
- Other documents that are required:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<u>Estimated Value of Contract – Subcontractor</u>	<i>For Subcontractors in the any of the four major branches (Structural Steel, HVACR, Plumbing and Electrical) and C099-Elevator, if needed.</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor’s Registration Certificate	
\$6,000 through \$17,499	Contractor’s Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form	
\$20,000 or more	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form Notice of Classification Total Amount of Uncompleted Contracts -- Certified	

Certification of Equipment

The _____ hereby certifies the above named Name of Bidding Company subcontractor has the personnel, equipment, experience, financial and sufficient means to complete their portion of the contract in full accordance with the bid specifications.

Authorized Agent (Print) -- Bidder

Signature of Authorized Agent—Bidder

SECTION 000110 – CONTRACTOR’S PROPOSAL

3. Sub-Contractor for C047 - ELECTRICAL WORK

Name of Subcontracting Company _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-Mail _____ FEIN No: _____

Authorized Agent _____ Title _____

Will the cost of sub-contract exceed \$20,000.00?

_____ Yes Estimated Value of Contract \$ _____

_____ No Estimated Value of Contract \$ _____

If checked **yes**, the sub-contractor must be pre-qualified to perform the work. The bidder must provide in the bid package the following:

- The subcontractor’s Notice of Classification,
- The subcontractor’s Total Amount of Uncompleted Contracts; and
- Other documents that are required:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<u>Estimated Value of Contract – Subcontractor</u>	<i>For Subcontractors in the any of the four major branches (Structural Steel, HVACR, Plumbing and Electrical) and C099-Elevator, if needed.</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor’s Registration Certificate	
\$6,000 through \$17,499	Contractor’s Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form	
\$20,000 or more	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form Notice of Classification Total Amount of Uncompleted Contracts -- Certified	

Certification of Equipment

The _____ hereby certifies the above named Name of Bidding Company subcontractor has the personnel, equipment, experience, financial and sufficient means to complete their portion of the contract in full accordance with the bid specifications.

Authorized Agent (Print) -- Bidder

Signature of Authorized Agent—Bidder

SECTION 000110 – CONTRACTOR’S PROPOSAL

4. Sub-Contractor for C099 - ELEVATOR WORK

Name of Subcontracting Company _____

Address _____

City, State, Zip _____

Telephone _____ Fax _____

E-Mail _____ FEIN No: _____

Authorized Agent _____ Title _____

Will the cost of sub-contract exceed \$20,000.00?

_____ Yes Estimated Value of Contract \$ _____

_____ No Estimated Value of Contract \$ _____

If checked **yes**, the sub-contractor must be pre-qualified to perform the work. The bidder must provide in the bid package the following:

- The subcontractor’s Notice of Classification,
- The subcontractor’s Total Amount of Uncompleted Contracts; and
- Other documents that are required:

<u>SUBCONTRACTOR DOCUMENT SUBMISSIONS</u>		
<u>Estimated Value of Contract – Subcontractor</u>	<i>For Subcontractors in the any of the four major branches (Structural Steel, HVACR, Plumbing and Electrical) and C099-Elevator, if needed.</i>	<i>For all other Subcontractors</i>
	<u>Submit With Bid</u>	<u>Submit Within ten (10 Days of Receipt of Notice of Award</u>
\$2,000 through \$5,999	Contractor’s Registration Certificate	
\$6,000 through \$17,499	Contractor’s Registration Certificate New Jersey Business Registration Certificate	
\$17,500 through \$19,999	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form	
\$20,000 or more	Contractor’s Registration Certificate New Jersey Business Registration Certificate Chapter 271 Political Contribution Disclosure Form Notice of Classification Total Amount of Uncompleted Contracts -- Certified	

Certification of Equipment

The _____ hereby certifies the above named Name of Bidding Company subcontractor has the personnel, equipment, experience, financial and sufficient means to complete their portion of the contract in full accordance with the bid specifications.

Authorized Agent (Print) -- Bidder

Signature of Authorized Agent—Bidder

WILDWOOD HOUSING AUTHORITY
ACKNOWLEDGMENT OF RECEIPT OF ADDENDA

The undersigned Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Dated	Acknowledge Receipt (Initial)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

No addenda were received:

Acknowledged for: _____
(Name of Bidder)

By: _____
(Signature of Authorized Representative)

Name: _____
(Print or Type)

Title: _____

Date: _____

C. 271 POLITICAL CONTRIBUTION DISCLOSURE FORM

Contractor Instructions

Business entities (contractors) receiving contracts from a public agency that are NOT awarded pursuant to a “fair and open” process (defined at N.J.S.A. 19:44A-20.7) are subject to the provisions of P.L. 2005, c. 271, s.2 (N.J.S.A. 19:44A-20.26). This law provides that 10 days prior to the award of such a contract, the contractor shall disclose contributions to:

- Ø any State, county, or municipal committee of a political party
any legislative leadership committee*
- Ø any continuing political committee (a.k.a., political action committee)
- Ø any candidate committee of a candidate for, or holder of, an elective office:
 - o of the public entity awarding the contract
 - o of that county in which that public entity is located
of another public entity within that county
 - o or of a legislative district in which that public entity is located or, when the public entity is a county, of any legislative district which includes all or part of the county
The disclosure must list reportable contributions to any of the committees that exceed \$300 per election cycle that were made during the 12 months prior to award of the contract. See N.J.S.A. 19:44A-8 and 19:44A-16 for more details on reportable contributions.

N.J.S.A. 19:44A-20.26 itemizes the parties from whom contributions must be disclosed when a business entity is not a natural person. This includes the following:
individuals with an “interest” ownership or control of more than 10% of the profits or assets of a business entity or 10% of the stock in the case of a business entity that is a corporation for profit
all principals, partners, officers, or directors of the business entity or their spouses
any subsidiaries directly or indirectly controlled by the business entity
IRS Code Section 527 New Jersey based organizations, directly or indirectly controlled by the business entity and filing as continuing political committees, (PACs).

When the business entity is a natural person, “a contribution by that person’s spouse or child, residing therewith, shall be deemed to be a contribution by the business entity.” [N.J.S.A. 19:44A-20.26(b)] The contributor must be listed on the disclosure.

Any business entity that fails to comply with the disclosure provisions shall be subject to a fine imposed by ELEC in an amount to be determined by the Commission which may be based upon the amount that the business entity failed to report.

The enclosed list of agencies is provided to assist the contractor in identifying those public agencies whose elected official and/or candidate campaign committees are affected by the disclosure requirement. It is the contractor’s responsibility to identify the specific committees to which contributions may have been made and need to be disclosed. The disclosed information may exceed the minimum requirement.

The enclosed form, a content-consistent facsimile, or an electronic data file containing the required details (along with a signed cover sheet) may be used as the contractor’s submission and is disclosable to the public under the Open Public Records Act.

The contractor must also complete the attached Stockholder Disclosure Certification. This will assist the agency in meeting its obligations under the law. NOTE: This section does not apply to Board of Education contracts.

N.J.S.A. 19:44A-3(s): “The term “legislative leadership committee” means a committee established, authorized to be established, or designated by the President of the Senate, the Minority Leader of the Senate, the Speaker of the General Assembly or the Minority Leader of

the General Assembly pursuant to section 16 of P.L.1993, c.65 (C.19:44A-10.1) for the purpose of receiving contributions and making expenditures.”

C. 271 POLITICAL CONTRIBUTION DISCLOSURE FORM
Required Pursuant To N.J.S.A. 19:44A-20.26

This form is to be submitted with the bid.

Part I - Vendor Information

Vendor Name:			
Address:			
City:		State:	Zip:

The undersigned being authorized to certify, hereby certifies that the submission provided herein represents compliance with the provisions of N.J.S.A. 19:44A-20.26 and as represented by the Instructions accompanying this form.

Signature

Printed Name

Title

Part II - Contribution Disclosure

Disclosure requirement: Pursuant to N.J.S.A. 19:44A-20.26, this disclosure must include all reportable political contributions (more than \$300 per election cycle) over the 12 months prior to submission to the committees of the government entities listed on the form provided by the local unit.

Check here if disclosure is provided in electronic form.

Contributor Name	Recipient Name	Date	Dollar Amount

Check here if the information is continued on subsequent page(s).

THE PUBLIC WORKS CONTRACTOR REGISTRATION ACT

No contractor shall bid on any contract for public work as defined in Section 2 of P.L. 1963, c.150 (CL34:11-56.26) unless the contractor is registered pursuant to The Public Works Contractor Registration Act (N.J.S.A. 34:11-56.48) and no contractor shall list a subcontractor in a bid proposal for the contract unless the subcontractor is registered pursuant to that act at the time the bid is made. No contractor or subcontractor, including a subcontractor not listed in the bid proposal, shall engage in the performance of any public work subject to the contract, unless the contractor or subcontractor is registered pursuant to that act.

In submitting this bid, the undersigned hereby acknowledges the requirements of “The Public Works Contractor Registration Act”, and hereby certifies that the contractor and all listed subcontractors are registered in accordance with the act.

Name of Bidder

By Authorized Representative (Name & Title)

Signature

Date

INSTRUCTIONS FOR DEBARMENT CERTIFICATION

1. By signing and submitting this certification, the contracting firm is providing certification as set out below.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the contracting firm knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the Authority may pursue available remedies including suspension and/or debarment.
3. The contracting firm shall provide immediate written notice to the Authority if, at any time, it learns that its certification is erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms “covered transaction”, “debarred”, “suspended”, “Ineligible”, “lower tier covered transaction”, “participant”, “person”, “primary covered transaction”, “principal”, and “voluntarily excluded”, as used in this clause, have the meanings set forth in the Definitions and Coverage sections of rules implementing Executive Order 12549.
5. The contracting firm agrees, by submitting this certification, that, should the covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction.
6. The contracting firm further agrees, by submitting this certification, that it will include the clause titled “Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction,” without modification, in all subcontracts to this agreement as authorized by the Authority.

CERTIFICATION REGARDING THE DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION - LOWER TIER COVERED TRANSACTIONS

I am _____ of the firm _____
(Your Title) (Name of Organization)

(Address of your Organization)

CHOOSE ONE OF THE FOLLOWING

() A. I hereby certify, on behalf of _____
(Name of Organization)

That neither it nor its principals are debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

() B. I am unable to certify to any of the statements set forth in this certification. I have attached an explanation to this form.

Signature

Print/Type Name & Title

Date

DISCLOSURE OF INVESTMENT ACTIVITY IN IRAN

OPS NUMBER: _____

Proposer: _____

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that the person or entity, or one of the person or entity's parents, subsidiaries, or affiliates, is not identified on a list created and maintained by the New Jersey Department of the Treasury ("Treasury") as a person or entity engaging in investment activities in Iran. If the Director finds a person or entity to be in violation of the Act or of the principles which are the subject of this law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the person or entity.

I certify, pursuant to Public Law 2012, c.25, that the person or entity listed above for which I am authorized to submit a proposal:

_____ Is not providing goods or services of \$20,000.00 or more in the energy sector of Iran, including a person or entity that provides oil or liquified natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquified natural gas, for the energy sector of Iran.

AND

_____ is not a financial institution that extends \$20,000.00 or more in credit to another person or entity, for 45 days or more, if that person or entity will use the credit to provide goods or services in the energy sector of Iran.

In the event that a person or entity is unable to make the above certification because it or one of its parents, subsidiaries, or affiliates has engaged in the above-referenced activities, a detailed, accurate and precise description of the activities must be provided in Part 2 below to **Wildwood Housing Authority** under penalty of perjury. Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN
You must provide a detailed, accurate and precise description of the activities of the proposer, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the information below.

Name: _____ Relationship to Proposer: _____

Description of Activities: _____

Duration of Engagement: _____ Anticipated Cessation Date: _____

Proposer Contact Name: _____ Contact Phone Number: _____

Certification: I being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above-referenced person or entity. I acknowledge that the State of New Jersey is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the State to notify the State in writing of any changes to the answers of information contained herein. I acknowledge that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreement(s) with the State of New Jersey and that the State at it option may declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): _____ Signature: _____

Title: _____ Date: _____

AFFIDAVIT OF NON-DEFAULT

SECTION 000110 – CONTRACTOR’S PROPOSAL

State of _____

County of _____

_____, being duly sworn according to law, deposes and says:

1. That he/she is _____, a (partner/officer of the firm of _____, etc.), the party making for foregoing bid.

2. He/she further certifies as follows:
 - a. 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.
 - b. That for the period beginning 10 years ago, the date of this certificate, and except as shown by me on the attachment, I have not experienced defaults or non-compliance under any contract for the US Department of Housing and Urban Development or any other governmental agency with which I have contracts.
 - c. To the best of my knowledge, there are no unresolved findings raised as a result of HUD audits, management reviews, or any other governmental investigations concerning me or work under any of my contracts.
 - d. There has not been a suspension or termination of payments under any HUD contract in which I have had a legal or beneficial interest attributable to my fault or negligence.
 - e. I have not been convicted of a felony and am not presently, to my knowledge, the subject of a complaint or any indictment charging a felony. (A felony is any offense that is punishable by imprisonment for more than one year, but does not include any offense classified as a misdemeanor under the laws of a state and punishable by imprisonment for two years or less).
 - f. I have not been suspended, debarred, or otherwise restricted by any department or agency of the federal government or any state government or of the **City of Wildwood or the Wildwood Housing Authority** from doing business with such department of agency.
 - g. I have not defaulted on an obligation covered by a bond and have not been the subject of a claim under any fidelity bond.
 - h. All the names of the parties, known to me to be principals in this contract in which I propose to participate, are included on resumes submitted with this bid.
 - i. To my knowledge, if have not been found by HUD or the State of New Jersey to be in non-compliance with any of the applicable civil rights laws.
 - j. 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 State of America.
 - k. I am not an officer, employee, or commissioner of the **Wildwood Housing Authority** who is prohibited or limited by law from contracting with the **WHA**.
 - l. For the period beginning five years prior to the date of this certification, and except as shown by me on the attachment, I have not been suspended, debarred, or otherwise disqualified by the US Department of Housing and Urban Development, or any other governmental agency with which I have contracted, from doing business with any governmental agency.
 - m. 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 help to qualify me as a responsible principal for participation in this project

SECTION 000110 – CONTRACTOR’S PROPOSAL

FIRM NAME: _____

By: _____
Signature of Proposer if the Proposer is an Individual

Signature of Partner if the Proposer is a Partnership

Signature of Officer if the Proposer is a Corporation

Subscribed and sworn before me this ____ day of _____, 2 ____.

Signature of Notary Public

State of _____

My Commission expires: _____

AMERICANS WITH DISABILITIES ACT OF 1990

SECTION 000110 – CONTRACTOR’S PROPOSAL

Equal Opportunity for Individuals with Disability

The Contractor and the **Housing Authority of the City of Wildwood** (hereinafter “Owner”) do hereby agree that the provisions of Title 11 of the Americans with Disabilities Act of 1990 (the “Act”) (42 USC S121 01 et.seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs and activities provided or made available by public entities, and the rules and regulations promulgated pursuant there unto, are made a part of this contract. In providing any aid, benefit or service on behalf of the owner pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. In the event that the contractor, its agents, servants, employees or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the contractor shall defend the Owner in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the owner, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages, of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The contractor shall, at its own expense, appear, defend and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the Owner, or if the Owner incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the contractor shall satisfy and discharge the same at its own expense.

The Owner shall, as soon as practicable after a claim has been made against it, give written notice thereof to the Contractor along with full and complete particulars of the claim, if any action or administrative proceeding is brought against the Owner or any of its agents, servants, and employees, the Owner shall expeditiously forward or have forwarded to the Contract every demand, complaint, notice, summons, pleading or other process received by the Owner or its representatives.

It is expressly agreed and understood that any approval by the Owner of the services provided by the Contractor pursuant to the contract will not relieve the Contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the Owner pursuant to this paragraph.

It is further agreed and understood that the Owner assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the Contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the contractor’s obligations assumed in this Agreement, nor shall they be construed to relieve the Contractor from any liability, nor preclude the Owner from taking any other actions available to it under any other provisions of the Agreement or otherwise at law.

FIRM NAME: _____

By: _____
Signature

Date: _____

WILDWOOD HOUSING AUTHORITY

INSURANCE AND INDEMNIFICATION REQUIREMENTS

The successful bidder shall maintain current insurance as listed below:

1. General Liability at \$1,000,000.00 per occurrence, \$2,000,000.00 aggregate for bodily injury and property damage and shall include the interest of the **WHA**.

This instance shall include the following:

- a. Personal Injury Liability
 - b. Blanket contractual liability applying to assumption of liability under any written contract.
2. Worker’s Compensation at NJ statutory limits and Employer’s Liability of \$500,000.00
 3. Automobile Liability at \$1,000,000.00 limits
 4. Umbrella Liability at \$2,000,000.00 per occurrence and aggregate.

The **WHA**, its agents, officers and employees shall be named as additional insured parties. The Firm(s) shall provide copies of all Insurance Certificates to the **WHA** prior to execution of contract(s).

The Firm(s) shall defend, indemnify and hold harmless the **WHA**, its agents, officers and employees from any and all claims, suites, actions, damages and costs of any nature whatsoever, whether for personal injury, property damage or other liability arising out of or in any way connected with the Firm(s) obligations under this contract.

Firm Name _____

Address _____

Signature _____

WILDWOOD HOUSING AUTHORITY

SECTION 000110 – CONTRACTOR’S PROPOSAL

CONSTRUCTION CONTRACT BID DOCUMENT CHECKLIST

* This form need NOT be submitted. It is provided for bidder’s use in assuring compliance with required documentation.

Required by Owner (if checked)	Submission Requirements	Initial each required entry and, if required, submit the item
X	Bid Proposal	
X	Bid Guarantee	
X	Consent of Surety	
X	Stockholder Disclosure Certification	
X	Mandatory Affirmative Action Certification	
X	Proof of Business Registration	
X	Non-Collusion Affidavit	
X	No Material Change of Circumstances Certificate	
X	Subcontractor Information	
X	Receipt of Addenda	
X	Political Contributions Disclosure Form	
X	Public Works Contractor Registration	
X	Debarment Certification	
X	Disclosure of Investment Activity in Iran	
X	Affidavit of Non-Default	
X	ADA Compliance Form	
X	Insurance and Indemnification Form	

END OF SECTION

SECTION 000120 - FORMS

PART 1 GENERAL

1.1 FORMS TO BE SUBMITTED BY THE SUCCESSFUL BIDDER:

- A. Standard Form of Agreement Between Owner and Contractor (AIA Document A101).
- B. Certificate of Insurance (AIA Document G705).
- C. Performance Bond (AIA Document A311) or equal statutory forms.
- D. Labor and Material Payment Bond (AIA Document A311).
- E. Application & Certificate for Payment (AIA Document G702 and G703).
- F. Payer's request for Taxpayer Identification Number.
- G. Affirmative Action Affidavit.

1.2 PROJECT CLOSE OUT FORMS:

- A. Certificate of Substantial Completion (AIA Document G704).
- B. Contractor's Affidavit of Payment of Debts and Claims (AIA Document G706).
- C. Contractor's Affidavit of Release of Liens (AIA Document G706A).
- D. Consent of Surety Company to Final Payment (AIA Document G707).

1.3 GENERAL CONDITIONS

- A. The General Conditions of the Contract for Construction (A.I.A. Document A.201, Fourteenth Edition, dated 2017) as published by the American Institute of Architects and as herein modified and supplemented are a part of the Contract Documents and shall apply to all Contractors, separate Contractors and/or Subcontractors.

END OF SECTION

DO NOT QUALIFY AS SECTION 3 BUSINESS CONCERN
(Please sign and return if you do not qualify)

POTENTIAL STATUS AS A SECTION 3 FIRM: "As described in" 24 CFR 135.5, *Section 3 business concern*, I hereby declare that my firm does not qualify as a Section 3 business concern; in that:

(1) I am the sole owner and my income does not meet the Section 3 guidelines. Accordingly, my firm is not "51 percent or more owned by section 3 residents;" and

(2) As I am the sole employee, I have no "permanent, full-time employees." Accordingly, there are no Section 3 residents employed at my firm; and

(3) I do not have any intention to "subcontract in excess of 25 percent of the dollar award of all subcontracts to be awarded to . . . [a] section 3 business concern." As I will not be subcontracting any of the contract to any other business concern, claim of this is not "feasible."

MY PROPOSED SECTION 3 PLAN: (a) Within 24 CFR 135.1(a), HUD states that the purpose of the Section 3 requirements is to ". . . ensure that employment and other economic opportunities . . . shall, to the greatest extent feasible, . . . be directed to low- and very low-income persons . . .

(b) Subcontracting. I hereby state that it is not "feasible" or reasonable for me to hire or retain any other person, much less a section 3 person, to assist in the performance of the ensuing contract. To explain in detail: It is clear that performance of the work detailed within the contract requires a very specialized skill-set and extensive knowledge and experience. It is extremely unlikely that I would be able to locate a Section 3 person with the requisite knowledge and experience to perform this work. If the work was extensive enough, I have other skilled sources and could retain another contractor to help; however, the work listed is well within my capabilities and abilities and it is my decision that the WHA would be best served by my performing the contract myself.

(c) Numerical Goals. As the award of this contract to my firm would not at any time result in any new hires, the "numerical goals" detailed within 24 CFR 135.30(a)(4)(b) do not apply to my firm; nor do the optional subcontract awards detailed within the following 24 CFR 135.30(a)(4)(c)(2).

(d) Section 3 Offer. Within the Appendix to Part 135, *Examples of Efforts To Award Contracts to Section 3 Business Concerns*, HUD details a number things that the WHA may implement to increase the effectiveness of its Section 3 efforts. I am pleased to make this offer: consistent with the level set within 24 CFR 135.30(c)(2), as requested by the WHA, I will donate not less than 3% of my time contracted by the WHA to assist the WHA to effectively implement HUD requirements and these recommendations within the WHA Section 3 plan, procedures and efforts. I believe that this offer meets the HUD requirement of "to the greatest extent feasible" as I ascertain how I can help the WHA with this most important issue.

SIGNATURE

DATE: _____ PRINTED NAME: _____

COMPANY: _____

SECTION 3 BUSINESS PREFERENCE SUBMITTAL FORM
(Please return with Bid if claiming a Section 3 Business Preference)

- 1.0 Introduction:** This form must be fully completed, accompanied by all required attachments, for any bidder/proposer claiming a Section 3 Business Preference (hereinafter, "Preference").
- 1.1** This fully completed form and any attachments thereto, will become a part of any ensuing contract.
 - 1.2** Each bidder/proposer shall mark an "X" where provided following for all that apply to his/her claim of a Preference.
 - 1.3** The bidder/proposer shall provide as an attachment to this completed form a detailed work plan clearly explaining how each following "denoted effort" or "claim" will be accomplished). Failure on the part of the bidder/proposer to include any such required attachment fully explaining the claim of the bidder/proposer shall result in the HA not considering the claim for a Preference (though the HA will, if awarded, later require the bidder/proposer to submit the information to satisfy the Section 3 requirements of the ensuing contract).
 - 1.4** Please note that, even if a bidder/proposer does not complete and submit this form claiming a Preference, the HA may require this form to be completed by the successful bidder/proposer as an attachment to the ensuing contract to document the Section 3 Plan required for the ensuing contract.
- 2.0 Current Section 3 Status:** The undersigned bidder/proposer hereby claims that it is a Section 3 business concern and claims such preference in that he/she can provide evidence that (the bidder/proposer has attached justifying documentation for each item following marked with an "X"):
- 2.1** It is 51% or more owned by a Section 3 resident:
 - 2.1.1** HA resident lease;
 - 2.1.2** Evidence of participation in a public assistance program;
 - 2.1.3** Articles of Incorporation;
 - 2.1.4** Fictitious or Assumed Business Name Certificate;
 - 2.1.5** List of owners/stockholders and % of each;
 - 2.1.6** Latest Board minutes appointing officers;
 - 2.1.7** Organization chart with names and titles and brief functional statement;
 - 2.1.8** Partnership Agreement;
 - 2.1.9** Corporation Annual Report.
 - 2.2** At least 30% of its full-time employees include persons that are currently Section 3 residents, or within 3 years of the date of first employment with the business concern were Section 3 residents:

2.2.1 To justify this claim, please see the immediate following:

(1) Classification	(2) Total Number of Current Permanent Employees	(3) Total Number of Section 3 Resident Employees
Trainees		
Apprentices		
Journeypersons		
Laborers		
Supervisory		
Superintendent		
Professional		
Clerical		
Other:		

2.2.2 Attach a listing of all employees listed within column (3) above, including name and total annual income.

2.3 ___ He/she has a commitment to subcontract in excess of 25% of the dollar award of all subcontracts to be awarded to a Section 3 business concern.

