



# **PROJECT MANUAL**

## **Wood Frame Repairs and Related Work -9 Buildings-**

### **Phases II, III, and IV**

**Property at:**

**Vintage Grand  
4012 Crockers Lake Boulevard  
Sarasota, Florida 34238**

**Prepared for:**

**Vintage Grand Condominium Association, Inc.  
4012 Crockers Lake Boulevard  
Sarasota, Florida 34238**

**Project No. R1503-302D**

**May 07, 2018**

**10405 TECHNOLOGY TERRACE  
LAKEWOOD RANCH, FL 34211**

**FLORIDA REGISTERED ENGINEERING CORP.  
CERTIFICATE OF AUTHORIZATION #8753  
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**Vintage Grand Condominium Association, Inc.**  
**Wood Frame Repairs and Related Work**  
**Project No. R1503-302D**  
**May 07, 2018**

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Owner: Vintage Grand Condominium Association, Inc.

Issued By: Delta Engineering & Inspection, Inc. Certificate of Authorization: No. #8753

Reviewed By: Steven J. Mainardi, PE FL Reg. Eng. No. #56563

Date: 5.07.18

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THE DRAWING AND DESIGN IS VALID FOR A PERIOD OF 1 YEAR AFTER THE DATE IT IS SIGNED OR UNTIL A NEWER VERSION OF THE BUILDING CODE, HAVING JURISDICTION, IS ADOPTED, WHICH EVER OCCURS FIRST.

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**SECTION 006100**

**BONDS**

- A. Provide Performance Bond and Payment Bond, if required by the Owner. Bonds will be approved in a Change Order.
- B. Bond forms can be obtained from the American Institute of Architects, Washington, D.C., 202-626-7300, include:

AIA A312, Performance Bond and Payment Bond.

**END OF SECTION**

## SECTION 007200

**GENERAL CONDITIONS**1.0 INTENT AND INTERPRETATIONS:

- A. The INTENT of the Contract Documents is to include all items necessary for the proper execution and completion of the Work. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. The Contractor shall be responsible for the construction and coordination of the parts and all systems shall be completely compatible and fully functional without additional cost to the Owner. Word abbreviations, which have well known technical or trade meanings, are used in the Contract Documents in accordance with such recognized meanings.
- B. Reference to standard specifications, manuals or codes or any technical society, organization or association, or to the code or any governmental authority, whether such reference is specific or by implication, shall mean the latest standard specification, manual or code in effect at the time indicated for reception of proposals, except as may be otherwise specially stated.
- C. "General Conditions" apply with equal force to Contractor's, Subcontractors', Sub-subcontractors' Work, material suppliers', extra Work and the like that may be specified herein or performed in or about building or site under this Contract.
- D. The layout of mechanical and electrical systems equipment and fixtures, piping, ductwork, conduit, specialty items and accessories indicated on the drawings is diagrammatic, and all variations in alignment, elevations, and detail required to avoid interference and satisfy architectural and structural limitations of the Work shall be carried out without effecting the architectural and structural integrity and limitations of the Work and shall be performed in such a sequence and manner as to avoid conflicts, provide clear access to all control points, including valves, strainers, control devices, specialty items of every nature related to such systems and equipment, obtain maximum headroom and provide adequate clearances as required for operation and maintenance. Immediately notify Engineer in writing and otherwise of any specific conditions which exist such that these requirements cannot be satisfied.
- E. **Construction Loads on Building Structures:** The structure is designed to support the loads of the finished building. No provision is included for unusual erection stresses or loads imposed by construction materials or equipment. If the Contractor desires to place loads in excess of the design load (shown on original as built drawings) on any part of the building structure, he shall submit drawings and stress calculations (prepared by and bearing the seal of a professional Engineer registered in the State of Florida) of the proposed method for supporting materials, scaffolding and/or other items of construction plant and equipment, for the Owner and the Engineer's review and acknowledgement. Interference with mechanical, electrical and other Work shall be considered in any proposed permanent design. The cost of engineering and all additional support loads shall be placed on the Contractor. No loading of any kind in excess of design loads shall be placed on any part of the building structure prior to submission of drawings and calculations.

## 2.0 EXECUTION / SCHEDULING / START OF WORK

- A. The award of contract, if awarded, will be to the most qualified, responsive and responsible Bidder whose qualifications are in the best interest of the Owner and whose proposal complies with all the job requirements. No award will be given until the Owner has concluded such investigation and qualification to establish responsiveness, responsibility, qualification, and financial ability of the Bidder to perform the Work as described within the cost objectives and time prescribed. In review of the Bids, the Owner may make provisions for alternates and unit prices, if requested by the bid forms. If the Contract is awarded, it is estimated that the OWNER or ENGINEER will give the Bidder written notification of the award within 30 days after opening the Bids.
- B. The Contractor will be furnished free of charge, three (3) copies of Contract Documents. Additional sets will be furnished at the cost of reproduction, postage and handling.
- Partial sets of documents will not be issued, nor will documents be issued to other than the General Contractor. **Unauthorized reproduction of Documents will be considered a violation of the Engineer's Copyright.**
- C. Prior to commencement of any Work, the Contractor will submit to the Owner and Engineer an estimated progress schedule indicating the starting and completion dates of the various stages of the work.
- D. Before the commencement of Work, a conference will be held to review the estimated schedule to establish procedures for handling submissions and for processing applications for Payment, and to establish an understanding of the scope of work. Present at the conference will be the following: Owner, Engineer, Contractor, and representatives of his Subcontractors and Material Suppliers.

## 3.0 CONTRACTOR / SUB CONTRACTS / WORK BY OTHERS / MATERIALS

- A. The Contractor may make no changes to the scope of Work without having first received written permission. Where detailed information is lacking, refer to Engineer, in writing and otherwise, for information before proceeding with work. If work is required in a manner to make it impossible to produce first class work, a written request from the Engineer with a written interpretation before proceeding with said work from the Owner or Engineer is required.
- B. The Contractor will not employ any Subcontractor not included in bid document as a substitute without first obtaining written approval and acknowledgement from the Owner.
- C. The Contractor will be fully responsible for all acts and omissions of his Subcontractors and of all persons, directly or indirectly, employed by him. As well as, all persons for whose acts make him liable to the same extent that he is responsible for the acts and omissions of the persons directly employed by him. No contractual relationship shall exist between any Subcontractor and the Owner or any obligation on the part of the Owner to pay or to see to the payment of any monies due any subcontractor, except as to the extent practicable, evidence of amount paid to the Contractor on account of specific work done in accordance with the schedule of values.
- D. The Contractor will specifically bind all Subcontractors to all of the applicable terms and conditions of the Contract Documents. Each and every subcontractor by undertaking to

perform any of the Work will thereby automatically be deemed to be bound by such terms and conditions.

- E. The Contractor will provide and pay for all materials, equipment, labor, transportation, machinery, tools, appliance, fuel, light, telephone, sanitary facilities and all peripherals and incidentals necessary for the execution, testing, initial operation and completion of Work.
- F. The Contractor's insurance will provide coverage for all equipment, tools and facilities placed on the Owner's property. The Owner assumes no liability for theft or vandalism of any materials, equipment, tools or facilities placed on the Owner's property.
- G. All equipment, tools, and facilities shall be in good working order and all materials used will be NEW. The Contractor is obligated to furnish evidence as to the type and quality of materials and equipment if requested by the Owner or Engineer.
- H. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacture, fabricator, supplier or distributor, except as otherwise provided in the Contract Documents.
- I. Where several materials are specified by the name for one use, select for use any of those specified. Whenever item or class of materials is specified exclusively by trade name, manufactures name, or by catalog reference, use only such item. No substitutions for materials, article, or process required under Contract will be allowed unless the Owner grants specific written approval. Substitutions may not be necessarily granted.

#### 4.0 PERMITS, FEES, NOTICES AND TAXES

- A. Charges by local municipalities for connections to water and sewer systems shall be paid by the Contractor. The Contractor shall pay any fees for damages to roads, other public property or to any public utilities.
- B. The Contractor shall secure and pay for all construction permits, certifications of inspections, licenses and certificates of occupancy that may be required by authorities having jurisdiction over Work.
- C. The Contractor shall expend every reasonable effort to obtain the necessary permits, licenses and certificates herein required, but shall not be responsible for an inability to obtain it due to governmental authority or body that prevents the commencement, continuation or completion of Work unless caused directly or indirectly by the Contractor.
- D. The Contractor will pay all sales, use, consumer and similar taxes required by law. The Contractor assumes and is liable for all State, Federal Payroll or Social Security Taxes, Unemployment and Workers Compensation Taxes and fees, and guarantees to hold the Owner harmless in every respect against the same.

#### 5.0 SITE USE & SAFETY

- A. The Contractor shall be responsible for the receiving, unloading, handling and storage of any equipment or materials supplied or utilized by the Contractor hereunder. The Contractor shall store equipment and materials, as necessary to those areas permitted by

law, ordinances, permits and those areas designated by the Owner and shall not unreasonably encumber the premises with equipment and materials.

- B. The Contractor will be responsible for the development, initiation, maintaining and supervising of all safety and precautionary programs and will provide the necessary protection to prevent damage, injury or loss to all employees, occupants, visitors, subcontractors, materials, tools, equipment, and property at the site of the Owner, both common to the community and of the individual residents.
- C. The Contractor is to comply with all regulatory safety standards and codes, such as and not limited to OSHA. The Contractor will comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction over the safety of persons or property or to protect them from damage or injury or loss.
- D. The Contractor will be responsible for the erection of and maintenance of all equipment and safety barriers as required by the conditions and progress of the Work, necessary safeguards for safety and protection including posting danger signs and other warnings against hazards and compliance with safety regulations.
- E. The Contractor will be responsible and (without special instruction or authorization from the Engineer), is obligated to: 1) notify the Owner and each of the residents of any potential hazards which may exist at the job site and 2) is obligated to act, at his discretion, to prevent threatened damage, injury or loss.
- F. In the event the Contractor encounters what is thought to be asbestos containing material (ACM) or polychlorinated biphenyl (PCB) the Contractor shall immediately stop work and notify the Owner and Engineer of the present condition. The Work shall continue once the ACM and PCB are rendered harmless, by written notification of the Owner to the Contractor.
- G. In the event of an injury or accident at the site, the Contractor shall immediately notify the Owner and Engineer in writing of the individuals involved, circumstances surrounding the accident and severity of the injury.
- H. The Contractor shall be responsible for the means & methods of all materials handling and will not be permitted to use the Owner's elevator without prior approval. The cost to repair any damages to the elevator resulting from the Contractor's use shall be at the Contractor's expense and shall be deducted from the contract price.

## 6.0 SUPERINTENDENT

- A. The Contractor shall maintain at the project job site, a full-time superintendent satisfactory to the Owner and Engineer, who will devote **100% of his working hours to this project**. The superintendent will be the Contractor's representative at the site and shall have authority to act on behalf of the Contractor. All communication given to the superintendent shall be binding as if given to the Contractor. The superintendent shall also be the responsible member whose duty shall include accident prevention on the job site.
- B. **The Contractor will be solely responsible for the means, methods, techniques, sequences and procedures of construction. Before undertaking the Work, he will carefully review the Contract Documents, check and verify all figures and field measurements for inconsistencies. Perform required compatibility tests and he will report in writing any conflict, error or discrepancy, which he may discover to the Engineer.**

- C. The Contractor will provide competent, qualified and skilled labor in the respective field of Work. He will at all times maintain good discipline and ensure an environment that refrains from the public use of profanity and drugs.
- D. The Owner and Engineer will not be responsible for the acts or omissions of the Contractor, or any Subcontractors, or any of his or their agents, employees or any other persons performing any of the Work.

## 7.0 INDEMNIFICATION

- A. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner and its members, agents and employees from and against all claims, damages, losses and expenses, including but not limited to attorney's fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (1) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including the loss of use resulting there from, and (2) is caused in whole or in part by any negligent act or omission of the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused by in part by a party indemnified hereunder. Such obligation shall not be construed to negate abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person. In any and all claims against the Owner or any of its members, agents, or employees by an employee of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable the indemnification obligation shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any Subcontractor under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts. The parties hereto specifically acknowledge and agree pursuant to Florida Statutes, Section 725.06 that a portion of the consideration given by Owner to Contractor pursuant to the terms hereinafter in the amount of \$100 is specific consideration to Contractor for indemnification provided

## 8.0 ADMINISTRATION OF THE CONTRACT

- A. The Engineer will review the Work done and material used by the Contractor and carry out the duties that are stated in the engagement contract and in the Contract Documents or delegated to him by the Owner.
- B. The Engineer will review all requests for specifications, alternates and substitutions and recommend appropriate response to Owner for its prior approval.
- C. The Engineer will notify the Contractor concerning any violation of, or failure to comply with any part of the Contract Documents and Specifications by the Contractor and recommend recriminatory action to owner for the prior approval.
- D. The Engineer along with the Owner and/or Owner's attorney shall decide all questions concerning the interpretations of the Contract Documents to the quality, amount and value of any Work done and materials furnished under or by reason of this Contract, and his estimate and decision shall be final and conclusive.

- E. The Engineer or Owner will not be responsible for the Contractor's means, methods, techniques, and procedures used in construction and will not be held liable for the Contractor's inadequate or unsatisfactory performance of Work delays which are beyond his control.
- F. Any information NOT furnished by the Owner or the Engineer, his staff or inspectors does not relieve the Contractor of his responsibilities to complete the work as prescribed.

#### 9.0 STOPPAGE / SUSPENSION OF WORK / TERMINATION

- A. The Contractor's rights to perform Work, correct deficiencies and occupy the contract site shall be at the sole option of the Owner.
- B. The Owner may, at any time and without cause, suspend Work or any portion thereof for a period of not more than ninety (90) days by notice in writing to the Contractor. The Contractor may be allowed a reasonable increase in the Contract Price and/or an extension of the Contract Time directly attributable to any suspension if he makes a claim thereof.
- C. If the Work is defective, or the Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, or if the Contractor fails to make prompt payments to the Subcontractors or suppliers for labor materials, or equipment, the Owner or the Engineer may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been resolved.
- D. If the Contractor is adjudged as bankrupt or insolvent or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the Contractor or for any of his property, or if he files a petition to take advantage of any debtors' act or to reorganize under the bankruptcy or similar laws, or if he repeatedly fails to supply skilled workmen or repeatedly fails to make prompt payments to the Subcontractors or if he disregards law, ordinances, rules, regulations or orders of any public body having jurisdiction, or if he disregards the authority of the owner or if he violates any provisions of the Contract Documents, the Owner may without prejudice to any other right or remedy and after giving the Contractor and his SURETY seven days written notice, terminate the services of the Contractor and take possession of the Project and all materials, equipment, tools, construction equipment thereon owned by the Contractor, and finish the Work by whatever method he may deem expedient. The Contractor shall not be entitled to further payment. If the balance to complete the work exceeds the unpaid balance, the Contractor will pay the difference to the Owner.
- E. If the Work is suspended for a period of more than ninety (90) days by the Owner, through no fault of the Contractor, or under an order of the court or other public authority, or the Owner fails to act on any Application of Payment within thirty days (30) days after it is submitted, or the Owner fails to pay the Contractor any sum approved or awarded by the arbitrators within thirty (30) days of its approval and presentation, then the Contractor may upon seven (7) days written notice to the Owner, terminate the Agreement and recover from the Owner payment for all Work executed. In addition, if the Owner has failed to act on an application of payment or the Owner has failed to make payment as aforesaid, the Contractor may upon seven (7) days written notice to the Owner stop Work until he has been paid all amounts due.

**10.0 CHANGE ORDERS**

- A. The Owner or Engineer may at anytime order additions, deletions or revisions in the Work. These changes will be authorized via written Change Orders. Upon receipt of a written Change Order signed by the Owner, the Contractor will proceed with the Work. All such changes shall be executed in accordance with the provisions of the Contract Documents.
- B. The Owner and the Engineer may authorize minor changes or alterations in the Work that may not involve extra cost and are not inconsistent with the overall intent of the Contract documents. This may be accomplished by a Field Change Request. If the Contractor believes these changes will increase the Contract Price, he shall request a written Change Order.
- C. If the Contractor should neglect to perform Work in accordance with the Contract Documents, including any requirements of the progress schedule, The Owner, after three (3) days written notice to the Contractor may, without prejudice to any other remedy he may have, make good such deficiencies and the cost thereof (including compensation for additional professional services) to be charged against the Contractor in which case a Change Order shall be issued incorporating the necessary changes in the Contract Documents including an appropriate reduction in the Contract Price. If the payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor will pay the difference to the Owner.
- D. All Work will be of good quality and free from faults or defects. Work not in accordance with the requirements of the Contract Documents or defects revealed through failed inspection or tests shall be considered defective. Prompt notice of all defects shall be given to the Contractor. Prompt notice is defined as 4 business days from date of inspection. All defective Work whether or not in place may be rejected.

**11.0 DELAYS DUE TO WEATHER:**

- A. The Contractor shall submit written notification for weather related delays to the Owner. Written notification shall be submitted no later than 24 hrs after the requested delay. The notification shall include:
  - 1) Project name and location
  - 2) Name of Owner
  - 3) Project number
  - 4) Contractor's name and address
  - 5) Date of submittal
  - 6) Day(s) / requested (1/4 day, 1/2 day, 3/4 day, full day)
  - 7) Did work continue that day?
  - 8) What time did work stop that day?

**12.0 CHANGE IN CONTRACT PRICE:**

- A. The Contract Price is the total compensation payable to the Contractor for performing the Work based on the bid form, unit prices, cost plus and estimated quantities. There shall be no changes in the Contract Price unless approved in advance and in writing by the Owner or Engineer with prior approval of Owner.

- B. The Owner and Contractor shall agree upon all quantities and methods for computations of payments prior to submittal for payments.
- C. Provisions for establishing the Contractor's overhead and profit for extra work are set forth within the Bid Form Document.
- D. The Contractor shall submit receipts or other evidence showing his costs and his right to the payment for extra work if so required by the Owner or the Engineer.
- E. Labor costs shall include supervision, estimations, layout, tradesman and laborer's wages, including all applicable taxes, insurance premiums and assessments.

### 13.0 CONTRACT TIME

- A. It is hereby understood and mutually agreed, by and between Owner and Contractor, that the Contract Time as indicated on the Agreement Form constitutes a reasonable time period in which to complete the Work in compliance with the Contract Documents. Execution of the Contract shall constitute acknowledgement and agreement to the above.
- B. The Contractor will be required to have the project completed by the agreed upon date as mutually agreed upon and set forth within the Contract Agreement and have the actual site work, including punch list items and site clean up, totally completed within 14 calendar days thereafter fixed date. Failure to do so will result in liquidated damages in the amount of **\$250.00 per day** for each day between the fixed date and the total completion date; such payment shall not be construed as Penalty but as Liquidated damages for breach of contract.
- C. The Contractor shall furnish sufficient forces and equipment and shall work such hours, including overtime operations, as necessary to execute the Work in accordance with the approved progress schedule. If the Contractor falls behind the progress schedule, he shall take steps as necessary to see that the work progresses properly in order to complete it on time.
- D. Failure of the Contractor to comply with the prescribed requirements under Article 8.0 shall be grounds for determination that the Contractor is not pursuing the Work with diligence as will insure the completion within the time specified and such failure constitutes a violation of the Agreement.
- E. Under such determination, the Owner may terminate the Contractor's right to proceed with the work.
- F. The Owner's exercise of the right to terminate shall not release the Contractor from his obligation to pay said damages in the amounts set out in the Agreement. The Owner may deduct from the funds owed to the Contractor amount equal to such damages.

### 14.0 PAYMENTS AND COMPLETION

- A. **The Contractor shall submit the following with each payment request:**
  - 1. Application for Payment (AIA Document G702, G703).
  - 2. **Schedule of values of the Work, including quantities and unit prices, aggregating the Contract Price for all items on the Bid Form.** This schedule

shall subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction.

- a. Project name and location
  - b. Name of owner
  - c. Project number
  - d. Contractor's name and address
  - e. Date of submittal
3. **Product Delivery Bill of Laden:** Indicating materials purchased and delivered.
  4. **Summary List:** A list of completed units and other completed areas of work.
  5. **Sketch Plan:** (If applicable) A sketched plan indicating actual quantities and areas of completed repair.
  6. **Project Schedule.** With the Application for Payment, the Contractor shall submit an updated Project Schedule UNO
  7. **Contractor's Affidavit, Releases of Liens and Partial Liens**
- B. The Contractor will submit to the Owner for review **three (3) copies of the Application for Payment** filled out and signed by the Contractor covering the Work completed during the first twenty-five (25) days of the preceding month supported by such data as the Owner may reasonably require. Quantities used in the Application for Payment shall be previously approved by the Owner.
- C. The Contractor warrants and guarantees that title to all Work, materials and equipment covered by an Application for Payment, whether incorporated in the Project or not, will have passed to the Owner PRIOR TO THE MAKING OF THE application for Payment, free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens"); and no Work, materials or equipment covered by an Application for Payment will have been acquired by the Contractor or by any other person performing the Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person.
- D. The Owner will, within **ten days after receipt** of each Application for Payment, either indicate in writing an approval of payment, or return the Application to the Contractor indicating in writing the reason for refusing to approve payment (such as errors or incomplete Pay Applications). In the latter case, the Contractor will make the necessary corrections and resubmit the Application. The Owner will, within ten days of receipt of the approved Application for Payment, pay the Contractor the amount approved by the Owner. Should the original or resubmitted Application cause a delay in payment, there will be no penalty towards the Owner.
- E. If the Contractor fails to provide the required construction schedules, submittals and samples, or fails to provide for tests and inspections, the Owner may withhold approval of pay applications until the deficiencies have been corrected.
- F. Payment application times: The twenty-fifth of each month with a **ten percent (10%) retainage** applying to all approved payments, being held until Project Close out.
- G. **Contractor shall submit simultaneously, with his Progress Payment Request, a Contractor's Affidavit for Partial Progress Payment and Partial Releases of Lien.**

## GENERAL CONDITIONS

## 15.0 APPROVAL OF PAYMENTS

- A. Approval by the Owner of any payment requested in an Application for Payment, will be based upon on-site observations of the Work in progress, as well as a review of the Application for Payment and the determination that the work has progressed to the point indicated and that the quality of Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning project upon completion, to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in the approval). Approval of payment by the Owner shall not be deemed to have been based on exhaustive on-site inspections to review the quality or the quantity of Work, or that he has reviewed the means, methods and techniques, sequences, and procedures of construction or that he has made any examination to ascertain how or for what purpose the Contractor has used the monies paid or to be paid to him on account of the Contract Price.
- B. Payments due to Contractor may be withheld by the Owner on account of defective work not remedied, claims filed, reasonable evidence indicating probability of filing claims, failure of Contractor to make payment properly to Subcontractor or for material or labor on the reasonable belief of the Owner that the work to be performed under this Contract which remain unfinished cannot be completed for the balance then unpaid as determined by the Engineer and Owner.

