

**STATE OF NEW HAMPSHIRE  
DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT  
DIVISION OF PARKS AND RECREATION  
PLANNING AND DEVELOPMENT**

172 Pembroke Road  
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Concord, NH 03301  
Tel. (603) 271-2606 Fax (603) 271-2629

PROJECT MANUAL

Project No.: CAP #1634

North Country Resource Center  
Siding and Window Replacement

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September 19, 2016

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**PART I**

**BIDDING DOCUMENTS**

**SECTION 00 11 16**

**INVITATION TO BID**

SIDING AND WINDOW REPLACEMENT  
CAP NO. 1634  
NORTH COUNTRY RESOURCE CENTER

1. **Sealed Bids:** Proposals for a General Contract for the Construction of the above project will be received by the Owner until 2:00 P.M. prevailing time on October 20, 2016, at which time they will be publicly opened and read aloud. All Bids shall be made out only on the form included in the specifications package and delivered in sealed, labeled envelope marked: Bid Proposal for North Country Resource Center – Siding and Window Replacement and deposited in the bid box located at the reception desk of the Department of Resources and Economic Development (DRED) offices at 172 Pembroke Road in Concord, NH. Bidders are invited to attend the Bid opening. Bids received after the above stated time and date will not be accepted.
  
2. **Technical Questions:** Questions regarding the Bidding Documents shall be referred to: Department of Resources and Economic Development, 172 Pembroke Road, Concord New Hampshire, 03302, Telephone (603) 271-2606, attention Scott Coruth, Architect.
  
3. **Documents:** Bidding Documents may be examined at the Planning and Development Section of DRED, 172 Pembroke Road, Concord NH and at the following locations:  
  
**Construction Summary of New Hampshire Inc.:** 734 Chestnut Street, Manchester, New Hampshire 03104, (603) 627-8856, [www.constructionsummary.com](http://www.constructionsummary.com)  
  
**Infinite Imaging:** 933 Islington Street, Portsmouth, NH 03801, (800) 581-2712 or (603) 436-3030, [www.planroom.infiniteimaging.com](http://www.planroom.infiniteimaging.com)  
  
**McGraw-Hill Construction:** [www.construction.com](http://www.construction.com)  
  
**Signature Digital Imaging:** 45 Londonderry Turnpike, Hooksett, NH 03106, (603) 624-4025, [www.signaturenh.com](http://www.signaturenh.com)  
  
**Works in Progress:** 20 Farrell Street, Suite 103, South Burlington, VT 05403. (800) 286 3633 or (802) 658-3797  
  
**New Hampshire Department of Administrative Services Bureau of Purchase and Property Website:** <http://admin.state.nh.us/purchasing/vendorresources.asp>  
  
**New Hampshire State Parks Website:** [www.nhstateparks.org](http://www.nhstateparks.org) under the News & Events tab improvement projects sub tab
  
4. **Qualifications:** All companies, corporations, and trade names bidding must be registered and have a certificate of existence from the New Hampshire Secretary of State's Office, Corporate Division (telephone 603-271-3244) in order to do business with the State of New Hampshire

5. Bid Security: A Bid Bond in the amount of five (5%) percent of the total amount of the lump sum bid price shall accompany each Bid Proposal in accordance with the Instructions to Bidders.
6. Bonds: Bidders shall be required to provide the Owner with financial responsibility as security for the completion of the contract in accordance with the plans, specifications and contract documents, in the form of a Performance and Payment Bond in the amount of One Hundred (100%) Percent of the contract award, if the contract award is thirty-five thousand dollars (\$35,000) or more, the cost of which shall be a part of the Base Bid. The form of bond shall be that provided for by the Department, and the surety shall be acceptable to the Commissioner. No contract bond shall be required on contract awards of less than thirty-five thousand dollars (\$35,000).
7. Inspection of Site: Bidders are expected to thoroughly inspect existing building and site conditions prior to submission of Proposals. A pre-bid tour of the existing building/site will be conducted by the Owner on October 6, 2016 at 10:30 a.m. at the North Region Resource Center, Route 3, Lancaster NH. Attendance by Bidders shall be considered mandatory.
8. Awards: In most cases the proposal submitted by the qualified bidder with the lowest base bid price shall be selected. However, the Department of Resources and Economic Development (DRED) reserves the right to reject any or all proposals, or advertise for new proposals as it judges to be in the best interest of the state.

**END OF INVITATION TO BID**

## **SECTION 00 21 13**

### **INSTRUCTIONS TO BIDDERS**

SIDING AND WINDOW REPLACEMENT  
CAP NO. 1634  
NORTH COUNTRY RESOURCE CENTER

### **ARTICLE 1**

#### **DEFINITIONS**

- 1.1 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201, or in other Contract Documents are applicable to the Bidding Documents.
- 1.2 Bidding Documents include the Bidding Requirements and the proposed Contract Documents. The Bidding Requirements include the Invitation to Bid, Instructions to Bidders, the Proposal Form and other sample Bidding and Contract forms.
- 1.3 Addenda are written or graphic instruments issued prior to the execution of the Contract. They modify or interpret the Bidding Documents by additions, deletions, clarifications, or corrections. Addenda will become part of the Contract Documents when the Construction Contract is executed.
- 1.4 A Bid is a complete and properly signed Proposal to do the Work or designated portion thereof for the sums stipulated therein, submitted in accordance with the Bidding Documents.
- 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or deducted for sums stated in Alternate Bids.
- 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in Work, as described in the Bidding Documents, is accepted.
- 1.7 A Unit Price is an amount stated in the Bid as a possible price per unit of measurement for materials, equipment, services or a portion of the Work as described in Bidding Documents. The choice of using Unit Prices, or an alternative method of payment, for additional Work shall be left solely to the Owner's discretion.
- 1.8 A Bidder is a person or entity who submits a Bid.
- 1.9 A Sub-Bidder is a person or entity who submits a bid to a Bidder for materials, equipment or labor for a portion of the Work.

## ARTICLE 2

### **BIDDER'S REPRESENTATION**

- 2.1 Each Bidder by making his Bid represents that he has examined and understands the Bidding Documents, that the Bidding Documents are adequate to produce the required results, and that his Bid is in accordance therewith.
- 2.2 Each Bidder by making his Bid represents that he has visited and thoroughly inspected the existing building and site and familiarized himself with the local conditions under which the Work will be performed. Bidders are encouraged to make any and all inspections and tests as they feel necessary to achieve such familiarization prior to submitting Bids. Such inspections and tests shall be conducted at times mutually acceptable to the Owner and Bidder. Unless waived by the Owner, Bidders shall make repairs following their testing, as necessary to restore tested areas to pre-testing condition. Should a Bidder conclude that time or other factor(s) prohibits him from performing sufficient tests, he shall so notify the Owner, in writing, prior to the receipt of Bids.
- 2.3 The submission of a Bid will be construed as conclusive evidence that the Bidder has made all such examinations and inspections necessary for a complete and proper assessment of the Work required, and that the Bidder has included in his Bid a sum sufficient to cover the cost of all items necessary to perform the Work as set forth in the proposed Contract Documents. No allowance will be made to a Bidder because of lack of such examination, inspection or knowledge.
- 2.4 Each Bidder by making his Bid represents that he has assessed the conditions of the current construction marketplace, and verified that an adequate, experienced workforce is available to suitably man the Work of this Project, and complete it in a timely fashion.
- 2.5 Each Bidder is assumed to have made himself familiar with all Federal, State and Local laws, ordinances and regulations which in any manner affect those engaged in or upon the Work, or in any way affect those engaged or employed in the Work, and no plea of misunderstanding will be considered on account of ignorance thereof. The Contractor shall comply with all taxes, fees and assessments as levied by Federal, State and Local authorities.

## ARTICLE 3

### **BIDDING PROCEDURES**

- 3.1 All Bids must be prepared on the Proposal forms provided in the Specification and submitted in duplicate copies in accordance with the Notice to Bidders and Instructions to Bidders.
- 3.2 A Bid shall be invalid if it has not been deposited at the designated location prior to the time and date in the Invitation to Bid, or prior to any extension thereof issued to the Bidders.
- 3.3 Each copy of a Bid shall be signed by the person or persons legally authorized to bind the Bidder to a Contract. A Bid by a corporation shall further give the state of incorporation and have a corporate seal affixed.

- 3.4 Unless otherwise provided in any supplement to these Instructions to Bidders, no Bidder shall modify, withdraw or cancel his Bid or any part thereof for ninety (90) days after the time designated for the receipt of Bids in the Notice to Bidders.
- 3.5 Prior to the receipt of Bids, Addenda will be e-mailed, mailed or delivered to each person or firm recorded by the Owner as having received the Bidding Documents and will be available for inspection wherever the Bidding Documents are kept available for that purpose.

#### **ARTICLE 4**

##### **BID SECURITY**

- 4.1 Bid Security shall be made payable to the Owner, in the amount of not less than five percent (5%) of the Bid Sum and shall be attached to the Bid. Security shall be either a certified check or Bid Bond issued by surety licensed to conduct business in the State of New Hampshire. The successful Bidder's security will be retained until he has signed the Agreement or Contract and furnished the required Performance and Payment Bonds and Certificates of Insurance. The Owner reserves the right to retain the Security of the next two lowest Bidders until the low Bidder enters into a Contract, or until ninety (90) days after Bid opening, whichever occurs first. Bid Security of all other Bidders will be returned as soon as practicable. If any Bidder refuses to enter into an Agreement or Contract, the Owner will retain his Bid Security as liquidated damages, but not as a penalty.

#### **ARTICLE 5**

##### **EXAMINATION OF BIDDING DOCUMENTS**

- 5.1 Each Bidder shall examine the Bidding Documents carefully and, not later than seven (7) days prior to the date of receipt of Bids, shall make written request to the Owner for interpretation or correction of any ambiguity, inconsistency or error therein, which he may discover. Any interpretation or correction will be issued as an Addendum by the Owner. Only a written interpretation or correction by Addendum will be binding. No Bidder shall rely upon any interpretation or correction given by any other method. Bidders are encouraged to direct any questions which may arise to the Owner, in order to provide necessary clarifications prior to the receipt of Bids. Bidders shall promptly notify the Owner of any ambiguity, inconsistency or error which they may discover upon examination of the Bidding Documents, or the existing building, site or local conditions. Should a Bidder fail to notify the Owner of errors, discrepancies or contradictions, he shall be assumed to have bid the more expensive alternative.

#### **ARTICLE 6**

##### **SUBSTITUTIONS**

- 6.1 Each Bidder represents that his Bid is based upon the materials and equipment described in the Bidding Documents. Where the language "or approved equal" is used in the Bidding Documents,

it is intended to require that all such materials and equipment shall be submitted as required by ARTICLE 6 of these Instructions to Bidders, and approved by the Owner.

- 6.2 No substitution will be considered unless written request has been submitted to the Owner for approval at least seven (7) days prior to the date for receipt of Bids. Each such request shall include a complete description of the proposed substitute, the name of the material or equipment for which it is to be substituted, drawings, cuts, performance and test data and any other data or information necessary for a complete evaluation. A statement identifying changes in other materials, equipment or other portions of the Work that incorporation of the proposed substitution would require shall also be included.
- 6.3 If a Bidder proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, he shall inform the Owner in writing of the nature of such deviations at the time the material is submitted for approval. It shall be the responsibility of the Bidder to notify the Owner, in writing, of the presence of Asbestos or any other hazardous materials in any proposed substitution. Such written notice shall be in the form of a cover letter attached to the related documents.
- 6.4 In requesting approval of deviations or substitutions, a Bidder shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable. If, in the opinion of the Owner, the evidence presented by the Bidder does not provide a sufficient basis for such reasonable certainty, the Owner may reject such substitution or deviation without further investigation.
- 6.5 In requesting approval of substitutions, a Bidder represents that he will provide the same warranty and/or guarantee for the substitution that he would for that specified.
- 6.6 The Contract Documents are intended to produce a building and site improvements of consistent character and quality of design. The Owner shall judge the design and appearance of proposed substitutes on the basis of their suitability in relationship to the overall design of the project, as well as for their intrinsic merits. The Owner will not approve as equal to materials specified proposed substitutions which, in his opinion, would be out of character, obtrusive, or otherwise inconsistent with the character or quality of design of the project.
- 6.7 The Contractor shall be solely responsible for coordinating the installation of accepted substitutions, making such changes as may be required for the Work to be complete in all respects. Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the Contractor, notwithstanding approval or acceptance of such substitution by the Owner, unless such substitution was made at the written request or direction of the Owner.
- 6.8 The burden of proof of the merit of a proposed substitution is upon the proposer. Approval of a proposed substitution is valid only upon issuance by the Owner in written form, and the Owner's decision of approval or disapproval of a proposed substitution shall be considered final.

## **ARTICLE 7**

### **PRECONSTRUCTION CONFERENCE**

- 7.1 Either before or soon after the actual award of the Contract (but in any event prior to the start of construction), the Contractor or his representative and his principal subcontractors shall attend a preconstruction conference with representatives of the Owner. The conference will serve to acquaint the participants with the general plan of contract administration and requirements under which the construction operation is to proceed.

**END OF INSTRUCTIONS TO BIDDERS**

**SECTION 00 41 00**

**BID PROPOSAL FORM**

**Project No.**                    **CAP # 1634**

**PROJECT:**                    **Siding and Window Replacement**  
North Country Resource Center  
629B Main Street, Lancaster, NH

**DATE BID OPENING:** **October 20, 2016** at 2:00 pm at DRED's office at 172 Pembroke Road, Concord, NH

**START DATE:**                **April 24, 2017**

**COMPLETION DATE:** **June 29, 2017**

Sealed bid proposals for the above project will be accepted until **2:00 p.m., October 20, 2016**. Bids may be deposited in the bid box at DRED's offices in Concord or mailed to the attention of Scott Coruth, Architect, Department of Resources and Economic Development (DRED), 172 Pembroke Road, Concord NH 03301. Please note on the outside of the sealed envelope: Bid Proposal for North Country Resource Center – Siding and Window Replacement.

**DATE:** \_\_\_\_\_

**PROPOSAL OF:** \_\_\_\_\_

**GRAND TOTAL / LUMP SUM BASE BID (A+B):** \_\_\_\_\_



Enclosed, herewith, find certified check or bid bond in the amount of 5% of the total amount of the Lump Sum Price made payable to the "Treasurer, State of New Hampshire" as a proposal guarantee which is understood, will be forfeited in the event the form of contract is not executed, if awarded to the undersigned. Note: Personal checks will not be accepted as a proposal guarantee.

The undersigned acknowledges receipt of the following addenda, issued during the bidding time, and states that these have been incorporated in the proposal:

Addendum #1 dated \_\_\_\_\_

Addendum #2 dated \_\_\_\_\_

Addendum #3 dated \_\_\_\_\_

Dated \_\_\_\_\_

**ALLOWANCE #1: Unanticipated Modification and/or Additions to Contract Items:**

Include in the Contract, a stipulated sum/price of \$20,000 for use upon the Project Managers instruction. This Allowance will make money available for modifications and/or additions to contract items due to owner-initiated changes, or for unknown, latent or differing existing conditions, or for the removal of hazardous materials that are encountered by construction.

- a. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from this Allowance. The cost of the bond for the amount of Allowance shall be included as part of the lump sum base bid.
- b. Funds will be drawn from an Allowance only by Change Order. Contractor can proceed with Change Order Work against Allowance with direction from the Project Manager. The Contractor shall not proceed with any work that will exceed the amount of Allowance remaining.
- c. Credits can only be added to an Allowance by Alteration Order. The Contractor may not use a credit until an Alteration Order is fully executed.
- d. Notwithstanding the Contractors objection, the Project Manager may at any time reduce the funds remaining in the Allowance by Alteration Order.
- e. At Final Payment of the Contract, funds remaining in the Allowance will be credited to the State.

