

SPECIFICATIONS

PROJECT:

45 DOUGHERTY
DOUGLASS STREET
PORTLAND, ME
MAINE HOUSING PROJECT NO.

OWNER:

SZANTON COMPANY
10 FREE STREET
PORTLAND, ME 04101-3409

ARCHITECT:

ARCHETYPE, P. A.
48 UNION WHARF
PORTLAND, MAINE 04101

September 14, 2023
90% MaineHousing Submission

Owner: _____

Date: _____

Developer: _____

Date: _____

Architect: _____

Date: _____

Contractor: _____

Date: _____

Construction Lender: _____

Date: _____

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The Maine State Housing Quality Standards & Procedures Manual – 2019 is applicable to this project and can be found at the following web address: <http://www.mainehousing.org/docs/default-source/qap/qap-2015-2016-quality-standards-and-procedures-manual.pdf?sfvrsn=12>

SECTION 00 43 23

Add/Deduct Alternates and Allowances

Subcontractor acknowledges receipt of the following alternates:

1. ADD/ALTERNATE 1:

- ADD

\$ _____

2. DEDUCT/ALTERNATE 2:

- DEDUCT

\$ _____

Subcontractor

By: _____

Title: _____

Business Address: _____

**SECTION 00 73 00
SUPPLEMENTAL GENERAL CONDITIONS
TO THE AIA DOCUMENT A201-2017**

GENERAL CONDITIONS:

- A. The "General Conditions of the Contract for Construction". Document A-201, Sixteenth Edition, dated 2017, as issued by the American Institute of Architects, 1735 New York Avenue, N.W., Washington, D.C. 20006; form the General Conditions for this Contract whether bound herein or not. The term "Contractor" as used herein shall have the same meaning as the term "Construction Manager" or "General Contractor" as used in the Standard Form of Agreement between Owner and Contractor, AIA Document form stipulated in the Project Manual between the parties hereto.

- B. The provisions of the foregoing document shall apply to the work of this Contract, except as modified or supplemented hereinafter in the Supplemental Conditions. Where General Conditions Paragraphs or Subparagraphs are modified in part by the Supplemental Conditions, the portions of same which have not been modified shall remain in effect. In the event of discrepancy between the General and Supplemental Conditions, the Supplemental Conditions shall prevail.

ARTICLE 1 - GENERAL PROVISIONS:

- A. Paragraph 1.1 Basic Definitions: Add the following to Subparagraph 1.1.9:
 - 1. Notwithstanding procurement and contractual requirements, in the event of conflict or discrepancies among the Contract Documents, the Documents shall be construed according to the following priorities.
 - a. First Priority Addenda
 - b. Second Priority Division 1 of the Specifications
 - c. Third Priority Drawings and Div. 2-16 of the Specifications

 - 2. In the event of conflicts or discrepancies between the Drawings and Divisions 2-32 of the Specifications or within either document not clarified by Addendum, the Architect will determine which takes precedence in accordance with Section 4.2.11.

- B. Paragraph 1.1 Basic Definitions: Add the following to Subparagraph 1.1.10:

Except for the special agreements in Paragraph 3.18, nothing contained in the Contract Documents shall be construed to create any contractual relationship of any kind between the Architect and the Contractor.

ARTICLE 2 – OWNER:

Section 2.3: Delete “repeatedly” in line 2.

ARTICLE 3 - CONTRACTOR:

- A. Change Subparagraph number 3.18.2 to read “3.18.3”.
- B. Add the following Subparagraph:

3.18.2 Contractor shall indemnify, defend and hold harmless the Owner from all loss, costs and damages incurred by the Owner as a result of the filing of any mechanics liens relating to the Work, except to the extent such lien relates solely to Owner’s failure to make a timely progress payment under the Agreement.
- C. Add the following Subparagraphs:

3.2.5 The Contractor shall give the Architect timely notice of any additional design drawings, specifications, or instructions required to define the work in greater detail, in order to permit the proper progress of the work.

3.2.6 The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for the Architect to evaluate and respond to the Contractor’s requests for information, where such information was available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

3.2.7 Any necessary changes shall be ordered as provided in Article 7.
- D. Paragraph 3.4 Labor and Materials: Add the following Sections and clauses:

3.4.4 Not later than 15 days from the execution of the Construction Contract, the Contractor shall provide a list showing the name of the manufacturer proposed to be used for each of the major products to be used in the work and, where applicable, the name of the installing Subcontractor.

3.4.5 The Architect shall reply in writing within seven (7) days to the Contractor stating whether the Owner or the Architect, after due investigation, has reasonable objection to any such proposal. If adequate data on any proposed manufacturer or installer is not available, the Architect may state that action will be deferred until the Contractor provides further data. Failure to object to a manufacturer shall not constitute a waiver of any of the requirements of the Contract

Documents, and all products furnished by the listed manufacturer must conform to such requirements.

1. After the Construction Contract has been executed, the Owner and the Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the Contract Documents, Section 01001 Basic Requirements.
2. By making requests for substitutions based on Clause 3.4.4.1 above, Contractor:
 - a. represents that he has personally investigated the proposed substitute products and determined that it is equal or superior in all respects to that specified;
 - b. represents that he will provide the same warranty for the substitution that he would for that specified;
 - c. certifies that the cost data presented is complete and includes all related costs under this Contract but excludes costs under separate contracts, and excludes the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
 - d. will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects.
3. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect to evaluate the Contractor's proposed substitutions and to make agreed upon changes in the Drawings and Specifications made necessary by the Owner's acceptance of such substitutions. Such amounts shall be agreed upon by the Owner and the Contractor at the time that the substitution is accepted.

Section 3.7 Permits, Fees, Notices and Compliance with Laws

In Section 3.7.4 change the time required for notice from 21 days to 5 days.

E. Paragraph 3.9 Superintendent:

Add the following clauses to the end of Section 3.9.1:

1. The Contractor shall assign one construction superintendent to the project and maintain the same person as superintendent, excepting

acts beyond the Contractor's control, throughout the duration of the Contract.

2. The Contractor shall not make any changes in project superintendent personnel without prior written approval from the Owner.