## 16.0 FINAL PAYMENT

- A. Upon written notice from the Contractor to the Owner that the Project is complete, the Owner and Engineer will make a final inspection with the Contractor and will notify the Contractor in writing of any particulars in which this inspection reveals that the Work is defective. The Contractor shall immediately make such corrections as are necessary to remedy such defects. At the Owner's request, the Engineer may be asked to perform an additional final inspection to verify all deficiencies have been remedied.
- B. After the Contractor has completed any such corrections to the satisfaction of the Owner and Engineer and delivered all maintenance and operating instructions, schedules, guarantees, certificates of inspection and other documents, all as required by the Contract Documents, he may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by such supporting data as the Owner and Engineer may require, together with complete and legally effective releases or waivers (satisfactory to the Owner and Engineer) of all Liens arising out of the Contract Documents and the labor and services, material and equipment for which a Lien could be filed, and that all payrolls, materials and equipment bills, and other indebtedness connected with the Work for which the Owner or his property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or supplier fails to furnish a release or receipt in full, the Contractor may furnish a bond satisfactory to the Owner to indemnify him against any Lien.
- C. **The Contractor shall submit simultaneously with the Final Application for Payment a Contractor Final Affidavit and Release of Lien, as well as Final Release of Lien for all Subcontractors, laborers, material men and suppliers; including Contractor's and Manufacturer's Warranties, and Manufacturer's Certification of finished work.**

- D. **Contractor, manufacturers, and any product applicators shall be jointly and severely liable for any warranty or to serviceability or defects of works or products.**

17.0 WAIVERS OF CLAIMS AND CONTINUING OBLIGATIONS

- A. The Contractor's obligation to perform the Work and complete the Project in accordance with the Contract Documents shall be absolute. Neither approval of any progress or final payment by the Engineer, nor any payment by the Owner to the Contractor under the Contract Documents, nor any use or occupancy of the Project or any part thereof by the Owner nor any faulty or defective work by the Owner shall constitute an acceptance of work not in accordance with the Contract Documents.
- B. The making applications for and acceptance of final payment shall constitute:
  - 1. A waiver of all claims by the Owner against the Contractor other than those arising from unsettled Liens, from faulty or defective work appearing after final payments or from failure to comply with the requirements of the Contract Documents or the terms of any special guarantees specified therein, and
  - 2. A waiver of all claims by the Contractor against the Owner other than those previously made in writing and still unsettled.

18.0 INSURANCE AND BONDS

A. **CONTRACTOR'S LIABILITY INSURANCE**

1. **Required Insurance**

- a. **Worker's Compensation:**

Each Accident	\$100,000
Disease – Employee	\$100,000
Disease Policy Limit	\$500,000
- b. **Bodily Injury, Personal Injury Liability and Property Damage Liability**

Each Occurrence:	\$1,000,000
General Aggregate (umbrella):	\$2,000,000
Products – Comp/OP AGG	\$2,000,000

Comprehensive General Public Liability including Contractors Protective Liability, Product Completed Operations – Coverage, shall include Premises and/or Operations, Independent Contractors, Products and/or Completed Operations, Independent Contractors, Products Coverage, and Contractual Liability Endorsement.

- c. **Comprehensive Automobile (owned, leased, non-owned and hired) for Bodily Injury Liability and Property Damage Liability.**

Each Claimant:	\$500,000
Each Occurrence:	\$500,000
General Aggregate (umbrella):	\$1,000,000

GENERAL CONDITIONS

- B. Before the commencement of Work the Contractor will submit to the Owner certificates of insurance. These certificates shall contain a provision that the coverage afforded under the policies will not be cancelled or non-renewed until at least thirty (30) days prior written notice has been given to the Owner, certified mail, return receipt requested.
- C. The insurance required in Article 18.0 shall be extended and maintained in the amounts specified in the event that the Contractor, his Subcontractors and or his Sub-subcontractors is required to remedy workmanship defects in materials or to execute and satisfy any Guarantee – Warranty requirements after the date of completion of the Contract.
- D. Contractor, manufacturer, and any product applicator shall be jointly and severally liable for any warranties or to serviceability or defects.

**19.0 PERFORMANCE BOND AND PAYMENT BOND**

- A. If Required: Prior to the execution of the Contract, the Contractor shall furnish bonds covering the faithful performance of the Contract and the payment of all obligations arising therefrom in a form acceptable to the Owner for the full amount of the Contract. Bonds shall be kept current in the full amount of the Contract.

END OF SECTION

## SECTION 011100

**SUMMARY****PART 1 - GENERAL**

- 1.0 PROJECT IDENTIFICATION Wood Frame Repairs and Related Work – 9 Buildings  
Vintage Grand Condominium Association, Inc.
- 1.1 PROJECT OWNER Vintage Grand Condominium Association, Inc.  
Sarasota, FL 34238
- 1.2 PROJECT SPECIFIER Steven J. Mainardi, PE  
10405 Technology Terrace  
Lakewood Ranch, FL 34211  
Tel: 941-727-2600  
Fax: 941-758-5012
- 1.3 RELATED DOCUMENTS
- A. Project Manual, Repair Drawings, Manufacturer's Specifications, and the Original Construction Drawings apply to this Section.
- 1.4 PROJECT SUMMARY
- A. The Work to be performed under the terms and conditions of this contract includes: the furnishing of all materials, labor, services, supervision, quality control, inspections, testing, scaffolding, portable sanitation, dumpsters, and equipment required or incidental to performing stucco repair/replacement, framing repairs, attic truss repairs, window replacement, exterior painting and sealants, and related work at the following two-story residential condominiums:
1. **(Phase 2)** - For the 2018 Year:
    1. Buildings 14 and 25
    2. Attic truss repairs at Building 17, 19, 22, 4, and 28
    3. Balcony repairs at Building 7 Unit 727, Building 13, Unit 1324, and Building 18 Unit 1824A
  2. **(Phase 3)** - For the 2019 year: Buildings 10, 24, 26, and 27
  3. **(Phase 4)** - For the 2020 year: Buildings 20, 21, 23
- B. The Contractor shall realize that the facility will be occupied and fully functional during the construction period. The Contractor shall proceed with the Work in a manner that does not interfere with daily operation of the facility. Any action by the Contractor, that may affect the operation of the facility, will be addressed to the Owner and Engineer. Notification from the Contractor shall be provided in writing, seven (7) days prior to proceeding with that portion of Work and must be approved by the Owner.
- 1.5 PERFORMANCE REQUIREMENTS
- A. All repairs shall be performed in strict accordance with these plans, specifications, Florida Building Code 6<sup>th</sup> Edition (2017), Florida Existing Building Code 6<sup>th</sup> Editions (2017) and local ordinances.

- B. The work shall be performed in strict accordance with these plans, specifications, Sealant, Waterproofing, and Restoration Institute (SWRI) standards and manufacturer's instructions.
- C. Provide sustainable stucco repairs in strict accordance with American Society for Testing and Materials (ASTM), Portland Cement Association (PCA) and manufacturer's instructions.
- D. Provide a premium paint coating system free of peeling, blistering, flaking, delamination, loss of adhesion and cracking for the life of the warranty.

## 2.0 DESCRIPTION OF WORK

The following work items are to be executed only as indicated by the Owner and/or Engineer and in accordance with the provisions of all applicable Sections and Drawings contained within the Project Manual.

- A. Mobilization, Demobilization and General Conditions in accordance with Section 007200 of the project manual. Breakdown of this amount will be required before signing of contract.
- B. Install protection, i.e. drop cloths, protection board, and plastic sheeting at all areas surrounding the area of Work to prevent damage to the property. Protection shall include but not be limited to the installation of protection at floor surfaces in the areas of work as well as protection of each drop including but not limited to protection of railings, plywood to slider doors at balconies, installation of temporary barrier walls at the interiors (as required) and other components adjacent to the area of work which may be affected.
- C. Installing staging, scaffolding, shoring, and/or other methods will be required as needed to facilitate the Work. Scaffolding is to be certified and OSHA approved with certification letter provided prior to commencement of work being performed.
- D. Scaffolding and staging shall remain in place for use by the Engineer and inspectors in order to conduct progress observation and Required Inspections will include but not limited to:
  - a. Wall framing condition verification
  - b. Wall framing rough-in prior to wall sheathing
  - c. Wall sheathing fastening
  - d. Installation of window flashing
  - e. Installation of window with AAMA 502 "Voluntary Specification for Field Testing of Newly Installed Fenestration Products"
  - f. Installation of lath, stucco and accessories
  - g. Stucco-to-stucco and stucco-to-metal sealant joints
  - h. Painting systems for metal and stucco substrates (stepped mock-up):  
Prep / prime / finish
  - i. Punch Out
- E. The Contractor shall perform mock-ups of the required Work prior to proceeding with the said repairs.
  - 1. Mock-ups shall be installed in the presence of the Engineer and manufacturer's representative to assure installation procedures adhere to warranty requirements.
  - 2. Required mock-up locations:
    - a. Framing repair and strapping
    - b. Sheathing installation
    - c. Tyvek (WRB) Installation
    - d. Stucco Installation
    - e. Window flashing installation
    - f. Window installation
    - g. Sealant joints:

- i. Stucco to stucco
      - ii. Stucco to metal
      - iii. Stucco to window perimeters (metal-to-stucco)
    - h. Painting systems (stepped mock-up) Prep / prime / finish
      - ii. Stucco / masonry substrate
      - iii. Painting system on miscellaneous service doors and frames
  - 2. Approved mock-up shall remain in place and establish the guidelines for acceptable installation of Work and acceptable appearance.
- F. If the presence of microbial growth is present, The Owner shall provide a certified mold specialist for testing and determine a remediation protocol. **(NOTE: The Mold Remediation work to be performed by Others)**

#### STUCCO REMOVAL AND REPLACEMENT:

Perform the following scope of work for the following:

- a. **(Phase 2)** - For the 2018 Year:
    - 1. Buildings 14 and 25
    - 2. Balcony repairs at Building 7 Unit 727, Building 13, Unit 1324, and Building 18 Unit 1824A
  - b. **(Phase 3)** - For the 2019 year: Buildings 10, 24, 26, and 27
  - c. **(Phase 4)** - For the 2020 year: Buildings 20, 21, 23
- A. The implementation of this condition assessment shall begin at an agreed upon Building location, progressing from that point around the building until all sides have been assessed.
  - B. The work will proceed as designated on the construction sequence drawing or as agreed upon by Owner, Engineer, and Contractor, and shall include stucco removal as required in the contract documents.
  - C. Building construction will be designated per the attached building elevation layout. Elevation designations have been established and are required by the County of Sarasota. Work and Inspections must be performed per elevation. No partial repairs of elevation are allowed.
  - D. Areas of the building exterior will be opened for demolition in accordance to the locations provided on the plans with the intent to uncover hidden wood-frame damage. Only half of the building may be demoed and opened at one time (i.e. elevation A, B, C, and D) until framing, strapping, and sheathing has been installed and County inspections are completed on such elevations. After passing of county inspections the rest of the building may be demoed. Commencement and completion of each building shall be per the contract.
  - E. Remove and store existing lighting and building signage for re-installation. Contractor shall perform a pre-construction survey of the lights and signage prior to removal. Preexisting damage shall be noted and reported to the Engineer for approval. Contractor shall take reasonable care in removal. Contractor shall not be responsible for damage caused during the removal process, on lights or signs that are noted with pre-existing damage and approved as noted by the Engineer.
  - F. Remove and store gutter downspouts for re-installation.
  - G. Remove and dispose of "Main Building Sign" only, KEEP all Unit # signage. Remove and dispose of abandoned wireless "wire-link hot-spots" connected to the exterior of the buildings. Contractor shall install temporary sign indicating building address and number at front of building.
  - H. Remove and replace existing roof wood perforated vented soffit to facilitate strapping, install new blocking (if required) with new like kind vented soffit assembly. (Note: Insulation shall not block the

free flow of air, a minimum of 1-inch space shall be provided between the insulation and the roof sheathing and at the location of the soffit vent).

- I. Remove and reinstall screen enclosures and guard railings (if required) to facilitate the removal and replacement of stucco. Modify screen enclosures, guards, and railing as required to accommodate new stucco opening.
- J. Remove all exterior coverings (stucco) in those areas indicated on the plans. Within lanais install new control joint opposite to the existing control joint in line with the lanai closet door edge. All stucco removal and framing repair will cease at this point. If damaged framing goes beyond this point, contact the Engineer for further direction.
- K. The exterior covering is to be disposed in a designated refuse container per Section 015000. All nails, staples and fasteners are to be removed and discarded in a timely fashion.
- L. Remove existing "Thermo-Ply Red" (sheathing) and insulation to expose the framing. Sheathing and insulation are to be disposed in a designated refuse container per Section 015000. All nails, staples and fasteners are to be removed and discarded in a timely fashion.
- M. The contractor shall only remove exterior stucco and "Thermo-Ply Red" sheathing attached to the framing in sections that can be **weather-proofed "dried-in" at the end of each work day** with the intent to assess the extent of damage to the wood framing members in accordance with these specifications, details and inspection protocols found in Appendix C. **Contractor to only remove sections of "Thermo-Ply Red" sheathing that can be re-installed the same day or Contractor must install temporary wall bracing.**
- N. After sheathing removal, the Engineer shall assess the existing framing conditions. The condition of the framing shall be assessed for damages where the integrity of the timber has been compromised by insect, wood decay, moisture, vermin, or other wood destroying organisms to the extent of which that member would not be permissible for use in new construction.
- O. Damage shall be confirmed through visual examination and by probing the timber with a tool such as a screwdriver, awl, or pick by jabbing the member with the probe and prying down, the resistance to the probe and condition of the pried splinters can be evaluated. Sound wood is dense and hard and when pried into will break into long splinters. Damaged wood is soft and brittle and will break into short splinters.
- P. Prior to repair, notify the project Engineer when the wall cavities have been completely exposed and schedule engineering site visitation.
- Q. The Contractor shall provide shoring, bracing or support for all existing structural elements affected by and within the scope of work and shall remain in place until all structural modifications have been completed and accepted for their intended use. The Contractor shall be responsible for the design and erection of all load-bearing shoring, should a shoring plan be necessary or required by the engineer of record based on the conditions, the Contractor shall submit a plan signed and sealed by a Professional Engineer retained by the Contractor and submitted to Delta Engineering & Inspection Inc.
- R. After sheathing removal, the Engineer shall assess the existing framing conditions; all framing members that are deemed damaged shall be replaced per these details and specifications (See "Framing Repairs" below for estimated quantities of framing replacement). All modifications provided to the existing framing shall comply with Section 061000, all applicable building codes and methods of fastening as suggested by the connector manufacturer. **(NOTE: Repairs will be performed on a T & M basis, when Unit Pricing is not provided or unless otherwise noted)**

- S. After the exposed framing has been examined by the Engineer, they shall be temporarily sealed and protected from the elements. This shall be done in such a manner to keep moisture out until repairs are made to match existing surface conditions.
- T. All damaged wood framing and associated components shall be treated for termites and replaced in members with new No. 2 Southern Yellow Pine (unless noted otherwise) lumber in accordance with these specifications, details, and as directed by the Engineer. (See "Framing Repairs" below for estimated quantities of framing replacement). (NOTE: **The framing repairs are to be performed on a T & M basis, when Unit Pricing is not provided**)
- U. At the existing window headers install 11"x11"x1/2" plywood spacers above each window (2 total for double window) and nail with 2 rows of three (3) 16d nails per drawing detail. Nail off existing plywood strip with 16d nails as required to provide a total of three (3) fasteners per row. Install in accordance with the project plans and specifications issued by Delta Engineering, Inc.
- V. Contractor shall contract with exterminator to spray inside all wall cavities and between floor cavities for termite control with "BORA-CARE" in accordance with these specifications and manufacturer's instructions.
- W. Provide a wood preservative at the lower 2 feet of framing, meeting the requirements of Chapter 23 of the FBC 6<sup>th</sup> Ed., over all non-pressure-treated framing (new and existing) exposed during this project within 8 inches of grade in accordance with the manufacturer's instructions, after framing repairs are complete but prior to installation of the sheathing. Submit a technical data sheet and manufacturer's instructions for the wood preservative. Submit written confirmation of the compatibility between the specified connectors and fasteners and the wood preservative. Moisture content of the wood must be 19% or less in accordance with Chapter 23 of the FBC 6<sup>th</sup> Ed. prior to installing covering, i.e., insulation.
- X. Any damage to sub-floor and 2<sup>nd</sup> floor truss shall be brought to the attention of the Engineer and evaluated and repaired on a case by case basis.
- Y. Replace all existing gable end vents, correct openings if damaged, flash opening per FMA/AAMA 100-12 (Method A) and install new GreenHeck EHH-601 Wind Driven Rain Louver (NOA No.: 12-0830.08) AAMA 2604 color: white or Engineer approved equal, Contractor to install MEPS trim around opening to match existing in accordance with these specifications, details, and manufacturer's instructions. Add/Deduct
- Z. Contractor shall install new gable-end bracing in accordance with these specifications and details.
- AA. At all areas that are exposed install new straps, ties, anchor bolts, and supplemental fastening and members in accordance with these specifications, details, and manufacturers' instructions.
- BB. After framing repairs and connectors have been installed and prior to re-sheathing the Contractor shall contact the Engineer to assess the work.
- CC. Remove all damaged insulation and install new R-13 Single Faced Batt insulation, in accordance with manufacturers' instructions.
- DD. Install new exterior rated 15/32" Exposure 1 plywood wall sheathing to the exterior framing in accordance with these specifications, and details. Bottom sheet of plywood to be pressure treated. Contractor shall contact the Engineer to assess the work prior to the installation of the weather resistant barrier.
- EE. Install Tyvek weather resistive barrier, "**Home Wrap**", over sheathing in accordance with these specifications, details, and manufacturer's instructions. Contractor shall contact the Engineer to

assess the work prior to the installation of the stucco accessories and self-furring expanded metal lath.

- FF. Install new stucco at balcony flashing detail with kickout flashing at each side of all balcony to wall intersections. Install in accordance with these specifications and details.
- GG. Install new kickout flashing at all roof to wall intersections. Install in accordance with these specifications and details.

#### FRAMING REPAIR (EXCLUDING BALCONIES):

Perform the following scope of work for the following:

- a. **(Phase 2)** - For the 2018 Year: Buildings 14 and 25
  - b. **(Phase 3)** - For the 2019 year: Buildings 10, 24, 26, and 27
  - c. **(Phase 4)** - For the 2020 year: Buildings 20, 21, 23
- A. Install new 2x12 header at window openings on ground floor. Replaced members with new No. 2 Southern Yellow Pine (unless noted otherwise) lumber in accordance with these specifications, details, and as directed by the Engineer.
  - B. Install new 2x4 wall stud 8'-0" long at ground floor. This includes corner studs and jack and king studs for window openings. Replaced members with new No. 2 Southern Yellow Pine (unless noted otherwise) lumber in accordance with these specifications, details, and as directed by the Engineer.
  - C. Install new 2x4 pressure treated wall bottom plate 8'-0" long at ground floor. Install lumber in accordance with these specifications, details, and as directed by the Engineer.
  - D. Install steel angle 8'-0" long where existing bottom plate overhangs foundation. Install angle in accordance with these specifications, details, and as directed by the Engineer.
  - E. Install new 2x4 wall top plate 8'-0" long at ground floor. Replaced members with new No. 2 Southern Yellow Pine (unless noted otherwise) lumber in accordance with these specifications, details, and as directed by the Engineer.
  - F. Install new 2x12 header at window openings on second floor. Replaced members with new No. 2 Southern Yellow Pine (unless noted otherwise) lumber in accordance with these specifications, details, and as directed by the Engineer.
  - G. Install new 2x4 wall stud 8'-0" long at second floor where damaged. This includes jack and king studs for window openings. Replaced members with new No. 2 Southern Yellow Pine (unless noted otherwise) lumber in accordance with these specifications, details, and as directed by the Engineer.
  - H. Install new 2x4 wall top or bottom plate 8'-0" long at second floor where damaged. Replaced members with new No. 2 Southern Yellow Pine (unless noted otherwise) lumber in accordance with these specifications, details, and as directed by the Engineer.
  - I. Install subfloor repair details 8'-0" long where the subfloor is damaged along the edge. Replaced members with new No. 2 Southern Yellow Pine (unless noted otherwise) lumber in accordance with these specifications, details, and as directed by the Engineer.
  - J. Install subfloor repair detail 4'-0" long which requires a built-up ladder frame where damage extends beyond the exterior wall plane into the unit. Replaced members with new No. 2 Southern

Yellow Pine (unless noted otherwise) lumber in accordance with these specifications, details, and as directed by the Engineer.

- K. Remove and replace existing damaged breezeways for building types 1, 2, 3, 4, 5. Replaced members with new pressure treated lumber and No. 2 Southern Yellow Pine (for members to be covered by stucco) lumber in accordance with these specifications, details, and as directed by the Engineer.

#### BALCONY FRAMING REPAIRS

Perform the following scope of work for the following:

- a. **(Phase 2)** - For the 2018 Year:
    1. Buildings 14 and 25
    2. Balcony repairs at Building 7 Unit 727, Building 13, Unit 1324, and Building 18 Unit 1824A
  - b. **(Phase 3)** - For the 2019 year: Buildings 10, 24, 26, and 27
  - c. **(Phase 4)** - For the 2020 year: Buildings 20, 21, 23
- A. Remove and replace existing damaged balcony types C2, A2, B2, B5, A1, C1A, C1B, and C1B Corner. Replaced members with new pressure treated lumber and No. 2 Southern Yellow Pine (for members to be covered by stucco) lumber in accordance with these specifications, details, and as directed by the Engineer.
- B. Provide connection hardware on all balconies that are not being replaced per S-7.0 through S-7.2 for balcony types C2, A2, B2, B5, A1, C1A, C1B, and C1B Corner. Install connection hardware in accordance with these specifications, details, and as directed by the Engineer.
- C. Remove and replace existing balcony 2x6 deck boards. Attach with two (2) deck screws per joist intersection. Replaced members with new pressure treated lumber in accordance with these specifications, details, and as directed by the Engineer.

#### WINDOW REMOVAL AND REPLACEMENT:

Perform the following scope of work for the following:

- a. **(Phase 2)** - For the 2018 Year: Buildings 14 and 25
  - b. **(Phase 3)** - For the 2019 year: Buildings 10, 24, 26, and 27
  - c. **(Phase 4)** - For the 2020 year: Buildings 20, 21, 23
- A. Prior to starting window removal operations, provide necessary protections of existing spaces to remain. Protect existing finish work that is to remain in place and will be exposed during demolition operations. Erect and maintain dust resistant partitions and enclosures as required to prevent the spread of dust or fumes to occupied portions of the structure.
- B. Property protection:
1. Owner's Responsibility:
    - a. Removal/reinstallation of window treatments.
    - b. Provide clear access to the work areas and remove all furnishings and fixtures from the work area. All furniture is to be moved at least 4' away from the work area.
  2. Contractor Responsibility:
    - a. Provide appropriate protection of the floor surfaces at work areas and through the unit.
    - b. Vacuum and cleanup of work areas.
    - c. Remove and replace interior trim work

- d. Repair damage to drywall / install new drywall to fit repaired opening
- C. Remove existing aluminum windows and legally dispose of materials in a safe, responsible manner.
- D. Verify that openings provide an acceptable anchoring surface, being clean, level, plumb, and dimensionally within the manufacturer's tolerance of clearance spacing.
- E. Correct unacceptable openings, replace damaged wood, and install shimmed bucks as required. The installation of shims and bucks shall be in strict accordance with manufacturer testing approvals (NOA). **(NOTE: The framing repairs which are not identified are to be performed on a T & M basis, when Unit Pricing is not provided)**
- F. Provide weather-barrier flexible flashing to window opening per Section 072613 and plans.
- G. Flash window opening in accordance with Dupont Self-Adhered Flashing Systems Installation Guidelines "Alternate Flanged Window Detail Aligned with FMA/AAMA 100-12 (Method A) Standard Practice for the Installation of Windows with Flanges, or Mounting Fins in Wood Frame Construction for Wind/Water Conditions, these specifications, and details.
- H. Install new PGT Single Hung Series 700 [NOA # 11-1013.14] aluminum windows and accessories (unless noted otherwise) in accordance with approved shop drawings, Dupont Self-Adhered Flashing Systems Installation Guidelines "Alternate Flanged Window Detail Aligned with FMA/AAMA 100-12 (Method A) Standard Practice for the Installation of Windows with Flanges, or Mounting Fins in Wood Frame Construction for Wind/Water Conditions, these specifications, details, and manufacturer's instructions.

