Renovations for:

Galego Court
Administration Building & Building 200

483 Weeden Street
Pawtucket, Rhode Island 02860

December 15, 2023

Prepared for:

Pawtucket Housing Authority
214 Roosevelt Avenue
Pawtucket, RI 02860

Architect: Ed Wojcik Architect, Ltd.
One Richmond Square
Providence, RI 02906
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141 Industrial Drive
Slatersville, RI 02876
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END OF SECTION

SECTION 001113
ADVERTISEMENT FOR BIDS

FROM:

1.01 THE OWNER (HEREINAFTER REFERRED TO AS OWNER):

A. Pawtucket Housing Authority

B. Address:
214 Roosevelt Avenue
Pawtucket, RI, 02860

1.02 DATE: DECEMBER 15, 2023

1.03 TO: POTENTIAL BIDDERS

A. Your firm is invited to submit an offer under seal to Owner for renovations of Administration Building & Building 200 located at Galego Court, 483 Weeden Street, Pawtucket, RI before 10:00 am local standard time on the 15th day of February, 2024.

B. Project: PHA Galego Court Administration Building & Building 200

C. **Contractors, including sub-contractors, such as painters and carpenters are required to be a licensed Lead Renovation firm in Rhode Island. Contractors are required to follow Rhode Island Renovation, Repair, and Painting Rule (RRP).**

D. Project Description: Relocate existing offices, create two new residential units.

E. Prebid Conference: A bidders conference has been scheduled for 10:00 am on January 30, 2024 at the location of Galego Court, 483 Weeden Street, Pawtucket, RI 02860.

F. Documents may be obtained only by general contract Bidders. Others may view the Bid Documents at the office of the Owner.

G. Bidders will be required to provide Bid security in the form of a Bid Bond of a sum no less than 5 percent of the Bid Amount.

H. Refer to other bidding requirements described in Document 002113 - Instructions to Bidders and Document 003100 - Available Project Information.

I. Submit your offer on the Bid Form provided. Bidders may supplement this form as appropriate.

J. Your offer will be required to be submitted under a condition of irrevocability for a period of 30 days after submission.

K. The Owner reserves the right to accept or reject any or all offers.

1.04 SIGNATURE

END OF SECTION

SECTION 002113
INSTRUCTIONS TO BIDDERS

INVITATION

1.01 BID SUBMISSION

A. Bids signed and under seal, executed, and dated will be received at the office of the Owner at 214 Roosevelt Avenue, Pawtucket, RI before 10:00 a.m. local standard time on the 15th day of February 2024.

B. Offers submitted after the above time shall be returned to the bidder unopened.

C. Offers will be opened publicly immediately after the time for receipt of bids.

1.02 INTENT

A. The intent of this Bid request is to obtain an offer to perform work to complete renovations to Administration Building and Building 200 located at Galego Court for a Stipulated Sum contract, in accordance with Contract Documents.

1.03 WORK IDENTIFIED IN THE CONTRACT DOCUMENTS

A. Work of this proposed Contract comprises renovation, including general construction Work.

B. Location: Galego Court located at 483 Weeden Street, Pawtucket, RI 02860.

1.04 CONTRACT TIME

A. Identify Contract Time in the Bid Form. The completion date in the Agreement shall be the Contract Time added to the commencement date.

BID DOCUMENTS AND CONTRACT DOCUMENTS

2.01 DEFINITIONS

A. Bid Documents: Contract Documents supplemented with Instructions to Bidders, Information Available to Bidders, Bid Form Supplements To Bid Forms and Appendices identified.

B. Contract Documents: Defined in AIA A201 Article 1 including issued Addenda.

2.02 CONTRACT DOCUMENTS IDENTIFICATION

A. Contract Documents are identified as Project Number 2123, as prepared by Architect who is located at One Richmond Square, Suite 100K, Providence, RI 02906, and with contents as identified in the Table of Contents.

2.03 AVAILABILITY

A. Bid documents will be made available electronically only to invited Bidders printed at their own cost.

B. Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not grant a license for other purposes.

2.04 EXAMINATION

A. Bid Documents may be viewed at the office of Owner which is located at 214 Roosevelt Avenue, Pawtucket, RI 02860.

B. Upon receipt of Bid Documents verify that documents are complete. Notify Architect should the documents be incomplete.

C. Immediately notify Architect upon finding discrepancies or omissions in the Bid Documents.

2.05 INQUIRIES/ADDENDA

A. Direct questions to Matthew Clemence, email; mclemence@edwojcikarchitect.com.

B. Addenda may be issued during the bidding period. All Addenda become part of Contract Documents. Include resultant costs in the Bid Amount.

C. Verbal answers are not binding on any party.

D. Clarifications requested by bidders must be in writing not less than 7 days before date set for receipt of bids. The reply will be in the form of an Addendum, a copy of which will be forwarded

to known recipients.

2.06 PRODUCT/ASSEMBLY/SYSTEM SUBSTITUTIONS

A. General Requirements for Substitution Requests:
   1. Project Manual establishes standards for products, assemblies, and systems.
   2. Submit requests only for elements for which substitution is specifically allowed in the Project Manual.
   3. Provide sufficient information to determine acceptability of proposed substitutions.
   4. Provide complete information on required revisions to other work to accommodate each proposed substitution.

B. Substitution Request Time Restrictions:
   1. Where the Bid Documents stipulate a particular product, substitutions will be considered up to 10 days before receipt of bids.

C. Substitution Request Form:

D. Review and Acceptance of Request:
   1. Architect may approve the proposed substitution and will issue an Addendum to known bidders.

E. See Section 012500 - Substitution Procedures for additional requirements.

SITE ASSESSMENT

3.01 SITE EXAMINATION

A. Examine the project site before submitting a bid.

3.02 PREBID CONFERENCE

A. A bidders conference has been scheduled for 10:00 a.m. on the 30th day of January 2024 at the location of Galego Court, 483 Weeden Street, Pawtucket, RI 02860.

B. Invited general contract bidders and suppliers are invited.

C. Representatives of Architect will be in attendance.

QUALIFICATIONS

4.01 EVIDENCE OF QUALIFICATIONS

A. To demonstrate qualification for performing the Work of this Contract, bidders may be requested to submit written evidence of financial position, license to perform work in the State.

B. **Contractors, including sub-contractors, such as painters and carpenters are required to be a licensed Lead Renovation firm in Rhode Island.**

C. **Contractors are required to follow Rhode Island Renovation, Repair, and Painting Rule (RRP).**

4.02 SUBCONTRACTORS/SUPPLIERS/OTHERS

A. Owner reserves the right to reject a proposed subcontractor for reasonable cause.

BID SUBMISSION

5.01 SUBMISSION PROCEDURE

A. Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.

B. Submit two copies of the executed offer on the Bid Forms provided, signed and sealed with the required security in a closed opaque envelope, clearly identified with bidder's name, project name and Owner's name on the outside.

C. Improperly completed information, irregularities in bid bond, may be cause not to open the Bid Form envelope and declare the bid invalid or informal.

D. An abstract summary of submitted bids will be made available to all bidders following bid opening.

5.02 BID INELIGIBILITY

A. Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at the discretion of the Owner, be declared unacceptable.

B. Bid Forms, Appendices, and enclosures that are improperly prepared may, at the discretion of Owner, be declared unacceptable.

BID ENCLOSURES/REQUIREMENTS

6.01 SECURITY DEPOSIT

A. Bids shall be accompanied by a security deposit as follows:
   1. Bid Bond of a sum no less than 5 percent of the Bid Amount on AIA A310 Bid Bond Form.

B. Endorse the Bid Bond in the name of the Owner as obligee, signed and sealed by the principal (Contractor) and surety.

C. The security deposit will be returned after delivery to the Owner of the required Performance and Payment Bond(s) by the accepted bidder.

D. Include the cost of bid security in the Bid Amount.

E. If no contract is awarded, all security deposits will be returned.

6.02 PERFORMANCE ASSURANCE

A. Accepted Bidder: Provide a Performance and Payment bond as described in 007300 - Supplementary Conditions.

B. Include the cost of performance assurance bonds in the Bid Amount.

6.03 INSURANCE

A. Provide an executed "Undertaking of Insurance" on a standard form provided by the insurance company stating their intention to provide insurance to the bidder in accordance with the insurance requirements of Contract Documents.

6.04 BID FORM REQUIREMENTS

A. Complete all requested information in the Bid Form and Appendices.

B. Taxes: Refer to Document 007300 - Supplementary Conditions for inclusion of taxes, procedures for tax rebate claims, and products that are tax exempt.

6.05 FEES FOR CHANGES IN THE WORK

A. Include in the Bid Form, the overhead and profit fees on own Work and Work by subcontractors, applicable for Changes in the Work, whether additions to or deductions from the Work on which the Bid Amount is based.

6.06 BID FORM SIGNATURE

A. The Bid Form shall be signed by the bidder, as follows:
   1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
   2. Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.
   3. Corporation: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the bid is signed by officials other than the president and secretary of the company, or the president/secretary/treasurer of the company, a copy of the by-law resolution of their board of directors authorizing them to do so, must also be submitted with the Bid Form in the bid envelope.
   4. Joint Venture: Each party of the joint venture shall execute the Bid Form under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

6.07 ADDITIONAL BID INFORMATION

A. Submit the following Supplements concurrent with bid submission:
   1. HUD Form 5369-A Representations, Certifications, and Other Statements of Bidders, Public and Indian Housing Programs
   2. Non-Collusive Affidavit
   3. Contractual Liability Risk Management Form

OFFER ACCEPTANCE/REJECTION

7.01 DURATION OF OFFER

7.02 ACCEPTANCE OF OFFER

A. Owner reserves the right to accept or reject any or all offers.

END OF SECTION

SECTION 004000
PROCUREMENT FORMS AND SUPPLEMENTS

PART 1 GENERAL

1.01 CONTRACTOR IS RESPONSIBLE FOR OBTAINING A VALID LICENSE TO USE ALL COPYRIGHTED DOCUMENTS SPECIFIED BUT NOT INCLUDED IN THE PROJECT MANUAL.

1.02 FORMS

A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in the procurement requirements.

B. Representations and Certifications:
   1. HUD 2530 Previous Participation Certification
   2. HUD Form 5369 Instructions to Bidders and Contracts - Public and Indian Housing Programs
   3. HUD Form 5369-A Representations, Certifications, and Other Statements of Bidders - Pulbic and Indian Housing Programs
   4. HUD Appendix 9: Lead-Based Paint Liability Insurance
   5. Davis Bacon Act as amended
   6. Wage Rates General RI 20230002
   7. Section 3 Clause
   8. U.S. Department of Labor Payroll Form
   9. Non-Collusion Affidavit: _____.
   10. Contractual Liability Risk Management Form
   11. Contract Insurance Provisions
   12. Certificate of Liablity Insurance Form
   13. Pawtucket Housing Authority Holiday Schedule 2024

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

P P
C

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

U.S. Department of Agriculture
Farmers Home Administration

OMB Approval No. 2502-0118
(exp11/30/2012)

Part I To be completed by Principals of Multifamily Projects. See Instructions
Reason for Submitting Certification

For HUD HQ/FmHA use only

1. Agency Name and City where the application is filed

2. Project Name, Project Number, City and Zip Code contained in the application

3. Loan or Contract Amount

4. Number of Units or Beds

5. Section of Act

6. Type of Project (check one)
☐ Existing ☐ Rehabilitation ☐ Proposed (New)

List of all proposed Principal Participants and attach organization chart for all organizations.

7. Names and Addresses of All Known Principals and Affiliates (people, businesses & organizations) proposing to participate in the project described above. (list names alphabetically; last, first, middle initial)	8. Role of Each Principal in Project	9. Expected % Ownership Interest in Project	10. Social Security or IRS Employer Number

Certifications: I (meaning the individual who signs as well as the corporations, partnerships or other parties listed above who certify) hereby apply to HUD or USDA FmHA, as the case maybe, for approval to participate as a principal in the role and project listed above based upon my following previous participation record and this Certification. Verify that neither you nor any of your principals or affiliates have ever been found to be in noncompliance with any applicable fair housing and civil rights requirements in 24 CFR 5.105 (a). If you or any of your principals or affiliates have been found to be in noncompliance with any such requirements, attach a signed statement explaining the relevant facts, circumstances, and resolution, if any.

I certify that all the statements made by me are true, complete and correct to the best of my knowledge and belief and are made in good faith, including the data contained in Schedule A and Exhibits signed by me and attached to this form. **Warning:** HUD will prosecute false claims and statements. Conviction may result in criminal and/or civil penalties. (18 U.S.C. 1001, 1010, 1012; 31U.S.C. 3729, 3802)

I further certify that:

1. Schedule A contains a listing of every assisted or insured project of HUD, USDA FmHA and State and local government housing finance agencies in which I have been or am now a principal.
2. For the period beginning 10 years prior to the date of this certification, and except as shown by me on the certification.
   a. No mortgage on a project listed by me has ever been in default, assigned to the Government or foreclosed, nor has mortgage relief by the mortgagee been given;
   b. I have not experienced defaults or noncompliances under any Conventional Contract or Turnkey Contract of Sale in connection with a public housing project;
   c. To the best of my knowledge, there are no unresolved findings raised as a result of HUD audits, management reviews or other Governmental investigations concerning me or my projects;
   d. There has not been a suspension or termination of payments under any HUD assistance contract in which I have had a legal or beneficial interest;
   e. I have not been convicted of a felony and am not presently, to my knowledge, the subject of a complaint or indictment charging a felony. (A felony is defined as any offense punishable by imprisonment for a term exceeding one year, but does not include any offense classified as a misdemeanor under the laws of a State and punishable by imprisonment of two years or less);
   f. I have not been suspended, debarred or otherwise restricted by any Department or Agency of the Federal Government or of a State Government from doing business with such Department or Agency.
   g. I have not defaulted on an obligation covered by a surety or performance bond and have not been the subject of a claim under an employee fidelity bond.
3. All the names of the parties, known to me to be principals in this project(s) in which I propose to participate, are listed above.
4. I am not a HUD/FmHA employee or a member of a HUD FmHA employee's immediate household as defined in Standards of Ethical Conduct for Employees of the Executive Branch in 5C.F.R. Part 2635 (57 FR 35006) and HUD's Standard of Conduct in 24 C.F.R. Part 0 and USDA's Standard of Conduct in 7 C.F.R. Part 0 Subpart B.
5. I am not a principal participant in an assisted or insured project as of this date on which construction has stopped for a period in excess of 20 days or which has been substantially completed for more than 90 days and documents for closing, including final cost certification have not been filed with HUD or FmHA
6. To my knowledge I have not been found by HUD or FmHA to be in noncompliance with any applicable fair housing and civil rights requirements in 24 CFR 5.105(a).
7. I am not a Member of Congress or a Resident Commissioner nor otherwise prohibited or limited by law from contracting with the Government of the United States of America.
8. Statements above (if any) to which I cannot certify have been deleted by striking through the words with a pen. I have initialed each deletion (if any) and have attached a true and accurate signed statement (if applicable) to explain the facts and circumstances which I think helps to qualify me as a responsible principal for participation in this project.

Typed or Printed Name of Principal	Signature of Principal	Certification Date (mm/dd/yyyy)	Area Code and Telephone No.

This form was prepared by (Please print name)

Area Code and Telephone No.

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

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

Part II – For HUD Internal Processing Only

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

Date (mm/dd/yyyy)	Telephone Number and Area Code	☐ A. No adverse information; form HUD-2530 approval is recommended.	☐ C. Disclosure or Certification problem
Staff	Processing and Control	☐ B. Name match in system	☐ D. Other, our memorandum is attached.
Supervisor		Director of Housing / Director, Multifamily Division	Approved ☐ Yes ☐ No — Date (mm/dd/yyyy)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Projects to be financed with mortgages insured under the National Housing Act (FHA).
- Projects to be financed according to Section 202 of the Housing Act of 1959 (Elderly and Handicapped).
- Projects in which 20 percent or more of the units are to receive a subsidy as described in 24 C.F.R. 200.213.
- Purchase of a project subject to a mortgage insured or held by the Secretary of HUD.
- Purchase of a Secretary-owned project.
- Proposed substitution or addition of a principal, or principal participation in a different capacity from that previously approved for the same project.
- Proposed acquisition by an existing limited partner of an additional interest in a project resulting in a total interest of 25 percent or more, or proposed acquisition by a corporate stockholder of an additional interest in a project resulting in a total interest of 10 percent or more.
- Projects with U.S.D.A., Farmers Home Administration, or with state or local government housing finance agencies that include rental assistance under Section 8 of the Housing Act of 1937. For projects of this type, form HUD-2530 should be filed with the appropriate applications directly to those agencies.

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

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

Specific Line Instructions:

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

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

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

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

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

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

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

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

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

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

Instructions for Completing Schedule A:

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

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

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

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

Column 5 Explain any project defaults during your participation.

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

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

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

To make a Master List, use form HUD-2530. On page 1, in block 1, enter (in capital letters) the words "**Master List**." In blocks 2 through 6 enter in "N.A." meaning Not Applicable. Complete blocks 7 through 10.

In the box below the statement of certification, fill in the names of all parties who wish to file a Master List together (type or print neatly). Beside each name, every party must sign the form. In the box titled "Proposed Role," fill in "N.A." Also, fill in the date you sign the form and provide a telephone number where you can be reached during the day. No determinations will be made on these certificates.

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

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

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

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

Certification:

After you have completed all other parts of form HUD-2530, including Schedule A, read the Certification carefully. In the box below the statement of certification, fill in the name of all principals and affiliates (type or print neatly). Beside the name of each principal and affiliate, each party must sign the form, with the exception in some cases of individuals associated with a corporation (see "Exception for Corporations" in the section of the instructions titled "Who Must Sign and File form HUD-2530"). Beside each signature, fill in the role of each party (the same as shown in block 3). In addition, each person who signs the form should fill in the date that he or she signs, as well as providing a telephone number where he or she can be reached during business hours. By providing a telephone number where you can be reached, you will help to prevent any possible delay caused by mailing and processing time in the event HUD has any questions.

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

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

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

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

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. This agency may not collect this information, and you are not required to complete this form, unless it displays a currently valid OMB control number.
A response is mandatory. Failure to provide any of the information will result in your disapproval for participation in this HUD program.

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

Instructions to Bidders for Contracts Public and Indian Housing Programs

Instructions to Bidders for Contracts

Public and Indian Housing Programs

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1. Bid Preparation and Submission

(a) Bidders are expected to examine the specifications, drawings, all instructions, and, if applicable, the construction site (see also the contract clause entitled **Site Investigation and Conditions Affecting the Work** of the *General Conditions of the Contract for Construction*). Failure to do so will be at the bidders' risk.

(b) All bids must be submitted on the forms provided by the Public Housing Agency/Indian Housing Authority (PHA/IHA). Bidders shall furnish all the information required by the solicitation. Bids must be signed and the bidder's name typed or printed on the bid sheet and each continuation sheet which requires the entry of information by the bidder. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority. (Bidders should retain a copy of their bid for their records.)

(c) Bidders must submit as part of their bid a completed form HUD-5369-A, "Representations, Certifications, and Other Statements of Bidders."

(d) All bid documents shall be sealed in an envelope which shall be clearly marked with the words "Bid Documents," the Invitation for Bids (IFB) number, any project or other identifying number, the bidder's name, and the date and time for receipt of bids.

(e) If this solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "No Bid" in the space provided for any item on which no price is submitted.

(f) Unless expressly authorized elsewhere in this solicitation, alternate bids will not be considered.

(g) Unless expressly authorized elsewhere in this solicitation, bids submitted by telegraph or facsimile (fax) machines will not be considered.

(h) If the proposed contract is for a Mutual Help project (as described in 24 CFR Part 905, Subpart E) that involves Mutual Help contributions of work, material, or equipment, supplemental information regarding the bid advertisement is provided as an attachment to this solicitation.

2. Explanations and Interpretations to Prospective Bidders

(a) Any prospective bidder desiring an explanation or interpretation of the solicitation, specifications, drawings, etc., must request it at least 7 days before the scheduled time for bid opening. Requests may be oral or written. Oral requests must be confirmed in writing. The only oral clarifications that will be provided will be those clearly related to solicitation procedures, i.e., not substantive technical information. No other oral explanation or interpretation will be provided. Any information given a prospective bidder concerning this solicitation will be furnished promptly to all other prospective bidders as a written amendment to the solicitation, if that information is necessary in submitting bids, or if the lack of it would be prejudicial to other prospective bidders.

(b) Any information obtained by, or provided to, a bidder other than by formal amendment to the solicitation shall not constitute a change to the solicitation.

3. Amendments to Invitations for Bids

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date on the bid form, or (3) by letter, telegram, or facsimile, if those methods are authorized in the solicitation. The PHA/IHA must receive acknowledgement by the time and at the place specified for receipt of bids. Bids which fail to acknowledge the bidder's receipt of any amendment will result in the rejection of the bid if the amendment(s) contained information which substantively changed the PHA's/IHA's requirements.

(c) Amendments will be on file in the offices of the PHA/IHA and the Architect at least 7 days before bid opening.

4. Responsibility of Prospective Contractor

(a) The PHA/IHA will award contracts only to responsible prospective contractors who have the ability to perform successfully under the terms and conditions of the proposed contract. In determining the responsibility of a bidder, the PHA/IHA will consider such matters as the bidder's:

(1) Integrity;

(2) Compliance with public policy;

(3) Record of past performance; and

(4) Financial and technical resources (including construction and technical equipment).

(b) Before a bid is considered for award, the bidder may be requested by the PHA/IHA to submit a statement or other documentation regarding any of the items in paragraph (a) above. Failure by the bidder to provide such additional information shall render the bidder nonresponsible and ineligible for award.

5. Late Submissions, Modifications, and Withdrawal of Bids

(a) Any bid received at the place designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it:

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);

(2) Was sent by mail, or if authorized by the solicitation, was sent by telegram or via facsimile, and it is determined by the PHA/IHA that the late receipt was due solely to mishandling by the PHA/IHA after receipt at the PHA/IHA; or

(3) Was sent by U.S. Postal Service Express Mail Next Day Service - Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and observed holidays.

(b) Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a) of this provision.

(c) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerk to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(d) The only acceptable evidence to establish the time of receipt at the PHA/IHA is the time/date stamp of PHA/IHA on the proposal wrapper or other documentary evidence of receipt maintained by the PHA/IHA.

(e) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, bidders should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and Failure by a bidder to acknowledge receipt of the envelope or wrapper.

(f) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful bid that makes its terms more favorable to the PHA/IHA will be considered at any time it is received and may be accepted.

(g) Bids may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before the exact time set for opening of bids; provided that written confirmation of telegraphic or facsimile withdrawals over the signature of the bidder is mailed and postmarked prior to the specified bid opening time. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for opening of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

6. Bid Opening

All bids received by the date and time of receipt specified in the solicitation will be publicly opened and read. The time and place of opening will be as specified in the solicitation. Bidders and other interested persons may be present.

7. Service of Protest

(a) Definitions. As used in this provision:

"Interested party" means an actual or prospective bidder whose direct economic interest would be affected by the award of the contract.

"Protest" means a written objection by an interested party to this solicitation or to a proposed or actual award of a contract pursuant to this solicitation.

(b) Protests shall be served on the Contracting Officer by obtaining written and dated acknowledgement from —

[Contracting Officer designate the official or location where a protest may be served on the Contracting Officer]

(c) All protests shall be resolved in accordance with the PHA's/IHA's protest policy and procedures, copies of which are maintained at the PHA/IHA.

8. Contract Award

(a) The PHA/IHA will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the PHA/IHA considering only price and any price-related factors specified in the solicitation.

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

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

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

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

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

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

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

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

10. Assurance of Completion

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

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

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

[ ] (3) a 20 percent cash escrow;

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

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

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

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

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

11. Preconstruction Conference (applicable to construction contracts)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(k) The IHA [ ] does [ ] does not [Contracting Officer check applicable box] maintain lists of Indian-owned economic enterprises and Indian organizations by specialty (e.g., plumbing, electrical, foundations), which are available to bidders to assist them in meeting their responsibility to provide preference in connection with the administration of contracts and subcontracts.

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

Representations, Certifications, and Other Statements of Bidders

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1. Certificate of Independent Price Determination

(a) The bidder certifies that--

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

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

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

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

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

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

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

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

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

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

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

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

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

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

2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4. Organizational Conflicts of Interest Certification

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

(a) Result in an unfair competitive advantage to the bidder; or,

(b) Impair the bidder's objectivity in performing the contract work.

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

5. Bidder's Certification of Eligibility

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

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

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

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

6. Minimum Bid Acceptance Period

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

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

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

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

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

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

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

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

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

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

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

(Check the block applicable to you)

☐ Black Americans
☐ Hispanic Americans
☐ Native Americans
☐ Asian Pacific Americans
☐ Asian Indian Americans
☐ Hasidic Jewish Americans

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

The bidder represents and certifies that it:

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

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

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

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

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

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

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

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

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

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

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

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

(1) Obtain identical certifications from the proposed subcontractors;

(2) Retain the certifications in its files; and

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

Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities

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

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

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

The bidder certifies that:

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

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

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

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

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

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

13. Bidder's Signature

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

_____ ☐

(Signature and Date)

_____

(Typed or Printed Name)

_____

(Title)

_____

(Company Name)

(Company Address)

Appendix 9:

I. PURPOSE OF APPENDIX

This appendix provides guidance to property owners on the purchase of liability insurance against claims as a result of:

1. A negligent act, error or omission in professional services related to lead-based paint evaluation work (lead-based paint inspection, lead-based paint risk assessment, lead-based paint testing, and clearance examinations after lead hazard control work) in the owner's housing management program (Professional Liability Coverage), and/or
2. Bodily injury or property damage resulting from the discharge, dispersal, release, or escape of lead-based paint during renovation, remodeling, maintenance, and lead hazard control work by owners as part of their housing management program (Contractor's Pollution Legal Liability Coverage).

The term "lead hazard control" includes both interim controls and abatement.

II. LEAD-BASED PAINT-RELATED WORK AND OVERVIEW OF PUBLIC HOUSING INSURANCE REQUIREMENTS

For several years, lead liability insurance has been readily available for lead-based paint inspection, risk assessment and abatement work. (Firms and individuals conducting lead-based paint inspection and risk assessment work are called consultants in this Appendix. Firms and individuals conducting abatement, interim controls and renovation work are called construction contractors or contractors in this Appendix.) Depending on the type and/or level of HUD assistance, two general categories of lead-based paint work may be performed: 1) Evaluation Work, and 2) Lead Hazard Control Work. These two categories require different insurance coverage.

The broad insurance requirements for these categories of lead-based paint work are described below. Greater detail is provided in Sections III and V of this appendix.

A. **Professional Liability Coverage (Errors and Omissions, or "E&O") for Lead-Based Paint Evaluation Work:**

Evaluation Work* includes:

Clearance examinations after lead hazard control work

Lead-Based Paint Inspection

Lead-Based Paint Risk Assessment, including Reevaluation

Lead-Based Paint Testing by certified renovators in unassisted housing

*Note: Proper training is required for all work listed. State or U.S. Environmental Protection Agency (EPA) certification is required for lead-based paint inspections and risk assessments, and clearance examinations after abatement work or after renovation, repair or painting work, or after lead hazard control work, or when certified renovators perform paint testing in unassisted housing, when required by regulatory, grant or contract requirements of the state, tribal or local government or of HUD or another federal agency, including certification of the individuals and the firm (or owner) by whom the certified individuals are employed. See the EPA lead web site at ***http://epa.gov/lead/pubs/traincert.htm***.

B. **Contractor Pollution Liability ("CPL") Coverage for Lead Hazard Control Work:** HUD also recommends coverage for lead-based paint-related claims for bodily injury or property damage arising from the performance of lead-based paint-related construction or maintenance work. If the owner's employees perform the work, the work may be covered under the owner's General (or Umbrella) Liability policy provided that the policy will address such pollution claims, or, the owner may take out a CPL policy (perhaps, if the owner's broker advises, as an owner-controlled policy or "OCIP") with the owner as the Named Insured on the CPL policy. If a contractor performs the work, HUD recommends that the contractor list the owner as an Additional Insured on the contractor's CPL policy.

Lead Hazard Control Work* includes:

Lead-Based Paint Abatement performed by certified abatement contractors working for a certified abatement firm, or by certified abatement supervisor and abatement worker employees working for the owner if the owner is itself a certified abatement firm.

Interim Controls, including Ongoing Lead-Based Paint Maintenance, and Renovation, Repair, and Painting work, performed by the owner's employees or contractors trained in lead-safe work practices; the project supervisor must be a certified renovator if the work is covered by the EPA's Renovation, Repair, and Painting (RRP) Rule. If the work is covered by the RRP Rule, the owner (if the work is being done by the owner's employees) or the contractor (if not) must be a certified renovation firm.

*Note: Proper training is required for all work listed. State or EPA Certification is required for abatement work (see the EPA lead regulations web site, ***www.epa.gov/opptintr/lead/pubs/regulation.htm***) and RRP work (see the EPA RRP Rule web site, ***www.epa.gov/lead/pubs/renovation.htm*** for the scope and requirements of that Rule). Some states require certification for some RRP or interim control work; owners should check their state requirements; see the RRP web site, above, for information on whether the state or tribal area in which the work is to be done is operating the certification program instead of EPA. HUD requires that persons performing interim controls in HUD-assisted housing be certified renovators who have been certified by either the EPA or the EPA-authorized state or tribe in which the work is to be done, as applicable, or be certified lead abatement workers. The EPA's RRP Rule generally applies to interim control work in target housing (generally, pre-1978 housing), but EPA does not allow certified abatement supervisors/workers to do RRP work unless they are also RRP certified. For unassisted housing, the RRP training requirements apply. Owners having RRP work done should check their own insurance policies, or (if applicable) their contractor's insurance policies to determine if they cover lead hazard control work, and, if they do, what exclusions, deductibles and/or limitations apply. For more regulatory information, see Appendix 6.

In summary, for lead-based paint evaluations or other lead-based paint-related professional services, E&O coverage, which does not exclude lead-based paint activities, is required. For lead hazard control work, CPL coverage is required. Either the "occurrence" or "claims made" form of coverage is acceptable for CPL coverage (see section on Lead Liability Coverage Issues, below). True occurrence coverage is preferable because claims by children could occur years later, perhaps even after the business has ceased operation. Moreover, statutes of limitation may in some states not begin to run against children until they reach their majority.

C. **In-Place Lead Liability:** Although In-Place Lead Liability coverage (commonly referred to as Pollution Legal Liability, or PLL) is a different coverage than E&O and CPL, the coverage intent can be similar to E&O and CPL.

There are two reasons why property owners may want to purchase this type of policy:

1. To supplement E&O and CPL policies purchased; or

2. To provide coverage for bodily injury or property damage resulting from existing lead or lead-based paint in a property if an owner is unable to procure the required E&O or CPL coverage.

This type of policy may be purchased as a substitute provided that the policy language covers bodily injury and property damage from lead or lead-based paint on or in the owner's buildings and if E&O and CPL are not available for purchase. These policies are normally sold for a fixed term (three/five years, etc.) on a claims made basis.

III. EXISTING COVERAGE AND POLICY FORMS

A. **Existing Coverage**

Lead liability coverage is often not provided under existing standard E&O policies for engineering or architectural services because the policy's definition of "Professional Services" may not be broad enough to cover liability for lead-based paint-related work. Likewise, lead is also typically excluded in standard Commercial General Liability (CGL) coverage. Almost all CGL policies have a "pollution exclusion" provision, which excludes coverage for claims arising from "pollutants," which can include asbestos, lead, lead-based paint, mold, or other environmental contaminants.

Therefore, the owners' existing E&O and/or CGL may have a gap in coverage created when performing lead hazard evaluation and control work. Owners may obtain lead liability protection for their own lead-based paint-related work and require their contractors to obtain lead liability coverage for the contractors' lead-based paint-related work performed on behalf of the owner, as discussed in detail below. Such insurance coverage can be purchased from specialty environmental carriers or risk retention groups. Subcontractors performing non-professional work should be required to present evidence that they have environmental coverage (CPL) that does not exclude coverage for lead-based paint-related claims ("lead exclusion") and that the contractor and owner are additional insureds on the policy. As discussed above, the policy should be on a true occurrence basis.

B. **Professional Liability Errors and Omissions Insurance (E&O) for Lead Evaluation Work by Property Owners' Employees, Consultants and Construction Contractors**

Standard E&O insurance is intended to cover any negligent acts, errors, or omissions in rendering or failing to render the Professional Services as defined in the policy. As discussed above, owners' existing standard E&O policies are not designed to provide liability coverage for employees performing lead-based paint evaluations. Owners may purchase additional E&O insurance beyond the standard policy coverage to cover their employees or contractors for lead-based paint-related work conducted on their property. (Depending upon the market, these policies may be referred to as "miscellaneous" E&O coverage.) It is important to note that such policies should afford coverage for lead-based paint-related work in the definition of Professional Services. As of 2012, E&O coverage was available only on a "claims made" basis.

Most major carriers will refuse to add third parties as additional insureds to an E&O policy. This is a material difference between E&O coverage and CPL coverage. If the owner is added to an E&O policy as an "Additional Insured," the owner is expected to be covered for claims brought against the owner that arise directly out of work or projects performed on the owner's behalf. In other words, the "Additional Insured" owner will be protected from indirect liability arising out of the "Named Insured's" work. If this type of policy is not feasible, the owner may be able to purchase an E&O insurance policy in which the owner is the "Named Insured" and the consultant or contractor is an "Additional Insured," but the policy should be limited to lead-based paint evaluation work conducted on behalf of the owner.

Lead Evaluations by Property Owners' Employees: If lead-based paint evaluation work is conducted by employees, the owner should be the "Named Insured" on such a policy. Some insurance carriers require that each individual employee performing lead-based paint evaluation work be named on the policy as an "Additional Insured." As of the publication of this edition of the *Guidelines*, there is a benefit to naming individual employees on the policy in order to broaden the range of protection. Prior to binding coverage, the carrier may require submission of documents proving each individual employee proposed for coverage is properly trained and certified by the state or EPA. Owners should consider retaining copies of past and current employee training certificates related to EPA or State certification or licensure, and any other related documents. Carriers may also request information about the number, type and age of housing units under control of the owner applying for coverage.

Lead Evaluations by Consultants: If lead-based paint evaluation work is conducted by consultants, the consultant obtains the insurance, is the "Named Insured," and should list the owner as an "Additional Insured" on the policy. Most major carriers will refuse to add third parties as additional insureds to an E&O policy. This is a material difference between E&O coverage and CPL coverage. In the uncommon case that the owner is added to a consultant's E&O policy as an "Additional Insured," the owner will be covered for claims brought against the owner that arise directly out of work or projects performed by the consultant on the owner's behalf. In other words, the "Additional Insured" owner will be protected from indirect liability arising out of the "Named Insured's" (i.e., consultant's) work. If this type of policy is not feasible, the owner may be able to purchase an E&O insurance policy in which the owner is the "Named Insured" and the consultant is an "Additional Insured," but the policy should be limited to lead-based paint evaluation work conducted on behalf of the owner.

Lead Evaluations by Construction Contractors: It should be noted that non-professional contractors will normally not have E&O coverage. Certified renovation firms doing paint testing in unassisted housing using certified renovators who are not lead-based paint inspectors or risk assessors should have CPL without a lead exclusion.

Housing Authorities (HAs) and Resident Management Corporations (RMCs): The duties of an RMC hired by an HA are similar to those of a real estate management firm. If the HA has contracted for an RMC to manage a building or project, the owner should purchase an E&O insurance policy in which the HA is the "Named Insured" and the RMC, and its subcontractors, if applicable, are "Additional Insureds." If this type of policy is not available, the RMC should purchase an E&O insurance policy in which the HA is an "Additional Insured." The policy purchased by the RMC would be limited to lead-based paint evaluation work conducted on behalf of the HA, in connection with the HA's contract related to lead-based paint evaluation work. (Note: E&O coverage for non-professionals (HA, RMCs, etc.) may be difficult to obtain or, depending upon the market, may not be available. The default would be to a CPL or PLL type situation; but remember: these coverages are not identical.)

Although the Lead Safe Housing Rule does not categorize visual assessment as a lead-based paint evaluation method, owners may choose to purchase an E&O policy that covers the work of visual assessors, if the owner determines that such coverage is needed and if the coverage is available.

C. **Contractor's Pollution Liability (CPL) Insurance for Lead Hazard Control Work by Property Owners' Employees and Contractors**

Contractors Pollution Liability (CPL) insurance is intended to cover property damage and bodily injury claims resulting from the discharge, dispersal, release, or escape of lead or lead-based paint during lead hazard control work by employees, interim control contractors or abatement contractors. It is important to note that such policies must afford coverage for lead and lead-based paint in the definition of "pollutants."

Lead Hazard Control Work by Owners' Employees: If lead hazard control work is conducted by the owner's employees, the owner should be the "Named Insured" on such a policy. Some insurance carriers require that each individual employee performing lead hazard control work be named on the policy as an "Additional Insured." (See comments above.) Prior to binding coverage, the carrier may require submission of documents proving each individual employee proposed for coverage is properly trained and/or certified, as applicable, by the state or EPA. Owners should retain copies of past and current employee training certificates related to EPA or State certification or licensure, and any other related documents. Carriers may also request information about the number, type and age of housing units under control of the owner applying for coverage.

Lead Hazard Control Work by Contractors: If lead hazard control work is conducted by interim control contractors or abatement contractors separate from the owner, the contractor obtains the insurance, with the contractor being the "Named Insured" and the owner listed as an "Additional Insured" on the policy. Such contractors must be properly trained and/or certified, as applicable. If the owner is added to a contractor's CPL policy as an "Additional Insured," the owner will be covered for claims that arise directly out of work or projects performed by the contractor on the owner's behalf. In other words, the "Additional Insured" owner wants to be protected from indirect liability arising out of the "Named Insured's" (i.e., contractor's) work. If this type of policy is not feasible, the owner can purchase a CPL insurance

policy in which the owner is the "Named Insured" and the interim control (trained in Lead Safe Work Practices) contractor or abatement contractor is an "Additional Insured," but the policy should be limited to lead hazard control work conducted on behalf of the owner.

Housing Authorities (HAs) and Resident Management Corporations (RMCs): The duties of the RMC hired by an HA are similar to those of a real estate management firm. If the HA has contracted for an RMC to manage a building or project, the HA should purchase a CPL insurance policy in which the HA is the "Named Insured" and the RMC, and its subcontractors, if applicable, are "Additional Insureds." If this type of policy is not available, the RMC should purchase a CPL insurance policy in which the RMC is the "Named Insured" and the HA is an "Additional Insured." The policy purchased by the RMC would be limited to lead hazard control work conducted on behalf of the HA, in connection with the HA's contract related to lead hazard control work.

D. **Claims-Made and Occurrence Coverage for Lead Hazard Control Work**

These are two types of policy coverage for E&O and CPL policy forms. Each type of policy contains "triggers" that describe when a claim or lawsuit may be covered. A "claim" is a demand for payment under the policy. An "occurrence" is frequently defined as an exposure, event or accident, including continuous or repeated exposure to the same general harmful conditions.

In an "Occurrence" policy, as long as the circumstance resulting in a claim occurs during the policy period, a claim may be covered regardless of when it is made against the insured and reported to the insurer. This is so even if the insured business ceases operations, files for bankruptcy or changes carriers several times over a period of years. Occurrence policies are preferable because they contain an indefinite claim-reporting period. However, as of 2012, occurrence forms are typically difficult to obtain from specialty insurance companies or risk retention groups covering lead-based paint-related work.

"Claims-Made" policies require that the circumstances resulting in a claim must occur after the retroactive date specified in the policy declarations, and the claims must be made against the insured and reported to the insurer within the policy period. "Some "Claims-Made" policies have a reporting period extending after the end of the policy period, during which a claim can be made and reported to the insurer, for a circumstance that occurred during the policy period. An extended reporting period is sometimes referred to as "tail" coverage. Tail coverage is usually expensive and the coverage will still cease in relatively short order. See discussion above concerning children, claims and statutes of limitations. Changing carriers will rapidly end coverage, but the insured must address this through having the new carrier extend the retroactive date to the retroactive date of the expiring/non-renewed policy. The potential issue in such situations is whether or not the new carrier is willing to do so. (see Section V).

Either "Claims-Made" or "Occurrence" coverage for lead hazard control insurance may be suitable. See discussions above, however. HUD strongly recommends that owners and their contractors purchase occurrence-based lead liability coverage, when available, instead of a "claims-made" type of policy with an extended reporting period. Because HUD recognizes that, as of 2012, when this guidance was published, occurrence policies are difficult to obtain, it encourages property owners to engage their insurers on the issue of the availability of occurrence policies. If a "Claims-Made" policy is purchased, the policy should provide an automatic extended reporting period of at least thirty days for no additional premium. It would be in the best interest of the owner if the policy should also allow for the purchase of an optional extended reporting period of at least one year. Because the occurrence type of coverage may not be available for certain types of work and operations,

either type of coverage will suffice. The lead liability coverage must remain in effect during the entire period of the lead-based paint evaluation and control work. The insurance certificate evidencing the claims made coverage should show the policy inception and expiration date, and should contain a provision requiring the broker to notify the additional insured of any cancellation, early termination or material alteration in the policy (such as a claim eroding limits available under the policy.)

Completed Operations Coverage.

CPL coverage should include "completed operations" coverage (see Section V). Even though the operations are deemed to be "completed" by the contractor, the loss or injury is deemed to be as a result of those operations. This type of coverage is often covered under general liability insurance, but sometimes is purchased by a contractor/manufacturer over and above general liability to cover loss or injury that occurs off the insured's property.

E. **Proof of Contractor Coverage and Recordkeeping**

Whenever an owner requires a contractor to purchase E&O or CPL insurance, proof of the insurance should be provided to the owner prior to the commencement of work. A copy of a Certificate of Insurance identifying the owner as an "Additional Insured" should be submitted and retained by the owner as an important record associated with the lead-based paint work being performed. Owners must retain a current certificate of insurance as long as the owner performs or contracts for lead-based paint-related work. Owners should keep lead-based paint-related records for ongoing lead-based paint maintenance work in public housing for at least three years and, preferably, for as long as the owner controls the property.