2.3.1 To justify this claim, please see the immediate following:

(1) Name of Section 3 Firm Receiving the Subcontract	(2) Total Amount of Subcontract(s)	(3) Percentage the Subcontract(s) is/are of the Total Proposed Contract Amount
	\$	%
	\$	%
	\$	%

2.3.2 Attach for each firm listed immediately above:

2.3.2.1 A detailed description of the subcontracted activity; and

2.3.2.2 A fully completed Profile of Firm form.

3.0 Section 3 Preference Claim, Training and Employment Opportunities: The undersigned bidder/proposer hereby claims that it will, as detailed within 24 CFR §135.34, provide such "opportunities" as denoted following; to:

- 3.1 ___ Residents of the housing development or developments for which the section 3 covered assistance is expended (category 1 residents);
- 3.2 ___ Residents of other housing developments managed by the HA that is expending the section 3 covered housing assistance (category 2 residents);
- 3.3 ___ Participants in HUD Youthbuild programs being carried out in the metropolitan area (or nonmetropolitan county) in which the section 3 covered assistance is expended (category 3 residents);
- 3.4 ___ Other section 3 residents.

4.0 Section 3 Preference Claim, Section 3 Business Concerns: The undersigned bidder/proposer hereby claims that it will, as a result of the contract award, and as detailed within 24 CFR §135.36, provide such "opportunities" as denoted following; to:

- 4.1 ___ Business concerns that are 51 percent or more owned by residents of the housing development or developments for which the section 3 covered assistance is expended, or whose full-time, permanent workforce includes 30 percent of these persons as employees (category 1 businesses);
- 4.2 ___ Business concerns that are 51 percent or more owned by residents of other housing developments or developments managed by the HA that is expending the section 3 covered assistance, or whose full-time, permanent workforce includes 30 percent of these persons as employees (category 2 businesses); or
- 4.3 ___ HUD Youthbuild programs being carried out in the metropolitan area (or nonmetropolitan county) in which the section 3 covered assistance is expended (category 3 businesses).
- 4.4 ___ Business concerns that are 51 percent or more owned by section 3 residents, or whose permanent, full-time workforce includes no less than 30 percent section 3 residents (category 4 businesses), or that subcontract in excess of 25 percent of the total amount of subcontracts to business concerns identified in paragraphs (a)(1)(i) and (a)(1)(ii) of this section.

5.0 As further detailed herein, which of the following priority are you claiming? (NOTE: Mark with an "X" the highest claimed Priority only.)

PRIORITY CLAIMED (Mark "X")	MAX POINT VALUE	FACTOR TYPE	FACTOR DESCRIPTION
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		Objective	SECTION 3 BUSINESS PREFERENCE PARTICIPATION: (NOTE: A maximum of 15 points awarded).
	15 points		Priority I, Category 1a: Business concerns that are 51 percent or more owned by residents of the housing development or developments for which the Section 3-covered assistance is expended.
	13 points		Priority II, Category 1b: Business concerns whose workforce includes 30 percent of residents of the housing development for which the Section 3-covered assistance is expended, or within three (3) years of the date of first employment with the business concern, were residents of the Section 3-covered housing development.
	11 points		Priority III, Category 2a: Business concerns that are 51 percent or more owned by residents of any other housing development or developments.
	9 points		Priority IV, Category 2b: Business concerns whose workforce includes 30 percent of residents of any other public housing development or developments, or within three (3) years of the date of first employment with the business concern, were "Section 3" residents of any other public housing development.
	7 points		Priority V, Category 3: Business concerns participating in HUD Youth-build programs being carried out in the metropolitan area in which the Section 3-covered assistance is expended.
	5 points		Priority VI, Category 4a: Business concerns that are 51 percent or more owned by Section 3 residents in the metropolitan area, or whose permanent, full-time workforce includes no less than 30 percent of Section 3 residents in the metropolitan area, or within three (3) years of the date of employment with the business concern, were Section 3 residents in the metropolitan area.
	3 points		Priority VII, Category 4b: Business concerns that subcontract in excess of 25 percent of the total amount of subcontracts to Section 3 business concerns.

6.0 As detailed within 24 CFR §135, Appendix I, *Examples of Efforts To Offer Training and Employment Opportunities to Section 3 Residents*, denote the "efforts" your firm hereby formally commits to implement if you are awarded a contract:

6.1 ___ Entering into "first source" hiring agreements with organizations representing Section 3 residents.

6.2 ___ Sponsoring a HUD-certified "Step-Up" employment and training program for section 3 residents.

- 6.3 ___ Establishing training programs, which are consistent with the requirements of the Department of Labor, for public and Indian housing residents and other section 3 residents in the building trades.
- 6.4 ___ Advertising the training and employment positions by distributing flyers (which identify the positions to be filled, the qualifications required, and where to obtain additional information about the application process) to every occupied dwelling unit in the housing development or developments where category 1 or category 2 persons (as these terms are defined in §135.34) reside.
- 6.5 ___ Advertising the training and employment positions by posting flyers (which identify the positions to be filled, the qualifications required, and where to obtain additional information about the application process) in the common areas or other prominent areas of the housing development or developments. For HAs, post such advertising in the housing development or developments where category 1 or category 2 persons reside; for all other recipients, post such advertising in the housing development or developments and transitional housing in the neighborhood or service area of the section 3 covered project.
- 6.6 ___ Contacting resident councils, resident management corporations, or other resident organizations, where they exist, in the housing development or developments where category 1 or category 2 persons reside, and community organizations in HUD-assisted neighborhoods, to request the assistance of these organizations in notifying residents of the training and employment positions to be filled.
- 6.7 ___ Sponsoring (scheduling, advertising, financing or providing in-kind services) a job informational meeting to be conducted by an HA or contractor representative or representatives at a location in the housing development or developments where category 1 or category 2 persons reside or in the neighborhood or service area of the section 3 covered project.
- 6.8 ___ Arranging assistance in conducting job interviews and completing job applications for residents of the housing development or developments where category 1 or category 2 persons reside and in the neighborhood or service area in which a section 3 project is located.
- 6.9 ___ Arranging for a location in the housing development or developments where category 1 persons reside, or the neighborhood or service area of the project, where job applications may be delivered to and collected by a recipient or contractor representative or representatives.
- 6.10 ___ Conducting job interviews at the housing development or developments where category 1 or category 2 persons reside, or at a location within the neighborhood or service area of the section 3 covered project.

- 6.11 ___ Contacting agencies administering HUD Youthbuild programs, and requesting their assistance in recruiting HUD Youthbuild program participants for the HA's or contractor's training and employment positions.
- 6.12 ___ Consulting with State and local agencies administering training programs funded through JTPA or JOBS, probation and parole agencies, unemployment compensation programs, community organizations and other officials or organizations to assist with recruiting Section 3 residents for the HA's or contractor's training and employment positions.
- 6.13 ___ Advertising the jobs to be filled through the local media, such as community television networks, newspapers of general circulation, and radio advertising.
- 6.14 ___ Employing a job coordinator or contracting with a business concern that is licensed in the field of job placement (preferably one of the section 3 business concerns identified in part 135), that will undertake, on behalf of the HA, other recipient or contractor, the efforts to match eligible and qualified section 3 residents with the training and employment positions that the HA or contractor intends to fill.
- 6.15 ___ For an HA, employing section 3 residents directly on either a permanent or a temporary basis to perform work generated by section 3 assistance. (This type of employment is referred to as "force account labor" in HUD's Indian housing regulations. See 24 CFR §905.102, and §905.201(a)(6).)
- 6.16 ___ Where there are more qualified section 3 residents than there are positions to be filled, maintaining a file of eligible qualified section 3 residents for future employment positions.
- 6.17 ___ Undertaking job counseling, education and related programs in association with local educational institutions.
- 6.18 ___ Undertaking such continued job training efforts as may be necessary to ensure the continued employment of section 3 residents previously hired for employment opportunities.
- 6.19 ___ After selection of bidders but prior to execution of contracts, incorporating into the contract a negotiated provision for a specific number of public housing or other section 3 residents to be trained or employed on the section 3 covered assistance.
- 6.20 ___ Coordinating plans and implementation of economic development (e.g., job training and preparation, business development assistance for residents) with the planning for housing and community development.

- 7.0 As detailed within 24 CFR §135, Appendix II, *Examples of Efforts To Award Contracts to Section 3 Business Concerns*, denote following the "efforts" your firm hereby formally commits to implement if you are awarded a contract:
- 7.1 ___ Utilizing procurement procedures for section 3 business concerns similar to those provided in 24 CFR part 905 for business concerns owned by Native Americans (see section III of this Appendix).
 - 7.2 ___ In determining the responsibility of potential contractors, consider their record of section 3 compliance as evidenced by past actions and their current plans for the pending contract.
 - 7.3 ___ Contacting business assistance agencies, minority contractor's associations and community organizations to inform them of contracting opportunities and requesting their assistance in identifying section 3 businesses which may solicit bids or proposals for contracts for work in connection with section 3 covered assistance.
 - 7.4 ___ Advertising contracting opportunities by posting notices, which provide general information about the work to be contracted and where to obtain additional information, in the common areas or other prominent areas of the housing development or developments owned and managed by the HA.
 - 7.5 ___ For HAs, contacting resident councils, resident management corporations, or other resident organizations, where they exist, and requesting their assistance in identifying category 1 and category 2 business concerns.
 - 7.6 ___ Providing written notice to all known section 3 business concerns of the contracting opportunities. This notice should be in sufficient time to allow the section 3 business concerns to respond to the bid invitations or request for proposals.
 - 7.7 ___ Following up with section 3 business concerns that have expressed interest in the contracting opportunities by contacting them to provide additional information on the contracting opportunities.
 - 7.8 ___ Coordinating pre-bid meetings at which section 3 business concerns could be informed of upcoming contracting and subcontracting opportunities.
 - 7.9 ___ Carrying out workshops on contracting procedures and specific contract opportunities in a timely manner so that section 3 business concerns can take advantage of upcoming contracting opportunities, with such information being made available in languages other than English where appropriate.
 - 7.10 ___ Advising section 3 business concerns as to where they may seek assistance to overcome limitations such as inability to obtain bonding, lines of credit, financing, or insurance.

- 7.11 ___ Arranging solicitations, times for the presentation of bids, quantities, specifications, and delivery schedules in ways to facilitate the participation of section 3 business concerns.
- 7.12 ___ Where appropriate, breaking out contract work items into economically feasible units to facilitate participation by section 3 business concerns.
- 7.13 ___ Contacting agencies administering HUD Youthbuild programs, and notifying these agencies of the contracting opportunities.
- 7.14 ___ Advertising the contracting opportunities through trade association papers and newsletters, and through the local media, such as community television networks, newspapers of general circulation, and radio advertising.
- 7.15 ___ Developing a list of eligible section 3 business concerns.
- 7.16 ___ For HAs, participating in the “Contracting with Resident-Owned Businesses” program provided under 24 CFR part 963.
- 7.17 ___ Establishing or sponsoring programs designed to assist residents of public or Indian housing in the creation and development of resident-owned businesses.
- 7.18 ___ Establishing numerical goals (number of awards and dollar amount of contracts) for award of contracts to section 3 business concerns.
- 7.19 ___ Supporting businesses which provide economic opportunities to low income persons by linking them to the support services available through the Small Business Administration (SBA), the Department of Commerce and comparable agencies at the State and local levels.
- 7.20 ___ Encouraging financial institutions, in carrying out their responsibilities under the Community Reinvestment Act, to provide no or low interest loans for providing working capital and other financial business needs.
- 7.21 ___ Actively supporting joint ventures with section 3 business concerns.
- 7.22 ___ Actively supporting the development or maintenance of business incubators which assist Section 3 business concerns.

8.0 The undersigned bidder/proposer hereby declares:

- 8.1 The information within this completed form (and any attachments) is, to the best of his/her knowledge, true and accurate.
- 8.2 He/she is aware that if the HA discovers that any such information is not true and accurate, such shall allow the HA to:

8.2.1 NOT award the bidder/proposer a Preference; and

8.2.2 If the HA deems such is warranted (e.g. in the case of submitting information the bidder/proposer knows to be untrue), declare such bidder/proposer to be nonresponsive and not allow the bidder/proposer to receive an award.

8.3 He/she is aware that if he/she receives and award as the result of this competitive solicitation, even though he/she may not receive a Preference from the HA as a result of this submittal, he/she will still be required to, to the greatest extent feasible, implement a Section 3 Plan, including a commitment to interview and consider hiring Section 3 persons (most specifically, residents of the HA) whenever the successful bidder/proposer has need to hire additional employees during the term of the ensuing contract.

SIGNATURE _____ DATE: _____ PRINTED NAME _____

COMPANY _____

Section 3 Business Preference Explanation Attachment

1.0 Introduction: The purpose of this document is to, in simplified terms, explain to bidders/proposers major issues pertaining to the Section 3 Business Preference program required by the HA's funding source, the U.S. Department of Housing and Urban Development (HUD). Also, hereinafter, a Section 3 Business Preference will be referred to as "Preference."

2.0 What is Section 3?

2.1 Section 3 is a provision of the Housing and Urban Development Act of 1968, which recognizes that HUD funds are typically one of the largest sources of federal funding expended in communities, including Cape May County, NJ. Section 3 is intended to ensure that when a contractor has need to hire additional people as the result of receiving a contract from the Wildwood Housing Authority (HA), preference must be given to low- and very low-income persons residing in Cape May County, NJ (Section 3 resident), or Section 3 business concerns.

2.2 The requirements pertaining to Section 3 apply only to purchases and contracts the HA completes for work--the requirements of Section 3 DO NOT apply to purchases or contracts the HA completes solely for commodities or equipment; meaning, "no work provided, no Section 3 required."

2.3 Section 3 is race and gender neutral in that preferences are based on income-level and location.

3.0 What does the term "Section 3 resident" mean?

3.1 A "Section 3 resident" is:

3.1.1 a public housing resident of the HA; or

3.1.2 a low- or very low-income resident of Cape May County, NJ.

3.1.2.1 Low- and very low-income within Cape May County, NJ, are defined as residents within the following income levels for FY 2017 (Median Income = \$73,400):

Income Limit Category	(1) Person	(2) Persons	(3) Persons	(4) Persons	(5) Persons	(6) Persons	(7) Persons	(8) Persons
Very Low (50%)	\$26,250	\$30,000	\$33,750	\$37,500	\$40,500	\$43,500	\$46,500	\$49,500
Extremely Low (30%)	\$15,750	\$18,000	\$20,420	\$24,600	\$28,780	\$32,960	\$37,140	\$41,320
Low (80%)	\$42,000	\$48,000	\$54,000	\$60,000	\$64,800	\$69,600	\$74,400	\$79,200

Income Limit figures are based on FY2017 Fair Market Rent (FMR).

Section 3 Business Preference Explanation Attachment

4.0 What does the term "Section 3 business concern" mean?

- 4.1 A "Section 3 business concern" is a business that can provide evidence that it meets one of the following:
 - 4.1.1 It is 51% or more owned by a Section 3 resident; or
 - 4.1.2 At least 30% of its full- time employees include person that are currently Section 3 residents, or within 3 years of the date of first employment with the business concern were Section 3 residents; or
 - 4.1.3 Provides evidence of a commitment to subcontract in excess of 25% of the dollar award of all subcontracts to be awarded to business concerns that meet the qualifications within the preceding 3.1.1 or 3.1.2.

5.0 Is participation in Section 3 optional?

- 5.1 Except for purchases or contracts solely for commodities and equipment, as a part of the solicitation the HA will offer all bidders and proposers the option of a Preference.
- 5.2 In response to a competitive solicitation (quotes; bids; RFP's), bidders and proposers are not required to respond to the HA with a claim of a Preference (meaning, such claim is optional and failure to respond with a claim of a Preference will not cause the bidder or proposer to be deemed non-responsive); however, if a bidder or proposer does claim a Preference, then the HA will consider, investigate, and determine the validity of each such claim for a Preference.
- 5.3 Regardless of whether or not a bidder or proposer claims a Preference in response to a solicitation, the recipient of the award will be required to, "to the greatest extent feasible," implement the requirements of Section 3 during the ensuing awarded contract term.

6.0 Must a contractor receiving an award from the HA take part in the Section 3 program?

- 6.1 The short answer is "Yes," as detailed following, each contractor must, "to the greatest extend feasible," take part in the program.
 - 6.1.1 If the contractor wishes, he/she may claim a Preference during the competitive solicitation process (please see Section 2.0 thereon).
 - 6.1.1.1 Pertaining to Quotations for Small Purchases (QSP's), the HA will give a Preference of 10% to any quoter deemed to be eligible to receive such Preference ("deemed," based on information the quoter submits in response to the QSP

Section 3 Business Preference Explanation Attachment

issued). This means that for a quoter deemed eligible to receive a Preference, though he/she, for example, submits a quote of \$10,000, such quote will be considered by the HA to be \$9,000 (10% less), even though, if awarded, the HA will pay the quoter the full \$10,000 originally quoted.

6.1.1.2 Pertaining to Invitations For Bids (IFB's), the HA will give a Preference based upon the following:

	Preference = lesser of:
When the lowest responsive bid is less than \$100,000	10% of that bid or \$9,000
When the lowest responsive bid is:	
At least \$100,000 but less than \$200,000	9% of that bid, or \$16,000
At least \$200,000 but less than \$300,000	8% of that bid, or \$21,000
At least \$300,000 but less than \$400,000	7% of that bid, or \$24,000
At least \$400,000 but less than \$500,000	6% of that bid, or \$25,000
At least \$500,000 but less than \$1,000,000	5% of that bid, or \$40,000
At least \$1,000,000 but less than \$2,000,000	4% of that bid, or \$60,000
At least \$2,000,000 but less than \$4,000,000	3% of that bid, or \$80,000
At least \$4,000,000 but less than \$7,000,000	2% of that bid, or \$105,000
\$7,000,000 or more	1 1/2% of lowest responsive bid, with no dollar limit

6.1.1.3 Pertaining to Request For Proposals (RFP's) and Request For Qualifications (RFP/QBS), the HA will give a Preference based upon the following:

MAX POINT VALUE	FACTOR TYPE	FACTOR DESCRIPTION
	Objective	SECTION 3 BUSINESS PREFERENCE PARTICIPATION: (NOTE: A maximum of 15 points awarded).
15 points		Priority I, Category 1a: Business concerns that are 51 percent or more owned by residents of the housing development or developments for which the Section 3-covered assistance is expended.
13 points		Priority II, Category 1b: Business concerns whose workforce includes 30 percent of residents of the housing development for which the Section 3-covered assistance is expended, or within three (3) years of the

Section 3 Business Preference Explanation Attachment

		date of first employment with the business concern, were residents of the Section 3-covered housing development.
11 points		Priority III, Category 2a: Business concerns that are 51 percent or more owned by residents of any other housing development or developments.
9 points		Priority IV, Category 2b: Business concerns whose workforce includes 30 percent of residents of any other public housing development or developments, or within three (3) years of the date of first employment with the business concern, were "Section 3" residents of any other public housing development.
7 points		Priority V, Category 3: Business concerns participating in HUD Youth-build programs being carried out in the metropolitan area in which the Section 3-covered assistance is expended.
5 points		Priority VI, Category 4a: Business concerns that are 51 percent or more owned by Section 3 residents in the metropolitan area, or whose permanent, full-time workforce includes no less than 30 percent of Section 3 residents in the metropolitan area, or within three (3) years of the date of employment with the business concern, were Section 3 residents in the metropolitan area.
3 points		Priority VII, Category 4b: Business concerns that subcontract in excess of 25 percent of the total amount of subcontracts to Section 3 business concerns.
15 points		Maximum Preference Points (Additional)

6.1.2 It is possible that a contractor may demonstrate, to the HA's satisfaction, that he/she has made a good faith and reasonable effort to comply with the requirements of Section 3, but it is not feasible to implement any portion of the Section 3 program. Such failure must be fully documented by the contractor and approved by the HA or that contractor may be deemed not responsible by the HA and the contract may be, at the HA's discretion, not awarded or terminated.

7.0 Be aware that, as detailed within §138.38, the following Section 3 Clause will be a part of every applicable contract the HA executes, and when a contractor executes the contract he/she is thereby agreeing to comply with the following:

SECTION 3 CLAUSE

Section 3 Business Preference Explanation Attachment

- A. The work to be performed under this contract is project assisted under a program providing direct Federal financial assistance from the Department of Housing and Urban Development and 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 requires that to the greatest extent feasible, opportunities for training and employment be given to lower income residents of the area of the Section 3 covered project and contracts for work in connection with the project be awarded to business concerns which are located in or owned in substantial part by persons residing in the area of the Section 3 covered project.
- B. The parties to this contract will comply with the provisions of said Section 3 and the regulations issued pursuant thereto by the Secretary of Housing and Urban Development set forth in 24 CFR, Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of this contract. The parties to this contract certify and agree that they are under no contractual or other disability, which would prevent them from complying with these requirements.
- C. The contractor will send to each labor organization or representative of workers with which s/he has a collective bargaining agreement or other contract or understanding, if any, a notice advising the said labor organization or workers' representative of its commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.
- D. The contractor will include this Section 3 clause in every subcontract for work in connection with the project and will, at the direction of the applicant for or recipient of Federal financial assistance, take appropriate action pursuant to the subcontract upon a finding that the subcontractor is in violation of regulations issued by the Secretary of Housing and Urban Development, 24 CFR, Part 135, the contractor will not subcontract with any subcontractor where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR, Part 135 and will not let any subcontract unless the subcontractor has first provided it with a preliminary statement of ability to comply with the requirements of this regulation.
- E. Compliance with the provisions of Section 3, the regulations set forth in 24 CFR, Part 135, and all applicable rules and orders of the Department issued thereunder prior to the execution of the contract, shall be a condition of the Federal financial assistance provided to the project, binding upon the applicant or recipient, its contractors and subcontractors, its successors and assigns to those sanctions specified by the grant or loan agreement or contract through which Federal assistance is provided and to such sanctions as are specified by 24 CFR, Part 135.

Section 3 Business Preference Explanation Attachment

- F. Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

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

1.1 INSURANCE REQUIREMENTS/INDEMNITY

- A. Contractors Insurance: Before commencing the contract work, and as a condition precedent for payment, the Contractor shall purchase and maintain insurance, in conformance with the provisions contained in this Exhibit. This insurance will provide a defense and indemnify the **Wildwood Housing Authority (WHA)** against any such claim, damage, loss or expense that is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work: itself) including the loss of use, which arises out of the Contractor's operations under this agreement This insurance shall apply regardless of whether the operations, actions, derelictions or failures to act from which the claim arises, are attributable to the Contractor, any of its consultants, officers, agents, subcontractors, employees, or anyone directly or indirectly employed by any of them including anyone for whose acts of the aforementioned may be liable by operation of statute, government regulation, or applicable case law.
- B. Proof of this insurance shall be provided to the **WHA** before the work: commences as set forth below. In no event shall the failure to provide this proof prior to the commencement of the work, be deemed a waiver by the **WHA** of the Contractor's insurance obligations set forth herein.
- C. In the event that the insurance company (ies) issuing the policy (ies) required by this exhibit deny coverage to the **WHA**, the Contractor will defend and indemnify the **WHA** at the Contractor's expense.
- D. The Contractor must obtain the required insurance with the carrier rated A- VII or better by AM Best. The Contractor shall maintain at least the limits of liability as set forth below:
- Commercial General Liability Insurance**
\$ 1,000,000 Each Occurrence Limit (Bodily Injury and property Damage)
\$ 2,000,000 General Aggregate
- \$ 2,000,000 Product/Completed Operations Aggregate
\$ 1,000,000 Personal and Advertising Injury Limit.
- Contractual Liability that will respond to indemnification clause included in this Agreement and the "Designated Construction Project(s) General Aggregate Limit" endorsement shall be included in the policy.
- Comprehensive Automobile Liability Insurance**
\$ 1,000,000 Combined Single Limit Bodily Injury and Property Damage.
Coverage must include all owned, non-owned and hired vehicles used by the Contractor.
- Workers' Compensation and Employers' Liability Insurance**
\$ 500,000 Each Accident
\$ 500,000 Each Employee for Injury by Disease
\$ 500,000 Aggregate for Injury by Disease.
If the Subcontractor is a Sole Proprietor, Partnership or ILC, Insurance Policy and Certificate must indicate that the proprietor/ partners/members are "included".
- Umbrella**
\$2,000,000 per occurrence
\$2,000,000 Aggregate.