3.9.4 The superintendent or assistant to the superintendent shall also perform as a coordinator for mechanical and electrical work. The coordinator shall be knowledgeable in mechanical and electrical systems and capable of reading, interpreting and coordinating Drawings, Specifications, and shop drawings pertaining to such systems. The coordinator shall assist the Subcontractors in arranging space conditions to eliminate interference between the mechanical and electrical systems and other Work and shall supervise the preparation of coordination drawings documenting the spatial arrangements for such systems within restricted spaces. The coordinator shall assist in planning and expediting the proper sequences of delivery of mechanical and electrical equipment to the site. The contract documents are the basis for the creation of the coordination drawings. The Architect is responsible for the fundamental coordination of the contract documents upon which all further coordination by Contractor is based. The Contractor is responsible for submission of coordination drawings, if required, and for final coordination of the Work.

F. Paragraph 3.12 Shop Drawings, Product Data and Samples

Add the following clauses to the end of Section 3.12:

3.12.11 The Architect's review of Contractor's submittals will be limited to examination of an initial submittal and up to one (1) resubmittal. The Architect's review of additional submittals will be made only with the consent of the Owner after notification by the Architect. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for evaluation of such additional submittals.

Section 3.18 Indemnification.

Change Section 3.18.2 to read "3.18.3".

Add the following Section:

3.18.2 The Contractor shall indemnify, defend and hold harmless the Owner from and against all loss, costs, and damages incurred by the Owner as a result of the filing of any mechanic's liens relating to the Work, except to the extent any such lien relates solely to or arises solely from Owner's failure to make a timely progress payment under the Agreement.

ARTICLE 4 - ADMINISTRATION OF THE CONTRACT:

A. Paragraph 4.2 Architect's Administration of the Contract

Add the following clauses to Section 4.2.1

4.2.2.1 The Contractor shall reimburse the Owner for compensation paid to the Architect for additional site visits made necessary by the fault, neglect, or request of the Contractor.

ARTICLE 5 – SUBCONTRACTORS

- A. Change the following phrase before the words "the Contractor shall require..." in first line of Paragraph 5.3.4 to read "By appropriate written agreement, the Contractor shall require.... "
- B. Add the words "in writing" after the words "subcontractor agreement" in the last sentence of Paragraph 5.4.1.
- C. Add the words "as may be agreed upon by the Subcontractor and the Owner" to the end of Paragraph 5.4.2.

ARTICLE 6 - CONSTRUCTION BY OWNER - No modifications.

ARTICLE 7 - CHANGES IN THE WORK:

- A. Delete the words "a reasonable allowance for overhead and profit" wherever they occur in Article 7 and substitute "an allowance for overhead and profit in accordance with the schedule set forth in subparagraph 7.1.4.
- B. Add the following subparagraphs and clauses:
 - 7.1.4 The allowance for overhead and profit combined, included in the total cost to the Owner, shall be based on the following:
 - 1. For the combination of the Contractor and all subcontractors, for any Work 15 percent of the cost.
 - 2. Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.6.
 - 7.1.4.2 In order to facilitate checking for quotations of extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$1,000.00 be approved without such itemization.

- C. Modify the following clause as indicated:
 - 7.2.1 ... and signed by the Owner, Contractor, Architect, and Financing Agent stating their agreement ...
- D. Any and all changes effected by Change Order or by Change Order Proposal shall be reviewed and endorsed by signature from a MaineHousing representative.

ARTICLE 8 - TIME:

- A. Paragraph 8.3 Delays and Extensions of Time:
 - 8.3.1 Delete the words "labor disputes" from line three.

Add the following Section 8.3.4:

The Owner shall have the right to establish liquidated damages for failure to achieve Substantial Completion in a timely manner. The amount and schedule for liquidated damages shall be \$500.00 per calendar day.

ARTICLE 9 - PAYMENTS AND COMPLETION

- A. Add the following to the end of the last sentence in Paragraph 9.3.1: ", together with lien waivers, on forms acceptable to the Owner's lenders, (i) from Contractor through end of period from which payment is sought, and (ii) from Subcontractors not more than 30 days in arrears.

Add the following clauses to Section 9.3.1:

- 9.3.1.3 Until the Work is 50 percent complete, the Owner will pay 90 percent of the undisputed amount due the Contractor on account of progress payments. Thereafter, the Owner will pay 100% of the undisputed amount due the Contractor on account of progress payments until Substantial Completion of the Work as defined in the General Conditions and amended herein. All Retainage accrued up to the point of 50% completion will be held by the Owner until Substantial Completion. From the point of 50% completion to Substantial Completion, Project retainage will not be allowed to fall below 5% of the adjusted Contract Sum, including the Original Contract Sum plus the costs of any executed Change Orders included in the Contractor's Requisition. The Owner may reinstate retainage at any time in sufficient amount to maintain the 5% level of retainage until Substantial Completion.
- 9.3.1.4 The full Contract retainage in the amount of 10 % may be reinstated at any time by the Owner if the manner of completion of the Work and its progress do not remain satisfactory to the Architect or the Owner, or if the Surety withholds its consent, or for other good and sufficient reasons.

- B. Delete the work “repeated” from item 9.5.1.7.
- C. Additional Paragraph: Insert additional Paragraphs in their proper locations as follows:

Paragraph 9.8 Substantial Completion: Add the following to the end of Subparagraph 9.8.1:

and only minor items, which can be corrected or completed without substantial interference with the Owner's use of the Work, remain to be corrected or completed, and a Certificate of Occupancy has been issued by the local code enforcement agency having jurisdiction for the project location.