Product	Ext. Panel	Int. Panel	Argon Gas	Ext. Panel Thickness	Air space	Int. Panel Thickness	U-Factor	SHGC	LBVT
SH700	Solarban 70xl	CL/CL	ARG	0.1875	0.3125	0.3125	0.54	0.25	0.52

- I. Securely fasten frames and set units level, plumb, and square with respect to the surrounding structure, without twist or bow.
- J. Place insulation materials around shim spaces as required ensuring continuity of the thermal barrier of the structure.
- K. Apply a bead of one-part urethane sealant to inside of window fins prior to installation. Urethane sealant shall be BASF NP1 or approved equal.
- L. Apply a closed cell backer rod into all exterior annular spaces.
- M. Apply a 1/2" flexible urethane sealant exterior to window to ensure a tight weather seal.
- N. Install new sills to match existing as closely as possible (as necessary).
- O. Repair of interior drywall returns (as necessary):
  - 1. New drywall cut into the returns, new corner bead secured to existing wall and new return.
  - 2. Drywall will be taped, finished, primed, and painted to match existing as closely as possible.

- P. Ensure that units freely operate in a normal fashion, and that vents make proper contact with weather-stripping perimeter seal. Adjust frame, vent, or hardware as needed.
- Q. Leave units thoroughly clean and free of dirt or other construction residue.
- R. Interior drywall will be replaced as needed at locations of exterior wall framing replacement and window installation. Drywall will be taped, textured to match existing as closely as possible, finished, and primed. Final colors are the responsibility of the unit owners. Replace all damaged base board and window trim work as required. **(NOTE: The drywall repairs are to be performed on a T & M basis, when Unit Pricing is not provided)**
- S. Replace all window sills with like kind. Provide deduct cost if a new window sill is not required.
- T. Replace all stucco accessories in their existing position (terminations, control joints, corners, and foundation weep-screeds) install peel n' stick tape behind accessories in accordance with these details, specifications, and manufacturers' instructions.
- U. Install self-furring expanded metal lath over "Super Jumbo Tex Grade D 60 Minute Weather-Resistive Barrier" building paper per ASTM C 1063. Contractor shall contact the Engineer to assess the work prior to the installation of the stucco scratch coat.
- V. Install 7/8" thick stucco in (3) coats to all previously stucco'd walls. Match existing texture. Install per ASTM C 926, these specifications, details, and manufacturer's instructions.
- W. Replace sealants at all dissimilar materials and junctures and remove and replace existing joint sealants where previously omitted.
- X. Install raised stucco trim bands around window perimeter in accordance with these specifications and details.
- Y. New stucco shall be tested for pH levels, recorded, and submitted to the Engineer prior to painting to ensure the new stucco is within the paint manufacturer's allowable limits. When applying over new stucco surfaces the following time lines shall be followed prior to applying coating system:
- a. First and second coats of cement plaster shall be applied and moist cured as set forth in ASTM C 926 and Table 2512.6 "Cement Plasters" of the Florida Building Code 6<sup>th</sup> Edition (2017) or as dictated by the governing local building authority.
  - b. Once the surface has been primed the surface must dry a minimum of 4 hours before applying Finish Coating.
- Z. Once Stucco has sufficiently cured, paint to match existing with Hot Stucco Primer for fresh stucco and Finish coat per manufacturer's instructions.

#### EXTERIOR PAINTING AND SEALANTS:

Perform the following scope of work for the following:

- a. **(Phase 2)** - For the 2018 Year:
    1. Buildings 14 and 25
    2. Balcony repairs at Building 7 Unit 727, Building 13, Unit 1324, and Building 18 Unit 1824A
  - b. **(Phase 3)** - For the 2019 year: Buildings 10, 24, 26, and 27
  - c. **(Phase 4)** - For the 2020 year: Buildings 20, 21, 23
- A. Install protection, i.e. drop cloths, protection board, and plastic sheeting at all areas surrounding the area of Work to prevent damage to the property. Protection shall include but not limited to the installation of protection at floor surfaces in the areas of work as well as including but not limited to

installing plastic protection at glazing assemblies, railings, and other components adjacent to the area of work which may be affected required or incidental to performing exterior painting and related work.

- B. Coordinate testing and compatibility evaluations for all materials at each unique substrate per referenced protocols and include mock-up samples for approval with the manufacturer's representative and Engineer present.
- C. Staging, scaffolding, shoring, and/or other methods will be required as needed to facilitate the Work. The staging shall remain in place for use by the Engineer and Inspectors to conduct progress inspections and punch out.
- D. At start of work for each "drop" or section of the building(s), the Contractor shall perform a pre-condition inspection of the exterior walls of the building(s). This inspection shall incorporate visual observations to identify fractured stucco and to identify areas of dis-bonded stucco and cracks greater than hairline (1/16"). If areas of stucco dis-bonded or concrete distress are encountered, spray-mark or identify in the field for evaluation by the Engineer.
- E. Repair all exterior wall breaches including stucco cracks, voids, holes, and penetrations including but not limited to: building walls, trim bands, and sills. The work shall be performed in accordance with these specifications and manufacturers' requirements and shall include but not be limited to the removal of protruding accessories, rust stains, blisters, delaminations, and dis-bonding stucco.
- F. Detail and seal decorative trim and shall include but not be limited to the filling of joints using approved sealants and elastomeric patching compounds in accordance with these specifications, details, and manufacturers' instructions. Do not seal under trim bands at the band to wall interfaces.
- G. Remove and replace all exterior building sealants and clean, prepare surfaces, and install new Masterseal NP 150 urethane sealants where previously omitted and backer rod (if required) using approved materials in accordance with these specifications, details and manufacturer's instructions. (i.e., junctures, inside all corners, joints, reveals, wall penetrations, control joints, trim band to building interfaces, railing to wall interfaces, exposed fasteners, transitions, dissimilar material interfaces, surface mounted components horizontal to vertical transitions, inside all corners, wall penetrations, and sills. ***(Excluding: enclosed breeze way, and open breeze way ceiling-to-wall, and vertical wall interfaces under cover.)***)
- H. Remove and replace all exterior window and door perimeter sealants with MasterSeal NP 150. Clean, prepare surfaces, solvent wipe metals clean, and prime (if necessary) to obtain proper adhesion and install new urethane sealants and backer rod (if required) in accordance with these specifications, details, and manufacturers' instructions (i.e. metal-to-stucco).
- I. Prepare, prime, and coat (paint) all stucco exterior surfaces with the specified paint/coatings system as directed including but not limited to: all exterior building walls including interiors of lanais, knee-walls, columns, walkway ceilings, property site walls, building entrance sign, and ancillary components of the property using approved materials in accordance with these specifications, details, and manufacturers' instructions. New stucco shall be tested for pH levels, recorded, and submitted to the Engineer prior to painting to ensure the new stucco is within the paint manufacturer's allowable limits. When applying over new stucco surfaces the following time lines shall be followed prior to applying coating system:
  - a. First and second coats of cement plaster shall be applied and moist cured as set forth in ASTM C 926 and Table 2512.6 "Cement Plasters" of the Florida Building Code 6<sup>th</sup> Edition (2017) or as dictated by the governing local building authority.
  - b. Once the surface has been primed the surface must dry a minimum of 4 hours before applying Finish Coating.

- J. Prepare, prime and coat all previously painted concrete floor surfaces at the interior breezeways, using approved materials in accordance with these specifications, details, and manufacturers' instructions.
- K. Prepare, prime, and coat all previously painted wood surfaces including but not limited to: under sides of 2<sup>nd</sup> floor Unit walkways, top side of previously painted 2<sup>nd</sup> floor deck boards, underside of 2<sup>nd</sup> floor decks, interior breeze way ceilings, and Unit entry door trim work, using approved materials in accordance with these specifications, details, and manufacturers' instructions.
- L. Prepare, prime, and coat all pre-painted ferrous metal surfaces including but not limited to: Interior and exterior sides of service and storage doors and frames including jambs, unit entry doors, previously painted wall vents, and light fixtures, using approved materials in accordance with these specifications, details, and manufacturers' instructions.
- M. Prepare, prime, and coat all pre-painted non-ferrous metal surfaces including but not limited to: conduit, flashings, and junction boxes using approved materials in accordance with these specifications, details, and manufacturers' instructions.
- N. Strip, prepare, prime, and coat all pre-painted metal balcony guard rails and stairwell steel frames and hand rail surfaces, using approved materials in accordance with these specifications, details, and manufacturers' instructions.
- O. Prepare, prime, and coat all existing concrete stair treads, using approved materials in accordance with these specifications, details, and manufacturers' instructions.

#### TESTING:

- P. After coatings and sealant have achieved sufficient cure the Coatings Manufacturer's Representative shall contract or conduct adhesion tests at a minimum of (2) locations at every building or more, if required, prior to the Contractor proceeding with Work. Adhesion testing shall be either conducted in accordance with ASTM D3359-02 "Standard Test Method for Measuring Adhesion by Tape Test or ASTM D4541-02 "*Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers*" whichever is recommended by the Manufacturer. Pull testing of the sealants shall also be conducted with the same duration and be conducted in accordance with the attached "*Standard Field Adhesion Test*". The Engineer shall be present at all tests with reports delivered to both the Engineer and Contractor.
- Q. Testing and passing of each window installation in compliance with ASTM test method E 1105 "standard test method for field determination of water penetration of installed exterior windows, curtain walls and doors by uniform or cyclic static air pressure difference" and according to the latest AAMA 502 testing guideline "Voluntary Specification for Field Testing of Windows and Sliding Glass Doors" is required after sealants and waterproofing has fully cured. The testing of the windows shall be performed by a third-party firm at the Contractor's expense for (2) windows per building to be randomly selected by the Engineer. If leaks are detected Contractor shall repair the defect and his own expense and have the window re-tested until passed.
- R. The project will be "punched-out" by building with the Engineer present unless otherwise directed.

#### ATTIC REPAIRS:

Perform the following scope of work for the following:

- a. (Phase 2) - For the 2018 Year:

1. Buildings 14 and 25
  2. Attic truss repairs at Building 17, 19, 22, 4, and 28
  - b. (Phase 3) - For the 2019 year: Buildings 10, 24, 26, and 27
  - c. (Phase 4) - For the 2020 year: Buildings 20, 21, 23
- A. Provide truss scab detail to repair existing truss chords and diagonals that are broken, missing, or damaged. Contractor to field locate truss damage at each unit and verify repair details with engineer before proceeding with the work. Quantities for repairs within each unit per the "Roof Repairs & Related Work" drawings. Install and use approved materials in accordance with these specifications, details, and manufacturers' instructions.
- B. Provide truss gusset repair detail to repair existing truss chord and diagonal intersections that are missing, offset, not engaged, or damaged. Contractor to field locate truss damage at each unit and verify repair details with engineer before proceeding with the work. Quantities for repairs within each unit per the "Roof Repairs & Related Work" drawings. Install and use approved materials in accordance with these specifications, details, and manufacturers' instructions.
- C. Provide fire caulk to seal penetrations through firewall from plumbing and electrical holes. Install and use approved materials in accordance with these specifications, details, and manufacturers' instructions.
- D. Provide 4 square feet of 5/8" Type X fire rated gypsum board at penetrations within the existing fire walls. Screw new gypsum board to existing framing at 6 inches on center and seal perimeter of gypsum board with fire caulk.

### 3.0 PERMITS AND FEES

- A. Apply for, obtain, and pay for permits, fees, and utility company back-charges required to perform the Work.
- B. A copy of all required permits, licenses, certificates, and approvals shall be delivered to the Engineers, and a copy shall be posted at the job site in a location acceptable to the Owner.
- C. The Contractor shall give notice of commencement and comply with laws, ordinances, rules and regulations, and orders of public authority bearing on the scope of Work. Should the Contractor notice a discrepancy between the Contract Documents and the aforementioned, he shall notify the Engineer in writing. If the contractor performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and orders of public authority laws, and without such notice to the Engineer, the Contractor shall assume full responsibility and shall bear any attributed costs incurred.

### 4.0 CODES

- A. Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices, and similar communications to Engineer.
- B. Florida Existing Building Code 6<sup>th</sup> Edition (2017)
- C. Sarasota County Ordinances

### 5.0 DIMENSIONS / DRAWINGS

- A. Verify ALL dimensions indicated on drawings with field dimensions before performing repairs and ordering materials. Drawings are not to scale.
- B. The Contractor shall maintain at all times a complete set of drawings and the Project Manual for review on the job site. All deviations and/or modifications from the original Construction Drawings shall be noted, and the Engineer is to be notified.

#### 6.0 EXISTING CONDITIONS

- A. It is the Contractor's responsibility to verify all EXISTING CONDITIONS as they relate to the scope of Work prior to commencement. Review existing conditions with the original construction and restoration drawings contained herein. Notify Engineer of all conditions differing from those indicated in the Project Manual.
- B. Do not remove or alter structural components without prior written approval.
- C. It is the Contractor's responsibility to document existing conditions through photographs, videotape, and/or documentation of the existing conditions of the areas adjacent to the Work.
- D. Prepare and coordinate drawings for areas where close tolerances are required between building elements and mechanical and/or electrical work.
- E. Verify location of utilities, electrical, exterior wall framing, and existing conditions.
- F. Verify all existing conditions and scope of Work with Original Construction Drawings.
- G. It is the responsibility of the Contractor to protect areas outside the area of Work prior to commencement.

#### 7.0 INSTALLATION REQUIREMENTS, GENERAL

- A. Inspect substrates and report unsatisfactory conditions in writing to the Engineer.
- B. Do not proceed until **ALL** unsatisfactory conditions have been corrected.
- C. Install materials in exact accordance with Manufacturer's instructions and approved submittals. In cases of discrepancy, Manufacturer's published instructions shall govern over Project Manual specifications for approval by Engineer.
- D. Install materials in proper relation with adjacent construction and with proper appearance.
- E. Refer to additional installation requirements and tolerances specified under individual specification sections.

#### 8.0 SPECIAL REQUIRMENTS

- A. The Contractor will be responsible to have all testing which may be required by the governing building authority conducted including but not limited to testing for lead based paints and asbestos. All fees for required testing will be paid by the Owner directly to the entity performing the testing. Contractor is responsible for coordinating the testing.
- B. The surface preparation and the finish coat stages will be punched out by the Engineer and coatings manufacturer on each drop.
- C. The Contractor shall provide schedules for sequencing by building, showing impacts on budget, schedule, and occupancy for each. The building will be partially occupied and fully functional for the duration of the project.

- D. The Contractor's access to the site shall be limited from 8:00 A.M. to 5:00 P.M. Monday through Saturday or in accordance with the Building Authority having jurisdiction. Work by the Contractor will not be permitted on Sundays or any holidays unless otherwise directed by the Owner.
- E. The Contractor, Subcontractors, and their employees shall not be permitted inside any of the Owner's buildings, unless directed by and in compliance with all applicable regulations of the Building Authority having jurisdiction and shall be prohibited from using any of the Owner's facilities such as restrooms, swimming pool, tennis courts, etc., and shall be confined to those immediate areas necessary to accomplish their work and as designated by the Owner.
- F. The Contractor shall provide telephone and fax service to the site for his own use. The Contractor shall not use the Owner's telephone and fax service.
- G. The Contractor shall provide access to ALL work areas as may be reasonably necessary for inspections.
- H. The Contractor shall keep existing driveways and entrances serving premises clear and available to the Owner, the Owner's employees, and guests.
- I. The project schedule shall conform to all of the Owner's requirements for the use of the existing facility with minimum interruption to normal operations. The Contractor shall follow the guidelines for phasing as indicated on the applicable Contract Documents and general standards for safe and efficient construction.
- J. Contractor shall use overtime and weekends with prior Owner approval as needed to complete the Work on time.

#### 9.0 WORK UNDER SINGLE CONTRACT

- A. The "Contract Documents", as defined in the General Conditions, include "the Drawings and Specifications". Although Drawings are grouped and identified by classification of the Work, the Contractor shall be responsible for the Work as specified herein and as indicated in the Drawings. No additional monies will be allowed due to the Contractor using "scaling instruments" to determine material quantities or for other reasons.
- B. The Owner and Engineer of Record will not allow assigning or subcontracting the Work, except for the Subcontractor specified in the bid, unless express written permission is granted.

#### 10.0 PERSONNEL CONDUCT AND DRESS

- A. The Contractor shall be responsible to properly supervise Subcontractors and employees as to proper language, conduct, dress codes and noise levels.
- B. Alcohol or drugs on the site is prohibited. Any individual or employee under the influence of these substances will be promptly removed from the Owner's property.
- C. The Engineer shall have the right, with cause, to require the Contractor or Subcontractors to remove any employee from the project site.
- D. The Contractor shall provide the Engineer with a list of all the personnel working at the project site in accordance with the Owner's security policy.

**11.0**      QUALITY ASSURANCE

- A. At start of project, Contractor shall perform a mock-up of required Work at one area of the building. Mock-up area shall be coordinated with the Owner.
1. At start of project, Contractor shall perform a mock-up of required Work. Mock-up area shall be coordinated with the Project Manager.
  2. Mock-up shall be installed in the presence of the sealant Manufacturer's Technical Representatives and the Engineer to assure installation procedures adhere to the contract documents, warranty requirements, and Owner's acceptance.
  3. Approved mock-up shall remain in place and establish the guidelines for acceptable installation of Work and acceptable appearance.

**12.0**      WARRANTIES

- A. Base Bid: For a period of **Five (5) years** from the date of project's final completion, for LABOR AND MATERIALS are warranted by the Contractor for all work covered under this contract against defects in material and workmanship. A sample of the CONTRACTOR'S warranty shall be included with the bid submittal.
- B. **In addition to the Contractors warranties, additional material supplier warranties shall be issued**
1. For a period of **Ten (10) years** from the date of project's final completion, for LABOR AND MATERIALS are warranted for the windows against defects in materials and shall be free of defects and delamination for the life of the warranty. A sample of the SUPPLIERS warranty shall be included with the bid submittal.
    - i. **Manufacturer's standard warranty:** Include labor and materials for defective materials for a minimum of: (10 years)
    - ii. **Glazing Warranty:**
      1. Insulating glass units: Provide (25 year) warranty for insulated glass units that they will be free from obstruction of vision as a result of dust or film formation on the internal glass surfaces caused by failure of the hermetic seal due to defects in material and workmanship.
      2. Warrant glass lamination for ten (10) years against de-lamination and film integrity.
    - iii. **Installer's Warranty: Total Window System**
      1. The responsible contractor shall assume full responsibility and warrant for (5 years) the satisfactory performance of the total glazing installation for that of the windows, hardware, glass (including insulated units), glazing, anchorage and setting system, sealing, flashing, etc., as it relates to air, water, and structural adequacy as called for in the specifications and approved shop drawings.
      2. Any deficiencies due to such elements not meeting the specifications shall be corrected by the responsible contractor, at his expense, during the warranty period.
  2. For a period of **Five (5) years** from the date of project's final completion, for LABOR AND MATERIALS are warranted for the Stucco against defects in materials and shall

be free of defects including cracks, delamination, and loss of adhesion. A sample of the SUPPLIERS warranty shall be included with the bid submittal.

3. Base Bid: For a period of **Seven/Ten (7/10) years** from the date of project's final completion, Work for LABOR AND MATERIALS are warranted by the Paint Material Manufacturers against defects in materials and shall be free of excessive fading, peeling, blistering, flaking, delamination, loss of adhesion, and cracking for the life of the warranty.
4. Base Bid: For a period of **Five/Ten (5/10) years** (5 years for Sika and Tremco) (10 years for BASF hybrid sealants) from the date of project's final completion, Work for LABOR AND MATERIALS are warranted by the Urethane Sealants Material Manufacturers against defects in materials and shall be free of excessive fading, peeling, blistering, flaking, delamination, loss of adhesion, and cracking for the life of the warranty.
5. For a period of **Three (3) years** from the date of project's final completion, Work for PAINTED METAL AND ALUMINUM (except railing) are warranted by the Material Manufacturers against defects in materials and shall be free of peeling, blistering, flaking, delamination, loss of adhesion, and cracking for the life of the warranty. A sample of the CONTRACTOR'S warranty shall be included with the bid submittal.
6. Provide warranties as specified; warranties shall not limit length of time for remedy of damages the OWNER may have provided by law. The CONTRACTOR, SUPPLIER, or INSTALLER is responsible for performance of said warranty and shall sign warranties.

### 13.0 DEFINITIONS

- A. Provide: Furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.
- B. Approved: Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of 'Approved' in General, all Supplementary Conditions and Addenda.
- C. Match Existing: Match existing as acceptable to the Owner.
- D. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonably implied or necessary for proper performance of the project shall be included.
- E. Reinstall: To remove and put back existing assemblies in the former position with new connectors.
- F. System: A complete assembly including all accessories and components necessary and incidental to the work for the installed work to perform and function.
- G. Replace/Replacement: To remove and install with new assemblies in the former position. No reuse of exiting assemblies and connectors are allowed.
- H. Writing style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, 'Provide shingles' or 'Furnish shingles' means Contractor shall provide shingles.'

END OF SECTION

SUMMARY  
011100-16

## SECTION 013000

**ADMINISTRATIVE REQUIREMENTS****PART I - GENERAL****1.0 SUMMARY**

- A. Provide administrative requirements for the proper coordination and completion of Work.

**1.1 COORDINATION**

- A. Coordinate construction operations included in various Sections of the Project Manual to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend upon each other for proper installation, connection and operation.
- B. Schedule construction operations in the sequence required, obtaining the best results where installation of one part of the Work depends on the installation of other components, before or after its own installation.
- C. Coordinate installation of different components with other Contractors to ensure maximum accessibility for required maintenance, service and repair.
- D. Make adequate provisions to accommodate items scheduled for later installation.
- E. Prepare memoranda for distribution to each party involved (i.e. demolition, roofing, rough carpentry) outlining special procedures required for coordination. Include such items as required notices, reports, and list attendees at meetings.
1. Prepare similar memoranda for Owner and separate Subcontractors if coordination of their Work is required.