The certificate should show the insurance policy period corresponding to the date(s) of work performed by the insured contractor. Certificates should also state the carrier, type of insurance, policy number, policy effective date and expiration date, and limits of liability. The certificate should also include a minimum 30-day notice of cancellation requirement to the owner.

F. **Explanation of Policy Limits and Aggregates**

Most E&O and CPL policies have two stated limits of liability:

1. The "per occurrence" or "per claim" limit. As discussed above, a "claim" is a demand for payment under the terms of the policy. An "occurrence" is frequently defined as an exposure, event or accident, including continuous or repeated exposure to the same general harmful conditions. The "per occurrence" or "per claim" limit is the maximum amount the insurer will pay for a single covered claim or occurrence.

2. The "aggregate limit." This is the maximum overall limit of liability for a policy period. The aggregate policy limit is intended to be the maximum amount paid out for claims arising out of all occurrences that take place during the policy period. For example, if the contractor's liability policy has a $1,000,000 "aggregate" policy limit and other unrelated claims totaling $600,000 have already been made against the policy, only $400,000 is potentially available to cover additional claims arising out of the owner's lead-based paint-related work.

IV. REQUIRED POLICY LIMITS AND DEDUCTIBLES

A. **Lead-Based Paint Evaluations and Other Professional Services:** Whether the owner's employees or its contractor physically performs the evaluation work (lead-based paint inspections, lead-based paint risk assessments, lead-based paint testing, and clearance examinations after lead hazard control work), HUD recommends that any policy insuring for evaluation work comply with the minimum requirements below. (See discussion above for the source of the insurance requirement.)

1. **Form:** The policy form used to cover evaluation work should be an E&O form, which includes lead-based paint evaluation work in the definition of "Professional Services" (or similar). If a "Claims-Made" E&O policy is purchased, the policy should provide an automatic extended reporting period of at least thirty days for no additional premium. The policy should also allow for the purchase of an optional extended reporting period of at least one year. (Note: Occurrence E&O is not readily available in the marketplace as of the time of publication of this edition of the *Guidelines*)

2. **Limits of Liability for Evaluation Work**: The limits of liability should be a minimum of $1,000,000 per claim or per occurrence. If the policy contains an aggregate limit, the minimum limit should be $1,000,000. The owner may choose higher limits of liability based on claims history in its area or its own claims experience.

3. **Deductible**: If a deductible is applicable, it should not exceed $5,000 per claim or per occurrence. Deductibles of less than $5,000 may be elected if the owner chooses, although this may cause an increase in premium which may be passed through in some form to the owner.

4. **Cancellation**: The insurance company should provide the owner (as the "Named Insured or "Additional Insured") with a notice of policy cancellation for any reason; a minimum of 10 days advance notice before cancellation for non-payment of premium; and a minimum of 30 days advance notice before cancellation is effective for any reason other than non-payment of premium. The broker's certificate should confer upon the broker the duty to also notify the owner of these developments – as well as any material change in policy limits or coverages.

B. **Lead Hazard Reduction Work:** Whether the owner or its contractor physically performs the lead hazard control work (abatement or interim controls, including on-going lead-based paint maintenance), the owner should consider the recommendations below for any policy insuring owners for lead hazard control work.

1. **Form:** The policy form used to cover lead hazard control work should be a Contractor Pollution Liability (CPL) policy form that includes lead and lead-based paint in the definition of "pollutants" (or similar characterization). If a "Claims-Made" CPL policy is purchased, the policy should provide an automatic extended reporting period of at least thirty days for no additional premium. The policy should also allow for the purchase of an optional extended reporting period of at least one year.

2. **Limits of Liability for Lead Hazard Control Work**: The limits of liability should be a minimum of $1,000,000 per claim or per occurrence. If the policy contains an aggregate limit, the minimum acceptable limit should be $1,000,000. The owner may choose higher limits of liability based on claims history in its area or its own claims experience.

3. **Deductible**: If a deductible is applicable, it should not exceed $5,000 per claim or per occurrence. Deductibles of less than S5,000 may be elected if the owner chooses, although this may cause an increase in premium which may be passed through in some form to the owner.

4. **Cancellation**: The insurance company should provide the owner (as the "Named Insured or "Additional Insured") notice of policy cancellation for any reason; a minimum of 10 days advance notice before cancellation for non-payment of premium; and a minimum of 30 days advance notice before cancellation is effective for any reason other than non-payment of premium. The broker's certificate should confer upon the broker the duty to also notify the owner of these developments – as well as any material change in policy limits or coverages.

C. **Recommended Minimum Characteristics for Insuring Entities**

The insurer should be approved to issue insurance policies in the State, District or territory in which the owner is domiciled. Alternatively, the insuring entity can be a domestic risk retention group operating under the Federal Liability Risk Retention Act. It should be understood that pollution E&O policies, PLL policies and other policies may be issued on a "surplus lines" basis (also called by the industry term "non-admitted paper"), which may have flexible language but does not require the state insurance commission's approval, and, as a result, is generally not able to access state funds in the event of the insolvency of the carrier or if the carrier goes out of business.

The insurer should have a minimum A.M. Best Financial Strength Rating of at least A (the highest rating is A++), and an A.M. Best Financial Size Category of at least VII (out of XV). The ratings and categories are defined by A.M. Best Company, a credit rating agency serving insurance sectors. For more information, see its website at ***http://ambest.com***.

V. DEFINITIONS

For the purpose of this Appendix, definitions are provided for the terms below. For regulatory definitions, please see the applicable regulations.

Clearance examinations after lead hazard control work: Visual examination and collection of lead dust samples by an inspector or risk assessor, or, in some circumstances, a sampling technician, and analysis by a EPA-recognized laboratory upon completion of an abatement project, interim control intervention, maintenance or renovation job that disturbs lead-based paint (or paint presumed to be lead-based.) For abatement projects, the clearance examination is performed to ensure that lead exposure levels do not exceed clearance standards established by the EPA at 40 CFR 745.227(e)(8)(viii); HUD's dust-lead standards for clearance after interim control projects are found at 24 CFR 35.1320(b)(2)(i).

Completed Operations coverage: An insurance product that covers the liability incurred by a contractor for property damage or injuries that may happen to a third party once contracted operations have ceased or been abandoned. Even though the operations are deemed to be "completed" by the contractor, the loss or injury is deemed to be as a result of those operations. Completed operations insurance contracts are applied to construction products or the manufacturing of consumer goods and medicines.

Lead-Based Paint Inspection: A surface-by-surface investigation to determine the presence of lead-based paint (in some cases including dust and soil sampling) and a report of the results.

Lead-Based Paint Risk Assessment: An on-site investigation of a residential dwelling to determine the existence, nature, severity, and location of lead-based paint hazards. Risk assessments, which must be conducted be a certified risk assessor, include an investigation of the age, history, management, and maintenance of the dwelling, and the number of children under age 6 and women of childbearing age who are residents; a visual assessment; limited randomized environmental

sampling (i.e., collection of dust wipe samples, soil samples, and deteriorated paint samples); and preparation of a report identifying abatement and interim control options based on specific conditions. HUD's Lead Safe Housing Rule requires risk assessments for certain types and amounts of HUD assistance; in these cases, a risk assessment must be no more than 12 months old to be considered current.

Lead-Based Paint Testing: The process of determining, by a certified lead-based paint inspector or risk assessor, or by a certified renovator in unassisted housing, the presence or absence of lead-based paint on deteriorated paint surfaces or painted surfaces to be disturbed or replaced.

Reevaluation: The combination of a visual assessment and collection of dust and, as appropriate, soil samples performed by a certified risk assessor to determine if the housing is free of lead-based paint hazards, and determine whether previously implemented lead-based paint hazard control measures are still effective.

Retroactive Date: A provision found in many claims-made policies that eliminates coverage for injuries or damage that occurred prior to a specified date even if the claim is first made during the policy period. A retroactive date is not required. If one is shown on the policy, any claim made during the policy period on a loss that occurred before the retroactive date will not be covered.

VI. COORDINATION WITH COUNSEL ON INDEMNITY/HOLD HARMLESS LANGUAGE

It is important that insurance provisions be coordinated with the indemnity/hold harmless/defense provisions in the services or work agreement. The owner should retain experienced contract and insurance counsel to make sure that, to the extent reasonably possible, the risks shifted under the indemnity provisions are (A) enforceable under applicable state law and do not run afoul of "anti-indemnity" laws or cases; and (B) are funded as "insured contracts" under the relevant policies. Overextended indemnities create uninsurable risks which, in turn, raise questions about the ability of the claimant to collect.

The Davis-Bacon Act, as Amended

U.S. Wage and Hour Division

U.S. Department of Labor
Employment Standards Administration
Wage and Hour Division

WH Publication 1246
(Revised April 2009)

PUBLIC LAW 107–217—AUG. 21, 2002 [as amended[1]]

An Act

To revise, codify, and enact without substantive change certain general and permanent laws, related to public buildings, property, and works, as title 40, United States Code, "Public Buildings, Property, and Works".

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. TITLE 40, UNITED STATES CODE.

Certain general and permanent laws of the United States, related to public buildings, property, and works, are revised, codified, and enacted as title 40, United States Code, "Public Buildings, Property, and Works", as follows:

TITLE 40—PUBLIC BUILDINGS, PROPERTY, AND WORKS

* * * *

SUBTITLE II—PUBLIC BUILDINGS AND WORKS

PART A—GENERAL

* * * *

CHAPTER 31 – GENERAL

* * * *

SUBCHAPTER IV - WAGE RATE REQUIREMENTS

Sec. 3141. Definitions

In this subchapter, the following definitions apply:

(1) Federal government.— The term "Federal Government" has the same meaning that the term "United States" had in the Act of March 3, 1931 (ch. 411, 46 Stat. 1494) (known as the Davis-Bacon Act).[2]

(2) Wages, scale of wages, wage rates, minimum wages, and prevailing wages. The terms "wages", "scale of wages", "wage rates", "minimum wages", and "prevailing wages" include--

(A) the basic hourly rate of pay; and

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[1]Pub. L. 109-284 Sec. 6(11), (12), and (13) made three minor technical corrections in Secs 3141(1), and 3142(d) and (e). (Sept. 27, 2006, 120 Stat.1213.)

[2]The Davis-Bacon Act, referred to in par. (1), is act of Mar. 3, 1931, ch. 411, 46 Stat. 1494, as amended, which was classified generally to sections 276a to 276a-5 of former Title 40, Public Buildings, Property, and Works, and was repealed and reenacted as sections 3141-3144, 3146, and 3147 of this title by Pub. L. 107-217, Secs. 1, 6(b), Aug. 21, 2002, 116 Stat. 1062, 1304.

(B) for medical or hospital care, pensions on retirement or death, compensation for injuries or illness resulting from occupational activity, or insurance to provide any of the foregoing, for unemployment benefits, life insurance, disability and sickness insurance, or accident insurance, for vacation and holiday pay, for defraying the costs of apprenticeship or other similar programs, or for other bona fide fringe benefits, but only where the contractor or subcontractor is not required by other federal, state, or local law to provide any of those benefits, the amount of—

(i) the rate of contribution irrevocably made by a contractor or subcontractor to a trustee or to a third person under a fund, plan, or program; and

(ii) the rate of costs to the contractor or subcontractor that may be reasonably anticipated in providing benefits to laborers and mechanics pursuant to an enforceable commitment to carry out a financially responsible plan or program which was communicated in writing to the laborers and mechanics affected.

Sec. 3142. Rate of wages for laborers and mechanics

(a) Application.— The advertised specifications for every contract in excess of $2,000, to which the Federal Government or the District of Columbia is a party, for construction, alteration, or repair, including painting and decorating, of public buildings and public works of the Government or the District of Columbia that are located in a State or the District of Columbia and which requires or involves the employment of mechanics or laborers shall contain a provision stating the minimum wages to be paid various classes of laborers and mechanics.

(b) Based on Prevailing Wage.— The minimum wages shall be based on the wages the Secretary of Labor determines to be prevailing for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the civil subdivision of the State in which the work is to be performed, or in the District of Columbia if the work is to be performed there.

(c) Stipulations Required in Contract.— Every contract based upon the specifications referred to in subsection (a) must contain stipulations that—

(1) the contractor or subcontractor shall pay all mechanics and laborers employed directly on the site of the work, unconditionally and at least once a week, and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the advertised specifications, regardless of any contractual relationship which may be alleged to exist between the contractor or subcontractor and the laborers and mechanics;

(2) the contractor will post the scale of wages to be paid in a prominent and easily accessible place at the site of the work; and

(3) there may be withheld from the contractor so much of accrued payments as the contracting officer considers necessary to pay to laborers and mechanics employed by the contractor or any subcontractor on the work the difference between the rates of wages required by the contract to be paid laborers and mechanics on the work and the rates of wages received by the laborers and mechanics and not refunded to the contractor or subcontractors or their agents.

(d) Discharge of Obligation.— The obligation of a contractor or subcontractor to make payment in accordance with the prevailing wage determinations of the Secretary of Labor, under this subchapter and other laws incorporating this subchapter by reference, may be discharged by making payments in cash, by making contributions described in section 3141(2)(B)(i) of this title, by assuming an enforceable commitment to bear the costs of a plan or program referred to in section 3141(2)(B)(ii) of this title, or by any combination of payment, contribution, and assumption, where the aggregate of the payments, contributions, and costs is not less than the basic hourly rate of pay plus the amount referred to in section 3141(2)(B) of this title.

(e) Overtime Pay.— In determining the overtime pay to which a laborer or mechanic is entitled under any federal law, the regular or basic hourly rate of pay (or other alternative rate on which premium rate of overtime compensation is computed) of the laborer or mechanic is deemed to be the rate computed under section 3141(2)(A) of this title, except that where the amount of payments, contributions, or costs incurred with respect to the laborer or mechanic exceeds the applicable prevailing wage, the regular or basic hourly rate of pay (or other alternative rate) is the amount of payments, contributions, or costs actually incurred with respect to the laborer or mechanic minus the greater of the amount of contributions or costs of the types described in section 3141(2)(B) of this title actually incurred with respect to the laborer or mechanic or the amount determined under section 3141(2)(B) of this title but not actually paid.

Sec.3143. Termination of work on failure to pay agreed wages

Every contract within the scope of this subchapter shall contain a provision that if the contracting officer finds that any laborer or mechanic employed by the contractor or any subcontractor directly on the site of the work covered by the contract has been or is being paid a rate of wages less than the rate of wages required by the contract to be paid, the Federal Government by written notice to the contractor may terminate the contractor's right to proceed with the work or the part of the work as to which there has been a failure to pay the required wages. The Government may have the work completed, by contract or otherwise, and the contractor and the contractor's sureties shall be liable to the Government for any excess costs the Government incurs.

Sec. 3144. Authority of Comptroller General to pay wages and list contractors violating contracts

(a) Payment of Wages.—

(1) In general.— The Comptroller General shall pay directly to laborers and mechanics from any accrued payments withheld under the terms of a contract any wages found to be due laborers and mechanics under this subchapter.

(2) Right of action.— If the accrued payments withheld under the terms of the contract are insufficient to reimburse all the laborers and mechanics who have not been paid the wages required under this subchapter, the laborers and mechanics have the same right to bring a civil action and intervene against the contractor and the contractor's sureties as is conferred by law on persons furnishing labor or materials. In those proceedings it is not a

defense that the laborers and mechanics accepted or agreed to accept less than the required rate of wages or voluntarily made refunds.

(b) List of Contractors Violating Contracts.—

(1) In general.— The Comptroller General shall distribute to all departments of the Federal Government a list of the names of persons whom the Comptroller General has found to have disregarded their obligations to employees and subcontractors.

(2) Restriction on awarding contracts.— No contract shall be awarded to persons appearing on the list or to any firm, corporation, partnership, or association in which the persons have an interest until three years have elapsed from the date of publication of the list.

* * * *

Sec. 3146. Effect on other federal laws

This subchapter does not supersede or impair any authority otherwise granted by federal law to provide for the establishment of specific wage rates.

Sec. 3147. Suspension of this subchapter during a national emergency

The President may suspend the provisions of this subchapter during a national emergency.

Sec. 3148. Application of this subchapter to certain contracts

This subchapter applies to a contract authorized by law that is made without regard to section 3709 of the Revised Statutes (41 U.S.C. 5), or on a cost-plus-a-fixed-fee basis or otherwise without advertising for proposals, if this subchapter otherwise would apply to the contract.

"General Decision Number: RI20230002 12/22/2023

Superseded General Decision Number: RI20220002

State: Rhode Island

Construction Type: Residential

Counties: Bristol, Kent, Providence and Washington Counties in Rhode Island.

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/06/2023
1	01/13/2023
2	06/02/2023
3	08/25/2023
4	12/22/2023

* ASBE0006-009 09/01/2023

	Rates	Fringes
INSULATOR - PIPE & PIPEWRAPPER Includes application of all insulating materials, protective coverings, coatings & finishes to all types of mechanical systems.	$ 48.15	34.84

ELEC0099-004 06/01/2023

	Rates	Fringes
ELECTRICIAN	$ 36.46	5.77%+15.64

FOOTNOTE: Work of a hazardous nature, or where the work height is 30 feet or more from the floor, except when working OSHA-approved lifts: 20% per hour additional.

ELEV0039-002 01/01/2023

	Rates	Fringes
ELEVATOR MECHANIC	$ 59.36	37.335+a+b

FOOTNOTES:

a. PAID HOLIDAYS: New Years Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

b. Employer contributes 8% basic hourly rate for 5 years or more of service of 6% basic hourly rate for 6 months to 5 years of service as vacation pay credit.

ENGI0057-004 12/01/2021

	Rates	Fringes
Power Equipment Operator		
Grader and Roller	$ 39.90	28.25+a
Paver	$ 40.82	28.25+a

a. FOOTNOTES: Any employee who works 3 days in the week in which a holiday falls shall be paid for the holiday.

a. PAID HOLIDAYS: New Year's Day, President's Day, Memorial Day, July Fourth, Victory Day, Labor Day, Columbus Day, Veterans Day, Thanksgiving Day & Christmas Day.

Hazmat work: $2.00 per hour additional.
Tunnel/Shaft work: $5.00 per hour additional.

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* ROOF0033-002 12/01/2023

	Rates	Fringes
ROOFER	$ 43.80	30.31

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* SURI1999-002 04/12/1999

	Rates	Fringes
BRICKLAYER	$ 20.45	11.40
CARPENTER		
Including Acoustical Ceiling Installation, Drywall Hanging, & Metal Stud Framing	$ 15.32 **	9.65
Cement Mason/Finisher	$ 20.45	11.40
Drywall Finisher/Taper	$ 20.55	8.50
FLOOR LAYER: Carpet	$ 15.62 **	9.65
INSULATOR - BATT	$ 19.56	9.65
LABORER		

Unskilled, Landscape, & Brick Mason Tender	$ 18.47	8.10
PAINTER (Brush and Roller)	$ 20.55	8.50
PLASTERER	$ 13.50 **	2.45
PLUMBER	$ 23.96	8.95
Power Equipment Operator Backhoe	$ 20.27	8.98
SPRINKLER FITTER	$ 24.24	9.81

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

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($16.20) or 13658 ($12.15). Please see the Note at the top of the wage determination for more information.

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

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

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

Union Rate Identifiers

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

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

Survey Rate Identifiers

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

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

Union Average Rate Identifiers

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

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

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

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

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END OF GENERAL DECISION
"

Logo Here

SECTION 3 POLICY

The Housing Authority of the City of Pawtucket

214 ROOSEVELT AVE PAWTUCKET, RI 02861

Office: (401) 721-6000 Website: https://www.pawthousing.org

INTERNAL PROCEDURES, INSTRUCTIONS, AND FORMS

This packet is designed to comply with the New HUD Section 3 Final Rule issued September 29, 2020, and became effective November 30, 2020. Therefore, these documents and instructions are related to the **"Hours Worked Benchmarks"** as called for in the **24 CFR Part 75 regulation.** Every contractor and sub-contractor (with the exception of professional services) are required to work toward meeting the prescribed benchmarks as indicated on the bottom of page 10 of this packet. **There are no specific hiring or contracting goals under this new rule.**

Most importantly, **the rule does not require the hiring or contracting of any person or business that is not fully qualified** to perform the work as would be charged. However, the rule makes clear that HUD is intent on ensuring Section 3 persons employed under the new rule receive measurable and sustainable employment. Therefore, Section 3 employees can be counted for up to five full years from the date of certification or hire respectively. HUD is expected to issue continued guidance on the new rule in the future so these documents may change in accordance with the rule.

If you should have any questions on this packet, please contact our Compliance Consultant:

Cecelia M. Swiney-Horne, Compliance Manager
Motivation, Inc.
678-350-5460
cswiney@motivation-inc.com

Prepared January 28, 2022 Board Approved: _____

GOVERNING PARTS OF THE SECTION 3 FINAL RULE SPECIFIC TO THE

THE HOUSING AUTHORITY OF THE CITY OF PAWTUCKET

The Final Rule is at 24 CFR Part 75

SECTION 3 BACKGROUND

Applicable to all expenditures and agreements regardless of the dollar amount

Background - Section 3 of the Housing and Urban Development Act of 1968 (Public Law 90-448, approved August 1, 1968) (Section 3) was enacted to bring economic opportunities generated by certain HUD financial assistance expenditures, to the greatest extent feasible, to low- and very low-income persons residing in communities where the financial assistance is expended. Section 3 recognizes that HUD funds are often one of the largest sources of Federal funds expended in low- and very low-income communities and, where such funds are spent on activities such as construction and rehabilitation of housing and other public facilities, the expenditure results in economic opportunities. By directing HUD-funded economic opportunities to residents and businesses in the community where the funds are expended, the expenditure can have the dual benefit of creating new or rehabilitated housing and other facilities while providing opportunities for employment and training for the residents of these communities.

The Section 3 statute establishes priorities for employment and contracting for public housing programs and for other programs that provide housing and community development assistance. For example, the prioritization as it relates to public housing assistance places an emphasis on public housing residents, in contrast to the prioritization as it relates to housing and community development assistance, which places more emphasis on residents of the neighborhood or service area in which the investment is being made.

INTERNAL PROCEDURES FOR IMPLEMENTATION OF THE RULE

The Housing Authority of the City of Pawtucket Internal Hiring Procedure

For all positions at the authority, the human resources staff will include the Section 3 Individual Low-Income Person Self Certification form with the applications (virtually and paper) allowing each applicant to identify themselves accordingly. The completion of the form will remain voluntary and at the applicants discretion.

Once all applications have been received and reviewed, the most desirous and qualified candidate will be progressed through the hiring process. The Section 3 status of the applicant will be considered only after the "Most Qualified" candidate has been determined.

If there are multiple and equally qualified persons, the Section 3 status and category of the applicant will be considered. The candidate with the highest Section 3 priority based on the 24CFR Part 75.9(a)(2) will be offered the position.

All advertisements for positions with the authority will carry this wording:

"This opportunity is covered under Section 3 of the HUD Act of 1968"

The Housing Authority of the City of Pawtucket Contracting Procedure

For all advertised contracts let by the authority, the responsible staff will include the Section 3 Business Self Certification form and the Section 3 Individual Low-Income Self Certification form with the bid package (virtually and paper) allowing each respondent to identify themselves and their business accordingly. The completion of the forms will remain voluntary and at the respondents discretion.

Once all responses have been received and reviewed, the most desirous and qualified business will be progressed through the contracting process. The Section 3 status of the respondent will be considered only after the "Most Qualified and Advantageous" respondent has been determined.

If there are multiple and equally qualified businesses, the Section 3 status and category of the business will be considered. The business with the highest Section 3 priority, based on the 24CFR Part 75.9 (b)(2) will be awarded the contract. All other applicable procurement laws will be adhered to relative to contracting amounts. All advertisements for contracts with the authority will carry this wording:

"This opportunity is covered under Section 3 of the HUD Act of 1968"

The Housing Authority of the City of Pawtucket Internal Resident Training Procedure

For all resident training offered by The Housing Authority of the City of Pawtucket and its contractors, the staff will include the Section 3 Individual Low-Income Person Self Certification form with the training notice or upon the first day of training (virtually and paper) allowing each prospective trainee to identify themselves accordingly as public housing or Section 8. The completion of the form will NOT be voluntary as the prospective trainees will be allowed to attend based on their prioritization in the 24CFR Part 75.9(a)(2).

If the training is being paid for with HUD Public Housing financial assistance, the training will be limited to residents and potentially voucher holders only.

All advertisements for training will carry this wording:

"This opportunity is covered under Section 3 of the HUD Act of 1968"

Note: Where a portion of a Section specifically spoke to areas not related to Public Housing Assistance, those pieces were intentionally removed. So there is no need to feel something important is not included.

§ 75.1 Purpose.

This part establishes the requirements to be followed to ensure the objectives of Section 3 of the Housing and Urban Development Act of 1968 (12 U.S.C. 1701u) (Section 3) are met. The purpose of Section 3 is to ensure that economic opportunities, most importantly employment, generated by certain HUD financial assistance shall be directed to low- and very low-income persons, particularly those who are recipients of government assistance for housing or residents of the community in which the Federal assistance is spent.

§ 75.3 Applicability.

(a) General applicability. Section 3 applies to public housing financial assistance and Section 3 projects, as follows:

(1) Public housing financial assistance. Public housing financial assistance means:

(i) Development assistance provided pursuant to section 5 of the United States Housing Act of 1937 (the 1937 Act);

(ii) Operations and management assistance provided pursuant to section 9(e) of the 1937 Act;

(iv) The entirety of a mixed-finance development project as described in 24 CFR 905.604, regardless of whether the project is fully or partially assisted with public housing financial assistance as defined in paragraphs (a)(1)(i) through (iii) of this section.

(iii) The requirements in this part apply to an entire Section 3 project, regardless of whether the project is fully or partially assisted under HUD programs that provide housing and community development financial assistance.

(b) Contracts for materials. Section 3 requirements do not apply to material supply contracts.

(d) Other HUD assistance and other Federal assistance. Recipients that are not subject to Section 3 are encouraged to consider ways to support the purpose of Section 3.

§ 75.5 Definitions.

The terms HUD, Public housing, Public Housing Agency (PHA), and are defined in 24 CFR part 5. The also apply to this part: 1937 Act means the United States Housing Act of 1937, 42 U.S.C. 1437 et seq. Contractor means any entity entering into a contract with:

(1) A recipient to perform work in connection with the expenditure of public housing financial assistance or for work in connection with a Section 3 project; or

(2) A subrecipient for work in connection with a Section 3 project.

Labor hours means the number of paid hours worked by persons on a Section 3 project or by persons employed with funds that include public housing financial assistance.

Low-income person means a person as defined in Section 3(b)(2) of the 1937 Act.

Material supply contracts means contracts for the purchase of products and materials, including, but not limited to, lumber, drywall, wiring, concrete, pipes, toilets, sinks, carpets, and office supplies.

Professional services means non-construction services that require an advanced degree or professional licensing, including, but not limited to, contracts for legal services, financial consulting, accounting services, environmental assessment, architectural services, and civil engineering services.

Public housing financial assistance means assistance as defined in § 75.3(a)(1).

Public housing project is defined in 24 CFR 905.108.

Recipient means any entity that receives directly from HUD public housing financial assistance or housing and community development assistance that funds Section 3 projects, including, but not limited to, any State, local government, instrumentality, PHA, or other public agency, public or private nonprofit organization.

Section 3 means Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701u).

Section 3 business concern means:
(1) A business concern meeting at least one of the following criteria, documented within the last six-month period:

(i) It is at least 51 percent owned and controlled by low- or very low-income persons;
(ii) Over 75 percent of the labor hours performed for the business over the prior three- month period are performed by Section 3 workers; or
(iii) It is a business at least 51 percent owned and controlled by current public housing residents or residents who currently live in Section 8-assisted housing.

(2) The status of a Section 3 business concern shall not be negatively affected by a prior arrest or conviction of its owner(s) or employees.

(3) Nothing in this part shall be construed to require the contracting or subcontracting of a Section 3 business concern. Section 3 business concerns are not exempt from meeting the specifications of the contract.

Section 3 project means a project defined in § 75.3(a)(2).

Section 3 worker means:

(1) Any worker who currently fits or when hired within the past five years fit at least one of the following categories, as documented:

(i) The worker's income for the previous or annualized calendar year is below the income limit established by HUD.

(ii) The worker is employed by a Section 3 business concern.

(iii) The worker is a YouthBuild participant.

(2) The status of a Section 3 worker shall not be negatively affected by a prior arrest or conviction.

(3) Nothing in this part shall be construed to require the employment of someone who meets this definition of a Section 3 worker. Section 3 workers are not exempt from meeting the qualifications of the position to be filled.

Section 8-assisted housing refers to housing receiving project-based rental assistance or tenant-based assistance under Section 8 of the 1937 Act.

Service area or the neighborhood of the project means an area within one mile of the Section 3 project or, if fewer than 5,000 people live within one mile of a Section 3 project, within a circle centered on the Section 3 project that is sufficient to encompass a population of 5,000 people according to the most recent U.S. Census.

Small PHA means a public housing authority that manages or operates fewer than 250 public housing units.

Subcontractor means any entity that has a contract with a contractor to undertake a portion of the contractor's obligation to perform work in connection with the expenditure of public housing financial assistance or for a Section 3 project.

Subrecipient has the meaning provided in the applicable program regulations or in 2 CFR 200.93.

Targeted Section 3 worker has the meanings provided in §§ 75.11, 75.21, or 75.29, and does not exclude an individual that has a prior arrest or conviction.

Very low-income person means the definition for this term set forth in section 3(b)(2) of the 1937 Act.

YouthBuild programs refers to YouthBuild programs receiving assistance under the Workforce Innovation and Opportunity Act (29 U.S.C. 3226).

§ 75.9 Requirements

(a) Employment and Training.

(1) Consistent with existing Federal, state, and local laws and regulations, PHAs or other recipients receiving public housing financial assistance, and their contractors and subcontractors, must make their *best efforts to provide employment and training opportunities* generated by the public housing financial assistance to Section 3 workers.

(2) PHAs or other recipients, and their contractors and subcontractors, must make their best efforts described in paragraph (a)(1) of this section in the following order of priority:

(i) To residents of the public housing projects for which the public housing financial assistance is expended;

(ii) To residents of other public housing projects managed by the PHA that is providing the assistance or for residents of Section 8-assisted housing managed by the PHA;

(iii) To participants in YouthBuild programs; and

(iv) To low- and very low-income persons residing within the metropolitan area (or nonmetropolitan county) in which the assistance is expended.

(b) Contracting.

(1) *Consistent with existing Federal, state, and local laws and regulations*, PHAs and other recipients of public housing financial assistance, and their contractors and subcontractors, must make their *best efforts to award contracts and subcontracts to business concerns that provide economic opportunities to Section 3 workers*.

(2) PHAs and other recipients, and their contractors and subcontractors, must make their best efforts described in paragraph (b)(1) of this section in the following order of priority:

(i) To Section 3 business concerns that provide economic opportunities for residents of the public housing projects for which the assistance is provided;

(ii) To Section 3 business concerns that provide economic opportunities for residents of other public housing projects or Section-8 assisted housing managed by the PHA that is providing the assistance;

(iii) To YouthBuild programs; and

(iv) To Section 3 business concerns that provide economic opportunities to Section 3 workers residing within the metropolitan area (or nonmetropolitan county) in which the assistance is provided.

§ 75.11 Targeted Section 3 worker for Public Housing Financial Assistance.

(a) Targeted Section 3 worker. A Targeted Section 3 worker for public housing financial assistance means a Section 3 worker who is:

(1) A worker employed by a Section 3 business concern; or

(2) A worker who currently fits or when hired fit at least one of the following categories, as documented within the past five years:

(i) A resident of public housing or Section 8-assisted housing;

(ii) A resident of other public housing projects or Section 8-assisted housing managed by the PHA that is providing the assistance; or

(iii) A YouthBuild participant.

§ 75.13 Section 3 Safe Harbor. *(See Benchmarks on page 13)*

(a) General. Recipients will be considered to have complied with requirements in this part, in the absence of evidence to the contrary if they:

(2) Certify that they have followed the prioritization of effort in § 75.9; and

(3) (2) Meet or exceed the applicable Section 3 benchmark as described in paragraph (b) of this section.

§ 75.15 Reporting. *(See Benchmarks on page 13)*

(a) Reporting of labor hours. (1) For public housing financial assistance, PHAs and other recipients must report in a manner prescribed by HUD:

(i) The total number of labor hours worked;

(ii) The total number of labor hours worked by Section 3 workers; and

(iii) The total number of labor hours worked by Targeted Section 3 workers.

(2) Section 3 workers' and Targeted Section 3 workers' labor hours may be counted for five years from when their status as a Section 3 worker or Targeted Section 3 worker is established pursuant to § 75.31.

(3) The labor hours reported under paragraph (a)(1) of this section must include the total number of labor hours worked with public housing financial assistance in the fiscal year of the PHA or other recipient, including labor hours worked by any contractors and subcontractors that the PHA or other recipient is required, or elects pursuant to paragraph (a)(4) of this section, to report.

(4) PHAs and other recipients reporting under this section, as well as contractors and subcontractors who report to PHAs and recipients, may report labor hours by Section 3 workers, under paragraph (a)(1)(ii) of this section, and labor hours by Targeted Section 3 workers, under paragraph (a)(1)(iii) of this section, from professional services without including labor hours from professional services in the total number of labor hours worked under paragraph (a)(1)(i) of this section. If a contract covers both professional services and other work and the PHA, other recipient, contractor, or subcontractor chooses not to report labor hours from professional services, the labor hours under the contract that are not from professional services must still be reported.

(5) PHAs and other recipients may report on the labor hours of the PHA, the recipient, a contractor, or a subcontractor based on the employer's good faith assessment of the labor hours of a full-time or part-time employee informed by the employer's existing salary or time and attendance based payroll systems, unless the project or activity is otherwise subject to requirements specifying time and attendance reporting.

(b) Additional reporting if Section 3 benchmarks are not met.
If the PHA's or other recipient's reporting under paragraph (a) of this section indicates that the PHA or other recipient has not met the Section 3 benchmarks described in § 75.13, the PHA or other recipient must report in a form prescribed by HUD on the qualitative nature of its Section 3 compliance activities and those of its contractors and subcontractors. Such ***qualitative efforts may, for example***, include but are not limited to the following:

(1) Engaged in outreach efforts to generate job applicants who are Targeted Section 3 workers.

(2) Provided training or apprenticeship opportunities.

(3) Provided technical assistance to help Section 3 workers compete for jobs (e.g., resume assistance, coaching).

(4) Provided or connected Section 3 workers with assistance in seeking employment including: drafting resumes, preparing for interviews, and finding job opportunities connecting residents to job placement services.

(5) Held one or more job fairs.

(6) Provided or referred Section 3 workers to services supporting work readiness and retention (e.g., work readiness activities, interview clothing, test fees, transportation, child care).

(7) Provided assistance to apply for/or attend community college, a four-year educational institution, or vocational/technical training.

(8) Assisted Section 3 workers to obtain financial literacy training and/or coaching.

(9) Engaged in outreach efforts to identify and secure bids from Section 3 business concerns.

(10) Provided technical assistance to help Section 3 business concerns understand and bid on contracts.

(11) Divided contracts into smaller jobs to facilitate participation by Section 3 business concerns.

(12) Provided bonding assistance, guaranties, or other efforts to support viable bids from Section 3 business concerns.

(13) Promoted use of business registries designed to create opportunities for disadvantaged and small businesses.

(14) Outreach, engagement, or referrals with the state one-stop system as defined in Section 121(e)(2) of the (c) Reporting frequency. Unless otherwise provided, PHAs or other recipients must report annually to HUD under paragraph (a) of this section, and, where required, under paragraph (b) of this section, in a manner consistent with reporting requirements for the applicable HUD program.

(d) Reporting by Small PHAs. Small PHAs may elect not to report under paragraph (a) of this section. Small PHAs that make such election are required to report on their qualitative efforts, as described in paragraph (b) of this section, in a manner consistent with reporting requirements for the applicable HUD program.

§ 75.17 Contract Provisions.

(a) PHAs or other recipients must include language in any agreement or contract to apply Section 3 to contractors.

(b) PHAs or other recipients must require contractors to include language in any contract or agreement to apply Section 3 to subcontractors.

(c) PHAs or other recipients must require all contractors and subcontractors to meet the requirements of § 75.9, regardless of whether Section 3 language is included in contracts.

§ 75.29 Multiple Funding Sources.

(a) If a housing rehabilitation, housing construction or other public construction project is subject to Section 3 pursuant to § 75.3(a)(1) and (2), the recipient must follow subpart B of this part for the public housing financial assistance and may follow either subpart B or C of this part for the housing and community development financial assistance. For such a project, the following applies:

(2) The recipients of both sources of funding shall report on the housing rehabilitation, housing construction, or other public construction project as a whole and shall identify the multiple associated recipients. PHAs and other recipients must report the following information:

(i) The total number of labor hours worked on the project;

(ii) The total number of labor hours worked by Section 3 workers on the project; and

(iii) The total number of labor hours worked by Targeted Section 3 workers on the project.

§ 75.31 Recordkeeping.

(b) *Recipients must maintain documentation, or ensure that a subrecipient, contractor, or subcontractor that employs the worker maintains documentation, to ensure that workers meet the definition of a Section 3 worker or Targeted Section 3 worker, at the time of hire or the first reporting period, as follows:*

(1) For a worker to qualify as a Section 3 worker, one of the following must be maintained:

(i) A worker's self-certification that their income is below the income limit from the prior calendar year;
(ii) A worker's self-certification of participation in a means-tested program such as public housing or Section 8-assisted housing;
(iii) Certification from a PHA, or the owner or property manager of project-based Section 8-assisted housing, or the administrator of tenant-based Section 8-assisted housing that the worker is a participant in one of their programs;
(iv) An employer's certification that the worker's income from that employer is below the income limit when based on an employer's calculation of what the worker's wage rate would translate to if annualized on a full-time basis; or
(v) An employer's certification that the worker is employed by a Section 3 business concern.

(2) For a worker to qualify as a Targeted Section 3 worker, one of the following must be maintained:

(i) For a worker to qualify as a Targeted Section 3 worker under subpart B of this part:

(A) A worker's self-certification of participation in public housing or Section 8-assisted housing programs;

(B) Certification from a PHA, or the owner or property manager of project-based Section 8-assisted housing, or the administrator of tenant-based Section 8-assisted housing that the worker is a participant in one of their programs;

(C) An employer's certification that the worker is employed by a Section 3 business concern; or

(D) A worker's certification that the worker is a YouthBuild participant.

Benchmarks

For Public Housing Financial Assistance, the proposed benchmark notification set the benchmarks for the recipient's fiscal year. The proposed benchmark notification provided that recipients would meet the safe harbor in the new § 75.13 by certifying to the prioritization of effort in the new § 75.9 and meeting or exceeding Section 3 benchmarks for total number of labor hours worked by Section 3 workers and by Targeted Section 3 workers. The benchmark for Section 3 workers was set at 20 percent or more of the total number of labor hours worked by all workers paid with public housing financial assistance. The benchmark for Targeted Section 3 workers was set at 5 percent or more of the total number of labor hours worked by all workers paid with public housing financial assistance.

Simply stated, the recipient needs to meet these two benchmarks annually in order to achieve Safe Harbor.

$$\frac{\text{Section 3 Workers Labor Hours}}{\text{Total Labor Hours for the Recipient}} = 20\% \qquad \frac{\text{Section 3 Targeted Workers Labor Hours}}{\text{Total Labor Hours for the Recipient}} = 5\%$$

Note: Motivation, Inc. is the Section 3 Consultant for The Housing Authority of the City of Pawtucket and will be launching an electronic method for contractors and the agency to enter their monthly Hours Worked data into their proprietary cloud-based Section 3 Compliance software. That system will mirror the information contained in the Contract Compliance Forms Package with the contractor or agency uploading any new Section 3 self-certification forms directly into the system for review and confirmation by Motivation, Inc. staff. This system is expected to go live on April 1, 2022, but will be tested prior to the live tested with real data from the client and its contractors.

Forms Package Follows on the Next Page

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SECTION 3 NEW RULE
24 CFR Part 75

On November 30, 2020, HUD put into effect a New and Final Section 3 Rule for all recipients. This rule is drastically different from the old rule and therefore, we want everyone to know these requirements and plan accordingly.

Every contractor must ensure this package is included in their sub-contracts. **Every sub-contractor must include this package in their lower-tiered sub-contracts.**

This new rule exempts all material and supply only agreements. The rule applies to all service related contracts/agreements despite the dollar amount or project duration, except CPA's, Attorneys, Engineers, and Architects.

You should not issue the Individual or Business Self-Certification form(s) until you have secured a qualified contractor or employee respectively. **DO NOT** hand the individual self-certification form to every employee as it may be a waste of time if they were not hired within the past five years and were low-income, public housing, or Section 8 at the time of hire.

Documents included in this package:

The Acknowledgement and Affidavit must be executed and returned by Every Contractor.

- Twenty (20) percent or more of the total number of labor hours worked by all workers employed with public housing financial assistance in a HA's fiscal year are Section 3 workers; and

- Five (5) percent or more of the total number of labor hours worked by all workers employed with public housing financial assistance in a HA's fiscal year are Section 3 workers;

- There are **No specific hiring or contracting goals** under this new rule.

- There is **No Section 3 Business Preference** under the new rule and **No points awarded for being a Section 3 Business.**

- The rule **does not require the hiring or contracting of any person or business that is not fully qualified** to perform the work.