- D. In the first line of 9.8.2, replace the word “agrees” with “may in its sole discretion agree”.
- E. Add the following to the end of the last sentence in Paragraph 9.8.5: “, reduced by 150% of the cost of the work that is incomplete or not in conformance with the Contract Documents.”
- F. Paragraph 9.10.2: Insert a new item (6) as follows:
 “(6) Delivery of As-Built Drawings”
- G. Replace the last two sentences in Paragraph 9.10.2 as follows: “If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor shall promptly furnish a bond or other security satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains undischarged after the furnishing of such bond or other security, the Contractor shall indemnify, defend and hold harmless the Owner for all sums that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorney’s fees. Contractor shall promptly at no cost to the Owner bond off of cause to be discharged all liens filed by Subcontractors, unless any such lien was filed due to non-payment by the Owner.”
- H. Add the following paragraph:

9.11 Storage of Materials Off Site

9.11.1 The Contractor, its Subcontractor and Sub-subcontractors shall obtain prior written approval from the Owner for permission to store materials to be incorporated in the Work, for which Progress Payments will be requested, at off-site locations. Such approval, which may also be subject to MaineHousing review, shall not be unreasonably withheld. Any and all charges for storage, including insurance, shall be borne solely by the Contractor. Before approval, Owner will require proper proof of insurance naming the Owner as an additionally insured party, and a letter in which is furnished the following:

1. The name of the Contractor and/or Subcontractor or Subordinate Subcontractor leasing the storage area.

2. The location of such leased space.
3. The leased area: the entire premises of certain areas of a warehouse giving the number of floors or portions thereof..
4. The date on which the material is first stored.
5. The value of the material stored.
6. A transfer of title of the material to the Owner once the Contractor receives payment.
7. A written waiver of all claims against the materials stored offsite by the lessor, lessee or owner of the location where such materials are stored.
8. Written documentation of Right of Entry.
9. Certificate of Insurance
10. Itemized list of stored materials, including an Invoice and/or Bill of Lading.

- I. All applications for payment shall be reviewed and endorsed by signature of a MaineHousing representative.

ARTICLE 10 – PROTECTION OF PERSONS AND PROPERTY

- A. Paragraph 10.2 Safety of Persons and Property

Add the following clauses to Section 10.2.4:

10.2.4.1 When use or storage of explosives, or other hazardous materials, substances or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall give the Owner reasonable advance notice.

10.2.4.2 If the Contract Documents require the Contractor to handle materials or substances that under certain circumstances may be designated as hazardous, the Contractor shall handle such materials in an appropriate manner.

- B. Add the following after the words “written notice” in the first sentence of Paragraph 10.3.2: “and subject to the requirements of the Owner’s lenders”.
- C. Add the following after the words “Contract Documents” in the second sentence of Paragraph 10.3.2: “or Owner’s lenders”.
- D. Paragraph 10.4 Add the following at the end of the paragraph: “and contractor has properly handled such materials.”

ARTICLE 11 - INSURANCE AND BONDS:

A. Paragraph 11.1 Contractor's Liability Insurance:

11.1.1.1 Delete the semicolon at the end of Section 11.1.1.1 and add:

“, including private entities performing Work at the site and exempt from the coverage on account of the number of employees of occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project.”

11.1.1.2 Delete the semicolon at the end of Section 11.1.1.2 and add:

“or persons or entities excluded by statute from the requirements of Section 11.1.1.1 but required by the Contract Documents to provide the insurance required by that section;

B. Add the following lines and clauses to the end of Section 11.1.2:

11.1.2 “...The insurance required by Section 11.1.1 shall be written for not less than the following, or greater if required by law and all such policies excluding Worker’s Compensation shall include the Owner as an additional insured and may be satisfied by provision of an umbrella liability policy that covers all items indicated.”

1. Worker's Compensation:

(a) State: Statutory

(b) Applicable Federal Statutory

2. Employers Liability \$500,000

3. Comprehensive General Liability (including Premises-Operations; Independent Contractors' Protective; Products and Completed Operations; Contractual Liability, Comprehensive Automobile Liability (Bodily Injury/Property Damage), Personal Injury with Employment Exclusion deleted, and Broad Form Property Damage (including coverage for XCU Hazards Liability) shall be as follows:

(a) Bodily Injury/Property Damage:

\$5,000,000 Each Occurrence/Accident
\$5,000,000 Annual Aggregate

(b) Products and Completed Operations shall be maintained for a minimum period of at least 1 year after either 90 days following Substantial Completion, or final payment, whichever is earlier.

4. Contractual Liability (including indemnification provisions):
 - (a) shall include coverage sufficient to meet the obligations in AIA Document A201-2007 under Section 3.18.
 8. Aircraft Liability (owned and non-owned) when applicable: (Owner to approve limits proposed by Contractor.)
 9. Watercraft Liability (owned and non-owned) when applicable: (Owner to approve limits proposed by Contractor).
 10. Contractor shall ensure that all sub and sub-sub contractors shall carry policies with \$1,000,000.00 insurance coverage for their work on this project.
- C. Add the following clause to Section 11.1.3:
1. The Contractor shall furnish three (3) copies each of Certificates of Insurance herein required with one copy for Architect's use, which shall specifically set forth evidence of all coverage required herein. The form of the Certificate shall be ACORD form 25 or equivalent, completed and supplemented in accordance with AIA G-715 – 1991 or equivalent. The Contractor shall furnish to the Owner copies of any endorsements that are subsequently issued amending coverage or limits.
- D. 11.1.4 is deleted in its entirety and is replaced with the following:
- § 11.1.4** The Contractor shall cause the commercial liability coverage required by the Contract Documents to include (1) the Owner, the Architect and the Architect's Consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's completed operations, (3)
- E. Paragraph 11.3 Property Insurance.
- 11.3.1 Add the following clause to Section 11.3.1:
- 11.3.1.6 The insurance required by Section 11.3 is not intended to cover machinery, tools or equipment owned or rented by the Contractor that are utilized in the performance of the Work but not incorporated into the permanent improvements. The Contractor shall, at the Contractor's own expense, provide insurance coverage for owned or rented machinery, tools or equipment, which shall be subject to the provisions of Section 11.3.7.

11.3.5 In the first sentence, delete the words “Owner shall waive all rights in accordance with” and replace them with “Owner shall not waive any rights in accordance with”; and delete the period at the end of the first sentence and replace it with “, to the extent the damage is caused by the Contractor’s negligence.”

11.3.7 Delete the first word at the beginning of the first sentence and replace it with “Except as set forth in article 11.3.5 above, the”.

F. Paragraph 11.4 Performance Bond and Payment Bond

11.4.1 Delete Section 11.4.1 and substitute the following:

11.4.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. Bonds may be obtained through the Contractor’s usual source and the cost thereof shall be included in the Contract Sum. The amount of each bond shall be equal to 100% of the Contract Sum. If requested, the contractor shall name the Owner’s financing authorities or agencies as Additional or Dual Obligee on the Payment and Performance Bonds. *Payment and Performance Bonds shall name the Maine State Housing Authority as dual obligee.*

11.4.1.1 The Contractor shall deliver the required bonds to the Owner not later than three (3) days prior to the scheduled loan closing date of the Project, or if the Work is to be commenced prior thereto in response to a letter of intent, the Contractor shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished.