**1.2 ADMINISTRATIVE PROCEDURES**

- A. Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other Contractors and subcontractors, to avoid conflicts and ensure orderly progress of Work. Administrative activities include preparation and submittal to the Engineer and Owner of the following:
1. **Contractor's Construction Schedule** (Submit progress schedule, bar-chart type, updated monthly)
  2. **Schedule of Values**
  3. **Installation and removal of temporary facilities and controls**
  4. **Delivery and processing of submittal**
  5. **Preconstruction conference**
  6. **Preinstallation conference**
  7. **Progress meetings (Every 2 weeks)**
  8. **Project closeout activities**
  9. **Site visits (2 per week with Superintendent)**

**ADMINISTRATIVE REQUIREMENTS**

### 1.3 PROJECT MEETINGS: GENERAL

- A. All project meetings and conferences will be conducted at the Project Site, unless otherwise specified.
- B. Inform participants and others involved whose presence is required, of date and time of each meeting. Notify Owner and Engineer of scheduled meeting dates and times.
- C. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees. (This duty may be reserved for the Engineer.)
- D. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer within 3 days of adjournment (This duty may be reserved for the Engineer.)

### 1.4 PRE-INSTALLATION CONFERENCE

- A. The Contractor shall participate in pre-construction conference at the Project Site at the beginning of the project and before each construction activity that requires coordination with other construction.
- B. Attendee: Installers and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration of other materials and installations that have proceeded or will follow, shall attend the meeting. Advise Owner and Engineer of scheduled dates.
- C. Agenda: Review progress of other construction activities and preparations for the particular activities under consideration, including requirements for the following:
  - 1. Deliveries
  - 2. Product Submittals
  - 3. Schedules
  - 4. Weather Limitations
  - 5. Manufacturer's written recommendations
  - 6. Inspections
  - 7. Warranty requirements
- D. Record significant conference discussions, agreements and disagreements. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work, and reconvene the conference at the earliest feasible date.
- E. **All product submittals, sample warranties and schedules are required prior to the Pre-installation Conference.**
- F. Updated schedules are required to be updated and submitted with each payment application.

### 1.5 PROGRESS MEETINGS

- A. Conduct progress meetings at two (2) week intervals unless otherwise noted. Coordinate dates of meetings with preparation of payment requests.

## ADMINISTRATIVE REQUIREMENTS

- B. Attendee: Owner, Engineer, each Contractor, Subcontractor, Supplier and any other entity concerned with the current progress or involved in planning, coordination or performance of future activities. Advise Owner and Engineer of scheduled dates.
- C. Agenda: Review and correct or approve minutes of previous meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
- D. **CONTRACTOR'S CONSTRUCTION SCHEDULE:**
  - 1. An **updated project schedule** is required with each request for payment application.
  - 2. Review progress since last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction, which is behind schedule, will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
- E. Review present and future needs of each entity present, including the following:
  - 1. Sequence of operations
  - 2. Deliveries
  - 3. Access
  - 4. Temporary facilities and controls
  - 5. Work hours
- F. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, to the progress of the meeting (This duty may be reserved for the Engineer.) Where revisions to the schedule have been made or recognized, issue revised schedule concurrently with the report of each meeting.

END OF SECTION

## SECTION 013300

**SUBMITTAL PROCEDURES****PART 1 - GENERAL****1.0 SUMMARY**

- A. Provide types of submittals listed in individual sections and the number of copies required below to the Owner and Engineer.
1. **Product data - 3 copies**
  2. **Samples - 2 plus extra samples as required, to indicate range of color, finish and texture to be expected**
  3. **Change orders & substitution requests**
  4. **Inspection and test reports - 3 copies**
  5. **Construction schedule – 3 copies**
  6. **Warranties - 3 copies**
  7. **Closeout submittals - 3 copies**

**1.1 PRODUCT DATA**

- A. The Contractor is to supply copies of the material product data sheets for all products installed, including all fasteners (prior to installation).

**1.2 CHANGE ORDERS & SUBSTITUTION REQUESTS**

- A. The ENGINEER will consider requests from the Contractor for substitutions up to the date of the Bid Opening. Subsequently, substitutions will be considered when a product becomes unavailable due to no fault of the Contractor.
- B. Submit three (3) copies of the Substitution Request Form.
- C. The Engineer will determine the acceptability of proposed substitution and will notify the Contractor of acceptance or rejection in writing.
- D. Only one request will be entertained per each product.
- E. All products specified must be of the "current model" and of the latest issue. Requests to use products of a later model must be approved by the Engineer for acceptance prior to use.
- F. The Contractor's submittal of (and Engineer's acceptance of) shop drawings, product data or samples which relate to work not complying with requirements of the Contract Documents, does not constitute an acceptable request for substitution, nor approval thereof.

**1.3 SAMPLES**

- A. The Contractor is to supply samples of all materials for all products installed as required to indicate range of color, finish and texture to be expected (prior to installation).

**SUBMITTAL PROCEDURES**

#### 1.4 INSPECTIONS

- A. The Contractor is to coordinate **inspections by materials suppliers** and as required per these specifications and supplier's warranties. All inspections are to be performed independent of the contractor. Inspections for the purpose of approvals are not to be performed by the Contractor's own forces.
- B. The Owner or Engineer and/or Manufacturer's Representative may make random inspections.
- C. If during the course of work the Contractor is found to be in violation of the written specifications, the Owner or Engineer will bring these items to his/her attention in writing, and after the first written discrepancy occurs and there is one additional warning of the same infraction, or if any three significant infractions and violations of the specifications occurs, the Contractor shall be liable for a penalty of \$500.00 (five hundred dollars) per day for full-time inspections to ensure that the Contract is carried out in accordance with the specifications. The cost of the penalties will be deducted from the payment requests and the Owner will make payment directly to the Engineer for quality assurance inspection(s) out of the Contract Price. The quality assurance will begin at the date of the infraction and continue for each additional day of the Contract until full Project completion.

#### 1.5 WARRANTIES

- A. The Contractor is to supply warranties as described and samples of all materials for all products installed as required.
- B. The Contractor will provide to the Owner written labor and materials warranties as outlined in the Sections 004100 - Bid Form of the Project Manual.
- C. Provide warranties as specified; warranties shall not limit length of time for remedy of damages the Owner may have as provided by law. The Contractor, supplier, or installer responsible for performance of said warranty shall sign warranties.

END OF SECTION

**FIELD CHANGE ORDER # \_\_\_\_\_**

This document is a written request from the Contractor requesting a revision, addition, modification or deletion in the Work. This document will act as an executed Change Order on all parties having authorized this form.

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

PROJECT: \_\_\_\_\_

ISSUED BY: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

TITLE: \_\_\_\_\_

1. The CONTRACTOR hereby requests the following change(s) in the Work.

DESCRIPTION OF THE PROPOSED CHANGES(s):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2. Will this change affect the Contract Price? \_\_\_\_\_

3. Will this change affect the Contract Time? \_\_\_\_\_

4. The proposed adjustment to the Contract Sum if any is:

\_\_\_\_\_ Lump Sum Increase (decrease) of \$

\_\_\_\_\_ Unit Price of \$ \_\_\_\_\_ per \_\_\_\_\_

\_\_\_\_\_ Not to Exceed (Increase/Decrease) of \$ \_\_\_\_\_

5. The proposed adjustment to the Contract Time if any is an (Increase / Decrease) of \_\_\_\_\_ days.

---

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Authorization:

\_\_\_\_\_  
OWNER

Date:

\_\_\_\_\_  
CONTRACTOR

Date:

\_\_\_\_\_  
ENGINEER

Date:

**SUBMITTAL PROCEDURES**

**SUBSTITUTION REQUEST # \_\_\_\_\_**

This document is a written request from the Contractor requesting a substitution of product.

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

PROJECT: \_\_\_\_\_

SUBMITTED BY: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

TITLE: \_\_\_\_\_

The CONTRACTOR hereby requests consideration for the following substitution:

DESCRIPTION OF THE PROPOSED SUBSTITUTION(s):

\_\_\_\_\_  
\_\_\_\_\_

1. Will this substitution affect the dimensions as shown on the drawing? \_\_\_\_\_
2. Will this substitution differ in fit, form or function from what was originally specified? If so, how?  
\_\_\_\_\_
3. What trades will this substitution affect? \_\_\_\_\_ Will it affect scheduling?
4. Will this substitution cause a change in the CONTRACT TIME? \_\_\_\_\_ Days (+/-) \_\_\_\_\_
5. What is the cost difference for this substitution vs. what was originally specified? (+/-) \$ \_\_\_\_\_
6. Will this substitution cause a change in the Contract Price? (+/-) \$ \_\_\_\_\_
7. Is this product or parts readily available locally? \_\_\_\_\_ Where? \_\_\_\_\_

Attach all applicable product specifications, drawings, photographs, performance and test data for the substitution requested.

For use by DELTA ENGINEERING & INSPECTION, INC.

\_\_\_\_\_ Accepted      \_\_\_\_\_ Accepted as Noted      \_\_\_\_\_ Not Accepted

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

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

Authorization:

\_\_\_\_\_  
OWNER

Date:

\_\_\_\_\_  
CONTRACTOR

Date:

\_\_\_\_\_  
ENGINEER

Date:

**REQUEST FOR INFORMATION #**

PROJECT: \_\_\_\_\_

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

CONTRACTOR: \_\_\_\_\_

PAGE: \_\_\_\_\_ of \_\_\_\_\_

TO: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

FROM: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Reference Drawing: \_\_\_\_\_ Detail: \_\_\_\_\_ Spec. Section: \_\_\_\_\_ Page No. \_\_\_\_\_

Reason for Request:     Insufficient Information                       Conflict in Documents  
                                  Interpretation of Documents                       Other

Probable Affect "Cost"     Increase     Decrease     No Change

Probable Affect "Schedule"     Increase     Decrease     No Change

Response Required by: \_\_\_\_\_

=====

**Information Needed:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

=====

**Engineering Reply:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

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

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

## DELAY REQUEST DUE TO INCLEMENT WEATHER

This document is a written request from the Contractor requesting an extension of the contract days. This document is not but merely a request for extension. If approved by all parties the request will be issued. The Contractor shall submit written notification for weather related delays to the Engineer.

***Requests must be submitted to the office of the Engineer on Monday of the following week for which the delay has been requested.***

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

PROJECT: \_\_\_\_\_

ISSUED BY: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

TITLE: \_\_\_\_\_

The CONTRACTOR hereby requests the following extension (s) in the Work.

1. Complete the table below.

	Mon	Tues	Wed	Thurs	Fri	Sat
Date						
Reason for delay? Weather or other						
Number of days (1/4, 1/2, 3/4, 1 full day)?						
What time did work stop that day?						
Did work continue that day?						
What time did work continue?						

2. Will this change affect the Contract Time? \_\_\_\_\_

3. The proposed adjustment to the Contract Time if any is an (Increase / Decrease) of \_\_\_\_\_ days.

Authorization:

\_\_\_\_\_  
OWNER

Date:

\_\_\_\_\_  
CONTRACTOR

Date:

\_\_\_\_\_  
ENGINEER

Date:

### SUBMITTAL PROCEDURES

**CONTRACTOR AND SUB-CONTRACTORS AFFIDAVIT**

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

PERMIT NUMBER: \_\_\_\_\_

I, \_\_\_\_\_, Certified to engage in business as a \_\_\_\_\_  
(Individual's Name)

Contractor in \_\_\_\_\_ County by \_\_\_\_\_ do hereby certify that all work  
(State)

completed for permit number(s) \_\_\_\_\_

Located at \_\_\_\_\_ has been  
(Street Address)

installed in accordance with the \_\_\_\_\_ Code and its

amendments in effect at the time the permit was issued.

\_\_\_\_\_  
(Corporate/Business)

\_\_\_\_\_  
(Certified Contractor's Signature)

Sworn to and subscribed before me this \_\_\_\_\_ day of

\_\_\_\_\_, 20\_\_\_\_

Notary: \_\_\_\_\_

My commission expires \_\_\_\_\_

SECTION 014113

CODE SUMMARY

1.1 RELATED DOCUMENTS:

- A. Project Manual, Repair Drawings, Manufacturer’s Specifications, and the Original Construction Drawings apply to this Section.

1.2 SUMMARY:

- A. This section specifies the Design Loads and Building Codes applicable to this project.
- B. It is intended that the design parameters this Project Manual includes is the replacement to the existing stucco, framing repairs, window replacement and related work to the building.

1.3 BUILDING CODE:

- A. The Work depicted herein has been designed and shall be constructed in accordance with the Florida Building Code 6<sup>th</sup> Edition (2017) Existing Building.
- B. Classification of Work: Repairs (Florida Building Code 6<sup>th</sup> Edition (2017) Existing Building, Section 502)
- C. Repairs for less than substantial structural damage (Florida Building Code 6<sup>th</sup> Edition (2017) Existing Building, Section 606.2.1)
- D. Original Construction: Year Built: 1988  
Southern Standard Building Code: 1985 Edition

1.4 BUILDING DATA:

- A. Occupancy Classification:  
Residential Occupancy R-2 (2017 Florida Building Code, Section 310.4)
- B. Construction Type:  
Type Vb (2017 Florida Building Code, Section 602.2)  
Roof Height: 25 feet

1.5 DESIGN LOADS:

- A. Wind Loads (Florida Building Code 6<sup>th</sup> Edition (2017), Section 1609)
  - i. Ultimate Design Wind Speed ( $V_{ult}$ ): 150 mph, 3 second gust
  - ii. Nominal Design Wind Speed ( $V_{asd}$ ): 116 mph
  - iii. Risk Category: II
  - iv. Exposure Category: C
  - v. Enclosure Classification: Partially Enclosed
  - vi. Internal Pressure Coefficient: +/- 0.55

C&C	Pressures are based on $V_{asd}$ (psf)	
Zone 4 & 5 (+)	Zone 4 (-)	Zone 5 (-)
+42.8	-45.6	-53.8

a = 6.2 ft.

END OF SECTION

CODE SUMMARY

014113-1

## SECTION 015000

**TEMPORARY FACILITIES AND CONTROLS****1.0 SUMMARY**

1.1 This section includes requirements for temporary facilities and controls. Included are temporary utilities, support facilities and security protection. Temporary facilities include, but are not limited to the following:

1. Sanitary facilities including toilets, wash facilities and drinking water facilities
  2. Electric power service
  3. Water service
  4. Vertical transport
- A. The Contractor shall be responsible for off site parking, material storage and warehousing, should the designated area provided by the OWNER not provide adequate space.
- B. The Contractor's staging area will be determined at the Pre-Construction Conference.
- C. The Contractor will provide on-site portable toilet facilities and drinking water in a location acceptable to the Owner.

**1.2 ELECTRIC & WATER**

- A. The Owner will provide temporary electric service and water at the job site. The Contractor will pay for hook-up, installation and any applicable charges as the result of accessing the Owner's electric and water. The location of the hook-up for electric and water will be determined at the Pre-Construction Conference.

**2.0 SITE CONDITIONS & EMPLOYEE EXPECTATIONS**

- A. The following conditions apply to the use of temporary facilities by all parties engaged in the Work:
1. Keep temporary facilities clean and neat.
  2. Relocate temporary facilities as required by progress of Work.
- B. The Contractor will clean the site of debris, tools and equipment on a daily basis.
- C. The Contractor will be responsible for enforcing the personal conduct of all individuals under his authority, including Sub-contractors and Sub-subcontractors. The use of the following are prohibited while on the Property of the Owner:
1. Public use of profanity is prohibited on the job site.
  2. The use of radios and tape players, etc.
  3. The use of the Owner's dumpster or resident owners' trashcans.
  4. Proper attire must be worn at all times. Shirts must be worn at all times.
  5. Use of the pool, clubhouse, elevator, or other Association property is prohibited.
  6. All personnel shall follow the rules and policies of the Association at all times.

**TEMPORARY FACILITIES AND CONTROLS**

- D. The Contractor shall provide, at his expense, waste dumpsters and contracts with the local waste management carrier for the removal of construction debris.
- E. Work hours are limited to **8:00 am to 5:00 pm Monday through Friday**. Any deviation of these hours will need prior approval.
- F. The erection of signs and their location will need prior approval by the Owner.

**END OF SECTION**

## SECTION 017700

**CLOSEOUT PROCEDURES****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract Documents, including General Conditions, Supplemental Conditions, Addenda and other Division 1 Sections including: Administrative Requirements (Section 013000) and Submittal Procedures (Section 013300) apply to this Section.

**1.2 SUMMARY**

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to the following:
1. Inspections
  2. Warranties
  3. Payment
  4. Completion
  5. Final cleaning
  6. Project-record drawings

**1.3 SUBSTANTIAL COMPLETION**

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion the following must be completed:
1. Prepare a list of items to be completed and corrected (punch list) with Engineer and Owner.
  2. Submit sample copies of warranties, workmanship bonds, maintenance service agreements, final certifications and similar documents.
  3. Obtain and submit releases permitting Owner of unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates and similar releases.
  4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools and similar elements, except as required to complete the project.
  5. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: **Submit a request for inspection for Substantial Completion.** On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for Final

**CLOSEOUT PROCEDURES**

Completion.

- C. The Contractor shall be given 14 days for final completion to clean up after the approved substantial completion date.

#### 1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division I Section "Payment Procedures."
  2. Submit a copy of the Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated for each item by Contractor stating that each item has been completed or otherwise resolved for acceptance.
  3. Submit project record documents (if required).
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections listed as incomplete is completed or corrected.

#### 1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of incomplete items in sequential order.
  2. Include the following information at the top of each page:
    - a. Project name
    - b. Date
    - c. Name of Engineer
    - d. Name of Contractor

#### 1.6 WARRANTIES

- A. Provide warranties as specified; warranties shall not limit length of time for remedy of damages the Owner may have as provided by law. The Contractor, supplier, or installer is responsible for performance of said warranty shall sign warranties.

#### 1.7 PROJECT RECORD DRAWINGS- IF REQUESTED (Can be provided during pay applications to verify for concrete quantities and delineate areas of repair).

- A. Update project record drawings on a separate prints set aside especially for this purpose on the job. Drawings shall incorporate changes made in the work of the respective trades during the construction period. Such change shall be indicated at the time they occur.

- B. Maintain at the job site one copy of drawings, specifications, addenda, approved shop drawings, change orders, field orders, other contract modifications and other approved document submitted by Contractor, in compliance with various sections of the specifications.
- C. Each project record document shall be clearly marked "Project Record Copy", maintained in a good condition, available for observation by Engineer /Owner, and shall not be used for construction purposes. The document shall be marked to reflect:
  - 1. Significant changes and selections made during the construction process.
  - 2. Significant detail not shown in the original Contract Documents including change orders.
  - 3. Location and quantities of concrete repairs.
  - 4. Features of the structures.
  - 5. When elements are placed exactly as shown on drawings, so indicate, otherwise show changed location.
- D. Keep Project Record Documents current. Do not permanently conceal work until the required information has been recorded.
- E. Prior to final payment on the project, submit to Engineer and Owner the Project Record Drawings for changes recorded for the work of Division 1 through Division 9. Drawings to be furnished to Owner shall be in hard copy and digital format.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or may damage finished surfaces.

## **PART 3 - EXECUTION**

### **3.1 FINAL CLEANING**

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program.
  - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for each building:
    - a. Clean Project site, yard and grounds in areas disturbed by construction activities, including landscape development areas of rubbish, waste, material, litter and other foreign sub-stances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains and other foreign deposits.
    - c. Remove tools, construction equipment, machinery and surplus material

from Project site.

- d. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
  - e. Wash ALL areas in the vicinity of the areas work (i.e. walkways and walls, rails, windows, and sliding glass doors).
2. Areas of work performed in vertical drops will be cleaned prior to removal of access equipment, paint, sealant material, residue, construction dust, and debris deposited by work on the building locations shall be re-cleaned from previously cleaned drops.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

**END OF SECTION**

## SECTION 024119

**SELECTIVE DEMOLITION****PART I - GENERAL****1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. This Section includes the following:
1. Removal, proper and safe storage and legal disposal of all building materials and components associated with the scope of work described in Section 011100 - Summary and other sections of the Project Manual.
  2. Repair procedures for selective demolition operations.

**1.3 DEFINITIONS**

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged / reinstalled.
- B. Remove and Reinstall: Detach items from existing construction, prepare them for reuse and reinstall them where indicated.

**1.4 MATERIALS OWNERSHIP**

- A. All items or materials to be reused, salvaged, reinstalled or otherwise indicated are to remain the Owner's property. Demolished materials shall become the Contractor's property and shall be removed from Project site.

**1.5 SUBMITTALS**

- A. Qualification Data: Firms and persons specified in the "Quality Assurance" Article are to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses to Owner and all other information specified.
- B. Schedule of Selective Demolition Activities: Indicate the following:
1. Detailed sequence of selective demolition and removal work, include the starting and ending dates for each activity. Insure that Owners and tenants will be notified of any interruptions from on-site operations.
  2. Coordination with Owner's continuing occupancy of existing buildings for Contractor.
- C. Pre-demolition Photographs or Videotape is suggested to be conducted by the Contractor to show existing conditions, including finish surfaces that might be misconstrued as damage caused by selective demolition operations.

**SELECTIVE DEMOLITION**

## 1.6 QUALITY ASSURANCE

- A. **Pre-Construction Conference:** Conduct conference at Project site to comply with requirements in Division I. Review methods and procedures related to selective demolition including, but not limited to, the following:
1. Inspect and discuss the condition of construction to be selectively demolished.
  2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment and facilities needed to avoid delays.
  3. Review requirements of Work performed by other trades that rely on substrates exposed by selective demolition operations.
  4. Review methods and procedures for material handling.

## 1.7 PROJECT CONDITIONS

- A. Owner will occupy building during selective demolition area.
- B. Heavy equipment will be permitted on the paved parking areas only (see Section 024119). Heavy equipment will not be permitted on grass or landscaped areas of the property at any time. The cost to repair damages as a result of heavy equipment shall be at the Contractor's expense and deducted from the Contract Price.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Do not close or obstruct walkways, corridors or other occupied or used facilities.
- E. Owner assumes no responsibility for the condition of areas to be selectively demolished.
- F. Conditions existing at time of inspection for bidding purpose will be maintained by the Owner as far as practical.
- G. **Hazardous Materials:** It is not expected that hazardous materials will be encountered in the Work; however, it will be the responsibility of the Contractor to abide by local federal regulations regarding demolition testing.
1. If required, prior to the commencement of Work, the Contractor's test sample the composition of suspected materials to determine whether ACRM's are present. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed and abated by the Owner under a separate contract.
  2. If required, prior to the commencement of Work, the Contractor's shall test sample the composition of suspected materials to determine whether Lead Based Paints are present. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed and abated by the Owner under a separate contract.
  3. At the request and authorization of the owner, the contractor shall test sample the composition of suspected materials to determine whether mold is present. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner. Hazardous materials will be removed and abated by the Owner under a separate contract.
- H. **Utility Service:** Maintain existing utilities indicated to remain in service, and protect them against damage during selective demolition operations.

### SELECTIVE DEMOLITION

- I. Vertical Transport: (if applicable). The Contractor shall NOT have use of the Owner's elevator(s) without prior approval from the Owner. The cost to repair any damages resulting from Contractor's use shall be at the Contractor's expense and deducted from the Contract price. Contractor shall submit an inspection report documenting the existing condition of the elevator prior to Contractor use. Contractor may only use protected elevator (padded and carpeted) and must install and change (weekly) floor protection.