The two new categories of Section 3 are now referred to as:

- **Section 3 Worker** - Any low or very low-income persons residing in the housing authority MSA
- **Targeted Section 3 Worker** - Public Housing, Voucher Holder, YouthBuild participant

Contractors will provide these three (3) data sets to the The Housing Authority of the City of Pawtucket's Section 3 Consultant within 40 days of the month after the hours have been worked by EVERY person that worked directly on the contract. (**Ex:** April data is required by June 10th) No back-office staff hours are counted:

- Total Hours Worked by all workers
- Total Hours Worked by Section 3 Workers (Individual Self-Certification Form Required)
- Total Hours worked by Targeted Section 3 Workers (Individual Self-Certification Form Required

There are new definitions of how to be a Section 3 Business Concern:

- It is at least 51 percent owned by low- or very low-income persons; with businesses at least 6 months old

- Over 75 percent of the labor hours performed for the business are performed by low- or very low-income persons; or (Based on the prior 90 days of full business payrolls)

- It is a business at least 51 percent owned by current public housing residents or residents who currently live in Section 8-assisted housing, with businesses at least 6 months old

MONTHLY REPORTING INSTRUCTIONS

STEP ONE

Enter your company name and the name of the contract or task you are performing in the appropriate lines at the top of the form.

STEP TWO

Determine which workers qualify as Section 3 by having each complete a **Section 3 Individual Low-Income Person Self-Certification Form**. This form is submitted once per Section 3 employee or those that believe they meet the definition of a Section 3 employee.

The form is to be completed by the individual and stress to the employee that the form is Voluntary:

1. Complete contact info section
2. Check the box that describes your situation
3. Sign and date the form
4. Complete the employer information
5. Return to your employer

STEP THREE

After determining which workers are Section 3, determine their classification based on what they check in the box on the form as Non-Targeted or Targeted:

Non-Targeted are those Section 3 income-qualified workers who are low-income and reside in the MSA.

Targeted are those Section 3 income-qualified workers who are low-income and reside in public housing, Section 8 or YouthBuild

STEP FOUR

Enter the monthly dates of reporting on the first line, then proceed as follows:

1. Enter total hours worked by ALL contract or project level staff with exceptions as noted above*
2. Enter total hours worked by all Section 3 staff Non-Targeted
3. Enter total hours worked by all Section 3 staff Targeted

List **ONLY** the individual names of the workers who have self-certified as Section 3 (Non-Targeted and Targeted) along with their **total** hours for this months report only.

Submit the Section 3 Hours Worked Reporting Form on a monthly basis to the contact person noted on your reporting form above.

SECTION 3 BUSINESS

Voluntary Self-Certification Form

IN COMPLIANCE WITH SECTION 3 OF THE HUD ACT OF 1968 UPDATED 24 CFR PART 75 11/30/2020

The purpose of this form is to comply with Section 3 of the HUD Act of 1968 Business Certification requirements. To count as a Section 3 Business your company/firm must meet one of the listed categories below. Each category will require additional documentation to support the election. You must provide that supporting documentation with this form properly completed to be confirmed as a Section 3 business. If this form is submitted without the required supplemental data, your certification will not be processed.

CATEGORY	DOCUMENTATION REQUIRED	YOUR ELECTION
a business at least 51 percent owned by low- or very low-income persons;	Proof of ownership showing all owners and their percentages and a completed Section 3 Individual Self-Certification form for all low- and very low-income owners	← INITIAL HERE ←
Over 75 percent of the labor hours performed for the business are performed by low- or very low-income persons; or	Provide the last 90 days full payrolls for the entire company, make a list of the names from the payrolls of the Section 3 workers, and provide a completed Section 3 Individual Self- Certification for all low- and very low-income workers you list	
It is a business at least 51 percent owned by current public housing residents or residents who currently live in Section 8-assisted housing.	Proof of ownership showing all owners and their percentages and a Section 3 Individual Self-Certification form for all public housing and/or Section 8 owners	

I hereby certify to the US Department of Housing and Urban Development (HUD) that all of the information on this form is true and correct. I attest under penalty of perjury that my business meets the elected definition and understand proof of this information may be requested. If found to be inaccurate, I understand that I may be disqualified as a certified Section 3 business.

Full Name: _____

Company Name: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Signature: _____ Date: _____

SECTION 3 INDIVIDUAL LOW-INCOME PERSON

Voluntary Self-Certification Form

IN COMPLIANCE WITH SECTION 3 OF THE HUD ACT OF 1968 UPDATED 24 CFR PART 75 11/30/2020

The purpose of this form is to comply with Section 3 of the HUD Act of 1968 self-certification income requirements. To count as a Section 3 individual, any legal resident of the United States annual income must not exceed the HUD income limits for the year before they were hired, or, the individual's current year income annualized for the year they are being confirmed as low-income.

Print Name _____

Phone _____ Email _____

Address _____

City _____ State _____ Zip _____

To qualify as a Section 3 Person, you must meet one of the standards in the brackets below and your individual annual income must not exceed the number in the box below.

Check only one box below that describes your situation:

_____ I am a Public Housing Resident, Section 8 assists me with my rent, or I am a current YouthBuild participant

_____ I receive No HUD support, but I am low-income and live in the Pawtucket MSA

My Individual Annual Income does not exceed: $48,450*

I hereby certify to the US Department of Housing and Urban Development (HUD) that all of the information on this form is true and correct. I attest under penalty of perjury that my total income is as shown above, and that proof of this information may be requested. If found to be inaccurate, I understand that I may be disqualified as an applicant and/or a certified Section 3 individual. Finally, I authorize including my name on a list of Section 3 Residents seeking employment and to include my contact information so that contractors may contact me directly for any employment opportunities.

Signature: _____ Date: _____

Income Limits website: https://www.huduser.gov/portal/datasets/il/il2021/2021summary.odn

SECTION 3

Hours Worked Reporting Form

IN COMPLIANCE WITH SECTION 3 OF THE HUD ACT OF 1968 UPDATED 24 CFR PART 75 11/30/2020

The purpose of this form is to comply with Section 3 of the HUD Act of 1968 tracking of hours worked by all person's employed by _____ _____ _____(company name) on the_____ _____ _____ _____contract including those meeting the Section 3 income requirements as low- or very low-income.

Section 3 Employees are now defined to as:

Section 3 Workers - are those Section 3 income-qualified workers who are low-income and reside in the MSA.

Targeted Section 3 Workers - are those Section 3 income-qualified workers who are low-income and reside in public housing, Section 8 or YouthBuild.

If your company employs any person you believe is low income now or was when they were hired within the past five years, please have them complete the **SECTION 3 INDIVIDUAL LOW-INCOME PERSON SELF-CERTIFICATION FORM"** and return it immediately.

All hours worked by everyone on the project must be reported monthly to:

Nicholas Toth
ntoth@pawthousing.org
(401) 721-6044

Total Hours Worked by non-Section 3 staff	
Total hours worked by all Non-targeted Section 3 employees	
Total hours worked by all Targeted Section 3 employee	

Please list the names and hours worked by each Section 3 Worker individually below or on a separate sheet.

First Name	Last Name	Total Hours This Period

Are You Attaching any New Contractor or Resident Self-Certification Forms to this month's report? _____Yes or _____No

Section 3 New Rule Contractor Acknowledgement and Affidavit

(Return this form with your Bid/Quote/Response)

Company Name: _____ **Solicitation #:** _____

I hereby certify to the US Department of Housing and Urban Development (HUD) and The Housing Authority of the City of Pawtucket that I have read all of the information in this policy package and agree to follow the requirements for complying with the order of prioritization in 75.9 and reporting of all labor hours associated with my contract as required. I further understand that failure to comply with these requirements will cause my payments to be held and not processed or not released until I come into full compliance with this policy.

Monthly, I will be required to provide these data points for all contract staff working directly on the contract not including any back-office staff:

- ☐ Total Hours Worked by all employees (Section 3 and regular employees)
- ☐ Total Hours Worked by All **Targeted Section 3 employees** (Public Housing, Section 8, and YouthBuild)
- ☐ Total Hours Worked by All **Non-Targeted Section 3 employees** (Low Income persons residing in the Metropolitan Statistical Area)

You are required to enter the names and hours worked by each Section 3 employee individually.

Signature: _____ **Print:** _____ **Date:** _____

STATE OF _____ in _____ COUNTY)

I, the undersigned authority, a Notary Public in and for said County and in said State, hereby certify that, _____, whose name as _____ of _____ is signed to the foregoing conveyance and who is known to me, acknowledged before me on this day, that, being informed of the contents of the foregoing conveyance, he/she, in his/her capability as _____(Title), and with full authority, executed the same voluntarily for and as the act of said corporation.

Given under my hand and official seal, this the _____ day of _____, 20_____.

Notary Public

My Commission Expires _____

U.S. Department of Labor
Wage and Hour Division

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.

U.S. Wage and Hour Division
Rev. Dec. 2008

OMB No.: 1215-0149
Expires: 12/31/2011

NAME OF CONTRACTOR ☐ OR SUBCONTRACTOR ☐	ADDRESS	
PAYROLL NO.	FOR WEEK ENDING	PROJECT AND LOCATION / PROJECT OR CONTRACT NO.

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT. OR ST.	(4) DAY AND DATE — HOURS WORKED EACH DAY	(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS: FICA	WITH-HOLDING TAX			OTHER	TOTAL DEDUCTIONS	(9) NET WAGES PAID FOR WEEK
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While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that is will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

Date _____

I, _____ _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Start. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

_____

_____

_____

_____

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

☐ – in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

☐ – Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

FORM OF NON-COLLUSIVE AFFIDAVIT

A F F I D A V I T

(Firm Submitting Proposal)

State of _____) ss
Country of _____)

_____, being first duly sworn, deposes and says:

That he is _____ (A partner or officer of the firm of, etc.) _____ the party making the foregoing proposal, that such proposal is genuine and not collusive or sham; that said person has not colluded, conspired connived or agreed, directly or indirectly with any person, to put in a sham proposal or to refrain from submitting a proposal, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the proposal price or affidavit or any other firm submitting a proposal, or to fix any overhead, profit or cost element of said proposal price, or of that of any other firm submitting a proposal, or to secure any advantage against the (LHA) _____ or any person interested in the proposed contract; and that all statements in said proposal are true.

Signature of:

Authorized Individual if Proposal is

Submitted as an Individual, Partnership,

Corporation, etc.

Subscribed and sworn to before me

this _____ day of _____ 20____

_____

My commission expires _____, 20____.

Contractor: _____
Date: _____
Re: Contractual Liability Risk Management

It is our policy to identify and effectively manage our contractual liabilities arising out of business relationships with Contractors. We seek to take responsibility for our own actions and their consequences, while requiring our business partners to assume a share of risk relative to their ability to control it.

Given the number of contractual relationships that we may have at any point in time, it is imperative that we control the type and magnitude of the liabilities we assume. Conversely, we will look for opportunities to ensure that where legally possible, we manage our risks by asking others to contractually assume their share of liability. The effective management of these liabilities will allow us to lower our overall cost of risk. This program is a vital element of our overall safety and risk management program.

In order to perform as a Contractor for us, we will require a certificate of insurance form from you with limits equal to or greater than those on the attached sample certificate. We will require that we have additional insured coverage on your general liability policy and that the additional insured status be shown on the certificate of insurance as indicated on the sample.

The following Hold Harmless and Indemnity Agreement, as evidenced by your (the Contractors') signature below, hereby applies to all work performed by the Contractor on our behalf, whether or not a separate work order or contract has been signed or agreed to between the parties:

> To the fullest extent permitted by law, the Contractor hereby acknowledges and agrees that it shall indemnify, hold harmless and defend **The Housing Authority of the City of Pawtucket** and any of their officers, directors, employees, agents, affiliates, subsidiaries and partners, from and against all claims, damages, losses and expenses, including but not limited to, attorney's fees, arising out of or resulting from the performance of the Contractor's work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death or to the destruction of tangible property (other than to the work itself) including loss of use resulting there from, and (2) is caused in whole or in part by any acts or omissions of the Contractor, its employees, agents or Subcontractors or anyone directly or indirectly employed by any of them, or anyone whose acts any of them may be liable.

The Contractor hereby acknowledges its obligation under the foregoing paragraph to indemnify **The Housing Authority of the City of Pawtucket** against judgments suffered because of the Contractor's work and to assume the cost of defending **The Housing Authority of the City of Pawtucket** against claims as described in the foregoing paragraph.

_____
Contractor Signature
Company: _____
Title: _____

We must receive the required Certificate of Insurance meeting all of our requirements, as well as the Contractors signature above accepting the terms of this letter, prior to the beginning of any work.

If you have any questions on the above requirements, please contact _____ at _____.

Sincerely,
The Housing Authority of the City of Pawtucket

_____
By: _____
Title: _____

Contract Insurance Provisions:

The Contractor is required to obtain insurance to protect the Authority from any claims arising from the contractor's operations. Before beginning work, the Contractor and each subcontractor shall furnish the Authority with Certificates of Insurance showing that the following insurance is in force and will insure all operations under the contract. All insurance shall be carried with companies that have an AM Best rating of at least A X and that are authorized to do business in the State of Rhode Island.

1) Commercial General Liability Insurance naming the Authority as an additional insured on a primary and non-contributory basis for ongoing operations CG 2010 and completed operations CG 2037 or their equivalent at a minimum limit of $1,000,000 per occurrence and $2,000,000 in the aggregate, together with damage to premises rented and fire damage legal liability limit of $1,000,000 and medical payments for any one person of $5,000.

2) Automobile Liability Insurance at a minimum of $1,000,000 combined single limit for each accident naming the Authority as an additional insured on a primary and non-contributory basis.

3) Workers Compensation and Employers Liability Insurance certificate evidencing the Contractor's current workers compensation per statute and employers' liability at a minimum limit of $1,000,000 per accident, $1,000,000 disease each employee and $1,000,000 disease policy limit.

4) Umbrella/Excess Liability insurance at a minimum limit of $2,000,000 per occurrence and in the aggregate including the Authority as an additional insured on a primary and non-contributory basis with General Liability, Automobile Liability and employers' liability as underlying coverage.

5) Professional Liability insurance, where applicable, with a minimum limit of $2,000,000 per occurrence.

6) Pollution Liability Insurance, where applicable, with a minimum limit of $2,000,000 per occurrence.

The Commercial General Liability, Automobile Liability, Umbrella Liability and Employers Liability shall all include a waiver of subrogation in favor of the Authority.

To the fullest extent permitted by law, the Contractor hereby acknowledges and agrees that it shall indemnify, hold harmless and defend the Authority and any of their offices, directors, employees, agents, affiliates, subsidiaries and partners, from and against all claims, damages, losses and expenses, including but not limited to, attorney's fees, arising out of or resulting from the performance of the Contractor's work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death or to the destruction of tangible property (other than to the work itself) including loss of use resulting there from, and (2) is caused in whole or in part by any acts or omissions of the Contractor, its employees, agents or Subcontractors or anyone directly or indirectly employed by any of them or anyone whose acts any of them may be liable.

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
Current Date

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
Contractor Insurance Agent 123 Main Street Anytown State Zip	PHONE (A/C, No, Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : ABC Insurance Company	
INSURER B : DEF Insurance Company	
INSURER C : GHI Insurance Company	
INSURER D : JKL Insurance Company	
INSURER E :	
INSURER F :	

INSURED
Contractor Name
Address
City State Zip

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	☑ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☑ OCCUR ☐ ☐ GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☑ PRO-JECT ☐ LOC ☐ OTHER:	X	X	Policy Number	Current	Date	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 100,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
B	AUTOMOBILE LIABILITY ☑ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☑ HIRED AUTOS ONLY ☑ NON-OWNED AUTOS ONLY ☐	X	X	Policy Number	Current	Date	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $ $
A	☑ UMBRELLA LIAB ☑ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☐ RETENTION $	X	X	Policy Number			EACH OCCURRENCE AGGREGATE	$ 2,000,000 $ 2,000,000 $
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N ☐ N/A If yes, describe under DESCRIPTION OF OPERATIONS below	N/A	X	Policy Number	Current	Date	☑ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
D	Professional/Pollution Liability			Policy Number	Current	Date	Per Claim Aggregate	2,000,000 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Certificate Holder is included as an Additional Insured on a primary and non-contributory basis on the General Liability policy for Ongoing Operations (CG2010) and Completed Operations (CG2037) or their equivalent. Certificate holder is included as an additional insured a primary and non-contributory basis on the on Automobile and Umbrella policies. The Additional Insured Coverage shall not require a contract between the certificate holder and the Insured. The Commercial General Liability, Automobile Liability, Umbrella Liability and Employers Liability all include a Waiver of Subrogation in favor of certificate holder. All insurance carriers affording coverage are approved to do business in the State of Rhode Island and have an AM Best Rating of not less than A X.

CERTIFICATE HOLDER

The Housing Authority of the City of Pawtucket, Rhode Island

214 Roosevelt Avenue
Pawtucket RI 02862-1303

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Must be signed

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Pawtucket Housing Authority

2024 Holiday Schedule

Day	Date	Holiday
Monday	01/01/2024	New Year's Day
Monday	01/15/2024	Martin Luther King
Monday	02/19/2024	President's Day
Monday	05/27/2024	Memorial Day
Wednesday	06/19/2024	Juneteenth
Thursday	07/04/2024	Independence Day
Monday	08/12/2024	Victory Day
Monday	09/02/2024	Labor Day
Monday	10/14/2024	Columbus Day
Monday	11/11/2024	Veteran's Day
Wednesday	11/27/2024	Thanksgiving Eve - **1/2 Day**
Thursday	11/28/2024	Thanksgiving Day
Friday	11/29/2024	Day after Thanksgiving
Tuesday	12/24/2024	Christmas Eve - **1/2 Day**
Wednesday	12/25/2024	Christmas Day
Tuesday	12/31/2024	New Year's Eve - **1/2 Day**

SECTION 004100
BID FORM

THE PROJECT AND THE PARTIES

1.01 TO:

A. Owner

1.02 FOR:

A. Project: PHA Galego Court Administration Building & Building 200

B. Architect's Project Number: 30911
Project Location Address 1
Pawtucket, Rhode IslandProject Location ZIP

1.03 DATE: _____ (BIDDER TO ENTER DATE)

1.04 SUBMITTED BY: (BIDDER TO ENTER NAME AND ADDRESS)

A. Bidder's Full Name _____
1. Address _____
2. City, State, Zip_____

1.05 OFFER

A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Bid Documents prepared by Ed Wojcik Architect, Ltd. for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

B. _____
_____ dollars
($_____), in lawful money of the United States of America.

C. We have included the required security Bid Bond as required by the Instruction to Bidders.

D. We have included the required performance assurance bonds in the Bid Amount as required by the Instructions to Bidders.

1.06 ACCEPTANCE

A. This offer shall be open to acceptance and is irrevocable for sixty days from the bid closing date.

B. If this bid is accepted by Owner within the time period stated above, we will:
1. Execute the Agreement within seven days of receipt of Notice of Award.
2. Furnish the required bonds within seven days of receipt of Notice of Award.

1.07 CONTRACT TIME

A. If this Bid is accepted, we will:

B. Complete the Work in _____ calendar days from Notice to Proceed.

1.08 CHANGES TO THE WORK

A. When Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:
1. _____ percent overhead and profit on the net cost of our own Work;
2. _____ percent on the cost of work done by any Subcontractor.

B. On work deleted from the Contract, our credit to Owner shall be Architect-approved net cost plus _____ of the overhead and profit percentage noted above.

1.09 ADDENDA

A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.
1. Addendum # _____ Dated _____.
2. Addendum # _____ Dated _____.

3. Addendum # _____ Dated _____.

1.10 BID FORM SUPPLEMENTS

A. The following Supplements are attached to this Bid Form and are considered an integral part of this Bid Form:
   1. HUD Form 5369-A Representations, Certifications, and Other Statements of Bidders - Public and Indian Housing Programs
   2. Non-Collusive Affidavit
   3. Liability Risk Management Form

B. We agree to submit the following Supplements to Bid Forms within 48 hours after submission of this bid for additional bid information:
   1. HUD Form 2530 Previous Participation Certification

1.11 BID FORM SIGNATURE(S)

A. _____

B. (Bidder - print the full name of your firm)

C. _____

D. (Authorized signing officer, Title)

END OF SECTION

SECTION 005000
CONTRACTING FORMS AND SUPPLEMENTS

PART 1 GENERAL

1.01 CONTRACTOR IS RESPONSIBLE FOR OBTAINING A VALID LICENSE TO USE ALL COPYRIGHTED DOCUMENTS SPECIFIED BUT NOT INCLUDED IN THE PROJECT MANUAL.

1.02 AGREEMENT AND CONDITIONS OF THE CONTRACT

A. See Section 005200 - Agreement Form for the Agreement form to be executed.

B. See Section 007200 - General Conditions for the General Conditions.

C. The Agreement is based on AIA A101.

D. The General Conditions are based on AIA A201.

E. The General Conditions are based on HUD Form 5370.

1.03 FORMS

A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in Contract Documents.

B. Post-Award Certificates and Other Forms:
   1. Schedule of Values Form: AIA G703.
   2. Application for Payment Forms: AIA G702 with AIA G703 (for Contractors).

C. Clarification and Modification Forms:
   1. Architect's Supplemental Instructions Form: AIA G710.
   2. Construction Change Directive Form: AIA G714.
   3. Change Order Form: AIA G701.

D. Closeout Forms:
   1. Certificate of Substantial Completion Form: AIA G704.

1.04 REFERENCE STANDARDS

A. AIA A101 - Standard Form of Agreement Between Owner and Contractor where the basis of Payment is a Stipulated Sum 2017.

B. AIA A201 - General Conditions of the Contract for Construction 2017.

C. AIA G701 - Change Order 2017.

D. AIA G702 - Application and Certificate for Payment 1992.

E. AIA G703 - Continuation Sheet 1992.

F. AIA G704 - Certificate of Substantial Completion 2017.

G. AIA G710 - Architect's Supplemental Instructions 2017.

H. AIA G714 - Construction Change Directive 2017.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 007300
SUPPLEMENTARY CONDITIONS

PART 1 GENERAL

1.01 SUMMARY

A. These Supplementary Conditions amend and supplement the General Conditions defined in Document 007200 - General Conditions and other provisions of Contract Documents as indicated below. Provisions that are not so amended or supplemented remain in full force and effect.

B. The terms used in these Supplementary Conditions that are defined in the General Conditions have the meanings assigned to them in the General Conditions.

1.02 MODIFICATIONS TO GENERAL CONDITIONS

A. ARTICLE 3.6 - TAXES
   1. Add the following subparagraph:
      a. 3.6.2: The Owner will obtain an exemption certificate for the Contractor for taxes and duties on Certain Products or Items, for purchasing Products or Items for the Work.

B. ARTICLE 11.5 - PERFORMANCE BOND AND PAYMENT BOND
   1. Add the following subparagraph:
      a. Provide a 100 percent Performance Bond.
      b. Provide a 100 percent Payment Bond.
      c. Deliver bonds within 3 days after exectuion of the Contract.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 011000
SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: PHA Galego Court Administration Building & Building 200

B. Owner's Name: Pawtucket Housing Authority.

C. Architect's Name: Ed Wojcik Architect, Ltd.

D. The Project consists of the renovation of Administration Building and Building 200. The existing offices will be relocated to Administration Building. Space vacated will be used to create two residential units..

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 005200 - Agreement Form.

1.03 DESCRIPTION OF ALTERATIONS WORK

A. Scope of alterations work is indicated on drawings.

B. Renovate the following areas, complete including operational mechanical and electrical work and finishes:
   1. Administration Building: Relocate offices from Building 200 to former Daycare.
   2. Building 200: Create two residential units from vacated offices.

C. Plumbing: Replace existing system with new construction.

D. HVAC: Replace existing system with new construction.

E. Electrical Power: Replace existing system with new construction.

1.04 OWNER OCCUPANCY

A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.

B. Owner intends to occupy the Project upon Substantial Completion.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

D. Schedule the Work to accommodate Owner occupancy.

1.05 CONTRACTOR USE OF SITE AND PREMISES

A. Arrange use of site and premises to allow:
   1. Owner occupancy.
   2. Use of site and premises by the public.

B. Provide access to and from site as required by law and by Owner:
   1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
   2. Do not obstruct roadways, sidewalks, or other public ways without permit.

C. Existing building spaces may not be used for storage.

D. Time Restrictions:
   1. Limit conduct of the hours of 8:00 am to 3:30 pm.
   2. No work allowed on Saturday and Sunday.
   3. No work allowed on Pawtucket Housing Authority Holidays (see attached).

E. Utility Outages and Shutdown:
   1. Prevent accidental disruption of utility services to other facilities.

1.06 WORK SEQUENCE

A. Coordinate construction schedule and operations with Owner.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 012000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for progress payments.

B. Documentation of changes in Contract Sum and Contract Time.

C. Change procedures.

D. Procedures for preparation and submittal of application for final payment.

1.02 SCHEDULE OF VALUES

A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.

B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.

C. Forms filled out by hand will not be accepted.

D. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.

E. Schedule of Values shall be approved by the Owner

F. Revise schedule to list approved Change Orders, with each Application For Payment.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.

C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.

D. Forms filled out by hand will not be accepted.

E. Execute certification by signature of authorized officer.

F. Submit one electronic and three hard-copies of each Application for Payment.

G. Include the following with the application:
   1. Transmittal letter as specified for submittals in Section 013000.
   2. Partial release of liens from major subcontractors and vendors.
   3. Affidavits attesting to off-site stored products.
   4. Certified payrolls shall be submitted by U.S. Mail with each requisition for payment request. Submit payroll on provided U.S. Department of Labor PAYROLL form.

1.04 MODIFICATION PROCEDURES

A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.

B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
   1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
   2. Promptly execute the change.

C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within five days.

D. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.

1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
3. For pre-determined unit prices and quantities, the amount will based on the fixed unit prices.

E. Substantiation of Costs: Provide full information required for evaluation.
1. Provide the following data:
a. Quantities of products, labor, and equipment.
b. Overhead and profit.
c. Justification for any change in Contract Time.
d. Credit for deletions from Contract, similarly documented.
2. Support each claim for additional costs with additional information:
a. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

F. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

G. Promptly enter changes in Project Record Documents.

1.05 APPLICATION FOR FINAL PAYMENT

A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

B. Application for Final Payment will not be considered until the following have been accomplished:
1. All closeout procedures specified in Section 017000.
2. All latent defects and punchlist items are completed and approved.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

A. Section 002113 - Instructions to Bidders: Restrictions on timing of substitution requests.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.

B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. Forms indicated in the Project Manual are adequate for this purpose, and must be used.

D. Limit each request to a single proposed substitution item.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:
   1. Section 002113 - Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.
   2. Owner will consider requests for substitutions only if submitted at least 10 days prior to the date for receipt of bids.

B. Submittal Form (before award of contract):

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

3.04 RESOLUTION

A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

B. Architect will notify Contractor in writing of decision to accept or reject request.

3.05 ACCEPTANCE

END OF SECTION

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General administrative requirements.

B. Preconstruction meeting.

C. Progress meetings.

D. Construction progress schedule.

E. Submittals for review, information, and project closeout.

F. Number of copies of submittals.

G. Submittal procedures.

1.02 RELATED REQUIREMENTS

A. Section 017000 - Execution and Closeout Requirements: Additional coordination requirements.

B. Section 017800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

1.03 GENERAL ADMINISTRATIVE REQUIREMENTS

A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.

1.04 PROJECT COORDINATOR

A. Project Coordinator: Construction Manager.

B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for pedestrian access, traffic, and parking facilities.

C. During construction, coordinate use of site and facilities through the Project Coordinator.

D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 011000 - Summary.

F. Coordinate field engineering and layout work under instructions of the Project Coordinator.

G. Make the following types of submittals to Architect through the Project Coordinator:
   1. Requests for Interpretation.
   2. Requests for substitution.
   3. Shop drawings, product data, and samples.
   4. Test and inspection reports.
   5. Closeout submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

A. Owner will schedule a meeting after Notice of Award.

B. Attendance Required:
   1. Owner.
   2. Architect.
   3. Contractor.

C. Agenda:
   1. Execution of Owner-Contractor Agreement.

2. Submission of executed bonds and insurance certificates.
3. Distribution of Contract Documents.
4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
5. Designation of personnel representing the parties to Contract and Architect.
6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
7. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the work at maximum bi-monthly intervals.

B. Attendance Required:
1. Contractor.
2. Owner.
3. Architect.
4. Contractor's superintendent.
5. Major subcontractors.

C. Agenda:
1. Review minutes of previous meetings.
2. Review of work progress.
3. Field observations, problems, and decisions.
4. Identification of problems that impede, or will impede, planned progress.
5. Review of submittals schedule and status of submittals.
6. Maintenance of progress schedule.
7. Corrective measures to regain projected schedules.
8. Planned progress during succeeding work period.
9. Maintenance of quality and work standards.
10. Effect of proposed changes on progress schedule and coordination.
11. Other business relating to work.

D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
1. Include written certification that major contractors have reviewed and accepted proposed schedule.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

3.04 SUBMITTALS FOR REVIEW

A. When the following are specified in individual sections, submit them for review:
1. Product data.
2. Shop drawings.
3. Samples for selection.
4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.

C. Samples will be reviewed for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout Submittals.

3.05 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
1. Design data.
2. Certificates.
3. Test reports.
4. Inspection reports.
5. Manufacturer's instructions.
6. Manufacturer's field reports.
7. Other types indicated.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.06 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
1. Project record documents.
2. Operation and maintenance data.
3. Warranties.
4. Bonds.
5. Full Lien Releases .
6. Other types as indicated.

D. Submit for Owner's benefit during and after project completion.

3.07 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Documents for Information: Submit one copy.

C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
1. After review, produce duplicates.
2. Retained samples will not be returned to Contractor unless specifically so stated.

3.08 SUBMITTAL PROCEDURES

A. General Requirements:
1. Sequentially identify each item. For revised submittals use original number and a sequential combination numberical and alphabetical suffix.
2. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
3. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
4. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
   a. Send submittals in electronic format via email to Architect.
5. Schedule submittals to expedite the Project, and coordinate submission of related items.

a. For each submittal for review, allow 5 days excluding delivery time to and from the Contractor.

6. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
7. Provide space for Contractor and Architect review stamps.
8. When revised for resubmission, identify all changes made since previous submission.
9. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
10. Submittals not requested will not be recognized or processed.

B. Shop Drawing Procedures:
1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
2. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

END OF SECTION

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. References and standards.

C. Testing and inspection agencies and services.

D. Control of installation.

E. Mock-ups.

F. Manufacturers' field services.

G. Defect Assessment.

1.02 RELATED REQUIREMENTS

A. Section 012100 - Allowances: Allowance for payment of testing services.

1.03 REFERENCE STANDARDS

A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants 2008 (Reapproved 2023).

B. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation 2017.

C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry 2023.

D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction 2019.

E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection 2021.

F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing 2021.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
   1. Include:
      a. Date issued.
      b. Project title and number.
      c. Name of inspector.
      d. Date and time of sampling or inspection.
      e. Identification of product and specifications section.
      f. Location in the Project.
      g. Type of test/inspection.
      h. Date of test/inspection.
      i. Results of test/inspection.
      j. Compliance with Contract Documents.
      k. When requested by Architect, provide interpretation of results.
   2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.

C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
   1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.

D. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

E. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
1. Submit report in duplicate within 30 days of observation to Architect for information.
2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

1.05 REFERENCES AND STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.

C. Obtain copies of standards where required by product specification sections.

D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

1.06 TESTING AND INSPECTION AGENCIES AND SERVICES

A. Owner will employ services of an independent testing agency to perform certain specified testing; payment for cost of services will be derived from allowance specified in Section 012100; see Section 012100 and applicable sections for description of services included in allowance.

B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

C. Contractor Employed Agency:

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

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

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

A. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Architect will use accepted mock-ups as a comparison standard for the remaining Work.

D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

3.03 TESTING AND INSPECTION

A. See individual specification sections for testing and inspection required.

B. Testing Agency Duties:
   1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
   2. Perform specified sampling and testing of products in accordance with specified standards.
   3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
   4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
   5. Perform additional tests and inspections required by Architect.
   6. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:
   1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
   2. Agency may not approve or accept any portion of the Work.
   3. Agency may not assume any duties of Contractor.
   4. Agency has no authority to stop the Work.

D. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
   2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
   3. Provide incidental labor and facilities:
      a. To provide access to Work to be tested/inspected.
      b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
      c. To facilitate tests/inspections.
      d. To provide storage and curing of test samples.
   4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
   5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
   6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.

F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

3.04 MANUFACTURERS' FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance equipment as applicable, and to initiate instructions when necessary.

B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 014100
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 SUMMARY OF REFERENCE STANDARDS

A. Regulatory requirements applicable to this project are the following:

B. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines current edition.

C. FED-STD-795 - Uniform Federal Accessibility Standards (UFAS) 1988.

D. 29 CFR 1910 - Occupational Safety and Health Standards Current Edition.

E. 2021 RI State Fire Code adopting NFPA 1 and NFPA 101, 2018 edition and NFPA 72 2019 edition.

F. 2021 Rhode Island State Building Code, adopting IBC, IPC, IMC, IECC 2018 editions.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary utilities.

B. Temporary sanitary facilities.

C. Temporary Controls: Barriers, enclosures, and fencing.

D. Security requirements.

E. Vehicular access and parking.

F. Waste removal facilities and services.

1.02 TEMPORARY UTILITIES

A. Owner will provide the following:
   1. Electrical power and metering, consisting of connection to existing facilities.

B. Existing facilities may be used.

1.03 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Use of existing facilities located at Community Room or Maintenance Shop is permitted.

C. Maintain daily in clean and sanitary condition.

D. At end of construction, return facilities to same or better condition as originally found.

1.04 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.

C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 SMOKING

A. Smoking is not permitted on the work site.

B. Post signs and educate subcontracotrs and vendors of the no smoking policy.

1.06 FENCING

A. Provide 6 foot (1.8 m) high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.07 INTERIOR ENCLOSURES

A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.08 SECURITY - SEE SECTION 013553

A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.09 VEHICULAR ACCESS AND PARKING

A. Coordinate access and haul routes with governing authorities and Owner.

B. Provide and maintain access to fire hydrants, free of obstructions.

C. Provide means of removing mud from vehicle wheels before entering streets.

D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

E. Existing parking areas located at (coordinate with Owner) may be used for construction parking.

1.10 WASTE REMOVAL

A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash from site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Re-use of existing products.

B. Transportation, handling, storage and protection.

C. Product option requirements.

D. Substitution limitations.

1.02 RELATED REQUIREMENTS

A. Section 012500 - Substitution Procedures: Substitutions made during procurement and/or construction phases.

B. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.

C. Section 017419 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

1.03 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.

B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

B. Use of products having any of the following characteristics is not permitted:
   1. Made outside the United States, its territories, Canada, or Mexico.
   2. Made using or containing CFC's or HCFC's.

C. Where other criteria are met, Contractor shall give preference to products that:
   1. If used on interior, have lower emissions, as defined in Section 016116.
   2. If wet-applied, have lower VOC content, as defined in Section 016116.
   3. Are extracted, harvested, and/or manufactured closer to the location of the project.
   4. Have longer documented life span under normal use.
   5. Result in less construction waste. See Section 017419

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 012500 - Substitution Procedures.

3.02 TRANSPORTATION AND HANDLING

A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.

B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

D. Transport and handle products in accordance with manufacturer's instructions.

E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.

H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.03 STORAGE AND PROTECTION

A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 017419.

B. Store and protect products in accordance with manufacturers' instructions.

C. Store with seals and labels intact and legible.

D. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.

E. For exterior storage of fabricated products, place on sloped supports above ground.

F. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.

G. Comply with manufacturer's warranty conditions, if any.

H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

I. Prevent contact with material that may cause corrosion, discoloration, or staining.

J. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

K. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 016116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Requirements for Indoor-Emissions-Restricted products.

B. Requirements for VOC-Content-Restricted products.

C. Requirement for installer certification that they did not use any non-compliant products.

1.02 DEFINITIONS

A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:

B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.
   3. Resilient floor coverings.
   4. Insulation.

C. Interior of Building: Anywhere inside the exterior weather barrier.

D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
   1. Concrete.
   2. Clay brick.
   3. Metals that are plated, anodized, or powder-coated.
   4. Glass.
   5. Ceramics.
   6. Solid wood flooring that is unfinished and untreated.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

B. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings 2005 (Reapproved 2018).

C. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board 2020.

D. SCAQMD 1113 - Architectural Coatings 1977, with Amendment (2016).

E. SCAQMD 1168 - Adhesive and Sealant Applications 1989, with Amendment (2022).

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

C. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of installer's products, or 2) that such products used comply with these requirements.

1.05 QUALITY ASSURANCE

A. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
   1. Evidence of Compliance: Acceptable types of evidence are:
      a. Report of laboratory testing performed in accordance with requirements.

B. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

PART 2 PRODUCTS

2.01 MATERIALS

A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.

B. VOC-Content-Restricted Products: VOC content not greater than required by the following:
   1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
   2. Joint Sealants: SCAQMD 1168 Rule.
   3. Paints and Coatings: Each color; most stringent of the following:
      a. 40 CFR 59, Subpart D.
      b. SCAQMD 1113 Rule.
      c. CARB (SCM).

PART 3 EXECUTION

3.01 FIELD QUALITY CONTROL

A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.

B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

END OF SECTION

SECTION 017000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition.

C. Cutting and patching.

D. Surveying for laying out the work.

E. Cleaning and protection.

F. Starting of systems and equipment.

G. Demonstration and instruction of Owner personnel.

H. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 RELATED REQUIREMENTS

A. Section 078400 - Firestopping.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
   1. On request, submit documentation verifying accuracy of survey work.
   2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
   3. Submit surveys and survey logs for the project record.

C. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Work of Owner or separate Contractor.

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.04 QUALIFICATIONS

A. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,

1.05 PROJECT CONDITIONS

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.

C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

D. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

E. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.06 COORDINATION

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, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of work of separate sections.

G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

F. Utilize recognized engineering survey practices.

G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
   1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and _____.
   2. Grid or axis for structures.
   3. Building foundation, column locations, ground floor elevations, and _____.

H. Periodically verify layouts by same means.

I. Maintain a complete and accurate log of control and survey work as it progresses.

3.04 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as indicated.
   2. Report discrepancies to Architect before disturbing existing installation.
   3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
   1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
   2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.

C. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
   2. Relocate items indicated on drawings.
   3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
   4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and _____): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
   3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
      a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
      b. Provide temporary connections as required to maintain existing systems in service.
   4. Verify that abandoned services serve only abandoned facilities.
   5. Remove abandoned pipe, ducts, conduits, and equipment , including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

E. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.

F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
   1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
   2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
   3. Where a change of plane of 1/4 inch (6 mm) or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.

G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

H. Refinish existing surfaces as indicated:
   1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
   2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.

I. Clean existing systems and equipment.

J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

K. Do not begin new construction in alterations areas before demolition is complete.

L. Comply with all other applicable requirements of this section.

3.06 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

C. Perform whatever cutting and patching is necessary to:

1. Complete the work.
2. Fit products together to integrate with other work.
3. Provide openings for penetration of mechanical, electrical, and other services.
4. Match work that has been cut to adjacent work.
5. Repair areas adjacent to cuts to required condition.
6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-complying work.

D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

G. Restore work with new products in accordance with requirements of Contract Documents.

H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 078400, to full thickness of the penetrated element.

J. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.
   3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.07 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.08 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

3.09 SYSTEM STARTUP

A. Coordinate schedule for start-up of various equipment and systems.

B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.

C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

D. Verify that wiring and support components for equipment are complete and tested.

E. Execute start-up under supervision of applicable Contractor personnel in accordance with manufacturers' instructions.

F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.10 DEMONSTRATION AND INSTRUCTION

A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.

B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.

3.11 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.12 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Use cleaning materials that are nonhazardous.

C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

F. Clean filters of operating equipment.

G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage systems, and _____.

H. Clean site; sweep paved areas, rake clean landscaped surfaces.

I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.13 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to Owner.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion

inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 017800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Project record documents.

B. Operation and maintenance data.

C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

A. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

B. Individual Product Sections: Specific requirements for operation and maintenance data.

C. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.

B. Operation and Maintenance Data:
   1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
   2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
   3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
   4. Submit two sets of revised final documents in final form within 10 days after final inspection.

C. Warranties and Bonds:
   1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work:
   1. Drawings.
   2. Addenda.
   3. Change Orders and other modifications to the Contract.

B. Ensure entries are complete and accurate, enabling future reference by Owner.

C. Store record documents separate from documents used for construction.

D. Record information concurrent with construction progress.

E. Record Drawings: Legibly mark each item to record actual construction including:
   1. Field changes of dimension and detail.
   2. Details not on original Contract drawings.

3.02 OPERATION AND MAINTENANCE DATA

A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
   1. Product data, with catalog number, size, composition, and color and texture designations.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

D. Include manufacturer's printed operation and maintenance instructions.

E. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.

B. Where systems involve more than one specification section, provide separate tabbed divider for each system.

C. Binders: Commercial quality, 8-1/2 by 11 inch (216 by 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.

F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.

G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.

H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.

I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

J. Arrangement of Contents: Organize each volume in parts as follows:
   1. Project Directory.
   2. Table of Contents, of all volumes, and of this volume.
   3. Operation and Maintenance Data: Arranged by system, then by product category.
      a. Source data.
      b. Product data, shop drawings, and other submittals.
      c. Operation and maintenance data.
      d. Field quality control data.
      e. Photocopies of warranties and bonds.

3.06 WARRANTIES AND BONDS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

END OF SECTION

SECTION 024100
DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.02 RELATED REQUIREMENTS

A. Section 011000 - Summary: Limitations on Contractor's use of site and premises.

B. Section 011000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.

C. Section 015000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

D. Section 016000 - Product Requirements: Handling and storage of items removed for salvage and relocation.

E. Section 017000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

F. Section 312323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

1.03 REFERENCE STANDARDS

A. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2022, with Errata (2021).

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

3.01 SCOPE

A. Demolish materials and start renovation work as noted on the Construction Documents.

B. Remove other items indicated, for salvage, relocation, recycling, and _____.

C. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 312200.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   5. Do not close or obstruct roadways or sidewalks without permit.
   6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
   7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Protect existing structures and other elements that are not to be removed.
   1. Provide bracing and shoring.

2. Prevent movement or settlement of adjacent structures.
3. Stop work immediately if adjacent structures appear to be in danger.

D. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

E. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

F. **At project completion, clearance inspection by Rhode Island licensed Lead inspector is required for ALL units.**

3.03 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
1. Verify that construction and utility arrangements are as indicated.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from other areas that are still occupied.
1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 015000 in locations indicated on drawings.

C. Remove existing work as indicated and as required to accomplish new work.
1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction specified.
2. Remove items indicated on drawings.

D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and _____): Remove existing systems and equipment as indicated.
1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
3. Verify that abandoned services serve only abandoned facilities before removal.
4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.

E. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.

2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
3. Repair adjacent construction and finishes damaged during removal work.
4. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 061000
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural dimension lumber framing.

B. Subflooring.

C. Underlayment.

D. Communications and electrical room mounting boards.

E. Concealed wood blocking, nailers, and supports.

F. Miscellaneous wood nailers, furring, and grounds.

1.02 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023c.

C. AWPA U1 - Use Category System: User Specification for Treated Wood 2023.

D. PS 1 - Structural Plywood 2022.

E. PS 2 - Performance Standard for Wood Structural Panels 2018.

F. PS 20 - American Softwood Lumber Standard 2021.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Structural Composite Lumber: Submit manufacturer's published structural data including span tables, marked to indicate which sizes and grades are being used; if structural composite lumber is being substituted for dimension lumber or timbers, submit grading agency structural tables marked for comparison.

1.04 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
   1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
   2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Sizes: Nominal sizes as indicated on drawings, S4S.

B. Moisture Content: S-dry or MC19.

C. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 (50 by 150 mm through 100 by 400 mm)):
   1. Machine stress-rated (MSR) as follows:
      a. Fb-single; minimum extreme fiber stress in bending: 1350 psi (9,300 kPa).
      b. E; minimum modulus of elasticity: 1,300,000 psi (8960 MPa).

2. Species: Allowed under grading rules. .

D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
1. Lumber: S4S, No. 2 or Standard Grade.
2. Boards: Standard or No. 3.

2.03 CONSTRUCTION PANELS

A. Subfloor/Underlayment Combination: PS 1 or PS 2 type, rated Single Floor.
1. Bond Classification: Exposure 1.
2. Bond Classification: Exposure 1.
3. Span Rating: 48.
4. Edges: Tongue and groove.

B. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch (19 mm) thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.04 ACCESSORIES

A. Fasteners and Anchors:
1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.

2.05 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.02 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

B. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.

C. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

D. Provide the following specific nonstructural framing and blocking:
1. Cabinets and shelf supports.
2. Wall brackets.
3. Handrails.
4. Grab bars.
5. Towel and bath accessories.
6. Wall-mounted door stops.
7. Chalkboards and marker boards.
8. Wall paneling and trim.
9. Joints of rigid wall coverings that occur between studs.

3.03 INSTALLATION OF CONSTRUCTION PANELS

A. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches (610 mm) on center on all

edges and into studs in field of board.

1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
3. Install adjacent boards without gaps.

3.04 TOLERANCES

A. Framing Members: 1/4 inch (6 mm) from true position, maximum.

B. Surface Flatness of Floor: 1/8 inch in 10 feet (1 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.

C. Variation from Plane, Other than Floors: 1/4 inch in 10 feet (2 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.

3.05 CLEANING

A. Waste Disposal: See Section 017419 - Construction Waste Management and Disposal.
   1. Comply with applicable regulations.
   2. Do not burn scrap on project site.
   3. Do not burn scraps that have been pressure treated.
   4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.

B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.

C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 062000
FINISH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Finish carpentry items.

B. Wood door frames, glazed frames.

C. Wood casings and moldings.

1.02 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.

C. PS 1 - Structural Plywood 2022.

1.03 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect from moisture damage.

PART 2 PRODUCTS

2.01 FINISH CARPENTRY ITEMS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Interior Woodwork Items:

1. Moldings, Bases, Casings, and Miscellaneous Trim: Clear white pine; prepare for paint finish.

2.02 LUMBER MATERIALS

A. Softwood Lumber: _____ species, _____ sawn, maximum moisture content of 6 percent; with vertical grain, of quality suitable for transparent finish.

2.03 SHEET MATERIALS

A. Softwood Plywood, Not Exposed to View: Any face species, medium density fiberboard core; PS 1 Grade A-B, glue type as recommended for application.

B. Softwood Plywood, Exposed to View: Face species as indicated, plain sawn, medium density fiberboard core; PS 1 Grade A-B, glue type as recommended for application.

2.04 PLASTIC LAMINATE MATERIALS

2.05 FASTENINGS

A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.

B. Fasteners: Of size and type to suit application; plain finish in concealed locations and colored finish in exposed locations.

C. Fasteners for Exterior Applications: Stainless steel; length required to penetrate wood substrate 1-1/2 inch (38 mm) minimum.

2.06 ACCESSORIES

A. Lumber for Shimming and Blocking: Softwood lumber of any species.

B. Wood Filler: Solvent base, tinted to match surface finish color.

2.07 FABRICATION

A. Shop assemble work for delivery to site, permitting passage through building openings.

B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

C. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs. (Locate counter butt joints minimum 600 mm from sink cut-outs.)

2.08 SHOP FINISHING

A. Sand work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

3.02 INSTALLATION

A. Install custom fabrications in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.

B. Set and secure materials and components in place, plumb and level.

C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch (0.79 mm). Do not use additional overlay trim to conceal larger gaps.

3.03 TOLERANCES

A. Maximum Variation from True Position: 1/16 inch (1.6 mm).

B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch (0.79 mm).

END OF SECTION

SECTION 068316
FIBERGLASS REINFORCED PANELING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fiberglass reinforced plastic panels.

B. Trim.

1.02 REFERENCE STANDARDS

A. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels 2022.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023c.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Samples: Submit two samples 4 by 4 inch (____x____ mm) in size illustrating material and surface design of panels.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Store panels flat, indoors, on a clean, dry surface. Remove packaging and allow panels to acclimate to room temperature for 48 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fiberglass Reinforced Plastic Panels:
   1. Panolam Industries International, Inc; C-General Purpose: www.panolam.com/#sle.
   2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PANEL SYSTEMS

A. Wall Panels:
   1. Panel Size: 4 by 8 feet (1.2 by 2.4 m).
   2. Panel Thickness: 0.10 inch (2.5 mm).
   3. Surface Design: Smooth.
   4. Color: As selected by Architect.
   5. Attachment Method: Adhesive only, sealant joints, no trim.

2.03 MATERIALS

A. Panels: Fiberglass reinforced plastic (FRP), complying with ASTM D5319.
   1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.

B. Trim: Vinyl; color coordinating with panel.

C. Adhesive: Type recommended by panel manufacturer.

D. Sealant: Type recommended by panel manufacturer; white.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions and substrate flatness before starting work.

B. Verify that substrate conditions are ready to receive the work of this section.

3.02 INSTALLATION - WALLS

A. Install panels in accordance with manufacturer's instructions.

B. Cut and drill panels with carbide tipped saw blades, drill bits, or snips.
C. Apply adhesive to the back side of the panel using trowel as recommended by adhesive manufacturer.
D. Apply panels to wall with seams plumb and pattern aligned with adjoining panels.
E. Install panels with manufacturer's recommended gap for panel field and corner joints.
F. Place trim on panel before fastening edges, as required.
G. Fill channels in trim with sealant before attaching to panel.
H. Install trim with adhesive and screws or nails, as required.
I. Seal gaps at floor, ceiling, and between panels with applicable sealant to prevent moisture intrusion.
J. Remove excess sealant after paneling is installed and prior to curing.

END OF SECTION

SECTION 078400
FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.

B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2022.

B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2023a.

C. ITS (DIR) - Directory of Listed Products Current Edition.

D. FM (AG) - FM Approval Guide Current Edition.

E. SCAQMD 1168 - Adhesive and Sealant Applications 1989, with Amendment (2022).

F. UL 1479 - Standard for Fire Tests of Penetration Firestops Current Edition, Including All Revisions.

G. UL (DIR) - Online Certifications Directory Current Edition.

H. UL (FRD) - Fire Resistance Directory Current Edition.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on product characteristics, performance ratings, and limitations.

C. Sustainable Design Submittal: Submit VOC content documentation for nonpreformed materials.

D. Manufacturer's qualification statement.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

PART 2 PRODUCTS

2.01 MATERIALS

A. Firestopping Materials: Any materials meeting requirements.

B. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.

2.02 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
   1. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.03 FIRESTOPPING PENETRATIONS THROUGH GYPSUM BOARD WALLS

A. Penetrations By:
   1. Uninsulated Metallic Pipe, Conduit, and Tubing:
      a. 2 Hour Construction: UL System W-L-1222; Specified Technologies Inc. LCI Intumescent Firestop Sealant.

b. 1 Hour Construction: UL System W-L-1054; Hilti FS-ONE MAX Intumescent Firestop Sealant.

2. Uninsulated Non-Metallic Pipe, Conduit, and Tubing:
   a. 2 Hour Construction: UL System W-L-2241; Specified Technologies Inc. WF300 Intumescent Firestop Caulk (For Wood Frame Construction).
   b. 1 Hour Construction: UL System W-L-2128; Hilti FS-ONE MAX Intumescent Firestop Sealant.

2.04 FIRESTOPPING SYSTEMS

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section.

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

3.03 INSTALLATION

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

3.04 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.05 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

END OF SECTION

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Nonsag gunnable joint sealants.

B. Joint backings and accessories.

1.02 RELATED REQUIREMENTS

A. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.

1.03 REFERENCE STANDARDS

A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015 (Reapproved 2022).

B. ASTM C794 - Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants 2018 (Reapproved 2022).

C. ASTM C834 - Standard Specification for Latex Sealants 2017 (Reapproved 2023).

D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.

E. ASTM C1087 - Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems 2023.

F. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016 (Reapproved 2023).

G. SCAQMD 1168 - Adhesive and Sealant Applications 1989, with Amendment (2022).

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Backing material recommended by sealant manufacturer.
   4. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   5. Substrates the product should not be used on.

C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

D. Sustainable Design Documentation: For sealants and primers, submit VOC content and emissions documentation; see Section 016116.

E. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.

F. Executed warranty.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.

B. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
   1. Adhesion Testing: In accordance with ASTM C794.
   2. Compatibility Testing: In accordance with ASTM C1087.
   3. Allow sufficient time for testing to avoid delaying the work.
   4. Deliver sufficient samples to manufacturer for testing.

5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.

1.06 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

C. Extended Correction Period: Correct defective work within 2-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Nonsag Sealants:
1. Dow; _____: www.dow.com/#sle.
2. Pecora Corporation; _____: www.pecora.com/#sle.
3. Sherwin-Williams Company; _____: www.sherwin-williams.com/#sle.
4. Sika Corporation; _____: www.usa.sika.com/#sle.
5. Tremco Commercial Sealants & Waterproofing; _____: www.tremcosealants.com/#sle.
6. Substitutions: See Section 016000 - Product Requirements.

2.02 JOINT SEALANT APPLICATIONS

A. Scope:
1. Exterior Joints:
   a. Seal the following joints:
      1) Joints between doors, windows, and other frames or adjacent construction.
      2) Joints between different exposed materials.
2. Interior Joints:
   a. Seal the following joints:
      1) Joints between door frames and window frames and adjacent construction.
3. Do Not Seal:
   a. Intentional weep holes in masonry.
   b. Joints indicated to be covered with expansion joint cover assemblies.
   c. Joints where sealant installation is specified in other sections.
   d. Joints between suspended ceilings and walls.

B. Interior Wet Areas: Bathrooms, restrooms, and kitchens; fixtures in wet areas include plumbing fixtures, countertops, and cabinets.

C. Sound-Rated Assemblies: Walls and ceilings identified as STC-rated, sound-rated, or acoustical.

2.03 JOINT SEALANTS - GENERAL

A. Sealants and Primers: Provide products having lower volatile organic compound (VOC) content than indicated in SCAQMD 1168.

2.04 NONSAG JOINT SEALANTS

A. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
1. Color: White.

B. Hybrid Urethane Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 35 percent, minimum.
2. Color: To be selected by Architect from manufacturer's standard range.
3. Products:
   a. Franklin International Inc; Titebond WeatherMaster ULTIMATE MP Sealant: www.titebond.com/#sle.

b. Sherwin-Williams Company; Stampede 100 Low-Modulus Hybrid Urethane Sealant: www.sherwin-williams.com/#sle.
c. Tremco Commercial Sealants and Waterproofing; Dymonic FC: www.tremcosealants.com/#sle.
d. Substitutions: See Section 016000 - Product Requirements.

C. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 25 percent, minimum.
2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
3. Color: To be selected by Architect from manufacturer's standard range.
4. Products:
a. Sherwin-Williams Company; Stampede 2NS Polyurethane Sealant: www.sherwin-williams.com/#sle.
b. Sika Corporation; Sikaflex-1a: www.usa.sika.com/#sle.
c. Tremco Commercial Sealants & Waterproofing; Dymonic 100: www.tremcosealants.com/#sle.
d. Substitutions: See Section 016000 - Product Requirements.

D. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, nonstaining, nonbleeding, nonsagging; not intended for exterior use.

2.05 ACCESSORIES

A. Sealant Backing Materials, General: Materials placed in joint before applying sealants; assists sealant performance and service life by developing optimum sealant profile and preventing three-sided adhesion; type and size recommended by sealant manufacturer for compatibility with sealant, substrate, and application.

B. Sealant Backing Rod, Open-Cell Type:
1. Size: 25 to 50 percent larger in diameter than joint width.

C. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

D. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that joints are ready to receive work.

B. Verify that backing materials are compatible with sealants.

C. Verify that backer rods are of the correct size.

3.02 PREPARATION

A. Remove loose materials and foreign matter that could impair adhesion of sealant.

B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.

D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

3.03 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Provide joint sealant installations complying with ASTM C1193.

C. Install bond breaker backing tape where backer rod cannot be used.

D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

E. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

F. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

END OF SECTION

SECTION 081113
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal doors and frames.

1.02 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.

B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors 2022.

C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2023.

D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames 2020.

E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.

F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable 2023.

G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2023.

H. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

I. ITS (DIR) - Directory of Listed Products Current Edition.

J. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames 2017.

K. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.

L. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies 2022.

M. UL (DIR) - Online Certifications Directory Current Edition.

N. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.

C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

D. Samples: Submit two samples of metal, 2 by 2 inches (51 by 51 mm) in size, showing factory finishes, colors, and surface texture.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

C. Maintain at project site copies of reference standards relating to installation of products specified.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Hollow Metal Doors and Frames:
   1. Ceco Door, an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
   2. Curries, an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
   3. Republic Doors, an Allegion brand; ____: www.republicdoor.com/#sle.
   4. Steelcraft, an Allegion brand; ____: www.allegion.com/#sle.
   5. Substitutions: See Section 016000 - Product Requirements.

2.02 PERFORMANCE REQUIREMENTS

A. Requirements for Hollow Metal Doors and Frames:
   1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
   2. Accessibility: Comply with ICC A117.1 and ADA Standards.
   3. Door Edge Profile: Manufacturers standard for application indicated.
   4. Typical Door Face Sheets: Flush.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

A. Door Finish: Factory primed and field finished.

B. Interior Doors, Non-Fire-Rated:
   1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
      a. Level 1 - Standard-duty.
      b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
      c. Model 1 - Full Flush.
      d. Door Face Metal Thickness: 20 gauge, 0.032 inch (0.8 mm), minimum.
   2. Door Thickness: 1-3/4 inches (44.5 mm), nominal.

2.04 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Interior Door Frames, Non-Fire Rated: Face welded type.
   1. Frame Metal Thickness: 18 gauge, 0.042 inch (1.0 mm), minimum.
   2. Frame Finish: Factory primed and field finished.

2.05 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.06 ACCESSORIES

A. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Coordinate frame anchor placement with wall construction.

C. Install door hardware as specified in Section 087100.

3.03 ADJUSTING

A. Adjust for smooth and balanced door movement.

END OF SECTION

SECTION 081416
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush configuration; non-rated.

1.02 RELATED REQUIREMENTS

A. Section 062000 - Finish Carpentry: Wood door frames.

B. Section 081113 - Hollow Metal Doors and Frames.

C. Section 087100 - Door Hardware.

D. Section 099123 - Interior Painting: Field finishing of doors.

1.03 REFERENCE STANDARDS

A. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).

C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.

D. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.

E. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.

D. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging, and inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer Warranty: Provide manufacturer's warranty on interior doors for the life of the installation. Complete forms in Owner's name and register with manufacturer.

1. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Medium-Density Overlay (MDO) Faced Doors for Opaque Finish:

1. Masonite Architectural; Aspiro Premium Painted Doors: www.architectural.masonite.com/#sle.
2. Substitutions: See Section 016000 - Product Requirements.

2.02 DOORS AND PANELS

A. Doors: See drawings for locations and additional requirements.
   1. Quality Standard: Custom Grade, Standard Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Interior Doors: 1-3/4 inches (44 mm) thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at each location.

2.03 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.

2.04 DOOR FACINGS

A. Veneer Facing for Opaque Finish: Medium density overlay (MDO), in compliance with indicated quality standard.

2.05 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:

C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
   1. Exception: Doors to be field finished.

E. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:

2.07 ACCESSORIES

A. Hollow Metal Door Frames: See Section 081113.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

3.03 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

END OF SECTION

SECTION 087100
DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for wood and hollow metal doors.

B. Thresholds.

C. Weatherstripping and gasketing.

1.02 REFERENCE STANDARDS

A. BHMA A156.1 - Standard for Butts and Hinges 2021.

B. BHMA A156.2 - Bored and Preassembled Locks and Latches 2022.

C. BHMA A156.3 - Exit Devices 2020.

D. BHMA A156.4 - Door Controls - Closers 2019.

E. BHMA A156.5 - Cylinders and Input Devices for Locks 2020.

F. BHMA A156.7 - Template Hinge Dimensions 2016.

G. BHMA A156.8 - Door Controls - Overhead Stops and Holders 2021.

H. BHMA A156.12 - Interconnected Locks 2022.

I. BHMA A156.13 - Mortise Locks & Latches Series 1000 2022.

J. BHMA A156.16 - Auxiliary Hardware 2023.

K. BHMA A156.18 - Materials and Finishes 2020.

L. BHMA A156.21 - Thresholds 2019.

M. BHMA A156.22 - Standard for Gasketing 2021.

N. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.

B. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Manufacturer's catalog literature for each type of hardware, marked to clearly show products to be furnished for this project, and includes construction details, material descriptions, finishes, and dimensions and profiles of individual components.

C. Shop Drawings - Door Hardware Schedule: Submit detailed listing that includes each item of hardware to be installed on each door. Use door numbering scheme as included in Contract Documents.
   1. Prepared by or under supervision of Architectural Hardware Consultant (AHC).
   2. Provide complete description for each door listed.

D. Specimen warranty.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

B. Supplier Qualifications: Company with certified Architectural Hardware Consultant (AHC) and Electrified Hardware Consultant (EHC) to assist in work of this section.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match door hardware schedule.

1.07 WARRANTY

A. See Section 017800 - Closeout Submittals for additional warranty requirements.

B. Manufacturer's Warranty: Provide warranty against defects in material and workmanship for period indicated. Complete forms in Owner's name and register with manufacturer.
   1. Locksets and Cylinders: Three years, minimum.
   2. Other Hardware: Two years, minimum.

PART 2 PRODUCTS

2.01 DESIGN AND PERFORMANCE CRITERIA

A. Provide specified door hardware as required to make doors fully functional, compliant with applicable codes, and secure to extent indicated.

B. Provide individual items of single type, of same model, and by same manufacturer.

C. Provide door hardware products that comply with the following requirements:
   1. Applicable provisions of federal, state, and local codes.

2.02 HINGES

A. Manufacturers:
   1. Hager Companies; _____: www.hagerco.com/#sle.
   2. Stanley, dormakaba Group; _____: www.stanleyhardwarefordoors.com/#sle.
   3. Substitutions: See Section 016000 - Product Requirements.

B. Hinges: Comply with BHMA A156.1, Grade 1.
   1. Butt Hinges: Comply with BHMA A156.1 and BHMA A156.7 for templated hinges.
      a. Provide hinge width required to clear surrounding trim.
   2. Provide hinges on every swinging door.
   3. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
   4. Provide following quantity of butt hinges for each door:
      a. Doors From 60 inches (1.5 m) High up to 90 inches (2.3 m) High: Three hinges.

2.03 LOCK CYLINDERS

A. Lock Cylinders: Provide key access on outside of each lock, unless otherwise indicated.
   1. Provide standard, electronic, conventional, full size interchangeable core (FSIC), and small format interchangeable core (SFIC) type cylinders, Grade 1, with six-pin core in compliance with BHMA A156.5 at locations indicated.
   2. Provide cylinders from same manufacturer as locking device.
   3. Provide cams and/or tailpieces as required for locking devices.

2.04 CYLINDRICAL LOCKS

A. Cylindrical Locks (Bored): Comply with BHMA A156.2, Grade 1, 4000 Series.
   1. Bored Hole: 2-1/8 inch (54 mm) diameter.
   2. Latchbolt Throw: 1/2 inch (12.7 mm), minimum.
   3. Backset: 2-3/4 inch (70 mm) unless otherwise indicated.
   4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
      a. Finish: To match lock or latch.

2.05 MORTISE LOCKS

A. Manufacturers:
   1. Schlage, an Allegion brand; _____: www.allegion.com/us/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Mortise Locks: Comply with BHMA A156.13, Grade 1, Security, 1000 Series.

1. Latchbolt Throw: 3/4 inch (19 mm), minimum.
2. Deadbolt Throw: 1 inch (25.4 mm), minimum.
3. Backset: 2-3/4 inch (70 mm) unless otherwise indicated.
4. Strikes: Provide manufacturer's standard strike for each latchset or lockset with strike box and curved lip extending to protect frame in compliance with indicated requirements.
   a. Finish: To match lock or latch.

2.06 INTERCONNECTED LOCKS

A. Interconnected Locks: Comply with BHMA A156.12, Grade 1, 5000 Series.

2.07 CLOSERS

A. Manufacturers; Surface Mounted:
   1. LCN, an Allegion brand; _____: www.allegion.com/us/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Closers: Comply with BHMA A156.4, Grade 1.
   1. Type: Surface mounted to door.
   2. Provide door closer on each exterior door.

2.08 FLOOR STOPS

A. Manufacturers:
   1. Hager Companies; _____: www.hagerco.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Floor Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
   1. Provide floor stops when wall surface is not available; be cautious not to create a tripping hazard.
   2. Type: Manual hold-open, with pencil floor stop.
   3. Material: Aluminum housing with rubber insert.

2.09 WALL STOPS

A. Manufacturers:
   1. Hager Companies; _____: www.hagerco.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Wall Stops: Comply with BHMA A156.16, Grade 1 and Resilient Material Retention Test as described in this standard.
   1. Provide wall stops to prevent damage to wall surface upon opening door.
   2. Type: Bumper, concave, wall stop.
   3. Material: Aluminum housing with rubber insert.

2.10 THRESHOLDS

A. Thresholds: Comply with BHMA A156.21.
   1. Provide threshold at each exterior door, unless otherwise indicated.
   2. Type: Flat surface.
   3. Material: Aluminum.
   4. Threshold Surface: Fluted horizontal grooves across full width.
   5. Field cut threshold to profile of frame and width of door sill for tight fit.
   6. Provide non-corroding fasteners at exterior locations.

2.11 WEATHERSTRIPPING AND GASKETING

A. Manufacturers:
   1. Pemko; an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Weatherstripping and Gasketing: Comply with BHMA A156.22.
   1. Head and Jamb Type: Self-adhesive.
   2. Door Sweep Type: Encased in retainer.

3. Material: Rubber.

2.12 COAT HOOKS

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Coat Hooks: Provide on room side of door, screw fastened.

C. Material: Brass.

2.13 SIGNAGE

A. Manufacturers:
   1. Rockwood; an Assa Abloy Group company; _____: www.assaabloydss.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Signage (Room Name Plates and Numbers): Provide on doors for individuals to easily identify room names and/or numbers.
   1. Text Required: "RESTROOM" with symbols and braille text.
   2. Material: In plastic or metal with paint used to create necessary text, adhered to door.

2.14 SILENCERS

A. Manufacturers:
   1. Ives, an Allegion brand; _____: www.allegion.com/us/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Silencers: Provide at equal locations on door frame to mute sound of door's impact upon closing.
   1. Single Door: Provide three on strike jamb of frame.
   2. Pair of Doors: Provide two on head of frame, one for each door at latch side.
   3. Material: Rubber, gray color.

2.15 FINISHES

A. Finishes: Provide door hardware of same finish, unless otherwise indicated.
   1. Primary Finish: 626; satin chromium plated over nickel, with brass or bronze base material (former US equivalent US26D); BHMA A156.18.
   2. Secondary Finish: 626; satin chromium plated over nickel, with brass or bronze base material (former US equivalent US26D); BHMA A156.18.
      a. Use secondary finish in kitchens, bathrooms, and other spaces containing chrome or stainless steel finished appliances, fittings, and equipment; provide primary finish on one side of door and secondary finish on other side if necessary.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive this work; labeled, fire-rated doors and frames are properly installed, and dimensions are as indicated on shop drawings.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Use templates provided by hardware item manufacturer.

C. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.

D. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.

3.03 ADJUSTING

A. Adjust work under provisions of Section 017000 - Execution and Closeout Requirements.

B. Adjust hardware for smooth operation.

C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

3.04 CLEANING

A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.

B. Clean adjacent surfaces soiled by hardware installation.

END OF SECTION

SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Performance criteria for gypsum board assemblies.

B. Metal stud wall framing.

C. Acoustic insulation.

D. Cementitious backing board.

E. Gypsum wallboard.

F. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry: Wood blocking product and execution requirements.

1.03 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 2019.

C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017 (Reapproved 2022).

D. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board 2004 (Reapproved 2020).

E. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members 2018.

F. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2023.

G. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.

H. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2023.

I. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2022.

J. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019.

K. ASTM C1288 - Standard Specification for Fiber-Cement Interior Substrate Sheets 2023.

L. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units 2022, with Editorial Revision (2023).

M. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.

N. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2021.

O. GA-216 - Application and Finishing of Gypsum Panel Products 2021.

P. UL (FRD) - Fire Resistance Directory Current Edition.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on gypsum board, accessories, and joint finishing system.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 METAL FRAMING MATERIALS

A. Manufacturers - Metal Framing, Connectors, and Accessories:
   1. ClarkDietrich; ____: www.clarkdietrich.com/#sle.
   2. Marino; ____: www.marinoware.com/#sle.
   3. Substitutions: See Section 016000 - Product Requirements.

B. Non-structural Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf (L/120 at 240 Pa).
   1. Studs: C-shaped with knurled or embossed faces.
   2. Runners: U shaped, sized to match studs.

C. Partition Head To Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and fastened as indicated on drawings.

2.03 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board:
   1. American Gypsum Company; ____: www.americangypsum.com/#sle.
   2. CertainTeed Corporation; ____: www.certainteed.com/#sle.
   3. Georgia-Pacific Gypsum; ____: www.gpgypsum.com/#sle.
   4. National Gypsum Company; ____: www.nationalgypsum.com/#sle.
   5. USG Corporation; ____: www.usg.com/#sle.
   6. Substitutions: See Section 016000 - Product Requirements.

B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces, unless otherwise indicated.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
      a. Mold resistant board is required at all locations.
   3. Thickness:
      a. Vertical Surfaces: 5/8 inch (16 mm).
   4. Mold Resistant Paper Faced Products:
      a. American Gypsum Company; M-Bloc: www.americangypsum.com/#sle.
      b. CertainTeed Corporation; M2Tech 5/8" Type X Moisture & Mold Resistant Drywall: www.certainteed.com/#sle.
      c. Georgia-Pacific Gypsum; ToughRock Mold-Guard: www.gpgypsum.com/#sle.
      d. National Gypsum Company; Gold Bond XP Gypsum Board: www.nationalgypsum.com/#sle.
      e. Substitutions: See Section 016000 - Product Requirements.

C. Backing Board For Wet Areas: One of the following products:
   1. Application: Surfaces behind tile in wet areas including tub and shower surrounds, shower ceilings, and _____.
   2. Application: Horizontal surfaces behind tile in wet areas including floors.
   3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   4. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
      a. Thickness: 1/2 inch (12.7 mm).
      b. Products:
         1) National Gypsum Company; PermaBase Cement Board: www.nationalgypsum.com/#sle.

2) USG Corporation; _____: www.usg.com/#sle.
3) Substitutions: See Section 016000 - Product Requirements.

5. ASTM Cement-Based Board: Non-gypsum-based, cementitious board complying with ASTM C1288.
   a. Thickness: 1/2 inch (12.7 mm).
   b. Products:
      1) James Hardie Building Products, Inc; _____: www.jameshardie.com/#sle.
      2) Substitutions: See Section 016000 - Product Requirements.

2.04 GYPSUM BOARD ACCESSORIES

A. Acoustic Insulation: ASTM C665; preformed mineral-fiber, friction fit type, unfaced; thickness 3 1/2 inch (___ mm).

B. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.

C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
   1. Fiberglass Tape: 2 inch (50 mm) wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
   2. Paper Tape: 2 inch (50 mm) wide, creased paper tape for joints and corners, except as otherwise indicated.
   3. Joint Compound: Setting type, field-mixed.

D. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches (0.84 mm) in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

B. Studs: Space studs at 16 inches on center (at 406 mm on center).
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
   3. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs with continuous bridging.

C. Acoustic Furring: Install resilient channels at maximum 24 inches (600 mm) on center. Locate joints over framing members.

D. Blocking: Install wood blocking for support of:
   1. Framed openings.
   2. Wall-mounted cabinets.
   3. Plumbing fixtures.
   4. Toilet accessories.
   5. Wall-mounted door hardware.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.04 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.

D. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

E. Installation on Metal Framing: Use screws for attachment of gypsum board.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
   1. Not more than 30 feet (10 meters) apart on walls and ceilings over 50 feet (16 meters) long.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.06 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
   3. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.

B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).

END OF SECTION

SECTION 095100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 REFERENCE STANDARDS

A. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2022.

B. ASTM E1264 - Standard Classification for Acoustical Ceiling Products 2023.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on suspension system components and acoustical units.

C. Samples: Submit two samples 6 by 6 inch (____by____ mm) in size illustrating material and finish of acoustical units.

1.05 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F (16 degrees C), and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acoustic Tiles/Panels:
   1. Armstrong World Industries, Inc; ____: www.armstrongceilings.com/#sle.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Suspension Systems:
   1. Same as for acoustical units.

2.02 ACOUSTICAL UNITS

A. Acoustical Panels, Type ACT-1: Painted mineral fiber, with the following characteristics:
   1. Classification: ASTM E1264 Type III.
   2. Size: 24 by 24 inches (610 by 610 mm).
   3. Thickness: 7/8 inch (____ mm).
   4. Panel Edge: Square.
   5. Suspension System: Exposed grid.
   6. Products:
      a. Armstrong World Industries, Inc; Ultima High NRC: www.armstrongceilings.com/#sle.

2.03 SUSPENSION SYSTEM(S)

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.

B. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.

C. Exposed Suspension System: Aluminum grid and cap.
   1. Structural Classification: Light-duty, when tested in accordance with ASTM C635/C635M.
   2. Profile: Tee; 15/16 inch (24 mm) face width.
   3. Finish: Baked enamel.

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch (2 mm) galvanized steel wire.

C. Perimeter Moldings: Same metal and finish as grid.

D. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

B. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.

C. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

D. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

E. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

F. Support fixture loads using supplementary hangers located within 6 inches (152 mm) of each corner, or support components independently.

G. Do not eccentrically load system or induce rotation of runners.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

3.04 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet (3 mm in 3 m).

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 096500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient sheet flooring.

B. Resilient tile/plank flooring.

C. Resilient base.

D. Resilient stair accessories.

E. Installation accessories.

1.02 REFERENCE STANDARDS

A. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile 2004 (Reapproved 2018).

B. ASTM F1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing 2004 (Reapproved 2021).

C. ASTM F1700 - Standard Specification for Solid Vinyl Floor Tile 2020.

D. ASTM F1861 - Standard Specification for Resilient Wall Base 2021.

E. ASTM F2169 - Standard Specification for Resilient Stair Treads 2015 (Reapproved 2020).

F. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings 2018.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Maintain temperature in storage area between 55 degrees F (13 degrees C) and 90 degrees F (72 degrees C).

D. Protect roll materials from damage by storing on end.

1.05 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F (21 degrees C) to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.01 SHEET FLOORING

A. Vinyl Sheet Flooring - Type RS-1: Transparent or translucent vinyl wear layer over interlayer and backing.
   1. Manufacturers:
      a. Altro Flooring: Altro Serenade; www.altro.com.
      b. Substitutions: See Section 016000 - Product Requirements.
   2. Minimum Requirements: Comply with ASTM F1303, Type I, with Class A fibrous backing.
   3. Wear Layer Thickness: 0.028 inch (____ mm) minimum.
   4. Total Thickness: 0.080 inch (2.0 mm) minimum.
   5. Sheet Width: 79 inch (____ mm) minimum.
   6. Color: As indicated on drawings.

2.02 TILE FLOORING

A. Vinyl Plank - Type LVP-1: Printed film type, with transparent or translucent wear layer; acoustic interlayer or backing.
   1. Manufacturers:
      a. Patcraft: www.patcraft.com.
      b. Substitutions: See Section 016000 - Product Requirements.
   2. Minimum Requirements: Comply with ASTM F1700, Class III.
   3. Plank Tile Size: 4 in by 36 in inch (_____ by ____ mm).
   4. Wear Layer Thickness: 0.020 inch (0.50 mm).
   5. Total Thickness: 0.20 inch (5 mm).
   6. Pattern: Highland Forest.
   7. Color: As indicated on drawings.

B. Vinyl Plank - Type LVP-2: Printed film type, with transparent or translucent wear layer, acoustic interlayer or backing.
   1. Manufacturers:
      a. Shaw Property Solutions (Philadelphia Commercial)
   2. Plank Tile Size: 5.96 in x 48 inch
   3. Wear Layer Thickness: 0.030 inch
   4. Pattern: In the Grain II 30
   5. Color: As indicated on drawings

2.03 STAIR COVERING

A. Stair Treads with Integral Risers: Rubber; full height of riser, full width and depth of tread in one piece; tapered thickness.
   1. Manufacturers:
      a. Johnsonite, a Tarkett Company; _____: www.johnsonite.com.
      b. Substitutions: See Section 016000 - Product Requirements.
   2. Minimum Requirements: Comply with ASTM F2169, Type TS, rubber, vulcanized thermoset.
   3. Nosing: Square.
   4. Tread Texture: Raised.
   5. Color: As indicated on drawings.

2.04 RESILIENT BASE

A. Resilient Base - Type RB-1: ASTM F1861, Type TS, rubber, vulcanized thermoset; style as scheduled.
   1. Manufacturers:
      a. Johnsonite, a Tarkett Company; _____: www.johnsonite.com/#sle.
   2. Height: 4 inches (100 mm).
   3. Thickness: 0.125 inch (3.2 mm).
   4. Finish: Satin.
   5. Length: Roll.
   6. Color: As indicated on drawings.

2.05 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.

B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.

C. Moldings, Transition and Edge Strips: Same material as flooring.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface

hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

3.02 PREPARATION

A. Remove existing resilient flooring and flooring adhesives; follow the recommendations of RFCI (RWP).

B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.

C. Prohibit traffic until filler is fully cured.

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install in accordance with manufacturer's written instructions.

3.04 INSTALLATION - SHEET FLOORING

A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.

3.05 INSTALLATION - TILE FLOORING

A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.

B. Install plank tile with a random offset of at least 6 inches (152 mm) from adjacent rows.

3.06 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches (45 mm) between joints.

B. Install base on solid backing. Bond tightly to wall and floor surfaces.

3.07 INSTALLATION - STAIR COVERINGS

A. Install stair coverings in one piece for full width and depth of tread.

B. Adhere over entire surface. Fit accurately and securely.

3.08 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

END OF SECTION

SECTION 099123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces including: interior side of door, and interior wood trim

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Floors, unless specifically indicated.
   6. Glass.
   7. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

A. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.

B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
   2. MPI product number (e.g., MPI #47).
   3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.05 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
   1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Supply each paint material in quantity required to complete entire project's work from a single production run.
   3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

C. Colors: To be selected from manufacturer's full range of available colors.
   1. Selection to be made by Architect after award of contract.

2.03 PAINT SYSTEMS - INTERIOR

A. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including wood and fiberglass:
   1. Medium duty applications include doors, door frames, and trim.
   2. Two top coats and one coat primer.
   3. Top Coat(s): Interior Alkyd, Water Based; MPI #157, 167, 168, or 169.
      a. Products:
         1) Sherwin-Williams ProMar 200 Waterbased Acrylic-Alkyd, Semi-Gloss.
         2) Substitutions: Section 016000 - Product Requirements.
   4. Top Coat Sheen:
      a. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.
   5. Primer: As recommended by top coat manufacturer for specific substrate.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
   1. Interior Institutional Low Odor/VOC Primer Sealer; MPI #149.
      a. Products:
         1) PPG Paints Speedhide Zero Interior Latex Sealer, 6-4900XI. (MPI #149)
         2) Substitutions: Section 016000 - Product Requirements.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been adequately prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. Test shop-applied primer for compatibility with subsequent cover materials.

E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
   1. Interior Wood: 15 percent, measured in accordance with ASTM D4442.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Seal surfaces that might cause bleed through or staining of topcoat.

E. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

F. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

D. Sand wood and metal surfaces lightly between coats to achieve required finish.

E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

3.06 COLOR SCHEDULE

A. Units:
   1. Interior Side of Door and Wood Trim - Sherwin Williams, SW7050 Useful Gray.

END OF SECTION

SECTION 104400
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fire extinguishers.

1.02 REFERENCE STANDARDS

A. NFPA 10 - Standard for Portable Fire Extinguishers 2022.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fire Extinguishers:
   1. Kidde, a unit of United Technologies Corp; _____: www.kidde.com/#sle.
   2. Pyro-Chem, a Tyco Business; _____: www.pyrochem.com/#sle.
   3. Substitutions: See Section 016000 - Product Requirements.

2.02 FIRE EXTINGUISHERS

A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.

B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
   1. Class: A:B:C type.
   2. Size: 5 pound (2.27 kg).
   3. Finish: Baked polyester powder coat, red color.
   4. Temperature range: Minus 40 degrees F (Minus 40 degrees C) to ___ degrees F (___ degrees C).

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Secure rigidly in place.

C. Place extinguishers in cabinets.

END OF SECTION

SECTION 113013
RESIDENTIAL APPLIANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Kitchen appliances.

1.02 RELATED REQUIREMENTS

A. Section 260583 - Wiring Connections: Electrical connections for appliances.

1.03 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data indicating dimensions, capacity, and operating features of each piece of residential equipment specified.

C. Copies of Warranties: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.04 WARRANTY

A. See Section 017800 - Closeout Submittals, for additional warranty requirements.

B. Provide five (5) year manufacturer warranty on refrigeration system of refrigerators.

C. Provide ten (10) year manufacturer warranty on magnetron tube of microwave ovens.

PART 2 PRODUCTS

2.01 KITCHEN APPLIANCES

A. Refrigerator: Free-standing, top-mounted freezer, and frost-free.
   1. Capacity: Total minimum storage of 17.5 cubic ft (____ cu m); minimum 15 percent freezer capacity.
   2. Energy Usage: Minimum 20 percent more energy efficient than energy efficiency standards set by U.S. Department of Energy (DOE).
   3. Features: Include glass shelves and light in freezer compartment.
   4. Exterior Finish: Porcelain enameled steel, color white.
   5. Manufacturers:
      a. Hotpoint; HPS18BTN: www.hotpoint.com.
      b. Substitutions: See Section 016000 - Product Requirements.

B. Range: Natural gas, free-standing, with sealed burners.
   1. Size: 30 inches (762 mm) wide.
   2. Oven: Self-cleaning with electronic ignition.
   3. Elements: Four (4).
   4. Controls: Solid state electronic.
   5. Features: Include storage drawer, oven door window, broiler pan and grid, and oven light.
   6. Exterior Finish: Porcelain enameled steel, color white.
   7. Manufacturers:
      a. Hotpoint; RGBS300DM: www.hotpoint.com.
      b. Substitutions: See Section 016000 - Product Requirements.

C. Cooking Exhaust: Range hood.
   1. Size: 30 inches (762 mm) wide.
   2. Fan: Two-speed, 200 cfm (____ L/s)
   3. Exhaust: Round, recirculated.
   4. Features: Include cooktop light, backdraft damper, and removable grease filter.
   5. Exterior Finish: Painted steel, color white.
   6. Manufacturers:
      a. GE Appliances; JVX3300DJ: www.geappliances.com/#sle.
      b. Substitutions: See Section 016000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify utility rough-ins are provided and correctly located.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Anchor built-in equipment in place.

3.03 ADJUSTING

A. Adjust equipment to provide efficient operation.

3.04 CLEANING

A. Remove packing materials from equipment and properly discard.

B. Wash and clean equipment.

END OF SECTION

SECTION 123530
RESIDENTIAL CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Kitchen cabinets.

B. Kitchen countertops.

C. Vanity cabinets.

D. Vanity countertops.

1.02 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide component dimensions, configurations, construction details, and joint details.

C. Certificate: Submit Kitchen Cabinet Manufacturers Association (KCMA) certificate showing manufacturer has met the requirements of KCMA's Environmental Stewardship Program (ESP).

D. Shop Drawings: Indicate casework locations, elevations, clearances required, rough-in and anchor placement dimensions and tolerances.

1.03 QUALITY ASSURANCE

A. Products: Cabinets complying with requirements of KCMA's Environmental Stewardship Program (ESP).

PART 2 PRODUCTS

2.01 CABINETS

A. Manufacturers:
   1. Detroit Cabinet Manufacturing; Newport Millstone: www.detroitcabinets.kitchen.
   2. Substitutions: See Section 016000 - Product Requirements.