11.4.1.2 The Contractor shall require the attorney in fact who executes the required bonds of behalf of the surety to affix thereto a certified and current copy of the power of attorney.

ARTICLE 12 – CORRECTION OF WORK:

- A. Add the words “of any deficiencies known to Owner” between the words “notify the Contractor” and “and give the Contractor an opportunity” in the second to the last sentence of Paragraph 12.2.2.1.

ARTICLE 13 - MISCELLANEOUS PROVISIONS:

- A. Paragraph 13.2 Successors and Assigns:

13.2.1: Add the following at the end of the second sentence: “; provided, however, that consent to an assignment by Owner will not be unreasonably withheld by Contractor.”

Delete Section 13.2.2 and replace with the following:

13.2.2 The Owner may assign the Contract to an institutional lender providing construction financing for the Project, and the Contractor shall execute a written consent to such assignment provided the lender agrees in the assignment to assume the obligations of the Owner. The Contractor shall execute all consents reasonably required to facilitate such assignment

B. Add the following Paragraph 13.8 to Article 13:

13.8 EQUAL OPPORTUNITY

13.8.1 The Contractor shall maintain polices of employment as follows:

13.8.1.1 The Contractor and the Contractor's Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex , national origin or sexual orientation. The Contractor shall take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, national origin or sexual orientation. Such action shall include, but not be limited to, the following employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the polices of non-discrimination.

13.8.1.2 The Contractor and the Contractor's Subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex , national origin or sexual orientation.

ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT:

A. Paragraph 14.2 Termination By The Owner For Cause:

14.2.1.1 Delete the words "persistently or repeatedly"

14.2.1.3 Delete the word "repeatedly"

ARTICLE 15 – CLAIMS AND DISPUTES :

The last sentence of Section 15.1.2 is deleted and is replaced with the following:

Claims by either party must be initiated within 90 days after occurrence of the event giving rise to such Claim or within 90 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

ARTICLE 16 - OTHER CONDITIONS OF THE CONTRACT:

- 16.1 The Contractor acknowledges that nothing in the performance of the Services of the Architect in connection with this project implies any undertaking for the benefit of, or which may be enforced by the Contractor, its subcontractors or suppliers, or the surety of any of them, and that the obligations of the Architect run solely to the benefit of the Owner.
- 16.2 Typographical errors shall not be grounds for additional payments.
- 16.3 The Architect is not responsible for the survey, identification, or removal of any hazardous materials, including asbestos, on the project.
- 16.4 The Contractor is not responsible for the survey, identification, or removal of any hazardous materials, including asbestos, on the project unless otherwise specified.
- 16.5 In the event the Contractor encounters material reasonably believed to be asbestos or other hazardous materials which has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner and the Architect in writing. The Work in the affected area shall not thereafter be resumed except by written agreement of the Owner and Contractor if in fact the material is asbestos or other hazardous materials and has not been rendered harmless. The Work in the affected area shall be resumed in the absence of asbestos or other hazardous materials, or when it has been rendered harmless, by written agreement of the Owner and Contractor. The Owner shall be responsible for contracting the removal of asbestos or other hazardous materials.
- 16.6 The Contractor shall not be required to perform without consent any Work relating to asbestos or other hazardous materials.
- 16.7 Access to Records
- 16.7.1 It is also agreed that the following Access to Records provision applies if Section 952 of the Omnibus Reconciliation Act of 1980 is found to apply to this contractual relationship. Until the expiration of four years after the furnishing of the services provided under this Contract, the Contractor will make available to the Secretary, U.S. Comptroller General, and their representatives, this Contract and all books, and documents and records necessary to certify the nature and extent of the costs for those services. If the Contractor carries out the duties of

the Contract through a subcontract worth \$10,000.00 or more over twelve month period with a related organization, the subperiod will also contain the access clause to permit access by the Secretary, Comptroller General, and their representative to the related organization's books and records.

16.8

MAINE HOUSING REQUIREMENTS

- A. Changes Orders - all Change Orders or Change Order Proposals must be approved by the MaineHousing Construction Analyst prior to the Change Order becoming a valid amendment to the Contract.
- B. Applications for Payment require MaineHousing Construction Analyst approval.
- C. Retainage - withhold retainage (10%) on payment requisitions/applications. Reductions in retainage if approved by the Owner and MaineHousing Construction Analyst.
- D. Closeout Requirements - MaineHousing Closeout requirements are included in Appendix A to this section.
- E. MaineHousing Incomplete Work Escrow policy and form is included in Appendix B to this section.
- F. All required MaineHousing forms are published in the Appendix.

END OF SUPPLEMENTAL GENERAL CONDITIONS

**SECTION 01 11 00
SUMMARY OF THE WORK**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: 45 Dougherty

1. Project Location: 45 Dougherty, Portland ME

Owner: The Szanton Company

- B. Architect: The Contract Documents were prepared for the Project by Archetype, P.A., 48 Union Wharf, Portland, Maine.

The Work includes, but is not limited to:

- New building construction built to passive LEED Silver standards
- Wood frame
- Concrete slab on grade.
- Site and landscaping work to include excavation, grading, paving, utilities trenching and installation.
- Storm water drainage system.
- Concrete masonry units
- Fiber cement lap siding, fiber cement panel siding, metal shingles and brick veneer – see elevations
- Rough and finish carpentry.
- Spray foam insulation, Fiberglas, rigid , Dens pack
- White EPDM roofing and shingle roofing
- Steel and wood doors and frames.

- Vinyl windows.
- Finishes include gypsum board walls and ceilings, resilient flooring and base, carpet and painting.
- The work includes a hydraulic elevator.
- Specialties include postal boxes, shelving, toilet and bath accessories and window treatment.
- The building will be fully sprinkled.
- The Work includes plumbing and mechanical systems.
- The Work includes electrical service, panels, switches and devices, and lighting.
- The Work includes fire alarm and smoke detection systems.
- The Work includes intercom/door control and telephone and cable systems.
- Blower door testing will be performed by an owner-paid, third-party testing agent. The Contractor is responsible for coordination, site access, preparation and any necessary remedial work found to be required by test results.
- Mechanical commissioning will be performed by the design engineer. Contractor shall coordinate with the engineer for timing of inspections and installations, as well as start-up scheduling.