SECTION 000300 - SUPPLEMENTARY GENERAL CONDITIONS

- E. Additional Insured Status and Certificate of Insurance
1. The **WHA**, along with their respective officers, agents and employees, shall be named as Additional Insured for Operations and Products/Completed Operations on the Contractor's Commercial General Liability Policy and the Contractor's Automobile Liability, which must be primary and non-contributory with respect to the Additional Insured. This insurance shall remain in effect as set forth below, in the "Continuation of Coverage" provision.
 2. It is expressly understood by the parties to this Contract that it is the intent of the parties that any insurance obtained by the **WHA** is deemed excess, non-contributory and not co-primary in relation to the coverage(s) procured by the Contractor, any of its consultants, officers, agents, subcontractors, employees or anyone directly or indirectly employed by any of them or by anyone for whose acts any of the aforementioned may be liable by operation of statute, government regulation or applicable case law.
 3. A Waiver of Subrogation Clause shall be added to the General Liability and Automobile policies in favor of the **WHA**, and this clause shall apply to the **WHA's** officers, agents and employees with respect to all projects during the policy term. It should also apply to the Contractor's Workers' Compensation policy if allowed by state law.
 4. Prior to Commencement of work, Contractor shall submit a Certificate of Insurance in favor of the **WHA** and an Additional Insured Endorsement (in a form acceptable to the **WHA**) as required hereunder.
- F. No Limitation on Liability
1. In any and all claims against the Additional Insured by any employee of the Contractor, anyone directly or indirectly employed by the Contractor or anyone for whose acts the Contractor may be liable, the indemnification obligation shall not be limited by any limitation on the amount or type of damage, compensation or benefits payable by or for the Contractor under workers' compensation acts, disability benefit acts or other employee benefit acts.
- G. Cancellation, Renewal and Modification
1. The Contractor shall maintain in effect all insurance coverages required under this Agreement at the Contractor's sole expense. In the event the Contractor fails to obtain or maintain any insurance coverage required under this Agreement, the **WHA** may, at its sole discretion, purchase such coverage as desired for the **WHA's** benefit and charge the expense to the Contractor, or, in the alternative, terminate this Agreement.
- H. Continuation of Coverage
1. The Contractor shall continue to carry Completed Operations Liability Insurance for at least three years after either ninety-(90) days following Substantial Completion of the Work or final payment to the Contractor, whichever is later. The Contractor shall furnish the **WHA** evidence of such insurance at final payment and in each successive year during which the insurance coverage must remain in effect.

1.2 PERFORMANCE BOND:

- A. Having satisfied all conditions of award as set forth, the successful bidder shall furnish performance and payment bonds as required in the Instructions to Bidders.

SECTION 000300 - SUPPLEMENTARY GENERAL CONDITIONS

- B. On each such bond, the rate of premium shall be stated, together with the total amount of the premium charged. The current power of attorney for the person who signs for any surety company shall be attached to such bonds.
- C. The failure of any successful bidder to execute such contract and to supply the required bonds within seven (7) days after the prescribed forms are presented for signature, or within such extended period as the Owner may grant based upon reasons determined adequate by the Owner, shall constitute a default, entitling the Owner to the remedies set forth in the Instructions to Bidders.

1.3 ADDITIONAL OR SUBSTITUTE BOND:

- A. If at any time the Owner, for justifiable cause, shall be or become dissatisfied with the Surety or Sureties for the Performance and/or Payment Bonds, the Contractor shall within five (5) days after the notice from the Owner to do so, substitute an acceptable bond (or bonds) in such form and sum and signed by such other Surety or Sureties as may be satisfactory to the Owner. The premiums on such bond shall be paid by the Contractor. No further payments shall be deemed due nor shall be made until the new Surety or Sureties shall have furnished such an acceptable bond to the Owner.

1.4 PROGRESS PAYMENTS AND RETAINER

- A. The Owner will make progress payments to the contractor on a monthly basis as follows:
 - 1. The Owner shall pay the Contractor the Contract Sum based on Contractor's Applications for Payment submitted to the Architect, and certified by the Architect to the Owner as provided in the Contract Documents and below:
 - a. The work period covered for each Application for Payment submitted by the Contractor to the Architect shall be for the work completed during one calendar month ending on the last day of the preceding month.
 - b. Contractor shall submit an Application for Payment to the Architect no later than the 15th day of the following month. The Architect shall issue the Certificate of Payment to the Owner within 15 days after receipt. The Owner shall make payment to the Contractor no later than 30 days after the Owner receives the Architect's Certificate of Payment.
 - 2. Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form and supported by such data to substantiate its accuracy as the Architect may require. This schedule, once approved by the Architect, shall be used as the basis for reviewing the Contractor's Applications for Payment.
 - a. Each Application for Payment shall indicate the percentage of completing of each portion of the work as of the end of the period covered by the Application for Payment and shall be computed as provided in the Contract Documents and as follows:
 - 1. The portion of the Contract Sum allocable to the completed work shall be determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum

allocated to that portion of the Work in the schedule of values, less retainage of 5%. The retainage shall be 2% on amounts in excess of \$500,000.00.

2. The portion of the Contract Sum allocable to materials and equipment delivered and securely stored at the present site for subsequent incorporation into the Project (or if approved in advance by the Owner, suitable stored off the site at a location agreed upon in writing), less retainage of 10%.
 3. There shall be deducted therefrom the total payments previously made by the Owner to the Contractor for work already completed plus any amounts which the Architect has withheld or disapproved.
 3. Upon Substantial Completion of the Work, the Architect may approve a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for uncompleted or defective Work, retainage applicable to such work, plus claims, closeout work and work needed to achieve full performance.
 4. Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor within 30 days after the Contractor has fully performed the Contract and a final Certificate of Payment has been issued by the Architect and Contractor has completed all closeout documentation to the satisfaction of the Owner.
- B. Progress payments for stored materials will be made only when the location of stored materials is provided in writing by the Contractor along with receipts for said material and insurance certificate for the material wherever stored. Liability for stored material whether stored on or off site, will be the responsibility of the Contractor. Basis of payment for stored materials shall consist of actual invoice cost only less retainage.
- C. Ownership of all materials stored or on site shall be with the Owner but Contractor shall be responsible for caring for and insuring such materials until they are permanently incorporated into the project. Owner may, at Owner's option, insure materials before they are incorporated into the project.

1.5 TIME OF COMPLETION / LIQUIDATED DAMAGES

- A. Work, including the procurement of permits and processing of required submittals, shall be started within five (5) days of the date of the Notice to Proceed which is the date of the Owner-Contractor Agreement for this work unless otherwise agreed to by the Owner and Contractor.
- B. All work, except as modified herein, shall be substantially completed within **two hundred forty (240) calendar days**.
- C. The date of substantial completion is defined as the date when construction is sufficiently completed, in accordance with the Contract Documents, as modified by any Change Order agreed to by the parties so that the Owner can occupy the project for the intended use and a Temporary Certificate of Occupancy is issued. Partial occupation of the project shall not be deemed to be substantially complete.

SECTION 000300 - SUPPLEMENTARY GENERAL CONDITIONS

- D. Time shall be of the essence of the performance of the Contract. The Contractor and the Owner agree, that the date of beginning and the time for completion as specified in the Contract of work to be done hereunder are essential conditions of this Contract and it is further mutually understood and agreed that the work embraced in this Contract shall be commenced on the date to be specified above or in a Notice to Proceed issued by Owner or Architect.
- E. The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will insure full completion thereof, by and between the Contractor and the Owner, that the time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.
- F. If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner **five hundred (\$500.00) dollars per day**, not as a penalty, but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work.
- G. The liquidated damages amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain. The amount is agreed upon to be the amount of damages which the Owner would sustain and may be retained from time to time by the Owner from amounts due to Contractor.
- H. It is further agreed that time is of the essence of each and every portion of this Contract and of the Specifications wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be of the essence to this Contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the Owner determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the Owner; Provided further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of work is due:
1. To any preference, priority or allocation order duly issued by the Government;
 2. To unforeseeable cause beyond the control and without the fault or negligence of the Contractor, included, but not restricted to, acts of God, or of other public enemy, act of the Owner, acts of another contractor in the performance of a contract with the Owner, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and severe weather; or
 3. To any delays of subcontractors or supplies occasioned by any of the causes specified in subsections 1. and 2. of this article.
- I. Contractor shall be required to request an extension of time for any delay under Article 1.5H in the manner set forth in the General Conditions.

SECTION 000300 - SUPPLEMENTARY GENERAL CONDITIONS

1.6 OBSERVANCE OF LAWS:

- A. The Contractor shall observe and comply with all Federal, State and local laws that affect those engaged or employed in this project, the materials and/or the conduct of the work.
- B. All such laws and/or ordinances affecting this Contract in any way shall be part of the Contract as if included herein.
- C. The specifications, instructions to bidders, and all accompanying documents, including the bid and the contract as awarded, shall be construed to be in accordance with the laws of the State of New Jersey.

1.7 SPECIFICATIONS/JURISDICTIONAL ISSUES

- A. The titles to the Divisions of these Specifications are introduced merely for convenience and are not necessarily a correct segregation of labor or materials. Such separations shall not operate to make the Architect an arbiter to establish limits between the General Contractor and Subcontractors.
- B. The Contractor shall classify and allocate the furnishing of materials and the performance of work to the various trades in accordance with local customs, jurisdictional awards, regulations and decisions insofar as they are applicable.
- C. The Contractor for General Construction and all subcontractors shall conduct all their operations on this project in such a manner that no jurisdictional disputes arise regarding unloading, handling, installations, and connections of the various items in the several trades involved.

1.8 LONG LEAD ITEMS

- A. Contractor shall submit a list of all materials, equipment or components which are anticipated to require more than one-week delivery, together with scheduled ordering and delivery time table. This will be discussed and reviewed regularly at the job sit meetings. Upon request by the Architect, the Contractors shall be prepared to produce evidence of having placed orders for specific materials, equipment, and components.

1.9 GUARANTEE

- A. The Contractor shall guarantee all materials and workmanship installed and/or performed under this Contract to be free of defects which may impair the strength, durability or appearance of said work and/or may make it unsuitable for the intended purpose, for a period of one (1) year from the date of final completion, unless otherwise noted in the other sections of this Specification.
- B. The Contractor shall repair and/or replace any such work to the satisfaction of the Owner at no additional cost to the Owner.

SECTION 000300 - SUPPLEMENTARY GENERAL CONDITIONS

- C. This guarantee is in addition to and shall in no way limit any other warranty, guarantee or maintenance bond required by the provisions of the Contract Documents or any warranty of a manufacturer of supplier.
- D. Contractor or manufacturers agree to provide in the closeout documents a manufacturer's warranty or warranties in the form attached to or provided for in this manual or better.

1.10 REGULATIONS

- A. The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the Drawings and Specifications are at variance therewith, he shall promptly notify the Architect in writing and any necessary changes shall be adjusted as provided for in the Contract Documents. If the Contractor performs any work knowing it to be contrary to such laws, ordinances, rules, and regulations, and without such notice to the Architect, he shall bear all costs arising therefrom.

1.11 REQUIRED PROVISIONS DEEMED INSERTED:

- A. Each and every provision of law and clause required by law to be inserted in the Agreement between Owner and Contractor shall be deemed to be inserted therein and the Agreement shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the Agreement shall forthwith be physically amended to make such insertion or correction.

1.12 SUSPENSION OF WORK / NO DAMAGES FOR DELAY:

- A. Should the Owner be prevented or enjoined from proceeding with work or from authorizing its prosecution either before or after its prosecution, for any reason, the Contractor shall not be entitled to make or assert a claim for damage by reason of said delay, but time for completion of the work will be extended to such reasonable time as the Owner may determine will compensate for time lost by such delay with such determination to be set forth in writing.

1.13 ANTI-KICKBACK ACT

- A. The parties to this contract will comply with the requirements of the Copeland "Anti-Kickback Act" (18 USC 374) and N.J.S.A. 2C:21-33, 27-4, 27-6, 22-9, N.J.S.A. 40A:9-22.1, N.J.S.A. 52: 13D-21, 34-48 and N.J.S.A. 56:9-11.

1.14 SAFETY PRECAUTIONS AND PROGRAMS

- A. Neither the Owner nor the Architect will be responsible for providing a safe working place for the Contractors, their Subcontractors or their employees, or any individual responsible for the work.

SECTION 000300 - SUPPLEMENTARY GENERAL CONDITIONS

- B. Neither the professional activities of the Architect, nor the presence of the Architect or the Architect's employees and sub-consultants at a construction site, shall relieve the Contractor and any other entity of their obligations, duties, and responsibilities including, but not limited to, construction means, methods, sequences, techniques or procedures necessary for performing, superintending or coordinating all portions of the work of construction in accordance with the contract documents and any health or safety precautions required by any regulatory agencies. The Architect and Architect's personnel have no authority to exercise any control over any connection with their work or any health or safety precautions. The Owner agrees that the Contractor is solely responsible for job site safety and warrants that this intent shall be made evident in the Owner's agreement with the Contractor. The Owner also agrees that the Owner, the Architect and the Architect's consultants shall be indemnified and shall be made additional insured under the Contractor's general liability insurance policy as otherwise provided herein.

1.15 SAFETY OF PERSONS AND PROPERTY

- A. The Contractor shall conform to requirements of the Federal Occupational Safety and Health Act, and the Construction Safety Code. The requirements of the State, Local and Association Codes shall apply where they are equal to or more restrictive than the requirements of the Federal Act.
- B. The Contractor will be responsible for providing general safeguarding, compliance with the requirements of laws, regulations and codes relating to safety and coordinating with all Contractors, subcontractors and material suppliers on the Project. Contractors and subcontractors shall comply with the Construction Safety Act, N.J.S.A. 34:5-166 et seq.
- C. The Contractor shall protect all materials and equipment for which he is responsible, which is stored at the Project Site for incorporation in the work, or which has been incorporated into the work. He shall replace all such materials and equipment which may be lost, stolen or damaged at his expense, whether or not such materials or equipment have been entirely or partially paid for by the Owner.
- D. Each Contractor shall submit Material Safety Data Sheets (MSDS) to the General Contractor for all material to be used on site and prior to material being sought on site. The General Contractor shall maintain Material Safety Data Sheets and make them available for inspection to everyone as required by law.

1.16 VOLATILE ORGANIC COMPOUNDS (VOC)

- A. All material used on this Project shall comply with all applicable governmental and local VOC requirements.

END OF SECTION

SECTION 000400 - PREVAILING WAGE RATES

1.1 GENERAL

- A. Federal and State prevailing wages are required to be paid on this project.
- B. The higher of these two rates for the various disciplines defined herein will be in effect on this project.
- C. Bidders can contact: Ms. Karen Chiarello, Director of Administration (856) 825-8860 Extension 1028 for copies of current wage rates.

1.2 PREVAILING WAGES: CONSTRUCTION, ALTERATIONS, REPAIRS

- A. The State of New Jersey Prevailing Wage Act, Chapter 150 Laws of 1963 with applicable statewide wage rates and the wage rates for the county of the location of the **Housing Authority**, as published by the Department of Labor and Workforce Development in conformance with N.J.S.A. 34:11-56.25 et. seq., are deemed to be included in these bid contract documents. Copies of these wage rates may be obtained from the State Department of Labor and Workforce Development, and/or viewed at <http://lwd.dol.state.nj.us/> the Prevailing Wages Determination Section.
- B. **Compliance with NJ Prevailing Wage Act**
Every contractor and subcontractor performing services in connection with this project, shall pay all workers a wage rate not less than the published prevailing wage rates, for the locality the work is being performed, as designated by the New Jersey Department of Labor and Workforce Development.
- C. **Certified Payrolls**
Every contractor agrees to submit to the **Housing Authority** a certified payroll for each payroll period within ten (10) days of the payment of wages including those of its subcontractors. The contractor further agrees that no payments will be made to the Contractor by the **Housing Authority**, if certified payrolls are not received by the **Housing Authority**. It is the Contractor's responsibility to insure timely receipt by the **Housing Authority** of certified payrolls.
- D. **Subcontractors**
Every contractor agrees to provide the names of all subcontractors who will perform work on the project prior to the subcontractor starting work.
- E. **Submission of Affidavit**
Before final payment, the contractor shall furnish the **Housing Authority** with an affidavit stating that all workers, including subcontractor workers, have been paid the prevailing rate of wages in accordance with State of New Jersey requirements. The contractor shall keep an accurate record showing the name, craft, or trade and actual hourly rate of wages paid to each workman employed by him in connection with this work. Upon request, the Contractor(s) and each Subcontractor shall file written statements certifying to the amounts then due and owing to any and all workmen for wages due on account of the work. The statements shall be verified by the oaths of the Contractor or Subcontractor, as the case may be.
- F. **Posting of Prevailing Wages**
The contractor and subcontractor shall post the prevailing wage rates for each craft and classification involved in the work, including the effective date of any changes thereof, in prominent and easily accessible places at the Site of the work and in such place or places as used to pay workmen their wages. Ref. 18A:7G-23 and N.J.S.A. 34:11-56.32.

SECTION 000400 - PREVAILING WAGE RATES

G. **Prevailing wages Certification – Submission with Bid**

The bidder shall submit a Prevailing Wages Certification with its bid package.

H. **Non-Compliance Statement**

If it is found that any worker, employed by the contractor or any subcontractor covered by said contract, has been paid a rate of wages less than the prevailing wage required to be paid by such contract, the **Housing Authority** may begin proceeding to terminate the contractor's or subcontractor's right to proceed with the work, or such part of the work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The contractor and his sureties shall be liable for any excess costs occasioned thereby to the public body.

1.3 DAVIS-BACON ACT (40 U.S.C.276a-276a-5)

- A. All contracts or subsequent subcontracts for construction, alteration, renovation or repair, including painting and decorating, of a public building or public work, or building or work, financed by federal funds which meets the \$2,000.00 threshold are required to pay the federal prevailing wage rate for each class of laborer or mechanic employed. Regulations applicable to grant-enabling statutes incorporating the Act can be found in 29 Code of Federal Regulations (CFR), Parts 1, 3, 5 and 7.

END OF SECTION

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Contract Method.
- B. Regulatory Requirements.
- C. Access to Site and Use of Premises.
- D. Security Procedures.
- E. Coordination.
- F. Reference Standards.
- G. Allowances.

1.2 CONTRACT METHOD

- A. General Construction - Contract No.1:
Construct the work under a single lump sum contract.
- B. Items noted 'NIC' (Not in Contract) will be furnished and installed by Owner.

1.3 REGULATORY REQUIREMENTS

- A. The following regulations are applicable to this project:
 - 1. International Building Code (Latest New Jersey Edition).
- B. Other regulations may also be applicable.

1.4 ACCESS TO THE SITE AND USE OF THE PREMISES

- A. The space available to the contractor for the performance of the work, either exclusively or in conjunction with others performing other construction as part of the project, is shown on the drawings.
 - 1. Other areas are off limits to all construction personnel.
- B. The Owner will continue to occupy the existing building during the construction period.
 - 1. The Owner will endeavor to cooperate with the contractor's operations when the contractor has notified the owner in advance of need for changes in operations in order to accommodate construction operations.
 - 2. Conduct the work so as to cause the least interference with the Owner's operations.
- C. Storage areas will be available on site.
- D. All deliveries by the Contractors to be coordinated with the Owner, prior to the delivery date.
- E. No material or equipment is to be sent directly to the school and such items will not be received by the Owner. All deliveries are to be to the construction site when appropriate contractor's representatives are available to accept delivery.

SECTION 010050 - ADMINISTRATIVE PROVISIONS

- F. Limit use of premises to areas of construction. Do not disturb portions of the building beyond the areas indicated.

1.5 SECURITY PROCEDURES

- A. Limit access to the site to persons involved in the work.
- B. Provide secure storage for materials for which the owner has made payment, and which are stored on site.
- C. Secure completed work as required to prevent loss.

1.6 COORDINATION WITH OCCUPANTS

- A. Occupied areas include all areas in which the Owner's regular operations will be going on or to which the Owner requires access during the construction period, whether conducted by the Owner or the public.
- B. Limit access through occupied areas to those days and time which the Owner approves.
- C. Provide separated access from the exterior to the construction area, without passing through occupied area, unless coordinated with the owner in advance.

1.7 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. The date of the standard is that in effect as of the Bid date, or date of Owner-Contractor Agreement when there are no bids, except when a specific date is specified.

1.8 ALLOWANCES

- A. Include in the contract for construction, a stipulated sum of **ten thousand (\$10,000.00) dollars** for use upon the Owner's instruction as a contingency allowance for incidental work not covered under the contract.

END OF SECTION

PART 1 GENERAL

1.1 REQUIREMENTS

- A. Identification and description of Alternate work.

1.2 RELATED REQUIREMENTS

- A. Bid Documents: Quotation of cost of each Alternate.
- B. Owner-Contractor Agreement: Alternates accepted by Owner for incorporation into the work.

1.3 PROCEDURES

- A. Alternates will be exercised at the option of Owner.
- B. Coordinate related work and modify surrounding work as required to complete the Work, including changes under each Alternate, when acceptance is designated in Owner-Contractor Agreement.

1.4 ALTERNATE NO.1 – ROOF TOP HVAC UNIT

- A. Deduct all material and labor required to provide and install RTU-1 indicated on Drawing M1.0 and in related specification sections.
- B. Deduct all material and labor required to install aluminum guardrails on roof edge as indicated on Drawing C1.0 and in related specification sections.

END OF SECTION

SECTION 010390 - COORDINATION AND MEETINGS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and project conditions.
- B. Preconstruction meeting.
- C. Progress meetings.
- D. Pre-installation meetings.

1.2 RELATED SECTIONS

- A. Division 1 - Project Coordination: Coordination with Owner/Architect.

1.3 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.
- B. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.

1.4 PRECONSTRUCTION MEETING

- A. Owner/Architect will schedule a meeting after Notice of Award.
- B. Attendance Required: Owner, Architect and Prime Contractor.
- C. Agenda:
 - 1. Review Scope of Work.
 - 2. Designation of personnel representing the parties in Contract and the Architect.
 - 3. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 4. Scheduling.
- D. Record minutes and distribute copies within 2 days after meeting to participants, with 1 copy to Architect, participants, and those affected by decisions made.

1.5 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum bi-weekly intervals. Coordinate with Pre-Installation meeting referenced in this Section.
- B. General Contractor will make arrangements for meetings, prepare agenda with copies for Participants and preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors, Owner and Architect as appropriate to agenda topics for each meeting.

SECTION 010390 - COORDINATION AND MEETINGS

- D. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems which impede planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of off-site fabrication and delivery schedules.
 - 7. Maintenance of progress schedule.
 - 8. Corrective measures to regain projected schedules.
 - 9. Planned progress during succeeding work period.
 - 10. Coordination of projected progress.
 - 11. Maintenance of quality and work standards.
 - 12. Effect of proposed changes on progress schedule and coordination.
 - 13. Other business relating to Work.

- E. General Contractor will record minutes and distribute copies within 2 days after meeting to participants, with 1 copy to Architect, Owner, participants, and those affected by decisions made.

1.6 PRE-INSTALLATION MEETING

- A. When required in individual specification sections, convene a pre-installation meeting at the site prior to commencing work of the section. Mock-up/samples are to be finished prior to meeting.

- B. Require attendance of parties directly affecting, or affected by, work of the specific section.

- C. Notify Architect two days in advance of meeting date.

- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of installation, preparation and installation procedures.
 - 2. Review coordination with related work.
 - 3. Review mock-up/samples.

- E. Record minutes and distribute copies within 2 days after meeting to participants, with 1 copy to Architect, Owner, participants, and those affected by decisions made.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Procedures.
- B. Schedule of Values.
- C. Product Data.
- D. Manufacturer's Instructions.
- E. Shop Drawings.
- F. Coordination of Submittals.

1.2 PROCEDURES

- A. Deliver submittals to Architect at address listed on cover of Project Manual.
- B. After Architect/Owner review of submittal, revise and resubmit as required, identifying changes made since previous submittal.

1.3 SCHEDULE OF VALUES

- A. Submit typed schedule on AIA Form G703.

1.4 PRODUCT DATA

- A. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturer's standard data to provide information unique to the Work.
- B. Submit the number of copies which Contractor requires, plus two copies which will be retained by Architect.
- C. Submit Material Safety Data Sheets on all chemicals to be used on the project in triplicate to the Owner prior to using any chemicals on this project.

1.5 MANUFACTURER'S INSTRUCTIONS

- A. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, in quantities specified for product data.

1.6 SHOP DRAWINGS

- A. Submit the number of opaque reproductions which Contractor requires, plus two copies which will be retained by Architect.

1.7 COORDINATION OF SUBMITTALS

SECTION 013000 - SUBMITTALS

- A. Schedule of Submittals:
 - 1. Prepare and submit for approval a schedule showing the required dates of all required submittals.
 - 2. Organize the schedule by the applicable specification section number.
 - 3. Submit Schedule of Submittals within ten (10) days after "Notice to Proceed".
 - 4. Revise and resubmit the schedule for approval when requested.
- B. Contractor Review: Contractor to sign each copy of each submittal certifying compliance with the requirements of the contract document.
- C. Notify the architect, in writing and at time of submittal, of all points upon which the submittal does not conform to the requirements of the contract documents, if any.
- D. Submittals will be accepted from the contractor ONLY. Submittals received from other entities will be returned without review or action.