## **PART 2 – PRODUCTS**

### **2.1 REPAIR MATERIALS**

- A. Use repair materials identical to existing materials, unless otherwise noted on the drawings and related specifications.
  1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
  2. Use materials with installed performance that is equal to or surpasses existing materials.
- B. Comply with material and installation requirements specified in individual Specification Sections.

## **PART 3 – EXECUTION**

### **3.1 EXAMINATION**

- A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- B. When unanticipated, mechanical, electrical or structural elements conflicting with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to the Engineer.
- C. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

### **3.2 UTILITY SERVICES**

- A. Existing Utilities: Maintain services indicated to remain, and protect them against damage during the selective demolition operations.
- B. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to insure minimum interference with roads, streets, walks, walkways and other adjacent occupied and used facilities.

1. Protect existing site improvements and landscaping.
- C. Temporary Facilities: Provide temporary barricades and other protection as required, to prevent injury to people, as well as to prevent damage to adjacent buildings and facilities that are to remain.
1. Provide protection to insure the safe passage of people around the selective demolition area and to and from occupied portions of building.
  2. Provide temporary weather protection, during intervals between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.

### 3.3 POLLUTION CONTROLS

- A. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
1. Remove debris from elevated portions of building by chute, hoist or other device that will convey debris to grade level in a controlled descent.
- B. Cleaning: Clean adjacent structures and improvements of dust, dirt and debris caused by selective demolition operations. Return adjacent areas to the condition existing before the selective demolition operations began.

### 3.4 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Remove decayed, vermin-infested or otherwise dangerous or unsuitable materials and promptly dispose of them off-site.
  2. Dispose of demolished items and materials promptly.
  3. Return elements of construction and surfaces that are to remain to the condition existing before selective demolition operations began.
- B. Removed and Reinstalled Items: Comply with the following:
1. Clean and repair items to functional condition adequate for intended reuse.
  2. Protect items from damage during transport and storage.
  3. Reinstall items in locations indicated. Comply with installation requirements. Provide connections, supports and miscellaneous materials necessary to make item functional for use indicated.

### 3.5 PATCHING AND REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.
- B. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

#### SELECTIVE DEMOLITION

- C. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

**3.6 DISPOSAL OF DEMOLISHED MATERIALS**

- A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

**END OF SECTION**

## SECTION 061000

**ROUGH CARPENTRY****PART 1- GENERAL****1.1 RELATED DOCUMENTS**

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

**1.2 REFERENCES**

- A. ANSI B18.22.1, "Plain Washers (1975; Revised 1998)".
- B. AWPB LP2, "Softwood Lumber Timber and Plywood Pressure Treated with Water-Borne Preservatives for Aboveground Use (1988)".
- C. AWPA A3, "Determining Penetration of Preservatives and Fire Retardants (2000)".
- D. AWPA C1, "All Timber Products – Preservative Treatment by Pressure Processes (2000)".
- E. AWPA C20, "Structural Lumber – Fire Retardant Treatment by Pressure Processes (1993)".
- F. AWPA C27, "Plywood – Fire Retardant Treatment by Pressure Processes (1993)".
- G. APA E30, "Design/Construction Guide, Residential and Commercial (1994)".
- H. ASME B18.2.1, "Square and Hex Bolts and Screws, Including Hex Cap and Lag Screws – Inch Series (1981; Revised 1992)".
- I. ASME B18.6.1, "Wood Screws – Inch Series (1981; Revised 1992)".
- J. ASTM A153, "Specification for Zinc-Coated (Hot-Dip of Iron and Steel Hardware)".
- K. ASTM A 307, "Standard Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength (2000)".
- L. ASTM A 36/A 36M, "Standard Specification for Carbon Structural Steel (2001)".
- M. ASTM A 525, "Standard Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process (1993)".
- N. ASTM A 525M, "Standard Specification for General Requirement for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process – Metric (1991; Revision A)".
- O. ASTM A563, "Specification for Carbon and Alloy Steel Nuts".
- P. ASTM D245, "Practice for Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber".
- Q. FS FF-B-588, "Bolts, Toggle and Expansion Sleeve, Screw (rev D)".
- R. FS FF-N-105, "Nails, Brads, Staples and Spikes: Wire, Cut and Wrought (Rev B, Int. Amd 4)".
- S. FS FF-S-325, "Shield, Expansion; Nail, Expansion; and Nail, Drive Screw – Devices, Anchoring Masonry (Int. Amd 3)".
- T. FS TT-W-571, "Wood Preservation – Treating Practices (Rev J)".
- U. PS 1, "US Product Standard for Construction and Industrial Plywood".
- V. PS 2, "Performance Standard for Wood-Based Structural-Use Panels".
- W. PS 20, "American Softwood Lumber Standard (ASLS)".

**1.3 SUMMARY**

- A. This Section includes the following:
1. Framing with dimension lumber

2. Decking
3. Wood furring, grounds, nailers, and blocking
4. Fasteners and metal framing anchors

#### 1.4 DEFINITIONS

- A. **Rough Carpentry:** All carpentry work specified in this and other Sections are both exposed and not exposed.
- B. **Exposed Framing:** Dimension lumber not concealed by other construction and indicated to receive a stain, paint or natural finish.
- C. **Damaged Framing:** The wood framing shall be considered damaged and if the integrity of the timber has been compromised by insect, wood decay due to moisture, vermin or other wood destroying organisms to the extent of which that member would not be permissible for use in new construction.

#### 1.5 SUBMITTALS

- A. **General:** Submit each item in this Article in accordance with the condition of contract and Section 013300, "Submittal Procedures".
- B. **Product Data:** Submit manufacturer's product data for each distinct product specified.
- C. **Material certificates** for dimension lumber specified to comply with the minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by American Lumber Standards Committee's (ALSC) Board of Review.
- D. **Wood treatment data** as follows, including chemical treatment manufacturer's warranty and instructions for handling, storing, installing and finishing treated materials:
  1. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained and compliance with applicable standards.
  2. For waterborne-treated products, include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site.
  3. For Fire-retardant-treated wood products, include certification by treating plant that treated materials comply with specified standard and other requirements as well as data relative to bending strength, stiffness and fastener-holding capacities of treated materials.

#### 1.6 QUALITY ASSURANCE

- A. **Mill and Producers Mark:** Each piece of lumber and plywood shall be grade-stamped indicating type, grade, mill and grading agency certified by the Board of Review of the American Lumber Standards Committee. Mark shall appear on unfinished surface, or end of pieces with the finished surfaces.
  1. **Pressure Preservative Treated Material:** Accredited agency quality mark on each piece of wood indicating treatment.
  2. **Fire-Retardant Treated Material:** Accredited testing agency mark on each piece of wood indicating compliance with the fire hazard classification.

**1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver wood product bundled or crated to provide adequate protection during transit and job storage, with required grade marks clearly identifiable. Inspect wood products for damage upon delivery. Remove and replace damaged materials.
- B. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks and under temporary coverings.
  - 1. For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.
- C. Protect Sheet materials during handling to prevent breaking of corners and damage to surfaces.

**PART 2 - PRODUCTS****2.1 MATERIALS: LUMBER, GENERAL**

- A. Lumber Standards: Comply with PS 20, "American Softwood Lumber Standard," current NDS specifications and applicable grading rules of inspection agencies certified by ALSC's Board of Review. Lumber design values are to comply with ASTM D245 and ASTM D2555.
- B. Inspection Agencies: Inspection agencies, and their grading rules, include the following:
  - 1. NELMA - Northeastern Lumber Manufacturers Association; 272 Tuttle Road, P.O. Box 87A, Cumberland Center, ME 04021. Phone 207-829-6901, Fax 207-829-4293.
  - 2. NLGA - National Lumber Grades Authority (Canadian); 406 First Capital Place, 960 Quayside Drive, New Westminster, BC V3M 6G2. Phone 604-524-2393, Fax 604-524-2893.
  - 3. RIS - Redwood Inspection Service; 405 Enfrente Drive, Suite 200, Novato, CA 94949. Phone 415-382-0662, Fax 415-382-8531.
  - 4. SPIB - Southern Pine Inspection Bureau; 4709 Scenic Highway, Pensacola, FL 32504; Phone 850-434-2611, Fax 850-433-5594.
  - 5. WCLIB - West Coast Lumber Inspection Bureau; P.O. Box 23145, Portland, OR 97281-3145. Phone 503-639-0651, Fax 503-984-8928.
  - 6. WWPA - Western Wood Products Association; Yeon Building, 522 SW Fifth Avenue, Portland Oregon 97204-2122. Phone 503-224-3930, Fax 503-224-3934.
- C. Grade Stamps: Provide lumber with each piece factory marked, with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing and mill.
  - 1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps and provide grade-compliance certificates issued by inspection agency.
- D. Where nominal sizes are indicated, provide actual sizes required by PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
  - 1. Provide dressed lumber, S4S, unless otherwise indicated.
  - 2. Provide lumber with **19 percent maximum moisture content** at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

**ROUGH CARPENTRY**

061000-3

## 2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWPA U1 C2 (lumber) and AWPA U1 C9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
  - 1. Do not use chemicals containing chromium or arsenic.
  - 2. For exposed items indicated to receive stained finish, use chemical formulations that do not bleed through, contain colorants or otherwise adversely affect finishes.
- B. Pressure-treat aboveground items with waterborne preservatives to a minimum retention of 0.25 lb/cu. ft. After treatment, kiln-dry lumber and plywood to a maximum moisture content of 19 percent. Treat indicated items and the following:
  - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers and waterproofing.
  - 2. Wood sills, sleepers, blocking, furring, stripping and similar concealed members in contact with the masonry or concrete.
  - 3. Wood framing members less than 18 inches above grade.
  - 4. Wood floor plates installed over concrete slabs directly in contact with earth.
- C. Pressure-treat wood members in contact with ground or freshwater with water-borne preservatives to minimum retention of 0.40 lb/cu. Ft.
- D. Complete fabrication of treated items before treatment, where possible. If cut after treatment, apply field treatment complying with AWPA M4 to cut surfaces. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

## 2.3 FIRE-RETARDANT-TREATMENT LUMBERS

- A. Lumbers for wood framed partitions and solid wood sheathing or plywood sheathing shall be fire-retardant treated by means of an approved pressure impregnating process in accordance AWPA C20 (solid wood), and AWPA C27 (plywood).
- B. Contractor shall submit reports of the results of retention-penetration test boring cores, weight test of plywood panels, and performance ratings. Treatment and performance inspection shall be performed by an independent, qualified test agency that establishes the performance rating.
- C. After treatment, wood materials shall have a flame-spread, smoke develop rating not greater than 25, with no evidence of significant progressive combustion when tested for 30 minutes tunnel test in accordance with ASTM E 84, NFPA 255 or UL 723. Fuel contributed shall not exceed 15, smoke develop shall not exceed 5.
- D. After treatment, solid lumber materials shall have a minimum penetration of ½ inch of fire retardant material when tested by a borer core in accordance with AWPA A3. Plywood materials shall have a minimum retention of 25 pounds per cubic foot when tested by weighing before and after treatment.
- E. Fire retardant treated wood products shall maintain metal finish and integrity virtually as well as untreated wood exposed to the same conditions.
  - 1. Corrosivity: Provide fire retardant treated lumber and plywood evaluated in

- accordance with AWPA E12 for use with fastening materials specified.
2. Hygroscopicity: Provide fire retardant treated wood and plywood rated as interior type A High Temperature (HT) in accordance with Section 2.2.2.1 of AWPA C20/C27 when tested at 92 percent relative humidity.
- F. Approved fire-retardant materials shall bear identification showing the fire performance rating thereof issued by an approved testing agency.
- G. After treatment, solid lumber shall be kiln-dried to reduce the moisture to not more than 19 percent. Plywood shall be kiln-dried to reduce moisture to not more than 15 percent.

## 2.4 DIMENSION LUMBER

- A. General: Provide dimension lumber of grades indicated according to the ALSC National Grading Rule Committee (NGRC) provisions of the inspection agency indicated.
1. Species: Pressure Treated, Southern pine; #2
- B. Species and grades must meet or exceed the following values, unless indicated otherwise on Contract documents.
1. Minimum extreme fiber in bending ( $F_b$ ): 1,500 psi.
  2. Modulus of elasticity (E): Minimum 1,600,000 psi.
- C. Exposed Framing: Refers to dimension lumber which is not concealed by other work, and is indicated to receive stain, paint or natural finish.
1. Provide material hand-selected from lumber of species and grade indicated for type of use, for uniformity of appearance, and freedom from characteristics that would impair finish appearance.

## 2.5 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including rooftop equipment curbs and support bases, cant strips, bucks, nailers, blocking, furring, grounds, stripping and similar members.
- B. Fabricate miscellaneous lumber from dimension of lumber of sizes indicated and into shapes shown on Contract documents.
- C. Moisture Content: **19 percent maximum** for lumber items not specified to receive wood preservative treatment.

## 2.6 WOOD-BASED STRUCTURAL-USE PANELS, GENERAL

- A. Structural-Use Panel Standard: Provide plywood grade C-D panel internal use, and grade C-C for exterior application, complying with PS 1, "U.S. Product Standard for Construction and Industrial Plywood," and current NDS specifications.
- B. Trademark: Factory mark structural-use panels with APA trademark evidencing compliance with grade requirements.

**2.7 CONCEALED, PERFORMANCE-RATED STRUCTURAL-USE PANELS**

- A. General: Where structural-use panels are indicated for the following concealed types of applications, provide APA-performance-rated panels complying with requirements designated under each application for grade, span rating, exposure durability classification and edge detail (where applicable).
1. Thickness: Provide panels meeting requirements specified by the Florida Building Code 6<sup>th</sup> Edition (2017), Section 2310.
  2. Span Ratings: Provide panels with span ratings required to meet "Code Plus" provisions of APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial."
  3. Provide panels clips for edge support as recommended by panel manufacturers or where required by UBC.
- B. Sub-Flooring: APA-rated sheathing.
1. Exposure Durability Classification: Exposure 1.
  2. Span Ratings: As required to suit joist spacing indicated.
- C. Wall Sheathing: APA-rated sheathing.
1. Exposure Durability Classification: Exposure 1. Where sheathing is permanently exposed to the weather, it shall be Exposure Durability Classification "Exterior".
  2. Span Ratings: As required to suit stud spacing indicated.
- D. Roof Sheathing: APA-rated sheathing.
1. Exposure Durability Classification: Exposure 1.
  2. Span Ratings: As required to suit joist or truss spacing indicated.
- E. Combination Sub-Floor - Underlayment: APA-rated sturd-I-Floor.
1. Exposure Durability Classification: Exposure 1.
  2. Span Ratings: As required to suit joist or truss spacing indicated.
  3. Edge Detail: Tongue and groove.
  4. Surface Finish: Fully sanded.

**2.8 STRUCTURAL-USE PANELS FOR BACKING**

- A. Plywood Backing Panels: For mounting electrical or telephone equipment, provide fire-retardant-treated plywood panels with grade C-D plugged Exposure 1, in thickness indicated on Contract documents or if not otherwise indicated, not less than 15/32 inch thick.

**2.9 STRUCTURAL-USE PANELS FOR UNDERLAYMENT**

- A. General: Over smooth sub-floors, provide underlayment not less than ¼ inches thick. Over board or uneven sub-floors, provide underlayment not less than 11/32 inch thick.
- B. Plywood Underlayment for Resilient Flooring: For underlayment 19/32-inch-thick, provide plywood panels with fully sanded face, APA underlayment grade, Exposure 1.
- C. Structural-Use Panel Underlayment for Resilient Flooring: For Underlayment 19/32-inch-thick or more, provide fully sanded, veneer-faced, APA-rated, Strud-I-Floor panels, Exposure

- D. Plywood Underlayment for Ceramic Tile: Provide APA-rated, underlayment grade, exterior plywood 5/8-inch-thick, for ceramic tile set in epoxy mortar.
- E. Plywood Underlayment for Carpet: For underlayment less than 19/32-inch-thick, provide plywood panels with fully sanded face, APA underlayment grade, Exposure 1.
- F. Structural-Use Panel Underlayment for Carpet: For underlayment 19/32-inch-thick or more, provide APA-rated Strud-I-Floor panels with touch-sanded face, Exposure 1.

## 2.10 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacturer.
  - 1. Where rough carpentry is exposed to weather, in ground contact or in area of high relative humidity, provide fasteners with a hot-dip zinc coating per ASTM A 153 or of Type 304 stainless steel.
  - 2. Use stainless steel fasteners to attach wood foundation components below grade.
- B. Nails, Wires, Brads and Staples: FS FF-N-105B.
  - 1. Nails for fastening interior wood partitions or rough framing shall be steel wire nails.
  - 2. Nails for blocking, cants and nailers shall be hot-dip galvanized or corrosion resistance equivalent, comply with ASTM F1667.
  - 3. Nails used to fasten exposed wood fascias or finished wood members exposed to the weather shall be hot-dip galvanized or corrosion resistance equivalent, comply with ASTM F1667.
- C. Bolts, Nuts and Screws
  - 1. Bolts and Nuts: Shall be minimum type 304 stainless steel unless noted otherwise.
  - 2. Wood screws shall be carbon steel, galvanized conforming to ASME B18.6.1
  - 3. Lag screws or lag bolts shall be commercial steel, galvanized conforming to ASME B18.2.1 and ASME B18.2.3.8M.
  - 4. Expansion shields, expansion nails, and drive screw devices shall conform to FS FF-S-325.
  - 5. Toggle bolts shall conform to FS FF-B-588.
  - 6. Washers shall be carbon steel, galvanized, or 304 stainless steel general assembly purpose type, conforming to ANSI B18.22.1 and ANSI B18.22M.
- D. Bar or Strap Anchors: Shall be carbon steel conforming to ASTM A575.
- E. Mechanical Fasteners: Simpson Strong Tie Company, USP / Hughes Manufacturing Lumber Connectors or approved ENGINEER'S substitution.
- F. All metal accessories exposed to the weather shall be:
  - 1. Stainless steel.
  - 2. Hot dipped galvanized with 1.85-ounce zinc per square foot conforming to ASTM A653, class G185.

## 2.11 MISCELLANEOUS MATERIALS

- A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form for use as a sill sealer; 1-inch nominal thickness, compressible to 1/32 inch; selected from manufacturer's standard widths to suit width of sill members indicated.

- B. Adhesives for Field Gluing Panels to Framing: Comply with ASTM D 5574.
- C. Water-Repellent Preservative: NWWDA-tested and accepted formulation containing 3-iodo-2-propynyl butyl carbonate (IPBC) as its active ingredient.

## PART 3- EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. The Contractor shall provide shoring, bracing or support for all existing structural elements and shall remain in place until all structural modifications have been completed and accepted for their intended use.
- B. The Contractor shall be responsible for the design and erection of all load-bearing shoring. Should a shoring plan be necessary, the plan shall be signed and sealed by a Professional Engineer retained by the Contractor.
- C. All plumbing, electrical and mechanical rough-ins must be completed, inspected and approved before requesting the framing inspection.
- D. Discard units of material with defects that impair quality of rough carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
- E. Set rough carpentry to required levels and lines, with members plumb, true to line, cut and fitted.
- F. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- G. Apply field treatment complying with AWPA M4 or approved equivalent method to cut surfaces of preservative-treated lumber greater 4 inches.
- H. All framing members that are structurally compromised shall be replaced with the identically sized member between supports. In cases where this were full replacement between supports is not possible, adequately spliced framing members shall be permitted in non-load bearing conditions.
- I. Wood structure framing members to be #2 Southern Yellow Pine (unless noted otherwise) with a modulus of elasticity of 1,600,000 PSI per NDS-01 and a moisture content not to exceed 19 percent at the time of incorporation into the building.
- J. **Splicing load-bearing members between supports is not permitted without prior approval by the ENGINEER.**
- K. Wall sheathing must be installed with long dimension across the supports with clips at all edges and shall be min 5/8" plywood APA Span Rating 24/16 and Exposure Rating I unless noted otherwise. Use 19/32" APA Span Rating 32/16 plywood at roof sections. Note: Do not overdrive fasteners into plywood – anti-penetration devices must be used.
- L. Roof sheathing must be installed with the longer dimension across the supports with clips at all edges, shall be min 5/8" thick plywood and exposure rating I unless noted otherwise.
- M. Securely attach rough carpentry work to substrate by anchoring and fastening as

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indicated, complying with Florida Building Code 6<sup>TH</sup> Edition (2017), Section 2306.

- N. Use common wire nails, unless otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; predrill as required.
- O. Use hot-dip galvanized or stainless steel nails where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity.
- P. Fasteners: Driven or placed in accordance with manufacturers specifications.  
Corrosion resistant hot dipped zinc coated per ASTM A153.
- Q. Nail Fasteners: Common wire nails only unless otherwise indicated. Countersink nail heads on exposed carpentry work and fill holes with an ENGINEER approved filler material.
- R. Improper or unauthorized field alterations of wood trusses and header beams is not allowed.

### 3.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

- A. Install wood grounds, nailers, blocking and sleepers where shown and where required for screeding or attaching other work. Form to shapes shown and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement
- C. Install permanent grounds of dressed, preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.
- D. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated.
- E. Install 2' x 4" framing members at 16" on center unless otherwise specified or required.

### 3.3 WOOD FURRING

- A. Furring strips shall be erected plumb and rigid, using wood shims whenever necessary to adjust the face of the furring to a true even plane to receive finish materials.
- B. Exterior masonry walls shall be furred to receive lath and plaster or dry-wall finish.
- C. Furring shall be 1X3-inch nominal continuous strips, 16 inches on center, installed vertically. Furring shall be secured to masonry or concrete with a nailing plugs, clips or masonry nails. Fasteners shall be provided at top and bottom and at 24 inches on center.
- D. Furring strips fastened to hollow structural tile or to concrete masonry unit shall be secured by toggle bolts, anchor bolts or screw with expansion sleeves.

- E. Furring for soffits, cornices, offsets and breaks in walls and ceilings shall be formed with 1X4-inch wood strips, 16 inches on center.
- F. Furring attached to the steel bar joists for finished ceilings, shall be 2X4-inch nominal lumber, 16 inches on center.
- G. Fire-stop furred spaces of walls at each floor level, and at ceiling with wood blocking or noncombustible materials, accurately fitted to close furred spaces.

#### 3.4 INSTALLATION OF STRUCTURAL-USE PANELS

- A. General: Comply with applicable recommendations contained in APA Form No. E30, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.
  - 1. Florida Building Code 6<sup>th</sup> Edition (2017), Section 2300.
- B. Fastening Methods: Per Florida Building Code 6<sup>th</sup> Edition (2017), Section 2306 and compliant with applicable wind speed per Section 2322.
- C. Plywood Wall Sheathing: Shall be fastened with 4" spacing on the edges and 6" spacing in the field.
- D. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut.
- E. Install materials and systems in accordance with mfg's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.
- F. Restore damaged components. Protect work from damage.