**SCHEDULE OF VALUES: North Region HQ – Siding and Window Replacement**

INDICATE DOLLAR AMOUNT OF CONTRACT SUM ALLOCATED TO EACH CATEGORY OF WORK AS DESIGNATED BELOW:

General Conditions: \_\_\_\_\_

Bond Cost: \_\_\_\_\_

Selective Demolition: \_\_\_\_\_

Weather Barriers: \_\_\_\_\_

Siding: \_\_\_\_\_

Windows: \_\_\_\_\_

Doors: \_\_\_\_\_

Painting: \_\_\_\_\_

Air Conditioning \_\_\_\_\_

**Sub Total (A):** \_\_\_\_\_

**Allowance #1 (B):** \_\_\_\_\_ \$20,000

**Grand Total: lump sum base bid (A + B)** \_\_\_\_\_

**Delete Alternative No. 1:** Delete Air Conditioning in Zone 1 \_\_\_\_\_

**Delete Alternative No. 2:** Delete Air Conditioning in Zone 3 \_\_\_\_\_

**Delete Alternative No. 3:** Delete Air Conditioning in Zone 2 \_\_\_\_\_

**Delete Alternative No. 4:** Delete Air Conditioning in Zone 4 \_\_\_\_\_

**NOTE:** The Schedule of Values must be completely filled out in order for bid proposal to be considered responsive.

**SIGNATURE PAGE**

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

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

Phone: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Signature of Authorized Bidder:  
\_\_\_\_\_

Print: \_\_\_\_\_

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

Address of Bidder: \_\_\_\_\_  
(If different than company)

Names and Addresses of Members of the Firm/Corporation

Name \_\_\_\_\_ address \_\_\_\_\_

Name \_\_\_\_\_ address \_\_\_\_\_

Name \_\_\_\_\_ address \_\_\_\_\_

**PART II**

**CONDITIONS OF THE CONTRACT**

## SECTION 00 73 00

### SUPPLEMENTARY CONDITIONS

The General Conditions of this Contract are the American Institute of Architect's Document A201, "General Conditions of the Contract for Construction," Fourteenth Edition, 1987, 14 Articles, 24 pages, herein referred to as "AIA General Conditions."

#### **THE SUPPLEMENTARY CONDITIONS**

The Supplementary Conditions contain modifications, deletions, and/or additions to the AIA General Conditions. Where any part of the AIA General Conditions is modified, deleted or superseded by the Supplementary Conditions, the unaltered provisions shall remain in full effect.

#### **GENERAL**

This contract is to be governed by all the applicable provisions of these specifications.

This project consists of: replacing windows & siding and installing air conditioning at the North Country Resource Center. The scope of work includes: windows, siding, air conditioning and associated selective demolition and patching & repairs.

#### **BIDDING REQUIREMENTS**

Bids shall only be accepted on the official Bid Proposal Forms, attached to these specifications. **Any bids submitted that are not on the official bid proposal forms will not be accepted.**

#### **CONDITIONS AT SITE OR BUILDING**

Bidders shall visit the site and be responsible for having ascertained pertinent local conditions such as: location, accessibility, general character of the site and the character and extent of existing work to remain, and any other work being performed thereon at the time of the submission of this bid.

#### **PERFORMANCE AND PAYMENT BOND**

In the event the bid is \$35,000 or more, the contractor shall furnish security by bond or otherwise in an amount equal to 100% of the contract guaranteeing performance and payment. The payment security shall meet the requirements of New Hampshire RSA 447:16.

The performance and payment bond must be returned with the signed contract within 15 days after the contract has been mailed or otherwise delivered to the bidder.

#### **PROPOSAL GUARANTEE**

The Contractor shall furnish a certified check or bid bond in the amount of 5% of the total amount of the Lump Sum Price made payable to the "Treasurer, State of New Hampshire" as a proposal guarantee. This proposal guarantee will be forfeited in the event that the contract is not executed. Personal checks will not be accepted.

## **DETERMINATION OF RIGHT TO DO BUSINESS WITH STATE OF N.H.**

If selected as the low bidder, the bidder must be registered and have a certificate of existence from the Secretary of State, Corporate Division (telephone 603-271-3244) in order to do business with the State of New Hampshire.

## **PROPOSAL SELECTION**

In most cases the proposal submitted by the qualified bidder with the lowest base bid price shall be selected. However, the Department of Resources and Economic Development (DRED) reserves the right to reject any or all proposals, or advertise for new proposals as it judges to be in the best interest of the state.

## **CONTRACTORS QUALIFICATIONS**

The successful bidder shall provide evidence upon request that they have been successfully performing this type, scale, and quality of work for a minimum of five years. Upon request, a comprehensive list of all similar projects worked on in the past two years by the general contractor shall be submitted along with contact information for 3 references of owner's representatives involved with three different projects completed by the contractor.

## **EXECUTION OF CONTRACT**

The Contractor's attention is called to the following:

**EXECUTION AND APPROVAL OF CONTRACT.** The contract shall be signed by the successful Bidder and returned, together with the contract bond, if applicable, within 15 days after the contract has been mailed or otherwise delivered to the Bidder. No contract shall be considered as in effect until it has been fully executed by all the parties thereto and, when the contract amount is more than \$25,000, the award has been concurred in by the Governor and Council.

**FAILURE TO EXECUTE CONTRACT.** Failure to execute the contract within 15 days after the contract has been mailed or otherwise delivered to the successful Bidder shall be just cause for the cancellation of the award and the forfeiture of the proposal guaranty which shall become the property of the Department, not as a penalty, but in liquidation of damages sustained. Award may then be made to the next lowest Bidder, or the work may be re-advertised as the Commissioner of DRED may decide.

## **STARTING DATE**

The Contractor shall start work after the Notice to Proceed is received. The Notice to Proceed shall be issued immediately upon contract approval by the Governor and Council, and shall establish the actual construction start date. Failure to start work within 15 calendar days after the start date shall be considered a default of the contract. If the actual start date is later than the advertised start date, the completion date shall be extended by an equivalent number of working days.

## **WORKERS COMPENSATION INSURANCE**

Workers compensation insurance is required for all workers on the job site of this project. Per RSA 21-1:81-b At the onset of work on any NH state construction project, the general contractor or designated project construction manager, if any, shall provide to the Department Project Manager a current list of all subcontractors and independent contractors that the general contractor has agreed to use on the job site, with a record of the entity to whom that subcontractor is insured for workers compensation purposes. This list shall be posted on the jobsite and updated as needed to reflect any new subcontractors or independent contractors.

If it is determined that a subcontractor or independent contractor is present on a state construction site without the contractor's name and direct contracting relationship being posted in a visible location at the worksite, the general contractor or designated project manager shall require the subcontractor or independent contractor to provide the information within 36 hours and to post the information in a visible location at the worksite. If the information is not provided within 36 hours of its request, the general contractor shall suspend the contractor until the information is provided and posted.

## **PROTECTION OF EXISTING PROPERTY**

It shall be the responsibility of the contractor to protect existing property from damage. Any damage caused by the contractor in the performance of the work shall be repaired or replaced at his expense to the satisfaction of the designated DRED Project Manager.

## **CODES**

All work performed shall meet the provisions, if applicable, of the 2009 IBC, the 2010 ADA standards for Accessible Design, and the 2015 NFPA 101 Life Safety Code.

## **WORKMANSHIP**

All work shall be performed in a neat workmanlike manner by skilled workmen who have been actively engaged in performing the type of work specified under this contract for the last two years.

## **CLEAN-UP**

The site for this project is in a NH State Office Building and will be open to the public throughout the construction period. It is important to the Department of Resources and Economic Development that the site be maintained in a clean and presentable condition for the public. Therefore, all debris from the project shall be cleaned up daily and removed from the site at least on a weekly basis.

## **DEFAULT AND TERMINATION OF CONTRACT**

If the Contractor...

- a) Fails to begin the work under the contract within the time specified in the contract, or
- b) Fails to perform the work with sufficient workmen and equipment or with sufficient materials to assure the prompt completion of said work, or
- c) Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- d) Discontinues the prosecution of work, or
- e) Fails to resume work which has been discontinued, within reasonable time after notice to do so, or
- f) Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- g) Makes an assignment for the benefit of creditors, or
- h) For any other cause whatsoever, fails to carry on the work in an acceptable manner...

The Commissioner of DRED will give notice in writing to the Contractor of such delay, neglect, or default.

If the Contractor or Surety does not proceed in accordance with the Notice, then the Commissioner will, upon written notification from the Project Manager of the fact of such delay, neglect or default, and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the prosecution of the work out of the hands of the Contractor. The Commissioner may enter into an agreement for the completion of said contract according to the terms and conditions thereof, or use such other methods as in his opinion will be required for the completion of said contract in an acceptable manner.

All extra costs and charges incurred by the Department as a result of such delay, neglect or default, together with the cost of completion of the work under the contract will be deducted from any monies due or which may become due said Contractor. If such expenses exceed the sum which would have been payable under the contract, then the Contractor and the Surety shall be liable and shall pay to the Department, the amount of such excess.

**FAILURE TO COMPLETE THE WORK ON TIME**

If the Contractor fails to complete all of the work or sections of the Project, within the time specified in the Contract, the sum given in the schedule that follows will be deducted from any money due the Contractor. This deduction will be made, not as a penalty, but as fixed, agreed liquidation damages for inconvenience to the State and for reimbursing the Department the cost of the Administration of the Contract, including engineering and inspection. Should the amount of money otherwise due the Contractor be less than the amount of such liquidated damages, the Contractor and his Surety shall be liable to the State for such deficiency.

Permitting the Contractor to continue and finish the work after the time fixed for its completion, shall in no way obligate the State to waive any of its rights under the Contract.

When the final acceptance has been duly made by the Project Manager, any liquidated damage charges shall end.

The fixed, agreed, liquidated damages shall be assessed in accordance with the following schedule.

<u>ORIGINAL CONTRACT AMOUNT</u>		<u>AMOUNT OF LIQUIDATED DAMAGES PER WORKING DAY</u>
From more than:	to and including:	
\$0.00	\$25,000.00	\$ 300.00
\$25,000.00	\$50,000.00	\$ 400.00
\$50,000.00	\$100,000.00	\$ 500.00
\$100,000.00	\$500,000.00	\$ 600.00

**SUBSTANTIAL COMPLETION & FINAL INSPECTION**

When the work is substantially complete, the Contractor shall submit to the Project Manager, a list of items of work to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents. On the basis of an inspection by the Project Manager which determines that the work is substantially complete, a Certificate of Substantial Completion shall establish the date of substantial completion and state the responsibilities for any damage to the work and insurance, and fix the time limit within which the Contractor shall complete the items listed herein. Warranties required by the Contract documents shall commence on the date of Substantial Completion unless otherwise provided in the Certificate of Substantial Completion.

If the Contractor fails to proceed to complete the items on the "punch list", then in addition to the

corrective measures listed in the Certificate of Substantial Completion, the Commissioner may use the monies still due the Contractor to have such items completed and the Contractor shall lose any claim to the monies used.

Upon written notice that the Work is ready for final inspection and acceptance, the Project manager shall promptly make such inspection, and when he finds the Work acceptable under the Contract documents and the Contract fully performed, a Certificate of Final Payment will be issued.

Final inspection will be made by the Project Manager. Incomplete items necessary to complete the project shall be done prior to final payment. **The completion date for this project is June 29, 2017.**

## **GUARANTEE OF WORK**

1. Except as otherwise specified, all work shall be guaranteed by the Contractor against defects resulting from the use of inferior materials, equipment or workmanship for **one year** from the date of substantial completion of the work.
2. If, within any guarantee period, repairs or changes are required in connection with guaranteed work, which in the opinion of the Project Manager, is rendered necessary as a result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, the Contractor shall, promptly upon receipt of notice from the Commissioner, and at his own expense:
  - a. Place in satisfactory condition in every particular, all of such guaranteed work; correct all defects therein, and...
  - b. Make good all damage to the building or site, or equipment or contents thereof, which in the opinion of the Project Manager, is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with the terms of the Contract, and...
  - c. Make good any work or material, or the equipment and contents of said building or site disturbed in fulfilling any such guarantee.
3. In any case, wherein fulfilling the requirements of the Contract or of any guarantee, embraced in or required thereby, the Contractor disturbs any work guaranteed under another contract, he shall restore such disturbed work to a condition satisfactory to the Project Manager and guarantee such restored work to the same extent as it was guaranteed under such other contracts.
4. If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, the Commissioner may have the defects corrected and the Contractor and his Surety shall be liable for all expense incurred.
5. All special guarantees applicable to definite parts of the work that may be stipulated in the specifications or other papers forming a part of the Contract shall be subject to the terms of this paragraph during the first year of the life of such special guarantee.

## **PROSECUTION OF WORK**

Upon starting the work within the 15 days set forth by this contract, the Contractor shall prosecute the work a minimum of 8 hours daily per working day until completion, excluding breakdowns or inclement weather. If the Contractor finds it impossible to start the work as stated above, he may make a written request to the Project Manager for an extension of time. Any such request shall be made prior to expiration of the allowable 15 days, and shall contain reasons which the Contractor believes will justify the granting of his request. In his request, the Contractor shall submit his proposed starting date.

## **CHANGES IN THE WORK**

The Project Manager may at any time, by a written order, and without notice to the Sureties, make changes in the Drawings and Specifications and completion date of this contract and within the general scope thereof.

In making any change, the additional cost or credit for the change shall be determined as follows:

- The order shall stipulate the mutually agreed upon lump sum price which shall be added to or deducted from the contract price. The contractor shall furnish an itemized breakdown of the prices used in computing the value of any change that might be ordered.
- If the price change is an addition to the contract price and the work is performed by the general contractor and not a subcontractor, it shall include the contractor's indirect costs as follows: Workmen's Compensation and Employee Liability, Unemployment and Social Security Taxes.
- In addition to the above indirect costs, the general contractor shall be allowed a markup not to exceed ten percent (10%). Said ten percent (10%) shall be all inclusive for overhead, supervision, and profit. In addition to this, an allowance shall be made for performance and payment bond additional premiums.
- If the price change is an addition to the contract price and involves the work of the general contractor and subcontractor, the general contractor would be allowed ten percent (10%) on that part of the work performed by him and five percent (5%) on that part of the work performed by the subcontractor. The same percentages shall apply to subcontractors.
- On any change which involves a net credit to the Owner, no allowance for overhead and profit shall be figured.

## **INSURANCE REQUIREMENTS**

**No operations under this contract shall commence unless and until certification of insurance attesting to the below listed requirements have been filed with the Commissioner, approved by the Attorney General, and the Contract approved by the Governor and Council and a Notice to Proceed is issued.**

Insurance requirements by paragraphs 1-4 below shall be the responsibility of the Prime Contractor. The Prime Contractor, at his discretion, may make similar requests of any subcontractor.

Following is the summary of minimum insurance requirements:

- 1.) Workmen's Compensation Insurance (In accordance with RSA 281-A.)
  - a. Employers' Liability
    - 1.) \$100,000 each accident
    - 2.) \$500,000 Disease-policy limit
    - 3.) \$100,000 Disease-each employee
- 2.) Commercial General Liability Insurance: Occurrence Form Policy: Include full Contractual Liability (see Indemnification Clause 9), Explosion, Collapse, and Underground coverage's:
  - a. Limits of Liability:
    - 1.) \$1,000,000 Each Occurrence Bodily injury & Property Damage

- 2.) \$2,000,000 General Aggregate-Include per Project Aggregate Endorsement
  - 3.) \$2,000,000 Products/Completed Operations Aggregate
  - 4.) State shall be named as an additional named insured.
- 3.) If blasting and/or demolition are required by the Contract, the Contractor or subcontractor shall obtain the respective coverage for those activities, and shall furnish to the Commissioner a certificate of Insurance evidencing the required coverage's prior to commencement of any operations involving blasting and/or demolition.
  - 4.) Owner's Protective Liability coverage for the benefit of the State of New Hampshire Department of Resources and Economic Development.
    - a. Limits of Liability:
      - 1.) \$2,000,000 Each Occurrence
      - 2.) \$3,000,000 Aggregate
  - 5.) Commercial Automobile Liability covering all motor vehicles including owned, hired, borrowed, and non-owned vehicles.
    - a. Limits of Liability:
      - 1.) \$1,000,000 Combined Single Limit for Bodily injury & Property Damage
  - 6.) Commercial Umbrella Liability
    - a. Limits of Liability:
      - 1.) \$1,000,000 Each Occurrence
      - 2.) \$1,000,000 Aggregate
  - 7.) Builder's Risk Insurance (Fire and Extended Coverage):

The Contractor shall insure the work included in the Contract, including extras and change orders, on an "All Risk" basis, on a one hundred percent (100%) completed value basis of the Contract, as modified. Builder's Risk coverage shall include materials located at the Contractor's premises, on-site, in-transit, and at any temporary site. The policy by its own terms or by endorsement shall specifically permit partial or beneficiary occupancy prior to completion or acceptance of the entire work. The policies shall be in the names of the State of New Hampshire Department of Resources and Economic Development and the Contractor. The policies shall provide for the inclusion of the names of all other Contractors, Subcontractors, and others employed on the premises as insured's. The policies shall stipulate that the insurance companies shall have no right of subrogation against any Contractors, Subcontractors or other parties employed on the premises.