1.3 CONTRACT

- A. The contract shall be AIA Document A101 – Standard Form of Agreement Between Owner and Contractor. See also AIA 201 General Conditions and Section 00 73 00 Supplementary Conditions.

1.4 BONDS

- A. Performance Bond shall be AIA A312 Performance Bond.
- B. Labor and Material Payment Bond shall be AIA A312 G Labor and Material Payment Bond

1.5 USE OF PREMISES

- A. General: During the entire construction period the Contractor shall have the exclusive use of the premises for construction operations, including full use of the site.

END OF SECTION

SECTION 01 31 00

SUBMITTALS, MEETINGS AND RECORD DOCUMENTS

1. GENERAL

1.1 PRE-CONSTRUCTION MEETING

A. Architect will schedule a pre-construction meeting within 15 days of issuance of Notice to Proceed, to be attended by the owner, all project managers, Contractor's field superintendent, representatives of financial institutes and representatives of major sub-contractors. Within 48 hours of contract signing, GC shall submit to Owner and Maine Housing the specified pre-construction submittals including the following:

1. Typed list of sub-contractors with addresses and telephone numbers.
2. Certificates of insurance.
3. Approved construction schedule. See General Conditions, Paragraph 3.10.
4. Schedule of values.
5. Start-up authorization or certificates.
6. Completed GC Contract, Building Permits, SFMO Permits, and Bonds.

B. Pre-construction meeting agenda will include following:

1. Processing application for payment.
2. Processing and distribution of submittals.
3. Maintenance of record documents and provisions of As-Built documents.
4. Procedure for field changes, change estimates, change orders, etc.
5. Site and building security.
6. Location and maintenance of temporary storage areas, field offices, vehicular parking and access, waste disposal, etc.
7. Safety and first-aid procedures and policy for visitors and non construction personal to site.
8. Date and time for regular monthly coordination and progress meeting (to be coordinated with monthly application for payment).

1.2 CONSTRUCTION SCHEDULE

A. Refer to General Conditions, Paragraph 3.10, for general provisions concerning construction progress schedule. Schedule shall show activities, itemized according to specification Section, and be organized in bar-chart or graph form so as to show both projected and actual progress of work.

B. Arrange schedule to indicate required sequencing of units, and to show time allowances for submittals, inspections, and similar time margins.

C. Show critical submittal dates related to each time bar, or prepare a separate coordinated listing of critical submittal dates.

- D. Show phases of work within each time bar for major elements which involve purchase lead-time, fabrication, seasonal treatment, mockups, testing, or similar phases as well as installation.
- E. Submit updated schedule monthly, together with application for payment.

1.3 SCHEDULE OF VALUES

- A. Refer to General Conditions, Paragraph 9.2 for general provisions concerning schedule of values.
- B. For these submittals, use AIA Document G702/703, Application and Certificate for Payment.
- C. Use specifications Sections as listed in Table of Contents as basis for format for listing costs.
- D. Itemize separately general cost items, such as bonds and allowances.
- E. Itemize change orders separately as they are approved.

1.4 MEETINGS AND REPORTING

- A. Contractor shall conduct general progress and coordination meetings at least once each month, attended by a representative of each primary entity engaged for performance of work. Record discussions and decisions, and distribute copies to those attending and others affected, including Architect/Engineer, Owner and MaineHousing.
- B. Date and time of at least one regular monthly progress and coordination meeting shall be determined at the pre-construction meeting. Timing of this monthly meeting shall be coordinated with payment requests.

1.5 APPLICATION FOR PAYMENT

- A. Refer to General Conditions, Paragraph 9.3, for general provisions concerning applications for payment.
- B. Use AIA Form G702/703, fully completed and executed.
- C. Submit the forms in triplicate including attachment of waivers and similar documentation with one copy. Submit with attachments to MaineHousing.

1.6 SHOP DRAWINGS, PROJECT DATA, SAMPLES

- A. Refer to General Conditions, Product Data and Samples, paragraph 3.12, for general provisions covering this type of submittal. Refer to specification section 01 33 00 - Submittal Procedures for specific provisions for all submittals.
- B. Coordinate the preparation and processing of work-related submittals with the performance of the work. Coordinate each separate submittal with other submittals and related activities that require sequential activity. Coordinate the submittal of different units of interrelated work so that one submittal will not be delayed by the necessity of reviewing a related submittal.
- C. Architect/Engineer Review:
 - 1. Allow ten working days for the Architect/Engineer's initial processing of each submittal. Allow one week for reprocessing each submittal. No extension of time will be authorized because of failure to transmit submittals to the Architect/Engineer sufficiently in advance of the work.
 - 2. The Architect/Engineer will stamp each submittal to be returned with a uniform, self-explanatory action stamp, appropriately marked and executed to indicate the status of the submittal.
- D. Mark each submittal with a permanent label for identification. Provide project name, date, name of Architect/Engineer, name of Contractor, number and title of appropriate specification section and similar definitive information. Provide a space on the label for Contractors and Architect/Engineer's review markings.
- E. Package each submittal appropriately for transmittal and handling. Send each submittal from the Contractor to the Architect/Engineer and other destinations using AIA Transmittal Form G810.
- F. Provide additional copies of submittals required by governing authorities that are in addition to copies specified for submittal to the Architect/Engineer.
- G. Where it is necessary to provide intermediate submittals between the initial and final submittals, provide and process intermediate submittals in the same manner as for initial submittals.
- H. Submit as follows:
 - 1. Shop drawings (original drawings prepared by Contractor or sub-contractor illustrating fabrication, layout, erection details, etc.): six prints, or one reproducible transparency and one opaque print, to Architect.
 - 2. Manufacturers' specifications, installation instructions, charts, schedules, catalogs, brochures, etc.: number of copies required by Contractor for distribution, plus one copy for Architect's retention.
 - 3. Samples: one sample to Architect only, unless otherwise specified.