**Limitations:**

*In the event of a conflict between these specifications and the manufacturer's instructions, recommendations and or warranty, the published text of the manufacturer shall govern. The specifier shall be notified in writing of any conflicts therein prior to construction and reserves the right to clarify and modify these specifications.*

END OF SECTION

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## SECTION 072613

**WEATHER BARRIER**

DuPont™ Tyvek® HomeWrap

**PART 1 - GENERAL****1.1 SECTION INCLUDES**

- A. Weather barrier membrane (DuPont™ Tyvek® HomeWrap®)
- B. Seam Tape (DuPont™ Tyvek® Tape)
- C. Flashing (DuPont™ FlexWrap™, DuPont™ StraightFlash™, DuPont™ StraightFlash™ VF, and DuPont™ Thru-Wall Flashing)
- D. Fasteners

**1.2 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
- 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)

**1.3 SUBMITTALS**

- A. Refer to Section 013300 Submittal Procedures.
- B. Product Data: Submit manufacturer current technical literature for each component.

- C. Samples: Weather Barrier Membrane, minimum 8-1/2 inches by 11 inch.
- D. Quality Assurance Submittals
  - 1. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with indicated requirements.
  - 2. Manufacturer Instructions: Provide manufacturer's written installation instructions.
  - 3. Manufacturer's Field Service Reports: Provide site reports from authorized field service representative, indicating observation of weather barrier assembly installation.
- E. Closeout Submittals
  - 1. Refer to Section 017700 Closeout Procedures.
  - 2. Weather Barrier Warranty: Manufacturer's executed warranty form with authorized signatures and endorsements indicating date of Substantial Completion.

#### 1.4 QUALITY ASSURANCE

- A. Qualifications
  - 1. Installer shall have experience with installation of DuPont™ Tyvek® weather barrier assemblies under similar conditions.
  - 2. Installation shall be in accordance with weather barrier manufacturer's installation guidelines and recommendations.
  - 3. Source Limitations: Provide weather barrier and accessory materials produced by single manufacturer.
- B. Mock-up
  - 1. Install mock-up using approved weather barrier assembly including fasteners, flashing, tape and related accessories per manufacturer's current printed instructions and recommendations.
    - a. Mock-up size: 10 feet by 10 feet.
    - b. Mock-up Substrate: Match wall assembly construction, including window opening.
    - c. Mock-up may remain as part of the work.
  - 2. Contact manufacturer's designated representative prior to weather barrier assembly installation, to perform required mock-up visual inspection and analysis as required for warranty.
- C. Pre-installation Meeting
  - 1. Hold a pre-installation conference, two weeks prior to start of weather barrier installation. Attendees shall include Contractor, Architect, installer, Owner's Representative, and weather barrier manufacturer's designated representative.
  - 2. Review all related project requirements and submittals, status of substrate work and preparation, areas of potential conflict and interface, availability of weather

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barrier assembly materials and components, installer's training requirements, equipment, facilities and scaffolding, and coordinate methods, procedures and sequencing requirements for full and proper installation, integration and protection.

#### 1.5 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.

#### 1.6 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.

#### 1.7 WARRANTY

- A. Refer to Section 011100 for Warranties

**(Note:** Special manufacturer Warranty Program – Manufacturer's Warranty is project specific and requires approval by the manufacturer. Include warranty only when manufacturer's limited warranty program is to be utilized. Manufacturer's Warranty is subject to use of manufacturer's recommended installation methods, required actions and submittals.

When the Manufacturer's Warranty is specified, Contractor is required to submit to weather barrier manufacturer the "Project Evaluation Request Form" and supporting documentation prior to assembly installation to obtain the required "Intent to Warranty" documentation. After completion of installation, to obtain warranty, Contractor must submit to weather barrier manufacturer site visit reports and supporting documentation from the manufacturer's designated representative.)

- B. Special Warranty
  - 1. Weather barrier manufacturer's warranty for weather barrier for a period of five years from date of Substantial Completion.
  - 2. Approval by weather barrier manufacturer for warranty is required prior to assembly installation.

**PART 2 - PRODUCTS****2.1 MANUFACTURER**

- A. E.I. du Pont de Nemours and Company ; 4417 Lancaster Pike, Chestnut Run Plaza 721, Wilmington, DE 19805; 1.800.44TYVEK (8-9835); <http://construction.tyvek.com>

**2.2 MATERIALS**

- A. Basis of Design: High-performance, flash spun-bonded olefin, non-woven, non-perforated, secondary weather barrier is based upon DuPont™ Tyvek® HomeWrap® and related assembly components.
- B. Performance Characteristics:
1. Air Penetration: Type 1 when tested in accordance with ASTM E 1677.
  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/yd<sup>2</sup>, 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.

**2.3 ACCESSORIES**

- A. Seam Tape: 3" DuPont™ Tyvek® Tape as manufactured by DuPont.
- B. Fasteners:
1. Wood Frame Construction  
DuPont™ Tyvek® Wrap Caps: #4 nails with large 1-inch plastic cap fasteners or 1-inch minimum plastic cap staple with a 7/8" minimum staple length.
  2. Masonry Construction  
Masonry tap-con fasteners with DuPont™ Tyvek® Wrap Caps: 2-inch diameter plastic cap fasteners.
- C. Sealants
1. Provide sealants that comply with ASTM C 920, elastomeric polymer sealant to maintain watertight conditions.
  2. Products: Tremco 830
    - a. Tremco Butyl
    - b. Sealants recommended by the weather barrier manufacturer.

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**D. Adhesives:**

1. Provide adhesive recommended by weather barrier manufacturer.
2. Products:
  - a. Liquid Nails® LN-109
  - b. Polyglaze® SM 5700
  - c. Denso Butyl Liquid
  - d. 3M High Strength 90
  - e. Adhesives recommend by the weather barrier manufacturer.

**E. Primers:**

1. Provide flashing manufacturer recommended primer to assist in adhesion between substrate and flashing.
2. Products:
  - a. 3M High Strength 90
  - b. Denso Butyl Spray
  - c. Permagrip 105
  - d. Primers recommended by the flashing manufacturer

**F. Flashing**

1. DuPont™ FlexWrap™: Flexible membrane flashing materials for window openings and penetrations.  
**AND/OR**
2. DuPont™ StraightFlash™: Straight flashing membrane materials for flashing windows and doors and sealing penetrations such as masonry ties, etc.  
**AND/OR**
3. DuPont™ StraightFlash™ VF: Dual-sided flashing membrane materials for brick mold and non-flanged windows and doors.  
**AND/OR**
4. DuPont™ Thru-Wall Surface Adhered Membrane with Integrated Drip Edge: Thru-Wall flashing membrane materials for flashing at changes in direction or elevation (shelf angles, foundations, etc.) and at transitions between different assembly materials.  
**AND/OR**
5. Preformed Inside and Outside Corners and End Dams as manufactured by DuPont: Preformed three-dimensional shapes to complete the flashing system used in conjunction with DuPont™ Thru-Wall Flashing.

**PART 3 - EXECUTION****3.1 EXAMINATION**

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

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### 3.2 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. Steel or 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.
  - 2. Masonry Construction: Attach weather barrier to masonry. Secure using weather barrier manufacturer recommend fasteners, space 6-18 inches vertically on center and 24 inches maximum horizontally. Weather barrier may be temporarily attached to masonry using recommended adhesive, placed in vertical strips spaced 24 inches on center, when coordinated on the project site.
- I. Apply 4 inch by 7-inch piece of DuPont™ StraightFlash™ to weather barrier membrane prior to the installation cladding anchors.

### 3.3 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.

### 3.4 OPENING PREPARATION (for use with flanged windows)

- A. Cut weather barrier in a modified "I-cut" pattern.

#### WEATHER BARRIER

1. Cut weather barrier horizontally along the bottom of the header.
  2. Cut weather barrier vertically 2/3 of the way down from top center of window opening.
  3. Cut weather barrier diagonally from bottom of center vertical cut to the left and right corners of the opening.
  4. 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.

### 3.5 FLASHING (for use with flanged windows)

- A. Cut 9-inch wide DuPont™ FlexWrap™ a minimum of 12 inches longer than width of sill rough opening.
- B. Cover horizontal sill by aligning DuPont™ FlexWrap™ 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 DuPont™ FlexWrap™ 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 DuPont™ StraightFlash™ 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 DuPont™ StraightFlash™ as 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 DuPont™ StraightFlash™ 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.

### 3.6 THRU-WALL FLASHING INSTALLATION

- A. Apply primer per manufacturer's written instructions.
- B. Install preformed corners and end dams bedded in sealant in appropriate locations along wall.

- C. Starting at a corner, remove release sheet and apply membrane to primed surfaces in lengths of 8 to 10 feet.
- D. Extend membrane through wall and leave ¼ inch minimum exposed to form drip edge.
- E. Roll flashing into place. Ensure continuous and direct contact with substrate.
- F. Lap ends and overlap preformed corners 4 inches minimum. Seal all laps with sealant.
- G. Prime exterior edge of membrane 1-inch and secure metal drip edge per manufacturer's written instructions.
- H. Terminate membrane on vertical wall.
- I. Apply sealant bead at each termination.

### 3.7 THRU-WALL FLASHING / WEATHER BARRIER INTERFACE AT BASE OF WALL

- A. Overlap thru-wall flashing with weather barrier by 6-inches.
- B. Mechanically fasten bottom of weather barrier through top of thru-wall flashing.
- C. Seal vertical and horizontal seams with tape or sealing membrane.

### 3.8 THRU-WALL FLASHING / WEATHER BARRIER INTERFACE AT WINDOW HEAD

- A. Cut flap in weather barrier at window head.
- B. Prime exposed sheathing.
- C. Install lintel as required. Verify end dams extend 4 inches minimum beyond opening.
- D. Install end dams bedded in sealant.
- E. Adhere 2 inches minimum thru-wall flashing to wall sheathing. Overlap lintel with thru-wall flashing and extend ¼ inch minimum beyond outside edge of lintel to form drip edge.
- F. Apply sealant along thru-wall flashing edges.
- G. Fold weather barrier flap back into place and tape bottom edge to thru-wall flashing.
- H. Tape diagonal cuts of weather barrier.
- I. Secure weather barrier flap with fasteners.

### 3.9 FIELD QUALITY CONTROL

**Note:** Field observation by a manufacturer designated representative is mandatory for the Manufacturer's Warranty.

Notify manufacturer's designated representative to obtain required periodic observations of weather barrier assembly installation.

3.10 PROTECTION

- A. Protect installed weather barrier from damage.

***Limitations:***

*In the event of a conflict between these specifications and the manufacturer's instructions, recommendations and or warranty, the text of the manufacture shall govern. The specifier shall be notified in writing of any conflicts therein prior to construction and reserves the right to clarify and modify these specifications.*

END OF SECTION

## SECTION 079200

**JOINT SEALANTS****PART 1 - GENERAL****1.1 RELATED REQUIREMENTS**

- A. Drawings and general provisions of the Contract, Construction Documents, including General Conditions, Summary, and modifications by Addenda or Change Order apply to Work under this Section.
- B. Sealants shall be installed in compliance with:
  - Sealants, Water-proofing & Restoration Institute (SWRI) guidelines
  - ASTM C1193 "Standard Guide for Use of Joint Sealants
  - ASTM 794 Test Method for Adhesion in Peel of Elastomeric Joint Sealant
  - ASTM C920 Specification for Elastomeric Joint Sealants
  - ASTM C1299 Guide for Use in Selection of Liquid Applied Sealants
  - ASTM C1375 Guide for Substrates Used in Testing Building Seals and Sealants

**1.2 SUMMARY**

- A. Replace damaged exterior joint sealants in the areas of work pertaining to Section 011100 Summary and where previously omitted.
- B. Repair and re-caulk all joint sealants at locations/junctures as identified during the pre-construction inspection unless otherwise noted (may or may not be currently sealed) including but not limited to:
  - 1. Stucco-to-stucco joints
  - 2. Metal-to-stucco joints
  - 3. Wall joints
  - 4. Stucco reveal accessory corners and butt joints
  - 5. Control joints
  - 6. Intersection of dissimilar materials, joints, transitions, and junctures
  - 7. Building penetrations
  - 8. Trim Bands
  - 9. Deck/floor to building junctures
  - 10. Railing post penetrations
  - 11. Railing attachment at wall
  - 12. Window perimeters
  - 13. Sliding glass door perimeters
  - 14. Wood joints: all end to end 45 and 90-degree joints

**1.3 QUALITY ASSURANCE**

- A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.
- B. The contractor's field installers shall be trained by the manufacturer's representative on site prior to construction.

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- C. Contractor qualifications: Contractor shall be qualified in the field of waterproofing with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.
- D. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state, and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.
- E. Manufacturer must be capable of testing on-site for adhesions and compatibility.

#### 1.4 PROJECT CONDITIONS

- A. Do not install solvent-curing sealants in enclosed building spaces.
- B. Maintain temperature and humidity recommended by the sealant manufacturer during and following installation.
- C. Do not apply sealants if it is raining or if it appears to be imminent.

#### 1.5 SYSTEM PERFORMANCES

- A. Provide joint sealers that have been produced and installed to establish and maintain watertight continuous seals.
- B. It is the intent of this specification to provide new sealant joints as noted, detailed, and required.
- C. Joint preparation to receive sealant shall comply with these specifications, unless manufacturer's requirements exceed these specifications. Procedures which differ from these specifications shall be submitted in writing and be approved by Engineer in writing.

#### 1.6 QUALITY ASSURANCE

- A. Installation Qualifications: Work shall be performed by a firm having not less than 5 years successful experience in comparable waterproofing projects and employing personnel skilled in the operations indicated. Bidders are required to be pre-qualified by the coating manufacturer for the level of warranty required prior to the submittal of bids.
- B. Contractor shall assign a full-time site foreman to the project whose qualifications shall have a minimum of five-year's experience in similar work.
- C. The Contractor shall be pre-qualified by the sealant manufacturer to install the Work and qualify for the specified warranties.
- D. Single Source Responsibility for Joint Sealer Materials: Obtain joint sealer materials from a single manufacturer for each different product required unless otherwise approved by the Engineer.
- E. Materials and workmanship shall be subject to observation by the Engineer and sealant manufacturer at all times. Such observations shall not relieve Contractor from obligation to provide materials and workmanship conforming to requirements of the Contract Documents.

#### JOINT SEALANTS

- F. Contractor shall provide swing stage operators and swing stage access when required to allow the Engineer and sealant manufacturer to make timely observations of the Contractor's work.
- G. Pre-construction Field Testing of Sealant: Prior to installation of joint sealant, Contractor and Manufacturer shall perform testing on actual substrates to determine the proper field preparation required to obtain optimum adhesion and compatibility on each different substrate condition. Manufacturer shall approve installation conditions and procedures in writing to Engineer.
- H. Manufacturer's technical representative shall make an inspection of the Contractor's work at intervals required by the manufacturer to assure issuance of the manufacturer's warranty at project completion.

## 1.7 SUBMITTALS

- A. Submit letter from sealant manufacturer stating that the Contractor is pre-approved by the manufacturer for application of products for this specific project with anticipation of issuing the specified warranty at the completion of the project.
- B. Product Data: Submit manufacturer's technical data for each joint sealer product required, including instructions for joint preparation, joint sealer application, and storage. Submit data on cleaning materials, primers, and related products.
- C. Material Safety Data Sheets: Submit MSDS sheets on all products including solvent cleaning products.
- D. Samples for Initial Selection: Submit manufacturer's standard bead samples consisting of strips of actual products showing full range of colors for each product exposed to view.
- E. Certificates: Submit a letter from manufacturers of joint sealers attesting:
  - 1. That manufacturer has reviewed this project and that their products comply with specification requirements and are suitable for project purposes.
  - 2. That upon review of the project specifications the manufacturer agrees with specified provisions for joint preparation and application.
  - 3. That the manufacturer has visited the job site, has conducted such tests as they deem necessary, and that the usage of their products shall result in the issuance of the specified warranties.
  - 4. Test reports from manufacturer inspections indicating proper substrate preparation for this project resulting from on-site adhesion testing.
  - 5. Designation of manufacturer's representatives for purposes of this project.
- F. Submit sample of sealant manufacturer's warranty to be supplied at completion of project.

## 1.8 MOCK-UP

- A. At start of project, Contractor shall perform a mock-up of required work at one area of the building. Mock-up area shall be coordinated with Engineer.
- B. Mock-up shall be installed in the presence of the sealant manufacturer's technical representative and Engineer to assure installation procedures adhere to warranty requirements.

### JOINT SEALANTS

- C. After sealant has achieved sufficient cure as coordinated with manufacturer's representative, conduct adhesion pull-test. Adhesion test shall be confirmed as acceptable by Engineer and manufacturer prior to proceeding with work.
- D. Approved mock-up shall remain in place and establish the guidelines for acceptable installation of work and acceptable appearance.

### 1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multi-component materials.
- B. Store and handle materials to prevent their deterioration or damage due to moisture, temperature change, contaminants, or other causes.

### 1.10 WARRANTY

- A. The Contractor will provide to the Owner written labor and materials warranties as outlined in the Section 004100 Bid Form of the Project Manual.
- B. Manufacturer shall provide Owner a written warranty against leakage and defects in materials for a period of seven (7) years for urethane and ten (10) years for silicone from the date of Substantial Completion. Warranty shall state that manufacturer shall pay for material to replace failed sealant materials.

Failure of materials or workmanship shall include, but not limited to:

- 1. Water penetration into the building
  - 2. Adhesive or cohesive failure of sealant
  - 3. Premature or abnormal deterioration of sealant material
- C. Provide warranties as specified; warranties shall not limit length of time for remedy of damages the Owner may have as provided by law. The Contractor, supplier, or installer responsible for performance of said warranty shall sign warranties.

## PART 2 - PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS

- A. The following manufacturers offer products that may be incorporated into the Work subject to compliance with the requirements. All products shall be installed in strict accordance with the Manufacturer's specifications and recommendations for each specific application.
  - 1. BASF, 889 Valley Park Drive, Shakopee, MN 55379
  - 2. Sika Corporation, 201 Polito Ave, Lyndhurst, NJ 07071
  - 3. Pecora Corporation 165 Wambold Road, Harleysville, PA 19438
  - 4. Tremco, 3735 Green Road, Beachwood, OH 44122
  - 5. Dow Corning Corporate Center, PO Box 994, Midland MI 48686-099

### 2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and
- JOINT SEALANTS**

application, as demonstrated by sealant manufacturer based on testing and field experience.

- B. Colors of exposed joint sealants shall match adjacent finish unless otherwise indicated on drawings.

## 2.3 MATERIALS

- A. Single Component: For use at stucco-to-stucco, stucco-to-metal, deck to wall transition, posts, doorsill tracks, thresholds, and embedded anchors and fasteners. Polyurethane sealant not to exceed ½" in depth unless otherwise noted.
1. BASF – MasterSeal CR 195, MasterSeal NP 1, MasterSeal NP 150
  2. Sika - Sikaflex 15 LM or Sikaflex -1a
  3. Tremco – Vulkem 116, Dymonic
  4. Pecora - DynaTrol I-XL
- B. Single-Component Self-Leveling: For use at railing post, drill and fill applications, and repairing routed cracks and sealing perimeter joint penetrations unless otherwise noted.
1. BASF – MasterSeal SL 1
  2. Sika - Sikaflex 1A
  3. Tremco - Vulkem 45 SSL
- C. Two-Component Non-Sag: For use at railing post, repairing routed cracks, and sealing perimeter joint penetrations unless otherwise noted.
1. BASF – MasterSeal NP 2
  2. Sika - Sikaflex 2C NS
  3. Tremco – Dymeric 240, 240FC
  4. Pecora - DynaTrol II
- D. Two-Component Self-Leveling: For use at railing post, drill and fill applications, and repairing routed cracks and sealing perimeter joint penetrations unless otherwise noted.
1. BASF – MasterSeal SL 2
  2. Sika – Sikaflex 2C SL
  3. Tremco - THC 900 SL
  4. Pecora – Dynatrol II
- E. Single-Component Silicone: For use at windows glass-to-metal and metal-to-metal joints.
1. Stucco-to-Metal
    - a. BASF – MasterSeal NP 150
    - b. Dow Corning – Silicone 795
    - c. Tremco – Spectrum 2 Tremsil 600 (embed end dams)
    - d. Pecora – 890 FTS
  2. Glass-to-Metal
    - a. Dow Corning – Silicone 995 or 795, unless noted otherwise
  3. Metal-to-Metal
    - a. Dow Corning – Silicone 795
    - b. Tremco – Spectrum 2 Tremsil 600 (embed end dams)
    - c. Pecora – 890 FTS
- F. Precured Sealant: For use at metal to metal, window mulls.
1. Dow Corning: 123 plus primer
  2. Sika: Sikadur Combiflex
- G. Pre-formed joint sealing expansion control system for use at expansion joints ¾" to 2" (if applicable)
1. The joint seal shall be extruded from a preformed closed-cell polychloroprene (neoprene)

## JOINT SEALANTS

expanded rubber with a relatively dense layer of skin at the surface and shall be held in place by a two-component 100% solids epoxy adhesive. The design of the seal shall accommodate movements and variations in joint widths through compression and tension of its shape. Serrated sidewalls shall be extruded to ensure an effective and quality surface for adhesion.

2. The adhesive shall be two-component, epoxy-based adhesive with properties based on the manufacturer's specifications.

## 2.4 JOINT-SEALANT BOND BREAKER MATERIALS

- A. General: Provide sealant backings of material and type that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings (Backer Rod): ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance. Selected materials will be non-gassing, compatible with specified sealant as determined by the sealant manufacturer. Contractor will supply different size rods to properly fill sealant joint to ensure two-sided adhesion of the sealant to the bonding surfaces.
  1. Type: C (closed-cell material with a surface skin).
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Contractor will supply different size rods to properly fill sealant joint to ensure two-sided adhesion of the sealant to the bonding surfaces. Provide self-adhesive tape where applicable.

## 2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants with joint substrates.
- C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 – EXECUTION

### 3.1 SURFACE PREPARATION

- A. The joint and adjacent substrate must be clean, dry, sound, and free of surface contaminants. Remove all traces of the old sealant, dust, laitance, grease, oils, curing compounds, form-release agents, and foreign particles by mechanical means, i.e., sandblasting, etc. Blow joint free of dust using compressed air line equipped with an oil trap.

## JOINT SEALANTS

### 3.2 INSTALLATION OF JOINT SEALANTS

- A. Contractor performing work must be a Sealant Manufacturer's Approved Applicator.
- B. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants. Remove foreign material and sealants from existing joint substrates to receive new sealant material. Joint surfaces must be clean dry, dust-free, and frost free.
  - 1. Clean using the Two-Cloth cleaning method:
    - a. Thoroughly clean all surfaces of loose debris.
    - b. Pour or dispense an acceptable cleaning-grade solvent onto the cloth; do not dip cloth into the container as this will contaminate the cleaning agent. A plastic, solvent bottle works best.
    - c. Wipe vigorously to remove contaminants. Check cloth to see if it has picked up contaminants. Rotate the cloth to a clean area, and re-wipe until no additional contaminants are picked up.
    - d. Immediately wipe the area clean with a spare dry clean cloth.
  - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.
  - 3. Remove laitance and form-release agents from concrete.
  - 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues that could interfere with adhesion of joint sealants.
- C. Joint Priming: Prime joint substrates where recommended in writing by joint sealant manufacturer, based on preconstruction joint-sealant-substrate tests, or prior experience. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- D. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.
- E. Sealant Installation: Comply with ASTM C 1193 and manufacturer's recommendations for use of joint sealants as applicable to materials, applications, and conditions indicated.
- G. Install sealant backings to support sealants during application and at positions required to produce optimum sealant movement capability.
  - 1. Do not leave gaps between ends of sealant backings.
  - 2. Do not stretch, twist, puncture, or tear sealant backings.
  - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- G. Install backer rod or bond-breaker tape behind sealants where sealant backings are not used between sealants and back of joints in position to achieve recommended joint configuration. Backer rod size shall be selected to allow for a minimum 30% compression of the backing when inserted into the joint.
- H. Place sealants so they contact directly and fully wet joint substrates.
  - 1. Completely fill recesses provided for each joint configuration.
  - 2. Produce uniform, cross-sectional shapes and depths that allow optimum sealant movement capability.
  - 3. All deep cracks shall be filled to within 1/2 inch of the surface with an appropriate back-up material and caulked with a caulking gun. Caulking beads shall be smooth

#### JOINT SEALANTS

and straight.