END OF SECTION

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. General Quality Control.
- B. Workmanship.
- C. Manufacturer's Instructions.
- D. Manufacturer's Certification.
- E. Samples.

1.2 QUALITY CONTROL - GENERAL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

1.3 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.4 MANUFACTURER'S INSTRUCTIONS

- A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

1.5 MANUFACTURERS' CERTIFICATES

- A. When required by individual Specifications Section, submit manufacturer's certificate, in duplicate, that products meet or exceed specified requirements.

1.6 SAMPLES

- A. Submit samples as specified. Samples are to be of same materials and finish as final product.

END OF SECTION

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Temporary Utilities: Electricity, water and sanitary facilities.
- B. Temporary Controls: Barriers and protection of the work.
- C. Construction Facilities: Progress cleaning.
- D. Security.
- E. Employee Facilities.

1.2 RELATED SECTIONS

- A. Section 017000 - Contract Closeout: Final Cleaning.

1.3 ENUMERATION OF TEMPORARY FACILITIES AND SERVICES

- A. General Construction Work Contractor shall provide and pay for the following:
 - 1. Dust control services.
 - 2. Existing property protection.
 - 3. Public protective facilities required by law.
 - 4. Waste disposal service.

1.4 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Contractor to provide secure storage for all materials and equipment when on site.

1.5 PROTECTION OF INSTALLED WORK

- A. Protect installed work and project special protection where specified in individual specification Sections.

1.6 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove waste materials, debris and rubbish from site periodically. Use of Owner's dumpsters and containers will not be permitted.

PART 2 PRODUCTS

2.1 TEMPORARY ELECTRICITY

- A. Utilities:
 - 1. Electric:
 - a. Obtain electric from existing building.
 - b. Provide required cords, equipment, etc.
 - 2. Water:

SECTION 015000 - CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

- a. Obtain from existing building.

2.3 EMPLOYEE FACILITIES

- A. Toilet Facilities:
 - 1. Existing Toilet Facilities are not to be used unless it is approved by Owner.
- B. Parking Facilities: Parking areas for all construction employees.
 - 1. Use designated areas identified by Owner.

END OF SECTION

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Provide products of same kind from a single source. The term “product” includes the terms “material”, “equipment”, “system” and similar items.
- B. Deliver, store, and handle products according to manufacturer’s written instructions, using means and methods that will prevent damage, deterioration and loss, including theft.
 - 1. Schedule delivery to minimize long-term storage and to prevent overcrowding construction spaces.
 - 2. Deliver in manufacturer’s original sealed packaging with labels and written instructions for handling, storing, protecting and installing.
 - 3. Inspect to ensure compliance with the Contract Documents and to ensure items are undamaged and properly protected.
 - 4. Store items subject to damage aboveground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required.

PART 2 PRODUCTS

2.1 PRODUCT OPTIONS

- A. Provide items that comply with the Contract Documents, are undamaged, and are new at the time of installation.
- B. Do not attach manufacturer’s labels or trademarks, except for required nameplates, on surfaces exposed to view in occupied spaces or on the exterior.
- C. Select products as follows:
 - 1. Where products or manufacturers are specified by name, accompanied by the term “or equal”, comply with provisions concerning “product substitutions” to obtain approval for use of an unnamed product or manufacturer.
 - 2. Where these Specifications describe a product and list characteristics required, with or without naming a brand or trademark, provide a product that complies with the characteristics and other requirements.
 - 3. Where these Specifications require compliance with performance requirements, provide products that comply and are recommended in writing by the manufacturer for the application.
 - 4. Where these Specifications require compliance with codes, regulations or reference standards, select a product that complies with the codes, regulations or reference standards.
- D. Unless otherwise indicated, Architect will select color, pattern and texture of any product from manufacturer’s full range of options.

2.2 PRODUCT SUBSTITUTIONS

- A. Reasonable and timely requests for substitutions will be considered. Substitutions include changes proposed by the Contractor after award of the Contract, in products and methods of construction required by the Contract Documents.
 - 1. Submit requests for product substitution in time to permit processing of request, subsequent re-submittals, if any, and possible rejection of proposed substitution,

SECTION 016000 - MATERIAL AND EQUIPMENT

2. sufficiently in advance of when materials are required in the Work.
 2. Do not submit unapproved substitutions on Shop Drawings or other submittals.
 3. Substitutions will not be considered when they are indicated or implied on shop drawings or product data submittals without separate written request.
 4. Architect will review the proposed substitution and notify Contractor of its acceptance or rejection.
 5. Only one request for substitution will be considered for each product.
 6. When substitution is not accepted, provide specified product.
- B. Submit 4 copies of each request for product substitution. Identify product to be replace, provide complete documentation showing compliance of proposed substitution with all specified requirements, and include the following:
1. A full comparison with the specified product.
 2. A list of changes to other Work required to accommodate the substitution.
 3. Any proposed changes in the Contract Sum or Contract Time should the substitution be accepted.
 4. Architect will review the proposed substitution and notify Contractor of its acceptance or rejection.
- C. Request for substitution constitutes a representation that Contractor.
1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified products.
 2. Will provide the same warranty for substitution as for specified product.
 3. Will coordinate installation and make other changes which may be required for Work to be complete in all respects.
 4. Waives claims for additional costs which may subsequently become apparent.
 5. Waives claims for additional time which may subsequently become apparent.

END OF SECTION

SECTION 017000 - CONTRACT CLOSEOUT

PART 1 GENERAL

1.1 PROJECT RECORD DOCUMENTS

- A. Maintain on site, one set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Reviewed shop drawings, product data and samples.
- B. Store Record Documents separate from those used for construction.
- C. Record information concurrent with construction progress.
- D. Record Documents and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 3. Field changes of dimension and detail.
 - 4. Details not on original Contract Drawings.
- E. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and Modifications.
- F. Operation and Maintenance Data: Organize data into 3-ring binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following:
 - 1. Installation instructions.
 - 2. Emergency instructions.
 - 3. Spare parts list.
 - 4. Copies of warranties.
 - 5. Wiring diagrams.
 - 6. Shop Drawings and Product Data.
- G. Delete Architect title block from all documents.
- H. Submit documents to Architect with claim for final Application for Payment.
- I. Submit as-built drawings for all trades; one (1) reproducible set and two (2) copies.
- J. Keep documents current; do not permanently conceal any work until required information has been recorded. Review documents periodically during project with Owner/Architect for content and clarity of information.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

SECTION 017000 - CONTRACT CLOSEOUT

3.1 EXAMINATION AND PREPARATION

- A. Examine substrates and conditions for compliance with manufacturer's written requirements including, but not limited to, surfaces that are sound, level, and plumb; substrates within installation tolerances; surfaces that are smooth, clean and free of deleterious substances; and application conditions within environmental limits. Do not proceed with installation until unsatisfactory conditions have been corrected.
- B. Prepare substrates and adjoining surfaces according to manufacturer's written instructions, including, but not limited to, the application of fillers and primers.
- C. Where Drawings indicated dimensions of existing construction, verify by field measurements. Where fabricated products are to be fitted to other construction, verify dimensions by field measurement before fabricating and, when possible, allow for fitting and trimming during installation.

3.2 CUTTING AND PATCHING

- A. For patching, provide materials whose installed performance will equal or surpass that of existing materials. For exposed surfaces, provide or finish materials to visually match existing adjacent surfaces to the fullest extent possible.

3.3 INSTALLATION

- A. Comply with manufacturer's written instructions for installation. Anchor each product securely in place, accurately located and aligned. Clean exposed surfaces and protect from damage. If applicable, prepare surfaced for field finishing.
- B. Comply with NFPA 70 for installation of electrically operated equipment and electrical components and materials.

3.4 FINAL CLEANING

- A. Clean each surface or item as follows before requesting inspection for certification of Substantial Completion.
 - 1. Remove labels that are not permanent.
 - 2. Clean exposed finishes free of stains, films and foreign substances. Leave concrete broom clean.
 - 3. Clean the site. Sweep paved areas; remove stains, spills, and foreign deposits.

END OF SECTION

SECTION 055213 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Aluminum pipe railings.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design railings, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. General: In engineering railings to withstand structural loads indicated, determine allowable design working stresses of railing materials based on the following:
 - 1. Aluminum: The lesser of minimum yield strength divided by 1.65 or minimum ultimate tensile strength divided by 1.95.
- C. Structural Performance: Railings shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Handrails and Top Rails of Guards:
 - a. Uniform load of 50 lbf/ ft. applied in any direction.
 - b. Concentrated load of 300 lbf applied in any direction.
 - c. Uniform and concentrated loads need not be assumed to act concurrently.
 - 2. Infill of Guards:
 - a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft.
 - b. Infill load and other loads need not be assumed to act concurrently.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 - 1. Temperature Change: 120 deg F , ambient; 180 deg F, material surfaces.
- E. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Manufacturer's product lines of mechanically connected railings.
 - 2. Railing brackets.
 - 3. Grout, anchoring cement.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Initial Selection: For products involving selection of color, texture, or design.

SECTION 055213 - PIPE AND TUBE RAILINGS

- D. Samples for Verification: For each type of exposed finish required.
 - 1. Fittings and brackets.
 - 2. Assembled Sample of railing system, made from full-size components, including top rail, post, handrail, and infill. Sample need not be full height.
 - a. Show method of connecting members at intersections.
- E. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of railing from single source from single manufacturer.
- B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- C. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication.

1.7 COORDINATION AND SCHEDULING

- A. Coordinate installation of anchorages for railings. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- B. Schedule installation so wall attachments are made only to completed walls. Do not support railings temporarily by any means that do not satisfy structural performance requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements.
 - 1. Aluminum Pipe and Tube Railings:
 - a. Hollaender Manufacturing Company.
 - b. Or approved equal.

2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

SECTION 055213 - PIPE AND TUBE RAILINGS

- B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.

2.3 ALUMINUM

- A. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required.
- B. Extruded Structural pipe: ASTM B 429/B 429M, Alloy 6063-T6.
 - 1. Provide Standard Weight (Schedule 40) pipe, unless otherwise indicated.
- C. Drawn Seamless Tubing: ASTM B 210, Alloy 6063-T832.
- D. Castings: ASTM B 26/B 26M, Alloy A356.0-T6.

2.4 FASTENERS

- A. General: Provide the following:
 - 1. Aluminum Railings: Type 304 stainless-steel fasteners.
- B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction indicated and capable of withstanding design loads.
- C. Fasteners for Interconnecting Railing Components:
 - 1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless otherwise indicated.
 - 2. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless exposed fasteners are unavoidable or are the standard fastening method for railings indicated.
 - 3. Provide Phillips flat-head machine screws for exposed fasteners unless otherwise indicated.
- D. Post-Installed Anchors: Torque-controlled expansion anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E 488, conducted by a qualified independent testing agency.

2.5 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
 - 1. For aluminum railings, provide type and alloy as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.
- B. Non-shrink, Nonmetallic Grout: Factory-packaged, non-staining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- C. Anchoring Cement: Factory-packaged, non-shrink, non-staining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound.

SECTION 055213 - PIPE AND TUBE RAILINGS

1. Water-Resistant Product: At exterior locations provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating and that is recommended by manufacturer for exterior use.

2.6 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural loads.
- B. Assemble railings in the shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.
- G. Connections: Fabricate railings with either welded or nonwelded connections unless otherwise indicated.
- H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove flux immediately.
 4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- I. Welded Connections for Aluminum Pipe: Fabricate railings to interconnect members with concealed internal welds that eliminate surface grinding, using manufacturer's standard system of sleeve and socket fittings.
- J. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings. Fabricate members and fittings to produce flush, smooth, rigid, hairline joints.
 1. Fabricate splice joints for field connection using an epoxy structural adhesive if this is manufacturer's standard splicing method.
- K. Close exposed ends of railing members with prefabricated end fittings.
- L. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.
- M. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.

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1. At brackets and fittings fastened to plaster or gypsum board partitions, provide crush-resistant fillers, or other means to transfer loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.
- N. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work. Fabricate anchorage devices capable of withstanding loads imposed by railings. Coordinate anchorage devices with supporting structure.
- O. For railing posts set in concrete, provide **stainless-steel** sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with metal plate forming bottom closure.

2.7 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Provide exposed fasteners with finish matching appearance, including color and texture, of railings.

2.8 STEEL AND IRON FINISHES

2.9 ALUMINUM FINISHES

- A. Mechanical Finish: AA-M12 (Mechanical Finish: non specular as fabricated).
- B. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

3.2 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.
- B. Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
 1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.

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2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- C. Corrosion Protection: Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.
- D. Adjust railings before anchoring to ensure matching alignment at abutting joints.
- E. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.3 RAILING CONNECTIONS

- A. Nonwelded Connections: Use mechanical or adhesive joints for permanently connecting railing components. Seal recessed holes of exposed locking screws using plastic cement filler colored to match finish of railings.
- B. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article whether welding is performed in the shop or in the field.

3.4 ANCHORING POSTS

- A. Use metal sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with **anchoring cement**, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with anchoring cement, mixed and placed to comply with anchoring material manufacturer's written instructions.
- C. Leave anchorage joint exposed with space to apply silicone sealer sloped away from post.

3.5 ATTACHING RAILINGS

- A. Anchor railing ends at walls with round flanges anchored to wall construction and welded to railing ends.
- B. Attach railings to wall with wall brackets, except where end flanges are used. Provide brackets with 1-1/2-inch clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
1. Use type of bracket with predrilled hole for exposed bolt anchorage.
 2. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.
- C. Secure wall brackets and railing end flanges to building construction as follows:
1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.

SECTION 055213 - PIPE AND TUBE RAILINGS

3.6 ADJUSTING AND CLEANING

- A. Clean aluminum by washing thoroughly with clean water and soap and rinsing with clean water.

3.7 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

END OF SECTION

SECTION 142200 – ELECTRIC TRACTION ELEVATOR MODERNIZATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. A. Provisions of the Wildwood Housing Authority Terms and Conditions and other Division 1 Specification Sections apply to this Section.

1.2 SUMMARY

- A. Modernize two traction passenger elevators: Cars 1 and 2.
- B. Preventive maintenance as described in this Section.
- C. Cartage and Hoisting: All required staging, hoisting, and movement to, on, and from the site including new equipment, reused equipment, or dismantling and removal of existing equipment.
- D. Unless specifically identified as “Reuse,” “Retain,” or “Refurbish,” provide new equipment.
- E. Protective barrier between car in normal operation and adjacent car in the modernization process. Full depth and height of hoistway. Contractor may reuse existing screens if suitable.
- F. Hoistway, pit, and machine room barricades as required.
- G. One elevator must remain in service at all times during the construction phase of the modernization.

1.3 PRICE AND PAYMENT PROCEDURES

- A. Elevator Car Allowances: Provide finished passenger elevators under the elevator car allowance specified. Allowance includes furnishing and installing the following:
 - 1. Car ceiling finishes including lighting, wiring, and coordination of battery-operated emergency lighting.
 - 2. Car door finishes.
 - 3. Car door sills.
 - 4. Cutouts and other provisions for installing elevator signal equipment in cars.
 - 5. Remounts and connect existing in-car cameras.
 - 6. Ventilation: Provide new 2-speed exhaust blower mounted to car canopy on isolated rubber gromets.

1.4 DEFINITIONS

- A. Terms used are defined in the latest edition of the Safety Code for Elevators and Escalators, ASME A17.1.
- B. Reference to a device or a part of the equipment applies to the number of devices or parts required to complete the installation.
- C. Provisions of this specification are applicable to all elevators unless identified otherwise. All work shall be performed by experienced and qualified mechanics having training and certification under a nationally recognized program such as the CET Program of the National Association of Elevator Contractors or the National Elevator Industry Education Program; mechanics shall be employed and supervised by the Contractor.
- D. Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of following Codes, laws, and/or Authorities, including revisions and changes in effect:
 - 1. Safety Code for Elevators and Escalators, ASME A17.1.
 - 2. Guide for Inspection of Elevators, Escalators, and Moving Walks, ASME A17.2.

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3. Elevator and Escalator Electrical Equipment, ASME A17.5.
4. National Electrical Code, NFPA 70.
5. ICC/ANSI A117.1, Accessible and Usable Buildings and Facilities.
6. Uniform Federal Accessibility Standards, UFAS.
7. Local Fire Authority.
8. Requirements of New Jersey IBC Edition and other applicable codes and ordinances.
9. Life Safety Code, NFPA 101.

1.5 QUALITY ASSURANCE

- A. Approved Components
 1. Fixtures vandal-resistant
 2. Non-OEM control systems: GAL Galaxy, SmartRise, MCE.
 3. Hoist Machines: Hollister Whitney, Titan, Imperial
 4. Rope brakes: Hollister Whitney, Bode, Draka
 5. Elevator Motor control:
 - a. ACVVVF Yaskawa KEB
- B. Measurements included with Contract Documents are for convenience of Contractor. Complete responsibility for detailed dimensions lies with Contractor. Contractor shall verify all dimensions with the actual on-site conditions. Where work of Contractor is to join another trade, Contractor's shop drawings shall show actual dimensions and method of joining work of those trades.
- C. Warranty:
 1. Material and workmanship of installation shall comply in every respect with Contract Documents. Correct defective material or workmanship which develops within one year from date of final acceptance of all work to satisfaction of Purchaser and Consultant at no additional cost, unless due to ordinary wear and tear or improper use or care by Purchaser.
 2. Defective is defined to include, but not be limited to: Operation or control system failures, car performance below required minimum, excessive wear, unusual deterioration, or aging of materials or finishes, unsafe conditions, the need for excessive maintenance, abnormal noise, or vibration, and similar unsatisfactory conditions.
 3. Retained Equipment: All retained components, parts, and materials shall be cleaned, checked, modified, repaired, or replaced in strict accordance with the specification requirements defined herein. Retained equipment must be compatible for integration with new systems.
 4. Make modifications, requirements, adjustments, and improvements to meet performance requirements specified herein.
 5. Warranty Maintenance shall be performed as specified in section 1.9.

1.6 DOCUMENT AND SITE VERIFICATION

- A. In order to discover and resolve conflicts or lack of definition which might create problems, Contractor must review Contract Documents and site conditions for compatibility with its product prior to submittal of quotation. Review existing structural, electrical, and mechanical provisions for compatibility with Contractor's products. Purchaser will not pay for change to structural, mechanical, electrical, or other systems required to accommodate Contractor's equipment.
- B. Power Confirmation Information: Design for existing conditions.
- C. Design Information: Provide calculations verifying the following:
 1. Adequacy of existing electrical provisions.
 2. Machine room heat emissions in B.T.U.
- D. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract. Include any unique or product specific procedures or methods required to

SECTION 142200 – ELECTRIC TRACTION ELEVATOR MODERNIZATION

inspect or test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.

- E. Construction schedule indicating equipment lead times, construction time for each elevator and close out.

1.7 SUBMITTALS

- A. Product Data: Include capacities, sizes, performances, operation, control, signal systems operations, safety features, finishes, and similar information. Include product data for car enclosures and hoistway entrances. Include product data for signal fixtures, lights, graphics, Braille plates, and details of mounting provisions.
- B. Shop Drawings:
 - 1. Include plans, elevations, sections, and large-scale details indicating openings at each landing, machine room equipment space layout, coordination with building structure, relationships with other construction, and locations of equipment.
 - 2. Include large-scale layout of car operating panel, pushbuttons, destination hall registration stations, signal fixtures, fire command center panel, and standby power operation control panel.
 - 3. Indicate maximum dynamic and static loads imposed on building structure at points of support, seismic loads, and maximum and average power demands.
 - 4. Power Confirmation Information: Include motor horsepower, code letter, starting current, full-load running current, and demand factor.
 - 5. Arrange equipment in existing machine room space.
- C. Samples for Initial Selection: For finishes involving surface treatment, paint, or color selection.
- D. Samples for Verification: For exposed car, hoistway door and frame, and signal equipment finishes:
 - 1. Samples of sheet materials: 3" (75 mm) square.
 - 2. Running trim members: 4" (100 mm) lengths.
- E. Submittal review shall not be construed as an indication that submittal is correct or suitable or that the work represented by submittal complies with the Contract Documents. Compliance with Contract Documents, Code requirements, dimensions, fit, and interface with other work is Contractor's responsibility.
- F. Acknowledge and/or respond to review comments within seven days. Promptly incorporate required changes due to inaccurate data or incomplete definition so that delivery and installation schedules are not affected. Identify and cloud drawing revisions including Contractor elective revisions on each re-submittal. Contractor's revision response time is not justification for equipment delivery or installation delay.

1.8 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data:
 - 1. For elevators to include in emergency, operation, and maintenance manuals.
 - 2. Diagnostic and repair information from the manufacturers for use by qualified maintenance personnel.
- B. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted elevator use.

1.9 PERMIT, TEST, AND INSPECTION

- A. Obtain and pay for permit, license, and inspection fee necessary to complete installation.

SECTION 142200 – ELECTRIC TRACTION ELEVATOR MODERNIZATION

- B. Perform test required by Governing Authority in accordance with procedure described in ASME A17.2 Guide for Inspection of Elevators, Escalators, and Moving Walks in the presence of Authorized Representative. Where the Local Jurisdiction required tests to be performed after normal working hours it shall be done at no additional cost to the Purchaser.

1.10 OCCUPANCY AND WORK BY OTHERS

- A. Contractor expressly affirms Housing Authority's rights to let other contracts and employ other Contractors in connection with required work. Contractor will afford other Contractors and their workmen reasonable opportunity for introduction and storage of materials and equipment, for execution of their work, and will properly connect and coordinate its work with theirs. Contractor will also incorporate comparable provisions in all its subcontracts.
- B. Contractor declares that other Contractors employed by Housing Authority on basis of separate contracts may proceed at such times as necessary to install items of work required by Housing Authority.
- C. Contractor declares that it will cooperate with other Contractors employed by Housing Authority and, in addition to other coordination and expediting efforts, will coordinate their work by written notices regarding necessity of such work to be done on or before certain dates.
- D. Contractor declares that it is responsible for review, stamped, and signed approval of all shop drawings for required work.
- E. Contractor hereby declares that content of foregoing paragraphs and influence they may have on project:
 - 1. Shall not cause a change in stipulated Contract Sum
 - 2. Shall not cause a change in Construction Time Schedule

1.11 CONCURRENT MODERNIZATION WORK AND BUILDING OPERATION

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

1.12 MAINTENANCE

- A. Initial Maintenance Service: Upon award of fully executed agreement, the Contractor shall perform preventive maintenance of the existing elevators. Provide emergency callback service 24 hours a day, 7 days a week at no extra cost during regular time. Overtime callbacks shall be billed for premium time only. All parts and labor required shall be included. Should a component fail that is scheduled to be replaced during the modernization, the Contract shall provide an estimate to the Owner with the following information:

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1. Narrative explanation of failed component with details describing why it cannot be repaired before being replaced.
2. Itemized material costs plus 10% total markup.
3. Detailed labor hours and rates.
4. Schedule to procure and install the component.

B. Ongoing Maintenance Service: Upon start of demolition, continue to maintain the remaining elevator as specified in 1.12.A.

1.13 MAINTENANCE

A. Interim: Provide preventive maintenance service on elevators described herein for a period from notice to proceed until each unit is removed from building service for modernization. In addition, provide interim preventive maintenance on completed unit until the modernization of both elevators is complete and one-year warranty maintenance, defined below, is commenced. Provide 24-hour emergency call back service for both units. Perform maintenance in accordance with the Maintenance Control Program. Interim maintenance cost shall be included in base bid.

B. Warranty Maintenance: Provide preventive maintenance and 24-hour emergency callback service for one year commencing on date of final acceptance by the Housing Authority for both elevators. Systematically examine, adjust, clean, and lubricate all equipment. Repair or replace defective parts using parts produced by the Contractor of installed equipment. Maintain elevator machine room, hoistways, and pits in clean condition. Perform maintenance in accordance with the Maintenance Control Program. Include any statutory tests. Warranty maintenance cost shall be included in base bid.

C. The warranty maintenance period specified in Item 1.13.B. above shall be extended one (1) month for each three (3) month period in which equipment related failures average more than .25 per unit per month.

PART 2 - PRODUCTS

2.1 SUMMARY

- A. 2 Geared Passenger Elevators.
- B. Unless specifically identified as “retain existing,” provide new equipment.

	Existing Equipment	Disposition
Number:	Cars 1, 2	Retain Existing
Capacity:	2500 #	Retain Existing
Class Loading:	Passenger/Service Class A	Retain Existing
Contract Speed:	200 F.P.M.	Retain Existing
Roping:	1:1	Retain Existing
Machine:	Geared	AC Induction or P.M.S.M.