4. In submitting shop drawings and product data to Architect, use separate transmittals for material in different specification Sections, with applicable specification Section clearly numbered.
- I. Architect will review submittals within ten working days, measured from date of receipt by Architect until date of mailing. Contractor shall promptly make corrections and resubmit when so directed. Where submittal is marked "Approved as Noted" or similar, assume that all items are approved other than those to which specific exception is taken. Do not delay fabrication, assembly and delivery pending receipt of entirely "Approved" submittal.
- J. Distribute approved submittals to job site and record document files, and to suppliers and sub-contractors as required. Samples not designated by Contractor for incorporation into Work shall be kept on file until job completion. Any sample not reclaimed within 30 days after job completion will be considered unclaimed, and will be disposed of as directed by Architect.

1.7 PROJECT RECORD DOCUMENTS

- A. Keep on file at job site one complete set of up-to-date Contract Documents, including drawings and specifications, addenda, shop drawings and product data, testing data, change orders, field orders, and other modifications. Documents shall be neatly and securely stored in files or on racks, clearly indexed by trade activity or specification Section, and shall not be used for construction purposes.
- B. Legibly mark significant field changes such as following, using colored pencils or felt-tipped pens:
 1. Drawings: locations of concealed utilities, field changes of dimension and detail, changes resulting from change order or field order, and details not on original drawings.
 2. Specifications: manufacturer and model number of equipment actually installed.
 3. Shop drawings and manufacturers' literature: changes made after Architect's review.
- C. At completion of Work, deliver completed record documents to Architect. Final payment for Project will not be made until Architect reviews and approves these documents.

1.8 SUBSTANTIAL COMPLETION

- A. Refer to General Conditions, Article 9, Substantial Completion, for general provision concerning substantial Completion.

- B. Following issuance by Architect/Engineer of Certificate of Substantial Completion, Contractor may submit special payment request, provided the following have been completed:
1. Obtain permits, certificates of inspection and other approval and releases by governing authorities, required for Owner's occupancy and use of project.
 2. Submit warranties and similar documentation.
 3. Submit maintenance manuals and provide instruction of Owner's operational/maintenance personnel.
 4. Complete final cleaning of the work.
 5. Submit record documents.
 6. Submit listing of work to be completed before final acceptance.
- C. Following completion of the following requirements, final payment request may be submitted:
1. Complete work listed as incomplete at time of substantial completion, or otherwise assures Owner of subsequent completion of individual incomplete items.
 2. Settle liens and other claims, or assure Owner of subsequent settlement.
 3. Submit proof of payment on fees, taxes and similar obligations.
 4. Transfer operational, access, security and similar provisions to Owner; and remove temporary facilities, tools and similar items.
 5. Completion of requirements specified in "Project Closeout" section.
 6. Obtain consent of surety for final payment.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Section Includes:
 - 1. Submittal procedures.
 - 2. Product Data, Shop Drawings, and Samples.
 - 3. Assurance/Control submittals.
 - a. Certificates.
 - b. Manufacturer's installation instructions.
 - 4. Architect's action.
- B. Related Documents: The Contract Documents, as defined in Section 01 11 00 - Summary of Work, apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

1.2 SUBMITTALS

- A. Submit two copies of proposed Schedule of Submittals to Contracting Officer Representative within 30 days after receipt of Notice to Proceed. List all items require submittal for review and approval by Contracting Officer.
- B. Submit two copies of final Schedule of Submittals to Contracting Officer Representative within 2 days after receipt of proposed Schedule of Submittals review from Contracting Officer.
- C. Submit schedule on Contracting Officer approved form provided to Contractor by Contracting Officer Representative.
- D. Schedule of Submittals: Include the following.
 - 1. Indicate type of submittal; product data, shop drawing, sample, certificate, or other submittal.
 - 2. Identify by Specification Section number, Specification paragraph number where item is specified, and description of item being submitted.
 - 3. Indicate scheduled date for initial submittal, date for approval, and date for possible resubmittal for each submittal.
- E. Coordinate Schedule of Submittals with Construction Schedule. Revise and update Schedule of Submittals when required by changes in the Construction Schedule. Provide Contracting Officer Representative with updated schedules within 2 days of date schedule is revised.

1.3 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Contracting Officer accepted form. Submit 3 copies of each transmittal.

- B. Sequentially number transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Lessor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to comply with scheduling requirements of Construction Schedule
- F. For each submittal for review, allow 10 days excluding delivery time to and from the Contractor.
- G. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- H. Provide space for Contractor and Architect of Record review stamps.
- I. Revise and resubmit, identify all changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with provisions.
- K. Submittals not requested will not be recognized or processed.

1.4 PRODUCT DATA

- A. Product data includes printed information such as catalog cuts, manufacturer's published instructions, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, performance curves and other similar items.
- A. Submit the number of copies which the Contractor requires, plus two copies which will be retained by Contracting Officer Representative and Architect of Record.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
- C. Indicate Product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

1.5 SHOP DRAWINGS

- A. Submit in the form of one reproducible transparency and one opaque reproduction.

- B. Shop Drawings: Submit for review. After review, produce copies and distribute in accordance with the SUBMITTAL PROCEDURES article above.
- C. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

1.5 SAMPLES

- B. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- C. Submit samples of finishes in colors selected, textures, and patterns for Contracting Officer selection.
- D. Include identification on each sample, with full Project information.
- E. Submit the number of samples specified in individual specification sections; one of which will be retained by the Contracting Officer.

1.6 CERTIFICATES

- A. When specified in individual specification sections, submit certification by manufacturer to Contracting Officer, in quantities specified for Product Data.
- B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Contracting Officer.

1.7 MANUFACTURER INSTALLATION INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, to Contracting Officer Representative in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.8 CONTRACTING OFFICER ACTION

- A. For submittals where action and return is required or requested, Contracting Officer Representative will review each submittal, mark to indicate action taken, and return promptly; generally within 10 calendar days from date of receipt.
 - 1. Compliance with specified characteristics is the Lessor's responsibility.
 - 2. Submittals for information, closeout documents, record documents and other submittals for similar purposes, no action will be taken.

- B. Action Stamp: Architect of Record will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken.
1. "Accepted": Final Unrestricted Release. Where submittals are marked "Accepted", that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
 2. "Accepted as Noted": Final-But-Restricted Release. When submittals are marked "Accepted as Noted", that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
 3. "Rejected: Submit Specified Item" or "Revise and Resubmit": Returned for Resubmittal. When submittal is marked "Rejected: Submit Specified Item", "Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
 - a. Do not permit submittals marked "Rejected: Submit Specified Item" or "Revise and Resubmit," to be used at the Project site, or elsewhere where Work is in progress.
 4. "Returned - Not Required": Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked "Returned - Not Required".