B. Kitchen and Vanity Cabinets: HUD Severe Use

C. Cabinet Box: Framed construction.
   1. Side Panels: Plywood.
      a. Exposed Side Panel Finish: Wood veneer, coordinate with cabinet door and drawer color/finish.
   2. Face Frame: Solid wood.

D. Cabinet Doors:
   1. Style: Newport Millstone manufactured by Detroit Cabinet Manufacturing.
   2. Solid wood, stained finish.
   3. Species: Maple.
   4. Stain Color: Espresso.

E. Drawers:
   1. Solid wood sides with dovetail joints, plywood bottom panel.
   2. Drawer Front: To match cabinet doors in style, material, and finish.
   3. Interior Finish: Manufacturer's standard.

F. Shelves: Manufacturer's standard adjustable shelves and shelf supports.

G. Cabinet Hardware: As selected from manufacturer's standard types, styles and finishes.
   1. Drawer and Cabinet Pulls: 4" pull, brushed nickel finish.
   2. Hinges: Manufacturer's standard hinges.
   3. Drawer Slides: Manufacturer's standard drawer slides.

H. Kitchen Countertop: Post formed plastic laminate over particle board, coved to back splash.
   1. Side Splash: Plastic laminate over particle board, square internal intersections to back splash and top surface, contoured to suit counter top profile.

I. Vanity Countertop: Post formed plastic laminate over particle board, coved to back splash.

2.02 FABRICATION

A. Shop assemble casework for delivery to site in units easily handled and to permit passage through building openings.

B. Fabricate corners and joints without gaps.

C. Fabricate each unit to be rigid and not dependent on adjacent units for rigidity.

D. Provide cutouts for plumbing fixtures and appliances. Prime paint contact surfaces of cut edges.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of support framing.

3.02 INSTALLATION

A. Install casework, components and accessories in accordance with manufacturer's instructions.

B. Set casework items plumb and square, securely anchored to building structure.

3.03 ADJUSTING

A. Adjust doors, drawers, hardware, and other moving or operating parts to function smoothly.

3.04 CLEANING

A. Clean casework, countertops, shelves, and hardware.

END OF SECTION

SECTION 220000
PLUMBING

PART I -- GENERAL

1.1 DESCRIPTION OF WORK

A. The work under this section shall consist of furnishing all labor, materials, equipment, supervision, transportation, construction, facilities, devices and incidentals necessary to provide complete plumbing systems as hereinafter described and as indicated on the drawings, including, but not limited to the following:

1. Sanitary, waste and vent piping system
2. Domestic water piping system
3. Natural gas system (Refer to mechanical plans for scope of work)
4. Plumbing fixtures and trim
5. Sleeves, escutcheons, hangers and supports
6. Fire safing of pipe penetrations
7. Floor drains
8. Hose bibs
9. Insulation
10. Valves
11. Water Hammer arrestors
12. Backflow preventers and file DEP submission
13. Fittings, unions and couplings
14. Cleaning, flushing, testing and disinfection
15. All supplementary steel for piping and equipment support
16. Guarantees
17. Drilling for installation of inserts
18. Vibration isolation and flexible connections
19. Installation of toilet accessories
20. Coordination drawings
21. Access panels
22. Selective demolition

1.2 CODES, ORDINANCES AND PERMITS

A. All material and work provided shall be in accordance with the following codes and standards:

1. State Plumbing and Fuel Gas Code
2. State Department of Public Safety
3. Standards of the Underwriters' Laboratories (UL)
4. CA State and local Building Codes
5. Occupational Safety and Health Act
6. Local Codes and Board of Health requirements
7. Requirements of the RI Department of Environmental Protection
8. Requirements of the City of Pawtucket, RI

B. Where the contract documents indicate more stringent requirements than the above codes and ordinances, the contract documents shall take precedence.

C. File all documents, pay all fees and secure all permits, inspections and approvals necessary for the work of this section.

1.3 CONTRACT DRAWINGS & SPECIFICATIONS

A. The Contract Drawings are generally diagrammatic and convey the Scope of Work and General Arrangement of apparatus and equipment. The locations of all items shown on the drawings or called for in the specifications that are not definitely fixed by dimensions are approximate only. The exact locations necessary to secure the best conditions and results must be determined at the project and shall have the approval of the Architect and Engineer before being installed. The Subcontractor shall follow drawings in laying out work and shall check drawings of the other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions at all points. If directed by the General Contractor, Engineer and/or Architect, the Subcontractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or before proper execution of the work.

B. Specifications: The specifications are intended only to complement the drawings; however, work detailed and/or noted only on the drawings or work described only in the specifications shall all be considered as part of the scope of work.

1.4 SHOP DRAWINGS

A. Within thirty (30) days after the date of notice to proceed, and before purchasing any materials or equipment, submit for approval a complete list, in six (6) copies, of all materials to be incorporated in the work.

B. After the list has been processed, submit six (6) complete sets of shop drawings of all equipment. These shop-drawing submittals shall be submitted within thirty (30) days after the processing date of the original submittal.

C. All submittals shall be complete and shall be in three-ring loose-leaf binders. No consideration will be given to partial submittals, except with prior approval.

D. The approval of the equipment does not relieve the Subcontractor of responsibility of shop drawing errors related to details, sizes, quantities, wiring diagram arrangements and dimensions which deviate from the Specifications, and/or job conditions as they exist.

E. Refer to General Requirements for the substitutions of equipment and submittal of shop drawings. If apparatus or materials are substituted for those specified, and such substitution necessitates changes in, or additional connections, piping, supports, or construction, same shall be provided. Plumbing Subcontractor to assume cost and entire responsibility thereof.

1.5 RECORD DRAWINGS

A. The General Contractor will provide two sets of black or blue line and white drawings to the Plumbing Contractor to maintain and submit record drawings. One set of which shall be maintained at the site, and which shall, at all times, be accurate, clear and complete. Showing the actual location of all equipment and piping. The record drawings shall be available to the Architect/Engineer and/or General Contractor field representative at all times.

B. Any addenda, sketches, and supplementary drawings issued during the course of construction shall be transferred to the "as-built" drawings in AutoCAD format.

C. At the completion of the contract, submit an accurate, checked set of "as-built" drawings along with a disc with plans in AutoCAD format.

D. All valves installed shall be indicated on these drawings, and shall be numbered with numbers corresponding to those on the valve charts.

1.6 OPERATING INSTRUCTIONS AND MAINTENANCE MANUALS

A. Operating Instructions: Provide operating instructions to the Owner's designated representative with respect to the operation functions and maintenance procedures for all equipment and systems installed..

B. Maintenance Manuals: At the completion of the project, turn over to the General Contractor four (4) complete manuals in 3-ring binders, indexed, containing the following:

1. Complete shop drawings of all material and equipment in Part 2 of this section.
2. Operation descriptions of all systems.
3. Names, addresses and telephone numbers of all suppliers of system components.
4. Preventative maintenance instructions for all systems.
5. Spare parts list of all system components.
6. Copies of all valve charts.

1.7 GUARANTEE

A. This Contractor shall obtain in the General Contractor's and Owner's name, the standard written manufacturer's guarantee of all materials furnished under this Section where such guarantees are offered in the manufacturer's published product data. All these guarantees shall be in addition to, and not in lieu of, other liabilities which the Contractor may have by law or other provisions of the Contract Documents. The guarantee shall be for a period of one (1) year minimum from the date of acceptance or final payment.

1.8 STORAGE OF MATERIALS

A. Store materials prior to their installation where designated by the General Contractor. This Contractor shall be responsible for all materials stored and protect all installed equipment from injury or defacement.

1.9 SITE VISITATION

A. **Prior to bid**, This Contractor shall be required to visit the site and to have examined the existing conditions, which may affect the work under this contract. Failure to do so shall be this Subcontractor's responsibility and no claims for extra compensation or extension of time shall be allowed because of it.

1.10 COOPERATION WITH OTHER TRADES

A. Give full cooperation to other trades and furnish in writing to the Architect any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.

B. Coordination drawings shall be initiated under Section 15500 of the Specifications. It is their responsibility for preparation of project coordination drawings showing the installation of all equipment, piping, ducts and accessories to be provided under Section 15500 of the Specifications. These drawings shall be prepared at not less than ¼ in. = 1 ft. scale, and shall show building room layouts, structural elements, ductwork and lighting layouts of function. Drawings shall indicate horizontal and vertical dimensions, to avoid interference with structural framing, ceilings, partitions, and other services. A reproducible copy of each drawing prepared shall then be submitted to each Contractor working under Sections 15300, 15400 and 16000, who shall be responsible to coordinate his equipment and systems and shall show these on the drawings submitted. After this Contractor has fulfilled his obligation, he shall return the drawings to the HVAC Contractor. After each drawing has been coordinated between trades, each trade shall sign each drawing, indicating acceptance of the installation. The HVAC Contractor shall then print the coordination original and these prints submitted through the General Contractor to the architect for review and comment, similar to shop drawings. Comments made on these drawings shall result in a correction and re-submittal of the drawings.

C. Furnish to other trades, as required, all necessary templates, patterns, setting plans, and shop details for the proper installation of work and for the purpose of coordinating adjacent work.

1.11 DEMOLITION

A. Prior to submitting bid, visit site and identify existing conditions and difficulties that will affect work of this section. Demolition work will require careful site examination prior to bidding. No compensation will be granted for additional work caused by unfamiliarity with site conditions that are visible or readily construed by experienced observers.

B. Prior to commencing demolition, contractor shall identify with owner any equipment to be returned to the owner after demolition. All other debris shall be disposed of by this contractor in accordance with all applicable regulations. Any shutdowns required for demolition shall be coordinated with building owner to avoid impact to operations.

C. During demolition, any equipment found to be abandoned shall be demolished. Existing unused connections to existing piping shall be capped accordingly.

D. Under demolition, the following is, in brief, the extent of the work to be performed by the Plumbing Contractor under this contract.

1. The plumbing contractor shall be responsible for the disconnection and removal of the existing equipment, fixtures, piping, valves, etc. in designated areas. Cut & cap piping back to mains.
2. This contractor shall protect work against injury or damage; and carefully store material and equipment to be relocated. Open ends of work shall be closed with temporary covers or plugs during storage and construction to prevent entry of obstructing material.

1.12 INSPECTION AND TESTS

A. If inspection of materials installed shows defects, such defective work, materials, and/or equipment shall be replaced at no cost to the General Contractor or Owner, and the inspection and tests repeated.

B. Make all reasonable tests as required, and prove the integrity of all work and leave the entire installation in correct adjustment and ready to operate.

1.13 CONFLICT BETWEEN PLANS AND SPECIFICATIONS

A. In case of conflict between the contract drawings and specifications, the Engineer shall determine which takes precedence.

PART 2 - PRODUCTS

2.1 ACCESS PANELS

A. Furnish access panels for access to all concealed parts of the plumbing system that require accessibility such as valves, shock absorbers and cleanouts. Access panels to be installed by others under the appropriate section of the specifications.

B. All access panels shall be located in a workmanlike manner, positioned so that the component can be easily reached and the size shall be sufficient for this purpose (minimum size 12-in. square). Location of access panels will be submitted for approval prior to installation.

C. Access panels shall be prime painted with cam lock, as manufactured by Inland Steel Products Co. Milcor, Miami Carey or Walsh-Hannon-Gladwin, Inc., Wayloctor or an approved equal. Provide fire rated access panels where required by applicable code. They should be as follows:

D. Access panel shop drawings shall be submitted to the Architect for approval.

2.2 PIPING/FITTINGS/JOINTS

A. Pipe and fittings shall be of US manufacture, and shall conform to the latest ASA, ASTM and/or FS Standards.

B. Domestic Water Piping: Pipe - Type L copper tubing, conforming to Federal Specification WW-T-799 hard temper, or ASTM B88 drawn copper. Fittings -Wrought copper and bronze solder joints. Joints - Soldered joints shall be lead free solder.

C. Waste and Vent: PVC Schedule 40 solid wall pipe and PVC drainage fittings joined by solvent welding.

D. Natural Gas Piping 2-1/2 in. and Larger: Schedule 40, black steel pipe (ASTM A120) with Schedule 40, black steel fittings. Pipe joints shall be welded or flanged.

E. Natural Gas Piping and Gas Train Vents 2 in. and Smaller: Schedule 40, black steel pipe (ASTM B16.3) with 125-psi malleable iron, screwed fittings.

2.3 HANGERS

A. All piping shall be supported from the building structure by means of approved standard weight UL/FM hangers and supports. Piping shall be supported to maintain required grading and pitching of lines to prevent vibration and to secure piping in place and shall be so arranged as to provide for expansion and contraction. Piping shall not be hung from the hangers of other trades.

B. The spacing of hangers for horizontal piping shall be in accordance with State Plumbing Code. In no case shall horizontal piping be supported at intervals greater than 10 ft. Vertical lines shall be adequately supported at their bases by a suitable hanger placed in the horizontal line near the riser and at every story height vertically.

C. Hangers shall be manufactured by Grinnell, Carpenter and Patterson, Fee and Mason, or equal. All hangers and support figure numbers referred to are Carpenter and Patterson.

D. On insulated piping, each hanger shall be oversized so that the hanger will allow the insulation to pass through undisturbed and uncut. Install a 14 gauge metal pipe shield between pipe insulation and at all pipe hangers or saddles. Hangers shall be around insulation so insulation will be between pipe and hanger or saddle.

E. Seismic Restraints: It is the intent of this seismic specification to keep all mechanical building system components in place during a seismic event.

2.4 INSULATION

A. Pipe and equipment installed under this Contract shall be covered as follows:

B. All cold water piping: 1/2 in. glass fiber, 3-1/2 pound density, snap-on fiberglass insulation with vapor barrier jacket and self-sealing lap.

C. All Hot Water Piping: 1 in. glass fiber, 3-1/2 pound density, snap-on fiberglass insulation with jacketed vapor barrier and self-sealing lap.

D. All existing horizontal storm water drain piping: 1/2 in. glass fiber, 3-1/2 pound density, snap-on fiberglass insulation with vapor barrier jacket and self-sealing lap.

E. All valves and fittings shall have fiberglass insulation and covered with Manville's Zeston or Proto, PVC fitting covers with a 25/50 flame and smoke rating. The covers shall be Manville's Zeston or an approved equal. The covers shall be secured in place with a 1-inch wide white vinyl tape on all seams joints and throat. No tacks or staples will be allowed on this project.

F. All Condensate Piping: Horizontal runs of condensate drainage piping, including the horizontal to vertical elbow of fitting and drain body and connection shall be insulated with 1/2" fiberglass insulation with vapor barrier.

G. All piping on factory assembled equipment shall be insulated same as for field installed piping.

H. All pipe insulation shall be covered with a fire retardant vapor jacket in accordance with NFPA. Jacket shall be constructed of outer layers of white kraft paper and one mil aluminum foil with a glass fiber reinforcing between, laminated together with fire retardant adhesive. This jacket shall have a water vapor permeability of .02 perms.

I. Joints: The end joints of insulation shall be tightly butted and covered with factory furnished end joint sealing tapes. The jacket overlap shall be sealed with an approved sealer which shall not mar the jacket finish. End joints on cold water piping shall be sealed with vapor barrier mastic.

J. All sealer, solvents, tapes, adhesives and mastics used in conjunction with the installation of all insulation specified under this section of the specifications, shall

pass the maximum possible fire safe qualities available and be of a type approved under NFPA or NFBU 91A and 90B Standards. The flame-spread rating shall not exceed 25. Smoke development rating shall not exceed 50.

K. No covering will be applied until the piping has passed all tests as required by the Engineer and approving authority.

L. All covering shall be Gustin Bacon, Johns-Manville, Owens Corning Fiberglass Co., or equal by recognized manufacturer, and shall be installed by reputable Sub-subcontractors regularly engaged in this work and employing particularly skilled therein.

2.5 VALVES

A. Furnish and install valves, required by code, where indicated on the drawings or specifications, so located that they may be operated, repaired or replaced with minimum effort and repacked under pressure. Provide access panels where valves are concealed behind non-removable ceilings or walls. Provide shut off valves for each battery of fixtures.

B. Ball valves 2 in. and smaller shall be two piece, all bronze with full port chrome plated ball, teflon seats, solder or threaded ends, extended stems and 600 psi cold working pressure. Ball valves 2-1/2 in. and larger shall be carbon steel with full port ball, teflon seats, flanged and designed for 600 lbs. non-shock cold water.

C. Stop and waste ball valves 3/4 in. and smaller shall be two piece, all bronze, with full port chrome plated ball, drain cap, teflon seats, solder or threaded ends, extended stems and 400-psi cold working pressure.

D. Gas cocks 2-1/2 in. and larger shall be all iron, lubricated plug, flanged ends, and 125-psi working pressure. Gas cocks 2 in. and smaller shall be bronze, lubricated plug, screwed ends and 125-psi working pressure.

2.6 HOSE BIBS AND WALL HYDRANTS

A. Hose bibs shall be Chicago No. 293, 1/2-in. brass "Y" pattern with lock shield, composition disk, loose tee handler and 3/4 in. hose end. Provide watts #8-A chrome plated backflow preventer on outlet. Mount the hose bib with the outlet 16-in. above finish floor.

A. Traps installed on threaded pipe shall be recessed drainage pattern.

2.8 PLUMBING FIXTURES

A. Plumbing fixtures shall be of the best quality as fabricated by a manufacturer of established reputation. Refer to architectural plans (Interior Design) for plumbing fixture specifications.

B. All fixtures shall have the manufacturer's guarantee label or trademark indicating first quality.

C. Provide in all areas where floor drains are located a 1/2" chrome plated hose bib with vacuum breaker and loose key.

D. All materials specified to be chromium plated shall be thoroughly cleaned and polished before plating and plate shall be heavily, thoroughly and evenly plated, guaranteed not to strip or peel.

E. Where escutcheons are not furnished with plumbing fixtures, this Contractor shall supply them. Fixtures shall meet the requirements for the conservation of hot and cold water as noted in the State Plumbing Code.

F. Each fixture shall be separately trapped, using the type and size of trap required by the Plumbing Code or as specifically denoted otherwise. Unless otherwise specified, faucets and all exposed fittings and pipe shall be chrome plated. All replacement materials shall be verified in the field to assure a trouble free installation.

G. Dimensions locating plumbing fixtures shall be as shown on the architectural drawings.

2.9 SHOCK ABSORBERS

A. Furnish and install where required to prevent water hammer (all cold water drops to waterclosets and urinals), Zurn Z-1700 Shoktrol arrestors stainless steel, gas filled, bellows type shock absorber. Installation of absorbers shall be as per manufacturer's recommendations. Access panels are required at shock absorbers.

2.10 DRAIN VALVES

A. It shall be possible to drain the water from all the cold and hot and hot water piping. This subcontractor shall furnish and install 1/2-in. bronze gate valves with 3/4-in. hose outlets to drain each section and branch.

2.11 FIRE SAFING

A. Where piping passes through fire rated walls, floors and ceilings, provide a fire safing system so as to maintain the integrity of the rated assemblies to the satisfaction of the Architect and the Building Inspector. The fire safing system shall be as manufactured by 3M, Dow, Bio-Fire Shield, or Nelson. Provide manufacturer's details or custom details when there are not manufacturer's details for each condition with a UL listing referenced. Where piping is insulated, pipe insulation shall run continuously through the rated opening. Details shall show the required depth and annular space width requirements and limitations and any packing requirements.

B. Refer to architectural drawings for rated walls and partitions. Where there are no architectural drawings or they do not indicate rated walls and partitions, the following guidelines shall be used. All floors, corridor walls, party walls, mechanical room walls, duct and pipe chase walls, stairwells, trash room and chute walls shall be considered minimum two hour fire rated walls.

C. Products for fire safing of PVC piping shall be Proset System "C" or approved equal.

2.12 SYSTEMS IDENTIFICATION

A. All systems identification materials shall meet ANSI standard A13.1 - 1975, and be as manufactured by Seton Name Plate Corporation or approved equal.

B. Valve tags shall be circular 19 gauge brass, 1-1/2 in. diameter, with black filled text Seton No. 250-BL with No 530 brass hooks, No. 16 brass jack chain, or No.6 nickel-plated bead chain. Letter abbreviations shall be 4 in. high above 1/2-in. high numbers.

C. Pipe markers shall be setmark type "SNA" pre-molded acrylic plastic, snap on markers, either 8 in. or 12 in. long with overlap, for up to 6 in. diameter ER and type "STP" strap for 6 in. and larger. The background, field and legend colors and letter sizes shall be per ANSI standards.

2.13 ESCUTCHEONS

Install escutcheons around exposed pipe passing through finished floor, wall or ceiling. Escutcheons shall be one piece heavy cast brass, chromium plated, with set screw adjustable and shall be of sufficient outside diameter to cover sleeve opening and shall fit snugly around pipe.

FLOOR DRAINS

All floor drains shall be the product of one manufacturer such as Jay R. Smith, Josam, Zurn, or approved equal.

A. FD-A: Cast iron body and flashing collar with protector cap and 5-inch nickel bronze adjustable square strainer, similar to Jay R. Smith 2010C.

B. Provide round funnel similar to Jay R. Smith Figure No. 3580 where applicable.

C. Provide trap primer connection similar to Jay R. Smith P050 where applicable.

D. FD-B: Cast iron body and flashing collar with adjustable top bar grate and sediment bucket, similar to Jay R. Smith 2360C-S

E. Provide round funnel similar to Jay R. Smith Figure No. 3580 where applicable.

F. Provide trap primer connection similar to Jay R. Smith P050 where applicable.

G. FS-A: Cast iron flanged body with flashing clamp, acid-resistant coated interior, nickel bronze rim and secured grate, with aluminum sediment bucket, similar to Jay R. Smith 3151C-C.

H. FS-B: Same as FS-A except with Jay R. Smith 12 nickel bronze rim and half grate.

I. FS-C: Same as FS-A except with Jay R. Smith 13 nickel bronze rim and 3/4 grate.

J. FS-D: Cast iron flanged body with flashing clamp, acid-resistant coated interior, nickel bronze rim and half secured grate, aluminum sediment bucket and trap primer connection similar to Jay R. Smith 3151C-12-LXH-P050 .

21.5 PLUMBING FIXTURES

A. Water Closet, P-1:
Fixture: Zurn Z5615 elongated wall-hung, vitreous china, 1.28 gpf siphon jet bowl with 1-1/2 inch top spud.

Flushometer: Zurn ZTS6200EV exposed sensor flushometer with 1.28 gallon per flush and courtesy flush button.

Seat: Zurn Z5955SS-EL elongated open front seat less cover.

Support: Combination drainage carrier fitting with foot support and supply pipe support.

Provide SA-A on supply piping above ceiling.

Provide white sanitary mildew resistant silicone sealant where china comes in contact with finished wall.

B. Water Closet, P-1A:
Same as P-1 except mounted to satisfy the Rhode Island Architectural Access Board .

Flushometer control shall be installed on wide side of water closet compartment.

C. Urinal, P-2:
Fixture: Toto UT105UG01 vitreous china, 0.125 gpf washout with 3/4 inch top spud inlet and 2-inch IPS outlet.

Flushometer: Toto TEU1UN12CP exposed ecopower sensor flushometer with 0.125 gallon per flush and courtesy flush button.

Support: Concealed carrier with foot support and supply support to suit.

Provide white sanitary mildew resistant silicone sealant where china comes in contact with finished wall.

Mounted to satisfy the Rhode Island Architectural Access Board.

D. Lavatory, P-3:
Fixture: Integral to counter top as provided under other Sections.

Faucet: Grohe Eurosmart 32642001 single lever handle faucet with stainless steel braided flexible supplies, 0.5 gpm aerator, pop up drain and tailpiece.

Miscellaneous: McGuire heavy duty polished chrome-plated cast brass loose key angle valve kits, flexible braided stainless steel risers, escutcheon.

Polished chrome-plated cast brass perforated offset strainer with 1-1/4 inch x 1-1/2 inch polished chrome-plated cast brass adjustable "P" trap, cleanout plug with extension to wall and escutcheon.

Insulation: Truebro Handi Lav-Guard antimicrobial white flexible vinyl insulation kit with foam inserts.

Provide white sanitary mildew resistant silicone sealant where china comes in contact with finished counter.

E. Hose Bibb, P-4:
Chicago Faucet 952 polished chrome-plated inside sill faucet, 3/4 inch hose thread outlet, vacuum breaker, removable loose key handle, 1/2 inch inlet and wall flange.

PART 3 - EXECUTION

3.1 WORKMANSHIP

A. Prior to the work of this section, this Contractor must ascertain that preceding work has been accomplished in a manner to permit compliance with the level of quality required by this Section.

B. The entire work provided in this specification shall be constructed and finished in every respect in a workmanlike and substantial manner. It is not intended that the drawings shall show every pipe, fitting, and appliance. Furnish all parts as may be necessary to complete the system in accordance with the best trade practices and to be the satisfaction of the Architect, Engineer and General Contractor.

C. This Contractor shall keep other contractors fully informed as the shape, size and position of all openings required for his apparatus and shall give full information to the General Contractor or other contractors sufficiently in advance of the work so that all openings may be built in advance. Furnish and install all sleeves, supports, etc., specified or required.

D. In the case of failure on the part of this Subcontractor to give proper and timely information as noted above, he shall do his own cutting and patching, or have same done by the General Contractor at this subcontractor's expense, but in any case, without extra expense to the Owner and General Contractor.

E. This Contractor shall obtain detailed information from the manufacturer of apparatus as to the proper method of installing and connecting same. He shall also obtain all information from the General Contractor and the other contractors which may be necessary to facilitate his work and the completion of the whole project.

3.2 CORE DRILLING

A. All holes through concrete or masonry for the passage of plumbing piping not provided by sleeves or openings at the time of casting, shall be cut by the Plumbing Contractor using an approved core boring machine with diamond edge bit and vacuum sludge removal device. The size of holes shall provide for fire stopping around a pipe. The location of all core drilled holes shall be coordinated with the structural reinforcing and be reviewed by the Architect prior to commencing work.

B. Prior to coring, the Plumbing Contractor shall submit a minimum 1/8 in. scale plan, dimensioning the location of proposed cored opening locations and indicating the core diameter. Prior to developing the coring plan, the Plumbing Contractor shall

examine the site carefully in an attempt to determine whether there are structural, mechanical or electrical obstacles in the proposed coring locations. Once the plans are reviewed by the Architect and Owner's representative, the Plumbing Contractor may proceed with caution.

3.3 TESTING PIPING SYSTEMS

A. Test all work in the presence of the Architect/Engineer and/or Owner, Owner's representative and Plumbing Inspector as called for in local codes.

B. After soil, waste and vent piping is in place and before being furred in, plug lower ends and fill. The system shall be left tight under these conditions and water level shall be maintained intact for a period of at least four hours.

C. Test domestic water piping and service by applying a hydrostatic pressure of 125 psi using a pump for this purpose. Make sure that all lines are properly plugged or capped, and that air has been vented before applying pressure, which shall remain constant without pumping for one hour at least.

D. Gas system piping shall be tested at a pressure of 5 psig and pressure shall be held for two hours minimum.

E. This Contractor shall furnish all equipment, labor and materials, required for these tests.

F. Any leaks in joints or evidence of defective pipe or fittings disclosed by tests shall be immediately corrected by replacing defective parts with new joints or corrected materials. No makeshift repairs effected by caulking threaded pipe with lead wool, application of wicking or patented compounds being permitted. Perform smoke tests as required by local code or by the Architect/Engineer.

3.4 PROTECTION AND CLEANING

A. Each subcontractor shall be responsible for his work and equipment until finally inspected, tested and accepted. Carefully store materials and equipment, which are not immediately installed after delivery on site. Close open ends or work with temporary covers or plug during construction to prevent entry of obstructing materials.

B. Each subcontractor shall protect work and materials of other trades from damage that might be caused by his work or workman and make good damage thus caused.

C. The premises shall be kept reasonably clean at all times, and rubbish shall be removed as directed by the General Contractor.

D. Upon completion of this work, the Contractor shall clean all fixtures and equipment and replace damaged parts. Upon failure of this Contractor to fulfill his obligation, this work will be taken care of at his expense.

3.5 WORK COORDINATION AND JOB COORDINATION

A. Plumbing equipment shall not be installed in congested and possible problem areas without first coordinating the installation of same with the other trades and the General Contractor.

B. Particular attention shall be directed to the coordination of system with all equipment of other trades installed in and above the ceiling areas. Conflicts in heights and clearance above hung ceilings shall be brought to the attention of the General Contractor for a decision before equipment is installed.

C. Furnish to the General Contractor and other trades all information relative to the position of the plumbing installation that will affect them so that they may plan their work and installation accordingly.

3.6 SUPPLEMENTARY STEEL, CHANNEL AND SUPPORTS

A. Furnish and install all supplementary steel, channels and supports required for the proper installation, mounting and support of all equipment.

B. Supplementary steel and channels shall be firmly connected to building construction in a manner approved by the Architect/Engineer.

C. The type and size of the supporting channels and supplementary steel shall be determined by the Plumbing Subcontractor and shall be sufficient strength and size to allow only a minimum deflection in conformance with the manufacturer's requirements for loading.

D. All supplementary steel and channels shall be installed in a neat and workmanlike manner parallel to the walls, floor and ceiling construction. all turns to be made with 90 degree fittings, as required to suit the construction and installation conditions.

3.7 SLEEVES AND INSERTS

A. Sleeves shall be furnished, set and properly secured in place and at all points where piping passes through masonry or concrete. All sleeves shall be of sufficient diameter to provide 1/4-in. clearance around the pipe.

B. Sleeves through concrete slabs, and interior concrete and masonry walls or partitions shall be steel pipe. Fire stop annular openings between sleeves and pipes at floor slab passages and make watertight. Galvanized sleeves and copper piping shall not be placed in concrete.

C. Install UL listed and FM approved inserts or other anchoring devices in concrete and masonry construction as required to support piping. Inserts shall be of the adjustable type as manufactured by Carpenter and Patterson, Grinnell, or Fee and Mason.

3.8 SYSTEM IDENTIFICATION

A. All valves on pipes of every description shall have circular brass valve tags of at least 1-1/2 in. in diameter, attached with brass hooks to each valve stem. Stamp number of the valve and the service, such as "HW", "CW", "GAS", etc., for hot water, cold water, gas, etc., respectively. The numbers of each service shall be consecutive and shall correspond with the numbers indicated for valves and controls on the record drawings and on three printed valve lists. These printed lists shall state number and locations of each valve and control and the section, fixture or equipment which it controls.

B. The printed valve lists shall be prepared in a form to meet the approval of the Architect and Engineer and one copy shall be framed under glass and mounted in approved locations.

C. All plumbing lines and equipment shall be identified by pipe markings, which shall be provided by this Contractor. Markers shall be applied every 20 ft. Markings shall indicate pipe content and direction of flow. The markers shall be as manufactured by Seton Name Plate Corp. or equal.

3.9 INSERTS AND OPENINGS

A. Inserts: Install inserts or other anchoring devices in concrete and masonry construction as required to support piping. Inserts shall be of the adjustable type as manufactured by Carpenter and Patterson, Grinnell of Fee and Mason.

B. Escutcheons: All exposed pipe, uncovered, passing through walls, floors or ceilings shall be fitted with one piece chrome plated brass escutcheons with set screw holding in position. Floor escutcheons to be deep enough to fit over sleeves, fastened to pipe and extending down to floor.

3.10 PLANS AND SPECIFICATIONS

A. The drawing showing layout of the plumbing systems indicate the approximate location of outlets, apparatus and equipment are schematic. The final determination as to the routing shall be governed by structural conditions and other obstructions.

B. The right to make any reasonable change in the location of outlets, apparatus and equipment up to the time of the roughing-in is reserved by the Architect and Engineer without involving any expense to the Owner or the General Contractor.

C. The specifications supplement the drawings and provide specifics pertaining to the methods of material to be used in the execution of the work.

3.11 SANITARY WASTE, STORM WATER AND VENT SYSTEMS

A. Furnish and install piping to take wastes from all soil and waste stacks, fixtures, drains and equipment as indicated and/or described in these plans and specifications.

B. Unless specifically noted otherwise on the plans, all horizontal piping 4 in. and larger shall be pitched at the rate of 1/8 in. per foot in the direction of the flow. Horizontal sanitary piping 3 in. and smaller shall be pitched at the rate of 1/4 in. per foot in the direction of the flow.

C. When connecting new piping to existing, the existing waste lines shall be tested and thoroughly cleaned to insure proper operation of all new and existing systems.

D. Vent System: Furnish and install piping to vent all stacks, fixtures, traps and appliances as indicated on the drawings and/or required to meet the Plumbing Code. All vent piping shall be concealed where possible with the horizontal pipe pitching back toward fixtures to allow connection to drain. Whether indicated on plan, riser diagram or not, offset vents below the roof to avoid air intakes, equipment, penthouse mansard etc., bring vents through the roof a minimum of 25 ft. away from air intakes, windows, and operable sash and 10 ft. away from other obstructions.

3.12 HOT AND COLD WATER SYSTEMS

A. Furnish and install complete cold, hot and hot water return systems to service all fixtures and equipment indicated on the drawings or specified as requiring cold or hot water. Cold water piping shall start at the connection to the water main indicated on plan and extend to all fixtures and equipment, including piping, fittings and valves requiring connections. Hot water piping shall extend from the hot water heater to all fixtures and equipment, including piping, fittings and valves. In general, piping shall pitch upward in the direction of flow with each branch and riser separately valved and with 1/2 in. hose end drains on the outlet side of the valve and at all low points in the systems. Install valves for each battery of fixtures and other valves as necessary to isolate all parts of these systems. All valves shall be accessible.

B. Hot water piping shall be circulated as shown on plans to ensure uniform temperatures throughout the system. All branches larger than 50 ft. shall be provided with hot water return lines.

3.13 GAS SYSTEM

A. Furnish and install pipe, fittings, valves and connections to all gas-fired equipment and all accessories and incidentals as indicated or specified to maintain a complete gas system. Install solenoid valves supplied by others as required. Installations shall be made in accordance with the State Gas Code requirements. All horizontal gas piping shall be pitched not less than 1/4 in. in 15 ft. to prevent traps. Pitch piping to risers. Install an 8 in. long sediment leg at the base of all risers.

B. All changes in direction shall be made with plugged tees for cleaning out piping. All horizontal branch outlet pipes shall be taken from the top or side of horizontal mains and not from the bottom. Coordinate the installation of the gas system with the utility company and General Contractor.

C. Provide gas train vents to the atmosphere for all gas-fired equipment as required by Code.

3.14 CHLORINATION

A. All water lines and water service shall be thoroughly flushed and chlorinated before being put into service. The domestic cold and hot water systems shall be chlorinated and flushed in accordance with the requirements of the State Plumbing Code and Local Inspector.

B. Submit a certificate of compliance when chlorination has been completed stating when performed, by whom and who witnessed the procedure.

END OF SECTION

SECTION 230000
MECHANICAL

PART 1: GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division-1 Specification Sections, apply to work of this section.

1.2 SUMMARY OF WORK

A. Provide complete functional Heating, Ventilating and Air Conditioning system as shown on Mechanical Construction Documents.

1.3 REFERENCE STANDARDS

A. NFPA Standards

B. ANSI Standards

C. ASME Standards

D. ASTM Standards

E. AWWA Standards

F. ASHRAE Standards

G. SMACNA Standards

H. OSHA Standards

I. NEBB Standards

J. Local Codes and Ordinances

K. Owner's Insurance Company Requirements

L. Where the contract documents indicate more stringent requirements than the above codes and ordinances, the contract documents shall take precedence.

M. File all documents, pay all fees and secure all permits, inspections and approvals necessary for the work of this section.

1.4 CONTRACT DRAWINGS & SPECIFICATIONS

A. The Contract Drawings are generally diagrammatic and convey the Scope of Work and General Arrangement of apparatus and equipment. The locations of all items shown on the drawings or called for in the specifications that are not definitely fixed by dimensions are approximate only. The exact locations necessary to secure the best conditions and results must be determined at the project and shall have the approval of the Architect and Engineer before being installed. The Subcontractor shall follow drawings in laying out work and shall check drawings of the other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions at all points. If directed by the General Contractor, Engineer and/or Architect, the Subcontractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or before proper execution of the work.

B. Specifications: The specifications are intended only to complement the drawings; however, work detailed and/or noted only on the drawings or work described only in the specifications shall all be considered as part of the scope of work.

1.5 CONFLICT BETWEEN PLANS AND SPECIFICATIONS

A. In case of conflict between the contract drawings and specifications, the Engineer shall determine which takes precedence.

1.6 SHOP DRAWINGS AND PRODUCT DATA

A. SUBMITTALS: Submit shop drawings, manufacturers data and certificates for equipment, materials and finish, and pertinent details for each system where specified in each individual section, and have them approved before procurement, fabrication, or delivery of the items to the job site. Partial submittals will not be acceptable and will be returned without review. Submittals shall include the manufacturer's name, trade name, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and paragraph reference, applicable industry, and technical society publication references, and other information necessary to establish contract compliance of each item the Contractor propose to furnish.

B. Submit in accordance with Division 1.

C. It is the intent of these specifications that all equipment, materials and workmanship used on this project be in complete conformance with all local, state and national codes, ordinances and standards.

D. Substitutions shall be equivalent to specified equipment in all aspects of quality and performance and shall conform to the intent stated above. It is the contractor's responsibility to submit only those items that meet these requirements. Should any non-conforming items be installed, they shall be replaced by the contractor at no additional cost to the owner.

E. The approval of the equipment does not relieve the Subcontractor of responsibility of shop drawing errors related to details, sizes, quantities, wiring diagram arrangements and dimensions which deviate from the Specifications, and/or job conditions as they exist.

F. Refer to General Requirements for the substitutions of equipment and submittal of shop drawings. If apparatus or materials are substituted for those specified, and such substitution necessitates changes in, or additional connections, piping, supports, or construction, it shall be provided. Contractor to assume cost and entire responsibility thereof.

1.7 INSPECTION AND TESTS

A. During the progress of the work it shall be subject to the inspection of the Owner and to such other inspectors, as may have jurisdiction.

B. At completion of the work, Contractor shall submit to the Owner's representative in writing a statement stating: (1) that the work is complete; (2) that the entire installation is in accordance with the specification; (3) that preliminary tests have been made; and (4) that the work is ready for final inspection and test.

C. A final inspection of the installation to determine compliance with the drawing and specifications will be made by the Owner's representative. Work will be checked for quality of materials, quality of workmanship, proper installation and finished appearance. This Contractor shall provide the services of the project foreman for inspection purposes. The foreman shall remove and reinstall access panels, ceiling tiles, etc., as required to facilitate any inspections required by the Owner's representative.

D. The Contractor shall arrange and conduct operating tests on all equipment in the presence of the Owner's representative. The component parts of systems and the various systems shall be demonstrated to operate in accordance with the requirements and intent of this specification. Any non-complying or defective materials or workmanship disclosed as a result of the inspection and the Contractor shall correct tests promptly, and the tests repeated as often as necessary until approved and accepted by the Owner's representative.

1.8 ELECTRICAL EQUIPMENT

A. Electrical components of mechanical equipment and systems, such as motors, factory mounted motor starters, disconnects, and control equipment shall be provided under the related Section of Division 23.

B. Temperature control equipment, including thermostats, zone valves, relays, aquastats, etc. shall be provided under related sections of Division 23. Temperature control wiring not specifically shown on electrical drawings shall be provided under related Section of Division 23.

C. Upon completion of temperature control system wiring, the responsibility of the control system will fall under Division 23.

D. All electrical equipment installed in concealed spaces shall be provided with a hard-wired electrical connection. Plug-type disconnects shall not be allowed in concealed spaces. Equipment provided with plug-in cords shall not have their cords modified.

1.9 OPENINGS IN EXTERIOR WALLS OR ROOF

A. Openings in exterior walls or roof shall be kept properly plugged and caulked at all times, except when being worked on to preclude the possibility of flooding due to storm or other causes. After completion of work, openings shall be permanently sealed and caulked in a manner approved by the Architect.

1.10 GUARANTEE

A. Except as otherwise specified, all work, materials and equipment shall be guaranteed against defects resulting from the use of inferior materials, equipment, or workmanship for one year from the date of final completion of the contract, or from full acceptance by the Owner, whichever is earlier.

B. If, within any guarantee period, repairs or changes to guaranteed work are required as a result of the use of defective materials or equipment, inferior workmanship or work that is not in accordance with the terms of the contract, and upon receipt of notice from the Owner, the following shall be done without expense to the Owner.

C. Place in satisfactory condition in every particular all of such guaranteed work and correct all defects therein.

D. Repair all damage to the building or site/equipment or contents thereof which is the result of the use of defective materials or equipment or inferior workmanship, or of work not in accordance with the terms of the contract.

E. Make good any work or materials, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.

F. In fulfilling the requirements of the contract or of any guarantee embraced in or required thereby, any work guaranteed under another contract is disturbed, restore such disturbed work to original condition and guarantee such restored work to the same extent as it was guaranteed under such other contract.

G. If upon failure to proceed promptly after notice to comply with the terms of the guarantee, the Owner may have the defects corrected and Contractor and his surety shall be liable for all expenses incurred.

H. This Contractor shall obtain in the General Contractor's and Owner's name, the standard written manufacturer's guarantee of all materials furnished under this Section where such guarantees are offered in the manufacturer's published product data. All these guarantees shall be in addition to, and not in lieu of, other liabilities, which the Contractor may have by law or other provisions of the Contract Documents. The guarantee shall be for a period of one (1) year minimum from the date of acceptance or final payment.

1.11 CLEANING OF SYSTEM

A. Thoroughly clean piping, ducts, fixtures and equipment of all foreign substances inside and out before placing in operation. All air handling equipment shall be provided with "construction filters" for use during construction. Once construction is substantially complete and prior to final testing adjusting and balancing, furnish and install new filters for each piece of equipment.

B. If any foreign matter should stop any part of a system after being placed in operation, clean and reconnect system.

C. Remove all covers of interior floor drains and cleanouts, clean of all dirt, concrete traces, etc., then lightly grease and reinstall.

D. Existing HVAC systems which are being tied into or otherwise modified shall be thoroughly cleaned and refurbished prior to being placed back in service.