- 8.) General Insurance Conditions  
Each policy shall contain a clause prohibiting cancellation or modifications of the policy earlier than thirty (30) days or ten (10) in cases of non-payment of premium after written notice thereof has been received by the State.
- 9.) Indemnification:  
The Contractor shall indemnify, defend, and hold harmless the State of New Hampshire, its Agencies, and its agents and employees from and against any and all claims, liabilities, suits or penalties arising out of (or which may be claimed to arise out of) acts of omissions of the Contractor or subcontractors in the performance of work covered by the Contract. This covenant shall survive the termination of the Contract. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the State, which immunity is hereby reserved by the State.

**END OF SUPPLEMENTARY CONDITIONS**

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**PART III**

**TECHNICAL SPECIFICATIONS**

## SECTION 01 00 00

### GENERAL REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. The General Conditions, Supplementary Conditions and Special Conditions of this Contract shall apply to each and every contract and contractor/sub-contractor or other person or persons supplying labor, materials, equipment and services entering into this Project and onto the premises directly or indirectly.
- B. **Definitions:** The word "Contractor" where used throughout this document to describe the General Contractor, shall also mean the "Construction Manager" or "Design Builder", all terms describing the entity holding the prime Contract for Construction.

The word "Owner" where used throughout this document shall indicate The State of New Hampshire Department of Resources and Economic Development and its assigned staff to manage the Project.

C. **Work Included in This Contract:**

1. Providing all labor, materials, equipment, and services, etc., as required to complete all Work identified in, implied by or otherwise required by the Contract Documents.
2. Providing all Permits, approvals and certifications as implied or otherwise required by the Contract Documents and Federal, State and local governing bodies.
3. Installation of all equipment noted as "Furnished By Owner", (F.B.O.). Installation of said equipment shall include providing and installing all blocking and other concealed items as required for a secure and safe installation.

D. **Work Excluded from This Contract:**

1. Providing equipment noted as "Not in Contract" (N.I.C.) or "By Owner," (B.O.). The Contractor shall provide services and coordination related to items not in the Contract as otherwise required or implied by the Contract Documents.

##### 1.02 GENERAL RESPONSIBILITIES OF THE CONTRACTOR

- A. **Regulations:** The Contractor shall fully comply with all governing Local, State and Federal Laws, Codes, Rules, Regulations and Ordinances, including but not limited to; The American National Safety Institute, The Americans with Disabilities Act, and Occupational Safety and Health Administration provisions.

- B. Permits:** The Contractor shall obtain and pay for all permits and arrange for necessary inspections and approvals from the authorities having jurisdiction. Should any changes be necessary in the Contract Documents to secure such approvals, the Contractor shall promptly notify the Owner.
- C. Coordination:** The Contractor shall be fully responsible for coordinating all construction activities, verifying dimensions and existing field conditions, establishing on-site lines of authority and communication, monitoring schedules and progress, monitoring quality, maintaining records and reports and in general assuring the proper administration of the Work.

Disruptions and inconveniences to the activities of existing facilities to remain in operation during construction shall be minimized, and shall be subject to the prior approval of the Owner. The Contractor shall cooperate and coordinate with the Owner and local governing authorities to the greatest extent possible all construction activities that occur in and around existing buildings. The Contractor's coordination efforts shall include, but shall not necessarily be limited to:

1. Maintaining fire and all other safety standards acceptable to governing authorities.
2. Protecting existing building construction, landscaping, site utilities, site improvements and features, and all other improvements within and about the project area.
3. Obtaining abutters' written authorization to conduct construction related activities on their properties, if required. *[NOTE: The Contractor shall obtain permits and approvals required to temporarily alter or obstruct sidewalks and street(s) if required.]*
4. Storing on-site materials at locations acceptable to the Owner and governing authorities.
5. Controlling construction staging, parking and traffic and limiting it to areas acceptable to the Owner and governing authorities.
6. Providing access for and cooperating with other contractors to be employed by the Owner.
7. Providing access for and cooperating with equipment and furnishing suppliers/installers (including the Owner's own forces) to be employed by the Owner.
8. Accommodating existing occupants and other ongoing activities within and about the Project. Such accommodations shall include, but shall not necessarily be limited to:
  - a. Maintaining safe egress acceptable to governing authorities.
  - b. Maintaining adequate heating, air conditioning, and ventilation.
  - c. Maintaining fire suppression system.
  - d. Maintaining electrical power, fire alarm and detection systems, sound systems, clock systems, intrusion detection systems, television, computer and telephone services.

- e. Maintaining special systems and services such as emergency electrical power.
  - f. Maintaining suitable toilet and janitorial facilities.
  - g. Maintaining a watertight roof.
  - h. Providing adequate dirt, dust, fume, vapor, and noise control. (*NOTE: The Contractor shall take special precautions to prevent the introduction of construction related dust, fumes, vapors, etc. from entering into HVAC system ducts, return air grilles, fresh air intakes, etc.*)
  - i. Providing temporary fire and smoke partitions acceptable to governing authorities.
  - j. Providing adequate building security in areas under the Contractor's control.
  - k. Scheduling work within the existing facility at times acceptable to the Owner and least disruptive to ongoing activities.
9. Existing facilities shall remain in operation during the execution of the Work of this Contract. The Contractor shall schedule and coordinate the Work as required to maintain the safe and functional use of such facilities. Prior to proceeding with the Work, the Contractor shall meet with the Owner, accurately assess the Owner's requirements relative to the use of existing facilities, and schedule the work accordingly. The Contractor shall provide, in writing and/or graphic form, a schedule of all phased work to be performed.
10. Except as otherwise noted on the Drawings, the Owner will assume responsibility for relocating and storing existing furniture, equipment and supplies as required to generally accommodate the Contractor.

**D. Safety:** The Contractor shall assume full responsibility for all means, methods, procedures, sequences and techniques of construction employed and shall take all measures required to ensure the safety of construction workers, as well as the safety of the general public. The Contractor shall provide all necessary barricades, fencing, and shoring and verify that they comply with applicable regulations and standards of good practice. The public shall be guarded from all construction hazards. All attractive nuisances, due to construction activity and storage, shall be shielded to the greatest extent possible. Site safety is of the utmost importance. The Contractor shall pay all costs necessary for temporary partitioning, barricading, fencing, shoring, walks, ramps, enclosures, security and safety devices required for the maintenance of a clean and safe construction site.

**E. Jobsite Layout, Conditions and Measurements:** The Contractor shall employ a qualified engineer to determine all lines and grades and to field verify existing job conditions and measurements shown on the Drawings. The Contractor is responsible for the coordination and verification of the finish floor elevations (all levels) of existing buildings, if applicable. All discrepancies shall be reported to the Owner for clarification.

The Contractor shall carefully examine all buildings, sites and Contract Documents prior to submitting his Bid and satisfy himself as to the conditions under which he must operate to perform the Work. No additional compensation will be made to the Contractor for any error or negligence on his part, nor for discrepancies between actual conditions found at the buildings and sites and as indicated in the Contract Documents, unless such discrepancies are brought to the attention of the Owner by a Bidder or Sub-Bidder, in writing, prior to the opening of Bids.

- F. Protection of Adjoining Property:** The Contractor shall provide all shoring, fencing, and other work necessary to support, protect and keep unharmed all walls, footings, floors, roofs, walks, roadways and all other parts of any existing buildings, facilities, site improvements, land forms, trees and plant materials, etc. located on adjoining properties. The Contractor shall hold the Owner harmless from any such damage due to any operations under this Contract. Any existing work or property damaged or disrupted as a result of this Contract shall be replaced or repaired to match original existing conditions at no additional cost to the Owner.
- G. Utilities:** The Contractor shall send proper notices, make all necessary arrangements and perform all other services required for the removal, care, protection and maintenance of all utilities, including, but not limited to, mail boxes, fire hydrants, electric, gas, water, sewer, alarm, television, telephone, computer, and telegraph poles and wires, and all other items of this character above or below the ground, on and around the building site, assuming all responsibility and paying all costs related thereto. Related services to any existing facilities shall not be disrupted without the prior approval of the Owner, and then only to the minimum extent required. The Contractor shall comply with the "Underground Utility Damage Prevention System" by notification to DIG SAFE SYSTEM of intent to excavate near or around any underground utility installations. The Contractor shall call DIG SAFE SYSTEM at least 72 working day hours in advance of starting any such excavation.
- H. Superintendent/Foreman - Supervision:** The Contractor shall place and maintain a competent, experienced construction Superintendent/Foreman in charge of the Work, on the job site at all times while work is in progress, including overtime operations by the Contractor's forces or by subcontractors. No changes in this position shall be made without the Owner's prior approval. The Owner shall have the right to review the qualifications of the proposed Superintendent/Foreman and ask for a replacement if, in his opinion, the person does not meet the qualifications which the project will demand. The same superintendent who was in charge during the general progress of the Work shall oversee the completion of all punchlist items.
- I. Traffic Regulations and Parking:** The Contractor shall provide adequate personnel, flagmen, and equipment including but not necessarily limited to: signals, flares, and lights, to properly regulate traffic at times when the Work interferes with the normal flow of traffic both on and off the site. Parking for workmen on the project shall be limited to areas coordinated with Owner or governing officials. Roadways and driveways outside the limits of the Contract shall be kept free of debris resulting from construction related traffic.
- J. Roads and Access to the Site:** Access to the site for workmen and the delivery or removal of construction materials and/or equipment shall be made only from locations approved by governing authorities and coordinated with Owner. Existing roads, lanes and other required fire access shall

remain accessible to fire vehicles at all times. Hauling permits and route approvals shall be obtained from governing authorities as applicable.

- K. Security:** The Contractor shall be responsible for the securing of new and existing structures against the entry of unauthorized persons at all times, including nights, holidays and days when the buildings may be unoccupied.
1. When construction related personnel are the last to leave the facilities, they shall verify that the entire building perimeter is properly secured.
  2. When non-construction related personnel are the last to leave the facilities, the Contractor shall verify that all unoccupied areas are properly secured, and shall record the names and affiliations of those persons remaining in the facilities.
- L. Fire Protection:** The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by governing fire or building authorities. Flammable products shall be properly stored in containers acceptable to fire officials. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site. Smoking shall be strictly prohibited on the construction site.
- M. Environmental Regulations:** The Contractor shall comply with all applicable environmental laws and regulations. Attention shall be paid to proper dust, fume and vapor control throughout the building and site.
- N. Hazardous Substances:** In the event the Contractor encounters on the site materials reasonably believed to be "Hazardous Materials", the Contractor shall immediately stop work in the affected area and report the condition to the Owner in writing. The work in the affected area shall not be resumed until a determination has been made by the Owner as to how to proceed.
- O. Snow Removal:** The Contractor shall remove all snow or ice which might result in damage or delay to the Work.
- P. Vandalism:** The Contractor shall take all reasonable precautions necessary to prevent loss or damage caused by vandalism, theft, burglary, pilferage, or unexplained disappearance of property of the Owner, whether or not forming part of the Work, located within those areas of the Project to which the Contractor has access.
- Q. Existing Materials and Equipment:** Unless specifically noted otherwise, all useful salvage materials resulting from demolition shall remain the property of the Owner. Such materials shall be carefully removed so as to limit unnecessary damage and shall be properly stored on-site at a location designated by the Owner. In general these materials shall NOT include basic building materials such as concrete, masonry, steel, wood framing, plaster, gypsum board, etc. In general these materials may include doors, windows, millwork, finish hardware, mechanical and electrical equipment, building specialties, etc. The determination of whether or not materials are to be

considered "useful" shall be left solely to the discretion of the Owner. All materials not determined to be "useful" shall be removed from the site and properly disposed of off-site at no additional cost to the Owner.

- R. Guarantee:** The Contractor shall guarantee the entire Work to be free from defective or improper work or materials, and shall make good any damage due to such work or materials for a term of one year from the date of substantial completion of the Work. In general the commencement date for warranties and guarantees shall be the date of Substantial Completion. Under no circumstances shall any warranties or guarantees for any individual or collective materials or items of equipment commence prior to the date of Substantial Completion. Additionally, the dates of commencement for all materials and equipment which have not been made satisfactorily operational upon or prior to the date of Substantial Completion, shall be the first day of continuous satisfactory performance of said materials or equipment. Extended guarantees or warranties shall be provided as specified elsewhere.

### **1.03 MEASUREMENT AND PAYMENT**

- A. Payment Requisition:** The Contractor shall submit to the Owner one original and one copy of "Application for Payment," AIA Forms G702 and G702A, an itemized statement showing the original estimate, the value of the Work to date, amount previously requested, the amount of the payment requested presently and the balance remaining. Each copy shall be fully executed and properly signed and sealed.
- B. Release of Lien:** If requested by the Owner, the Contractor shall furnish current Releases of Lien for himself and from all subcontractors and material suppliers with each Application for Payment.
- C. Schedule Update:** The Contractor shall, along with each payment requisition, submit construction photographs and a report on the status of the next month's construction schedule. Each such monthly report shall update the progress of the Work and shall identify:
1. Areas of the building and site expected to be worked on during the next month.
  2. Upcoming Work which may require the Owner's efforts or assistance.
  3. Special conditions or circumstances which may affect the safe use of the building or site.

### **1.04 SUBMITTALS**

- A. Comprehensive Construction Schedule:** The Work of all trades shall be scheduled so that close coordination will be effected throughout all phases of construction. The schedule shall be submitted to the Owner within thirty (30) days after award of Contract. The Owner's receipt and review of this schedule shall in no way be construed to be approval or endorsement thereof. The Schedule shall show concisely the manner in which the Work will be started, prosecuted and the inter-relationship of the Work under various contracts. If applicable, the schedule shall specifically identify the start and completion dates of any work or activity that may disrupt or otherwise affect ongoing activities within or about existing facilities.

1. If for any reason the progress schedule should fall behind schedule by 30 days (maximum), the Contractor shall prepare a new progress schedule, which shall be changed to indicate the manner in which the Contractor will complete the project within the time allowed for construction.
2. The term "Day" where used through the Contract unless otherwise stated, shall mean "Calendar Day."

**B. Schedule of Materials:** Within thirty (30) days after the award of Contract, the Contractor shall submit to the Owner a schedule of all materials specified for the Work, which are likely to cause delay due to unavailability, extended delivery dates or any other reason. This schedule shall contain the list of materials, the name of the supplier or suppliers that the Contractor contacted in attempting to purchase the material, the projected delivery dates and the reason for the anticipated delay. The Contractor shall assume full responsibility for delay attributed to unavailability, insufficient time for delivery and/or installation of material or performance of the Work, unless he has conformed with these instructions.

**C. Schedule of Submittals:** Within thirty (30) days after the award of Contract, the Contractor shall submit to the Owner a schedule of all submittals specified or otherwise required for the proper execution of the Work. The Schedule shall include identification of the materials to be submitted, reference to related sections of Specifications and names of subcontractors or suppliers who will prepare the submittals. Attached to said schedule shall be a listing of the full names, addresses and telephone numbers of all subcontractors and suppliers represented thereon.

1. The Owner will not review submittals of colors and finishes until submittals for all such related materials are complete and delivered for his collective review. This same requirement may be extended to other components and systems as deemed appropriate by the Owner.
2. In general, the Owner will strive to complete his review of submittals and return them to the Contractor in approximately ten (10) business days. Additional time may be required if large volumes of such submittals are simultaneously delivered to the Owner for review.

**D. Shop Drawings, Cuts and Literature:** The Contractor shall furnish shop drawings, brochures, cuts and manufacturer's literature, in three (3) copies or in electronic format, of all materials and/or equipment items, fixture items, etc., as required by the Owner. The Contractor shall check and correct shop drawings for compliance with the Contract Documents before submitting them to the Owner for review. The Contractor shall indicate by signed stamp on the drawings that he has checked the shop drawings and that the work shown is in accordance with the Contract requirements and has been checked for dimension, quantity, and relationship with work of all trades involved, before submitting same to the Owner. Shop drawings will be returned to the Contractor before Owner's review if Contractor has failed to properly stamp drawings prior to submittal.

1. In lieu of the copies identified above, the Contractor shall, if so requested by the Owner, furnish one print and one reproducible transparency of any Shop Drawings larger than 8-1/2" x 11".