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 33 10

PRODUCTS AND SUBSTITUTIONS

1. GENERAL

1.1 PROCEDURAL REQUIREMENTS

A. Source Limitations:

1. To the fullest extent possible, provide products of the same generic kind, from a single source, for each unit of work. Where it is not possible to do so, match separate procurements as closely as possible.
2. To the extent that the product selection process is under the Contractor's control, provide products that are compatible with previously selected products.
3. Where standard products are available that comply with specified requirements, provide those standard products that have been used successfully before in similar applications, and that are recommended by the manufacturers for the applications indicated.

1.2 PRODUCT SELECTION LIMITATIONS

A. Product Selections: Comply with the following requirements in the selection of products, materials and equipment:

1. Single Product Name: Where only a single product or manufacturer is named, provide the product, unless it is not available, is incompatible with existing work, or does not comply with specified requirements or governing regulations.
2. Two or More Products Named: Where two or more products or manufacturers are named, the selection is at the Contractor's option, provided the product selected complies with specified requirements.
3. "Or Approved Equal" Provisions": Where products or manufacturers are specified by name accompanied by the term "or approved equal", provide either the product named, or comply with the requirements for gaining approval of "substitutions" for the use of an unnamed product.
4. Compliance with Standards: Where the specifications require only compliance with an imposed standard, code or regulation, the Contractor has the option of selecting any product that complies with specified requirements provided no product names are indicated.
5. Performance Requirements: Where the specifications require compliance with indicated performance requirements, the Contractor has the option of selecting any

product that complies with the specific performance requirements, provided no product names are indicated.

6. Visual Requirements: Where the specifications indicate that a product is to be selected from the manufacturer's standard options, without naming the manufacturer, the Architect/Engineer has the option of making the selection, after the Contractor has determined or selected the manufacturer.
- B. Nameplates: Except as otherwise indicated for required labels and operating data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products which will be exposed to view either in occupied spaces or on the exterior of the completed project.

1.3 SUBSTITUTIONS

- A. Conditions: The Contractor's requests for substitutions will be considered when they are reasonable, timely, fully documented, and when they qualify under one or more of the following circumstances.
1. The proposed substitution is related to an "or approved equal" or similar provision in the contract documents.
 2. The required product cannot be supplied in time for compliance with Contract Time requirements.
 3. The required product is not acceptable to governing authorities.
 4. The required product cannot be properly coordinated with other materials in the work, or cannot be warranted or insured as specified.
 5. The proposed substitution will offer a substantial advantage to the Owner after deducting offsetting disadvantages including delays, additional compensation to the Architect/Engineer for redesign, evaluation and other necessary services, and similar considerations.
- B. Submittals: Include the following information, as appropriate, in each request for substitution:
1. Provide complete product documentation, including product data and samples, where appropriate.
 2. Provide detailed performance comparisons and evaluation, including testing laboratory reports where applicable.
 3. Provide coordination information indicating the effect of the substitution on other work and the time schedule.
 4. Provide cost information for the proposed change order.

5. Provide the Contractor's general certification of the recommended substitution.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Receive, store and handle products, materials and equipment in a manner which will prevent loss, deterioration and damage.
- B. Schedule deliveries so as to minimize long-term storage at the project site.

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL SERVICES

1. GENERAL

1.1 DESCRIPTION

- A. Quality control services include inspections and tests performed by independent agencies and governing authorities, as well as by the Contractor.
- B. Inspection and testing services are intended to determine compliance of the work with requirements specified.
- C. Specific quality control requirements are specified in individual specification sections.
- D. ***Blower door testing will be performed by an owner-paid, third-party testing agent. The Contractor is responsible for coordination, site access, and preparation. Should the results not pass this test, the cost of all re-testing and any remedial work by any subcontractor or trade shall be borne solely by the Contractor.***

BLOWER DOOR TESTING is required for each project and is to include either a whole building test (if possible) based on building type and configuration or a representative number of units, as determined by Owner or MaineHousing, to verify effectiveness of air sealing. The intent of Blower door testing is to verify that the building meets MaineHousing requirements for effective air sealing to prevent heat loss and creation of cold surfaces that can cause condensation and mold growth.

Test Procedure:

- a. Blower Door test conducted with calibrated equipment operated by a trained and qualified technician to be performed before the drywall is installed if polyethylene is the air barrier & after installation if airtight drywall approach (ADA).
- b. Maximum building envelope leakage is to not exceed 0.20 cubic feet per minute per square foot at 50 pascals negative pressure (0.20 CFM/SF @ 50 PA).

The SF (Square Foot) reference in the standard is the total building envelope square footage area measured using the outside surface dimensions. The intent is to analyze the effectiveness of the air sealing.

Example: A building that is 8' tall (single story) and has dimensions that are 24' by 24' would have an envelope SF of:

Walls: 4 walls 8'x24' = 768 SF Floor: 24 x 24 = 576 SF

Roof: 24 x 24 = 576 SF

Total: 1,920 SF of Envelope

- E. ***Mechanical commissioning will be performed by the design engineer. Contractor shall coordinate with the engineer for timing of inspections and installations, as well as start-up scheduling.***

1.2 RESPONSIBILITIES

- A. Except where indicated as being the Owner's responsibility, quality control services are the Contractor's responsibility, including those specified to be performed by an independent agency and not by the Contractor.
- B. The Contractor shall employ and pay an independent agency, testing laboratory or other qualified firm to perform quality control services specified.
- C. The Owner will engage and pay for services of an independent agency to perform the inspections and tests that are specified as Owner's responsibilities.
- D. Where results of inspections or tests do not indicate compliance with contract document, retests are the Contractor's responsibility.
- E. The Contractor shall cooperate with independent agencies performing inspections or tests. Provide auxiliary services as are reasonable. Auxiliary services include:
 - 1. Provide access to the work.
 - 2. Assist taking samples.
 - 3. Deliver samples to test laboratory.

1.3 COORDINATION

- A. The Contractor and independent test agencies shall coordinate the sequence of their activities. Avoid removing and replacing work to accommodate inspections and tests. The Contractor is responsible for scheduling times for inspections and tests.