1. Duct Systems shall be cleaned of all foreign contaminants, dust and debris.
2. Hydronic Systems shall be fully flushed, cleaned, refilled and treated.
    a) Contractor shall test existing system fluid to determine the concentration of freeze-inhibitor in the system prior to drain down.
    b) Refilling of the system shall include freeze inhibitor matching the concentration of the system prior to drain-down.
3. During contractor shall bring to the attention of the owner and engineer any perceived deficiencies in existing systems including but not limited to:
    a) Code deficiencies
    b) Inoperable equipment
    c) Leaking ductwork and/or piping
    d) Missing or deteriorating insulation
    e) Excessive noise

1.12 TEMPORARY OPENINGS

A. Coordinate construction and provide temporary openings in the building as required for the admission of equipment furnished under this Division.

1.13 DEFINITIONS

A. "Piping" includes, in addition to pipe, all fittings, valves, hangers, and other accessories relating to such piping.

B. "Concealed" means hidden from sight in trenches, chases, furred spaces, shafts, hung ceilings, embedded in construction or in crawl spaces.

C. "Exposed" means not installed underground or "concealed" as defined above.

D. "Provide" means furnish and install complete and ready to operate.

1.14 EQUIPMENT DEVIATIONS

A. Where proposals to use an item of equipment other than that specified which requires any redesign of the structure, partitions, foundations, piping, wiring or any other part of the mechanical, electrical or architectural layout, all such redesign, and all new drawings and detailing required therefore, shall be prepared by the Architect at the Contractor's expense.

B. Where such approved deviation requires a different quantity and arrangement of ductwork, piping, wiring, conduit, and equipment from that specified or indicated on the drawings,

furnish and install any such ductwork, piping, structural supports, insulation, controllers, motors, starters, electrical wiring and conduit, and any other additional equipment required by the system, at no additional cost to the Owner.

1.15 ELECTRICAL ROOM REQUIREMENTS

A. Do not install any piping, ductwork or equipment in or through electrical rooms, transformer rooms, electrical closets, telephone rooms or elevator machine rooms, unless piping or ductwork of equipment is intended to serve these rooms. Additionally, no ductwork or piping will be installed above electric panels. If the Contractor violates this requirement, he shall remove and/or relocate all items as required at his expense and to the satisfaction of the Architect.

1.16 COOPERATION WITH OTHER TRADES

A. Give full cooperation to other trades and furnish in writing to the Architect any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.

B. Coordination drawings shall be initiated by this contractor. It this contractor's responsibility for preparation of project coordination drawings showing the installation of all equipment, piping, ducts and accessories to be provided under Section 230000 of the Specifications.

1. Drawings shall be prepared at not less than 1/4 in. = 1 ft. scale, and shall show building room layouts, structural elements, ductwork and lighting layouts of function. Drawings shall indicate horizontal and vertical dimensions, to avoid interference with structural framing, ceilings, partitions, and other services.

2. A reproducible copy of each drawing prepared shall then be submitted to each Contractor working under Sections 210000, 220000, and 260000, who shall be responsible to coordinate his equipment and systems and shall show these on the drawings submitted.

3. After each Contractor has fulfilled his obligation, he shall return the drawings to the HVAC Contractor. After each drawing has been coordinated between trades, and appropriate revisions made, each trade shall sign each drawing, indicating acceptance of the installation.

4. The HVAC Contractor shall then print the coordination original and these prints submitted through the General Contractor to the architect for review and comment, similar to shop drawings. Comments made on these drawings shall result in a correction and re-submittal of the drawings.

C. Furnish to other trades, as required, all necessary templates, patterns, setting plans, and shop details for the proper installation of work and for the purpose of coordinating adjacent work.

1.17 PROJECT RECORD DOCUMENTS:

A. Each Contractor shall record clearly, neatly, accurately, and promptly as work progresses the following data:

1. Changes made resulting from change orders or instructions issued by the Architect.

2. Changes in routing made to avoid conflict with other trades or structural conditions.

3. Final location of equipment and panels if different than contract documents.

B. Upon completion of the project submit to the Architect a set of electronic media noting "as built" conditions indicating all variations and deviations of his work from contract documents.

1.18 PROTECTION

A. Protect all work and material from damage by work and workmen, and accept liability for all damage thus caused.

B. Be responsible for work and equipment until finally inspected, tested, and accepted. Protect work against theft, injury or damage; and carefully store material and equipment received on site, which is not immediately installed. Close open ends of work with temporary covers or plugs during storage and construction to prevent entry of obstructing material.

C. All openings in stored & installed ductwork shall be covered & sealed when not in use to prevent contamination from dust & debris.

1.19 SCAFFOLDING, RIGGING AND HOISTING

A. Provide scaffolding, rigging, hoisting and services necessary for delivery, erection and installation of material, equipment and apparatus furnished under this division. Remove same from premises upon completion of work.

B. Coordinate propose routing with architect prior to rigging and protect all existing building components against damage.

1.20 MATERIALS AND WORKMANSHIP

A. All materials and apparatus required for the work, except as specifically specified otherwise, shall be new, of first-class quality, and shall be furnished, delivered, erected, connected and finished in every detail, and shall be so selected and arranged as to fit properly into the building spaces. Where no specific kind or quality of material is given, a first-class standard article as approved by the Architect shall be furnished.

B. Furnish the services of an experienced foreman who shall be constantly in charge of the installation of the work, together with all skilled workmen, fitters, metal workers, welder, helpers, and labor required to unload, transfer, erect, connect, adjust, start, operate, and test each system.

C. All equipment and materials shall be installed in strict accordance with the manufacturer's recommended installation instructions as well as UL Listing instructions and all Local, State and National codes.

1.21 QUIET OPERATION AND VIBRATION

A. Work shall operate under all conditions of load without any objectionable sound or vibration. In case of moving machinery, sound, or vibration noticeable outside of room in which it is installed, or annoyingly noticeable inside its own room, will be considered objectionable. Sound or vibration conditions considered objectionable shall be corrected in an approved manner at no expense to the Owner. Vibration control shall be means of approved vibration eliminators in a manner as recommended by the manufacturer of the eliminators.

1.22 ACCESSIBILITY

A. Assure and be responsible for the adequacy of shafts and chases, the adequate clearance in double partitions and hung ceilings for the proper installation of the work. Cooperate with all other trades whose work is in the same space. Such spaces and clearances shall, however, be kept to the minimum size required.

B. Locate all equipment, which must be serviced, operated, adjusted or maintained fully accessible positions. Equipment shall include, but not be limited to, valves, traps, cleanouts, motors, controllers, filters, dampers, starters, coils, fire dampers, smoke dampers and drain points. If required for better accessibility, furnish access doors for this purpose. Minor deviations from drawings may be made to allow for better accessibility, and the engineer shall approve any change.

C. Provide access panels for installation in concrete block walls or gypsum wallboard ceilings and partitions in locations, which require access for service to the items located behind the permanent gypsum wallboard or concrete block finish.

1.23 CUTTING AND PATCHING

A. Provide all cutting and patching necessary to install the work specified in this division. Patching shall match adjacent surfaces.

B. At floor slabs & wall openings to be cored drilled or cut, contractor shall find and mark on both faces all reinforcing, rebar, conduits, utilities, etc.. by means of x-ray, pach-ometer or prof-ometer. Submit sketch showing locations of all findings and proposed cuts or cores for review.

C. No structural members shall be cut without the approval of the Structural Engineer, and all such cutting shall be accomplished in a manner directed by the Structural Engineer.

1.24 GROUNDING

A. All components of mechanical piping systems shall be properly grounded to building ground. Where ground path is interrupted by non-conductive materials, appropriate bonding or grounding to building ground shall be provided.

1.25 WATERPROOFING

A. Where any work pierces waterproofing including waterproof concrete, the method of installation shall be as approved by the Architect before work is started. Furnish all necessary sleeves required.

1.26 DEMOLITION

A. Prior to submitting bid, visit site and identify existing conditions and difficulties that will affect work of this section. Demolition work will require careful site examination prior to bidding. No compensation will be granted for additional work caused by unfamiliarity with site conditions that are visible or readily construed by experienced observers.

B. Prior to commencing demolition, contractor shall identify with owner any equipment to be returned to the owner after demolition. All other debris shall be disposed of by this contractor in accordance with all applicable regulations. Any shutdowns required for demolition shall be coordinated with building owner to avoid impact to operations.

C. During demolition, any equipment, ductwork, piping, etc. found to be abandoned shall be demolished. Existing unused connections to existing ducts or piping shall be cut back to the mains and capped accordingly.

D. Under demolition, the following is, in brief, the extent of the work to be performed by the mechanical contractor under this contract.

1. The mechanical contractor shall be responsible for the disconnection and removal of the existing mechanical equipment, ductwork, piping, valves, etc.,in designated areas. Cut & cap piping and ductwork back to mains. Patch all roof and wall penetrations to match existing.

2. This contractor shall protect work against injury or damage; and carefully store material and equipment to be relocated. Open ends of work shall be closed with temporary covers or plugs during storage and construction to prevent entry of obstructing material.

3. All existing HVAC components, including but not limited to ductwork, piping, equipment, controls & accessories, shall be removed from the area of renovation.

4. Coordinate all demolition with other trades to ensure all relevant portions of the

system including associated electrical and plumbing components are removed.

5. Refer to drawing plans and notes for additional information.

PART 2: PRODUCTS

2.1 USE OF INSTALLATION

A. The Owners shall have the privilege of using any part of the installation when sufficiently complete, but such use thereof, or partial or final payment shall not be considered as an acceptance of such work in lieu of a written certificate from the Engineer.

2.2 DUCTWORK

A. Fabricate and support in accordance with SMACNA HVAC Duct Construction Standards - Metal and Flexible, and as indicated. Provide duct material, gages, reinforcing, supports and sealing for operating pressures indicated.

B. Duct gauge shall be as required by SMACNA Duct Construction Standards taking into account duct size, supports, pressure rating, and any other relevant parameters. All ductwork, regardless of SMACNA Standards, shall be no thinner than 26 gauge.

C. Galvanized Steel Ducts: ASTM A525 and ASTM A527 galvanized steel sheet, lock-forming quality, having G90 zinc coating of in conformance with ASTM A90.

1. Sealant: As recommended by manufacturer specifically for sealing joints and seams in ductwork.

2. Non-hardening, water resistant, fire resistive, compatible with mating materials; liquid used alone or with tape, or heavy mastic.

3. Hanger Rod: ASTM A36; steel, galvanized; threaded both ends, threaded one end, or continuously threaded.

D. Flexible Ductwork: Duct shall be Flexmaster Type 4 Insulated Duct as manufactured by Buckley Associates or approved equal.

1. Flexible duct (insulated) shall be Underwriters Laboratory Listed (UL 181 Class I Connector) and constructed in accordance with NFPA Standards 90A and 90B. It shall have a smoke/flame spread rating of 50/25.

2. Duct fabric shall be of a smooth airtight polymer film mechanically locked to the outside helix. (Use of adhesives to lock to fabric in place is unacceptable.) The helix is constructed of corrosive resistant galvanized steel, formed and mechanically locked to the duct fabric on the outside to prevent tearing of the flexible duct.

3. Insulated flex shall have a fire retardant polyethylene outer jacket with a 1/2 lb. density, 1-1/2" thick fiberglass insulation blanket, factory wrapped.

4. The flexible duct shall be supported as required to prevent sagging. Flexible duct with excessive sagging will not be approved.

5. Flexible ductwork shall be rated at 6" positive pressure and 10" negative pressure for sizes up to 12". Negative pressure for 14" to 16" shall be 5". Negative pressure for 18" shall be 1".

6. Length of installed flexible duct shall not exceed 6'-0" in developed length.

E. Flexible Connections

1. Flexible connections shall be provided where a fan connects to a duct or casings to prevent transmission of vibration to ductwork.

2. Flexible connections shall fit tightly around ducts and fans and be securely bolted or clamped in place. Taping shall not be allowed.
3. Flexible duct connections shall be 6" long and made of straight, waterproof, flame retardant fabric having a flame spread rating of not over 25 and a smoke development rating of not over 50

F. Volume Dampers:

1. Provide new if none exist.

2.3 DUCT INSULATION

A. Compliance: Insulation thickness, conductivity and installation shall comply with local Mechanical and Energy Codes. Where local code conflicts with specifications, the more stringent shall apply.

B. Definitions:

1. Conditioned Space: An area, room or space that is enclosed within the building thermal envelope and is directly or indirectly heated or cooled. Spaces are indirectly heated or cooled where they communicate through openings with conditioned spaces, where they are separated from conditioned spaces by uninsulated walls, floors, or ceilings or where they contain uninsulated ducts, piping or other sources of heating or cooling,
2. Unconditioned Space: An enclosed space within a building that is not a conditioned space or a semiheated space. Crawlspaces, attics, and parking garages with natural or mechanical ventilation are not considered enclosed spaces.

C. Supply and Return Air Duct Insulation:

1. Insulation: ASTM C553; flexible, foil faced, noncombustible blanket.
   a) Exposed Conditioned
      (i) Supply Air: No Insulation Required
      (ii) Return Air: No Insulation Required
      (iii) Outside Air: No Insulation Required
   b) Concealed Conditioned
      (i) Supply Air: R-Value of 6.0 installed.
      (ii) Return Air: No Insulation Required
      (iii) Outside Air: R-Value of 6.0 installed.
   c) Unconditioned
      (i) Supply Air: R-Value of 8.0 installed.
      (ii) Return Air: R-Value of 8.0 installed.
      (iii) Outside Air: No Insulation Required
2. Vapor Barrier Jacket:
   a) Kraft paper with glass fiber yarn and bonded to aluminized film.
      (i) Moisture vapor transmission: ASTM E96; 0.02 perms.
      (ii) Secure with pressure sensitive tape.
3. Vapor Barrier Tape:
   a) Kraft paper reinforced with glass fiber yarn and bonded to aluminized film, with pressure sensitive rubber based adhesive.

D. Exhaust Ductwork Insulation:

1. Insulation: ASTM C553; flexible, foil faced, noncombustible blanket.
2. Direct Exhaust: No Insulation Required.

2.4 PIPING

A. Hydronic Piping

1. Steel Pipe: ASTM A53, Schedule 40, black.
   a) Fittings: ASTM B16.3, malleable iron or ASTM A234, forged steel welding type fittings or Victaulic ductile iron ASTM A536/395.
   b) Joints: Threaded, or AWS D1.1,welded or Victaulic grooved joints.
2. Copper Tubing: ASTM B88, Type L, hard drawn.
   a) Fittings: ASME B16.18, cast brass, or ASME B16.22, solder wrought copper.
   b) Tee Connections: Mechanically extracted collars with notched and dimpled branch tube.
   c) Joints: Solder, 95-5 tin-antimony, or tin and silver, with melting range 430 to 535 degrees F or Victaulic grooved joints.

2.5 PIPING INSTALLATION

A. Piping shall be inspected, tested and approved before being buried, covered or concealed. Horizontal piping shall be pitched with a minimum grade of one inch in 50 feet. Fittings shall be provided for changes in direction of piping, and for all connections. Fuel supply piping shall allow for ample tank movement and pipe expansion.

B. Install piping free from traps and drain toward tank.

C. Pipe Sleeves: Firmly pack space between the pipe or tubing, and sleeve with oakum and caulk on both ends of sleeve with elastic cement.

D. Unions, Flanges and Victaulic Couplings: Place unions, flanges or Victaulic couplings where necessary to permit easy disconnection of piping and apparatus. Each connection having a screw end valve shall have a union.

E. Valves: Install valves in positions accessible for operation and repair. Install check valve and an isolation valve on suction line of each fuel oil storage tank.

F. Field Testing: Upon completion and before final acceptance of the work, each system shall be tested as in service to demonstrate conformance with the contract requirements and in accordance with the requirements of ANSI B31.3 and NFPA 30.

G. Each new piping system will be hydrostatically tested at not less than 1.5 times the working pressure in accordance with ANSI B16.3, but in no case less than 200 psig and shall show no leakage or dials indicating not less than 1.5 times nor more than 2 times the test being placed in operation. Remove fuel quality monitor elements and water separator elements from filter separators before hydrostatic tests. Do not subject tank to pipe test pressures. Refer to tank manufacturers data for maximum test conditions.

2.6 PIPING INSULATION

A. Insulation

1. Hydronic/Steam Piping: Preformed glass fiber meeting ASTM C547, "k" value of 0.24 @ 75°F with all service jacket (ASJ). Service temperature 0°F to +850°F, 25/50.
2. Low Temperature Fluid Applications: Provide insulation with integral wick material. Product shall include a factory applied integral vapor retarder extending under the

evaporator area of the wick and covering not less than 98% of the circumference of the product. Exposed evaporator area shall be not less than 0.1 sq. ft./linear ft. of product.

B. Compliance: Insulation thickness, conductivity and installation shall comply with local Mechanical and Energy Codes.

C. Minimum Pipe Insulation:

1. Hot Water: 1-1/2" Thick, ≤ 1-1/2" Nominal Pipe Diameter
2. Hot Water: 2" Thick, > 1-1/2" Nominal Pipe Diameter

2.7 WATER TREATMENT

A. All hydronic HVAC systems shall be provided with water treatment chemicals during initial fill of the systems. Chemicals shall be designated for use in the specific system type and be provided in concentrations as recommended by the chemical manufacturer.

B. Where indicated on the drawings provide Propylene Glycol to hydronic systems in the concentrations indicated. Glycol shall be of the inhibited type and be provided with additional water treatment chemicals to prevent corrosion.

C. Hydronic systems shall be provided with a chemical shot feeder for the maintenance of water treatment chemicals.

D. Where Glycol Make-up systems are provided the contractor shall fill the tank with glycol solution at the completion of the project.

E. Contractor shall provide submittals for review and approval for all water treatment chemicals.

2.8 PIPING / EQUIPMENT LOCATED IN AREAS SUBJECT TO FREEZING

A. All piping subject to freezing shall be wrapped with heat trace cable, insulated as per specification and energy code, and in the case of drain piping, maintain a minimum continuous slope of 1%.

B. Where ceiling mounted equipment penetrates into an uninsulated attic space, it shall be covered with blanket insulation meeting minimum building code requirements and done in a manner complying with the equipment manufacturer's recommendations.

PART 3: EXECUTION

3.1 TESTING, ADJUSTING, STARTING UP AND COMMISSIONING

A. Testing: All work must be proved satisfactory. The tests herein specified shall be applied in the presence of, and to the satisfaction of, the Architect before the work is covered, concealed or made inaccessible to testing, repair, correction or replacement. Accommodate the testing operation to the progress of the project as a whole. Correct all defects appearing under test and repeat the tests until all parts of the work have been successfully tested. Apply the specific tests herein described. Present all work for acceptance in clean condition, properly adjusted and in good working order; for instance, all machinery must be quiet, well balanced, and must be in place and reading accurately. All systems, equipment, controls, and devices in this work shall be tested in operation and must prove for their purposes in the judgment of the Architect or his authorized representative. All internal surfaces of all lines and equipment shall be blown or flushed clean. Where pressure tests are specified, the apparatus shall be clean before the tests are applied. Contractor shall provide adequate protection of piping and duct systems to prevent vandalism and/or accidental damage, blockage, etc., that will hinder or prevent proper operation of the finished systems.

1. Provide instruments, pumps, gauges, supplies, equipment, materials, and labor for

testing and starting up. Dispose of test water and wastes after test, in a manner approved by all applicable codes.

2. Perform tests which may be required by authorities or agencies in addition to those herein specified.
3. Piping for hot water supply and return, drain, escape and relief valve discharge shall be tested with water and made tight under pressure of 150 pounds per square inch gauge maintained for one hour without pumping or as long as required to inspect all joints. Repair all leaks and retest. Piping shall be made tight without caulking. Apply pressure tests to piping only before connection of equipment. In no case shall piping, equipment or accessories be subjected to a pressure exceeding it's rating. Low-pressure elements shall be isolated or removed before tests are conducted.
4. Test valve bonnets for tightness. Test operate all valves at least once from closed-to-open-to-closed positions while valve is under pressure. Test all automatic valves for proper operation at the settings indicated. Test pressure relief valves at least three (3) times.
5. Test piping specialties for proper operation. Test air vent points to ensure that air has been vented.
6. Furnish certified shop test records for all pressure vessels. After installation, test at full operating pressures and temperatures maintained for one hour. Set and test all pressure control, relief and safety devices.
7. Repair or replace all defective work and repeat tests until the particular system and component parts thereof receive the approval of the Architect.
8. The duration of tests shall be as determined by authorities having jurisdiction, but in no case less than the time prescribed in each section of the specifications.
9. Test equipment and systems, which normally operate during seasons of the year during the appropriate season. Perform tests on individual equipment, systems and their controls. Whenever the equipment or system under test is interrelated with and depends upon the operation of other equipment, systems and controls for proper operation, function, and performance; the latter shall be operated simultaneously with the equipment of system being tested.

B. Adjusting, Balancing and Starting Up

1. Flush clean all systems prior to starting up the system. Any damages to the building or system components caused by failure to clean the systems properly shall be corrected to the satisfaction of the Architect or his authorized representative at no additional cost to the Owner.
2. In duct and piping systems, eliminate all noise and vibration and take all measures to secure proper circulation.
3. Run motor-driven equipment continuously for at least two hours in the presence of the Architect. Correct all defects of noise, vibration, alignment and balance. Replace all motors, which overheat or are noisy.
4. Balance systems completely for temperature, volume, and pressure per NEBB performance standards. Balancing subcontractor shall provide proof of certification by NEBB.
5. Air and water volumetric flow rates shall be within ten (10) percent of those specified. Air and water quantities and pressures shall be tested, balanced and recorded at all terminal devices. Volumetric flows and pressures shall be recorded on suitable forms and submitted for approval.
6. Provide any and all labor and equipment necessary to properly balance the

installation including but not limited to dampers, valves, flow stations, test ports, sheaves, belts, etc.

7. All sequences of the system shall be checked and all temperature controls operated and commissioned as required to insure that all systems operate per Engineers intent.

3.2 SEQUENCE OF OPERATIONS

A. Sequence of Operations: This is a performance-based specification intended to convey the control intent of the various systems. The contractor shall provide detailed shop drawings including P&ID diagrams, equipment lists and finalized sequences for review by the Engineer prior to installation. Any questions concerning specific details shall be referred to the engineer for clarification.

B. System: It is the intent of this specification that complete stand-alone controls be provided for each mechanical system to provide the sequences noted.

C. System: It is the intent of this specification that programmable electronic controls be provided to control occupied/unoccupied modes of all HVAC systems within the facility. Systems shall be provided with all additional required controls including, but not limited to, space mounted monitoring and user interface devices, to provide the specified sequence.

D. Equipment and Wiring: This contractor shall provide all control equipment, and wiring (regardless of voltage) to accomplish the sequence of operations as detailed below. This contractor shall carry funds sufficient to hire the Electrical Contractor to provide line-voltage power, including any required wiring, breakers, and/or disconnects, to all control's components needing such power. Such components shall include, but may not be limited to:

1. Control Transformers
2. Central Equipment Controllers
3. Line-voltage Thermostats or other sensors

E. Exhaust Fans:

a) Integral lights (where applicable) shall be energized/de-energized by a separate wall mounted switch.

F. Toe-Kick Heater:

1. Provide built-in aquastat, upon sensing heat fan shall energize.

G. Unit Heater Control: (wall and ceiling cabinet type, horizontal and vertical unit type)

1. Provide single temperature room thermostat to open valve and cycle fan motor to maintain constant space temperature.
2. Provide strap-on aquastat on unit return piping, to de-energize fan motor when fluid temperature falls below adjustable setting of aquastat.

END OF SECTION

SECTION 260000
ELECTRICAL

PART 1 – GENERAL

1.1 RELATED SECTIONS

A. Drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.
B. This Contractor shall also include allowances for startup and for making the systems fully operational, and for scope and design contingencies. Future changes in price for items not shown on these drawings will not be allowed if the system itself is shown on these Drawings.
C. Give notices, file plans, obtain permits and licenses, pay fees and back charges, and obtain necessary approvals from authorities that have jurisdiction as required to perform work in accordance with all legal requirements and with Specifications, Drawings, Addenda and Change Orders, all of which are part of Contract Documents.
D. The drawings show the layout of the electrical systems and indicate the approximate locations of outlets, apparatus, and equipment. The runs of feeders and branches as shown on the drawings are schematic only. The exact routing of branch circuits and feeders shall be determined by the structural conditions and possible obstructions. This shall not be construed to mean that the design of the systems may be changed but refers only to exact runs between given points. The Engineer reserves the right to revise the drawings from time to time to indicate changes in the work.
E. The Contractor shall consult and review all contract and reference drawings which may affect the location of any outlets, apparatus and equipment to avoid any possible interference and permit full location of outlets, apparatus and equipment up to the time of rough-in is reserved by the Engineer and such change shall be made without additional expense to the Owner.
F. It shall be the responsibility of this Contractor to see that all electrical equipment such as junction and pull boxes, panelboards switches, controls and such other apparatus as may require maintenance and operation from time to time is made accessible. Although the equipment may be shown on the drawings in certain locations, the construction may disclose the fact that such locations do make its position accessible. In such cases this Contractor shall call the attention of the Engineer to the condition before advancing the construction to a state where a change will reflect additional expense to the Owner.

1.2 SUMMARY

A. This Section specifies the basic requirements for electrical installations and includes requirements common to more than one section of Division 26. It expands and supplements the requirements specified in sections of Division 1.
B. These documents have been prepared with the intention that they call for finished, tested work, in full operating condition and complete with necessary accessories.
C. The contract drawings are generally diagrammatic and convey the scope of work and general arrangement of apparatus and equipment. The locations of all items shown on the drawings or called for in the specifications that are not definitely fixed by dimensions are approximate only. The exact locations necessary to secure the best conditions and results must be determined at the project and shall have the approval of the Architect/Engineer before being installed. The Contractor shall follow the drawings in laying out work and shall check drawings of the other trades to verify spaces in which work will be installed. Maintain maximum headroom and space conditions at all points. If directed by the General Contractor, Engineer and/or Architect, the Contractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.
D. These contract documents are complementary. What is called for by one shall be as binding as if called for by all. Materials or work described in words, which have well-known technical, or trade meaning shall be held to refer to such recognized standards. Incidental devices and accessories needed for complete, operational systems shall be provided even though they may not be indicated or identified in the documents.
E. If apparatus have been omitted, notify the Architects/Engineers of such belief. It is understood that bidder has included all required items and work in his bid, and will not if bid is successful, claim extra compensation for furnishing a complete and satisfactory system. If a particular item is called

for or specified more than once in these contract documents, the higher grade shall be considered specified.

F. Should it appear that the character of the work is not sufficiently explained in these specifications or on the drawings, apply to the A/E for further information. Conform to the A/E's decision and directions as shall become part of these contract documents. The A/E reserves the right to be sole interpreter of the drawings and specifications, and all decisions shall be conclusive, final and binding on the parties.
G. Materials called for in these documents shall be new, unused equipment and of the latest recognized standards.
H. The work to be done under Division 16 is shown on the electrical drawings.

1.3 OUTLINE SCOPE OF WORK

A. The work under this contract, without limiting the generality thereof, includes all materials, labor, equipment, services, and transportation, unless otherwise specified, necessary to complete all systems of electrical wiring and equipment required by the drawings and/or as specified herein. It is the intent of this section and accompanying electrical drawings that these systems be furnished complete in every respect. The Electrical Contractor shall furnish all wiring, equipment and labor needed for a complete operating installation.
B. The Electrical Contractor shall fully indemnify the Owner against any damages, removals and alteration work. This is in addition to the requirements of the General Conditions of the Specifications.
C. The Electrical Contractor shall review architectural, interior design and all other trades plans, elevations and details prior to any work and identify any conflicts between furnishings, furniture, art-work, molding, casework, televisions, signage, awnings, canopies, diffusers, fixtures, etc.. and electrical, fire alarm, audio/visual and communications devices shown on the electrical plans and details. The Electrical Contractor shall prepare 8.5" x 11" sketches showing the conflicts and submit to the Architect for resolution prior to any work. Failure of the electrical contractor to coordinate, identify and obtain a field-directive on any conflict herein noted, that results in installed electrical work to be relocated to the Owner/Architects liking shall be the sole-responsibility of the Electrical Contractor. The Electrical Contractor shall assume and cover all costs associated with conflicts not coordinated, identified and submitted to the Architect, inclusive of material, labor, overtime pay, etc.. and shall not affect the project schedule.

1.4 ROUGH-IN

A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.
B. Refer to equipment specifications in Divisions 2 through 25 for rough-in requirements.

1.5 SURVEYS AND MEASUREMENTS

A. Base measurements, both horizontal and vertical, on established bench marks. Work shall agree with these established lines and levels. Verify measurements at site and check the corrections of same as related to the work.
B. Should the Contractor discover any discrepancy between actual measurements and those indicated, which prevents following good practice or the intent of the drawings and specifications, he shall notify the A/E.

1.6 EXAMINATION OF SITE

A. Prior to submitting bid, visit the site where the work is to be performed and the materials are to be delivered. Failure in this respect shall not excuse the Contractor from his obligation to supply and install the work in accordance with the plans and specifications and under all conditions, as they exist.
B. By submitting a bid, this Contractor warrants that all specification sections and drawings showing equipment for plumbing, heating, ventilation, air conditioning, electrical, and architectural, have been examined and is familiar with the conditions and extent of work affecting this contract.

1.7 EQUIPMENT AND MATERIALS

A. All equipment and materials for permanent installation shall be the products of recognized manufacturer's and shall be new, unless noted for re-use, without damaged, functional or aesthetic components.
B. New equipment and materials shall:
    1. Be Underwriters Laboratories, Inc. (UL) labeled and/or listed where specifically called for, or where normally subject to such UL labeling and/or listing services
    2. Be without blemish or defect.
    3. Be in accordance with the latest applicable NEMA standards.
    4. Be products, which will meet with the acceptance of the agency inspecting the electrical work. Where such acceptance is contingent upon having the products examined, tested and certified by UL or other recognized testing laboratory, the product shall be so examined, tested and certified.
C. For all equipment, which is to be installed but not purchased as part of the electrical work, the electrical work shall include:
    1. The coordination of their delivery.
    2. Their unloading from delivery trucks driven in to any point on the property line at grade level.
    3. Their safe handling and field storage up to the time of permanent placement in the project.
    4. The correction of any damage, defacement or corrosion to which they may have been subjected.
    5. Their field make-up and internal wiring as may be necessary for their proper operation.
    6. Their mounting in place, including the purchase and installation of all dunnage, supporting members and fastenings necessary to adapt them to architectural and structural conditions.
D. Equipment, which is to be installed but not purchased as part of the electrical work, shall be carefully examined upon delivery to the project. Claims that any of these items have been received in such condition that their installation will require procedures beyond the reasonable scope of the electric work will be considered only if presented in writing within one week of the date of delivery to the project of the items in question. The electric work includes all procedures, regardless of how extensive, necessary to put into satisfactory operation, all items for which no claims have been submitted as outlined above.

1.8 ELECTRICAL INSTALLATIONS

A. All materials and labor called for, specified in Division 16 of the specifications, and or shown on the electrical drawings furnished under this contract shall be provided under Division 16 unless called for otherwise in the Division 16 documents. The word “provide” as used in the Division 16 documents, shall mean to furnish, install, connect up, complete with all accessories ready for operation and warranted.
B. Coordinate electrical equipment and materials installation with other building components. Fully coordinate work with that of other trades. Furnish information in writing that is needed for the coordination of clearances, etc., with the work of others, and such information shall be given in a timely fashion so as not to impede the progress of two or more trades. Confer and resolve the conflict immediately. If so directed by the A/E, prepare composite drawings to resolve any space or clearance conflict.
C. Verify all dimensions by field measurements.
D. Arrange for chases, slots, and openings in other building components to allow for electrical installations.
E. Coordinate the installation of required supporting devices and sleeves to be set in poured in place concrete and other structural components, as they are constructed.
F. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing-in the building.
G. Coordinate the cutting and patching of building components to accommodate the installation of electrical equipment and materials.
H. Where mounting heights are not detailed or dimensioned, the exact location shall be determined by the A/E, install electrical services and overhead equipment to provide the code and/or utility requirements.

I. Install electrical equipment to facilitate maintenance and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
J. Coordinate the installation of electrical materials and equipment above ceilings with suspension systems, mechanical equipment and systems, and structural components.
K. Coordinate connection of electrical systems with exterior underground and overhead utilities and services. Comply with requirements of governing regulations, franchised service companies, and controlling agencies. Provide required connection for each service.
L. Attention is directed to areas and items indicated on the drawings by the notations "HOLD", "N.I.C.", "BY OTHERS" and words of similar intent. The work indicated in these areas is shown for information and continuity only. Work or items furnished and installed in these areas solely for the convenience of this Contractor or others, without prior written approval of the Owner, shall be removed at the option of the Owner and at the Contractor's expense.
M. Provide all required staging and scaffolding for all the work under this section.

1.9 ALTERATION WORK

A. Maintain continuity of service in areas where occupancy is to be maintained during alterations. If it becomes necessary to disconnect or interrupt service, obtain written consent of the Owner, and only disconnect service at the convenience of, and with the consent of the Owner. A copy of the written request for a shutdown shall be forwarded to the A/E.

1.10 CUTTING AND PATCHING

A. Cutting and patching of electrical equipment, components, and materials specified under Division 16 (conduit, sleeves, equipment, etc.) shall be performed by Electrical Contractor.
B. Refer to the Conditions of the Contract (General and Supplementary) and Division 1 Section: "Cutting and Patching" for definitions, requirements, and procedures.
C. Cutting and patching of existing structures (thru walls, floors, ceilings, etc.) to accommodate equipment, components, and materials of all Contractors, including Mechanical and Electrical Contractors, shall be performed by General Contractor and/or his designated Subcontractor.
D. Cutting and patching of new structures (thru walls, floors, ceilings, etc.) to accommodate installation of ill-timed work or removal and replacement of defective work or work not conforming to requirements of Contract Documents, shall be performed by General Contractor and/or his designated Subcontractor and costs shall be back charged to appropriate trade Contractor.
E. Do not endanger or damage installed work through procedures and processes of cutting and patching.
F. Arrange for repairs required to restore other work, because of damage caused as a result of electrical installations.
G. Arrange to have ducts, raceways, conduit, panelboards, boxes, and such other pertinent parts, set in place ahead of construction work so that they will be built-in with structures and eliminate need for cutting and patching. Failure to conform to this paragraph will require that this Contractor perform any cutting and patching required for his work at his expense. Cutting shall be neatly finished to match adjoining work in a manner acceptable to the A/E. Cutting and patching shall not affect the fire rating of walls or structural parts. Cutting and patching required to correct work, due to error or negligence of the Contractor, or to defects in his material or workmanship, shall be corrected at no additional cost to the Owner. Patching shall meet or exceed quality of adjacent surfaces. Cutting must be accomplished as not to weaken adjacent structural members and must be approved by the Structural Engineer before proceeding.
H. Perform cutting, fitting, and patching of electrical equipment and material required to:
    1. Uncover work to provide for installation of ill-timed work.
    2. Remove and replace defective work.
    3. Remove and replace work not conforming to requirements of the contract documents.
    4. Remove samples of installed work as specified for testing.
    5. Install equipment and materials in existing structures.
    6. Upon written instructions from the A/E, uncover and restore work to provide for A/E observation of concealed work.

I. Cut, remove and legally dispose of selected electrical equipment, components and materials as indicated, including, but not limited to, removal of electrical items indicated to be removed and items made obsolete by the work.
J. Protect the structure, furnishing, finishes, and adjacent materials not indicated or scheduled to be removed. Protect the electrical work and the work of others in a manner best suited to the particular case. Correct any damage done to any work at no additional cost.
K. Provide and maintain temporary partitions or dust barriers adequate to prevent the spread of dust and dirt to adjacent areas.
L. Locate, identify, and protect electrical services passing through areas that are to under-go remodeling or demolition. Electrical services serving other areas required to be maintained, and transit services must be interrupted, provide temporary services for the affected areas and notify the Owner prior to changeover.

1.11 SUBMITTALS

A. Within fifteen (15) business days after the date of notice to proceed and before purchasing any materials or equipment, submit for approval a complete list, in six (6) copies, of all materials to be incorporated in the work.
B. Shop drawings/manufacturer's cuts are required for:
    1. Wire & Cable.
    2. Lighting Fixtures.
    3. Panelboards.
    4. Disconnect Switches.
    5. Fire Alarm System.
    6. Wiring Devices and Plates.
    7. Fire Stopping Materials.
    8. Seismic Restraint Components.
C. After the list has been processed, submit complete shop drawings of all equipment. These shop drawings submittals shall be submitted within thirty days after the processing date of the original submittal.
D. All submittals shall be complete and submitted electronically to all applicable parties. No consideration will be given to partial submittals except with prior approval. No consideration will be given to faxed submittals.
E. Explanation of Shop Drawing Stamp:
    1. Approved: indicates that we have not found any reason why this item should not be acceptable within the intent of the documents.
    2. Approved with Comments: indicates that we have found questionable components which, if corrected or otherwise explained, make the product acceptable.
    3. Resubmit for Final Review: indicates that this item should be resubmitted for approval before further processing.
    4. Does Not Conform: indicates that the item will not meet the intent of the Contract.
F. No shop drawing stamp or note shall constitute an order to fabricate or ship. Such notification can only be performed by the Project Manager for construction, the Contractor scheduling his own work, or the Owner.
G. Submittal of shop drawings, product data, will be reviewed only when submitted by the Contractor. Data submitted from Sub-contractors and material suppliers directly to the A/E will not be processed.
H. If shop drawing is not in compliance after two submissions, a third submission for the same manufacturer will not be considered for review.
I. Check shop drawings and other submittals to assure compliance with contract documents before submittal to A/E.
J. Review of shop drawings is final and no further changes shall be considered without written application. Shop drawing review does not apply to quantities, dimensions, nor relieve this Contractor of his responsibility for furnishing materials or performing his work in full compliance with these contract drawings and specifications. Review of these shop drawings shall not be considered a guarantee of the measurements of this building or the conditions encountered.
K. General requirements for the substitution of equipment and submittal of shop drawings as follows. If apparatus, systems or materials are substituted for those specified, and such substitution necessitates changes in, or additional connections, wiring, supports, or construction, it shall be provided by this Contractor at no additional cost to the Owner. This Contractor shall assume all cost

and entire responsibility thereof. The approval of substituted equipment does not relieve the contractor of his/her responsibility of shop drawing errors related to details, sizes, quantities, wiring diagram arrangements and dimensions which deviate from the Specifications, and/or job conditions as they exist. It is the contractor's responsibility to submit only those items that meet the specified apparatus, systems and material. Should any non-conformance code items be installed, they shall be replaced by this Contractor at no additional cost to the Owner. The construction means and methods used in the project shall be reviewed and approved through the local building department or a deputy inspector to insure compliance with the current codes, project specifications and general building practices.

L. Coordination drawings shall be submitted and shall show all HVAC, Electrical, Plumbing and Fire Protection systems superimposed in order to identify conflicts and ensure inter-coordination of all trades. Coordination drawings shall be initiated under this Section of the Specifications. It is this Contractors responsibility for preparation of project coordination drawings showing the installation of all electrical equipment, switchgear, motor control centers, panelboards, transformers, transfer switches, disconnect switches, enclosed circuit breakers, conduits, outlets, switches and accessories to be provided under this Section of the Specifications. These drawings shall be prepared at not less than 3/8 in. = 1 ft. scale, and shall show building room layouts, structural elements, ductwork and lighting layouts of function. A reproducible copy of each drawing prepared shall then be submitted to the Mechanical, Plumbing and Sprinkler Contractors, who shall be responsible to coordinate his equipment and systems and shall show these on the drawings submitted. After this Contractor has fulfilled his obligation, he shall notify all other Contractors. After each drawing has been coordinated between trades, each trade shall sign each drawing, indicating acceptance of the installation. This Contractor shall then print the coordination original and these prints submitted through the General Contractor to the architect for review and comment, similar to shop drawings. Comments made on these drawings shall result in a correction and re-submittal of the drawings. A Subcontractor who fails to promptly review and incorporate his work on the drawings shall assume full responsibility of any installation conflicts affecting his work and of any schedule ramifications. Review of coordination drawings shall not diminish responsibility under this Contract for final coordination of installation and maintenance clearances of all systems and equipment with Architectural, Structural, Mechanical, and Electrical Contractors.

1.12 PRODUCT OPTIONS AND SUBSTITUTIONS

A. Refer to the Conditions of the Contract (General and Supplementary) and Division 1 for definitions, requirements, and procedures.

B. If materials of equipment are substituted for specified items that alter the systems shown or its physical characteristics, or which have different operating characteristics, clearly note the alterations or differences and call it to the attention of the A/E. Under no circumstances shall substitutions be made unless identical material or equipment has been successfully operated for at least three consecutive years.

C. All substitution made by the Contractor shall require the Contractor to fully coordinate the substitution with other trades. The Contractor must make any modifications required by the substitution at no additional cost to the Owner. In addition the Contractor must notify the A/E of any changes required and obtain approval for the changes. The review of the shop drawings by the A/E shall not relieve the Contractor from his responsibility as set forth in this specification.

1.13 NAMEPLATE DATA

A. Provide permanent operational data nameplate on each item of power operated equipment, conduits with pull string, indicating manufacturer, product name, model number, serial number, capacity, operating and power characteristics, labels of tested compliances, and similar essential data. Locate nameplates in a readily accessible location.

1.14 DELIVERY STORAGE AND HANDLING

A. Deliver products to project properly identified with names, model numbers, types, grades, compliance labels, and similar information needed for distinct identifications; adequately packaged and protected to prevent damage during shipment, storage, and handling.

B. Store equipment and materials at the site, unless off-site storage is authorized in writing. Protect stored equipment and materials from damage. All devices shall be stored in a locked room. Assume responsibility for the devices until the date of final inspection.
C. Coordinate deliveries of electrical materials and equipment to minimize construction site congestion. Limit each shipment of materials and equipment to the items and quantities needed for the smooth and efficient flow of installations.