2. Review of Shop Drawings or Schedules by the Owner shall not relieve the Contractor of responsibility for deviations from the Contract Documents, or errors of any kind, or omissions from the shop drawings or schedules. The Owner's review shall not include the calculation, coordination or verification of dimensions or quantities, which shall be the sole responsibility of the Contractor.
3. All submittals shall be numbered to correspond to the submittal reference number in the Submittal Schedule described above.
4. Shop Drawings that are facsimiled (FAX) produced, or are photocopies of FAX documents will not be considered or reviewed.
5. Electronic Media:
  - a. Following the receipt of a written request from the Contractor, the Owner will make available electronic documents of drawings, for the limited purposes of project coordination and the Contractor's use in the preparation of submittals.
  - b. The Contractor, Owner and Recipient(s) agree that the use of the provided Electronic Data shall be entirely at their own risk , and hereby waive all claims and agree to indemnify and hold the Owner harmless from all liabilities, claims, losses, damages or expenses (including attorney's fees) arising out of, or connected with: (1) the transfer of Electronic Data by any means; or (2) the use, modification or misuse by any of the Electronic Data; or (3) the limited life expectancy and decline of accuracy or readability of the Electronic Data due to storage; or (4) any use of the Electronic Data by any third parties receiving the data from other parties to this Agreement; or (5) the incompatibility of software or hardware used by the Owner and the other parties to this Agreement.
  - c. The Electronic Data provided by the Owner under the terms of this Agreement is the proprietary information of the Owner. All Electronic Data is to be treated as confidential and is not to be disclosed to or shared with others without the Owners express, written consent.

#### 1.05 QUALITY CONTROL

- A. **General**: The Owner may employ an independent testing agency for the purpose of testing and inspecting portions of the Work in progress. These services shall be paid for by the Contractor from the Allowance, except as otherwise required by the Contract Documents.
- B. **Contractor's Responsibilities**: The Contractor shall:
  1. Schedule and coordinate all testing and inspections. Testing and inspections shall be performed as required by applicable Federal, State and Local codes or ordinances and as otherwise agreed to by the Contractor and Owner.
  2. Cooperate with testing laboratory personnel, provide access to the Work and to manufacturers' operations.

3. Provide representative samples of materials to be tested, in required quantities.
4. Furnish casual labor and facilities:
  - a. To provide access to Work to be tested.
  - b. To obtain and handle samples at the site.
  - c. To facilitate inspections and tests.
  - d. For testing laboratory's exclusive use for storage and curing of test samples.
5. Notify testing laboratory sufficiently in advance of operations to allow for the proper assignment of personnel and scheduling of tests.
6. Forward complete copies of all test results and reports to the Owner and local building authority.
7. Submit invoices for required testing to the Owner, with each month's Application for Payment. Following his review, the Owner will return such invoices to the Contractor for payment.
8. Monitor the expenditure of testing Allowances and notify the Owner prior to exceeding the Specified amounts.
9. Employ, and pay for, services of a separate, qualified independent testing laboratory, to perform additional inspections, sampling and testing required when initial tests indicate Work does not comply with Contract Documents.

**C. Testing Agency Responsibilities:** Among all other responsibilities, the testing agency shall:

1. Provide qualified personnel to perform required inspections and tests.
2. Immediately notify the Owner and Contractor of all noted irregularities and/or deficiencies.
3. Submit certified written reports of each inspection, test, or similar service to the Owner and Contractor. Reports shall include, but not be limited to: Date of issue; project name; dates and locations of samples and tests or inspections; names of individuals making tests or inspections; designation of work and test method; complete inspection or test data, test results and interpretations, ambient conditions at time of testing or inspection; opinion regarding compliance with the requirements of the Contract Documents; recommendations regarding re-testing; and signature.
4. Reports shall include description of all irregularities and deficiencies, and recommendations for corrective action.
5. The Testing Agency shall maintain a complete deficiency list of all items not corrected and

shall retest and/or re-inspect as required after each deficiency has been corrected. All such retesting and re-inspection shall be at the Contractor's expense.

6. At the completion of the Project, the Testing Agency shall submit a final signed report, stating whether or not all corrections have been made and the Work tested and inspected conforms to the Contract Documents.

**D. Field Sample Requirements:** In addition to required laboratory tests, the Contractor and/or his Subcontractors shall construct or prepare all project field samples/sample installations as directed by the Owner.

1. Project field samples/sample installations shall be constructed or prepared in the quantities, sizes and locations directed by the Owner.
2. The purpose of sample installations shall be to clearly establish standards of quality for the Work prior to proceeding with the Work itself.
3. To the extent possible, all samples/sample installations shall be preserved until the Work itself has been completed and accepted by the Owner. The alteration, destruction or removal of samples/sample installations shall not commence without the Owner's prior authorization.
4. Samples/sample installations may include, but shall not necessarily be limited to:
  - e. Siding, fascias and soffits.
  - f. Doors and windows.
  - g. Painting.
5. All costs related to providing, maintaining and removing required samples shall be paid by the Contractor.

**1.06 TEMPORARY FACILITIES**

- A. Project Signs:** No signs or advertisements will be allowed to be displayed on the premises without the approval of the Owner.
- B. Field Offices:** The Contractor may provide and maintain a field office with telephone at the site. Existing facilities and/or new construction shall not be available for this purpose without the express written consent of the owner.

Construction shanties, sheds and temporary facilities provided for the Contractor's convenience shall be located as approved by the Owner and governing authorities and maintained in good condition and neat appearance.

- C. Construction Equipment:** The Contractor shall furnish and maintain all equipment such as temporary stairs, ladders, ramps, scaffolds, runways, chutes, etc., as required for the proper execution of the Work, unless specifically included under the Work of other trades.
1. All such apparatus, equipment and construction shall meet all requirements of applicable laws, regulations, and standards of safety and good practice.
  2. As soon as permanent stairs are erected, the Contractor shall provide temporary protective treads, and handrails.
  3. All hoisting equipment and machinery required for the proper and expeditious prosecution and progress of the Work shall be furnished, installed, operated and maintained in safe condition by the Contractor for the use of all subcontractors' material and/or equipment delivered to the designated hoisting area. All costs for such equipment operating services shall be paid by the Contractor.
  4. In the event that a particular subcontractor has certain specific requirements which are peculiar to his needs, and which cannot be satisfied with the hoist provided by the Contractor, the subcontractor shall provide, maintain, operate and pay for hoisting equipment necessary for the proper execution and completion of his work.
- D. Toilets:** The Contractor shall provide and maintain in a sanitary condition enclosed, weathertight, chemical toilets for the use of all construction personnel at locations acceptable to the Owner and governing authorities. Installation of toilets shall be in accordance with all applicable codes and regulations of authorities having jurisdiction. The number of toilets required shall be in accordance with USA Standard Safety Code for Building Construction or other local requirements. Toilet facilities within existing buildings may not be used by construction personnel. Permanent toilets installed under this Contract shall not be used during construction.
- E. Shipping and Storage of Materials:** The Contractor shall be responsible for the proper protection of all materials and equipment prior to and following their incorporation into the Work.
1. Materials and equipment shall be inspected by the Contractor and if found to be damaged or otherwise unsuitable shall be promptly rejected.
  2. All materials stored on or off the site shall be kept in secured, weathertight enclosures, according to the manufacturer's instructions. The Contractor shall correct, at no additional cost to the Owner, any damages resulting from his failure to provide proper protection. Such corrective work shall include total replacement if so required by the Owner.
  3. Deliveries of materials and equipment to the site shall be scheduled so as not to allow the storage of materials or equipment on the site for more than thirty (30) days prior to their incorporation into the Work, without prior written approval of the Owner.
  4. The Contractor shall exercise caution in temporarily loading materials on floors, decks, roofs, etc. It shall be the Contractor's responsibility to determine the size of loads to be imposed and

the adequacy of the affected structure to support such loads. The Contractor shall correct, at no additional cost to the Owner, any resultant damages.

**F. Protective Covering:** The Contractor shall protect all finished surfaces, including the jambs and soffits of all openings used as passageways or through which materials are handled, against any possible damage resulting from the conduct of work by all trades.

1. All finished surfaces, including factory-finished and job-finished items, shall be clean and not marred upon delivery of the building to the Owner. The Contractor shall, without extra compensation, refinish all spaces where such surfaces prove to have been inadequately protected and are damaged.
2. Tight wood sheathing shall be laid under any materials that are stored on or moved over finished surfaces. Reinforced non-staining kraft building paper and plywood or planking shall be laid over all types of finished floor surfaces in traffic areas before moving any material over these finished areas. Wheelbarrows, if used over such areas, shall have rubber tired wheels.
3. Roof surfaces shall not be subjected to unnecessary traffic nor shall they be used for storage of material. Wherever such activity must take place in order to carry out the Work of the Contract, adequate protection shall be provided.

**G. Temporary Water Supply:** The existing water service may be used as temporary water during construction. The Owner will pay for all water used throughout the construction period, providing its use is not excessive or otherwise unreasonable. The Contractor shall:

1. Use the water service in a manner approved by governing authorities.
2. Extend therefrom a supply adequate for all construction purposes and convenient to all trades.
3. Protect lines against freezing and be fully responsible for the temporary installation in every way.
4. Provide backflow preventers, vacuum breakers, etc., as required to protect water systems from contamination.
5. Provide any and all hose needed. Remove all temporary equipment and materials completely upon completion of construction.
6. Repair all damage caused by his use of temporary or permanent water services.

**H. Temporary Electricity:** The Contractor shall provide and maintain temporary light and power for the execution of the Work of this Contract. The existing electrical service may be used for temporary lighting and power providing that it is safe and adequate, and its use is acceptable to governing authorities. Should the Contractor determine that the existing service is not suitable for use as temporary lighting and power, he shall arrange for temporary electric services and pay for all

charges of installation and removal of same. Such services shall be installed and maintained in a manner approved by the governing authorities. The Owner will pay monthly user charges throughout the construction period, providing such charges are not excessive or otherwise unreasonable. The Contractor shall:

1. Pay for permits, if applicable, as required by governing authorities. Obtain easements across private property if required. Comply with National Electrical Code, latest edition and applicable local codes and utility regulations.
2. Extend from the source a supply of temporary lighting and power adequate for all construction purposes and convenient to all trades.
3. Accept full responsibility for the temporary installation in every way. Remove all temporary equipment and materials completely upon completion of construction.

I. **Weather Protection:** It is the intent of these Specifications to require the General Contractor to provide temporary enclosures and heat to permit construction work to be carried on during the winter months. These Specifications are not to be construed as requiring enclosures and heat for operations which are not adversely affected by the weather or that are economically infeasible to protect.

1. "Weather Protection" shall mean the temporary protection of that work adversely affected by moisture, wind and cold, by covering, enclosing and heating. This protection shall provide adequate working areas during winter months, consistent with the approved construction schedule to permit the continuous progress of all work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install all "weather protection" material and be responsible for all costs, including heating, required to maintain a minimum temperature of 40 degrees F at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials, or the applicable General Conditions set forth in the Contract Documents with added regard to performance obligations of the Contractor.

J. **Job Meetings:** The Contractor shall conduct regular job meetings once every two weeks during the construction period, at such time as is mutually acceptable to the Owner, Owner and Contractor. All major subcontractors shall be represented at each meeting as needed. Other trades or subcontractors may be called to particular job meetings as the progress of the Work requires. The Owner shall record the minutes of each meeting. The minutes shall be distributed promptly to all participants.

K. **Clean-Up:** The Contractor shall at all times keep the site and structures or facilities thereon, free from accumulations of waste materials, debris, or rubbish. Upon the completion of the Work, he shall remove all tools, scaffolding, surplus materials, debris, and shall leave the Work "broom clean" or its equivalent.

1. No rubbish shall be allowed to accumulate or be allowed to remain on the premises or job site beyond a reasonable length of time. Trash shall be picked up daily and removed from the site

each week.

2. All rubbish shall be lowered by way of chutes or taken down on hoists or lowered in receptacles. Under no circumstances shall rubbish or waste be dropped or thrown from one level to another within or outside the building.
3. Care shall be taken by all workmen not to mark, soil or otherwise deface finishes. In the event that any finishes become defaced in any way, the Contractor shall clean and restore such surfaces to their original condition, or replace them if so required by the Owner.
4. In addition to general broom cleaning, the following cleaning shall be done just before final acceptance of the Work:
  - a. Remove putty stains and paint from all glass, wash and polish same. Care shall be taken not to scratch glass.
  - b. Remove all marks, stains, fingerprints, and other soil or dirt from all painted, decorated and stained work, ceiling and wall surfaces, and clean as required to leave in first class condition.
  - c. Remove all temporary protection and clean, shampoo, wax, and buff, etc. all floors in accordance with manufacturer's recommendations.
  - d. Clean and polish all hardware for all trades; this shall include removal of all paint stains, dust, dirt, etc.
  - e. Removal of all spots, soil and paint from all tile work and wash same.
  - f. Clean all fixtures, equipment, doors and door and window frames, removing all stains, paint, dirt and dust.
  - g. Replace all HVAC equipment filters if equipment was operated during construction. Provide additional systems cleaning and adjustment as appropriate.
5. Upon completion of the Work, the Contractor shall thoroughly clean the building site and surrounding ground. All trash and rubbish shall be removed and properly disposed of off-site.

#### **1.07 PROJECT CLOSEOUT**

- A. Closeout Meeting:** Not less than thirty (30) days prior to the scheduled date of substantial completion the Contractor shall conduct a Project Closeout meeting. Participants in the meeting shall include the Contractor, Subcontractors, and Owner. The Contractor shall prepare the agenda, for prior distribution, which shall include his schedule of procedures for all other tasks identified in the General Requirements.

**B. Instructions:** The Contractor and his subcontractors and suppliers shall jointly, thoroughly instruct the Owner's representative and maintenance personnel in the proper maintenance and operation of materials and systems as follows:

1. Detailed written instructions shall be provided for all mechanical and electrical systems, including but not limited to:
  - a. Winter shut-down, spring start-up of systems, if applicable.
  - b. Heating fuel conversion, if applicable.
  - c. All other operations which, if improperly performed, might endanger the building's occupants or damage the building's equipment or contents.
  - d. Operation and maintenance of air conditioning units
2. Sessions shall be held at the completed facility to instruct the Owner in the proper operation of all mechanical and electrical systems.

**C. Operating Manuals:** The Contractor shall submit to the Owner two (2) typed sets, bound neatly in loose leaf binders, of all instructions for all equipment, fixtures and systems. Instructions shall include the following information:

1. Installation procedures.
2. Operation instructions, including possible problems and suggested corrective action.
3. Care and maintenance, including lubrication instructions stating type of lubricant and where and how frequently lubrication is required.
4. Instructions for ordering and stocking of spare parts, including catalog numbers of parts and an itemized list of component parts that should be kept on hand.

Submission of the above listed instructions shall be a condition precedent of Final Payment.

**D. Warranties, Certificates and Bonds:** The Contractor shall submit to the Owner one (1) typed set, bound neatly in a loose leaf binder, of all warranties, certificates, and bonds as required by the Contract Documents.

**E. Lists of Subcontractors:** The Contractor shall submit to the Owner two (2) typed lists of all subcontractors, service organizations, and principal vendors, including names, addresses, and telephone numbers where they can be reached for emergency service at all times including nights, weekends and holidays.

**F. Punchlist:** Prior to final inspection and the preparation of a punchlist by the Owner and Owner, the Contractor shall prepare his own comprehensive punchlist, and along with his subcontractors,

properly complete all work items thereon. The receipt of the Contractor's written punchlist, clearly identifying all completed items, shall be considered a prerequisite for the commencement of the Owner and Owner's final inspection.

- G. Occupation by the Owner:** The Owner shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding the fact that the time for completing the entire Work or such portions thereof may not have expired; but such possession and use shall not be an acceptance of the Work.
- H. Occupancy Permit:** The Contractor shall, upon completion of the Project, or portions thereof, obtain and turn over to Owner an Occupancy Permit as required by governing authorities.
- I. Record Drawings:** The Owner will provide one set of prints for the Contractor's use in the preparation of Record Drawings. This set of prints shall be maintained at the site and, upon them the Contractor shall clearly and accurately record all Addenda, as well as all significant changes made during construction to the Work hereinafter listed.

Upon completion of the Contract, and as a prerequisite to final Payment, the Contractor shall draft, check and certify the Record Drawings for completeness and accuracy and submit them to the Owner. The Contractor's submittal shall include one full set of reproducible Record Drawings, plus two sets of prints. The Owner will casually review such Drawings, but will in no way ascertain or certify their completeness or correctness, which shall remain the sole responsibility of the Contractor. The Owner shall be entitled to rely upon the thoroughness and accuracy of the Contractor's documents, without further verification.