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	Existing Equipment	Disposition
Machine Location:	Overhead	Retain Existing
Operational Control:	Duplex Selective Collective	Duplex Selective Collective Microprocessor-Based System
Motor Control:	DC Variable Voltage	Variable Frequency Microprocessor Based with Digital Closed-Loop Feedback
Power Characteristics:	480 Volts, 3 Phase, 60 Hertz Field Verify	Retain Existing
Stops:	11 Front; 0 Rear	Retain Existing
Openings:	11 Front; 0 Rear	Retain Existing
Floors Served:	G,1-10 Front;	Retain Existing
Travel:	Field Verify	Retain Existing
Clear Inside Car:	Field Verify	Retain Existing
Entrance Size:	2'-8" Wide X 7'-0" High Field Verify	Retain Existing
Entrance Type:	Single Side Opening	Retain Existing
Door Operation:	GAL MOVFR.	High Speed, Heavy-Duty, Linear Drive Door Operator, Minimum Opening Speed 2-1/2 F.P.S.

2.2 CAR PERFORMANCE

- A. Car Speed: $\pm 3\%$ of contract speed under any loading condition.
- B. Car Capacity: Safely lower, stop and hold 125% of rated load.
- C. Car Stopping Zone: $\pm 1/8"$ under any loading condition.
- D. Car Ride Quality:
 - 1. Acceleration and Deceleration: Smooth constant and not less than 3 feet/second² with an initial ramp between 0.5 and 0.75 second. Sustained Jerk: Not more than 6 feet/second³.
- E. Noise and Vibration Control
 - 1. Airborne Noise: Measured noise level of elevator equipment and its operation shall not exceed 60 dBA inside car under any condition including door operation and car ventilation exhaust blower on its highest speed. Limit noise level in the machine room relating to elevator equipment and its operation to no more than 80 dBA. All dBA readings to be taken 3'-0" off the floor and 3'-0" from the equipment using the "A" weighted scale.

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2. Vibration Control: All elevator equipment provided under this contract, including power unit, controller, shall be mechanically isolated from the building structure and electrically isolated from the building power supply and to each other to minimize the possibility of objectionable noise and vibrations being transmitted to occupied areas of the building.

2.3 OPERATION

A. Collective Microprocessor-Based, Cars 1-2:

1. Operate car without attendant from pushbuttons in car and located at each floor. When car is available, automatically start car and dispatch it to floor corresponding to registered car or hall call. Once car starts, respond to registered calls in direction of travel and in the order the floors are reached.
2. Do not reverse car direction until all car calls have been answered, or until all hall calls ahead of car and corresponding to the direction of car travel have been answered.
3. Slow car and stop automatically at floors corresponding to registered calls, in the order in which they are approached in either direction of travel. As slowdown is initiated for a hall call, automatically cancel hall call. Cancel car calls in the same manner. Hold car at arrival floor an adjustable time interval to allow passenger transfer.
4. Answer calls corresponding to direction in which car is traveling unless call in the opposite direction is highest (or lowest) call registered.
5. Illuminate appropriate pushbutton to indicate call registration. Extinguish light when call is answered.

B. Other Items:

1. Load Weighing: Provide means for weighing car passenger load. Control system to provide dispatching at main floor in advance of normal intervals when car fills to capacity. Provide hall call by-pass when the car is filled to preset percentage of rated capacity and traveling in down direction. Field adjustment range: 10% to 100%.
2. Anti-Nuisance Feature: If car loading relative to weight in car is not commensurate with number of registered car calls, or activation of door protection device is not commensurate with the number of registered car calls, cancel car calls. Systems employing either load weighing or door protective device for activation of this feature are acceptable.
3. Independent Service: Provide controls for operation of each car from its pushbuttons only. Close doors by constant pressure on desired destination floor button or door close button. Open doors automatically upon arrival at selected floor.

C. Firefighters' Service: Provide equipment and operation in accordance with Code requirements.

D. Firefighters' Emergency Operation: Provide equipment and operation in accordance with code requirements. Replace all fire key switches in non-modernized elevators in this building to match modernized elevators.

E. Motion Control: Microprocessor based AC variable-voltage, variable frequency IGBT with digitally encoded closed-loop velocity feedback suitable for operation specified and capable of providing smooth, comfortable car acceleration, retardation, and dynamic braking. Limit the difference in car speed between full load and no load to not more than $\pm 3\%$ of the contract speed.

F. Geared Traction Hoist Machine:

1. Single worm geared traction type with AC induction or P.M.S.M. ACV3F motor, brake, gear, drive shaft, deflector sheave, and gear case mounted in proper alignment on an isolated bedplate. Provide bedplate blocking to elevate deflector sheave above machine room floor.
2. Provide hoist machine mounted direct drive, digital, closed-loop velocity encoder.
3. Provide hoist machine drip pans to collect lubricant seepage.

G. Solid State Power Conversion and Regulation Unit:

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1. Provide solid state, alternating current, variable voltage, variable frequency (ACV3F), I.G.B.T. converter/inverter drives.
 2. Design unit to limit current, suppress noise, and prevent transient voltage feedback into building power supply. Provide internal heat sink cooling fans for the power drive portion of the converter panels. Conform to IEEE standards 519-2014 for line harmonics and switching noise.
 3. Isolate unit to minimize noise and vibration transmission. Provide isolation transformers, filter networks, and choke inductors.
 4. Suppress solid-state converter noises, radio frequency interference, and eliminate regenerative transients induced into the mainline feeders or the building standby power generator.
 5. Supplemental direct-current power for the operation of hoist machine brake, door operator, dispatch processor, signal fixtures, etc., from separate static power supply.
 6. ACV3F Drives shall be regenerative and utilize IGBT converter/inverter and dynamic braking during overhauling condition.
- H. Encoder: Direct drive, solid-state, digital type. Update car position at each floor and automatically restore after power loss.
- I. Controller: UL/CSA labeled.
1. Compartment: Securely mount all assemblies, power supplies, chassis switches, relays, etc., on a substantial, self-supporting steel frame. Completely enclose equipment with covers. Provide means to prevent overheating.
 2. Relay Design: Magnet operated with contacts of design and material to insure maximum conductivity, long life, and reliable operation without overheating or excessive wear. Provide wiping action and means to prevent sticking due to fusion. Contacts carrying high inductive currents shall be provided with arc deflectors or suppressors.
 3. Microprocessor-Related Hardware:
 - a. Provide built-in noise suppression devices which provide a high level of noise immunity on all solid-state hardware and devices.
 - b. Provide power supplies with noise suppression devices.
 - c. Isolate inputs from external devices (such as pushbuttons) with opto-isolation modules.
 - d. Design control circuits with one leg of power supply grounded.
 - e. Safety circuits shall not be affected by accidental grounding of any part of the system.
 - f. System shall automatically restart when power is restored.
 - g. System memory shall be retained in the event of power failure or disturbance.
 - h. Equipment shall be provided with Electro Magnetic Interference (EMI) shielding within FCC guidelines.
 4. Wiring: CSA labeled copper for factory wiring. Neatly route all wiring. interconnections and securely attach wiring connections to studs or terminals.
 5. Permanently mark components (relays, fuses, PC boards, etc.) with symbols shown on wiring diagrams.
 6. Provide controller or machine mounted auxiliary, lockable “open,” disconnect if mainline disconnect is not in sight of controller and/or machine.
- J. Sleeves and Guards: Provide 2" steel angle guards around cable or duct slots through floor slabs or grating. Provide rope and smoke guards for sheaves, cables, and cable slots in machine room.
- K. Machine and Equipment Support Beams: Retain existing in place. Provide all required supplemental supports and attachments. Provide Structural Engineering certification validating size and location of all new support structure provided.
- L. Governor: Centrifugal-type, machine room mounted with pull-through jaws and bi-directional shutdown switches. Provide required bracketing and supports for attachment to building structure.

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- M. Emergency Brake:
 - 1. Provide means to prevent ascending car over-speed and unintended car movement per Code.
 - 2. Acceptable emergency brake devices:
 - a. BODE Rope Brake
 - b. Hollister-Whitney Rope Gripper
 - c. Draka
 - 3. Mount the auxiliary brake on suitable structural steel supports. Provide a drawing showing the supports, stamped by Professional Engineer verifying the adequacy of the support provided.
 - 4. Provide control circuits to enable the device to function as required by Code.
 - 5. Alternately provide redundant machine brake as allowed by code.

2.4 HOISTWAY EQUIPMENT

- A. Guide Rails: Retain main and counterweight guide rails in place.
 - 1. Clean rails and brackets. Remove rust.
 - 2. Check all rail and bracket fastenings and tighten.
 - 3. Realign rails as required to provide smooth car ride.
- B. Buffers, Car, and Counterweight: Retain existing.
 - 1. Drain, flush, refill, paint, and test.
 - 2. Retrofit switch to limit elevator speed if buffer is compressed.
- C. Sheaves, Deflector, Secondary & Compensating: Machined grooves and sealed bearings. Provide mounting means to machine beams, machine bedplate, car, and counterweight structural members, or building structure.
- D. Counterweight: Retain existing. Replace all rollers.
- E. Governor Rope and Encoder Tape Tensioning Sheaves: Mount sheaves and support frame on pit floor or guide rail. Provide frame with guides or pivot point to enable free vertical movement and proper tension of rope and tape.
- F. Hoist and Governor Ropes:
 - 1. Traction steel type as required by machine design. Fasten with staggered length, adjustable, spring isolated wedge type shackles.
 - 2. Governor rope as required by governor manufacturer
- G. Terminal Stopping: Provide normal and final devices.
- H. Electrical Wiring and Wiring Connections:
 - 1. Conductors and Connections: Copper throughout with individual wires coded and connections on identified studs or terminal blocks. Use no splices or similar connections in wiring except at terminal blocks, control compartments, or junction boxes. Provide a minimum of 10% spare conductors throughout. A minimum of ten #18 AWG wires shall be provided. Run spare wires from car connection points to individual elevator controllers in the machine room. Provide eight pairs of spare shielded communication wires in addition to those required to connect specified items. Tag spares in machine room.
 - 2. Conduit: Painted or galvanized steel conduit, EMT, or duct. Flexible heavy-duty service cord may be used between fixed car wiring and car door switches for door protective devices.
 - 3. Traveling Cables: Flame and moisture-resistant outer cover. Prevent traveling cable from rubbing or chafing against hoistway or equipment within hoistway. In addition to wires needed to connect specified items the following shall be provided:
 - a. Four twisted shielded pair for card reader.

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- b. Four pair of shielded wires to car top, plus 3'-0" excess loop at both ends for CCTV.
 - c. One RG6 coax to car top, plus 3'-0" excess loop at both ends for CCTV.
 - d. Three 14 gauge wires for CCTV power.
 - e. One twisted shielded pair for to car top, plus 3'-0" excess loop at both ends for firefighters announcement speaker.
 - f. One twisted shielded pair for firefighters phone jack.
4. Auxiliary Wiring: Connect fire alarm initiating devices, emergency two-way communication system, firefighters' phone jack, paging speaker, CCTV in each car controller in machine room.
- I. Entrance Equipment:
- 1. Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
 - 2. Door Tracks: Bar or formed, cold-drawn removable steel tracks with smooth roller contact surface.
 - 3. Door Interlocks: Operable without retiring cam. Paint interlock box flat black.
 - 4. Door Closers: jamb/strut mounted counterweight type. Design and adjust to insure smooth, quiet mechanical close of doors.
- J. Hoistway Door Unlocking Device: Provide unlocking device including new escutcheon with locking escutcheon in door panel at all floors, with finish to match adjacent surface.
- K. Hoistway Access Switches: Mount in wall at top and bottom floors. Provide switch with faceplate. Locate within easy reach to entrance so entrance can be guarded by one technician.
- L. Entrance Equipment:
- 1. Door Guide Tracks: Continuous steel angles or formed steel tracks fastened to hoistway door jamb.
 - 2. Door Guide Shoes: Machined iron shoes. Four shoes per door panel, with not less than 2-1/2" lateral contact per shoe.
 - 3. Door Interlocks: Operable without retiring cam.
- M. Hoistway Door Unlocking Device: Provide unlocking device with pull chain under hinged, lockable cover with stainless steel No. 4 finish at all floors.
- N. Floor Numbers: Stencil paint 4" high floor designations in contrasting color on inside face of hoistway doors or hoistway fascia in location visible from within car.

2.5 HOISTWAY ENTRANCES

- A. Frames: Retain existing. Provide Arabic floor designation/Braille plates, centered at 60" above finished floor, on both side jambs of all entrances. Repaint exposed surfaces.
- B. Door Panels: Retain existing. Provide new door gibs with fire tabs at all floors. Minimum two gibs per panel, one at leading edge, and one at trailing edge of each panel. Provide code required door panel retainer mechanism on lower edge of door panel to address failure of primary lower edge door guidance. Repaint exposed surfaces.
- C. Sight Guards: 14 gauge, same material, and finish as hoistway entrance door panels. Construct without sharp edges.
- D. Sills: Retain existing. Clean. Check and tighten all fastenings.
- E. Sill Supports: Retain existing. Check and tighten all fastenings.

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- F. Fascia, Toe Guards, and Hanger Covers: Retain existing. Provide as required where damaged or missing. Check and tighten all fastenings. Paint/Stencil floor number on fascia or hoistway wall all floors visible where car doors are initially opened.
- G. Struts and Headers: Retain existing. Check and tighten all fastenings.

2.6 CAR EQUIPMENT

- A. Frame: Retain Existing. Check and tighten all fastenings.
- B. Safety Device: Retain existing. Check and tighten all fastenings. Disassemble, clean, and inspect components. Replace all worn or damaged parts. Reassemble and test for proper operation. For wind up safeties inspect tail rope and verify proper type for the application, replace if needed. Perform soft set and full load test in advance of acceptance test.
- C. Platform: Retain existing. Reinforce if required. Check and tighten all fastenings.
- D. Guide Shoes: Roller type, 6" with three or more spring dampened, sound-deadening rollers per shoe.
- E. Finish Floor Covering: Included in Cab Allowance: coordinate floor thickness selection and installation to be flush with car door sill.
- F. Sills: Retain existing. Clean full width. Check and tighten all fastenings.
- G. Doors: Provide new stainless steel #4 finish.
- H. Door Hangers: Two-point hanger roller with neoprene roller surface and suspension with eccentric upthrust roller adjustment.
- I. Door Track: Bar or formed, cold-drawn removable steel track with smooth roller contact surface.
- J. Door Header: Construct of minimum 12 gauge steel, shape to provide stiffening flanges.
- K. Car Gate Switch: Prohibit car operation unless car door is closed.
- L. Door Clutch: Heavy-duty clutch, linkage arms, drive blocks and pickup rollers or cams to provide positive, smooth, quiet door operation. Design clutch so car doors can be closed, while hoistway doors remain open.
- M. Restricted Opening Device: Restrict opening of car doors outside unlocking zone.
- N. Door Operator: High speed, linear drive, heavy-duty door operator capable of opening doors at no less than 2.5 f.p.s. Accomplish reversal in no more than 2-1/2" of door movement. Provide solid-state door control with closed loop circuitry to constantly monitor and automatically adjust door operation based upon velocity, position, and motor current. Maintain consistent, smooth, and quiet door operation at all floors, regardless of door weight or varying air pressure. Provide closed loop operation, monitoring door speed, torque and closing force, at all times.
- O. Door Control Device:
 - 1. Infrared Reopening Device: Black fully enclosed device with full screen infrared matrix or multiple beams extending vertically along leading edge of each door panel to minimum height of 7'-0" above finished floor. Device shall prevent doors from closing and reverse doors at normal opening speed if beams are obstructed while doors are closing, except during nudging operation. In event of device failure, provide for automatic shutdown of car at floor level with doors open.

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2. Nudging Operation: After beams of door control device are obstructed for a predetermined time interval (minimum 20.0 - 25.0 seconds), warning signal shall sound, and doors shall attempt to close with a maximum of 2.5 foot pounds kinetic energy. Activation of the door open button shall override nudging operation and reopen doors.
- P. Car Operating Panel:
1. One car operating panel with faceplates, consisting of a metal box containing vandal resistant operating fixtures, mounted behind the car stationary panels. Faceplates shall be hinged and constructed of stainless steel, satin finish.
 2. Suitably identify floor buttons, alarm button, door open button, door close button and emergency push-to-call button with cast stainless tactile symbols recessed flush rear mounted. Configure plates per local building code accessibility standards including Braille. Locate operating controls no higher than 48" above the car floor; no lower than 35" for emergency push-to-call button and alarm button.
 3. Provide minimum 3/4" diameter raised floor pushbuttons which illuminate to indicate call registration
 4. Provide alarm button to ring bell located on car, and sound distress signal at security desk.
 5. Provide stainless steel vandal resistant red emergency stop switch at bottom of car operating panel to interrupt car power supply. Maintain registered calls when feature is actuated and continue normal service after power is restored. Actuation of switch or button shall sound car alarm bell and illuminate alarm button. Provide "door open" button to stop and reopen doors or hold doors in open position.
 6. Extended Door Hold Open Button: Provide button to extend normal door hold open period up to 30 seconds. Cancel extended time by registration of car call or actuation of door close button. Provide "door close" button to activate door close cycle. Cycle shall not begin until normal door dwell time for a car or hall call has expired, except firefighters' operation.
 7. Provide firefighters' locked box with code required devices and illuminated fire hat jewel in car operating panel.
 8. Provide firefighters' Phase II key switch with engraved instructions filled red. Include light jewel, buzzer, and call cancel button.
 9. Install firefighters' telephone jack with bezel matching adjacent controls.
 10. Provide lockable service compartment with recessed flush door. Door material and finish shall match car return panel or car operating panel faceplate. Inside surface of door shall contain an integral flush window for displaying the elevator operating permit.
 11. Include the following controls in lockable service cabinet with function and operating positions identified by permanent signage or engraved legend:
 - a. Inspection switch.
 - b. Light switch.
 - c. Three-position exhaust blower switch.
 - d. Independent service switch.
 - e. Constant pressure test button for battery pack emergency lighting.
 - f. 120-volt, AC, GFCI protected electrical convenience outlet.
 - g. Card reader override switch.
 - h. Stop key switch.
 12. Provide black paint filled (except as noted), engraved, or approved etched signage as follows with approved size and font:
 - a. Phase II firefighters' operating instructions on main operating panel above corresponding keyswitch filled red.
 - b. Car number on car operating panel.
 - c. "Certificate of Inspection on File in Building Office" on main car operating panel.
 - d. "No Smoking" on car operating panel.
 - e. Car capacity in pounds on main car operating panel
- Q. Car Top Control Station: Mount to provide safe access and utilization while standing in an upright position on car top. Locate car top stop switch within easy reach of landing entrance.

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- R. Work Light and Duplex Plug Receptacle: GFCI protected outlet at top and bottom of car. Include on/off switch and lamp guard
- S. Communication System:
 - 1. "Push to Call," two-way communication instrument in car with automatic dialing, tracking, and recall features with shielded wiring to car controller in machine room. Provide dialer with automatic rollover capability with minimum two numbers
 - a. "Push to Call" button or adjacent light jewel shall illuminate and flash when call is acknowledged. Button shall match car operating panel pushbutton design. Provide uppercase "PUSH TO CALL" "HELP ON THE WAY" engraved signage adjacent to button to indicate when call is placed and when call is received. Coordinate signage with communications provider.
 - b. Provide "Push to Call" button tactile symbol, engraved signage, and Braille adjacent to button mounted integral with car front return panel.
 - 2. Firefighters' telephone jack in car with four shielded wires to machine room junction box. Jack bezel shall match adjacent controls.
- T. Car Enclosure Retain existing car shell. Overall car weight to be verified and documented, prior to removal of any equipment from the existing car frame or car enclosure. Check and tighten all fastenings.

2.7 HALL CONTROL STATIONS

- A. Pushbuttons: Provide 1 riser with flush mounted faceplates. Include pushbuttons for each direction of travel which illuminate to indicate call registration. Provide LED illumination. Include approved engraved message and pictorial representation prohibiting use of elevator during fire or other emergency situation as part of faceplate. Include engraved plate with approved engraved message and pictorial representation prohibiting use of elevator during fire or other emergency situation. Pushbutton design shall match car operating panel pushbuttons

2.8 SIGNALS

- A. Hall Lantern, All Cars: Provide at each entrance to indicate travel direction of arriving car. Provide vandal resistant lantern and light assemblies consisting of series of dots or lines for maximum visibility.
- B. Car Direction Lantern Provide flush-mounted car lantern in all car entrance columns. Illuminate up or down LED lights and sound electronic tone once for up and twice for down direction travel as doors open. Sound tone once for up direction and twice for down direction. Sound level shall be adjustable from 0 - 80 dBA measured at 5'-0" in front of hall control station and 3'-0" off floor. Provide adjustable car door dwell time to comply with ADA requirements relative to hall call notification time. Car direction lenses shall be arrow shaped with faceplates. Lenses shall be minimum 2-1/2" in their smallest dimension. Provide vandal resistant lantern and light assemblies consisting of series of dots or lines for maximum visibility.
- C. Car Position Indicator: digital indicator containing floor designations and direction arrows a minimum of 2" high to indicate floor served and direction of car travel. Locate fixture in car operating panel. When a car leaves or passes a floor, illuminate indication representing position of car in hoistway. Illuminate proper direction arrow to indicate direction of travel.
- D. Hall Position Indicator, Alpha-numeric digital indicator containing floor designations and direction arrows a minimum of 2" high to indicate floor served and direction of car travel. Mount integral with hall lanterns at all floors. Provide vandal resistant indicator and light assemblies.
- E. Faceplate Material and Finish: Stainless steel Satin finish all fixtures.

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- F. Floor Passing Tone: Provide an audible tone of no less than 20 decibels and frequency of no higher than 1500 Hz, to sound as the car passes or stops at a floor served.

2.9 COMMUNICATIONS

- A. General: Provides hands free telephone integral with the car operating panel. Provide call acknowledgment light.

PART 3 - EXECUTION

3.1 SITE CONDITION INSPECTION

- A. Prior to beginning installation of equipment, examine hoistway and machine room areas. Verify no irregularities exist which affect execution of work specified.
- B. Do not proceed with installation until work in place conforms to project requirements.
- C. Coordinate demolition and removal of material from the building with the Owner.

3.2 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver material in Contractor's original, unopened protective packaging.
- B. Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
- C. Protect equipment and exposed finishes from damage and stains during transportation, erection, and construction.
- D. An equipment staging area will be available for use by Contractor. Contractor shall restrict usage to area designated and shall notify Housing Authority prior to storing of any large equipment which will impose heavy concentrated loading on floor area. Do not store such equipment until approval is received.

3.3 INSTALLATION

- A. Install all equipment in accordance with Contractor's instructions, referenced codes, specification, and approved submittals.
- B. Install machine room equipment with clearances in accordance with referenced codes, and specification.
- C. Install all equipment so it may be easily removed for maintenance and repair.
- D. Install all equipment for ease of maintenance.
- E. Install all equipment to afford maximum accessibility, safety, and continuity of operation.
- F. Contractor shall remove and properly dispose of all rubbish as fast as it accumulates including all existing parts and components not retained, keeping building and premises clean during progress of work and leave premises at completion in a condition acceptable to the Housing Authority. All parts and components not retained shall become property of Contractor.
- G. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.
 - 1. All exposed equipment and metal work installed as part of this work which does not have architectural finish.

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2. Machine room equipment, and pit equipment.
3. Neatly touch up damaged factory-painted surfaces with original paint color. Protect machine-finish surfaces against corrosion.

H. Paint machine room and pit floors.

I. Provide 6'-0" high barricades around the elevator entrance at with the top or bottom floor in coordination with the Owner.

J. All work is to be performed during regular time hours unless authorized by the Housing Authority.

3.4 FIELD QUALITY CONTROL

A. Work at jobsite will be checked during course of installation. Full cooperation with reviewing personnel is mandatory. Accomplish corrective work required prior to performing further installation.

B. Have Code Authority acceptance inspection performed and complete corrective work.

3.5 ADJUSTMENTS

A. Static balance car to equalize pressure of roller guides on guide rails.

B. Lubricate all equipment in accordance with Contractor's instructions.

C. Adjust motors, power conversion units, brakes, controllers, leveling switches, limit switches, stopping switches, door operators, interlocks, and safety devices to achieve required performance levels.

3.6 FINAL CLEANING

A. As a minimum:

1. Elevator hoistways and all equipment therein shall be cleaned and left free of rust, filings, welding slag, rubbish, loose plaster, mortar drippings, extraneous construction materials, dirt, and dust. Include walls, building beams, sill ledges, and hoistway divider beams.
2. Care shall be taken by work persons not to mark, soil, or otherwise deface existing or new surfaces. Clean and restore such surfaces to their original condition.
3. Clean down surfaces and areas which require final painting and finishing work. Cleaning includes removal of rubbish, broom cleaning of floors, removal of any loose plaster or mortar, dust and other extraneous materials from finish surfaces, and surfaces which will remain visible after the work is complete.