1.4 QUALIFICATIONS FOR SERVICE AGENCIES

- A. Engage inspection and test service agencies which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories.
- B. Each agency shall be employed with the approval of the Architect/Engineer.

1.5 SUBMITTALS

- A. Notify the Architect/Engineer of the testing schedule.
- B. Submit a certified written report of each inspection test or similar service, in duplicate to the Architect/Engineer. Submit additional copies of each report to governing authority, when the authority so directs.

1.6 REPORT DATA

- A. Written inspection or test reports shall include:
 - 1. Name of testing agency or test laboratory.
 - 2. Dates and locations of samples, tests or inspections.
 - 3. Names of individuals present.
 - 4. Complete inspection or test data.
 - 5. Test results.
 - 6. Interpretations.
 - 7. Recommendations.
 - 8. Structural Special Inspections

- B. Reports shall be provided to the Architect/Engineer and directly to MaineHousing in a timely manner.

1.7 REPAIR AND PROTECTION

- A. Upon completion of inspection or testing repair damaged work and restore substrates and finishes. Comply with requirements for "Cutting and Patching".

END OF SECTION

SECTION 014523 - BLOWER DOOR TESTING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for quality assurance and quality control.
- B. Requirements of this section will include performing a Blower Door Test for the whole building.
- C. Test will be performed by Owner's representative (consultant or commissioning agent ("CxA")) with cooperation and some preparation by the Contractor.
- D. Related Sections:
 - 1. Drawings and general provisions of Contract including General and Supplementary Conditions and all Division 1 specification sections.

1.2 DEFINITIONS

- A. Blower Door Test: A blower door test is used to quantify building air leakage. The standard blower door test is a depressurization test. This means that air will be blown out from the building, creating a negative pressure in the building.
- B. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.3 SUBMITTALS

- A. Section 01 33 00 - Submittal Procedures: Submittal procedures.
- B. Reports: Prepare and submit certified written reports that include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Ambient conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and re-inspecting.

1.4 QUALITY CONTROL

- A. Perform test in accordance with CGSB Standard 149, "Determination of the Air Tightness of Building Envelopes by Fan Depressurization Method, Canadian General

Standards Board" or ASTM E779 "Test Method for Determining Air Leakage by Fan Pressurization."

- B. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 PRE-TEST PREPARATION

- A. Before conducting the blower door test, the building needs to be placed in its normal heating or cooling configuration. This includes closing operable openings and preparing combustion appliances. The building that is to be tested should be prepared in the following ways:
 - 1. Mock-up/ model unit: prepare one corner dwelling unit for testing of exterior wall and as soon after rough-in of electrical and plumbing as possible. Complete insulation and air sealing and drywall prior to mock up unit blower door testing.
 - 2. The building should be wired with at least one working 20-amp circuit available to power the blower door fan and usually, the accompanying fog testing equipment.
 - 3. The forces created by the blower door fan for this test (up to at least 50 Pascals) are quite powerful and will tear material from walls that is not securely fastened. Sheetrock and rigid foam will hold, Tyvek, poly, and aluminum vapor and air-barrier materials probably will not.
 - 4. Attend a pre-construction air sealing meeting with all subcontractors that can affect air sealing, including, but not limited to, plumbing, electrical, HVAC, drywall, insulation.

3.2 DOORS AND WINDOWS

- A. A doorway must be provided that can be sealed and off limits to usage for the duration of the test. For the blower door test this will be up to one hour, but the fog test and on-the-spot air sealing work this could be a half day or longer.
- B. All interior doors must be open.
- C. Close all storm and prime windows.
- D. Close all exterior doors and attic or crawl space hatches connected to heated spaces. Also close exterior crawl space hatches.
- E. Open all interior doors to rooms that are heated. The object here is to treat the entire building as one heated space. Because few basements can be completely

sealed from the building and usually some heat to the basement is desirable, they are typically included as a heated space.

- F. Tape plastic over window air conditioners if they appear to be a source of air leakage into the building and they are normally removed during the winter. Close the AC fresh air vents.

3.3 COMBUSTION APPLIANCES - EXHAUST DEVICES

- A. Adjust any combustion appliances so they do not turn on during the test. This is usually done by turning off power to the heating system and turning the water heater to the "Pilot" setting. NOTE: If vented combustion appliances turn on during a depressurization test, it is possible for flames to be sucked out of the combustion air inlet (flame rollout). This is a fire hazard.
- B. Be sure that fires in fireplaces and woodstoves are completely out. Take precautions to prevent ashes from being blown into the building during the test. In most cases, closing dampers and doors is sufficient, but when they are leaky or absent, it will be necessary to either tape doors shut, clean out the ashes, or cover the ashes with wet newspaper.
- C. Turn off any exhaust fans, vented dryers, air conditioners and HV AC fans.
- D. Do not seal combustions flues, dryer vents, or ventilation system exhaust or intake vents that are normally open in the winter.

3.4 BLOWER DOOR TEST PROCEDURES (to be completed by consultant or CxA)

- A. Install blower door frame, panel, and fan in an exterior doorway with a clear path to outdoors.
- B. Follow manufacturer's instruction for fan orientation and manometer setup for either pressurization or depressurization.
- C. Connect the building-pressure manometer to measure building WRT outdoors.
- D. Connect the airflow manometer to measure fan WRT zone near fan inlet. The zone near the fan inlet is indoors for depressurization and outdoors for pressurization.
- E. Make pretest adjustments to manometer following manufacturer's instruction. Zero manometers as described previously.
- F. Turn on the fan and increase its speed until you read 50 pascals of pressure difference between indoors and outdoors.
- G. Read the CFM_{50} from the airflow manometer or from the second channel of a two-channel digital manometer.
- H. If the building cannot be depressurized to -50 pascals, depressurize to highest multiple of 5 and multiply your measured airflow by the "can't reach fifty" (CRF) factors in the following conversion table:

SECTION 014523
INDOOR AIR QUALITY REQUIREMENTS

Building Pressure	15	20	25	30	35	40	45
CRF Factor	2.2	1.8	1.6	1.4	1.3	1.2	1.1

3.5 REQUIREMENTS

- A. Maximum whole building envelope leakage is to not exceed 006 cubic feet per minute per square foot at 50 Pascals negative pressure (0.06 CFM/SF @ 50 PA).

END OF SECTION