#### **1.08 INDOOR AIR QUALITY IMPROVEMENT**

- A.** The Contractor and his various subcontractors as he may direct shall implement the following procedures in an effort to improve indoor air quality during the Owner's occupancy:
  - 1. All adhesives (for construction, floor and wall coverings, etc.), paints, thinners, solvents, etc. shall, among other technical qualifications, be selected in consideration of minimizing their potential contribution to indoor air pollution. All "wet" products (i.e. paint, sealers, and other liquid products) shall be installed before ceiling tile and carpet to minimize emissions interaction between building products.
  - 2. Provide maximum all-outside-air ventilation during the installation of strong emitting materials. This shall be done for the purpose of reducing the contamination of other materials by absorption of solvents and other volatile components.
  - 3. On projects where the Owner (or other user) occupies all or portions of the building during construction, the Contractor shall make every practical effort to minimize their exposure to fumes and dusts from construction. Such efforts shall include items 1 and 2 above, as well as the construction of temporary air-tight barriers, maintaining negative air pressure in work areas, isolation of ventilation systems and all other appropriate means as determined by the Contractor.

**1.09 TIME FOR COMPLETION AND LIQUIDATED DAMAGES**

- A.** Time is of the essence of the Contract, and the Work to be performed under the Contract shall be commenced on or before April 24, 2017, and shall be Substantially Complete and in receipt of an Occupancy Permit on or before June 29, 2017.
- B.** It is expressly understood and agreed, by and between the Contractor and the Owner, that the time for completion of the Work described herein is reasonable for the completion of same, taking into consideration the climatic and industrial conditions prevailing in this locality.
- C.** The project must be brought to substantial completion before the project completion date in order to avoid liability for liquidated damages.
  - 1. Substantial completion is defined in the General Conditions of the Contract under article 9.8.1. Procedures for issuance of the Certificate of Substantial Completion are set out in article 9.8.
- D.** The Certificate of Substantial Completion shall set the date for the final completion of all punch list items. Normally this date shall be 14 days from the date of substantial completion but may be longer at the discretion of the Project Manager. Failure to finish the punch list by this date shall be grounds to commence the assessment of liquidated damages in accordance with the Supplementary Conditions under the section entitled "Failure to Complete the Work on Time."

*(NOTE: Should the proposed construction start date be postponed, through no fault of the Contractor, the date of Substantial Completion shall be equitably adjusted.)*

**END OF GENERAL REQUIREMENTS**

## SECTION 01 23 00

### ALTERNATES

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

- A. Attention is directed to the General Conditions, Supplementary Conditions, and Section 01 00 00 of these Specifications.
- B. The Contractor shall provide all labor, materials, equipment and services, etc., necessary for the proper and complete execution of accepted Alternates. Amount of Alternate prices to be deducted from the Base Bid shall be stated on the Bid Proposal Form and shall include cost of any and all modifications made necessary by Owner's acceptance of Alternates.
- C. Related Work Described Elsewhere:
  - 1. Materials and methods to be used in the Base Bid and in the Alternatives are generally described in the Contract Documents.
  - 2. Method for stating the proposed Contract Sum is described in the Bid Proposal Form.

##### **1.02 PRODUCT HANDLING**

- A. If the Owner elects to proceed on the basis of one or more of the described Alternates, make all modifications to the Work required in order to deduct the selected Alternate or Alternates to the approval of the Owner and at no additional cost to the Owner, other than as proposed on the Bid Proposal Form.
- B. Immediately after award of the Contract, or as soon thereafter as the Owner has made a decision on which, if any, Alternates will be selected, thoroughly and clearly advise all necessary personnel and suppliers as to the nature and extent of Alternates selected by the Owner. Use all means necessary to alert those personnel and suppliers involved as to all changes in the Work caused by the Owner's selection or rejection of Alternates.
- C. It shall be the responsibility of the Contractor to properly coordinate work related to Alternates with all other Work of this Contract in order to ensure that a complete and proper job is provided.

#### **PART 2 - ALTERNATES**

##### **2.01 DESCRIPTION**

- A. All work described in the previous specifications is to be included in the base bid for this project. Provide separate pricing for removing each of the following 4 delete alternatives from the project if so requested by the Division of Parks. Indicate the pricing for the delete alternatives on the

lines indicated on the bid form.

1. Delete Alternative No. 1: Air Conditioning in Zone 1
2. Delete Alternative No. 2: Air Conditioning in Zone 3
3. Delete Alternative No. 3: Air Conditioning in Zone 2
4. Delete Alternative No. 4: Air Conditioning in Zone 4

**END OF ALTERNATES**

## SECTION 01 32 33

### PHOTOGRAPHIC DOCUMENTATION

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

A. Work Included in this Section:

1. Provide photographs taken at the specified stages during construction.

##### **1.02 SUBMITTALS**

A. Except as otherwise directed and paid for, submit electronic copies of each photograph.

##### **1.03 QUALITY ASSURANCE**

- A. Secure the services of a qualified photographer, who is skilled and experienced in construction photography and whose work samples are acceptable to the Owner. The employment of a "professional" photographer is not required, providing that an employee of the Contractor satisfies the necessary qualifications.
- B. Do not replace the photographer without the Owner's written approval.

#### **PART 2 - PRODUCTS**

##### **2.01 CONSTRUCTION PHOTOGRAPHS**

- A. Provide color digital photographs, transmitted via e-mail to the Owner.
- B. On each print, clearly identify the Job Name, location from which photographed and date of photograph.
- C. Do not permit photographs to be issued for any other purpose without specific written approval of the Owner.

#### **PART 3 - EXECUTION**

##### **3.01 CONSTRUCTION PHOTOGRAPHY**

- A. Except as otherwise approved by the Owner, take the photographs within three calendar days of the date of the Contractor's application for progress payment.

1. To the maximum extent practicable, take photographs at approximately the same time of day throughout progress of the Work.
  2. When inclement weather is anticipated, consult with the Owner and determine acceptable alternative arrangements.
- B. Except as otherwise approved by the Owner, take the photographs from not less than four (4) separate locations around the Work.
1. Select the locations to provide diversified overall views of the Work, from positions that are expected to remain accessible throughout the progress of the Work.
  2. When so directed by the Owner, change one or more of the locations to new locations inside or outside the building.
- C. Make each photograph clear, in focus, with high resolution and sharpness and with minimum distortion.

**END OF PHOTOGRAPHIC DOCUMENTATION**

## SECTION 01 73 29

### CUTTING AND PATCHING

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

###### A. Work Included in This Section:

1. Provide all labor, materials, equipment and services, etc., required for all cutting (including excavation), removal, fitting, patching, and/or repairs as required to:
  - a. Make the several parts fit properly.
  - b. Uncover work to provide for installing, inspecting, or both, of ill-timed work.
  - c. Remove and replace work not conforming to requirements of the Contract Documents.
  - d. Remove and replace defective work.

###### B. Related Work:

1. In addition to other requirements noted or specified, upon the Owner's request uncover work to provide for observation by the Owner of covered work, and remove samples of installed materials for testing.
2. Do not cut or alter work performed under separate contracts without the Owner's written permission.

##### **1.02 QUALITY ASSURANCE**

- A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the Work of this Section.

##### **1.03 SUBMITTALS**

- A. Prior to cutting which effects structural integrity or safety, submit written request to the Owner for permission to proceed with cutting.
- B. Submit written notice to the Owner designating the time the Work will be uncovered, to provide for the Owner's observation.

## **PART 2 - PRODUCTS**

### **2.01 MATERIALS**

- A. For replacement of items removed, use materials complying with pertinent Sections of these Specifications.
- B. In general, patches shall match existing adjacent materials to the degree required by the Owner, unless otherwise noted.

### **2.02 PAYMENT FOR COSTS**

- A. Perform cutting and patching needed to comply with the Contract Documents at no additional cost to the Owner.
- B. All costs resulting from ill-timed or defective work or work otherwise not conforming to the Contract Documents shall be borne by the Contractor.

## **PART 3 - EXECUTION**

### **3.01 SURFACE CONDITIONS**

- A. Inspection:
  - 1. Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, patching, and backfilling.
  - 2. After uncovering the work, inspect conditions affecting installation of new work.
- B. Discrepancies:
  - 1. If uncovered conditions are not as anticipated, immediately notify the Owner and secure needed directions.
  - 2. Do not proceed until unsatisfactory conditions are corrected.

### **3.02 PREPARATION PRIOR TO CUTTING**

- A. Provide required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.
- B. Provide proper dirt, dust, fume, vapor and noise control.
- C. Verify the conditions and requirements of all existing warranties which may be affected by cutting and patching (such as roofing warranties). It is the intent that all cutting and patching is performed in a manner that preserves all such warranties in full, without compromise.

### **3.03 PERFORMANCE**

- A. Cutting and patching shall be kept to an absolute minimum by careful planning and through proper holes, sleeves, anchors, inserts or other built-ins as the Work progresses.
- B. The Contractor shall properly restore work which has been cut or removed and install new products to provide completed work in accordance with the requirements of the Contract Documents.
- C. Perform necessary excavating and backfilling as required under pertinent other Sections of these Specifications.
- D. Perform cutting and demolition by methods which will prevent damage to other portions of the Work and provide proper surfaces to receive installation of repair and new work.
- E. Perform fitting and adjusting of products as required to provide finished installations complying with the specified tolerances and finishes or otherwise satisfactory to the Owner.
- F. All debris and rubbish shall be properly removed from the premises as it occurs. All materials shall be properly disposed of off-site, in strict accordance with all applicable Laws, Rules, Regulations and Ordinances.

**END OF CUTTING AND PATCHING**

## SECTION 02 41 19

### SELECTIVE DEMOLITION

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

- A. The Contractor, either himself or through his various subcontractors, shall provide all demolition as indicated on the Drawings, Specified herein, or otherwise required for the complete and proper execution of the Work.
- B. The Work of this Section is not necessarily fully represented on the Drawings or specifically identified herein. The Contractor, either himself or through his various subcontractors, shall thoroughly review all available documents and shall visit the site and existing building prior to bidding, as required to fully satisfy himself as to the types, locations and quantities of demolition work required for the complete and proper execution of the Work. No pleas of misunderstanding resulting from the failure to adequately inspect existing conditions will be entertained and no additional expenses related thereto will be granted.
- C. The Work of this Section shall include, but shall not necessarily be limited to:
1. Removal of site and building signage to be salvaged and reused.
  2. Removal of doors, windows and frames. Salvage windows as indicated on the plans.
  3. Removal of window trim
- D. NOTE: The Contractor shall thoroughly inspect the existing building and the Contract Documents in order to accurately assess the scope of existing finishes to be removed or to remain. Existing finishes to remain shall be patched and repaired as noted elsewhere in the Contract Documents, following which they shall be carefully protected from damage. Any ambiguities regarding the scope of demolition or new finishes shall be brought to the Owner's attention prior to proceeding with the Work.

##### 1.02 QUALITY ASSURANCE

- A. The Work of this Section shall be performed only by a company of qualified workmen, specializing in the demolition of comparable structures, with not less than five (5) years of experience.

#### PART 2 - PRODUCTS

##### 2.01 MATERIALS

- A. For replacement of Work removed, use materials which comply with the pertinent Sections of these Specifications. All other materials, not specifically described but required for a complete and proper job, shall be as selected by the Contractor, subject to the approval of the Owner.
- B. Whenever applicable, existing materials to be removed shall be carefully extracted, stored in a protected area and saved for reinstallation as a part of new construction. Such materials shall be handled with care to minimize unnecessary damage and maximize their potential for reuse.

### **PART 3 - EXECUTION**

#### **3.01 SPECIAL REQUIREMENTS FOR DEMOLITION**

- A. All methods, techniques and procedures of safety, shoring, barricading, fencing, protection, demolition, removal and disposal are left solely to the discretion of, and shall be the responsibility of the Contractor. Special attention shall be paid to the issues of safety and protection of existing construction and/or landscaping and site improvements to remain. See SECTION 01 00 00, GENERAL REQUIREMENTS, for additional information.
- B. The Contractor shall be responsible for compliance with all applicable Local, State, and Federal environmental regulations, including but not limited to the national Emission Standard for Hazardous Air Pollutants, as enforced by the United States Environmental Protection Agency. It shall be the Contractor's responsibility to provide all inspections and notifications related thereto.
- C. The Contractor shall provide proper dirt, dust, fume, and vapor and noise control throughout all demolition. Interior spaces will be in use while siding and window replacement work is on-going.
- D. The removal of all existing materials and equipment, particularly those which may contain hazardous substances such as asbestos (including but not limited to insulations, roofing and flooring products), shall be performed in strict accordance with all applicable Laws, Rules, Regulations and Ordinances
- E. All demolition waste, debris and rubbish shall be promptly removed from the premises as it occurs. All materials shall be properly disposed of off-site in strict accordance with all applicable Laws, Rules, Regulations and Ordinances. The Contractor shall pay particular attention to the proper removal and disposal of hazardous materials and substances.

#### **3.02 GENERAL REQUIREMENTS FOR DEMOLITION**

- A. The Contractor shall obtain and pay for all permits and approvals required for demolition, hauling, dumping and in general all activities related to the Work of this Section.
- B. The termination, demolition and removal of utilities shall comply with the procedures, regulations and recommendations of related utilities and governing authorities. The Contractor shall contact such agencies prior to proceeding, in order to assess their requirements and ensure proper coordination and full compliance.

- C. The Contractor shall be alert to potential problems or dangerous conditions. He shall exercise caution during demolition or removal which may affect structural safety. He shall proceed only when he has fully satisfied himself that he has provided proper support, shoring, bracing, protection, and safety precautions.
- D. If uncovered conditions are not as anticipated, immediately notify the Owner and secure needed directions. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.
- E. Unless otherwise noted or specified, all useful salvage materials resulting from demolition shall remain the property of the Owner and shall be stored on-site at location(s) designated by the Owner. See SECTION 01 00 00: GENERAL REQUIREMENTS, for additional information.
- F. The Contractor shall leave the site in a neat, clean, and safe condition, with all appropriate barricades, fencing, warning signage, etc. securely in place.

**END OF SELECTIVE DEMOLITION**

## SECTION 07 25 00

### WEATHER BARRIERS

#### PART 1 – GENERAL

##### 1.01 DESCRIPTION

Work Included in This Section:

1. Weather Barrier Membrane
2. Seam Tape
3. Flexible Flashing
4. Fasteners

B. Related Work Specified Elsewhere:

1. SECTION 01 00 00: General Requirements
2. SECTION 07 46 46: Fiber-Cement Siding
3. SECTION 08 54 13: Fiberglass Windows

##### 1.02 REFERENCES

A. ASTM International

1. ASTM C 920; Standard Specification for Elastomeric Joint Sealants
2. ASTM C 1193; Standard Guide for Use of Joint Sealants
3. ASTM D 882; Test Method for Tensile Properties of Thin Plastic Sheeting
4. ASTM D 1117; Standard Guide for Evaluating Non-woven Fabrics
5. ASTM E 84; Test Method for Surface Burning Characteristics of Building Materials
6. ASTM E 96; Test Method for Water Vapor Transmission of Materials
7. ASTM E 1677; Specification for Air Retarder Material or System for Framed Building Walls
8. ASTM E2178; Test Method for Air Permeance of Building Materials
9. ASTM E2357; Standard Test Method for Determining Air Leakage of Air Barrier Assemblies

B. AATCC – American Association of Textile Chemists & Colorists

1. Test Method 127 Water Resistance: Hydrostatic Pressure Test

C. TAPPI

1. Test Method T-410; Grams of Paper and Paperboard (Weight per Unit Area)
2. Test Method T-460; Air Resistance of Paper (Gurley Hill Method)

##### 1.03 SUBMITTALS

A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used, including:

1. Preparation instructions and recommendations

2. Storage and handling requirements and recommendations
  3. Installation methods
  4. Design Data and Test Reports
- B. Samples: Weather Barrier Membrane, minimum 8 1/2 inches by 11 inches

#### **1.04 QUALITY ASSURANCE**

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Provide a mock-up using approved weather barrier assembly including fasteners, flashing, tape and related accessories per manufacturer's current printed instructions and recommendations:
1. Mock-up size: 10 feet by 10 feet
  2. Mock-up Substrate: Match wall assembly construction, including window openings
  3. Mock-up may remain as part of the work

#### **1.05 DELIVERY, STORAGE AND HANDLING**

- A. Deliver weather barrier materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Store weather barrier materials as recommended by weather barrier manufacturer.