- J. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint.
  - 1. Remove excess sealants from surfaces adjacent to joint.
  - 2. Use tooling agents that are approved by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 3. Joint Configuration: Concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- K. Adhere to all limitations and cautions for the sealant as stated in the manufacturer's printed literature.
- L. Cracks: See manufacturer's recommendations and instructions and related Sections and Details

### 3.3 FIELD ADHESION TESTING

- A. Field Adhesion Testing: During the course of sealant work, the contractor shall perform field adhesion tests in accordance with on of the following:
  - 1. ASTM C 1521 Destructive Procedure Method A
  - 2. ASTM C 962 hand pull method
  - 3. Dow Corning Weatherproofing Sealant Guide hand pull method
- B. Sealant adhesion testing shall be performed for all types of sealant to be used at each substrate configuration. Adhesion testing is to be completed prior to the installation of any permanent exterior sealant weatherseal. Record of adhesion testing shall be forwarded to the Engineer upon request.
- C. The contractor shall confirm successful adhesion tests for each 100 lineal feet for the first 1,000 feet of sealant work installed for each type sealant and for each 1,000 lineal feet thereafter.
- D. Engineer may conduct random sealant adhesion tests during the work. The Engineer shall randomly select the time and location of each test.
- E. In the event of an adhesion test failure, the contractor will be responsible for the cost of replacing all faulty materials and for the cost of re-testing. Failure is defined as adhesive failure of the material during a pull test as specified by the sealant manufacturer.

### 3.4 CLEANING

- A. The cured sealant can be cleaned with a manufacturer-approved solvent which does not harm the adjacent substrates.
- B. Leave finished Work and Work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

## JOINT SEALANTS

079200-8

**Limitations:**

*In the event of a conflict between these specifications and the manufacturer's instructions, recommendations, and/or warranty, the text of the manufacturer shall govern. The specifier shall be notified in writing of any conflicts therein prior to construction and reserves the right to clarify and modify these specifications.*

END OF SECTION

JOINT SEALANTS

079200-9

**CONFORMANCE SUBMITTAL**  
**Section 079200 – Joint Sealants**

of

\_\_\_\_\_  
(City, State)

General Contractor: \_\_\_\_\_  
(Company Name)  
\_\_\_\_\_  
(Address, Phone Number)

Sub-Contractor: \_\_\_\_\_  
(Company Name)  
\_\_\_\_\_  
(Address, Phone Number)

The following product has been selected (check one box) for use in this project from the list of acceptable products specified:

Single-Component:

- BASF, MasterSeal CR 195
- BASF, MasterSeal NP 1
- BASF, MasterSeal NP 150
- Sika, Sikaflex 15 LM
- Sika, Sikaflex – 1a
- Tremco, Vulkem 116
- Tremco, Dymonic
- Pecora DynaTrol I-XL

Single-Component Self-Leveling:

- BASF, MasterSeal SL 1
- Sika, Sika 1A
- Tremco, Vulkem 45 SSL

I represent to the Owner that the product selected will be installed in compliance with the applicable codes for the authorities having jurisdiction and in accordance with the project specification. If noncompliance is discovered the General Contractor shall make or cause to be made all necessary corrections to meet the applicable codes and specifications. Immediately or as directed by the Owner the work shall be completed without additional cost to the Owner and/or the contract.

General Contractor: \_\_\_\_\_  
(Signature of the Authorized Agent of the General Contractor)

\_\_\_\_\_  
(Print Name of the Authorized Agent of the General Contractor)

I represent to the Owner that the product selected will be installed in compliance with the applicable codes for the authorities having jurisdiction and in accordance with the project specification. If noncompliance is discovered the General Contractor shall make or cause to be made all necessary corrections to meet the applicable codes and specifications. Immediately or as directed by the Owner the work shall be completed without additional cost to the Owner and/or the contract.

Sub-Contractor: \_\_\_\_\_  
(Signature of the Authorized Agent of the Sub-Contractor)

\_\_\_\_\_  
(Print Name of the Authorized Agent of the Sub-Contractor)

**JOINT SEALANTS**

**CONFORMANCE SUBMITTAL**  
**Section 079200 – Joint Sealants**

of

\_\_\_\_\_

\_\_\_\_\_  
*(City, State)*

General Contractor: \_\_\_\_\_  
*(Company Name)*

\_\_\_\_\_  
*(Address, Phone Number)*

Sub-Contractor: \_\_\_\_\_  
*(Company Name)*

\_\_\_\_\_  
*(Address, Phone Number)*

The following product has been selected (check one box) for use in this project from the list of acceptable products specified:

Two-Component Non-Sag:

Two-Component Self-Leveling:

- BASF, MasterSeal NP 2
- Sika, Sika 2C
- Tremco, Dymeric 240, 240 FC
- Pecora, DynaTrol II

- BASF, MasterSeal SL 2
- Sika, Sika 2C SL
- Tremco, THC 900 SL
- Pecora, Dynatrol II

I represent to the Owner that the product selected will be installed in compliance with the applicable codes for the authorities having jurisdiction and in accordance with the project specification. If noncompliance is discovered the General Contractor shall make or cause to be made all necessary corrections to meet the applicable codes and specifications. Immediately or as directed by the Owner the work shall be completed without additional cost to the Owner /or the contract.

General Contractor: \_\_\_\_\_  
*(Signature of the Authorized Agent of the General Contractor)*

\_\_\_\_\_  
*(Print Name of the Authorized Agent of the General Contractor)*

I represent to the Owner that the product selected will be installed in compliance with the applicable codes for the authorities having jurisdiction and in accordance with the project specification. If noncompliance is discovered the General Contractor shall make or cause to be made all necessary corrections to meet the applicable codes and specifications. Immediately or as directed by the Owner the work shall be completed without additional cost to the Owner and/or the contract.

Sub-Contractor: \_\_\_\_\_  
*(Signature of the Authorized Agent of the Sub-Contractor)*

\_\_\_\_\_  
*(Print Name of the Authorized Agent of the General Contractor)*

**JOINT SEALANTS**

**CONFORMANCE SUBMITTAL**  
**Section 079200 – Joint Sealants**

\_\_\_\_\_ of  
\_\_\_\_\_  
(City, State)

General Contractor: \_\_\_\_\_  
(Company Name)  
\_\_\_\_\_  
(Address, Phone Number)

Sub-Contractor: \_\_\_\_\_  
(Company Name)  
\_\_\_\_\_  
(Address, Phone Number)

Single-Component Silicone:

- Dow Corning - Silicone 795, 995
- Tremco - Spectrum 2, Tremsil 600 (embed end dams)
- Pecora - 890 FTS
- BASF – MasterSeal NP 150

I represent to the Owner that the product selected will be installed in compliance with the applicable codes for the authorities having jurisdiction and in accordance with the project specification. If noncompliance is discovered the General Contractor shall make or cause to be made all necessary corrections to meet the applicable codes and specifications. Immediately or as directed by the Owner the work shall be completed without additional cost to the Owner and/or the contract.

General Contractor: \_\_\_\_\_  
(Signature of the Authorized Agent of the General Contractor)  
\_\_\_\_\_  
(Print Name of the Authorized Agent of the General Contractor)

I represent to the Owner that the product selected will be installed in compliance with the applicable codes for the authorities having jurisdiction and in accordance with the project specification. If noncompliance is discovered the General Contractor shall make or cause to be made all necessary corrections to meet the applicable codes and specifications. Immediately or as directed by the Owner the work shall be completed without additional cost to the Owner and/or the contract.

Sub-Contractor: \_\_\_\_\_  
(Signature of the Authorized Agent of the Sub-Contractor)  
\_\_\_\_\_  
(Print Name of the Authorized Agent of the General Contractors)

## SECTION 085113

**IMPACT-RESISTANT ALUMINUM WINDOWS (PGT)****PART 1 - GENERAL****1.1 SECTION INCLUDES**

- A. SH-700 WinGuard aluminum single hung window.

**1.2 RELATED SECTIONS**

- A. Section 072613 – Weather Barrier  
B. Section 079200 - Joint Sealants

**1.3 REFERENCES**

- A. AAMA - American Architectural Manufacturers Association
1. AAMA 103.3-93 "Procedural Guide for Aluminum and Vinyl Prime Windows and Glass Doors, Insulating Storm Products for Windows and Glass Doors and Thermal Performance of Windows and Glass Doors"
  2. AAMA 1302.5-76, paragraph 3.1.1 Test A through 3.1.3 Test G "Voluntary Specifications for Forced-Entry Resistant Aluminum Prime Windows"
- B. ANSI - American National Standards Institute
1. ANSI/AAMA/NWDA 101/I.S.2-97 "Voluntary Specification for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors"
- C. ASTM - American Society for Testing and Materials
1. ASTM C 1036-91 "Standard Specification for Flat Glass"
  2. ASTM E 283-96 "Standard Test Method for Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors"
  3. ASTM E 330-96 "Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference"
  4. ASTM E 331-96 "Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference"
  5. ASTM E 547-96 "Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Cyclic Static Air Pressure Differential"
  6. ASTM F 588-85 "Standard Test Methods for Resistance of Window Assemblies to Forced Entry Excluding Glazing"
- D. Florida Building Code
1. Protocol TAS-201 "Impact Test"
  2. Protocol TAS -202 "Air, Water, Structural Test"

**IMPACT-RESISTANT ALUMINUM WINDOWS (PGT)**

## 3. Protocol TAS -203 "Cyclic Wind Load Test"

1.4 SYSTEM DESCRIPTION

- A. Configuration: flange construction [Integral fin construction] single hung (single vent) [proview] [radius top (only available as a flange, proview style)].
- B. Frame: 2.784" frame depth.
- C. Glazing: exterior glazed, with aluminum glazing bead, glass, factory glazed.
  - 1. 13/16 inch (21 mm) IG-Lami (1/8 inch (3 mm) – space – 5/16 inch (8mm) laminated) glass.
  - 2. Glass to meet new FBC 5<sup>th</sup> edition (2014) for prescriptive path energy code.
- D. Muntins: None.
- E. Performance Requirements
  - 1. When tested according to Miami-Dade County test protocols, meets the design pressures stated in the Miami-Dade County Notice(s) of Acceptance for this product.
  - 2. Air Infiltration: 0.3 (ft<sup>3</sup>)/min/(ft<sup>2</sup>) maximum when tested per ASTM E 283 at a 1.57 psf static air pressure difference.
  - 3. Water Resistance: no water leakage when tested per ASTM E 547 at a static air pressure difference of 15% of the positive design pressure.
  - 4. Uniform Load Structural: after testing per ASTM E 330 with a load equal to 150% of the positive design pressure, the unit must be operable, with a maximum permanent deformation in any member of 0.4% of the member's length.

1.5 SUBMITTALS

- A. Submit according to provisions of Section 013000.
- B. Product Data: provide manufacturer's standard details, specifications and catalog information, recommendations, and installation instructions.
- C. Shop Drawings: include unit elevations, details of all aluminum window sections, typical anchorage and installation details, type of glazing and window finish, and interface with other products.
- D. Finish Samples: manufacturer's available colors.
- E. Unit Samples: if required by Engineer, provide scaled-down size operating samples of each unit type, to demonstrate design and construction of the unit and hardware.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: minimum five (5) years documented experience in the manufacture of aluminum windows as required for this project.
- B. Installer Qualifications: workmen properly trained and skilled in the installation and handling of aluminum windows as required for this project.

## IMPACT-RESISTANT ALUMINUM WINDOWS (PGT)

**1.7 DELIVERY, STORAGE, AND HANDLING**

- A. Store and handle windows and accessories in accordance with the manufacturer's instructions.
- B. Protect the products from damage due to the elements, construction traffic, or other hazards, from the time of arrival through the completion of the project.

**1.8 WARRANTY**

- A. **Manufacturer's Warranty:** Furnish manufacturer's Limited Lifetime Warranty on aluminum windows and doors.

**PART 2 - PRODUCTS****2.1 MANUFACTURERS**

- A. PGT Industries, Inc. Series SH-700 WinGuard single-hung aluminum window.

**2.2 MATERIALS**

- A. Main frame members: extruded from 6063-T6 alloy, nominal 0.062" wall thickness.
- B. Sash members: extruded from 6063-T5 aluminum alloy, nominal 0.062" wall thickness.
- C. Hardware: two spiral torsion spring balances. Two steel and tin-lead-zinc alloy cam lever sash locks on each vent locking beneath a groove in the fixed meeting rail (one sash lock if window width is less than 44"). [Stainless steel assembly screws.]
- D. Weatherstripping: sides and top of vent weatherstripped with 0.170 x 0.270 fin seal, bottom of vent weatherstripped with compressed finned vinyl bulb.
- E. Glazing attachment with silicone adhesive.
- F. Screens: tubular aluminum frame with fiberglass screen cloth, vinyl spline, two plastic screen pull tabs and two compression retention springs per screen.
- G. [ Muntins: extruded aluminum 6063-T5 alloy, tube construction (flat bar used for interior surface) ]

**2.3 ACCESSORIES**

- A. [Mullions: 1x2.75 tube mull [1x4 tube mull] [heavy duty wall] [specify mull] and associated mull clips].

**2.4 FABRICATION**

- A. Main frame and sash joints constructed with butt joint fit, assembled with phillips pan head screws, and factory sealed with Parbond or Schnee Moorehead sealer.
- B. All hardware is factory installed.
- C. Bug screens constructed and installed in unit prior to shipment.

**2.5 FINISHES**

- A. Colors: Selected by Engineer from the following:

**IMPACT-RESISTANT ALUMINUM WINDOWS (PGT)**

1. Standard coating color charts.
  2. Custom coating color charts.
  3. Color Name and Number:
- B. AAMA 2603 finish: Pretreatment plus thermosetting polyester powder coating.
  - C. AAMA 2605 Duranar (or comparable) finish - pretreatment plus 2 coat, 50 and 70 percent Kynar base options.
  - D. Clear Anodized Finish: NAAMM AA-C2241, 204R1 – class II – Minimum 0.4 mils, in natural aluminum color.
  - E. ETERNA® Wood grain finish: Pretreatment plus base powder coat with preprinted film transfer with organic photosensitive pigments and cellulose resin thermoprint.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Verify that openings provide an acceptable anchoring surface, being clean, level, plumb, and dimensionally within the manufacturer's tolerance of clearance spacing.
- B. Correct unacceptable openings as required prior to installation.

#### **3.2 INSTALLATION**

- A. Install windows and accessories in accordance with approved shop drawings and manufacturer's recommendations.
- B. Securely fasten frames, and set units level, plumb, and square with respect to the surrounding structure, without twist or bow.
- C. Place insulation materials around shim spaces as required to ensure continuity of the thermal barrier of the structure.
- D. Apply caulk all around between the aluminum frame and the structure, ensuring that a continuous airtight and watertight perimeter seal results. Leave exposed surfaces clean and free of caulk.

#### **3.3 ADJUSTING AND CLEANING**

- A. Ensure that units freely operate in a normal fashion, and that vents make proper contact with weather-stripping perimeter seal. Adjust frame, vent, or hardware as needed.
- B. Leave units thoroughly clean and free of dirt or other construction residue.

END OF SECTION

**Limitations:**

*In the event of a conflict between these specifications and the manufacturer's instructions, recommendations and or warranty, the text of the manufacturer shall govern. The specifier shall be notified in writing of any conflicts therein prior to construction and reserves the right to clarify and modify these specifications.*

## SECTION 092423

**PORTLAND CEMENT PLASTER (STUCCO)****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

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

**1.2 SUMMARY**

- A. This Section includes the following:
1. The installation and repair of stucco at damaged areas along the roof parapets as outlined in the project specifications.
  2. Exterior portland cement plasterwork (stucco) on metal lath plaster bases.
  3. Exterior portland cement plasterwork (stucco) on CMU or concrete.

**1.3 SUBMITTALS**

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations and installation of control and expansion joints including plans, elevations, sections, details of components, and attachments to other work.
- C. Samples for Initial Selection: For each type of factory-prepared finish coat indicated.
- D. Samples for Verification: For each type of factory-prepared, colored, textured finish coat indicated; 12 by 12 inches and prepared on rigid backing.

**1.4 QUALITY ASSURANCE**

- A. Fire-Test-Response Characteristics: For portland cement plaster assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- B. Mockups: Before plastering, install mockups of at least 10 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Install mockups for each type of finish indicated.
  2. For interior plasterwork, simulate finished lighting conditions for review of mockups.
  3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Pre-installation Conference: Pre-installation Conference will be conducted at Project site.

**PORTLAND CEMENT PLASTER (STUCCO)**

**1.5 DELIVERY, STORAGE, AND HANDLING**

- A. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

**1.6 PROJECT CONDITIONS**

- A. Comply with ASTM C 926 requirements.
- B. Exterior Plasterwork:
  - 1. Apply and cure plaster to prevent plaster drying out during curing period. Use procedures required by climatic conditions, including moist curing, providing coverings, and providing barriers to deflect sunlight and wind.
  - 2. Apply plaster when ambient temperature is greater than 40 deg F.
  - 3. Protect plaster coats from freezing for not less than 48 hours after set of plaster coat has occurred.

**PART 2 - PRODUCTS****2.1 MANUFACTURERS**

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
  - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
  - 2. Products: Subject to compliance with requirements, provide one of the products specified.
  - 3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
  - 4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

**2.2 METAL LATH**

- A. Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.
  - 1. Manufacturers:
    - a. Alabama Metal Industries Corporation (AMICO).
    - b. California Expanded Metal Products Company (CEMCO).
    - c. Dale/Incor.
    - d. Marino/Ware; Division of Ware Industries, Inc.
    - e. Phillips Manufacturing Co.
    - f. Unimast, Inc.
    - g. Western Metal Lath & Steel Framing Systems.

**PORTLAND CEMENT PLASTER (STUCCO)**

2. Diamond-Mesh Lath: Self-furring.
  - a. Weight: 2.5 lb/sq. yd.
- B. Paper Backing: FS UU-B-790, Type I Grade D, Style 2 vapor-permeable paper.
  1. Provide paper-backed lath unless otherwise indicated at exterior locations.
- C. Building wrap:
  1. Tyvek Stuccowrap installed in accordance with manufacturer's requirements.

### 2.3 ACCESSORIES

- A. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.
- B. Zinc and Zinc-Coated (Galvanized) Accessories:
  1. Manufacturers:
    - a. Alabama Metal Industries Corporation (AMICO).
    - b. California Expanded Metal Products Company (CEMCO).
    - c. Dale/Incor.
    - d. Dietrich Industries, Inc.
    - e. Phillips Manufacturing Co.
    - f. Unimast, Inc.
    - g. Western Metal Lath & Steel Framing Systems.
  2. External-Corner Reinforcement: Fabricated from metal lath with ASTM A653, G60, hot-dip galvanized zinc coating.
- C. Plastic Trim: Fabricated from high-impact PVC.
  1. Manufacturers:
    - a. Alabama Metal Industries Corporation (AMICO).
    - b. Plastic Components, Inc.
    - c. Vinyl Corp.
  2. Cornerbeads: With perforated flanges.
    - a. Small nose cornerbead; use unless otherwise indicated.
    - b. Small nose cornerbead recommended by manufacturer for use where durable corner is required; use on columns and for finishing unit masonry corners.
    - c. Bull nose cornerbead, radius 3/4 inch minimum.
  3. Casing Beads: With perforated flanges in depth required to suit plaster bases indicated and flange length required to suit applications indicated.
    - a. Square-edge style; use unless otherwise indicated.
    - b. Bull-nose style, radius 3/4 inch minimum.

### PORTLAND CEMENT PLASTER (STUCCO)

4. Control Joints: One-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
5. Foundation Weep Screed: High Impact PVC.

## 2.4 MISCELLANEOUS MATERIALS

- A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.
- B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2-inch-long, free of contaminants, manufactured for use in portland cement plaster.
- C. Bonding Compound: ASTM C 932.
- D. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of not fewer than three exposed threads.
- E. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.
- F. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing), produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
  1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- G. Isolation Strip at Exterior Walls:
  1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), unperforated.
  2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8-inch-thick, in width to suit steel stud size.

## 2.5 PLASTER MATERIALS

- A. Portland Cement: ASTM C 150, Type I.
  1. Color for Finish Coats: Gray.
- B. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.
- C. Sand Aggregate: ASTM C 897.
- D. Ready-Mixed Finish-Coat Plaster: Mill-mixed portland cement, aggregates, coloring agents, and proprietary ingredients.
  1. Products:

### PORTLAND CEMENT PLASTER (STUCCO)

- a. Sto Stucco; Factory proportioned, fiber reinforced portland cement based stucco for trowel or pump application
- b. California Stucco Products Corp.; Conventional Portland Cement Stucco.
- c. ChemRex; Thoro Stucco; Conventional Portland Cement Stucco.
- d. Florida Stucco Corp.; Conventional Portland Cement Stucco.
- e. Highland Stucco & Lime Products, Inc.
- f. United States Gypsum Co.; Oriental Exterior Finish Stucco.

## 2.6 PLASTER MIXES

- A. General: Comply with ASTM C 926 for applications indicated.
  1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. ft. of cementitious materials. Reduce aggregate quantities accordingly to maintain workability. .
- B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:
  1. Portland Cement Mixes:
    - a. Scratch Coat: For cementitious material, mix 1 part portland cement and 0 to 3/4 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
    - b. Brown Coat: For cementitious material, mix 1 part portland cement and 0 to 3/4 parts lime. Use 3 to 5 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
- C. Base-Coat Mixes for Use over **Brick and Monolithic Concrete**: Single base coats for two-coat plasterwork as follows:
  1. Portland Cement Mix: For cementitious material, mix 1 part portland cement and 0 to 3/4 part lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
- D. Base-Coat Mixes for Use over **Brick and Concrete Unit Masonry**: Single base coats for two-coat plasterwork as follows:

Job-Mixed Finish-Coat Mixes:

  1. Portland Cement Mix: For cementitious materials, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 1-1/2 to 3 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
- E. Factory-Prepared Finish-Coat Mixes: For ready-mixed finish-coat plasters comply with manufacturer's written instructions.