1.15 RECORD DOCUMENTS

A. As work progresses and for the duration of Contract, maintain a complete and separate set of prints of Contract Drawings at job site at all times. Record work completed and all changes from original Contract Drawings clearly and accurately including work installed as a modification or addition to the original design. Work shall be updated on a weekly basis and shall be made available for review by Architect. Failure to perform this work shall be reason for withholding requisition payments. In addition, take photographs of all concealed equipment in gypsum board ceilings, shafts, and other concealed, inaccessible work. At completion of work, make copies of photographs with written explanation on back. These shall become part of Record Documents.
B. At completion of work prepare a complete set of Record As-Built Drawings in AutoCAD, Computer Aided Drafting (CAD) software, showing all systems as actually installed, including all fire alarm and electrical circuitry. The Record As-Built Drawings computer files shall be made available to the Architect, Engineer and Owner prior to final payment.
C. The Architect will not certify the accuracy of the Record Drawings. This is the sole responsibility of the Electrical Contractor.
D. This trade shall submit the record set for approval by the Fire and Building Departments in a form acceptable to the departments, when required by the jurisdiction.
E. Drawings shall show record condition of details, sections, riser diagrams, control changes and corrections to schedules. Schedules shall show actual manufacturer and make and model numbers of final equipment installation.

1.16 WARRANTIES

A. Refer to the Conditions of the Contract (General and Supplementary) and Division 1 for definitions, requirements, and procedures.
B. All work and equipment furnished under this Section shall be guaranteed free from defects in workmanship or materials for a period of one (1) year, unless specifically noted otherwise for a particular system, from the date of final acceptance of the systems as set forth in this Contract. The Subcontractor shall replace any defective work developing during this period, unless such defects are clearly the result of misuse of equipment by persons not under the control of the Subcontractor, without cost to the Owner. Where such defective work results in damage to work of other Sections, all such work shall be restored to its original condition by mechanics skilled in the affected trade, at the expense of the Subcontractor. The Subcontractor shall submit a separate written guarantee stipulating the aforesaid conditions.
C. Prior to or at the time of Substantial Completion for the work and during administrative close-out of the project, submit one (1) copy of all specified warranties and guarantees to the Architect for review, approval and subsequent transmittal to the Owner.
D. Warranties and guarantees, including those specified in excess of the general one (1) year guarantee, shall be complete for all specific materials, systems, sub-systems, equipment, appliances and products specified and required by the Contract Document.
E. Warranties and guarantees shall clearly define what is to be guaranteed; the extent, terms, conditions, time and effective dates.
F. Copies of the same warranties and guarantees shall be included in the "Operating and Maintenance Manual" as specified herein.

1.17 CLEANING

A. Refer to the Conditions of the Contract (General and Supplementary) and Division 1 for definitions, requirements, and procedures.
B. Upon completion of work, the Contractor shall clean, polish and leave bright, fixtures and lamps, and shall remove dust, dirt, debris and loose plaster from panelboards, controls, and

switchboards. Unused openings in pull boxes, junction boxes, equipment and raceways shall be capped or closed by an approved means. Replace all inoperative lamps.

1.18 DEFINITION OF TERMS

A. "This Contractor" or "E.C." specifically means, the Electrical Contractor working under this section of the specifications.
B. "Concealed" means hidden, in chases, furred spaces, walls, above ceilings or enclosed in construction.
C. "Exposed" means visible in sight or not installed "concealed" as defined above.
D. "Approved Equal" means any equipment or material which is approved by the Engineer and equal in quality, durability, appearance, strength, design and performance to the equipment or material originally specified.
E. "Conduit" shall mean all conduit including fittings, joints, hangers and supports.
F. "Furnish" shall mean to purchase and deliver to the project site complete with every necessary appurtenance and support, all as part of the electrical work.
G. "Install" shall mean to perform every operation necessary to establish secure mounting and correct operation at the proper location in the project, all as part of the electrical work.
H. "Provide" shall mean to furnish and install.

1.19 QUALITY ASSURANCE

A. Obtain services of manufacturer's representatives of electrical equipment, during erection and construction of their respective equipment to insure proper installation of same.
B. A letter is required from each system manufacturer's representative certifying to the A/E that requirements have been checked and are properly installed and operating.

1.20 PERFORMANCE TESTS - ELECTRICAL

A. Test and adjust the electrical systems and equipment during the progress of the work.
B. Upon completion of work and after preliminary tests to assure that all systems are complete and in proper working order, arrange with the A/E to conduct performance tests of the electrical systems. These tests may be witnessed by the A/E prior to acceptance of systems and shall be arranged for the purpose of demonstrating compliance with contract documents. During this period, visually inspect all electrical equipment. Lighting fixtures shall be tested with specified lamps in place for not less than six (6) hours. Check voltages to assure that all transformer taps are properly set.
C. General operating tests shall be performed under as near design conditions as possible, for a period of not less than one (1) hour for each system, and shall demonstrate that all equipment is functioning in accordance with specifications. Furnish all instruments, ladders, test equipment and personnel required for tests. Any equipment or systems found by test to be deficient or unsatisfactory shall be replaced and tests repeated as often as necessary to assure compliance with contract documents.
D. Test all feeders, sub-feeders and all branch wiring for amperage, voltage, phase balance, phase sequence of A,B,C and insulation resistance, then submit the results of this test to the A/E neatly typed in triplicate for review. This test may be conducted at any time up to, through and including, the guarantee period if requested by the A/E, at no additional cost to the Owner.
E. Phase balance the complete electrical system, phase balance all panels as near as loads will permit under normal working conditions.
F. Test all ground conductors for current flow, as near design operating conditions as possible. If any measured current exceeds one (1) ampere, determine and correct the cause. Also, if measured resistance is greater than 5 ohms indoor or 10 ohms outdoor, determine and correct the cause.
G. During the progress or completion of the work it shall be subject to the inspection of the Owner and to such other inspectors, as may have jurisdiction, including those of the Electric Company, Fire Department and the Telephone Company.
H. The Contractor shall be responsible for correct voltages, tap settings, trip settings and correct phasing on all equipment. Secondary voltages shall be measured at the line side of the main breakers with the breakers in an open position, at panelboards, and at such other location on the distribution systems and branch circuits as directed by the Engineer.

I. At completion of the work, Contractor shall submit to the Owner's representative in writing a statement stating: (1) that the work is complete; (2) that the entire installation is in accordance with the drawings and specifications; (3) that preliminary tests have been made; and (4) that the work is ready for final inspection and test.
J. A final inspection of the installation to determine compliance with the drawings and specifications will be made by the Owner's representative. Work will be checked for quality of materials, quality of workmanship, proper installation and finished appearance. The electrical contractor shall provide the services of the project electrical foreman for inspection purposes. The foreman shall remove and reinstall wiring devices, junction box covers, panelboard trims, switchboard covers, terminal box covers, ceiling tiles, lighting fixtures, etc. as required to facilitate any inspections required by the Owner's representative.
K. The Contractor shall arrange and conduct operating tests on all equipment in the presence of the Owner's representative. The components parts of systems and the various systems shall be demonstrated to operate in accordance with the requirements and intent of this specification. Any non-complying or defective materials or workmanship disclosed as a result of the inspection and tests shall be corrected promptly by the Contractor, and the tests repeated as often as necessary until approved and accepted by the Owner's representative.
L. The Contractor shall visit the site to acquaint himself with existing conditions. No extra compensation will be paid for failure to comply with this paragraph.
M. The Electrical Contractor shall provide supervision, labor, materials, tools, test equipment, and all other equipment or services and expenses required to test, adjust, set, calibrate, and operationally check work and components of the electrical systems and circuitry throughout this section.
N. The electrical contractor shall pay for all tests including expenses incident to retests occasioned by defects and failures of equipment to meet specifications at no additional cost to the owner.
O. Any defects or deficiencies discovered in any of the electrical work shall be corrected at no cost to the owner.
P. All testing shall be compatible with the manufacturer's installation instructions.

1.21 SEISMIC RESTRAINT

A. It is the intent of this seismic specification to keep all electrical building system components in place during a seismic event.
B. All electrical systems must be installed in strict accordance with seismic codes, component manufacturer's and building construction standards. Whenever a Conflict occurs between the manufacturer's or construction standards, the most stringent shall apply.
C. This contractor shall engage a professional structural engineer registered in the jurisdiction of this project to review the entire installation to determine all seismic restraint requirements and methods. Contractor shall submit a report outlining the structural engineer's review as well as seismic restraint shop drawings and supporting calculations prepared by the professional structural engineer for review by the Architect.
D. Seismic restraints shall be designed in accordance with seismic force levels as detailed in the applicable building code.

1.22 TEMPORARY LIGHT AND POWER

A. Under this Section of the specifications, this Contractor shall provide temporary electric service, sized suitable for construction for each trade. This contractor shall provide all material and labor for temporary electrical service per the local power company's requirements and standards with all necessary panelboards, disconnect switches, transformers, conduit, wiring, etc. as required. This contractor shall pay all associated costs, up front.
B. Where temporary electrical service cannot be obtained from the local power company, this contractor shall provide a temporary, on-site, electric generator with all necessary panelboards, disconnect switches, transformers, conduit, wiring, etc. as required. The fuel used for the generator shall be provided and paid for by this Contractor.
C. This contractor shall provide a distribution system with circuits for receptacles and lighting as required for construction. This contractor shall maintain the temporary electrical system during construction and remove the system when construction is complete.
D. Under this section of the specifications, this Contractor shall provide and maintain temporary lighting based on using not less than one 100-watt lamp for each 100 square feet of building floor

area and one duplex GFCI receptacle for each 200 square feet of building floor area. Where higher lighting intensities are required by Federal or State laws or otherwise specified, the above specified wattage shall be increased to provide the increase intensities.

E. This contactor shall provide temporary power and telephone services from the local telephone company for site trailers, fax machines, computers, etc., per the general contractor's direction.
F. The service shall incorporate ground fault protection and comply with NEC Article 527 and OSHA requirements.

1.23 PERMITS

A. Obtain all required electrical permits and pay all fees for same.
B. Provide to Engineer, in duplicate, a certificate of final inspection from the authority having jurisdiction for the electrical and systems.

1.24 OPERATING, INSTRUCTION, AND MAINTAINANCE MANUALS

A. Refer to Section 01700 – CONTRACT CLOSEOUT for submittal procedures pertaining to operating and maintenance manuals.
B. Each copy of the approved operating and maintenance manual shall contain copies of approved shop drawings, equipment literature, cuts, bulletins, details, equipment and engineering data sheets and typewritten instructions relative to the care and maintenance for the operation of the equipment, all properly indexed.

1.25 BIDDERS REPRESENTATION

A. By the act of submitting a bid for the proposed contract, the Bidder represents that:
    1. The Bidder and all subcontractors the Bidder intends to use have carefully and thoroughly reviewed the drawings, specifications and other construction contract documents and have found them complete and free from ambiguities and sufficient for the purpose intended; further that,
    2. The Bidder and workmen, employees and subcontractors the Bidder intends to use are skilled and experienced in the type of construction represented by the construction contract documents bid upon; further that,
    3. Neither the Bidder nor any of the Bidder's employees, agents, intended suppliers or subcontractors have relied upon any verbal representations, allegedly authorized or unauthorized from the Owner, or the Owner's employees or agents including architects, engineers or consultants, in assembling the bid figure; and further that,
    4. The bid figure is based solely upon the construction contract documents and properly issued written addenda and not upon any other written representation.

1.26 UTILITY COMPANY & AGENCY COORDINATION

A. This section includes, but is not limited to coordination with the following utilities, agencies and authorities having jurisdiction:
    1. Power Company: This Contractor shall coordinate with the local utility power company and provide all material & labor required to comply with the utility power company's requirements and standards, prior to ordering any electrical equipment, such as, switchgear, panels, transformers, disconnect switches, SPD, etc. This Contractor shall confirm metering sequence (hot or cold) and make the appropriate provisions and/or changes for the utility companies approved metering sequence arrangement. Notify Engineer of discrepancies between the plans and the local utility company's standards. No extra compensation will be given for corrections required to this Contractor for failure to coordinate with the utility company, but corrections shall be made. All A.I.C. ratings, grounding, bonding, concrete pads & curbs, protective bollards, raceways, ductbank, manholes, etc., shall be in accordance with the utility company's standards.
    2. Local Fire Marshal: This contractor shall verify with the local fire alarm official, the type of master-box or municipal connection required for this project. This contractor shall provide all material & labor to comply with the local municipality. Notify Engineer of discrepancies between

the plans and the municipality's standards. No extra compensation will be given for corrections required for failure to coordinate with the municipality, but corrections shall be made.

3. Electrical Inspector: Review plans and specifications with the local electrical and/or wiring inspector(s). Obtain and pay for all permits.
4. Building Inspector: Review plans and specifications with the local building inspector, if not done so by the General Contractor.
5. OSHA Representative: Review plans and specifications with the local OSHA representative, if not done so by the General Contractor.

B. The Electrical Contractor shall pay for all permits, inspections, labor, material and fees associated with the various Utility Companies coordination requirements mentioned in this section and for this Contractor's work under this project.
C. The Electrical Contractor shall carry a minimum of $15,000 of utility expenses. In the case the expenses are less than the carried expense, the difference will be credited to the owner. In the case the utility charges are more than the carried expense, the remaining payment shall be coordinated between the Electrical Contractor, General Contractor and Owner.
D. HVAC, Plumbing, Fire Protection, and Electrical Drawings are diagrammatic. They indicate general arrangements of mechanical and electrical systems and other work. They do not show all offsets required for coordination nor do they show the exact routings and locations needed to coordinate with structural and other trades and to meet Architectural requirements.
E. In all spaces, prior to installation of visible material and equipment, including access panels, review Architectural Drawings for exact locations and where not definitely indicated, request information from Architect. Where the electrical work shall interfere with the work of other trades, assist in working out the space conditions to make satisfactory adjustments before installation. Without extra cost to the Owners, make reasonable modifications to the work as required by normal structural interferences. Pay the General Contractor for additional openings, or relocating and/or enlarging existing openings through concrete floors, walls, beams and roof required for any work which was not properly coordinated. Maintain maximum headroom at all locations. All piping, duct, conduit, and associated components to be as tight to underside of structure as possible.
F. If any electrical work has been installed before coordination with other trades so as to cause interference with the work of such trades, all necessary adjustments and corrections shall be made by the trades involved without extra cost to the Owners.
G. Where conflicts or potential conflicts exist and engineering guidance is desired, submit sketch of proposed resolution to Architect and Engineer for review and approval.

PART 2 – PRODUCTS

2.1 CONDUIT

A. Minimum Size: ¾-inch, unless otherwise specified.
B. Underground Installations:
   1. More than Five Feet from Foundation Wall: Use thick wall nonmetallic conduit concrete encased.
   2. Within Five Feet from Foundation Wall: Use rigid steel conduit concrete encased.
   3. In or Under Slab on Grade: Use plastic coated conduit.
   4. Minimum Size: 1-inch.
C. Outdoor Locations, Above Grade: Use rigid steel conduit.
D. In Slab Above Grade:
   1. Use rigid steel conduit.
   2. Maximum Size Conduit in Slab: ¾ inch (19 mm); ½ inch (13 mm) for conduits crossing each other.
E. Wet and Damp Locations: Use rigid aluminum conduit.
F. Dry Locations:
   1. Concealed and in Cable-Tray: Use metal clad (MC) cable (see Division 1)
   2. Exposed: (Unfinished or utility spaces) Use electrical metallic tubing.
G. Metal conduit: Rigid Steel Conduit shall comply with ANSI C80.1 and be heavy wall zinc coated steel. Rigid Aluminum Conduit shall comply with ANSI C80.5. Intermediate Metal Conduit (IMC) shall be rigid steel. Fittings and Conduit Bodies shall comply with ANSI/NEMA FB 1 and material to match conduit. Acceptable manufacturers are Western Tube and Conduit Company, Allied Tube and Conduit Company and Triangle Wire and Cable, Inc.

H. Flexible metal conduit shall be interlocked aluminum contruction. Fittings shall comply with ANSI/NEMA FB 1. Acceptable manufacturers are AFC Cable Systems, Electri-Flex Company and Eastern Flexible Conduit Technologies. All flexible conduits shall include a grounding conductor.
I. Electrical metallic tubing (EMT) shall comply with ANSI C80.3; galvanized zinc coated steel tubing. Fittings and Conduit Bodies shall comply with ANSI/NEMA FB 1; steel, compression or set screw type. Acceptable manufacturers are Western Tube and Conduit Company, Allied Tube and Conduit Company and Triangle Wire and Cable, Inc.
J. Nonmetal conduit shall comply with NEMA TC 2; Schedule 40 PVC, or as indicated on plans. Fittings and Conduit Bodies shall comply with NEMA TC 3. Acceptable manufacturers are Carlon or approved equal.
K. Flexible nonmetallic conduit (Sealtite) shall be UL and CSA listed for purpose specified and shown. Acceptable manufacturers are Carlon or approved equal.
L. Install conduit in accordance with NECA "Standard of Installation." Install nonmetallic conduit in accordance with manufacturer's instructions.
M. Arrange supports to prevent misalignment during wiring installation. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers. Group related conduits; support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional conduits. Fasten conduit supports to building structure and surfaces under provisions of Division 1. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports. Do not attach conduit to ceiling support wires.
N. Arrange conduit to maintain headroom and present neat appearance. Route exposed conduit parallel and perpendicular to walls. Route conduit installed above accessible ceilings parallel and perpendicular to walls. Route conduit in and under slab from point-to-point. Do not cross conduits in slab.
O. Maintain adequate clearance between conduit and piping. Maintain 12-inch (300 mm) clearance between conduit and surfaces with temperatures exceeding 104 degrees F (40 degrees C).
P. Cut conduit square using saw or pipe cutter; de-burr cut ends. Bring conduit to shoulder of fittings; fasten securely. Join nonmetallic conduit using cement as recommended by manufacturer. Wipe nonmetallic conduit dry and clean before joining. Apply full even coat of cement to entire area inserted in fitting. Allow joint to cure for 20 minutes, minimum. Use conduit hubs or sealing locknuts to fasten conduit to sheet metal boxes in damp and wet locations and to cast boxes.
Q. Install no more than equivalent of three 90-degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use hydraulic one-shot bender to fabricate or factory elbows for bends in metal conduit larger than 2 inch (50 mm) size.
R. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic, control and expansion joints. All expansion and deflection fittings shall have a ground strap. Provide suitable pull string in each empty conduit except sleeves and nipples. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
S. Ground and bond conduit under provisions of NEC 250.

2.2 BUILDING WIRE & CABLE

A. Building Wire and Cable shall be copper with 600V insulation rated at 75°C minimum, Type XHHW insulation for feeders and branch circuits larger than #3 AWG; Type THHN/THWN insulation for feeders and branch circuits #4 AWG and smaller.
B. Conductors shall be of soft drawn 98% minimum conductivity properly refined copper, solid construction where No. 10 AWG and smaller, stranded construction where No. 8 AWG and larger.
C. Exterior of wires shall bear repetitive markings along their entire length indicating conductor size, insulation type and voltage rating.
D. Exterior of wires shall be color coded, so as to indicate a clear differentiation between each phase and between each phase and neutral. In all cases, grounded neutral wires and cables shall be identified by the colors "white" or "gray". In sizes and insulation types where factory applied colors are not available, wires and cables shall be color coded by the application of colored plastic tapes in overlapping turns at all terminal points, and in all boxes in which splices are made. Colored tape shall be applied for a distance of 6 inches along the wires and cables, or along their entire extensions beyond raceway ends, whichever is less.
E. Final connections to motors shall be made with 18" of neoprene sheathed flexible conduit.
F. Minimum branch circuit conductor size shall be No. 12 AWG installed in conduit. Motor control circuit wiring shall be minimum No. 14 AWG installed in conduit.

G. Fire alarm and security system wiring shall be No. 16 twisted non-shielded pairs for alarm and trouble circuits and a minimum of #14 AWG for device power, control and alarm annunciation circuits. Fire alarm system riser circuits shall be 2-hour rated, CI type (circuit integrity) cable per NFPA 72 and NEC 760.
H. Other wires and cables required for the various systems described elsewhere in this section of the Specifications shall be as specified herein, as shown on the Contract Drawings, or as recommended by the manufacturer of the specific equipment for which they are used, all installed in conduit.
I. Metal clad sheathed cable NFPA 70, type MC may be used for branch circuitry where shown and where run concealed and not subject to physical damage. All branch circuits shall be run in conduit from the panelboard to the first outlet. All type MC cable used shall contain a full size insulated ground conductor. All conductors shall be copper. All type MC cable insulation used shall have voltage rating of 600 volts, shall have a temperature rating of 75° C, and shall be thermoplastic material. Armor material shall be steel and armor design shall be interlocked metal tape. Fire alarm rated MC cable may be used for fire alarm work where concealed and approved by the Authority Having Jurisdiction.
J. Metal-Clad cable (Type MC) for circuits supplying computer equipment, electronic discharge lighting and other sensitive electronic equipment shall consist of 90°C THHN copper conductors with insulated ground and oversized neutral conductor (or one full size neutral conductor for each phase conductor). Cable shall be U.L. listed/labeled, and shall meet the requirements of NEC Art. 334 and 675.
K. Use armored cable (AFC Type HCF-90 or equal) for branch circuits and feeders in all buildings in the following areas; data processing systems, places of assembly, under raised floors, above suspended ceilings and in other environmental air-handling spaces. This cable shall consist of 90°C THHN copper conductors with combined armor/bond wire (equipment) plus a green insulated ground (redundant). Use insulated bushings. Cable shall be U.L. listed/labeled, and shall meet the requirements of NEC Art. 333, 517 and 645.
L. Wiring materials except MI cable shall be manufactured by Triangle, Essex, General Cable, AFC, Southwire or equal.
M. Concealed Dry Interior Locations: Use only building wire Type THHN/THWN or XHHW insulation in raceway, or metal clad cable where concealed and code acceptable.
N. Exposed Dry Interior Locations: Use only building wire, Type THHN/THWN or XHHW insulation, in raceway.
O. Above Accessible Ceilings: Use only building wire, Type THHN/THWN or XHHW insulation, in raceway or metal clad cable where code acceptable.
P. Wet or Damp Interior Locations: Use only building wire, Type THHN/THWN or XHHW insulation, in raceway.
Q. Exterior Locations: Use only building wire, Type THHN/THWN or XHHW insulation, in raceway.
R. Wiring methods, in general, are as follows:
    1. Galvanized rigid steel conduit shall be used for telephone system sleeves for main cable runs between floors, closets, etc. and for sweeps, bends, etc. in ductbanks and as specifically noted on the plans. EMT shall be used generally for exposed circuiting in unfinished spaces. Metal clad cable (type MC) may be used for branch circuiting and fire alarm rated MC cable for fire alarm circuiting where run concealed and where code acceptable.
    2. To prevent transmittal of vibration to conduit, connections to any vibration producing equipment (i.e. transformers, motors, etc.) shall be terminated by 18 inches of flexible metal conduit. Where flexible connections are exposed to grease and oil, liquid-tight flexible metal conduit shall be used.
    3. In general, no splices or joints shall be permitted in either feeders or branches except at outlets or accessible junction boxes. Splices in wire #8 AWG and smaller shall be pigtail type, made mechanically tight. All conduit systems shall be complete.
    4. Raceway, boxes, etc., run on walls in wet areas which are subject to being washed down, shall be mounted on the walls with 1/4" stand-offs. All boxes shall be cast type.
S. Route wire and cable as required to meet the Project Conditions. Install cable in accordance with the NECA "Standard of Installation." Use solid conductor for feeders and branch circuits 10 AWG and smaller. Use stranded conductors for control circuits. Use conductor not smaller than 12 AWG for power and lighting circuits. Use conductor not smaller than 16 AWG for control circuits. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet (25 m). Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet (160 m). Pull all conductors

into raceway at same time. Use suitable wire pulling lubricant for building wire 4 AWG and larger. Protect exposed cable from damage.

T. Support cables above accessible ceiling, using spring metal clips or metal cable ties to support cables from structure or ceiling suspension system, cables that are not part of the ceiling system cannot be supported from ceiling supports. Do not rest cable on ceiling panels. Use suitable cable fittings and connectors. Neatly train and lace wiring inside boxes, equipment, and panelboards.

U. Clean conductor surfaces before installing lugs and connectors. Make splices, taps, and terminations to carry full ampacities of conductors with no perceptible temperature rise. Use suitable reducing connectors or mechanical connector adapters for connecting aluminum conductors to copper conductors. Use split bolt connectors for copper conductor splices and taps, 6 AWG and larger. Tape un-insulated conductors and connector with electrical tape to 150 percent of insulation rating of conductor. Use solderless pressure connectors with insulating covers for copper conductor splices and taps, 8 AWG and smaller. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller. Identify and color code wire and cable. Identify each conductor with its circuit number or other designation indicated.

2.3 BOXES

A. Outlet Boxes:
   1. Each outlet in wiring or raceway systems shall be provided with an outlet box to suit conditions encountered. Boxes installed in normally wet locations shall be of cast-metal type having hubs. Concealed boxes shall be cadmium plated or zinc coated sheet metal type. Old work boxes with Madison clamps are not allowed in new construction.
   2. Each box shall have sufficient volume to accommodate number of conductors in accordance with requirements of NFPA 70. Boxes shall not be less than 1-1/2" deep unless shallower boxes are required by structural conditions and are specifically approved by Architect. Ceiling and bracket outlet boxes shall not be less than 4" octagonal except that smaller boxes may be used where required by particular fixture to be installed. Flush or recessed fixtures shall be provided with separate junction boxes when required by fixture terminal temperature requirements. Switch and receptacle boxes shall be 4" square or of comparable volume. Luminaire and equipment supporting boxes shall be rated for weight of equipment supported; include 1/2 inch (13 mm) male fixture studs where required.
   3. Provide metallic boxes rated for 2-hour, fire-rated walls with gasket to reduce noise-transmission in all fire-rated walls. A minimum horizontal distance of 24-inches shall separate metallic boxes located on opposite sides of fire walls. This minimum horizontal spacing may be reduced using UL classified wall opening protective materials, commonly known as "putty pads" or "insert pads" pending written approval from the local authority having jurisdiction (AHJ). Refer to Architect's plans for all wall types prior to bid and any related work that will require 2-hour fire ratings.
   4. All boxes installed in demising walls separating tenants, electrical room walls, mechanical room walls, conference room walls, nurse's office walls, and other room walls deemed private by the Owner shall be provided with gasket to reduce noise-transmission.
   5. All boxes installed in exterior walls shall be provided with appropriate caulking and gaskets to seal off and prevent air leakage. Follow caulking and gasket manufacturer's installation guidelines to ensure correct and effective installation.
   6. Acceptable Manufacturers:
      a. Appleton
      b. Crouse Hinds
      c. Steel City
      d. RACO

B. Pull and Junction Boxes: Where necessary to terminate, tap off, or redirect multiple raceway runs or to facilitate conductor installation, furnish and install appropriately designed boxes. Boxes shall be fabricated from code gauge steel assembled with corrosion resistant machine screws. Box size shall be as required by Code. Where intermediate cable supports are necessary because of box dimensions, provide insulated removable core brackets to support conductors. Junction boxes are to be equipped with barriers to separate circuits. Where splices are to be made, boxes shall be large enough to provide ample work space. All conductors in boxes are to be clearly tagged to indicate characteristics. Boxes shall be supported independently of raceways. Junction boxes in moist or wet areas shall be galvanized type. Boxes larger than 4-inches square shall have hinged covers. Boxes larger than 12-inches in one dimension will be allowed to have screw fastened

covers, if a hinged cover would not be capable of being opened a full 90 degrees due to installation location.

C. Install boxes in accordance with NECA "Standard of Installation." Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections and compliance with regulatory requirements.
D. Set wall mounted boxes at elevations to accommodate mounting heights indicated or specified in section for outlet device. Electrical boxes are shown on drawings in approximate locations unless dimensioned. Adjust box location up to 10-feet (3m) if required to accommodate intended purpose. Orient boxes to accommodate wiring devices. Maintain headroom and present neat mechanical appearance.
E. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches (150 mm) from ceiling access panel or from removable recessed luminaire. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Division 7.
F. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes. Locate outlet boxes to allow luminaires positioned as shown on reflected ceiling plan. Align adjacent wall mounted outlet boxes for switches, thermostats, and similar devices.
G. Use flush mounting outlet box in finished areas. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening. Do not install flush mounting box back-to-back in walls; provide minimum 6-inches (150 mm) separation. Provide minimum 24 inches (600 mm) separation in acoustic rated walls. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness. Use stamped steel bridges to fasten flush mounting outlet box between studs. Install flush mounting box without damaging wall insulation or reducing its effectiveness.
H. Use adjustable steel channel fasteners for hung ceiling outlet box. Do not fasten boxes to ceiling support wires. Support boxes independently of conduit. Use gang box where more than one device is mounted together. Do not use sectional box. Use gang box with plaster ring for single device outlets. Use cast outlet box in exterior locations exposed to the weather and wet locations. Use cast floor boxes for installations in slab on grade; formed steel boxes are acceptable for other installations. Set floor boxes level.
I. Adjust floor box flush with finish flooring material. Adjust flush-mounting outlets to make front flush with finished wall material. Install knockout closures in unused box openings.

2.4 WIRING DEVICES

A. Provide wiring device type plates for all wall-mounted devices. All wall plates shall be either brushed aluminum or smooth high impact nylon for all public areas as directed by the Architect. Provide galvanized steel for all Utility, Electric and Mechanical Rooms. Colors of wall plates as directed by the Architect.
B. Wiring devices standard for the project (i.e., with no specific type indicated) shall conform to the following:
    1. Visible part colors of wiring devices shall be as directed by the Architect for all public areas. Provide Ivory colored devices for all Utility, Electrical and Mechanical rooms.
    2. Exclude compact type devices.
C. Wiring device switches shall be toggle type, A.C. quiet design, specification grade, 20 amps on 120 volt circuits. Switches shall be mounted 48-inches to center line above finished floor unless noted otherwise. Equivalent 277volt, 20 amp switches shall be used where required.
D. Standard duplex convenience receptacles shall be 125volt, 20 amps, three wire (two circuit wires plus ground), "U-slot" ground NEMA configuration 5-20R, specification grade. Receptacles shall be mounted 18" to center line above finished floor unless noted otherwise. Where indicated on plans provide receptacles with ground fault current interrupters, UL Class A; 20A, 125V.
E. Non-standard convenience receptacles and special purpose power supply receptacles shall be as listed on plans.
F. Provide ground fault circuit interrupter (GFCI), weather-resistant type receptacles in all wet and damp locations as defined by the National Electrical Code. All outdoor receptacles and where indicated on the plans shall be installed in a weatherproof while-in-use enclosures.
G. Provide extension rings to bring outlet boxes flush with finished surface. Clean debris from outlet boxes. Install devices plumb and level. Install receptacles with grounding pole on top. Connect wiring device grounding terminal to branch circuit equipment grounding conductor. Use jumbo size

plates for outlets installed in masonry walls. Install galvanized steel plates on outlet boxes and junction boxes in unfinished areas, above accessible ceilings, and on surface mounted outlets.

H. Install wall switch 48 inches above finished floor to top of handle. On position, shall be up. Install convenience receptacles 18-inches above finished floor. Install convenience receptacle 6-inches above backsplash of counter. Install dimmer switches 48 inches above finished floor to top.

I. Verify that each receptacle device is energized. Test each receptacle device for proper polarity. Test each GFCI receptacle device for proper operation.

2.5 GROUNDING & BONDING

A. Ground all systems and equipment in accordance with best industry practice, the requirements of NFPA 70 and the following:
   1. The ground bus of the main switchboard shall be connected to the main grounding electrode specified below by means of insulated conductors run in conduit.
   2. The main grounding electrode shall be an accessible point on the nearest metallic main water service pipe. Connection shall be made on the street side of the main valve utilizing a ground clamp of a type specifically manufactured for the purpose. Bonding jumpers shall be provided around the water meters and around insulating joints and/or sections.
   3. Establish a ground bonding connection from the effectively grounded structural building steel to each cold-water main entering the building. Each bonding connection shall consist of insulated conductors run in conduit.
   4. The water pipe ground shall be supplemented by an additional electrode consisting of three (3) buried 3/4" diameter by 10'-0" long copperweld ground rods spaced 10'-0" apart, and provided in sufficient quantity so as to have measured resistance to ground of not more than 10 ohms. Provide independent certification confirming this. Establish a bonding connection from the electrode consisting of green insulated conductors run in conduit and sized as indicated hereinafter for main and supply side of service bonding jumpers.
   5. Provide grounding bonds between all metallic conduits of the light and power system which enter and leave cable chambers or other non-metallic cable pulling and splicing boxes. Accomplish this by equipping the conduits with bushings of the grounding type individually cross connected.
   6. Bond metallic conduits containing grounding electrode conductors and main bonding conductors to the ground bus service enclosure and/or grounding electrode at both ends of each run utilizing grounding bushings and jumpers.
   7. Provide grounding bonds for all metallic conduits of the light and power system which terminate in pits below equipment for which a ground bus is specified. Accomplish this by equipping the conduits with bushings of the grounding type connected individually to the ground bus.
   8. Provide supplementary ground bonding where metallic conduits terminate at metal clad equipment (or at the metal pull box of equipment) for which a ground bus is specified. Accomplish this be equipping the conduits with bushings of the grounding type connected individually by means of jumpers to the ground bus. Exclude the jumpers where directed. This exclusion will be required where an isolated ground for electronic equipment is to be maintained.
   9. Each grounding type bushing shall have the maximum ground wire accommodation available in standard manufacture for the particular conduit size. Connection to bushing shall be with wire of this maximum size.
   10. Bonding conductors on the load size of the service device and equipment grounding conductors shall be sized in relation to the fuses or trip size of the overcurrent device supplying the circuit.
   11. The central equipment for the fire protective alarm system and telephone system shall have its grounding terminal connected to the grounding electrode by means of a No. 6 green coded insulated conductor, run in 3/4" conduit. Utilize a ground clamp of a type specifically manufactured for the purpose.
   12. Install rod electrodes per this section & in compliance with Code. Install additional rod electrodes as required to achieve specified resistance to ground. Install 4/0 AWG bare copper wire in foundation footing as required. Provide isolated grounding conductor for circuits supplying personal computers as indicated on the plans. Equipment Grounding Conductor: Provide separate, insulated conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing. Provide a 3/4" raceway with #6 AWG ground wire from main telephone terminal board to the service ground.

13. Perform inspections and tests listed in NETA ATS, Section 7.13. Document test results in Record Documents.
14. Grounding means shall never exceed 10 ohms when located outdoors, or 5 ohms when located indoors.
15. An acceptable means of grounding is to provide an underground 2" thick, concrete-encased electrode of either ½" diameter, electrically conductive reinforcing bar of #4/0 bare copper conductor (minimum of 20-feet in length) per NEC 250.52(A)(3).

2.6 EQUIPMENT WIRING SYSTEMS

A. Cords & Caps: Manufacturers: Hubbel, Pass & Seymour or Arrow Hart. Attachment Plug Construction: Conform to NEMA WD 1. Configuration: NEMA WD 6; match receptacle configuration at outlet provided for equipment. Cord Construction: ANSI/NFPA 70, Type SO multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.

B. Motor Control Equipment: Each motor shall have a starter furnished under this Section where it is not being supplied by other sections. Wire and installed under this Section, unless otherwise noted herein or on the drawings.
   1. Connect the motor starting devices for all motors, except where otherwise specifically provided for under other sections, furnish all necessary connections between controllers and motors, in conduit and leave motors ready to start. Change connections, if necessary, to secure proper rotation of motors.
   2. Perform all the necessary wiring in connection with the motor starting and remote control equipment, where so designated, furnished under other sections. Where control or starting equipment is sent to the job as individual units, they shall be installed, wired up complete and left ready for operation under work of this section.
   3. Wiring to motor shall be in rigid conduit with watertight flexible conduit from wall to motor only.

C. Included in the general requirements for motor control equipment wiring and connections, the following specified items shall be performed:
   1. Installation and connection of motor controls which will be furnished under the heating, ventilating and air conditioning section and the plumbing section.

D. Starters by This Contractor: Where starters are not provided under other sections, this Contractor shall furnish starters for motors 1/2 HP and larger and where required by the control sequence for smaller motors and shall be magnetic across the line starters with adjustable overload protection in each phase line, all in NEMA 1 enclosures. Starters shall be solid state or acceptable substitute. Combination starters shall be with fused or non-fusible disconnect as required.
   1. Magnetic starters shall have 120 volt holding circuits, integral transformers, auxiliary contacts as required by the control sequence and integral selector switches with push-to-test pilot lights. One side of each pilot light shall be connected on the load side of the motor starter.
   2. Integral transformers shall have overload protection on the secondary section and, also, the secondary neutral shall be grounded.
   3. Starters shall be as manufactured by Square D Company or General Electric.

E. Temperature control wiring shall be by others as indicated under the heating, ventilating and air conditioning section.

F. Provide a suitable plywood backboard on a wall and/or angle iron or unistrut framework with plywood for all starters. Starters will be installed and wired under this section.

G. All starters shall be located next to the panel feeding same, if panel is in a closet or utility space, unless noted otherwise on the drawings. If panel is located in a finished space (i.e. corridor, gymnasium, etc.) starters shall be located in nearby utility closet or space acceptable to the Engineer.

H. Nameplates: Each starter shall have a 1.0" x 2.5" hot stamped nameplate identifying the unit and panel it is fed from. The lettering shall be white 1/2" high in a black background.

I. Connections to systems: Make electrical connections in accordance with equipment manufacturer's instructions. Make conduit connections to equipment using flexible conduit. Use liquid-tight flexible conduit with watertight connectors in damp or wet locations. Make wiring connections using wire and cable with insulation suitable for temperatures encountered in heat producing equipment. Provide receptacle outlet where connection with attachment plug is indicated. Provide cord and cap where field-supplied attachment plug is indicated. Provide suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes. Install disconnect

switches, controllers, control stations, and control devices as indicated. Modify equipment control wiring with terminal block jumpers as indicated. Provide interconnecting conduit and wiring between devices and equipment where indicated.

2.7 SUPPORTING DEVICES

A. Materials and Finishes: Provide adequate corrosion resistance. Provide materials, sizes, and types of anchors, fasteners and supports to carry the loads of equipment and conduit. Consider weight of wire in conduit when selecting products. Steel channel shall be galvanized.
B. Anchors and Fasteners:
   1. Concrete Structural Elements: Use precast insert system, expansion anchors.
   2. Steel Structural Elements: Use beam clamps, or welded fasteners.
   3. Concrete Surfaces: Use self-drilling anchors or expansion anchors.
   4. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts or hollow wall fasteners.
   5. Solid Masonry Walls: Use expansion anchors or preset inserts.
   6. Sheet Metal: Use sheet metal screws.
   7. Wood Elements: Use wood screws.
C. Installation: Install products in accordance with manufacturer's instructions. Provide anchors, fasteners, and supports in accordance with NECA "Standard of Installation". Do not fasten supports to pipes, ducts, mechanical equipment, and conduit. Do not use spring steel clips and clamps. Do not use powder-actuated anchors. Do no drill or cut structural members. Fabricate supports from structural steel or steel channel. Rigidly weld members or use hexagon head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts. Install surface-mounted cabinets and panelboards with minimum of four anchors. In wet and damp locations use steel channel supports to stand cabinets and panelboards one inch off wall. Use sheet metal channel to bridge studs above and below cabinets and panelboards recessed in hollow partitions.

2.8 ELECTRICAL IDENTIFICATION

A. Nameplates: Engraved three-layer laminated plastic, black letters on white background. Locations: Each electrical distribution and control equipment enclosure, communication cabinets. Letter Size: Use 1/8 inch letters for identifying individual equipment and loads. Use 1/4 inch letters for identifying grouped equipment and loads.
B. Labels: Embossed adhesive tape, with 3/16 inch white letters on black background. Use for identification of individual power receptacle faceplates indicating panel & circuit number the outlet is fed from and control device stations. In addition to nameplates as described above, use labels on all panelboards, disconnect switches and enclosed circuit breakers to identify where the equipment is fed from, voltage & phase.
C. Wire markers: Tape, or tubing type wire markers. Locations: Each conductor at panelboard gutters, pull boxes, outlet and junction boxes, and each load connection. Power and Lighting Circuits shall be marked with panel and branch circuit or feeder number as indicated on drawings. Control Circuits shall be marked with control wire number indicated on schematic and interconnection diagrams on drawings
D. Conduit markers: Corrosion and abrasion resistant. Location: Furnish markers for each conduit longer than 6 feet (2 m). Spacing: 20 foot on center. Indicate voltage and phase.
E. All panelboards shall be provided with a typed (hand written is not allowed) circuit directory indicating the load fed by each circuit breaker and it's location in the building.

2.9 ENCLOSED SWITCHES

A. Fusible Switch Assemblies shall be provided in accordance with the following. Description: NEMA KS 1, Type GD with externally operable handle interlocked to prevent opening front cover with switch in ON position, enclosed load interrupter knife switch. Handle lockable in OFF position. Fuse clips: Designed to accommodate NEMA FU1, Class R fuses. Provide NEMA 3R where located outdoors, kitchens or other interior wet areas.
B. Non-fusible switch assemblies shall be provided in accordance with following. Description: NEMA KS 1, Type GD with externally operable handle interlocked to prevent opening front cover with

switch in ON position enclosed load interrupter knife switch. Handle lockable in OFF position. Provide NEMA 3R where located outdoors, kitchens or other interior wet areas.

C. Install in accordance with NECA "Standard of Installation". Install fuses in fusible disconnect switches. Apply adhesive tag on inside door of each fused switch indicating NEMA fuse class and size installed.