#### **1.06 SCHEDULING**

- A. Review requirements for sequencing of installation of weather barrier assembly with installation of windows, doors, louvers and flashings to provide a weather-tight barrier assembly
- B. Schedule installation of weather barrier materials and exterior cladding within nine months of weather barrier assembly installation

#### **1.07 WARRANTY**

- A. Provide manufacturer's warranties:
1. Weather barrier manufacturer's warranty for weather barrier for a period of ten (10) years from date of substantial completion

### **PART 2 – PRODUCTS**

#### **2.01 WEATHER BARRIER**

- A. Manufacturer: DuPont, which is located at: Chestnut Run Plaza 728, Wilmington, DE 19805; Tel: 800-448-9835; Website: [www.construction.tyvek.com](http://www.construction.tyvek.com), or approved equal
- B. Basis of Design: spunbonded polyolefin, non-woven, non-perforated, Weather Barrier is based upon DuPont Tyvek CommercialWrap D and related assembly components
- C. Performance Characteristics:

1. Air Penetration: 0.001 cfm/sf at 75 Pa when tested in accordance with ASTM E 2178. Type 1 when tested in accordance with ASTM E 1677. ≤0.04 cfm/ft @ 75 Pa when tested in accordance with ASTM E 2357.
2. Water Vapor Transmission: 30 perms, when tested in accordance with ASTM E 96, Method B.
3. Water Penetration Resistance: 235 cm when tested in accordance with AATCC Test Method 127
4. Basis Weight: 2.4 oz/square yard, when tested in accordance with TAPPI Test Method T-410.
5. Air Infiltration Resistance: Air infiltration at >750 seconds, when tested in accordance with TAPPI Test Method T-460
6. Tensile Strength: 33/41 lbs/in., when tested in accordance with ASTM D 822, Method A
7. Surface Burning Characteristics: Class A, when tested in accordance with ASTM E 84. Flame Spread: 15, Smoke Developed: 25

## **2.02 ACCESSORIES**

- A. Seam Tape: Pressure-sensitive plastic tape recommended by weather barrier manufacturer for sealing joints and penetrations in weather barrier.
- B. Fasteners:
  1. Wood Frame Construction: Weather Barrier manufacturer's Caps; #4 nails with large 1 inch plastic cap fasteners or 1 inch minimum plastic cap staple with leg length sufficient to achieve a minimum penetration of 5/8 inch into the wood stud
- C. Sealants: Provide sealants that comply with ASTM C 920, elastomeric polymer sealant to maintain watertight conditions, as recommended by weather barrier manufacturer
- D. Adhesives: Provide adhesive recommended by weather barrier manufacturer as required for project conditions
  1. Liquid Nails LN-109
  2. Denso Butyl Liquid
  3. 3M High Strength 90
  4. SIA 655
- E. Primers: Provide flashing manufacturer's recommended primer to assist in adhesion between substrate and flashing
  1. 3M High Strength 90
  2. Denso Butyl Spray
  3. SIA 655
  4. Permagrip 105
- F. Flexible Flashing
  1. Flexible membrane flashing materials for window openings and penetrations as manufactured by weather barrier manufacturer
  2. Straight flashing membrane materials for flashing windows and doors and sealing penetrations such as masonry ties, etc. as manufactured by weather barrier manufacturer

## **PART 3 – EXECUTION**

### **3.01 EXAMINATION**

- A. Verify substrate and surface conditions are in accordance with weather barrier manufacturer's recommended tolerances prior to installation of weather barrier and accessories.

### **3.02 INSTALLATION – WEATHER BARRIER**

- A. Install weather barrier over exterior face of exterior wall substrate in accordance with manufacturer recommendations
- B. Install weather barrier prior to installation of windows and doors.
- C. Start weather barrier installation at a building corner, leaving 6-12 inches of weather barrier extended beyond corner to overlap.
- D. Install weather barrier in a horizontal manner starting at the lower portion of the wall surface with subsequent layers installed in a shingling manner to overlap lower layers. Maintain weather barrier plumb and level
- E. Sill Plate Interface: Extend lower edge of weather barrier over sill plate interface 3-6 inches. Secure to foundation with elastomeric sealant as recommended by weather barrier manufacturer.
- F. Window and Door Openings: Extend weather barrier completely over openings.
- G. Overlap weather barrier
  - 1. Exterior corners: minimum 12 inches.
  - 2. Seams: minimum 6 inches.
- H. Weather Barrier Attachment:
  - 1. Wood Frame Construction: Attach weather barrier to studs through exterior sheathing. Secure using weather barrier manufacturer recommend fasteners, space 6 -18 inches vertically on center along stud line, and 24 inch on center, maximum horizontally.

### **3.03 SEAMING**

- A. Seal seams of weather barrier with seam tape at all vertical and horizontal overlapping seams.
- B. Seal any tears or cuts as recommended by weather barrier manufacturer.

### **3.04 OPENING PREPARATION – FLANGED WINDOWS**

- A. Cut weather barrier in an "I-cut" pattern. A modified "I-cut" is also acceptable
  - 1. Cut weather barrier horizontally along the bottom and top of window opening.
  - 2. From top center of the window opening, cut weather barrier vertically down to the sill.
  - 3. Fold side and bottom weather barrier flaps into window opening and fasten.
- B. Cut a head flap at 45-degree angle in the weather barrier at window head to expose 8 inches of sheathing. Temporarily secure weather barrier flap away from sheathing with tape.

### **3.05 FLASHING – FLANGED WINDOWS**

- A. Cut 9-inch wide flexible flashing a minimum of 12 inches longer than width of sill rough opening.

- B. Cover horizontal sill by aligning flexible flashing edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.
- C. Fan flexible flashing at bottom corners onto face of wall. Firmly press in place. Mechanically fasten fanned edges.
- D. On exterior, apply continuous bead of sealant to wall or backside of window mounting flange across jambs and head. Do not apply sealant across sill.
- E. Install window according to manufacturer's instructions.
- F. Apply 4-inch wide strips of straight flashing at jambs overlapping entire mounting flange. Extend jamb flashing 1-inch above top of rough opening and below bottom edge of sill flashing.
- G. Apply 4-inch wide strip of straight flashing at head flashing overlapping the mounting flange. Head flashing should extend beyond outside edges of both jamb flashings.
- H. Position weather barrier head flap across head flashing. Adhere using 4-inch wide straight flashing over the 45-degree seams.
- I. Tape head flap in accordance with manufacturer recommendations
- J. On interior, install backer rod in joint between frame of window and flashed rough framing. Apply sealant around entire window to create air seal. Apply sealant in accordance with sealant manufacturer's instructions and ASTM C 1193.

### **3.06 PROTECTION**

- A. Protect installed weather barrier from damage

**END OF WEATHER BARRIERS**

## SECTION 07 46 46

### FIBER-CEMENT SIDING

#### **PART 1 – GENERAL**

##### **1.01 DESCRIPTION**

- A. Work Included in This Section:
1. Factory finished fiber cement board and batten siding, panels, trim, fascia, moulding and accessories.
  2. Aluminum flashing
  3. Sealant
- B. Related Work Specified Elsewhere:
1. SECTION 01 00 00: General Requirements
  2. SECTION 07 25 00: Weather Barriers
  3. SECTION 08 54 13: Fiberglass Windows

##### **1.02 REFERENCES**

- A. ASTM C1186 – Standard Specification for Flat Fiber-Cement Sheets
- B. ASTM D3359 – Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape
- C. ASTM E136 – Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C

##### **1.03 SUBMITTALS**

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used, including:
1. Preparation instructions and recommendations
  2. Storage and handling requirements and recommendations
  3. Installation methods
- B. Shop Drawings: Provide detailed drawings of atypical non-standard applications of fiber-cement siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.
- C. Selection Samples: Submit two samples of each material specified indicating visual characteristic and finish representing the manufacturer's full range of available colors and patterns. Include range samples if variation of finish is anticipated.
- D. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches, representing actual product, color and patterns

#### **1.04 QUALITY ASSURANCE**

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.
- B. Provide a mock-up for evaluation of surface preparation techniques and application workmanship:
  - 1. Finish areas designated by Owner
  - 2. Do not proceed with remaining work until workmanship, color and sheen are approved by Owner
  - 3. Refinish mock-up area as required to produce acceptable work

#### **1.05 DELIVERY, STORAGE AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation
- B. Store siding on edge or lay on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction

#### **1.06 PROJECT CONDITIONS**

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

#### **1.07 WARRANTY**

- A. Provide manufacturer's warranties:
  - 1. Siding: Limited, non-pro-rated product warranty for 30 years
  - 2. Trim: Limited, product warranty for 15 years
  - 3. Finish: Limited product warranty against manufacturing finish defects – When used for its intended purpose, properly installed and maintained according to manufacturer's installation instructions, for a period of 15 years against peeling, cracking, and chipping.
  - 4. Workmanship: Application limited warranty for 2 years

### **PART 2 – PRODUCTS**

#### **MANUFACTURERS**

- A. Basis of Design: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400; Mission Viejo, CA 92691; Tel: 866-274-3464; Fax: 949-367-4981; Email: info@jameshardie.com; Website: www.jameshardiecommercial.com

#### **2.02 SIDING**

- A. Vertical Siding

1. Complies with ASTM C 1186 Type A Grade II
2. Complies with ASTM E 136 as a noncombustible material
3. Complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5
4. Description: Panel siding to be used in a vertical application
5. Type: Cedarmill Vertical siding panel 4 feet by 8 feet
6. Type: Cedarmill Vertical siding panel 4 feet by 9 feet
7. Type: Cedarmill Vertical siding panel 4 feet by 10 feet

### **2.03 TRIM**

#### **A. Trim Boards**

1. Complies with ASTM C 1186 Type A Grade II
2. Complies with ASTM E 136 as a noncombustible material
3. Complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5
4. Description: Trim and accent boards in sizes indicated on drawings
5. Type: Smooth 4/4 (3/4 inches) thick by 12 feet long in widths indicated on drawings
6. Type: Smooth 5/4 (1 inch) thick by 12 feet long in widths indicated on drawings

#### **B. Batten Boards**

1. Complies with ASTM C 1186 Type A Grade II
2. Complies with ASTM E 136 as a noncombustible material
3. Complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5
4. Description: Trim and accent boards in sizes indicated on drawings
5. Type: Textured 3/4 inches thick by 2 1/2 inches by 12 feet long in widths indicated on drawings

### **2.04 FASTENERS**

#### **A. Wood Framing Fasteners:**

1. Common corrosion resistant nails: 4d or 6d
2. Box ring common corrosion resistant nails: 8d
3. Corrosion resistant siding nails: 0.089 inch shank by 0.221 head by 2 inches
4. Corrosion resistant siding nails: 0.093 inch shank by 0.222 head by 2 inches or 2 1/2 inches
5. Corrosion resistant siding nails: 0.091 inch shank by 0.221 head by 1 1/2 inches
6. Corrosion resistant siding nails: 0.091 inch shank by 0.225 head by 1 1/2 inches
7. Corrosion resistant roofing nails: 0.121 inch shank by 0.371 inch head by 1 1/4 inches
8. Corrosion resistant roofing nails: No. 11 gauge by 1 1/4, 1 1/2 or 1 3/4 inches

### **2.05 FINISHES**

#### **A. Factory Finish:**

1. Definition: Factory applied finish; defined as a finish applied in the same facility and company that manufactures the siding substrate
2. Process:
  - a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat cured finish within one manufacturing process.
  - b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs as measured by photospectrometer and verified by third party

3. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed
4. Accessories: Complete finishing system includes pre-packaged touch-up kit by fiber cement manufacturer. Provide quantities as recommended by manufacturer

C. Finish Schedule:

1. Vertical Siding: Color – As selected by the Owner from the manufacturer's full line
2. Trim Boards: Color – As selected by the Owner from the manufacturer's full line
3. Batten Boards: Color – As selected by the Owner from the manufacturer's full line

## **2.06 ACCESSORIES**

A. General: Provide starter strips, edge trim, outside and inside corner caps and other items as recommended by siding manufacturer for building configuration

1. Provide accessories made from the same material as adjacent siding unless otherwise indicated.

B. Flashing: Provide aluminum flashing complying with manufacturer's instructions

1. Finish for Aluminum Flashing: Siliconized polyester coating, same color as siding
2. Z-Flashing: At all window and door heads, horizontal trim boards and plinth blocks
3. Kickout flashing: At all sloped roof to wall interfaces and gutter to siding conditions
4. Additional sheet metal and flexible flashings for a complete job.

C. Sealant: Single component, nonsag, neutral curing as manufactured by Tremco, Sika, Dow Corning or approved equal

## **PART 3 – EXECUTION**

### **3.01 EXAMINATION**

A. Do not begin installation until substrates have been properly prepared.

B. If framing preparation is the responsibility of another installer, notify Owner of unsatisfactory preparation before proceeding.

C. Nominal 2 inch by 4 inch wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1 1/2 inches face and straight, true, of uniform dimensions and properly aligned.

1. Install water-resistive barriers and claddings to dry surfaces
2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
3. Protect siding from other trades

### **3.02 PREPARATION**

A. Clean surfaces thoroughly prior to installation

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

- C. Installation of a water-resistive barrier is required in accordance with local building code requirements
- D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements
- E. Install Seam Tape at all joints and laps

### **3.03 INSTALLATION – VERTICAL SIDING**

- A. Install materials in strict accordance with manufacturer's installation instructions
- B. Block framing between studs where siding horizontal joints occur
- C. Install metal Z flashing and provide 1/4 inch gap at horizontal panel joints
- D. Place fasteners no closer than 3/8 inch from panel edges and 2 inches from panel corners
- E. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions
- F. Maintain clearance between siding and adjacent finished grade
- G. Specific framing and fastener requirements refer to Tables 2 and 3 in national Evaluation Service Report No. NER-405
- H. Factory Finish Touch Up: Apply touch up paint to cut edges in accordance with manufacturer's printed instructions
  - 1. Touch-up nicks, scrapes and nail heads in pre-finished siding using the manufacturer's touch-up kit pen
  - 2. Touch-up of nails shall be performed after application, but before plastic protection wrap is removed to prevent spotting of touch-up finish
  - 3. Use touch-up paint sparingly. If large areas require touch-up, replace the damaged area with new pre-finished siding. Match touch-up color to siding color through use of manufacturer's branded touch-up kits.

### **3.04 INSTALLATION – TRIM BOARDS**

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.
- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch or full thickness of sheathing. Additional fasteners may be required to ensure adequate security
- C. Place fasteners no closer than 3/4 inch and no further than 2 inches from side edge of trim board and no closer than 1 inch from end. Fasten maximum 16 inches on center
- D. Maintain clearance between trim and adjacent finished grade
- E. Trim inside corner with a single board trim both side of corner.
- F. Outside Corner Board: Attach trim on both sides of corner with 16 gauge corrosion resistant finish nail 1/2 inch from edge spaced 16 inches apart, weather cut each end spaced minimum 12 inches apart

- G. Allow 1/8 inch gap between trim and siding
- H. Seal gap with high quality, paintable sealant
- I. Shim frieze board as required to align with corner trim
- J. Fasten through overlapping boards. Do not nail between lap joints
- K. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten trim boards to trim boards
- L. Install Fascia boards to rafter tails or to sub-fascia

**3.05 FINISHING**

- A. Factory finished in color as selected by owner

**3.06 PROTECTION**

- A. Protect installed products until completion of project
- B. Touch-up, repair or replace damaged products before Substantial Completion

**END OF FIBER-CEMENT SIDING**

## SECTION 08 54 13

### FIBERGLASS WINDOWS

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

###### A. Work Included in this Section:

1. Provide all labor, materials, equipment and services, etc. required to furnish and install fiberglass windows and all related flashings, trim and accessories as indicated on the Drawings, Specified herein, or otherwise required for a complete and proper job.
2. The Work shall include, but shall not necessarily be limited to:
  - a. Fiberglass wood window systems, including fixed and operable units.
  - b. All miscellaneous trim, flashings and enclosures within or contiguous with windows. All such miscellaneous materials shall be finished to match adjacent fiberglass unless otherwise noted.
  - c. Sealing of all joints within window, including joints between all materials furnished under this Section.