3.7 CONSULTANT'S FINAL OBSERVATION AND REVIEW REQUIREMENTS

A. Review procedure shall apply for individual elevators completed, accepted, and placed in operation.

B. Contractor shall perform review and evaluation of all aspects of its work prior to requesting Consultant's final review. Work shall be considered ready for Consultant's final contract compliance review when Contractor's tests are complete and all elements of work or a designated portion thereof are in place and elevators are deemed ready for service as intended.

C. Furnish labor, materials, and equipment necessary for Consultant's review. Notify Consultant five (5) working days in advance when ready for final review of elevator or group of elevators.

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- D. Consultant's written list of observed deficiencies of materials, equipment and operating systems will be submitted to Contractor for corrective action. Consultant's review shall include as a minimum:
1. Workmanship and equipment compliance with Contract Documents.
 2. Contract speed, capacity, floor-to-floor, and door performance comply with Contract Documents.
 3. Performance of following is satisfactory:
 - a. Starting, accelerating, running
 - b. Decelerating, stopping accuracy
 - c. Door operation and closing force
 - d. Equipment noise levels
 - e. Signal fixture utility
 - f. Overall ride quality
 - g. Performance of door control devices
 - h. Operations of emergency two-way communication device
 - i. Operations of firefighters' service
 - j. Operations of emergency brake device
 4. Test Results:
 - a. In all test conditions, obtain specified contract speed, performance times, stopping accuracy without re-leveling, and ride quality to satisfaction of Housing Authority and Consultant. Tests shall be conducted under both no load and full load condition.
 - b. Temperature rise in motor windings limited to 50° Celsius above ambient. A full-capacity one (1) hour running test, stopping at each floor for ten (10) seconds in up and down directions, may be required.
- E. Performance Guarantee: Should Consultant's review identify defects, poor workmanship, variance, or noncompliance with requirements of specified codes and/or ordinances, or variance or noncompliance with the requirements of Contract Documents, Contractor shall complete corrective work in an expedient manner to satisfaction of Housing Authority and Consultant at no cost as follows:
1. Replace equipment which does not meet code or Contract Document requirements.
 2. Perform work and furnish labor, materials, and equipment necessary to meet specified operation and performance.
 3. Perform retesting required by governing code authority, Housing Authority and Consultant.
- F. A follow-up final contract compliance review shall be performed by Consultant after notification by Contractor that all deficiencies have been corrected. Provide Consultant with copies of the initial deficiency report marked to indicate items which Contractor considers complete.

3.8 HOUSING AUTHORITY'S INFORMATION

- A. Non-Proprietary Equipment Design: Provide three sets of neatly bound written information necessary for proper maintenance and adjustment for equipment of within 30 days following final acceptance. Final retention will be withheld until all documents are received by Housing Authority and reviewed by Consultant. Include the following as minimums:
1. Straight-line wiring diagrams of "as-installed" elevator circuits, with index of location and function of components. Provide one set reproducible master. Mount one set wiring diagrams on panels, racked, or similarly protected, in elevator machine room. Provide remaining set rolled and in a protective drawing tube. Maintain all drawing sets with addition of all subsequent changes. These diagrams are Housing Authority's property. A legend sheet shall be furnished with each set of drawings to provide the following information:
 - a. Name and symbol of each relay, switch, or other apparatus.

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- b. Location on drawings, drawing sheet number and area, and location of all contacts.
 - c. Location of apparatus, whether on controller or on car.
 2. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract. Include any unique or product specific procedures or methods required to inspect or test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.
 3. Printed instructions explaining all operating features.
 4. Complete software documentation for all installed equipment.
 5. Lubrication instructions, including recommended grade of lubricants.
 6. Parts catalogs listing all replaceable parts including Contractor's identifying numbers and ordering instructions.
 7. Four sets of keys for all switches and control features properly tagged and marked.
 8. Diagnostic test devices, if required, together with all supporting information necessary for interpretation of test data and troubleshooting of elevator system and performance of routine safety tests.
 9. The elevator installation shall be a design which can be maintained by any licensed elevator maintenance company employing journeymen mechanics, without the need to purchase or lease additional diagnostic devices, special tools, or instructions from the original equipment Manufacturer.
 - a. Provide onsite capability to diagnose faults to the level of individual circuit boards and individual discreet components for the solid-state elevator controller.
 - b. Provide a separate, detachable device, as required to the Housing Authority as part of this installation if the equipment for fault diagnosis is not completely self-contained within the controller. Such device shall be in possession of and become property of the Housing Authority.
 - c. Installed equipment not meeting this requirement shall be removed and replaced with conforming equipment at no cost to the Housing Authority.
 10. Provide upgrades and/or revisions of software during the progress of the work, warranty period and the term of the ongoing maintenance agreement between the Housing Authority and Contractor.
- B. Acceptance of such records by Housing Authority shall not be a waiver of any Contractor deviation from Contract Documents or shop drawings or in any way relieve Contractor from his responsibility to perform work in accordance with Contract Documents.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. All work and material on this project shall be in compliance with all local, state and federal regulations including but not limited to the following:
 - 1. Established Federal Standards of the Occupational Safety and Health Administration under the Department of Labor.
 - 2. International Mechanical Code.
 - 3. International Energy Conservation Code.
- C. The above regulations are considered a part of the specifications and shall prevail should they differ with the plans and specifications. Prior to construction the Contractor shall notify the Architect of the difference. Should the Contractor not so notify the Architect, the Contractor shall fully comply without claim for extra costs

1.2 SUMMARY

- A. This section includes General Provisions for HVAC/Mechanical work.
- B. This Section includes the following:
 - 1. Equipment installation requirements common to equipment sections.
 - 2. Concrete bases.
 - 3. Supports and anchorages.

1.3 DEFINITIONS

- A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct chases, unheated spaces immediately below roof, 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. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and chases.
- D. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

1.4 SUBMITTALS

- A. SHOP DRAWINGS AND OTHER RELATED SUBMITTALS
 - 1. The type submittal information required for each item of equipment shall be as indicated in the individual sections of the specification.

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2. When a substitute item of equipment has been submitted for approval, submit layout drawings indicating the changes necessary to adapt the substituted item of equipment to the system design.
3. Submittal data shall include Specification data, such as metal gauges, finishes, optional accessories, etc., even though such equipment and materials may be detailed on the drawings or specified. In addition, the submittal data shall include performance (certification) data, wiring diagrams where applicable, accurate dimensional data and a recommended spare parts list. Outline or dimensional drawings alone are not acceptable. No roughing-in, connections, etc., shall be done until Architect reviewed equipment submittals are in the hands of the Contractors. It shall be the Contractor's responsibility to obtain drawings and to make all connections, etc., in the neatest and most workmanlike manner possible.
4. In general, normal catalog information (with the particular items underlined or otherwise denoted as being the submitted item) will be acceptable as submittal data. Installation, operating and maintenance instructions must be that information, specifically applicable to the items furnished, ordinarily supplied with the equipment to the Owner with any modifications indicated. Wiring diagrams must be correct for the application. Generalized wiring diagrams, showing alternate methods of connection, will not be acceptable unless all unrelated sections are marked. out. Submittal data sheets, which indicate several different model numbers, figure numbers, optional accessories, installation arrangements, etc., shall be clearly marked to indicate the specific items of equipment to be furnished. Samples and certificates shall be furnished as requested. Submittal data must be complete for each piece of equipment; piecemeal data will not be processed.
5. It shall be noted that the reviewing of shop drawings by the Architect applies only to general design, arrangement, type, capacity, and quality. Such review does not apply to quantities, dimensions, connection locations and the like. In all cases, the Contractor alone shall be responsible for furnishing the proper quantity of equipment and/or materials required, that all equipment fits the available space in a satisfactory manner, all equipment characteristics are appropriate and that all connections are suitably located.
6. Before the project is accepted, all submittal data (shop drawings, etc.) must be complete and reviewed.
7. After equipment requiring temperature control connection has been reviewed by the Architect, furnish complete manufacturer's data and wiring diagrams to the Automatic Temperature Control Supplier.

B. SUBSTITUTION OF MATERIALS AND EQUIPMENT

1. When the Contractor requests approval of substitute materials and/or equipment, except when under formal alternate proposal, it shall be understood and agreed that such substitution, if approved, will be made without cost to the Owner, regardless of changes in connections, spacing, electrical service, etc. In all cases where substitutions affect other trades the Contractor offering such substitutions shall reimburse all affected Contractors for all necessary changes in their work (without cost to Owner).

1.5 QUALITY ASSURANCE

- A. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers and subcontractors required to countersign special warranties with the Contractor.
- B. Electrical Characteristics for HVAC 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.

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1.6 COORDINATION

A. Coordination Between Trades:

1. Carefully examine all architectural, structural, electrical and any other drawings and specifications pertaining to the construction before fabricating and installing the work described and indicated under these drawings and specifications. Cooperate with all other Contractors in locating piping, ductwork, sleeves, equipment, etc., in order to avoid conflict with all other Contractor's work. No extra compensation will be allowed to cover the cost of relocating piping, ducts, etc., or equipment found encroaching on space required by others.
2. Lay out work from construction lines and levels established by the General Contractor. This Contractor shall be responsible for the proper location and placement of his work.
3. Any discrepancies occurring on the accompanying drawings and between the drawings and the specifications shall be reported to the Architect prior to any fabrication and installation so that a workable solution can be presented. Extra payment will not be allowed for the relocation of, or revision to, piping, ductwork, equipment, etc., not installed in accordance with the above instructions, and which interferes with work and equipment of other trades.

- B. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

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 manufacturers specified.

PART 3 - EXECUTION

3.1 STRUCTURAL RESPONSIBILITY

- A. Properly shore, brace, support, etc., any construction to guard against cracking, settling, collapsing, displacing or weakening. No structural member shall be cut without the written consent of the Architect.
- B. Any damage occurring to the structure, due to failure to exercise proper precautions or due to action of the elements, shall be promptly and properly made good to the satisfaction of the Owner or Architect, without cost.

3.2 EXISTING IMPROVEMENTS

- A. Maintain in operating condition all active utilities, sewer, gutters and other drains, etc., encountered in the utility installation. Repair to the satisfaction of the Architect and the Owner any surfaces or subsurface improvements damaged during the course of the work, unless such improvement is shown to be abandoned or removed.

SECTION 230500 - COMMON WORK RESULTS FOR HVAC

- B. Any obstructing utilities encountered in the course of this work, not shown on the drawings, nor evident during inspection prior to starting the work, shall be relocated as directed by the Architect.

3.3 PROTECTION OF THE BUILDING AND STORED EQUIPMENT

- A. Do not store materials or equipment on any floor or roof of building in such quantity that these parts of the building will be overloaded in any way. Do not move heavy equipment across any floor or roof without first submitting the details of the work to the Architect and having obtained his approval. In cases where frequent movement of men or materials over the roof is encountered, provide walking boards or other suitable protection for the roofing.
- B. Provide suitable storage for, and completely protect all materials and equipment prior to installation. Storage shall be dry, clean and safe. Any materials or equipment lost through theft or mishandling shall be replaced, all without additional cost to the Owner

3.4 DRAWINGS

- A. The drawings accompanying these specifications are diagrammatic and indicate the general design and arrangement of the proposed work. Do not scale drawings for the exact location of equipment and work. The exact routing and/or location of piping, ductwork, sleeves, equipment, etc., unless specifically dimensioned on the drawings, shall be determined to suit field conditions encountered, and to avoid interferences with other Contractors' work.

3.5 EQUIPMENT CONNECTIONS

- A. Make all water and drainage connections, etc., to equipment furnished by others under this Contract whenever such equipment is shown on any of the drawings or mentioned in any section of the specifications, unless otherwise specifically specified hereinafter.

3.6 PERMITS AND APPROVALS

- A. All permits and certificates of approval for the complete system shall be obtained by the respective Contractors from the authorities governing such work. The cost of all permits, tap-in-fees and approvals shall be borne by the Contractor furnishing the work, except as noted in the General Requirements. All work shall be approved by the Architect before final payment will be made.

3.7 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

- A. Install HVAC equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.

3.8 PAINTING

- A. Damage and Touchup: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish.

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3.9 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 HVAC materials and equipment.
- C. Field Welding: Comply with AWS D1.1.

3.10 INSTALLATION

- A. All equipment shall be installed at locations indicated.
- B. Assembly and installation of equipment shall be in strict accordance with manufacturer's installation instructions.
- C. Equipment shall be securely anchored in place. Care shall be exercised to correctly orient equipment before securing in place.

3.11 PLATFORMS AND SUPPORTING STANDS

- A. Each piece of equipment or apparatus mounted above the floor level shall be supported in accordance with the best recognized practice.
- B. Such supporting or mounting means shall be provided by each Contractor for all equipment furnished by him.
- C. Exercise extreme care that structural members of building are not overloaded by such equipment.
- D. All structural members of platforms, supporting stands, etc., shall be factory prime coated.
- E. Finish painting shall be the responsibility indicated under SECTION PAINTING, DIVISION FINISHES.

3.12 METAL GUARDS

- A. Furnish and install in approved expanded metal or sheet metal guard around all exposed moving and rotating parts, such as pump couplings, belt drives, fan belts, etc.

3.13 FRAMING

- A. All rectangular or special shaped openings in walls, partitions, roofs, ceilings, etc., including plaster, stucco, or similar materials shall be framed by means of plaster frames, casing beads, wood or metal angle members, as required. The intent of this paragraph is to prohibit cutting and patching in new construction and to provide smooth, even termination of wall, floor, and ceiling finishes, as well as to provide a fastening means for grilles, diffusers, etc. Lintels shall be provided over all openings in walls, etc., when not specifically indicated elsewhere. Lintels shall be of size and shape to prevent excessive deflection and shall be approved by Architect prior to installation.

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3.14 CUTTING, FITTING AND PATCHING

- A. Each respective Contractor shall do all cutting and drilling of masonry, steel, wood, or iron work, and all fitting necessary for the proper installation of all apparatus and materials.
- B. No cutting or drilling of the structure, of any kind, shall be done without first obtaining permission from Architect. All cutting and drilling shall be done under the supervision of the General Contractor in strict accordance with instructions furnished by Architect.
- C. All patching and finishing shall be the responsibility of the Contractor whose cutting or drilling makes such patching and finishing necessary. Patching and finishing shall be done by workmen skilled in the trade affected (masonry, plastering, painting, etc.).

3.15 CLEANING, TESTING AND PREPARATION FOR START-UP

- A. All equipment shall be cleaned of all foreign material.
- B. All equipment shall be lubricated and placed in proper working order. Drives on rotating equipment shall be checked for proper rotation and alignment. V-belt drives shall be checked and adjusted for proper tension. All fans shall be operated for at least 24 hours so that the initial stretch of the V-belt drives will take place before testing. When the belts have stretched, the fan drives shall be realigned and adjusted for tightness to make sure that the excess slippage is eliminated. All drives shall be set for the recommended speeds. All sheaves and bearing blocks shall be checked for any loose screws or nuts.
- C. All controls and safety devices shall be checked to determine that they are in place and properly installed.
- D. Where equipment is intended to contain fluids, it shall be filled and tested for leaks as recommended by the equipment manufacturer.
- E. Equipment shall be operated for a reasonable time to determine any undue vibration, heating of parts, or other improper operation.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes TAB to produce design objectives for the following:
 - 1. Air Systems:
 - a. Constant-volume air systems.
 - b. Variable-air-volume systems.
 - 2. Hydronic Piping Systems:
 - a. Variable-flow systems.
 - 3. HVAC equipment quantitative-performance settings.
 - 4. Verifying that automatic control devices are functioning properly.
 - 5. Reporting results of activities and procedures specified in this Section.

1.2 SUBMITTALS

- A. Strategies and Procedures Plan: Within 30 days from Contractor's Notice to Proceed, submit 4 copies of TAB strategies and step-by-step procedures as specified in Part 3 "Preparation" Article. Include a complete set of report forms intended for use on this Project.
- B. Certified TAB Reports: Submit two copies of reports prepared, as specified in this Section, on approved forms certified by TAB firm.
- C. Warranties specified in this Section.

1.3 QUALITY ASSURANCE

- A. TAB Firm Qualifications: Engage a TAB firm certified by AABC, NEBB or TABB.
- B. Certification of TAB Reports: Certify TAB field data reports. This certification includes the following:
 - 1. Review field data reports to validate accuracy of data and to prepare certified TAB reports.
 - 2. Certify that TAB team complied with approved TAB plan and the procedures specified and referenced in this Specification.
- C. TAB Report Forms: Use standard forms from AABC's "National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems." NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems." or SMACNA's TABB "HVAC Systems - Testing, Adjusting, and Balancing." TAB firm's forms approved by Architect. TABB "Contractors Certification Manual."
- D. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1-2004, Section 7.2.2 - "Air Balancing."
- E. ASHRAE/IESNA 90.1-2004 Compliance: Applicable requirements in ASHRAE/IESNA 90.1-2004, Section 6.7.2.3 - "System Balancing."

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1.4 COORDINATION

- A. Coordinate the efforts of factory-authorized service representatives for systems and equipment, HVAC controls installers, and other mechanics to operate HVAC systems and equipment to support and assist TAB activities.
- B. Perform TAB after leakage and pressure tests on air distribution systems have been satisfactorily completed.

1.5 WARRANTY

- A. National Project Performance Guarantee: Provide a guarantee on AABC's "National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems" forms stating that AABC will assist in completing requirements of the Contract Documents if TAB firm fails to comply with the Contract Documents. Guarantee includes the following provisions:
 - 1. The certified TAB firm has tested and balanced systems according to the Contract Documents.
 - 2. Systems are balanced to optimum performance capabilities within design and installation limits.
- B. Special Guarantee: Provide a guarantee on NEBB forms stating that NEBB will assist in completing requirements of the Contract Documents if TAB firm fails to comply with the Contract Documents. Guarantee shall include the following provisions:
 - 1. The certified TAB firm has tested and balanced systems according to the Contract Documents.
 - 2. Systems are balanced to optimum performance capabilities within design and installation limits.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine the Contract Documents to become familiar with Project requirements and to discover conditions in systems' designs that may preclude proper TAB of systems and equipment.
 - 1. Verify that balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers, are required by the Contract Documents. Verify that quantities and locations of these balancing devices are accessible and appropriate for effective balancing and for efficient system and equipment operation.
- B. Examine approved submittal data of HVAC systems and equipment.
- C. Examine design data, including HVAC system descriptions, statements of design assumptions for environmental conditions and systems' output, and statements of philosophies and assumptions about HVAC system and equipment controls.
- D. Examine equipment performance data including fan curves. Relate performance data to Project conditions and requirements, including system effects that can create undesired or unpredicted

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conditions that cause reduced capacities in all or part of a system. Calculate system effect factors to reduce performance ratings of HVAC equipment when installed under conditions different from those presented when the equipment was performance tested at the factory. To calculate system effects for air systems, use tables and charts found in AMCA 201, "Fans and Systems," Sections 7 through 10; or in SMACNA's "HVAC Systems--Duct Design," Sections 5 and 6. Compare this data with the design data and installed conditions.

- E. Examine system and equipment installations to verify that they are complete and that testing, cleaning, adjusting, and commissioning specified in individual Sections have been performed.
- F. Examine system and equipment test reports.
- G. Examine HVAC system and equipment installations to verify that indicated balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers, are properly installed, and that their locations are accessible and appropriate for effective balancing and for efficient system and equipment operation.
- H. Examine systems for functional deficiencies that cannot be corrected by adjusting and balancing.
- I. Examine HVAC equipment to ensure that clean filters have been installed, bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.
- J. Examine equipment for installation and for properly operating safety interlocks and controls.
- K. Report deficiencies discovered before and during performance of TAB procedures. Observe and record system reactions to changes in conditions. Record default set points if different from indicated values.

3.2 PREPARATION

- A. Prepare a TAB plan that includes strategies and step-by-step procedures.
- B. Complete system readiness checks and prepare system readiness reports. Verify the following:
 - 1. Permanent electrical power wiring is complete.
 - 2. Equipment and duct access doors are securely closed.
 - 3. Ceilings are installed in critical areas where air-pattern adjustments are required and access to balancing devices is provided.
 - 4. Windows and doors can be closed so indicated conditions for system operations can be met.

3.3 GENERAL PROCEDURES FOR TESTING AND BALANCING

- A. Perform testing and balancing procedures on each system according to the procedures contained in ASHRAE 111, AABC's "National Standards for Testing and Balancing Heating, Ventilating, and Air Conditioning Systems", NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems", SMACNA's TABB "HVAC Systems - Testing, Adjusting, and Balancing" and this Section.
 - 1. Comply with requirements in ASHRAE 62.1-2004, Section 7.2.2 - "Air Balancing."

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- B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary to allow adequate performance of procedures. After testing and balancing, close probe holes and patch insulation with new materials identical to those removed. Restore vapor barrier and finish according to insulation Specifications for this Project.
- C. Mark equipment and balancing device settings with paint or other suitable, permanent identification material, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, to show final settings.

3.4 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

- A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Crosscheck the summation of required outlet volumes with required fan volumes.
- B. Prepare schematic diagrams of systems' "as-built" duct layouts.
- C. For variable-air-volume systems, develop a plan to simulate diversity.
- D. Determine the best locations in main and branch ducts for accurate duct airflow measurements.
- E. Check airflow patterns from the outside-air louvers and dampers and the return- and exhaust-air dampers, through the supply-fan discharge and mixing dampers.
- F. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.
- G. Verify that motor starters are equipped with properly sized thermal protection.
- H. Check dampers for proper position to achieve desired airflow path.
- I. Check for airflow blockages.
- J. Check condensate drains for proper connections and functioning.
- K. Check for proper sealing of air-handling unit components.
- L. Check for proper sealing of air duct system.

3.5 PROCEDURES FOR MOTORS

- A. Motors, 1/2 HP and Larger: Test at final balanced conditions and record the following data:
 - 1. Manufacturer, model, and serial numbers.
 - 2. Motor horsepower rating.
 - 3. Motor rpm.
 - 4. Efficiency rating.
 - 5. Nameplate and measured voltage, each phase.
 - 6. Nameplate and measured amperage, each phase.
 - 7. Starter thermal-protection-element rating.
- B. Motors Driven by Variable-Frequency Controllers: Test for proper operation at speeds varying from minimum to maximum. Test the manual bypass for the controller to prove proper operation. Record observations, including controller manufacturer, model and serial numbers, and nameplate data.

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3.6 TOLERANCES

- A. Set HVAC system airflow and water flow rates within the following tolerances:
 - 1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus 5 to plus 10 percent.
 - 2. Air Outlets and Inlets: 0 to minus 10 percent.

3.7 FINAL REPORT

- A. General: Typewritten, or computer printout in letter-quality font, on standard bond paper, in three-ring binder, tabulated and divided into sections by tested and balanced systems.
- B. Include a certification sheet in front of binder signed and sealed by the certified testing and balancing engineer.
 - 1. Include a list of instruments used for procedures, along with proof of calibration.
- C. Final Report Contents: In addition to certified field report data, include the following:
 - 1. Fan curves.
 - 2. Manufacturers' test data.
 - 3. Field test reports prepared by system and equipment installers.
 - 4. Other information relative to equipment performance, but do not include Shop Drawings and Product Data.
- D. General Report Data: In addition to form titles and entries, include the following data in the final report, as applicable:
 - 1. Title page.
 - 2. Name and address of TAB firm.
 - 3. Project name.
 - 4. Project location.
 - 5. Architect's name and address.
 - 6. Engineer's name and address.
 - 7. Contractor's name and address.
 - 8. Report date.
 - 9. Signature of TAB firm who certifies the report.
 - 10. Table of Contents with the total number of pages defined for each section of the report. Number each page in the report.
 - 11. Summary of contents including the following:
 - a. Indicated versus final performance.
 - b. Notable characteristics of systems.
 - c. Description of system operation sequence if it varies from the Contract Documents.
 - 12. Nomenclature sheets for each item of equipment.
 - 13. Data for terminal units, including manufacturer, type size, and fittings.
 - 14. Notes to explain why certain final data in the body of reports varies from indicated values.
 - 15. Test conditions for fans and pump performance forms including the following:
 - a. Settings for outside-, return-, and exhaust-air dampers.
 - b. Conditions of filters.
 - c. Cooling coil, wet- and dry-bulb conditions.
 - d. Fan drive settings including settings and percentage of maximum pitch diameter.
 - e. Settings for supply-air, static-pressure controller.
 - f. Other system operating conditions that affect performance.

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- E. System Diagrams: Include schematic layouts of air and hydronic distribution systems. Present each system with single-line diagram and include the following:
 - 1. Quantities of outside, supply, return, and exhaust airflows.
 - 2. Water and steam flow rates.
 - 3. Duct, outlet, and inlet sizes.
 - 4. Pipe and valve sizes and locations.
 - 5. Terminal units.
 - 6. Balancing stations.
 - 7. Position of balancing devices.