2.10 PANELBOARDS

A. Description: NEMA PB1, circuit breaker type, lighting and appliance branch circuit panelboard.
B. Panelboard Bussing: Bus bars shall be copper. Provide copper ground bus bar in all panelboards.
C. Minimum Integrated Short Circuit Rating: 10,000 amperes RMS symmetrical for 240 volt panelboards; 65,000 amperes RMS symmetrical for 480 volt panelboards, or as indicated.
D. Molded Case Circuit Breakers: NEMA AB 1, bolt-on type thermal magnetic trip circuit breakers, with common trip handle for all poles, listed as Type SWD for lighting circuits, Type HACR for air conditioning equipment circuits. Class A ground fault interrupter circuit breakers where scheduled. Do not use tandem circuit breakers.
E. Enclosure: NEMA PB 1, Type 1.
F. Cabinet Box: 6 inches deep, 20 inches wide for 240 volt and less panelboards, 20 inches wide for 480 volt panelboards.
G. Cabinet Front: Flush or Surface cabinet front as scheduled with concealed trim clamps, concealed hinge, metal directory frame, and flush lock all keyed alike. Finish in manufacturer's standard ANSI 49 enamel.

2.11 ENCLOSED CIRCUIT BREAKERS

A. Enclosed Molded Case Circuit Breaker: Comply with NEMA AB 1. Include provisions for padlocking. Provide insulated grounding lug in each enclosure. Provide Products suitable for use as service entrance equipment where so applied. Fabricate enclosure from steel.
B. Install enclosed circuit breakers where indicated, in accordance with manufacturer's instructions. Install enclosed circuit breakers plumb. Provide supports in accordance with these specifications. Height: 5 ft (1.6 M) to operating handle. Provide engraved plastic nameplates.
C. Inspect each circuit breaker visually. Perform several mechanical ON-OFF operations on each circuit breaker. Verify circuit continuity on each pole in closed position. Determine that circuit breaker will trip on overcurrent condition, with tripping time to NEMA AB 1 requirements. Include description of testing and results in test report.

2.12 FUSES

A. All fuses shall be rated for proper voltage in which they are applied. Interrupting ratings shall be greater than the short circuit current available at the terminals of the switch.
B. Fuse types:
   1. Fuses for branch circuits shall be time delay class J.
   2. Fuses for equipment other than motor loads shall be general fast acting RK-5 or Class J.
   3. Control power transformers for motor controller circuits shall be as recommended by motor starter and motor control center manufacturer.
   4. Fuses for motors shall be sized at 250% of the motor FLA.
   5. Fuses for non-motor loads shall be sized at 125% of the rated FLA of equipment served.
   6. Fuses for elevator lifts shall be dual element type and sized in accordance with the elevator manufacturer's recommendations.
C. Spare Fuses
   1. Provide spare fuses in the amount of 20% (not less than three (3) nor more than nine (9) of all sizes and types).
   2. Spare fuses shall include general purpose fuses, motor fuses, and control fuses used in motor control centers, starters etc.
   3. A complete list and quantity of spare fuses shall be submitted with record drawings for review.

2.13 ENCLOSED MOTOR CONTROLLERS

A. The Electrical Contractor shall review the mechanical drawings and coordinate with the Mechanical Contractor for electrical components of the mechanical equipment and systems such as motors, factory mounted motor starters, factory mounted disconnect switches, variable frequency drives and controls to be provided under Division 15 (by the Mechanical Contractor).
B. The Electrical Contractor shall provide motor starters, variable frequency drives and disconnect switches for equipment shown on the drawings where the Mechanical Contractor is not providing such equipment.
C. The electrical contractor shall provide all power wiring for all HVAC equipment.
D. Manual Motor Controller: NEMA ICS 2, AC general-purpose Class A manually operated, full-voltage controller with thermal overload elements on each phase, red pilot light, NO, NC auxiliary contact, and push button or toggle operator.
E. Fractional Horsepower Manual Controller: NEMA ICS 2, AC general-purpose Class A manually operated, full-voltage controller for fractional horsepower induction motors, with thermal overload elements on each phase, red pilot light, and toggle operator.
F. Motor Starting Switch: NEMA ICS 2, AC general-purpose Class A manually operated, full-voltage controller for fractional horsepower induction motors, without thermal overload elements on each phase, with red pilot light and toggle operator.
G. Enclosures: NEMA ICS 6; Type 1 for indoors and Type 3R for outdoors and wet/damp locations (kitchens, mechanical rooms, pool equipment rooms, etc...).
H. Automatic Magnetic Motor Controllers: NEMA ICS 2, AC general-purpose Class A magnetic controller for induction motors rated in horsepower. Reversing Controllers: Include electrical interlock and integral time delay transition between FORWARD and REVERSE rotation. Two Speed Controllers: Include integral time delay transition between FAST and SLOW speeds. Coil operating voltage: 120volts, 60 Hertz. Overload Relay: NEMA ICS; bimetal or melting alloy. Enclosure: NEMA ICS 6, Type 1 for indoors or Type 3R for outdoors and wet/damp locations (kitchens, mechanical rooms, pool equipment rooms, etc...).
I. Product Options and Features as follows. Auxiliary Contacts: NEMA ICS 2, 2 each normally open and closed contacts in addition to seal-in contact. Cover Mounted Pilot Devices: NEMA ICS 2, standard duty type. Pilot Device Contacts: NEMA ICS 2, Form Z, rated A150. Pushbuttons: Recessed type. Indicating Lights: LED type. Selector Switches: Rotary type. Relays: NEMA ICS 2. Control Power Transformers: 120 volt secondary, in each motor starter. Provide fused primary and secondary, and bond un-fused leg of secondary to enclosure.
J. Installation Requirements: Install enclosed controllers where indicated, in accordance with manufacturer's instructions. Install enclosed controllers plumb. Provide supports in accordance with these specifications. Height: 5 feet to operating handle. Install fuses in fusible switches. Select and install overload heater elements in motor controllers to match installed motor characteristics. Provide engraved plastic nameplates under these specifications. Provide neatly typed label inside each motor controller door identifying motor served, nameplate horsepower, full load amperes, code letter, service factor, and voltage/phase rating.

2.14 ENCLOSED CONTACTORS

A. General purpose contactors: NEMA ICS 2, AC general purpose magnetic contactor. Coil Voltage as indicated. Poles as indicated. Size as indicated. Enclosure per ANSI/NEMA ICS 6, Type as scheduled.
B. Lighting contactors: NEMA ICS 2, magnetic lighting contactor. Coil Voltage as indicated. Poles as indicated. Size as indicated. Contact Rating shall match branch circuit overcurrent protection, considering de-rating for continuous loads.
C. Accessories: Provide Pushbuttons and Selector Switches per NEMA ICS 2, heavy duty type. Provide indicating lights per NEMA ICS 2, push-to-test type. Provide auxiliary contacts per NEMA ICS 2, Class A300 or A600 as required per equipment served.

2.15 INTERIOR LUMINAIRES

A. Lighting fixtures shall be in accordance with identifications as follows:
B. All lamping shall be of the highest quality available.
C. Finishes shall be as selected by the Architect or as indicated on the plans.
D. Any additional appurtenances required for installation and operation, where same are not covered by the identification used on the drawings, shall be included. Lighting fixtures and equipment shall

be furnished complete, wired and assembled, including canopies, lamps and other incidental items. Install specified lamps in each luminaire.

E. Recessed fixtures shall be coordinated with ceiling construction by the Electrical Contractor prior to Bid. Refer to the Architect's plans, details and elevations for ceiling types by area. Provide plaster trim kits as required by ceiling construction.
F. Exact location of all fixtures shall be confirmed with Architect prior to rough-in. Install surface mounted luminaires and exit signs plumb and adjust to align with building lines and with each other. Secure to prevent movement.
G. Recessed fixtures throughout shall have their components, wiring and external connections coordinated for use in ceilings utilized as air handling plenums. Install recessed luminaires to permit removal from below. Install recessed luminaires using accessories and firestopping materials to meet regulatory requirements for fire rating. Install clips to secure recessed grid-supported luminaires in place
H. Fixtures for use outdoors or in areas designated as damp locations, shall be suitably gasketed and UL listed for such applications.
I. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within luminaire
J. Emergency batteries for exterior fixtures shall be remote mounted within the building. Verify maximum distances for remote mounting the emergency batteries with the manufacturer prior to installation. Locate remote emergency batteries above accessible ceilings or utility rooms as required. Provide test switches for all emergency batteries as required.
K. Unless noted otherwise, all fixtures shall be 3500K and have a minimum CRI of 85.
L. The Contractor shall obtain all information relative to the exact type of hung ceilings and suspension systems to be installed before ordering any recessed fixtures. This Contractor shall furnish the proper type fixtures applicable to the ceiling framing system. If, other than the type of fixtures specified are required for installation due to the type of ceiling construction, this Contractor shall furnish and install the proper type fixtures and mounting appurtenances required at no extra charge.
M. The Contractor shall coordinate the exact locations of all lighting fixtures with the ceiling pattern during the construction period and before installation of the fixtures. Interferences between lighting fixtures, and other equipment, shall be brought to the attention of the General Contractor.
N. Include the aiming and/or adjustments of all lighting fixtures requiring same in accordance with instructions issued by the Architect in the field. Aim and adjust luminaries as indicated or as directed by the Owner, Architect or Engineer. Position exit sign directional arrows as indicated. Operate each luminaire after installation and connection. Ensure proper connection and operation.
O. Lighting fixtures shall be supported from building structure only, not from hung or suspended ceiling, by means of chains or threaded rods. The use of tie wire will not be allowed. All fixtures shall include seismic clips and shall be supported to comply with seismic regulations. Install suspended luminaires using pendants supported from swivel hangers or other suitable leveling means. All rows of fixtures shall be level, aligned with building lines and run parallel to each other. Provide pendant length required to suspend luminaires at indicated height. Support luminaires to building structure, independent of ceiling framing.

2.16 FIRE ALARM SYSTEM

A. GENERAL
1. The contractor shall submit complete documentation for the Fire Alarm/Life Safety System Data Sheets for all items to ensure compliance with these specifications. Copies of this information shall be submitted as required to the Architect award of this work and shall be subject to the approval of the architect.
2. The contractor shall submit, as part of the complete bid documentation package, certification that the engineered system distributor is a fully authorized factory trained and certified distributor of the system detailed within this specification.
3. All equipment and material shall be new and unused, and listed by Underwriter's Laboratories for the specific intended purpose. All control panel components, field peripherals and interactive computer peripherals shall be designed for continuous duty operation without degradation of function or performance.
4. All equipment covered by this specification or noted on installation drawings shall be the best equipment suited for the application and shall be provided by a single manufacturer.
5. Provide all equipment and accessories and compatible devices for a complete and fully functioning addressable fire alarm system. The fire alarm system shall be coordinated with and

inspected by the local fire department, and any inconsistency mentioned during any inspection shall be corrected by contractor at no additional cost to owner.

6. The control panel shall contain a microprocessor with 10/100 ethernet media access controller (MAC). The system shall be designed specifically for fire detection, and notification applications.
7. The installing contractor shall coordinate master-box, radio-box, and/or dialer requirements with local fire department.

B. FIRE ALARM LIFE SAFETY SYSTEM SEQUENCE OF OPERATION

1. Public Mode: The operation of a manual station or activation of any automatic alarm initiating device (system smoke, heat, waterflow) in the common areas of the building, shall automatically:
   a. Initiate the transmission of the alarm to the Municipal Fire Station or approved Central Station via the Local Energy or Radio Master-box where required by Code.
   b. Sound a code 3 temporal evacuation signal over all audible circuits.
   c. Flash all visual signals throughout the building in a synchronized manner.
   d. Flash an alarm LED and sound an audible signal at the FACP. Upon acknowledgement, the alarm LED shall light steadily and the audible shall silence. Subsequent alarms shall re-initiate this sequence.
   e. Upon alarm initiation by an elevator lobby smoke detector or other designated recall device, recall all elevators that serve the floor of initialization to the main egress level. If the alarm initiates on the main egress level, return the elevator to the alternate floor as directed by the local authority having jurisdiction.
   f. Visually indicate the alarm initiating device type and location via the LCD display located at the FACP (and at any remote annunciators) and (illuminate the appropriate alarm zone LED at the remote annunciator).
   g. Automatically shut down or control HVAC equipment to initiate smoke control functions as required. Manual override controls and programmable relay interface shall serve as an interface to the Building Automation System.
   h. Operate prioritized outputs to release all magnetically held smoke doors and magnetically locked doors throughout the building.
   i. Activate the exterior weatherproof beacon.
2. Private mode: The activation of any automatic local alarm initiating device (sounder-base with smoke, or combination smoke/carbon monoxide device) within an apartment shall automatically:
   a. Sound a code 3 temporal evacuation signal for smoke to all alarm devices within the apartment and a code 4 temporal evacuation signal for carbon monoxide to all alarm devices within the apartment.
   b. Visually indicate a supervisory trouble condition of the type and location of the initiating device via the LCD display located at the FACP (and at any remote annunciators) and (illuminate the appropriate zone LED at the remote annunciator).

C. WIRING

1. Provide in accordance with manufacturer's instructions all wiring, conduit and outlet boxes required for the installation of complete system as described herein and as shown on the drawings. Wiring shall be Class A.
2. Installation and fire alarm system wiring shall be installed in metal raceway. An equipment bonding conductor shall be provided in all flexible metallic raceways.
3. Color code for fire alarm systems shall be per the State Fire Alarm code.
4. DC supply to the main fire alarm panel shall be white and black. Fire alarm primary power source shall be on dedicated branch circuit. Circuit breaker locks shall be used. If a separate feed is required for the battery charger it shall be black and white unless the main fire alarm panel required only AC feed. In this case the conductors to the battery charger shall be red and white and shall be on a circuit breaker of fits own.
5. Conductors shall be minimum #14-gauge solid copper type THHN/THWN. Conductor's size shall be increased as required to maintain voltage drop to a maximum of 3%. All AC and DC portions of the system shall be installed in separate raceway. Addressable loop wiring may be #16 providing manufacturer's recommended distance is observed. Systems requiring shielded wiring for addressable loops shall not be acceptable.
6. Red painted terminal cabinets with hinged local covers shall be provided at all junction points. All conductor splices shall be made on screw type terminal blocks, wire nuts shall not be used.

All terminals within terminal cabinet shall be properly labeled. Provide terminal cabinet at each building cable entrance and at other locations as required.

7. All fire alarm initiating zone and signal wiring shall be wired Class A.
8. Final connections between the equipment and the wiring system shall be made under the direct supervision of a representative of the manufacturer.
9. Upon completion of the installation of fire alarm equipment, the electrical contractor shall provide to the engineer a signed statement substantially in the form as follows:
   a. The undersigned having been engaged as the electrical contractor on this project confirms the fire alarm equipment was installed in accordance with the specifications and in accordance with wiring diagrams, instructions, and directions provided to us by the manufacturer.

D. GUARANTEE AND FINAL TEST
1. All testing (pre-testing, final testing, quarterly testing and program change testing) to be coordinated with the owner and scheduled in advance so that owners and personnel can be present during testing. Contractor to certify that all tests comply with the "State Fire Code", latest edition.
2. Before this installation shall be considered complete and acceptable to the awarding authorities, a complete test on the system shall be performed as follows:
   a. A pre-test will be held by the electrical contractor with the manufacturer's authorized representative present. After certification of a complete pre-test, the installing contractor shall inform the authority having jurisdiction of the outcome of the test and will re-inspect in the presence of the authority having jurisdiction and the manufacturer's authorized representative.
   b. Final test: The electrical contractor in the presence of authorized representative of the manufacturer and the fire department shall operate every manual station, smoke detector, and thermodetector. Each station/detector circuit and horn circuit shall be opened in at least two locations to check for the presence of correct supervisory circuitry. When this testing ahs been completed to the satisfaction of both the electrical contractor's job foreman and the representative of the manufacturer, a letter from the contractor cosigned by the manufacturer attesting t the satisfactory completion of said testing, shall be forwarded to the owner.
3. The electrical contractor shall guarantee all equipment and wiring to be free from inherent mechanical and electrical defects for a period of one year from the date of final acceptance.
4. The contractor shall provide the Owner with a formal written equipment guarantee upon completion of the installation and testing of the system. The guarantee period shall begin on the day of acceptance of the system by the Owner and shall provide for a period of one year. This guarantee shall be indicated in the manufacturer's submission prior to approval. This guarantee shall be as normal policy by the equipment manufacturer.
5. The manufacturer shall maintain a full-time service and parts facility, with seven days per week, 24 hour per day service available.
6. All service technicians shall be licensed by the State Fire Code covering service and maintenance of systems.
7. Include as part of the contract, the four quarterly tests following the final acceptance test. Provide quarterly testing in conformance with the State Fire Code latest addition.

2.17 DATA

A. The Electrical Contractor shall provide and install the data outlets and wiring per the Owner's specifications and direction per data outlet and wiring as shown on the plans. Each data connection shall include the following:
1. Data outlet installed flush in the wall unless otherwise required by the site conditions and approved by the Owner. The outlet shall include faceplate, ID label, inserts, jacks and all other required accessories for a complete installation.
2. Wiring consisting of Category 6, 24AWG, copper cabling installed from outlet to patch panel. All wiring shall be installed concealed in finished & public spaces unless otherwise required by the site conditions and approved by the Owner. shall be used from the outlet to an accessible ceiling. In unfinished or utility spaces, the data cabling shall be installed in EMT conduit where not concealed. Accessible above ceiling installations shall use J-hooks unless cable tray is

used. Use plenum rated cable where installed in plenum return spaces per the Mechanical Contractors direction prior to bid.

3. Patch panel and outlet terminations. Provide identification labels at each end of the cable per the Owners requirements. Coordinate with Owner for nomenclature.
4. Test each cable for signal strength per EIA/TIA standards and record all results to be submitted to the Owner. All defective cable and/or termination shall be replaced at no cost to the Owner.

B. Provide patch panel(s) to accommodate each outlet plus 10% spare. Provide rack(s) to accommodate each patch panel.
C. Provide a copper ground bar (1/4" thick x 4" high x 36" long) with wall mounting brackets, insulators and a #6AWG copper exothermically welded pigtail in each telephone / data closet, server room and/or IDF closet. Connect pig tail to building steel or electrical service grounding system.
D. Servers, switches, routers and active electronic equipment by Owner.

2.18 TELEPHONE

A. Provide incoming telephone service raceways and cable as indicated on Drawings or as required by the serving telephone company. Provide 8' x 8' x ¾" plywood board (and one double duplex outlet) on wall for telephone equipment. Provide 3/4-inch thick plywood board, fire-retardant-treated and stamped FRT, securely anchored to the wall.
B. The Electrical Contractor shall provide and install the telephone outlets and wiring per the Owner's specifications and direction as shown on the plans. Each telephone connection shall include the following:
   1. Telephone outlet installed flush in the wall unless otherwise required by the site conditions and approved by the Owner. The outlet shall include faceplate, ID label, inserts, jacks and all other required accessories for a complete installation.
   2. Wiring consisting of Category 6, 24AWG, copper cabling installed from outlet to patch panel. All wiring shall be installed concealed in finished & public spaces unless otherwise required by the site conditions and approved by the Owner. shall be used from the outlet to an accessible ceiling. In unfinished or utility spaces, the data cabling shall be installed in EMT conduit where not concealed. Accessible above ceiling installations shall use J-hooks unless cable tray is used. Use plenum rated cable where installed in plenum return spaces per the Mechanical Contractors direction prior to bid.
   3. Telephone terminal board or PBX (private branch exchange) equipment and outlet terminations. Provide identification labels at each end of the cable per the Owners requirements. Coordinate with Owner for nomenclature.
   4. Test each cable for signal strength per EIA/TIA standards and record all results to be submitted to the Owner. All defective cable and/or termination shall be replaced at no cost to the Owner.
C. Provide a copper ground bar (1/4" thick x 4" high x 36" long) with wall mounting brackets, insulators and a #6AWG copper exothermically welded pigtail in each telephone room and telephone terminal board. Connect pig tail to building steel or electrical service grounding system per the telephone company's requirements.
D. PBX (private branch exchange) equipment by Owner.

2.19 CABLE TELEVISION

A. Provide incoming cable television service raceways and cable as indicated on Drawings or as required by the serving cable television company. Provide 8' x 8' x ¾" plywood board (and one double duplex outlet) on wall for cable equipment. Provide 3/4-inch thick plywood board, fire-retardant-treated and stamped FRT, securely anchored to the wall. Provide flush mounted CATV outlets with 3/4-inch EMT conduit concealed from outlet box to cable terminal board. Leave a pull string in all empty conduits.
B. Provide a copper ground bar (1/4" thick x 4" high x 36" long) with wall mounting brackets, insulators and a #6AWG copper exothermically welded pigtail in each CATV terminal room and main CATV terminal board. Connect pig tail to building steel or electrical service grounding system per the CATV utility company's requirements.

C. The Electrical Contractor shall provide and install the CATV outlets and wiring per the Owner's specifications and direction as shown on the plans. The allowance for each CATV connection shall include the following:
   1. CATV outlet installed flush in the wall unless otherwise required by the site conditions and approved by the Owner. The outlet shall include faceplate, ID label, inserts, jacks and all other required accessories for a complete installation.
   2. Wiring consisting of coaxial copper cabling per the CATV utility company's requirements installed from outlet to terminal board. All wiring shall be installed concealed in finished & public spaces unless otherwise required by the site conditions and approved by the Owner. be used from the outlet to an accessible ceiling. In unfinished or utility spaces, the data cabling shall be installed in EMT conduit where not concealed. Accessible above ceiling installations shall use J-hooks unless cable tray is used. Use plenum rated cable where installed in plenum return spaces per the Mechanical Contractors direction prior to bid. The length of cable to be used for the allowance shall be based on 100'-0".
   3. CATV terminal board and outlet terminations. Provide identification labels at each end of the cable per the Owners requirements. Coordinate with Owner for nomenclature.
   4. Test each cable for signal strength per CATV utility company's requirements and record all results to be submitted to the Owner. All defective cable and/or termination shall be replaced at no cost to the Owner.

PART 3 – EXECUTION

3.1 BASIC REQUIREMENTS

A. Adhere to best industry practice and the following:
   1. All work shall be concealed.
   2. Route circuitry runs embedded in concrete to coordinate with structural requirements.
   3. Equip each raceway intended for the future installation of wire or cable with a nylon pulling cord 3/16" in diameter and clearly identify both ends of the raceway.
   4. Provide all outlet boxes, junction boxes, and pull boxes for proper wire pulling and device installation. Include those omitted from the drawings due to symbolic methods of notation.
   5. Utilize lugs of the limited type to make connections at both ends of cables installed on the line side of main service overcurrent and switching devices. Provide cable limiters for each end of each service entrance cable.
   6. Beyond the termination of raceways, fireproof the following:
      a. All wires and cables within pad-mounted transformer enclosure.
      b. All service feeder cables ahead of main service overcurrent protection devices, and elsewhere where not in raceways.
   7. Fireproofing of wires and cables shall be by means of a half-lapped layer of arcproof or by means of sleeving of a type specifically manufactured for the purpose. Ends of tape or sleeving shall be severed with twine. Fireproofing shall be extended up into raceways. After conductors have been finally shaped into their permanent configuration, fireproofing tape or sleeving shall be coated with silicate of soda (water glass). Fireproofing shall be applied in an overall manner to raceway groupings of conductors.
   8. Provide all sleeves through fireproof and waterproof slabs, walls, etc., required for electric work.
   9. Provide waterproof sealing for the sleeves through waterproof slabs, walls, etc.
   10. Provide fireproof sealing for the sleeves through fireproof walls, slabs, etc.
   11. Provide fireproof sealing for the openings in fireproof walls, slabs, etc., resulting from removal of existing electrical sleeves, conduits, poke-thru's etc.
   12. No splicing of wires will be permitted in the Fire Alarm System.
   13. Bundle wiring passing through pull boxes and panelboards in a neat and orderly manner with plastic cable ties. Cable ties shall be by Ty-Raps as manufactured by Thomas & Betts, Holub Industries Inc., Quick Wrap, Bundy Unirap, or equal.
   14. Turn branch circuits and auxiliary system wiring out of wiring gutters at 90 degrees to circuit breakers and terminal lugs.

3.2 TESTING REQUIREMENTS & INSTRUCTIONS

A. Where any repairs, modifications, adjustments, tests or checks are to be made, the Contractor shall contact the Engineer to determine if the work should be performed by or with the Manufacturer's Representative.
B. Tests are to:
   1. Provide initial equipment/system acceptance.
   2. Provide recorded data for future routine maintenance and trouble-shooting.
   3. Provide assurance that each system component is installed satisfactorily and can be expected to perform, and continue to perform its specified function with reasonable reliability throughout the life of the facility.
C. At any stage of construction and when observed, any electrical equipment or system determined to be damaged, or faulty, is to be reported to the Engineer. Corrective action by the Contractor requires prior Engineer approval, retesting, and inspection.
D. When the electrical tests and inspections specified or required within Division 16 are completed and results reported, reviewed, and approved by the Engineer, the Contractor may consider that portion of the electrical equipment system or installation electrically complete. The Contractor will then affix appropriate, approved, and dated completion or calibration labels to the tested equipment and notify the Engineer of electrical completion. If the Engineer finds completed work unacceptable, he will notify the Contractor in writing of the unfinished or deficient work, with the reason for his rejection, to be corrected by the Contractor. The Contractor will notify the Engineer in writing when exceptions have been corrected. The Contractor will prepare a "Notification or Substantial Electrical Completion" for approval by the Engineer following Engineer's acceptance of electrical completion. If later in-service operation or further testing identified problems attributable to the Contractor, these will be corrected by the Contractor, at no additional cost to the Authority.
E. Grounding Systems:
   1. Test main building loops and major equipment grounds to remote earth, directly referenced to an extremely low resistance (approximately 1 ohm) reference ground benchmark. Perform a visual inspection of the systems, raceway and equipment grounds to determine the adequacy and integrity of the grounding. Ground testing results shall be recorded, witnesses, and submitted to the Engineer.
   2. Perform ground tests using a low resistance, null-balance type ground testing ohmmeter, with test lead resistance compensated for. Use the type of test instrument which compensates for potential and current rod resistances.
   3. Test each ground rod and measure ground resistance. If resistance is not 10 ohms or less, drive additional rods to obtain a resistance of 10 ohms or less. Submit tabulation of results to Engineer. Include identification of electrode, date of reading and ground resistance valve in the test reports.
   4. Test each building and major equipment grounding system for continuity of connections and for resistance. Ground resistance of conduits, equipment cases, and supporting frames, shall not exceed 5 ohms to ground. Submit all readings to the Engineer.
   5. Where ground test results identify the need for additional grounding conductors or rods that are not indicated or specified, design changes will be initiated to obtain the acceptable values. The Contractor is responsible for the proper installation of the grounding indicated and specified.
   6. Operating Instructions: Furnish operating instructions to Owner's designated representative with respect to operations, functions and maintenance procedures for equipment and systems installed. Cost of such instruction up to a full five (5) days of Electrical Subcontractor's time shall be included in contract. Cost of providing a Manufacturer's Representative at site for instructional purposes shall also be included.

3.3 BRANCH CIRCUITRY

A. For all lighting and appliance branch circuitry, raceway sizes shall conform to industry standard maximum permissible occupancy requirements except where these are exceeded by other requirements specified elsewhere.
B. Circuits shall be balanced on phases at their supply as evenly as possible.
C. Feeder connections shall be in the phase rotation which establishes proper operation for all equipment supplied.
D. Reduced size conductors indicated for any feeders shall be taken as their grounding conductors.
E. Feeders consisting of multiple cables and raceways shall be arranged such that each raceway of the feeder contains one (1) cable for each leg and one (1) neutral cable, if any.
F. For circuitry indicated as being protected at 20 Amps or less, abide by the following:

1. All 20 amp, 120/208 volt, 3-phase, 4-wire combined branch circuit homeruns shall be provided with a #8 AWG neutral conductor.
2. Minimum conductor size shall be No. 12 AWG cooper.
3. Conductors operating at 120 volts extending in excess of 100 ft. or at 277 volts extending in excess of 200 ft., or the last outlet or fixture tap shall be No. 10 AWG cooper throughout.
4. Lighting fixtures and receptacles shall not be connected to the same circuit.

G. Type MC Cable Installation:
1. Where cable is permitted under the products section, the installation of same shall be done in accordance with code and the following:
   a. Cable shall be supported in accordance with code. Tie wire is not an acceptable means of support. Cable supports such as Caddy WMX-6, MX-3, and clamps such as Caddy 449 shall be used. Where cables are supported by the structure and only need securing in place, then ty-raps will be acceptable. Ty-raps are not acceptable as a means of support. All fittings, hangers, and clamps for support and termination of cables shall be of type specifically designed for use with cable, i.e., romex connectors not acceptable.
   b. Armor of cable shall be removed with rotary cutter device equal to roto-split by Seatek Co.; not with a hacksaw.
   c. Use split "Insuliner" sleeves at terminations.

3.4 REQUIREMENTS GOVERNING ELECTRICAL WORK IN DAMP OR WET LOCATIONS

A. Outlets and outlet size boxes shall be of galvanized cast ferrous metal only.
B. The finish of threaded steel conduit shall be galvanized only.
C. Wires for pulling into raceways for lighting and appliance branch circuitry shall be limited to "THWN".
D. Wires for pulling into raceways for feeders shall be limited to "THWN".
E. Plates for toggle switches and receptacles shall have gasketed snap shut covers suitable for wet locations while in use.
F. Final connections of flexible conduit shall be neoprene sheathed.
G. Apply one (1) layer of half looped plastic electric insulating tape over wire nuts used for joining the conductors of wires.
H. Enclosures, junction boxes, pull boxes, cabinets, cabinet trims, wiring troughs and the like, shall be fabricated of galvanized sheet metal, shall conform to the following:
   1. They shall be constructed with continuously welded joints and seams.
   2. Their edges and weld spots shall be factory treated with cold galvanizing compound.
   3. Their connection to circuitry shall be by means of watertight hub connectors with sealing rings.
I. Enclosures for individually mounted switching and overcurrent devices shall be NEMA Class IV weatherproof construction.
J. The covers, doors and plates and trims used in conjunction with all enclosures, pull boxes, outlet boxes, junction boxes, cabinets and the like shall be equipped with gaskets.
K. Panels shall be equipped with doors without exception.
L. The following shall be interpreted as damp or wet locations within building confines:
   1. Spaces where any designations indicating weatherproof (WP) or vapor proof appear on the drawings.
   2. Below waterproofing in slabs applied directly on grade.
   3. Spaces defined as wet or damp locations by Article 100 of the National Electric Code.
   4. Parking garage.

3.5 REQUIREMENTS GOVERNING ELECTRIC WORK IN AIR HANDLING SPACES

A. Within air handling ductwork or plenums (other than spaces within suspended ceilings used for air handling purposes), Area "B" and the media shall comply with requirements for return air plenums.
B. Abide by the requirements specified for electric work in damp locations within building confines.
C. Where circuitry passes through duct walls, include, in accordance with instructions issued in the field, airtight sealing provisions which allow for a relative movement between the circuitry and the duct walls.
D. Exclude the installation of type NM or NMC cable.
E. In spaces within suspended ceilings used for air handling purposes, abide by the requirements specified for normal electric work conditions except:
F. Lighting fixtures recessed into the ceilings shall be certified as being suitable for this purpose.

3.6 LIMITING NOISE PRODUCED BY ELECTRICAL INSTALLATION

A. Perform the following work, in accordance with field instructions issued by the Architect to assure that minimal noise is produced by electrical installations due to equipment furnished as part of the electrical work.
B. Check and tighten the fastenings of sheet metal plates, covers, doors and trims used in the enclosures of electrical equipment.
C. Remove and replace any individual device containing one or more magnetic flux path metallic cores (e.g., discharge lamp ballast, transformer, reactor, dimmer, and solenoid) which is found to have a noise output exceeding that of other identical devices installed at the project.

3.7 SUPPORTS AND FASTENINGS

A. Support work in accordance with best industry standards, and Local Electric Code.
B. Include supporting frames or racks for equipment, intended for vertical surface mounting, which is required in a free standing position.
C. Supporting frames or racks shall be of standard angle, standard channel or specialty support system steel members. They shall be rigidly bolted or welded together and adequately braces to form a substantial structure. Racks shall be of ample size to assure a workmanlike arrangement of all equipment mounted on them.
D. No work intended for exposed installation shall be mounted directly on any building surface. In such locations, flat bar members or spaces shall be used to create a minimum of ¼" air space between the building surfaces and the work. Provide ¾" thick exterior grade plywood painted with two (2) coats of fire-retardant gray paint for mounting of panelboards.
E. Nothing (including outlet, pull and junction boxes and fittings) shall depend on electric conduits, raceways or cables for support.
F. Nothing shall rest on, or depend for support on, suspended ceiling media.
G. Support less than 2" trade size, vertically run, conduits at intervals no greater than 8'. Support such conduits, 2-1/2" trade size or larger, at intervals no greater than they story height, or 15', whichever is smaller.
H. Where they are not embedded in concrete, support less than 1" trade size, horizontally run, conduits at intervals no greater than 7'. Support such conduits, 1" trade size or larger, at intervals no greater than 10'.
I. Support all lighting fixtures directly from structural slab, deck or framing member.
J. Where fixtures and ceilings are such as to require fixture support from ceiling openings frames, include in the electric work the members necessary to tie back the ceiling opening frames to ceiling suspension members or slabs so as to provide actual support for the fixtures noted above.
K. As a minimum procedure, in suspended ceilings support smalls runs of circuitry (e.g., conduit not in excess of 1" trade size) from ceiling suspension members as defined above. Support larger runs of circuitry directly from structural slabs, decks or framing members.
L. Fasten electric work to building structure in accordance with the best industry practice.
M. Floor mounted equipment shall not be held in place solely by its own dead weight. Include floor anchor fastenings in all cases.
N. For items which are shown as being ceiling mounted at locations where fastenings to the building construction element above is not possible, provide suitably auxiliary channel or angle iron bridging tying to building structural elements.
O. As a minimum procedure, where weight applied to the attachment points is 100 lbs. or less, fasten to concrete and solid masonry with bolts and expansion shields.
P. As a minimum procedure, where weight applied to building attachment points exceed 100 lbs., but is 300 lbs. or less, conform to the following:
    1. At field poured concrete slabs, utilize inserts with 20' minimum length slip-through steel rods, set transverse to reinforcing steel.

3.8 SPLICING AND TERMINATING WIRES AND CABLES

A. Maintain all splices and joints in removable cover boxes or cabinets where they may be easily inspected.
B. Locate each completed conductor splice or joint in the outlet box, junction box, or pull box containing it, so that it is accessible from the removal cover side of the box.

C. Join solid conductors No. 8 AWG and smaller by securely twisting them together and soldering, or by using insulated coiled steel spring "wire nut" type connectors. Exclude "wire nuts" employing non-expandable springs. Terminate conductors No. 8 AWG and smaller by means of a neat and fast holding application of the conductors directly to the binding screws or terminals of the equipment or devices to be connected.
D. Join, tap and terminate standard conductors No. 6 AWG and larger by means of solder sleeves, taps, and lugs with applied solder or by means of bolted saddle type or pressure indent type connectors, taps and lugs. Exclude connectors and lugs of the types which apply set screws directly to conductors. Where equipment or devices are equipped with set screw type terminals which are impossible to change, replace the factory supplied set screws with a type having a ball bearing tip. Apply pressure indent type connectors, taps and lugs utilizing tools manufactured specifically for the purpose and having features preventing their release until the full pressure has been exerted on the lug or connector.
E. Except where wire nuts are used, build up insulation over conductor joints to a value, equal both in thickness and dielectric strength, to that of the factory applied conductor insulation. Insulation of conductor taps and joints shall be by means of half-lapped layers of rubber tape, with an outer layer of friction tape; by means of half-lapped layers of approved plastic electric insulating tape; or by a means of split insulating casings manufactured specifically to insulate the particular connector and conductor, and fastened with stainless steel or non-metallic snaps or clips.

3.9 PULLING WIRES INTO CONDUITS AND RACEWAYS

A. Delay pulling wires or cables in until the project has progressed to a point when general construction procedures are not liable to injure wires and cables, and when moisture is excluded from raceways.
B. Utilize nylon snakes or metallic fish tapes with ball type heads to set up for pulling. In raceways 2" trade size and larger, utilize a pulling assembly ahead of wires consisting of a suitable brush followed by a 3-1/2" diameter ball mandrel.
C. Leave sufficient slack on all runs of wire and cable to permit the secure connection of devices and equipment.
D. Include circular wedge-type cable supports for wires and cables at the top of any vertical raceway longer than 20 feet. Also include additional supports spaced at intervals which are no greater than 10'. Supports shall be located in accessible pull boxes. Supports shall be of a non-deteriorating insulating material manufactured specifically for the purpose.
E. Pulling lubricants shall be used. They shall be products manufactured specifically for the purpose.

3.10 REQUIREMENTS FOR THE INSTALLATION OF JUNCTION BOXES, OUTLET BOXES AND PULL BOXES

A. Flush wall-mounted outlet boxes shall not be set back to back but shall be offset at least 12" horizontally regardless of any indication on the drawings.
B. Locate all boxes so that their removable covers are accessible without necessitating the removal of parts of permanent building structure, including piping, ductwork, and other permanent mechanical elements.
C. In conjunction with concealed circuitry, abide by one of the following instructions (as may be applicable to the conditions) in order to assure the aforementioned accessibility. (Not required for circuitry concealed by removable suspended ceiling tiles.)
D. For a small (outlet size) box on circuitry concealed in a partition or wall, locate box or fitting so that its removable cover side, (or the face of any applied raised cover) penetrates through to within 1/8" of the exposed surface of the building materials concealing the circuitry and apply a blank or device plate to suit the functional requirements.
E. For a large box on circuitry concealed in a partition, suspended ceiling, or wall, locate box totally hidden but with its removable cover directly behind an architectural access door or panel (included for the purpose, separate from the electric work) in the building construction which conceals the circuitry.
F. Include all required junction and pull boxes regardless of indications on the drawings (which, due to symbolic methods of notation, may omit to show some of them).
G. Unless noted below or otherwise specifically indicated, include a separate outlet box for each individual wiring device, lighting fixture and signal or communication system outlet component. Outlet boxes supplied attached to lighting fixtures shall not be used as replacements for the boxes specified herein.

H. Utilize an outlet box no smaller than 5" square by 2-1/2" deep.
I. Allow no fixture to be supplied from an outlet box in another room.
J. Multiple local switches indicated at a single location shall be gang-mounted in a single outlet box.
K. Install junction boxes, pull boxes and outlet boxes in conjunction with concealed circuitry.
L. Close up all unused circuitry openings in outlet boxes. Unused openings in cast boxes shall be closed with approved cast metal threaded plugs. Unused openings in sheet metal boxes shall be closed with sheet metal knock-out plugs.
M. Outlet boxes for switches shall be located at the strike side of doors. Indicate door swings are subject to field change. Outlet boxes shall be located on the basis of final door swing arrangements.
N. Boxes and plaster covers for duplex receptacles shall be arranged for vertical mounting of the receptacle.
O. Equip outlet boxes used for devices which are connected to wires of systems supplied by more than one set of voltage characteristics with barriers to separate the different systems.
P. Barriers in junction and pull boxes of outlet size shall be of the same metal as the box.
Q. Barriers in junction and pull boxes which are larger than outlet size shall be of the polyester resin fiberglass of adequate thickness for mechanical strength, but in no case less than 1/4" thick. Each barrier shall be mounted, without fastenings, between angle iron guides so that they may be readily removed.

3.11 LOCATING AND ROUTING OF CIRCUITRY

A. In general, all circuitry shall be run concealed except that it shall be run exposed where the following conditions occur:
   1. Horizontally at the ceiling of permanently unfinished spaces which are not assigned to mechanical or electrical equipment.
   2. Horizontally and vertically in mechanical equipment spaces.
   3. Horizontally and vertically in electric equipment rooms.
B. Concealed circuitry shall be so located that building construction materials can be applied over its thickest elements without being subject to spalling or cracking.
C. All circuitry and raceways shall not be run within slabs. If field conditions requires raceways to be embedded in field-poured structural building construction concrete fill or slab shall conform to the following:
   1. Where turned up or down into a wall or partition they shall, before entering same, be routed parallel for a long enough distance to assure that no relocation of the wall or partition will be necessary to conceal the required bend.
   2. They shall be routed in such a manner as to coordinate with the structural requirements of the building.
   3. They shall be routed in accordance with field instructions issued by the Architect where such instructions differ from specifications set forth herein.
D. Circuitry run exposed shall be routed parallel to building walls and column lines.
E. Circuitry shall be routed so as to prevent electric conductors from being subject to high ambient temperature. Minimum clearances from heated lines or surfaces shall be maintained as follows:
   1. Crossing where uninsulated: 3".
   2. Crossing where insulated: 1"
   3. Running parallel where uninsulated: 36".
   4. Running parallel where insulated: 6".
F. Circuitry shall not be run in elevator shafts, hoistways, and the like. Where outlets for trail cables, pit lights, run be level lights, and the like, are involved, only the "final connection" outlet boxes themselves shall be located within or open into, the confines of the shaft.

3.12 INSTALLING CIRCUITRY

A. The outside surface of circuitry, which is to be embedded in cinder concrete, shall be coated with asphaltum paint.
B. In runs of conduit or raceway including flexible limit the number of bends between cable access points to a total which does not exceed the maximum specified for the particular system. Where no such maximum is specified, limit the number to four (4) right angle bends or the equivalent thereof.
C. In each conduit or raceway assigned for the future pulling in of wires, include a nylon drag cord. In raceways 2" trade size and larger, the cord shall be pulled in utilizing a suitable brush, followed by

an 85% diameter ball mandrel ahead of the cord in the pulling assembly. In the event that obstructions are encountered, which will not permit the drag cord to be installed, the blocked section of raceway shall be replaced and any cutting and patching of the structure involved in such replacement shall be included as part of the electric work.

D. Circuitry shall be arranged such that conductors of one feeder or circuitry carrying "going" current are not separated from conductors of the same feeder or circuitry carrying "return" current by any ferrous or other metal. Where not within raceways, all "going" and "return" current conductors of one feeder or circuit shall be laced together so as to minimize induction heating of adjacent metal components.

E. Sleeves used where circuitry is to penetrate waterproof slabs, decks and walls, shall be of a type selected to suit the water condition encountered in the field.

END OF SECTION