###### B. Related Work Specified Elsewhere:

1. SECTION 01 00 00: General Requirements
2. SECTION 07 25 00: Weather Barriers
2. SECTION 09 91 00: Painting

##### **1.02 REFERENCES**

###### A. American Society for testing and Materials (ASTM):

1. E283: Standard Test Method for Rate of Air Leakage through Exterior Windows, Curtain Walls, and Doors.
2. E330: Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
3. E547: Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential.
4. E2190: Specification for Sealed Insulating Glass Units.
5. E1886: Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials

6. E1996: Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes
  7. C1036: Standard Specification for Flat Glass.
  8. E90-09: Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
  9. F2090-10: Standard Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms
  10. E2068: Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- B. Window and Door Manufacturer's Association (WDMA): I.S.4: Industry Standard for Water Repellent Preservative Treatment for Millwork.
- C. Sealed Insulating Glass Manufacturer's Association/Insulating Glass Certification (SIGMA/IGCC).
- D. American Architectural Manufacturer's Association/Window and Door Manufacturer's Association/Canadian Specifications Association (AAMA/WDMA/CSA):
1. AAMA/WDMA/CSA 101/I.S.2/A440-11: Voluntary Performance Specification for Windows, Skylights, and Glass Doors
  2. AAMA/WDMA/CSA 101/I.S.2/A440-08: Voluntary Performance Specification for Windows, Skylights, and Glass Doors
- E. Window and Door Manufacturer's Association (WDMA): Hallmark Certification Program.
- F. American Architectural Manufacturer's Association (AAMA): 624-10: Voluntary Specification, Performance Requirements and Test Procedures for Organic Coatings on Fiber Reinforced Thermoset Profiles.
- G. National Fenestration Rating Council (NFRC):
1. 101: Procedure for Determining Fenestration Product Thermal Properties
  2. 200: Procedure for Determining Fenestration Product Solar Heat Gain Coefficients and Visible Transmittance at Normal Incidence

### **1.03 SUBMITTALS**

- A. Shop Drawings: Submit shop drawings indicating elevations of windows, sliding and swinging doors, full size sections, fastenings, proposed method of anchoring, the size and spacing of anchors, details of construction, method of glazing, mullion details, method and materials for

weather stripping, and details of installation. Where miscellaneous trim and other related items are required, shop drawings shall show the assemblage and connections to the adjacent surfaces.

- B. Product Data: Submit product data indicating system design and performance characteristics, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes.
- C. Submit the Following Samples:
  - 1. Window systems, trim and accessories.
  - 2. Sealant.
  - 3. Fasteners.
  - 4. Samples of finish shall be submitted for approval upon request. In the case of special finishes, these samples show extremes from light to dark within the allowable commercial tolerances. All materials installed shall fall within the range of the approved samples. Samples shall be clearly identified as to project and type of finish.

#### **1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: A manufacturer capable of fabricating fiberglass windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations
- B. Installer Qualifications: An installer acceptable to fiberglass window manufacturer for installation of units required for this Project

#### **1.05 DELIVERY AND STORAGE**

- A. All materials and related accessories shall be delivered and stored in strict compliance with the manufacturer's instructions.
- B. Prime and seal wood surfaces, including to be concealed by wall construction, if more than thirty (30) days will expire between delivery and installation
- C. Store window and door units in an upright position in a clean and dry storage area above ground to protect from weather

#### **1.06 WARRANTY**

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace fiberglass windows that fail in materials or workmanship within specified warranty period
  - 1. Failures include, but are not limited to, the following:
    - a. Failure to meet performance requirements

- b. Structural failures including excessive deflection, water leakage, and air infiltration
  - c. Faulty operation of movable sash and hardware
  - d. Deterioration of materials and finishes beyond normal weathering
  - e. Failure of insulating glass
2. Warranty Period:
- a. Glazing: Twenty (20) years from date of Substantial Completion
  - b. Non-Glass Components: Ten (10) years from date of Substantial Completion

## **PART 2 - PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Basis of Design (Subject to compliance with requirements): Marvin Integrity Windows & Doors, which is located in West Fargo, ND, or comparable product by Pella Corporation or approved equal.
- B. Source Limitations: Obtain fiberglass windows from single source from a single manufacturer.

### **2.02 PERFORMANCE REQUIREMENTS**

- A. Window units shall be designed to comply with ASTM E1996 Wind Zone 3 Missile Level D Rating +55/-55 psf.
- B. Air leakage shall not exceed the following when tested at 1.57 psf according to ASTM E283: 0.30 cfm per square foot of frame.
- C. No water penetration when tested at the following pressure according to ASTM E547: 9.75 psf
- D. Assembly shall withstand a positive or negative uniform static air pressure difference of psf without damage when tested according to ASTM E330.
- E. Impact and Cycling per ASTM E1996 and E1886 with passing results for Missile Level D and Pressure Cycling of +55/-55 psf.
- F. Forced Entry Resistance, complies with ASTM F588

### **2.03 FIBERGLASS WOOD WINDOWS**

- A. Windows: Shall be fiberglass framed with wood interiors.
  - 1. Windows shall be fixed and operable units as indicated on the Drawings.

2. All units shall be fabricated to the dimensions and configurations indicated on the Drawings.
  3. Wherever sizes of fixed units require, as a result of their unusual configuration, the manufacturer's related stationary system or other modifications shall be provided.
- B. Frames and Sash: Shall be pultruded fiberglass with exposed exterior fiberglass surfaces finished with manufacturer's standard coating and wood interiors
1. Interior: clear pine exposed surfaces
    - a. Kiln-dried to moisture content no greater than twelve (12) percent at the time of fabrication
    - b. Water repellent, preservative treated in accordance with ANSI/NWWDA I.S.4
  2. Exterior: Pultruded fiberglass, 0.080 inches thick
  3. Operating sash at double hung units shall tilt to interior for cleaning and removal
- C. Glazing: Shall be clear annealed glass complying with ASTM C 1036. Insulating glass SIGMA/IGCC certified to performance level CBA when tested in accordance with ASTM E 2190
1. Glazing Method: 11/16 inch insulating glass
  2. Glass Type: Low E, Argon filled
  3. Glazing Seal: Silicone bead at interior and exterior
- D. Finish
1. Exterior:
    - a. Pultruded Fiberglass.
    - b. Factory baked on acrylic urethane.
    - c. Meets AAMA 624-10 requirements.
    - d. Color: As selected by Owner from manufacturer's full line
  2. Interior:
    - a. Bare treated pine.
    - b. White factory finish
- F. Weather Strip: Provide full perimeter weather strip for each operable sash unless otherwise indicated

## **2.04 HARDWARE**

- A. Casement and Awning Windows

1. Lock: Multipoint locking mechanism is actuated from a single point of operation. The lock mechanism is concealed with only the actuator handle and escutcheon being visible.
2. Hinges: Concealed stainless steel track and injection molded shoe.
3. Handle: Die cast detachable folding handle.
4. Roto Gear Operator: coated hinge arm and housing mechanism.
5. Snubber: Pulls the sash tight to the frame and provides positive engagement to keep the sash in place under structural loads.
6. Color: Applies to the handle and locking hardware:
  - a. As selected by Owner from manufacturer's full line
7. Optional Hardware:
  - a. Casement Window Opening Control Device – Factory applied.
    1. WOCD locking assembly: Factory installed. Die cast. Color: As selected by Owner from manufacturer's full line
    3. WOCD tether assembly: Factory installed. Injection molded nylon. Color: color match
  - b. Awning Limiter Device – Factory or Field applied
    1. Limiter Clip: Tumbled stainless steel.
  - c. Casement Egress Hinges
    1. Egress hinges are required on Casement RO sizes noted to meet egress requirements.

## **2.05 INSECT SCREENS**

- A. Factory installed full screen
  1. Screen mesh, 18 by 16: charcoal fiberglass.
  2. Frame type: Rolled aluminum
  3. Aluminum frame finish: As selected by Owner from manufacturer's full line

## **2.06 ACCESSORIES AND TRIM**

- A. Jamb Extension: Furnish jamb extension in depths required: factory-installed.
  1. Finish: treated bare wood or white interior factory finish.
- B. Installation Accessories:
  1. Factory-installed nailing fin at head, sill and side jambs.

2. Installation Brackets: Brackets for as required for jamb depth

### **PART 3 - EXECUTION**

#### **3.01 EXAMINATION**

- A. All workmanship shall be in strict conformance with the manufacturer's instructions and recommendations.
- B. Before installation, verify openings are plumb, square and of proper dimensions. Report defects or unsuitable conditions to the General contractor and Owner before proceeding.
- C. Acceptance of Condition: Beginning on installation confirms acceptance of existing conditions

#### **3.02 INSTALLATION**

- A. Assemble and install window/door unit(s) according to manufacturer's instruction and reviewed shop drawing.
- B. Install sealant and related backing materials at perimeter of unit or assembly in accordance with manufacturer's instructions. Do not use expansive foam sealant. Sealant: Single component, nonsag, neutral curing sealant as manufactured by Tremco, Sika, Dow Corning or approved equal
- C. Install accessory items as required.
- D. Use finish nails to apply wood trim and mouldings.

#### **3.03 CLEANING**

- A. Remove visible labels and adhesive residue according to manufacturer's instruction.
- B. Leave windows and glass in a clean condition.

#### **3.04 PROTECTION**

- A. Protect windows from damage by chemicals, solvents, paint or other construction operations that may cause damage.

**END OF FIBERGLASS WINDOWS**

## SECTION 09 91 00

### PAINING

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION

###### A. Work Included In This Section:

1. Provide all labor, materials, equipment, and services, etc., required for the proper and complete surface preparation and painting of all surfaces to be finished throughout the entire interior and exterior of the building.
2. The Work shall include, but shall not necessarily be limited to:
  - a. Painting and/or finishing of all exterior ferrous metals, galvanized metals, woodwork, and any other surfaces indicated on the Drawings or herein Specified to receive paint. NOTE: Special attention shall be given to the proper priming all sides and edges, of all exterior wood to be painted.
  - b. Painting and/or finishing of all interior gypsum drywall, woodwork, and any other surfaces indicated on the Drawings or herein Specified to receive paint.
  - c. All necessary surface preparation.
  - d. Surface preparation, patching and repainting of existing interior walls, partitions, and ceilings as indicated on the Drawings or as otherwise required.
  - e. Back-priming and field touch-up.
  - f. Field testing compatibility of new paint with existing paint or finishes to be covered.
3. The painting subcontractor shall examine all the Sections of the Specifications and shall thoroughly familiarize himself with all their provisions regarding painting and finishing. All surfaces that are primed or left unfinished by the requirements of other Sections of the Specifications shall be painted or finished as a part of this Section.
4. The painting subcontractor shall examine the Drawings and note new patches in existing construction. In cases where new finishes are not scheduled for the existing construction, new patches shall be finished to match existing.

###### B. Related Work Specified Elsewhere:

1. SECTION 01 00 00: General Requirements
2. SECTION 07 46 46: Fiber-Cement Siding
3. SECTION 08 54 13: Fiberglass Windows.

## **1.02 REFERENCES**

- A. Occupational Safety and Health Act (OSHA) - Safety Standards.
- B. American National Standards Institute (ANSI) - Performance Standards.
- C. Paint Decorating Contractors of America (PDCA) - Application Standard.
- D. National Paint and Coatings Association (NPCA) - Gloss Standard.
- E. American Society for Testing Materials (ASTM) - Testing Methods.
- F. Master Paint Institute (MPI # ) - Established paint categories and standards.
- G. Ozone Transmission Commission (OTC) - Established levels of Volatile Organic Compounds.
- H. SSPC (PM1) - Steel Structures Painting Manual, Vol. 1, Good Painting Practice; Society for Protective Coatings; Current Edition.
- I. SSPC (PM2) - Steel Structures Painting Manual, Vol. 2, Systems and Specifications; Society for Protective Coatings; Current Edition.
- J. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

## **1.03 DEFINITIONS**

- A. Commercial as used in this Section refers to a product well suited for a commercial application.
- B. DFT as used in this Section refers to the Dry Film Thickness of the coating.
- C. Enamel refers to any acrylic or alkyd (oil) base paint which dries leaving an eggshell, pearl, satin, semi-gloss or high gloss enamel finish.
- D. DTM as used in this Section refers to paint that is applied Direct To Metal.
- E. Premium as used in this Section refers to the best quality product "top of the line".
- F. VOC as used in this Section refers to Volatile Organic Compounds found in primers, paints, sealers and stains. The level of VOCs appears after each product listed in the Schedule in grams per liter (g/L).

- G. Paints are available in a wide range of sheens or glosses, as measured by a gloss meter from a 60 and/or 85 degree angle from vertical, as a percentage of the amount of light that is reflected. The following terms are used to describe the gloss of the products specified. The list below is provided for general guidance; refer to the technical data sheet for the actual gloss/sheen level for each product.
1. Flat - Less than 5 Percent.
  2. Eggshell - 5 - 20 Percent.
  3. Satin - 20 - 35 Percent.
  4. Semi-Gloss - 30 - 65 Percent.
  5. Gloss - Over 65 Percent.

#### **1.04 SUBMITTALS**

- A. Product Data: Provide a complete list of all products to be used, with the following information for each:
1. Manufacturer's name, product name and/or catalog number, and general product category.
  2. Cross-reference to specified paint system(s) that the product is to be used in; include description of each system.
  3. Submit specifications and complete range of paint manufacturer's color chips. Non-conformance to specifications and a limited range of color samples shall be considered sufficient reason for rejection of paint manufacturer.
- B. Samples: Submit three paper samples, 5 inches by 7 inches in size, illustrating selected colors for each color and system selected with specified coats cascaded.
- C. Manufacturer's Instructions: Indicate special surface preparation procedures.
- D. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten years' experience.
- B. Installer Qualifications: All products listed in this section are to be applied by a Painting Contractor with a minimum of five years demonstrated experience in surface preparation and field application of the same type and scope as specified.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Mock-up areas designated by Owner.

2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Owner.
3. Approved mock-up areas will serve as the standard for remaining Work.
4. Refinish mock-up area as required to produce acceptable Work.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.
- C. Disposal:
  1. Never pour leftover coating down any sink or drain. Use up material on the job or seal can and store safely for future use.
  2. Do not incinerate closed containers.
  3. For specific disposal or recycle guidelines, contact the local waste management agency or district. Recycle whenever possible.

#### **1.07 PROJECT CONDITIONS**

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
- B. Do not apply exterior paints in snow, rain, fog or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

#### **1.08 WARRANTY**

- A. Inspection of all surfaces to be coated must be done by the manufacturer's representative to insure proper preparation prior to application. All thinners, fillers, primers and finish coatings shall be from the same manufacturer to support a product warranty. Products other than those submitted shall be accompanied by a letter stating its fitness for use and compatibility.
- B. At project closeout, provide to the Owner or owner's representative an executed copy of the Manufacturer's standard form outlining the terms and conditions of and any exclusions to their Limited Warranty against Manufacturing Defect.

#### **1.09 EXTRA MATERIALS**

- A. At project closeout, supply the Owner or owner's representative one gallon of each product for touch-up purposes. Cans shall be clearly marked with color name, number and type of paint.

- B. At project closeout, provide the color mixture name and code to the Owner or owner's representative for accurate future color matching.

## **PART 2 - PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Basis of Design: Subject to compliance with requirements, provide Sherwin-Williams Company products indicated or comparable product from one of the following:
1. Duron, Inc.
  2. Benjamin Moore & Company
  3. Pratt & Lambert
  4. PPG Pittsburg Paints

### **2.02 MATERIALS - GENERAL**

- A. Volatile Organic Compound (VOC) Content:
1. Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
    - a. Flat Paints and Coatings: 50 g/L
    - b. Nonflat Paints and Coatings: 150 g/L
    - c. Dry-Fog Coatings: 400 g/L
    - d. Primers, Sealers, and Undercoaters: 200 g/L
    - e. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L
    - f. Zinc-Rich Industrial Maintenance Primers: 340 g/L
    - g. Pretreatment Wash Primers: 420 g/L
    - h. Floor Coatings: 100 g/L
    - i. Shellacs, Clear: 730 g/L
    - j. Shellacs, Pigmented: 550 g/L
- B. Compatibility: Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- C. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers"

D. Colors: As selected by the Owner from manufacturer's full range.

### **2.03 MIXING AND TINTING**

A. Except where specifically noted in this section, all paint shall be ready-mixed and pre-tinted. Agitate all paint prior to and during application to ensure uniform color, gloss, and consistency.

B. Thinner addition shall not exceed manufacturer's printed recommendations. Do not use kerosene or other organic solvents to thin water-based paints.

C. Where paint is to be sprayed, thin according to manufacturer's current guidelines.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

A. The Contractor shall review the product manufacturer's special instructions for surface preparation, application, temperature, re-coat times, and product limitations.

B. The Contractor shall review product health and safety precautions listed by the manufacturer.

C. The Contractor shall be responsible for enforcing on site health and safety requirements associated with the Work.

D. Do not begin installation until substrates have been properly prepared.

E. Ensure that surfaces to receive paint are dry immediately prior to application.

F. Ensure that moisture-retaining substrates to receive paint have moisture content within tolerances allowed by coating manufacturer.

1. Concrete: 12 percent
2. Masonry (Clay and CMU): 12 percent
3. Wood: 15 percent
4. Gypsum Board: 12 percent
5. Plaster: 12 percent
6. Interior Finish Detail Woodwork, Including Trim, and Casework: 10 percent.