3.8 ADDITIONAL TESTS

- A. Within 90 days of completing TAB, perform additional testing and balancing to verify that balanced conditions are being maintained throughout and to correct unusual conditions.
- B. Seasonal Periods: If initial TAB procedures were not performed during near-peak summer and winter conditions, perform additional testing, inspecting, and adjusting during near-peak summer and winter conditions.

END OF SECTION

SECTION 237413 - PACKAGED, OUTDOOR, CENTRAL-STATION AIR-HANDLING UNITS (PRE-PURCHASE)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes packaged, outdoor, central-station air-handling units (rooftop units) with the following components and accessories:
 - 1. Direct-expansion cooling.
 - 2. Electric heating coils.

1.3 SUBMITTALS

- A. Product Data: Include manufacturer's technical data for each RTU, including rated capacities, dimensions, required clearances, characteristics, furnished specialties, and accessories.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 1. Wiring Diagrams: Power, signal, and control wiring.
- C. Field quality-control test reports.
- D. Operation and Maintenance Data: For RTUs to include in emergency, operation, and maintenance manuals.
- E. Warranty: Special warranty specified in this Section.

1.4 QUALITY ASSURANCE

- A. ARI Compliance:
 - 1. Comply with ARI 210/240 and ARI 340/360 for testing and rating energy efficiencies for RTUs.
 - 2. Comply with ARI 270 for testing and rating sound performance for RTUs.
- B. ASHRAE Compliance:
 - 1. Comply with ASHRAE 15 for refrigeration system safety.
 - 2. Comply with ASHRAE 33 for methods of testing cooling and heating coils.
 - 3. Comply with applicable requirements in ASHRAE 62.1-2004, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."
- C. ASHRAE/IESNA 90.1-2004 Compliance: Applicable requirements in ASHRAE/IESNA 90.1-2004, Section 6 - "Heating, Ventilating, and Air-Conditioning."

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- D. NFPA Compliance: Comply with NFPA 90A and NFPA 90B.
- E. UL Compliance: Comply with UL 1995.
- F. 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.

1.5 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to replace components of RTUs that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period for Compressors: Manufacturer's standard, but not less than five years from date of Substantial Completion.
 - 2. Warranty Period for Gas Furnace Heat Exchangers: Manufacturer's standard, but not less than five years from date of Substantial Completion.
 - 3. Warranty Period for Solid-State Ignition Modules: Manufacturer's standard, but not less than three years from date of Substantial Completion.
 - 4. Warranty Period for Control Boards: Manufacturer's standard, but not less than three years from date of Substantial Completion.

1.6 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fan Belts: One set for each belt-driven fan.
 - 2. Filters: One set of filters for each unit.

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:
 - 1. AAON, Inc.
 - 2. Addison Products Company.
 - 3. Carrier Corporation.
 - 4. Lennox Industries Inc.
 - 5. Daikin Applied Americas
 - 6. Trane; American Standard Companies, Inc.
 - 7. YORK International Corporation.

2.2 CASING

- A. General Fabrication Requirements for Casings: Formed and reinforced double-wall insulated panels, fabricated to allow removal for access to internal parts and components, with joints between sections sealed.

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- B. Exterior Casing Material: Galvanized steel with factory-painted finish, with pitched roof panels and knockouts with grommet seals for electrical and piping connections and lifting lugs.
- C. Condensate Drain Pans: Formed sections of stainless-steel sheet, a minimum of 2 inches deep, and complying with ASHRAE 62.1.
 - 1. Drain Connections: Threaded nipple.
- D. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1-2004.

2.3 FANS

- A. Direct-Driven Supply-Air Fans: Double width, forward curved or backward inclined, centrifugal; with permanently lubricated, ECM motor resiliently mounted in the fan inlet. Aluminum or painted-steel wheels, and galvanized- or painted-steel fan scrolls.
- B. Belt-Driven Supply-Air Fans: Double width, forward curved, centrifugal; with permanently lubricated, single-speed motor installed on an adjustable fan base resiliently mounted in the casing. Aluminum or painted-steel wheels, and galvanized- or painted-steel fan scrolls.
- C. Condenser-Coil Fan: Propeller, mounted on shaft of permanently lubricated motor.

2.4 COILS

- A. Supply-Air Refrigerant Coil:
 - 1. Aluminum or Copper-plate fin and seamless copper tube in steel casing with equalizing-type vertical distributor.
 - 2. Polymer strip shall prevent all copper coil from contacting steel coil frame or condensate pan.
 - 3. Coil Split: Interlaced.
 - 4. Condensate Drain Pan: Stainless steel formed with pitch and drain connections complying with ASHRAE 62.1.
- B. Electric-Resistance Heating:
 - 1. Open Heating Elements: Resistance wire of 80 percent nickel and 20 percent chromium, supported and insulated by floating ceramic bushings recessed into casing openings, fastened to supporting brackets, and mounted in galvanized-steel frame. Terminate elements in stainless-steel machine-staked terminals secured with stainless-steel hardware.
 - 2. Overtemperature Protection: Disk-type, automatically reset, thermal-cutout, safety device; serviceable through terminal box.
 - 3. Overcurrent Protection: Manual-reset thermal cutouts, factory wired in each heater stage.
 - 4. Control Panel: Unit mounted with disconnecting means and overcurrent protection. Include the following controls:
 - a. Magnetic contactors.
 - b. Step Controller: Pilot lights and override toggle switch for each step.
 - c. SCR Controller: Pilot lights operate on load ratio, a minimum of five steps.
 - d. Time-delay relay.
 - e. Airflow proving switch.

SECTION 237413 - PACKAGED, OUTDOOR, CENTRAL-STATION AIR-HANDLING UNITS (PRE-PURCHASE)

2.5 REFRIGERANT CIRCUIT COMPONENTS

- A. Compressor: Hermetic, reciprocating or Semihermetic, reciprocating or Hermetic, scroll, mounted on vibration isolators; with internal overcurrent and high-temperature protection, internal pressure relief, and crankcase heater.
- B. Refrigeration Specialties:
 - 1. Refrigerant: R-410A.
 - 2. Expansion valve with replaceable thermostatic element.
 - 3. Refrigerant filter/dryer.
 - 4. Manual-reset high-pressure safety switch.
 - 5. Automatic-reset low-pressure safety switch.
 - 6. Minimum off-time relay.
 - 7. Automatic-reset compressor motor thermal overload.
 - 8. Brass service valves installed in compressor suction and liquid lines.
 - 9. Low-ambient kit high-pressure sensor.

2.6 AIR FILTRATION

- A. Minimum arrestance according to ASHRAE 52.1, and a minimum efficiency reporting value (MERV) according to ASHRAE 52.2.
 - 1. Pleated: Minimum 90 percent arrestance, and MERV 7 and MERV 13.

2.7 DAMPERS

- A. Outdoor-Air Damper: Linked damper blades, for 0 to 100 percent outdoor air, with motorized damper filter.

2.8 ELECTRICAL POWER CONNECTION

- A. Provide for single connection of power to unit with unit-mounted disconnect switch accessible from outside unit and control-circuit transformer with built-in overcurrent protection.

2.9 CONTROLS

- A. Control equipment and sequence of operation are specified in Division 23 Section "Instrumentation and Control for HVAC."
- B. Basic Unit Controls:
 - 1. Control-voltage transformer.
 - 2. Wall-mounted thermostat or sensor with the following features:
 - a. Heat-cool-off switch.
 - b. Fan on-auto switch.
 - c. Fan-speed switch.
 - d. Manual changeover.
 - e. Adjustable deadband.
 - f. Unoccupied-period-override push button.
 - g. Data entry and access port to input temperature set points, occupied and unoccupied periods, and output room temperature, supply-air temperature, operating mode, and status.

SECTION 237413 - PACKAGED, OUTDOOR, CENTRAL-STATION AIR-HANDLING UNITS (PRE-PURCHASE)

2.10 ACCESSORIES

- A. Filter differential pressure switch with sensor tubing on either side of filter. Set for final filter pressure loss.
- B. Coil guards of painted, galvanized-steel wire.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Provide a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Report results in writing.

3.2 STARTUP SERVICE

- A. Provide a factory-authorized service representative to perform startup service.

3.3 DEMONSTRATION

- A. Provide a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain RTUs. Refer to Division 01 Section "Demonstration and Training."

END OF SECTION

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section applies to all work specified in Division 26.
- B. Provide all required materials, labor, equipment, installation, fabrication and testing required for a complete, safe, and fully operational system. System shall include all required materials and features whether specified or shown on drawings or not to comply with applicable codes and authorities having jurisdiction.
- C. The electrical installation shall be made in strict conformance with the latest edition and supplements in force at the time of bid opening of the National Electrical Code, the Rules and Regulations of the New Jersey Building Code, ASHRAE 90.1, the applicable Standards of the National Fire Protection Association, and applicable requirements of the Occupational Safety and Health Act of the United States Department of Labor. All materials and equipment employed shall be approved by and bear the label of Underwriters' Laboratories, Inc., where such labeling is made available by any manufacturer for said materials or equipment. All codes and regulations applicable shall be considered as jointly governing and the requirements of either and all will prevail. If it occurs that Drawings conflict with any applicable code, then this Contractor shall immediately bring same to attention of Architect or his representative for resolution.

1.3 DESCRIPTION OF DOCUMENTS

- A. The Drawings are generally diagrammatic and indicate the general design and arrangement of the proposed work. Do not scale drawings for the exact location of equipment and work. The exact routing of circuits and final location of all the electrical equipment, and other systems, unless specifically dimensioned on the Drawings, shall be subject to building and structural conditions, grid systems, and work of other trades involved in the construction, and subject to the approval of the Architect. The Contractor shall familiarize himself with the Contract Documents, and shall be responsible for the final location of his particular equipment to suit field conditions encountered and to avoid interferences with other trades' work, without extra cost to the Owner or the Architect. The Contractor shall visit the job site to determine the job conditions. The Architect reserves the right to make minor changes in outlet and equipment locations at any time prior to rough-in of the electrical work without incurring any additional costs.
- B. Where sizes are not provided for material and equipment, the material and equipment shall be sized in accordance with the latest addition of the National Electrical Code and in accordance with the manufacturer's recommendations.

1.4 DEFINITIONS

- A. The term "finished space" shall mean any space designated for the general or specific use of the occupants.
- B. The term "concealed space" shall mean all furred spaces, pipe chases, spaces above finished ceilings, crawl spaces, and other areas not generally accessible to the occupants.

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

- C. The term “electrical space” as used in this division of the specifications shall mean any space designated primarily for the installation of electrical equipment.
- D. “Provide” - Furnish and install the specific item, equipment, and/or system.
- E. “Furnish” - Supply the specific item, equipment, and/or system.
- F. “Install” - Set in position and adjust for use the specific item, equipment, and/or system unless otherwise specifically noted to be installed by others.
- G. “Concealed” - Hidden from sight in walls, chases, furred spaces, above ceilings, underground, in concrete, etc.
- H. “Exposed” - Not hidden from sight.
- I. “Work” - Labor and installation, including materials, equipment, and systems required for completion of all portions of the project.

1.5 CODES AND STANDARDS

- A. Following is a list of abbreviations for codes and standards which are referred to in the Specifications. Where such reference is made, the code or standard becomes a part of these Specifications as if the code or standard were included herein. Reference is always to the latest edition of the code or standard unless otherwise specifically noted.

ANSI - American National Standards Institute, Inc.
NFPA - National Fire Protection Association
ASTM - American Society for Testing and Materials
NBS - National Bureau of Standards
NEMA - National Electrical Manufacturers Association
UL - Underwriters' Laboratories, Inc.
NEC - National Electrical Code
NESC - National Electrical Safety Code
IPCEA - Insulated Power Cable Engineers Assn.
IEEE - Institute of Electrical and Electronics Engineers
OSHA - Occupational Safety and Health Act
IES - Illuminating Engineering Society
JIC - Joint Industrial Council

1.6 GUARANTEES AND WARRANTIES

- A. This Contractor shall guarantee all equipment, apparatus, materials, and workmanship entering into the Contract to be the best of its respective kind, and shall replace all parts at his expense which are defective within one year from final acceptance of the work by the Architect. Items of equipment which may have longer guarantees shall have warranties and guarantees completed, in order, and in effect at the time of final acceptance of the work by the Architect. This Contractor shall furnish all such warranties and guarantees at the time of final acceptance of the work.
- B. All work that is not installed in accordance with the Contract Documents shall be repaired or replaced at the direction of the Architect.

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

1.7 SUBMITTAL

- A. Submittals shall be made in accordance with Submittals paragraph in Division 1.
- B. Submittal data shall include specification data, such as metal gauges, finishes, optional accessories; even though such equipment and materials may be as specified. In addition, the submittal data shall include performance (certification) data, wiring diagrams where applicable, accurate dimensional data, and a recommended spare parts list. Outline or dimensional drawings alone are not acceptable.
- C. No roughing-in or connections shall be done until accepted equipment submittals are in the hands of the Contractor. It shall be this Contractor's responsibility to obtain accepted drawings and to make all connections in the neatest and most workmanlike manner possible. This Contractor shall coordinate with all other Contractors having any connections or roughing-in to the equipment.
- D. In general, normal catalog information (with the particular items underlined or otherwise denoted as being the submitted item) will be accepted as submittal data. Installation, operating and maintenance instructions must be that information specifically applicable to the items furnished, which is ordinarily supplied with the equipment to the Owner, for any modifications indicated. Wiring diagrams must be correct for the application. Generalized wiring diagrams, showing alternate methods of connection, will not be acceptable unless all unrelated sections are marked out. Submittal data sheets which indicate several different model numbers, figure numbers, optional accessories, or installation arrangements shall be clearly marked to indicate the specific items of equipment being furnished. Samples and certificates shall be furnished as requested. Submittal data must be complete for each piece of equipment; piecemeal data will not be processed.
- E. It shall be noted that acceptance of shop drawings by the Architect applies only to general design, arrangement, type, capacity, and quality. Such acceptance does not relieve the Contractor of the responsibility for furnishing the proper equipment.
- F. Corrections or comments made on the submittals during the Architect's review do not relieve the Contractor from compliance with the Drawings and Specifications. The Architect's review of submittals is only for general conformance with design concept and general compliance with the information given in the Contract Documents. The Contractor's responsibility includes, but is not limited to, conforming and correlating all quantities and dimensions, selecting fabrication processes and techniques of construction, coordinating his work with that of all other trades, and performing his work in a safe and satisfactory manner.

1.8 SUBSTITUTIONS

- A. When this Contractor requests approval of substitute materials and/or equipment, except where under formal alternate proposal, it shall be understood that such substitution, if approved, will be made without cost to the Owner and Architect, regardless of changes. In all cases where substitutions affect other trades, the Contractor offering such substitutions shall reimburse all affected contractors for all necessary changes in their work.

1.9 OPERATION AND MAINTENANCE MANUALS

- A. Operation and maintenance data shall be submitted in accordance with the requirements of Division "GENERAL REQUIREMENTS".
- B. Furnish owner with three (3) bound sets of the O&M manuals at completion of project. The manuals shall be furnished by the manufacturer of each item of equipment or system. Each set

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is to be bound separately in a loose leaf binder. Manuals shall include Contractor's Name and telephone numbers that can be called for service calls. The standard manufacturer's data shall be supplemented by such special instructions as may be necessary for the particular application. Also, include the following in the manuals:

- All project stamped acceptable shop drawings and copies of all certificates.
- Lubrication schedules and procedures
- Spare parts list; indicate all items that should be maintained at the site by owner.
- Maintenance and trouble-shooting suggestions for equipment.
- Wiring Diagrams
- Certification of owner instruction of system and equipment
- Record drawings

- C. The operating instructions shall integrate each piece of equipment in any one system into a numbered step-by-step sequence of operation.
- D. The parts list shall consist of a complete list of replacement items with all component parts numbered for each piece of mechanical or electrical equipment and shall include directions for ordering said replacement items.
- E. Maintenance procedure shall outline required routine maintenance for all equipment and systems and instructions for repair of the equipment.

1.10 RECORD DRAWINGS

- A. This Contractor shall submit to the Owner Record Drawings. Drawings shall be identified with the Contractor's name, the date, and title "RECORD DRAWINGS" on the paper copies.

1.11 COORDINATION

- A. Coordinate arrangement, mounting, and support of electrical equipment:
 - 1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
 - 2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
 - 3. To allow right of way for piping and conduit installed at required slope.
 - 4. So connecting raceways and cables will be clear of obstructions and of the working and access space of other equipment.
- B. Coordinate installation of required supporting devices.
- C. Coordinate sleeve selection and application with selection and application of firestopping specified in Division 07 Section "Penetration Firestopping".
- D. The Contractor shall coordinate with all other contractors in locating conduit, light fixtures, boxes, sleeves, and equipment in order to avoid conflict with all other trades' work. No extra compensation will be allowed to cover the cost of relocating light fixtures, conduit, boxes, sleeves, or other electrical equipment found encroaching on space required by others.
- E. The Contractor shall verify electrical requirements for all elevator equipment before rough-in. Coordinate installation with Elevator Contractor.

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PART 2 - PRODUCTS

2.1 GENERAL

- A. Material and equipment shall be furnished as specified in this section and each individual electrical section of these Specifications and shall be in strict accordance with applicable ANSI, NBS, ASTM, NESC, NEMA, IEEE, IPCEA, UL, NEC, OSHA and NFPA standards, codes, and specifications. Applicable codes, standards, and manufacturers' products referred to in these Specifications shall establish minimum requirements for materials and equipment furnished for this installation.
- B. When two or more articles of the same material or equipment are required, they shall be of the same manufacturer.

2.2 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.3 Bolting shall be carbon steel conforming to ASTM A-307 with heavy hexagonal nuts.

2.4 Angles, Channels, Beams, Bars and Rods shall be steel conforming to ASTM A-36 as applicable.

2.5 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. 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.

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.

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- 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.
- F. Any electrical box, device, conduit, or enclosure installed in any fire rated column, wall, or ceiling shall not reduce the fire rating of said column or wall. The Contractor providing the device, box, conduit, or enclosure shall provide the required material to maintain the fire rating of the column, wall, or ceiling.
- G. At penetrations of fire walls provide fire barrier penetration sealing system in conformance with Section FIRESTOPPING. The seal shall also be provided at all floor penetrations in a multi-story building. The sealing system shall have a 3 hour rating when tested in accordance with the provisions of ASTM E-119. Installation of penetration sealing systems shall be in accordance with manufacturer's instructions.
- H. Provide cover plates where conduit and raceways pass through floor, ceiling, or walls and are exposed in finished rooms. Flanges shall fit snugly and shall be sized to cover the openings. All escutcheons shall be chromium plated wing type with fastening screws.

3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Electrical penetrations occur when raceways, etc., 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.
- 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.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.
- F. Size pipe sleeves to provide 1/4-inch annular clear space between sleeve and raceway or cable, unless indicated otherwise.
- G. 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.
- H. 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."
- I. 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."

3.3 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 260500 - COMMON WORK RESULTS FOR ELECTRICAL

3.4 EQUIPMENT CONNECTION AND WIRING

- A. Unless specifically noted otherwise on the Drawings or elsewhere in the Specifications, all wiring and all equipment connections shall be provided by the Electrical Contractor, including equipment requiring electrical services furnished under other sections of the Specifications or by the Owner.
- B. The Electrical Contractor shall furnish and install all disconnect switches, NEC circuit protection, motor controllers, relays, and devices as required for all equipment to provide complete and operable electrical systems, unless the items are specifically noted elsewhere as being provided with, or as part of, the equipment.
- C. Electrical Contractor shall verify horsepower, voltage, phase, starting requirements, quantity of wires, and wattage of all equipment which requires electrical connections before equipment purchase or rough-in, and shall install feeders, branch circuits, and motor starting equipment and protection which are suitable in all respects for connection to, and operation with, the equipment furnished. Exact location of all equipment which requires electrical connection shall be verified with the equipment installer before rough-in.

3.5 EQUIPMENT INSTALLATION

- A. All equipment shall be installed at locations indicated and oriented so as to be easily accessible.
- B. Assembly and installation of equipment shall be in strict accordance with manufacturer's installation instructions. Equipment shall be securely anchored in place. Care shall be exercised to correctly orient equipment before securing in place.
- C. Cutting, Fitting, and Patching
 - 1. The Electrical Contractor shall do all cutting and drilling of masonry, steel, wood, or iron work and all fitting necessary for the proper installation of all electrical equipment and materials included in the Specifications or governed thereby.
 - 2. No cutting or drilling of the structure, of any kind, shall be done without first obtaining permission from the Architect. All cutting and drilling shall be done under the supervision of the Contractor in strict accordance with instructions furnished by the Architect.
 - 3. All patching and finishing shall be done by workmen skilled in the trades involved.
- D. PERMITS, CERTIFICATES, LAWS AND ORDINANCES
 - 1. The Electrical Contractor shall, at his own expense, procure all permits, certificates, and licenses required of him by law for the execution of his work. He shall comply with all Federal, State, and local laws, ordinances, rules and regulations relating to the performance of the work.
 - 2. Following completion, a certificate of approval shall be secured from the local code enforcement authority and delivered to the Architect.
- E. INSPECTION
 - 1. The Electrical Contractor shall, at his own expense, furnish electrical inspection as required by the local code enforcing agency, when applicable. The Contractor shall notify the Electrical Inspector in writing upon the start of the job and a copy of the notice shall be sent to the Architect. The Contractor shall furnish certificates of final approval by the Electrical Inspection Bureau and final payment shall be withheld until he has presented the Architect with the aforementioned certificates of approval.

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

F. PAINTING

1. Refinish surfaces marred or damaged by electrical work to original or specified condition.
2. Replace marred or discolored factory, multiple coat, baked on finish surfaces. Minor inconspicuous scratches may be "touched-up".
3. The following items do not require painting.
 - a. Equipment with a factory baked on finish.
 - b. Receptacle and switch cover plates.
 - c. Faceplates of instruments, equipment, and control panels.

END OF SECTION

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Building wires and cables rated 600 V and less.
 - 2. Connectors, splices, and terminations rated 600 V and less.
- B. Related Sections include the following:
 - 1. Division 26 Sections:
 - a. "Common Work Results for Electrical"
 - b. "Identification for Electrical Systems"
 - c. "Hangers and Supports for Electrical Systems"

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Field quality-control test reports.

1.4 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.
- C. Wire and cable shall be manufactured with material selection tests as described in ASTM D3291 and EN 50497 to prevent plasticizer exudation from PVC insulated and sheathed cables.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- 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:
 - 1. American Insulated Wire Corp.; a Leviton Company.
 - 2. General Cable Corporation.
 - 3. Senator Wire & Cable Company.
 - 4. Carol Cable.
- B. Copper Conductors: Comply with NEMA WC 70.

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

- C. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN and XHHW.

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:
 - 1. AFC Cable Systems, Inc.
 - 2. Hubbell Power Systems, Inc.
 - 3. O-Z/Gedney; EGS Electrical Group LLC.
 - 4. 3M; Electrical Products Division.
 - 5. Tyco Electronics Corp.
- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

PART 3 - EXECUTION

3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Branch Circuits: Copper. Solid or stranded for No. 10 AWG and smaller; stranded for No. 8 AWG and larger. Minimum conductor size shall be No. 12 AWG.
- B. Control Circuits: Copper. Solid or stranded for No. 10 AWG and smaller. Minimum conductor size shall be No. 14 AWG.

3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Exposed Branch Circuits: Type THHN-THWN, single conductors in raceway.
- B. Branch Circuits Concealed in Ceilings and Chases: Type THHN-THWN, single conductors in raceway.
- C. Class 1 Control Circuits: Type THHN-THWN, in raceway.
- D. Class 2 Control Circuits: Type THHN-THWN, in raceway.
- E. MC Cables or NM Cables are not permitted.

3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables above ceilings, and concealed in chase, 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, that 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.

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

- E. Support cables according to Division 26 Section "Hangers and Supports for Electrical Systems".
- F. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems".
- G. No wiring shall be pulled until construction is such that there is no danger of moisture entering open raceways. Protect all openings with caps or plugs until final connections are made. Conduit shall be swabbed clean before pulling conductors.
- H. No thermoplastic conductors shall be pulled through raceways at ambient temperatures below 33°F.
- I. All insulated bushings shall be installed before pulling conductors.
- J. All wiring in panel gutters, pull boxes, and other accessible enclosures shall be tied and bundled with cable ties.
- K. Wiring shall be installed continuously between terminal points indicated or dictated by field conditions without intermediate splices or taps unless specifically authorized by the Architect. Splices shall be made only in junction or terminal boxes.
- L. Conductors shall not be subject to pulling tension in excess of 50 percent of yield strength of conductor. Pulling lugs shall be attached to conductor with a sleeve or grip over the cable sheath to prevent slipping the insulation.
- M. Where terminals and splices are taped with insulation tape, apply a minimum of two layers of electrical tape, half-lapped.

3.4 CONNECTIONS

- A. 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.
- B. 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. All joints between conductors shall be made with wire connectors. Splices shall be in boxes and shall be accessible. Branch circuit conductors #10 AWG and smaller shall be spliced together using properly sized and listed spring type insulated conductors (i.e. wire nut) Conductors #8 AWG and larger shall be spliced using a non-insulated compression type sleeve or split-bolt connector with tape covering.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches of slack.

3.5 FIELD QUALITY CONTROL

- A. Perform tests and inspections and prepare test reports.

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

- B. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test.
- C. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Hangers and supports for electrical equipment and systems.

1.3 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports for multiple raceways 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.

1.4 SUBMITTALS

- A. Product Data: For the following:
 - 1. Steel slotted support systems.

1.5 QUALITY ASSURANCE

- A. Comply with NFPA 70.

PART 2 - PRODUCTS

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:

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- 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.
2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
 3. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
 4. 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:
 - 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:
 - 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.

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

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.

PART 3 - EXECUTION

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 as required by 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 two-bolt conduit clamps.
 2. Whenever possible, conduit shall be top mounted.
 3. Each conduit shall be individually clamped to supports.
 4. Parallel runs of conduit shall be grouped and fastened to walls with wall brackets of steel channel or knee-braced angles.
- 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 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. 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.
- C. 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 Wood: Fasten with lag screws or through bolts.
 2. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 3. 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 (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

4. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
 5. To Light Steel: Sheet metal screws.
 6. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.
- D. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

END OF SECTION

SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.
- B. Related Sections include the following:
 - 1. Division 26 Section "Common Work Results for Electrical".
 - 2. Division 26 Section "Hangers and Supports for Electrical Systems" for raceway and box supports.
 - 3. Division 7 Section "Penetration Firestopping".

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. FMC: Flexible metal conduit.

1.4 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. 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:
 - 1. AFC Cable Systems, Inc.
 - 2. Alflex Inc.
 - 3. Allied Tube & Conduit; a Tyco International Ltd. Co.
 - 4. Anamet Electrical, Inc.; Anaconda Metal Hose.
 - 5. Electri-Flex Co.
 - 6. Manhattan/CDT/Cole-Flex.
 - 7. Maverick Tube Corporation.
 - 8. O-Z Gedney; a unit of General Signal.
 - 9. Wheatland Tube Company.
- B. EMT: ANSI C80.3.

SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

- C. FMC: Zinc-coated steel.
- D. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
 - 1. Fittings for EMT: Steel compression type. Set screw fittings not allowed.

2.2 BOXES, ENCLOSURES AND CABINETS

- 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:
 - 1. Cooper Crouse-Hinds; Div. of Cooper Industries, Inc.
 - 2. EGS/Appleton Electric.
 - 3. Erickson Electrical Equipment Company.
 - 4. Hoffman.
 - 5. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
 - 6. O-Z/Gedney; a unit of General Signal.
 - 7. RACO; a Hubbell Company.
 - 8. Robroy Industries, Inc.; Enclosure Division.
 - 9. Scott Fetzer Co.; Adalet Division.
 - 10. Spring City Electrical Manufacturing Company.
 - 11. Thomas & Betts Corporation.
 - 12. Walker Systems, Inc.; Wiremold Company (The).
 - 13. Woodhead, Daniel Company; Woodhead Industries, Inc. Subsidiary.
- B. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
- C. Cast-Metal Outlet and Device Boxes: NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- D. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- E. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, galvanized, cast iron with gasketed cover.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Comply with the following indoor applications, unless otherwise indicated:
 - 1. Exposed or Concealed: EMT.
 - 2. Connection to Vibrating Equipment: FMC.
 - 3. Boxes and Enclosures: NEMA 250, Type 1.
 - a. Minimum outlet box depth shall be 2 1/8 inches.
 - b. Four inch octagonal outlet boxes shall be provided for wall and ceiling mounted fixtures. Outlet boxes shall be provided with fixture studs as required for mounting fixture.
 - c. Four inch square outlet boxes shall be provided for switches and convenience outlet boxes.
- B. Minimum Raceway Size: 3/4-inch trade size.

SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

- C. Raceway Fittings: Compatible with raceways and suitable for use and location.

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 12 inches away from parallel runs of flues and uninsulated steam or hot-water pipes, 6 inches if crossing. Where lines are insulated, conduit parallel or crossing shall be at least 2 inches away. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation. All conduit shall be swabbed and cleaned before pulling wire.
- D. Support raceways as specified in Division 26 Section "Hangers and Supports for Electrical Systems". Conduit shall be securely fastened in place within 3 feet of each outlet box, junction box, cabinet, or fitting and shall be supported at least every 10 feet. No conduit shall be supported by the equipment to which it is connected.
- E. 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.
- F. Conceal conduit and EMT above ceilings or in chases, unless otherwise indicated.
- G. Do not embed raceways in slabs.
- H. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.
- I. Flexible Conduit Connections: Use maximum of 72 inches of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for motors.
- J. Metallic conduit systems shall be electrically continuous in their entirety.
- K. Outlet boxes shall be provided for all devices. Pull boxes and junction boxes shall be provided at all points of splicing and tapping.
- L. Boxes and supports shall be fastened to wood with wood screws or screw-type nails of equal holding strength with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry block and with screws or welded studs on steel work.
- M. Threaded studs driven in by powder charge and provided with lock washers and nuts, or nail-type nylon anchors, may be used in lieu of wood screws, expansion shields or machine screws.
- N. All boxes shall be accessible.
- O. Conduit shall be run with smooth, easy bends. Exposed conduit shall be run parallel or perpendicular to walls, ceilings, beams, and columns. Concealed conduit may be run at angles other than parallel or perpendicular to building lines but shall be grouped in a neat and workmanlike manner. Dissimilar angles and crisscross arrangement will not be acceptable.
- P. Conduit bends and elbows shall be long-sweep, large radii when required by cable manufacturer.

END OF SECTION

SECTION 260553 – IDENTIFICATION FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Identification for conductors.
 - 2. Warning labels and signs including arc flash labeling.
 - 3. Instruction signs.
 - 4. Equipment identification labels.
 - 5. Miscellaneous identification products.

1.3 SUBMITTALS

- A. Product Data: For each electrical identification product indicated.

1.4 QUALITY ASSURANCE

- A. Comply with NFPA 70.
- B. Comply with NFPA 70E.
- C. Comply with 29 CFR 1910.144 and 29 CFR 1910.145.
- D. Comply with ANSI Z535 for arc flash labels.
- E. Comply with OSHA requirements for electrical labeling.

1.5 COORDINATION

- A. Coordinate identification names, abbreviations, colors, and other features with requirements in the Contract Documents, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.

PART 2 - PRODUCTS

2.1 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.

2.2 EQUIPMENT IDENTIFICATION LABELS

- A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed.
 - 1. Equipment Label Text Height: Equipment name 3/16 inch; all other text 1/8 inch.

SECTION 260553 – IDENTIFICATION FOR ELECTRICAL SYSTEMS

2. Equipment Label Minimum Size: 2 inch by 4 inch.
3. Equipment Label shall identify equipment name, equipment ampere and voltage ratings, and circuit feeding equipment.
4. Labels for equipment on normal power shall be white letters on black background. Labels for equipment on emergency power (including transfer switches) shall be white letters on red background.

B. Stenciled Legend: In nonfading, waterproof black ink.

2.3 CABLE TIES

- A. General-Purpose Cable Ties: Fungus inert, self extinguishing, one piece, self locking, Type 6/6 nylon.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Attach signs and plastic labels with mechanical fasteners appropriate to the location and substrate.

3.2 IDENTIFICATION SCHEDULE

- A. Power-Circuit Conductor Identification, 600 V or Less: For conductors in pull and junction boxes, use color-coding conductor tape to identify the phase.
1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service, 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. 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 possible unwinding. Locate bands to avoid obscuring factory cable markings.
- B. 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.

SECTION 260553 – IDENTIFICATION FOR ELECTRICAL SYSTEMS

1. Labeling Instructions:
 - a. Fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
2. Equipment to Be Labeled:
 - a. Enclosures and electrical cabinets.
 - b. Enclosed switches.

END OF SECTION

SECTION 262726 - WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
 - 2. Snap switches.

1.3 DEFINITIONS

- A. GFCI: Ground-fault circuit interrupter.
- B. Pigtail: Short lead used to connect a device to a branch-circuit conductor.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: List of legends and description of materials.
- C. Samples: One for each type of device and wall plate specified, in each color specified.
- D. Field quality-control test reports.
- E. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of wiring device and associated wall plate through one source from a single manufacturer. Insofar as they are available, obtain all wiring devices and associated wall plates from a single manufacturer and one source.
- B. 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.
- C. Comply with NFPA 70.

SECTION 262726 - WIRING DEVICES

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
1. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper).
 2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
 3. Leviton Mfg. Company Inc. (Leviton).
 4. Pass & Seymour/Legrand; Wiring Devices & Accessories (Pass & Seymour).

2.2 STRAIGHT BLADE RECEPTACLES

- A. Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, UL 498, and FS W-C-596.
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cooper.
 - b. Hubbell.
 - c. Leviton.
 - d. Pass & Seymour.

2.3 GFCI RECEPTACLES

- A. General Description: Straight blade, non-feed-through type. Comply with NEMA WD 1, NEMA WD 6, UL 498, FS W-C-596 and UL 943, Class A, and include indicator light that is lighted when device is tripped.
- B. Duplex GFCI Convenience Receptacles, 125 V, 20 A.
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cooper.
 - b. Pass & Seymour.
 - c. Leviton.
 - d. Hubbell.

2.4 SNAP SWITCHES

- A. Comply with NEMA WD 1 and UL 20.
- B. Switches, 120/277 V, 20 A:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following or approved equal.
 - a. Cooper; 2221 (single pole).
 - b. Hubbell; CS1221 (single pole).

SECTION 262726 - WIRING DEVICES

- c. Leviton; 1221-2 (single pole).
- d. Pass & Seymour; 20AC1 (single pole).

2.5 WALL PLATES

- A. Single and combination types to match corresponding wiring devices.
 - 1. Plate-Securing Screws: Metal with head color to match plate finish.
 - 2. Material for Unfinished Spaces: Galvanized steel, Smooth, high-impact thermoplastic.
- B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with type 3R weather-resistant.

2.6 FINISHES

- A. Device Color:
 - 1. Wiring Devices Connected to Normal Power System: Color to be selected by Architect.
 - 2. Wiring Devices Connected to Emergency Power System: Red.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1, including the mounting heights listed in that standard, unless otherwise noted.
- B. Coordination with Other Trades:
 - 1. Take steps to insure that devices and their boxes are protected. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of the boxes.
 - 2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
- C. Conductors:
 - 1. Do not strip insulation from conductors until just before they are spliced or terminated on devices.
 - 2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
 - 3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtailed.

SECTION 262726 - WIRING DEVICES

D. Device Installation:

1. Replace all devices that have been in temporary use during construction or that show signs that they were installed before building finishing operations were complete.
2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.
4. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, 2/3 to 3/4 of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by the manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device mounting screws in yokes, allowing metal-to-metal contact.

E. Receptacle Orientation:

1. Install ground pin of vertically mounted receptacles down, and on horizontally mounted receptacles to the right.

F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Arrangement of Devices: Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

3.2 FIELD QUALITY CONTROL

A. Perform tests and inspections and prepare test reports.

B. Tests for Convenience Receptacles:

1. Line Voltage: Acceptable range is 105 to 132 V.
2. Ground Impedance: Values of up to 2 ohms are acceptable.
3. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
4. Using the test plug, verify that the device and its outlet box are securely mounted.
5. The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Cartridge fuses rated 600-V ac and less for use in enclosed switches.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material, dimensions, descriptions of individual components. Include the following for each fuse type indicated:
 - 1. Dimensions and manufacturer's technical data on features, performance, electrical characteristics, and ratings.
 - 2. Current-limitation curves for fuses with current-limiting characteristics.
 - 3. Time-current coordination curves (average melt) and current-limitation curves (instantaneous peak let-through current) for each type and rating of fuse.
 - 4. Coordination charts and tables and related data.
- B. Operation and Maintenance Data: For fuses to include in operation and maintenance manuals. Include the following:
 - 1. Current-limitation curves for fuses with current-limiting characteristics.
 - 2. Time-current coordination curves (average melt) and current-limitation curves (instantaneous peak let-through current) for each type and rating of fuse.
 - 3. Coordination charts and tables and related data.

1.4 COORDINATION

- A. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size and with system short-circuit current levels.

1.5 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than two of each size and type.

SECTION 262813 – FUSES

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Cooper Bussmann, Inc.
 - 2. Edison Fuse, Inc.
 - 3. Ferraz Shawmut, Inc.
 - 4. Littelfuse, Inc.

2.2 CARTRIDGE FUSES

- A. Characteristics: NEMA FU 1, nonrenewable cartridge fuses with voltage ratings consistent with circuit voltages.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine fuses before installation. Reject fuses that are moisture damaged or physically damaged.
- B. Examine holders to receive fuses for compliance with installation tolerances and other conditions affecting performance, such as rejection features.
- C. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FUSE APPLICATIONS

- A. Cartridge Fuses: Class RK5, time delay.

3.3 INSTALLATION

- A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

3.4 IDENTIFICATION

- A. Install labels complying with requirements for identification specified in Division 26 Section "Identification for Electrical Systems" and indicating fuse replacement information on inside door of each fused switch.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Fusible switches.
 - 2. Molded-case circuit breakers (MCCBs).
 - 3. Enclosures.

1.3 DEFINITIONS

- A. NC: Normally closed.
- B. NO: Normally open.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include nameplate ratings, dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
 - 1. Enclosure types and details for types other than NEMA 250, Type 1.
 - 2. Current and voltage ratings.
 - 3. Short-circuit current ratings (interrupting and withstand, as appropriate).
 - 4. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.
- B. Shop Drawings: For enclosed switches and circuit breakers.
 - 1. Include plans, elevations, sections, details, and attachments to other work.
 - 2. Include wiring diagrams for power and control wiring.

1.5 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals include the following:
 - 1. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.

SECTION 262816 – ENCLOSED SWITCHES AND CIRCUIT BREAKERS

1.7 WARRANTY

- A. Manufacturer's Warranty: Manufacturer and Installer agree to repair or replace components that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: One year(s) from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single manufacturer.
- B. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.
- C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.
- D. Comply with NFPA 70.

2.2 FUSIBLE SWITCHES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. ABB Inc.
 - 2. Eaton.
 - 3. General Electric Company.
 - 4. Siemens Industry, Inc., Energy Management Division.
 - 5. Square D; by Schneider Electric.
- B. Type HD, Heavy Duty:
 - 1. Single throw.
 - 2. Three pole.
 - 3. 240-V ac.
 - 4. 200 A and smaller.
 - 5. UL 98 and NEMA KS 1, horsepower rated, with clips or bolt pads to accommodate indicated fuses.
 - 6. Lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.

SECTION 262816 – ENCLOSED SWITCHES AND CIRCUIT BREAKERS

C. Accessories:

1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
3. Lugs: Mechanical type, suitable for number, size, and conductor material.

2.3 MOLDED-CASE CIRCUIT BREAKERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Eaton.
2. General Electric Company.
3. NOARK Electric North America.
4. Siemens Industry, Inc., Energy Management Division.
5. Square D; by Schneider Electric.

B. Circuit breakers shall be constructed using glass-reinforced insulating material. Current carrying components shall be completely isolated from the handle and the accessory mounting area.

C. Circuit breakers shall have a toggle operating mechanism with common tripping of all poles, which provides quick-make, quick-break contact action. The circuit-breaker handle shall be over center, be trip free, and reside in a tripped position between on and off to provide local trip indication. Circuit-breaker escutcheon shall be clearly marked on and off in addition to providing international I/O markings. Equip circuit breaker with a push-to-trip button, located on the face of the circuit breaker to mechanically operate the circuit-breaker tripping mechanism for maintenance and testing purposes.

D. The maximum ampere rating and UL, IEC, or other certification standards with applicable voltage systems and corresponding interrupting ratings shall be clearly marked on face of circuit breaker. Circuit breakers shall be 100 percent rated.

E. MCCBs shall be equipped with a device for locking in the isolated position.

F. Standard: Comply with UL 489 with interrupting capacity to comply with available fault currents.

G. Thermal-Magnetic Circuit Breakers: Inverse time-current thermal element for low-level overloads and instantaneous magnetic trip element for short circuits.

H. Features and Accessories:

1. Standard frame sizes, trip ratings, and number of poles.
2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
3. Application Listing: Appropriate for application.
4. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.
5. Auxiliary Contacts: One SPDT switch with "a" and "b" contacts; "a" contacts mimic circuit-breaker contacts, "b" contacts operate in reverse of circuit-breaker contacts.

2.4 ENCLOSURES

A. Enclosed Switches and Circuit Breakers: UL 489, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.

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- B. Enclosure Finish: The enclosure shall be gray baked enamel paint, electrodeposited on cleaned, phosphatized steel (NEMA 250 Type 1).
- C. Operating Mechanism: The circuit-breaker operating handle shall be directly operable through the front cover of the enclosure (NEMA 250 Type 1). The cover interlock mechanism shall have an externally operated override. The override shall not permanently disable the interlock mechanism, which shall return to the locked position once the override is released. The tool used to override the cover interlock mechanism shall not be required to enter the enclosure in order to override the interlock.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
 - 1. Commencement of work shall indicate Installer's acceptance of the areas and conditions as satisfactory.

3.2 ENCLOSURE ENVIRONMENTAL RATING APPLICATIONS

- A. Enclosed Switches and Circuit Breakers: Provide enclosures at installed locations with the following environmental ratings.
 - 1. Indoor, Dry and Clean Locations: NEMA 250, Type 1.

3.3 INSTALLATION

- A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.
- B. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
- C. Temporary Lifting Provisions: Remove temporary lifting of eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
- D. Install fuses in fusible devices.
- E. Comply with NFPA 70 and NECA 1.

3.4 IDENTIFICATION

- A. Comply with requirements in Section 260553 "Identification for Electrical Systems."
 - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
 - 2. Label each enclosure with engraved metal or laminated-plastic nameplate.

3.5 FIELD QUALITY CONTROL

A. Tests and Inspections for Switches:

1. Visual and Mechanical Inspection:

- a. Inspect physical and mechanical condition.
- b. Inspect anchorage, alignment, grounding, and clearances.
- c. Verify that the unit is clean.
- d. Verify blade alignment, blade penetration, travel stops, and mechanical operation.
- e. Verify that fuse sizes and types match the Specifications and Drawings.
- f. Verify that each fuse has adequate mechanical support and contact integrity.
- g. Inspect bolted electrical connections for high resistance using one of the two following methods:
 - 1) Use a low-resistance ohmmeter.
 - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
 - a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.
- h. Verify correct phase barrier installation.
- i. Verify lubrication of moving current-carrying parts and moving and sliding surfaces.

2. Electrical Tests:

- a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
- b. Measure contact resistance across each switchblade fuseholder. Drop values shall not exceed the high level of the manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
- c. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with switch closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1 from the NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
- d. Measure fuse resistance. Investigate fuse-resistance values that deviate from each other by more than 15 percent.

B. Tests and Inspections for Molded Case Circuit Breakers:

1. Visual and Mechanical Inspection:

- a. Verify that equipment nameplate data are as described in the Specifications and shown on the Drawings.
- b. Inspect physical and mechanical condition.
- c. Inspect anchorage, alignment, grounding, and clearances.

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- d. Verify that the unit is clean.
 - e. Operate the circuit breaker to ensure smooth operation.
 - f. Inspect bolted electrical connections for high resistance using one of the two following methods:
 - 1) Use a low-resistance ohmmeter.
 - a) Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from those of similar bolted connections by more than 50 percent of the lowest value.
 - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method in accordance with manufacturer's published data or NETA ATS Table 100.12.
 - a) Bolt-torque levels shall be in accordance with manufacturer's published data. In the absence of manufacturer's published data, use NETA ATS Table 100.12.
 - g. Inspect operating mechanism, contacts, and chutes in unsealed units.
 - h. Perform adjustments for final protective device settings in accordance with the coordination study.
2. Electrical Tests:
- a. Perform resistance measurements through bolted connections with a low-resistance ohmmeter. Compare bolted connection resistance values to values of similar connections. Investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
 - b. Perform insulation-resistance tests for one minute on each pole, phase-to-phase and phase-to-ground with circuit breaker closed, and across each open pole. Apply voltage in accordance with manufacturer's published data. In the absence of manufacturer's published data, use Table 100.1 from the NETA ATS. Investigate values of insulation resistance less than those published in Table 100.1 or as recommended in manufacturer's published data.
 - c. Perform a contact/pole resistance test. Drop values shall not exceed the high level of the manufacturer's published data. If manufacturer's published data are not available, investigate values that deviate from adjacent poles or similar switches by more than 50 percent of the lowest value.
 - d. Test functionality of the trip unit by means of primary current injection. Pickup values and trip characteristics shall be as specified and within manufacturer's published tolerances.
 - e. Perform minimum pickup voltage tests on shunt trip and close coils in accordance with manufacturer's published data. Minimum pickup voltage of the shunt trip and close coils shall be as indicated by manufacturer.
 - f. Verify operation of charging mechanism. Investigate units that do not function as designed.
3. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
4. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.
- C. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.

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- D. Prepare test and inspection reports.
 - 1. Test procedures used.
 - 2. Include identification of each enclosed switch and circuit breaker tested and describe test results.
 - 3. List deficiencies detected, remedial action taken, and observations after remedial action.

3.6 ADJUSTING

- A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.

END OF SECTION

SECTION 265119 - LED LIGHTING

PART 1- GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes the following types of LED luminaires:
 - 1. LED Luminaires.
 - 2. Materials.
 - 3. Finishes.
 - 4. Luminaire support.

1.3 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color Rendering Index.
- C. Fixture: See "Luminaire."
- D. IP: International Protection or Ingress Protection Rating.
- E. LED: Light-emitting diode.
- F. Lumen: Measured output of lamp and luminaire, or both.
- G. Luminaire: Complete lighting unit, including lamp, reflector, and housing.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Arrange in order of luminaire designation.
 - 2. Include data on features, accessories, and finishes.
 - 3. Include physical description and dimensions of luminaires.
 - 4. Include life, output (lumens, CCT, and CRI), and energy efficiency data.
 - 5. Photometric data and adjustment factors based on laboratory tests.
 - a. Manufacturers' Certified Data: Photometric data certified by manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For luminaires and lighting systems to include in operation and maintenance manuals.

1.6 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Luminaire manufacturer's laboratory that is accredited under the NVLAP for Energy Efficient Lighting Products.

SECTION 265119 - LED LIGHTING

- B. Provide luminaires from a single manufacturer for each luminaire type.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect finishes of exposed surfaces by applying a strippable, temporary protective covering before shipping.

1.8 WARRANTY

- A. Warranty: Manufacturer and Installer agree to repair or replace components of luminaires that fail in materials or workmanship within specified warranty period.
- B. Warranty Period: Five year(s) from date of Substantial Completion.

PART 2- PRODUCTS

2.1 LUMINAIRE REQUIREMENTS

- 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. Standards:
 - 1. ENERGY STAR certified.
- C. Internal driver.
- D. Nominal Operating Voltage: As indicated.
 - 1. Lens Thickness: At least 0.125 inch minimum unless otherwise indicated.

2.2 MANUFACTURERS

- A. The following requirements apply to product selections as indicated on the drawing:
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.3 MATERIALS

- A. Metal Parts:
 - 1. Free of burrs and sharp corners and edges.
 - 2. Sheet metal components shall be steel unless otherwise indicated.
 - 3. Form and support to prevent warping and sagging.
- B. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.
- C. Factory-Applied Labels: Comply with UL 1598.

SECTION 265119 - LED LIGHTING

2.4 METAL FINISHES

- A. Variations in finishes are unacceptable in the same piece.

2.5 LUMINAIRE SUPPORT

- A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems".

PART 3- EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Examine roughing-in for luminaire to verify actual locations of luminaire and electrical connections before luminaire installation. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with NECA 1.
- B. Install luminaires level, plumb, and square.
- C. Supports:
 - 1. Sized and rated for luminaire weight.
 - 2. Able to maintain luminaire position after cleaning and relamping.
 - 3. Luminaire mounting devices shall be capable of supporting a horizontal force of 100 percent of luminaire weight and vertical force of 400 percent of luminaire weight.

3.3 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections:
 - 1. Operational Test: After installing luminaires, switches, and accessories, and after electrical circuitry has been energized, test units to confirm proper operation.
- B. Luminaire will be considered defective if it does not pass operation tests and inspections.

END OF SECTION