G. Examine surfaces to receive coatings for surface imperfections and contaminants that could impair performance or appearance of coatings, including but not limited to, loose primer, rust, scale, oil, grease, mildew, algae, or fungus, stains or marks, cracks, indentations, or abrasions.

H. Correct conditions that could impair performance or appearance of coatings in accordance with specified surface preparation procedures before proceeding with coating application.

### **3.02 PREPARATION - GENERAL**

- A. Clean surfaces thoroughly prior to coating application.
- B. Do not start work until surfaces to be finished are in proper condition to produce finished surfaces of uniform, satisfactory appearance.
- C. Stains and Marks: Remove completely, if possible, using materials and methods recommended by coating manufacturer; cover stains and marks which cannot be completely removed with isolating primer or sealer recommended by coating manufacturer to prevent bleed-through.
- D. Remove Mildew, Algae, and Fungus using materials and methods recommended by coating manufacturer.
- E. Remove dust and loose particulate matter from surfaces to receive coatings immediately prior to coating application.
- F. Remove or protect adjacent hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items not indicated to receive coatings.
- G. Move or protect equipment and fixtures adjacent to surfaces indicated to receive coatings to allow application of coatings.
- H. Protect adjacent surfaces not indicated to receive coatings.
- I. Prepare surfaces in accordance with manufacturer's instructions for specified coatings and indicated materials, using only methods and materials recommended by coating manufacturer.

### **3.03 SURFACE PREPARATION**

- A. Existing Coatings:
  - 1. Remove surface irregularities by scraping or sanding to produce uniform substrate for coating application; apply one coat primer of type recommended by coating manufacturer for maximum coating adhesion.
  - 2. If presence of lead in existing coatings is suspected, cease surface preparation and notify Architect immediately.
- B. Gypsum Board: Repair cracks, holes and other surface defects with joint compound to produce surface flush with adjacent surfaces.
- C. Concrete: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- D. Masonry: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceed that permitted in manufacturer's written instructions.

- E. Metals, Shop-Primed: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- F. Galvanized-Metal: Remove grease and oil residue from galvanized metal to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- G. Aluminum: Remove loose surface oxidation
- H. Wood:
  - 1. Seal knots, pitch streaks, and sap areas with sealer recommended by coating manufacturer; fill nail recesses and cracks with filler recommended by coating manufacturer; sand surfaces smooth.
  - 2. Remove mill marks and ink stamped grade marks.
  - 3. Prime edges, ends, faces, undersides, and backsides of wood.
  - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
- I. Cotton or Canvas Insulation Covering: Remove dust, dirt, and other foreign material that might impair bond of paints to substrate.

#### **3.04 APPLICATION - GENERAL**

- A. Application of primers, paints, or coatings, by the Contractor, will serve as acceptance that surfaces were properly prepared in accordance with the manufacturer's recommendation.
- B. Apply each coat to uniform coating thickness in accordance with manufacturer's instructions, not exceeding manufacturer's specified maximum spread rate for indicated surface; thins, brush marks, roller marks, orange-peel, or other application imperfections are not permitted.
- C. Allow manufacturer's specified drying time, and ensure correct coating adhesion, for each coat before applying next coat.
- D. Inspect each coat before applying next coat; touch-up surface imperfections with coating material, feathering, and sanding if required; touch-up areas to achieve flat, uniform surface without surface defects visible from 5 feet.
- E. Remove dust and other foreign materials from substrate immediately prior to applying each coat.
- F. Where paint application abuts other materials or other coating color, terminate coating with a clean sharp termination line without coating overlap.
- G. Where color changes occur between adjoining spaces, through framed openings that are of same color as adjoining surfaces, change color at outside stop corner nearest to face of closed door.

- H. Re-prepare and re-coat unsatisfactory finishes; refinish entire area to corners or other natural terminations.
- I. Pressure treated wood products shall be allowed to "weather" as recommended by the manufacturer prior to finishing.
- J. Before painting, remove hardware, accessories, plates, lighting fixtures and similar items or provide ample protection of such items. On completion of each area, replace items removed.
- K. Interior wood trim to be painted shall be back-primed before installation with an interior wood primer.
- L. Exterior wood trim to be painted shall be back-primed before installation with exterior wood primer. Edges of exterior plywood shall be similarly primed before installation. Exterior wood trim to be stained shall be back-stained before installation.
- M. All doors shall have same finish and number of coats on both interior and exterior sides. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

### **3.05 CLEANING**

- A. Clean excess coating materials, and coating materials deposited on surfaces not indicated to receive coatings, as construction activities of this section progress; do not allow to dry.
- B. Re-install hardware, electrical equipment plates, mechanical grilles and louvers, lighting fixture trim, and other items that have been removed to protect from contact with coatings.
- C. Reconnect equipment adjacent to surfaces indicated to receive coatings.
- D. Relocate to original position equipment and fixtures that have been moved to allow application of coatings.
- E. Remove protective materials.

### **3.06 PROTECTION AND REPAIR**

- A. Protect completed coating applications from damage by subsequent construction activities.
- B. Repair to Owner's acceptance coatings damaged by subsequent construction activities. Where repairs cannot be made to Owner's acceptance, re-apply finish coating to nearest adjacent change of surface plane, in both horizontal and vertical directions.

### 3.07 PAINING AND COATING SCHEDULE

#### A. Exterior Painting:

##### 1. Ferrous Metal, Galvanized Metal and Aluminum:

Prime Coat: Primer, water-based, anti-corrosive for metal: S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, 5.0 to 10.0 mils wet, 2.0 to 4.0 mils dry  
Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat  
Topcoat: Light industrial coating, exterior, water based, gloss: S-W Pro Industrial Acrylic Gloss Coating, B66-600 Series, at 2.5 to 4.0 mils dry, per coat

##### 2. Wood:

Prime Coat: Primer, latex for exterior wood  
Intermediate Coat: Latex, exterior, matching topcoat  
Topcoat: Latex, exterior, satin: S-W A-100 Exterior Latex Satin, A82 Series, at 4.0 mils wet, 1.5 mils dry, per coat  
Topcoat (Trim): Latex, exterior, gloss: S-W A-100 Exterior Latex Gloss, A8 Series, at 4.0 mils wet, 1.3 mils dry, per coat

##### 3. Exterior Insulation Finish Systems (EIFS):

First Coat: Latex, exterior, matching topcoat  
Topcoat: Latex, exterior, satin: S-W A-100 Exterior Latex Satin, A82 Series, at 4.0 mils wet, 1.5 mils dry, per coat

#### B. Work on Interior:

##### 1. Wood:

Prime Coat: Primer sealer, latex, interior: S-W PrepRite ProBlock Primer Sealer, B51-620 Series, at 4.0 mils wet, 1.4 mils dry  
Intermediate Coat: Latex, interior, matching topcoat  
Topcoat: Latex, interior, semi-gloss: S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils wet, 1.6 mils dry, per coat.

##### 6. Gypsum Board and Plaster

###### a. Walls

Prime Coat: Primer, latex, interior: S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils dry  
Intermediate Coat: Latex, interior, matching topcoat  
Topcoat: Latex, interior, eggshell: S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils wet, 1.7 mils dry, per coat

b. Walls (Toilet rooms, showers, kitchens and mechanical spaces):

Prime Coat: Primer sealer, latex, interior: S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils dry

Intermediate Coat: Light industrial coating, interior, water based, matching topcoat

Topcoat: Light industrial coating, interior, water based, eggshell: S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-151 Series, at 4.0 mils wet, 1.5 mils dry, per coat

c. Ceilings

Prime Coat: Primer, latex, interior: S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils wet, 1.5 mils dry

Intermediate Coat: Latex, interior, matching topcoat

Topcoat: Latex, interior, flat: S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series, at 4.0 mils wet, 1.6 mils dry, per coat

8. Disturbed Work: Disturbed work both interior and exterior caused by construction shall be thoroughly cleaned, repaired and sanded, and given sufficient coats of paint of color to match adjacent work so that the finished work will blend satisfactorily with existing work as approved by the Owner. Test patches shall be made to demonstrate compatibility of new paint materials with existing surfaces.

**END OF PAINTING**

## SECTION 23 81 26

### SPLIT-SYSTEM AIR-CONDITIONERS

#### **PART 1 - GENERAL**

##### **1.01 DESCRIPTION**

###### A. Work Included in this Section:

1. Provide all labor, materials, equipment and services, etc. required to furnish and install split-system heat pump air-conditioners and all related electrical systems, condensate pumps and drains, zone boxes, etc. as indicated on the Drawings, Specified herein, or otherwise required for a complete and proper job.
2. The Work shall include, but shall not necessarily be limited to:
  - a. Interior fan coil units
  - b. Exterior condensing / heat pump units
  - c. Controls and control panels
  - d. Condensate pumps and drawings
  - e. Electrical wiring and upgrades
  - f. Concrete equipment pads
  - g. Other appurtenances as required for a complete system

###### B. Related Work Specified Elsewhere:

1. SECTION 01 00 00: General Requirements
2. SECTION 02 41 19: Selective Demolition

##### **1.02 REFERENCES**

###### A. Air-Conditioning and Refrigeration Institute (ARI):

1. ARI 210/240 – Unitary Air-Conditioning and Air-Source Heat Pump Equipment
2. ARI 270 – Sound Rating of Outdoor Unitary Equipment
3. ARI340/360 – Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment
4. ARI 365 – Commercial and Industrial Unitary Air-Conditioning Condensing Units

###### B. ANSI/NEMA 250 – Enclosures for Electrical Equipment (1000 Volts Maximum)

###### C. ANSI/NFPA 90A – Installation of Air Conditioning and Ventilation Systems

###### D. UL – Underwriters' Laboratories

E. NFPA 70 – National Electric Code

**1.03 SUBMITTALS**

- A. Shop Drawings: Submit shop drawings indicating locations and sizes of interior and exterior units, routing of water and refrigeration lines, routing of electrical lines, location and size of condensate pumps and drains
- B. Product Data: Submit product data indicating system design and performance characteristics, material descriptions, rough-in connections and connection requirements, electrical requirements with electrical characteristics and connection requirements, controls and accessories and manufacturers installation instructions.
- C. Operation and Maintenance Data: Submit manufacturers operation and maintenance data, including; descriptive literature, operating instructions, installation instructions and maintenance and repair data

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: A company specializing in manufacturing the Products specified in this Section with a minimum 10 years experience
- B. Installer Qualifications: An installer specializing in performing the work of this Section with a minimum 3 years experience

**1.05 DELIVERY AND STORAGE**

- A. All materials and related accessories shall be delivered and stored in strict compliance with the manufacturer's instructions.

**1.06 WARRANTY**

- A. The units shall have a manufacturer's warranty for a period of 1 year from date of Substantial Completion
- B. The compressor shall have a warranty of 5 years from date of Substantial Completion
- C. If any part fails to function properly during the warranty period due to defects in workmanship or material, it shall be replaced or repaired

**PART 2 - PRODUCTS**

**2.01 MANUFACTURERS**

- A. Basis of Design: Daikin, which is located at Daikin Texas Technology Park, 19001 Kermier Road, Waller, TX, 77484, or comparable product by Mitsubishi, Carrier or approved equal.
- B. Source Limitations: Obtain interior and exterior units from single source from a single manufacturer.

## **2.02 GENERAL**

- A. The heat pump air conditioning system shall be a variable capacity multi-zone system consisting of compact wall-mounted packaged evaporator sections and matching air-cooled outdoor units
- B. The units shall be listed by Electrical Testing Laboratories (ETL) and bear the ETL label.
- C. Wiring shall be in accordance with the National Electrical Code (N.E.C.)
- D. The units shall be rated in accordance with ARI Standard 210 and bear the ARI label.
- E. A full charge of R-410A for refrigerant tubing shall be provided in the condensing unit. Tubing length shall be provided as required (coordinate with Drawings). A holding charge shall be provided in the evaporator.
- F. Unit shall be U.L. approved and bear the U.L. label.

## **2.03 INDOOR UNIT**

- A. The indoor unit shall be completely factory assembled, wired and run tested.
- B. The casing shall have a white finish.
- C. The evaporator fan shall be a high performance, forward curve line flow fan direct driven by a single motor. The fan shall be statically and dynamically balanced and run on permanently lubricated bearings.
- D. An adjustable change vane shall be provided with the ability to direct the air flow from horizontal to vertical. An adjustable guide vane shall be provided to manually change the air direction from left to right.
- E. The evaporator coil shall be of nonferrous construction with smooth plate fins bonded to copper tubing. The tubing shall have inner grooves for high efficiency heat exchange. Tube joints shall be brazed with phoscopper or silver alloy. The coils shall be pressure tested at the factory.
- F. A condensate pan with drain shall be provided under the coil.
- G. A condensate pump shall be provided. The condensate pump shall fit within the evaporator housing and shall be completely concealed. The pump shall be supplied by the air conditioning

unit manufacturer and shall be field installed in accordance with manufacturer's recommendations. The pump shall be provided with voltage and phase matching the associated indoor unit and shall have power wired via the indoor unit.

- H. The unit shall be powered from the outdoor unit. See "Outdoor Unit" in this Section for more information.
- I. The unit shall include washable filters.

#### **2.04 OUTDOOR UNIT**

- A. The outdoor unit shall be specifically designed to work with the corresponding indoor units. The outdoor unit shall be completely factory assembled, piped, wired and shall carry a complete refrigerant charge.
- B. The casing shall be fabricated of galvanized steel, bonderized and finished with baked enamel.
- C. The unit shall be furnished with a direct drive, propeller type fan arranged for horizontal discharge.
- D. The motor shall have inherent protection, be of the permanently lubricated type and resiliently mounted for quiet operation.
- E. Fan speed shall be switched automatically according to the number of operating indoor units and the compressor operating frequency.
- F. The fan shall be provided with a raised wire guard to prevent contact with moving parts.
- G. The compressor shall be of the high-performance serviceable rotary type with crankcase heater, accumulator and internal thermal overloads. The compressor shall be internally isolated with rubber mounts so as to avoid the transmission of vibration.
- H. The refrigeration system shall have the capability to operate with a maximum height difference of 23 feet and overall refrigerant tubing length of 65 feet between indoor and outdoor sections without the need for line size changes, traps or additional oil. Refrigerant flow from the condenser to be controlled by means of a capillary tube.
- I. The condenser coil shall be of nonferrous construction with smooth plate fins bonded to copper tubing. The tubing shall have inner grooves for high efficiency heat exchange. The coil shall be protected with an integral metal guard.
- J. Refrigerant flow from the outdoor unit to the indoor units shall be independently controlled by means of individual electronic linear expansion valves for each indoor unit..
- K. The unit shall be capable of low ambient operation, with outside air temperature as low as 0 degrees F (-17 degrees C).

- L. The outdoor unit shall have a liquid line connection and a gas line connection. Pipe lines running from the outdoor unit shall connect to a branch box. The branch boxes shall be installed indoors in an area with temperature between 67 degrees F and 95 degrees F and a relative humidity of 80% or lower.

## **2.05 SYSTEM CONTROL**

- A. The units shall be controlled by a wireless hand held controller to perform input functions necessary to operate the system.
- B. The wireless hand held controller shall have a Power On/Off switch, Mode Selector, Temperature Setting, Timer Control, Fan Speed Select and Auto Vane selector.
- C. The indoor unit shall perform Self-diagnostic Function and Check Mode switching.
- D. The microprocessor located in the indoor unit shall have the capability of sensing return air temperature and indoor coil temperature, receiving and processing commands from the wireless or a wired controller, providing emergency operation and controlling the outdoor unit.
- E. The system shall be capable of automatically restarting and operating at the previously selected conditions when the power is restored after power interruption.
- F. The indoor units shall be capable of working with single-zone or multi-zone outdoor units.

## **2.06 REFRIGERANT PIPING**

- A. Unit shall be provided with pre-charged and pre-insulated line sets as recommended by the manufacturer.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. All workmanship shall be in strict conformance with the manufacturer's instructions and recommendations.
- B. Verify that system is located per Drawings
- C. Verify that proper power supply is available
- D. Verify that concrete pad for condensing unit is ready for unit installation.

### **3.02 INSTALLATION**

- A. Install units in accordance with manufacturer's instructions.

- B. Mount air-cooled condensing units on isolation pads on concrete equipment pads
- C. Install condensing units so the fan blows in the same direction as the prevailing winds, unless otherwise directed by the manufacturer.
- D. Install condensate piping with trap and route from drain pan to condensate drainage system.

**END OF SPLIT-SYSTEM AIR-CONDITIONERS**