### PORTLAND CEMENT PLASTER (STUCCO)

**PART 3 - EXECUTION****3.1 EXAMINATION**

- A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.
  - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

**3.2 PREPARATION**

- A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.
- B. Prepare solid-plaster bases that are smooth or that do not have the suction capability required to bond with plaster according to ASTM C 926.
- C. Coordination with Sprayed Fire-Resistive Materials:
  - 1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling runners (tracks) to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24 inches o.c.
  - 2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of plaster assemblies and without reducing the fire-resistive material thickness to less than that required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

**3.3 INSTALLATION, GENERAL**

- A. Fire-Resistance-Rated Assemblies: Install components according to requirements for design designations from listing organization and publication indicated on Drawings.
- B. Sound Attenuation Blankets: Where required, install blankets before installing lath unless blankets are readily installed after lath has been installed on one side.

**3.4 INSTALLING PVC LATH**

- A. PVC Lath: Install according to ASTM D 1784.
  - 1. Partition Framing and Vertical Furring: Install flat diamond-mesh lath.

**3.5 INSTALLING ACCESSORIES**

- A. Install according to ASTM C 1063 and at locations indicated on Drawings.
- B. Reinforcement for External Corners:

**PORTLAND CEMENT PLASTER (STUCCO)**

1. Install lath-type external-corner reinforcement at exterior locations.
  2. Install cornerbead at interior and exterior locations.
- C. Control Joints: Install control joints at locations indicated on Drawings.
1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:
    - a. Vertical Surfaces: 144 sq. ft.
    - b. Horizontal and other Non-vertical Surfaces: 100 sq. ft.
  2. At distances between control joints of not greater than 18 feet o.c.
  3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2.5-1 / 2.5:1.
  4. Where control joints occur in surface of construction directly behind plaster.
  5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.

### 3.6 PLASTER APPLICATION

- A. General: Comply with ASTM C 926.
1. Do not deviate more than plus or minus 1/4 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed on surface.
  2. Grout hollow-metal frames, bases, and similar work occurring in plastered areas, with base-coat plaster material, before lathing where necessary. Except where full grouting is indicated or required for fire-resistance rating, grout at least 6 inches at each jamb anchor.
  3. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground, unless otherwise indicated. Where casing bead does not terminate plaster at metal frame, cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.
  4. Provide plaster surfaces that are ready to receive field-applied finishes indicated.
- B. Bonding Compound: Apply on unit masonry and concrete plaster bases.
- C. Plaster Finish Coats: Apply to provide skip trowel-textured finish to match existing building.

### 3.7 CUTTING AND PATCHING

- A. Cut, patch, replace, and repair plaster as necessary to accommodate other work and to restore cracks, dents, and imperfections. Repair or replace work to eliminate blisters, buckles, crazing and check cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

## PORTLAND CEMENT PLASTER (STUCCO)

3.8 CLEANING AND PROTECTION

- A. Remove temporary protection and enclosure of other work. Promptly remove plaster from all surfaces not indicated to be plastered. Repair roof, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

**Limitations:**

*In the event of a conflict between these specifications and the manufacturer's instructions, recommendations and or warranty, the text of the manufacturer shall govern. The specifier shall be notified in writing of any conflicts therein prior to construction and reserves the right to clarify and modify these specifications.*

END OF SECTION

**Exterior Lath Inspection Checklist**  
Per ASTM C1063

**INSTALLATION**□ Wall Sheathing

- When plywood is used for sheathing, a minimum of 1/8" separation shall be provided between adjoining sheets to allow for expansion (Table 3, Note A).

□ Foundation Weep Screed

- Shall be installed not less than 1" below joint formed by foundation and framing with nose of screed placed not less than 4" above raw earth or 2" above paved surfaces (7.11.15).

□ Control Joints

- Installed where an expansion joint occurs in the base exterior wall (7.11.4.3).
- Installed in walls to delineate areas not more than 144 square feet for walls and 100 square feet for ceilings (7.11.4.1).
- Distance between control joints shall not exceed 18 feet with a length-to-width ratio not exceeding 2½ to 1 (7.11.4.2).
- Flanges secured at no more than 7" intervals (7.11.1.1).
- Casing beads must be used to separate dissimilar materials (7.11.3).
- Control joint separation no less than 1/8" (7.11.4) (Clean control joints to maintain the minimum 1/8" space).

□ Lath

- Shall not be continuous through control joints but must be tied at each side (7.10.1.4).
- Shall be attached to framing members spaced no more than 7" (7.9) (7.10.2.1).
- Paper backing shall lap minimum 2" (7.8.3.1). Metal lath shall lap minimum ½" at sides and 1" at ends with paper to paper and wire to wire (7.8.2) (7.8.3).
- Side laps of metal plaster bases secured to framing member or tied between supports with 0.0475" wire at intervals no more than 9" o.c. (7.8.1).
- Lath applied with long dimension at right angles to supports (7.10.1.2).
- Ends of adjoining plaster bases staggered (7.10.1.3).
- Metal plaster bases shall be attached to masonry or concrete with powder or powder-actuated fasteners or a combination with hardened concrete stub nails. Fasteners must be installed not more than 7" o.c. in vertical rows not more than 16: o.c. with at least one powder-actuated fastener at each corner and at mid-point of each edge in long dimension (7.10.5).

PORTLAND CEMENT PLASTER (STUCCO)

**Exterior Lath Inspection Checklist**  
Per ASTM C1063

**MATERIALS**

- **Expanded Metal Lath** – to meet ASTM C847 (galvanized (2.1))
  - Metal plaster bases shall be furred away from vertical supports or solid surfaces at least ¼". Self-furring lath meets furring requirements; except, furring of expanded metal lath is not required on supports having a bearing surface of 1-5/8" or less (Table 3, Note B). (Paper-backed diamond-mesh flat lath commonly found in construction may not be used when applied over solid wall sheathing.)
  - A self-furring metal plaster base has evenly spaced indentations that hold the body of the lath approximately ¼" away from solid surfaces (3.2.4).
- **Fasteners**
  - Nails – for attaching to wood supports, 0.1205" (11 gauge) diameter, 7/16" head, barbed, galvanized roofing or common nails (6.7.1); not less than ¾" long (6.7.1.1).
  - 1½" roofing nails to horizontal members and 6d common nails or 1" roofing nails to vertical members, or 1" wire staples with crowns not less than ¾" engaging at least three strands of lath. All fasteners to penetrate not less than ¾" to structural members (7.10.2.2).
  - Screws – shall have 7/16" diameter wafer pan head and 0.120" diameter shank. #8 screws for attaching to metal framing shall be self-drilling or self-tapping. Screws for attaching to wood framing shall be sharp-point (6.7.2).
  - Powder-actuated fasteners and hardened concrete stub nails for attaching to concrete masonry must be corrosion resistant and not less than ¾" long with 3/8" head (7.10.5).
- **Framing Members** – Defined as studs, joist, or runner track in wood or light-gauge steel (3.2.5). (This means that structural plywood, OSB, or other sheathing are not framing members).
- **Accessories**
  - Foundation weep screed is an accessory required to terminate Portland cement-based stucco at the bottom of exterior walls. This accessory shall have a sloped, solid, or perforated ground screed flange with a vertical attachment flange not less than 3½" long (6.3.2).

PORTLAND CEMENT PLASTER (STUCCO)

## SECTION 099113

**EXTERIOR PAINTING****PART I - GENERAL****1.0 SUMMARY OF WORK**

- A. The scope of Work to be performed under the terms and conditions of this contract includes: the furnishing of all materials, labor, services, permit fees, supervision, quality control, inspections, testing, scaffolding, mechanical lifts, portable sanitation, dumpsters, and equipment required or incidental to the exterior painting of building(s) and components of the property.
- B. Contractor to remove or protect items not to be finish painted. After completion of painting in each space or area, reinstalled items. Items not to be painted:
1. Unpainted sidewalks
  2. Sign Posts
  3. Pool verandas
  4. Aluminum gates and fencing
  5. Unpainted second floor entry wood decks
  6. Aluminum screen porch frame work
  7. Gable louvers
  8. Vinyl fences
  9. Down Spouts and Gutters
  10. Vinyl portion of soffit only (Plywood covering to be painted)
  11. Factory-painted aluminum
  12. Anodized finishes
  13. Window & SGD frames
  14. Unpainted galvanized metal
  15. Exterior wall mounted lights
  16. Security cameras
  17. Light poles

**1.1 RELATED SECTIONS:**

- A. Section 079200 "Joint Sealants"
- B. Section 092423 "Portland Cement Plaster (Stucco)"

**1.2 INSPECTIONS:**

- A. The Owner reserves the right to have an agent of choice inspect, perform tests, take samples or photographs, and/or review any surface preparation, application technique, or material handling during any stage of the job, and submit verbally and/or in writing his or her observations to the Owner and/or Engineer.
- B. A Representative for the paint manufacturer shall perform inspections of the work during application. The minimum inspections required is two inspections per building elevation with any additional inspections required to warrant the full performance of the coating as applied to the existing substrates. The inspections include: (1) after preparation work is completed and prior to primer application, (2) perform a final top coat inspection. The Representative shall provide a field report for each site visit. Copies of each report shall be submitted to the Owner and the

**EXTERIOR PAINTING**

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Engineer.

- C. After coatings have achieved sufficient cure, the Coatings Manufacturer's Representative or Contactor shall contract or conduct adhesion tests at a minimum of (2) locations at every building or more if required prior to the Contractor proceeding with Work. Adhesion testing shall be either conducted in accordance with ASTM D3359-09e2 "Standard Test Method for Measuring Adhesion by Tape Test or ASTM D4541-09e1 "*Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers*" which ever is recommended by the Manufacturer. Pull testing of the sealants shall also be conducted with the same duration and be conducted in accordance with the attached "*Standard Field Adhesion Test*".

### 1.3 ESTABLISHMENT OF COLORS:

- A. Colors are to Match Existing unless otherwise specified. The exterior wall coating will be applied after priming in one or two separate coats; with the primer and each successive coat to be off - tinted with the final coat to be at 100% tint colorant.

Samples for Verification: Of each color and material (except primers) to be applied, with texture to simulate actual conditions, on 8 ½" by 11" drawdown cards.

Each card should have the following information (preprinted labels):

1. Product number and formula (if custom);
  2. Color name;
  3. Location(s) used;
- B. The Owners should be aware that certain colors, especially those of a pink or blue tone, have a propensity to fade more rapidly than other colors, regardless of the product manufacturer, product type, or substrate to which the product is applied. It is therefore advisable for Owner, and/or person responsible for color selection to consult with the Manufacturer early in the planning stage to see that the most durable combination of tinting colorants is used to achieve the desired color.
- C. Upon request, the Contractor will make available to the Owner and/or Project Coordinator any color selections offered by the Manufacturer. The Owner and/or Project Coordinator will provide chosen color selections to the Owner and Manufacturer for bidding purposes.
- D. Specifications may list paint systems as one and/or two finish coats. Due to certain tinted colors, low hiding colors or radical color changes industry standards may require the addition of more finish coats to achieve a solid and uniform finish.

### 1.4 DELIVERIES:

- A. All sealers, sealants, primers and coatings shall be delivered to the job site in sealed factory containers and shall have proper factory labeling including batch number and color number.
- B. All containers will have manufacturer's instructions as a part of the labeling requirement.

### 1.5 EXTRA MATERIALS

- A. Furnish extra paint materials from the same production run as the materials applied in the quantities described below. Package paint materials in unopened, factory-sealed containers for storage and identify with labels describing contents. Deliver extra materials to the Owner.

1. Quantity: Furnish the Owner with extra paint materials in the quantities indicated below:
  - a. Three five-gallons for (exterior walls)
  - b. One five-gallon (entry doors)

## **PART 2 - PRODUCTS**

### **2.0 APPROVED MANUFACTURERS:**

- A. Scott Paint Company  
7839 Fruitville Road  
Sarasota, FL 34240  
Eric Lawson / 941-809-4801
- B. Sherwin-Williams  
101 W. Prospect Avenue  
Cleveland, OH 44115  
Ted Brase / 941-720-1600
- C. PPG / Porter Paints  
400 South 13<sup>th</sup> Street  
Louisville, KY 40203  
Craig Hazelett / 941-650-1171

### **3.0 WORKMANSHIP AND APPLICATION CONDITIONS**

- A. The Contractor will perform all work using accomplished and skilled craftsmen familiar with and trained to perform the scope of work specified. They will also be qualified to operate and/or use all equipment.
- B. The Contractor will see that all surface preparation and material application is performed in accordance with label directions, product technical data sheets, the written specification contained herein, and standard industry practices. Failure of the paint and/or coating system due to improper surface preparation, application, or material usage or handling is solely the responsibility of the Contractor.
- C. The Contractor will see that all substrates are completely dry and moisture free prior to the application of any and all material. The Contractor will take into consideration the humid climate of Florida during the application process of all work.
- D. The Contractor will see that all material application take place only in dry or unthreatening weather when air, substrate and surface temperature are not below 50° F. Because of possible condensation build-up, due to temperature drops during evening hours, exterior application will cease a minimum of two hours before sunset to allow proper curing.
- E. The Contractor will apply material in accordance with the Manufacturer's approved product data sheet instructions to achieve specified dry film thickness (DFT). The Contractor will apply material at a rate not exceeding that recommended by the Manufacturer for the surface being coated.
- F. The Contractor will apply finish coats in a manner that yields a smooth finish, free of brush marks, streaks, laps or pile-ups of material, skips or holidays.

- G. The Contractor will see that acceptable painting techniques are used for touch-up applications. It is recommended that the same application technique for touch-up be the same as the original application.
- H. The Contractor will see that when applying paint by airless spray to select the proper tip size and fan for the area being painted. Tip size should reflect equipment type and pressure, applicator technique and surface conditions. Adjust pressure for constant and proper atomization. It is recommended that if airless spray is used it will be back rolled/brushed with a wet roller/brush while maintaining a wet edge. This will work the material into pores to help achieved a uniform, solid and pinhole free finish.
- I. The Contractor will be responsible to see, by reasonable and visible confirmation, that all surfaces to be finished are free of defects from substrate and/or previous applicators. Defects that may affect this application finish appearance, which can not be corrected under Section 8.0 General Surface Preparation, should be documented to Owner and/or Project Coordinator prior to application of finish material.
- J. Abutments of edges of different material or color will be a sharp, clean cut off and will not overlap.

#### 4.0 SURFACE PREPARATION

##### I. GENERAL

- A. The overall performance of a paint job is determined by proper product selection, proper surface preparation and proper application. Most importantly, paint and coating film integrity will be reduced because of improperly prepared surfaces. It has been determined that as high as 80% of all paint and coating failures can be directly attributed to inadequate surface preparation. Therefore, it is imperative to see that selection and implementation of proper surface preparation methods and techniques are performed to each and every substrate.
- B. The Contractor is responsible to see that all surfaces and substrates to be primed, sealed, painted, stained, or waterproofed are clean and free of foreign material, dust, dirt, grease, oil, or any substance which may adversely affect the performance of the coating before the application process begins.
- C. The Contractor is responsible for the **complete removal of all mildew spores and organic growth**. Apply a solution of 2/3 cup trisodium phosphate, 1/3 cup detergent (such as "Tide"), and 1 quart of non-ammoniated chlorine with water to make 1 gallon and apply to all affected areas. Allow to remain for 10 to 30 minutes. Using a medium-stiff nylon bristle brush, scrub all affected areas, as needed. Rinse thoroughly to ensure all residues have been removed. Or solution concentration shall be 1 part water to 3 parts chlorine. Work solution into cracks, joints and textured surfaces with clean, stiff-bristle scrub brush. Workers should wear rubber gloves and safety goggles. Avoid skin contact and wash with soap and water when through. Allow the solution to remain on the surface for ten minutes followed by a clean water rinse. NOTE: Special attention must be afforded to the cast and foam elements due to the fact that they may be damaged from too much water pressure directed too closely to the surface. These surfaces must have the mildecide solution applied using a 3-gallon pump-up sprayer with chemical/acid resistant hoses and nozzles. The application of the mildecide solution must be installed as to allow for the solution to reach the depths of the cavities designed in the cast elements.
- D. Remove all staining, mildew, efflorescence, and rust stains as per these specifications and coatings manufacturer's instructions. Special care is to be taken to remove all embedded iron deposits "rust mites" from stucco surfaces.

- E. The Contractor is responsible to see that special attention is given to previously painted chalky surfaces. Thorough pressure cleaning must be performed whenever chalk is present. Regardless of how much chalk is removed, complete coverage of the substrate with a bonding sealer must be performed.
- F. The Contractor is responsible to see that all surfaces to be coated will be pressure cleaned in order to remove of all chalky, blistered, peeling, and cracking paint, dirt, dust, mildew, organic matter, cobwebs, grease, tar, and any foreign matter that may affect the adhesion and performance of the finish coat. Use extreme caution when pressure washing cast and foam elements. Never use a fan size less than 25 degrees and wash perpendicular to the substrate at 18" away from the surface(s). The pressure cleaner is required to have a flow rate of no less than 4 gallons per minute and a minimum pressure for cleaning the following materials:
- 1) Stucco/concrete/masonry substrates – Minimum 2500 psi
  - 2) Metal surfaces – Minimum 3000 psi
  - 3) Wood substrates – 1500 psi
- G. The Contractor is responsible to see that all stucco/plaster/masonry cracks and voids are repaired as per details and specifications. Any deteriorated or failed caulk, sealant and/or patching compounds should be removed before applying primers, block fillers or surface conditioners and prior to reapplying caulk, sealants and/or patching compounds.
- H. The Contractor is responsible to remove all efflorescence. Apply a solution of 1 part muriatic acid to 5 parts water and apply to all affected areas. Using a coarse nylon bristle brush, scrub all affected areas. Allow to remain for 10 to 15 minutes. Rinse thoroughly to ensure all residues have been removed.
- I. The Contractor is responsible to remove all imbedded iron particles (rust mites) from stucco surfaces and repair as specified.
- J. The Contractor is responsible to see that all previously painted glossy surfaces are deglossed with an approved deglosser/degreaser and abraded before the paint application process begins. The edges of remaining old paint should be feathered to give the repainted surface a reasonably smooth appearance.
- K. The Contractor is responsible to see that all surface rust and mill scale is removed in accordance with the Steel Structures Painting Council. This process should be performed to a minimum of SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning unless otherwise noted. See manufacturer's representative for description if necessary.
- L. The Contractor is responsible for notifying the Owner and/or Project Coordinator of all wood that is warped, cracked, water damaged or delaminating is repaired or replaced. Nails should be counter sunk. Nail holes and small cracks should be filled prior to painting.

## II. SEALING CHALK AND EFFLORESCENCE

- A. The Contractor to verify if powder residue on surface is either chalking due to weathering or alkalinity, or efflorescence. Localized powdery spots on cementitious surfaces usually indicate efflorescence or high alkalinity. A few drops of muriatic acid applied to the powdery surface will react to efflorescence by bubbling; no reaction to chalk.
- B. After pressure washing and mildew treatment, the Contractor is to allow surface to dry thoroughly and check several areas of each surface for chalk and efflorescence.
- C. The Contractor is to apply surface conditioner appropriate to degree of chalk remaining, determined as follows: (Chalk ratings are as listed in ASTM 4214-89, Test Method 659.)

### EXTERIOR PAINTING

- a) Light Chalk: #8 on ASTM Photographic Standard.
  - b) Moderate Chalk: #6 on ASTM Photographic Standard.
  - c) Heavy Chalk: #4/2 on the ASTM Photographic Standard.
- D. The Contractor is to apply surface conditioner solution with brush, roller, airless or pressure sprayer. For heavy chalk, work surface conditioner thoroughly into surface with brush.
  - E. The Contractor is to allow the surface to dry according to label directions before proceeding.
  - F. Contractor to recheck for chalk after surface conditioner is dry. Surface conditioner should be applied to obtain a slight angular sheen on the entire surface.
  - G. Contractor to topcoat surface conditioner within 7 days after overnight dry.

### III. FERROUS METAL

- A. The Contractor is responsible after pressure washing, mildew treatment and chloride (salts) removal, to solvent clean the ferrous metals in accordance with the Society of Protective Coatings Standard, SSPC SP-1. Change cleaning rags often. Dispose of all rags in accordance with local, state and EPA regulations.
- B. The Contractor is responsible for removing any existing rust or loose and failed coatings by conscientious hand and power tool cleaning, according to SSPC-SP2. Unless NOT otherwise noted by the manufactures specifications, hand or power sand all existing gloss surfaces in order to promote the adhesion of the specified primer/finish. Remove all sanding residuals.
- C. The Contractor is responsible for completely removing all residue produced by grinding and chipping from the surface and surrounding area prior to any other procedure.
- D. The Contractor is responsible for treating any area that presents difficulty in reaching with the specified rust conversion primer, applied by label direction. Rust must be present for the converter to perform as formulated by converting ferrous oxide (rust) to a stable iron complex.
- E. Contractor to pay particular attention to back-to-back angles, bolt configurations and all welds. "Stripe coat" all welds and allow primer to dry prior to complete prime coat installation.
- F. Contractor to pay attention that the surface temperature must be 5 degrees above critical dew point prior to any coatings application procedure.
- G. The Contractor to prime any bare aluminum.

### IV. ALUMINUM

- A. The Contractor is responsible after pressure washing, mildew treatment and chloride (salts) removal, remaining oxidized or deteriorated aluminum coatings will be removed by power tool sanding.
- B. The Contractor is responsible for lightly sanding to remove existing gloss and ensure primary bond of the coatings system.
- C. The Contractor to remove all sanding residuals. Clean all surfaces to be painted by solvent wiping with approved solvent compatible with specified system and allow drying prior to any other procedure.

- D. The Contractor to prime any bare aluminum.

#### V. GALVANIZED METALS

- A. The Contractor is responsible after pressure washing, mildew treatment and removal of chloride (salts) residue, remaining oxidized or deteriorated coating to remove by power tool sanding or wire brushing.
- B. The Contractor is to lightly sand to remove existing gloss and ensure primary bond of the coatings system.
- C. Contractor is to clean all surfaces to be painted by solvent wiping with approved solvent compatible with specified system and allow to dry prior to any other procedure. Remove all sanding residuals.
- D. Contractor is to prime any bare galvanized metal. Convert any rust – see “Ferrous Metals.”

#### VI. MISCELLANEOUS EQUIPMENT – FIRE BOXES, MECHANICAL/ELECTRICAL BOXES AND PIPING

- A. The Contractor is responsible after pressure washing and mildew treatment, to sand, scrape and wire brush remaining loose paint.
- B. The Contractor to replace rusty fasteners.
- C. The Contractor to prime rust and prime bare metal.

#### 5.0 CONCRETE MASONRY & STUCCO CRACK TREATMENT (SEE SECTION 079200 FOR ADDITIONAL INFORMATION)

- A. Cracks – Up to 1/16”:
  - 1. Apply a detail coat of a brush-grade elastomeric patching compound (smooth or textured) generously working firmly into crack or void.
  - 2. Using a broad knife or a brush, “feather” or stipple the material on each side, reduction in thickness helps conceal the patch and allows the elongation characteristics of the patching compound to work effectively.
  - 3. Allow patching compound to thoroughly cure before top coating.
- B. Cracks – 1/16” to 1/8”:
  - 1. Stucco cracks 1/16” to 1/8” should be raked out with a knife, flushed clean with water, and allowed to dry thoroughly.
  - 2. Seal with surface conditioner/primer.
  - 3. Using a broad knife or a brush, “feather” or stipple the material on each side, thickness of 1/32” at center should be smoothed to 0” over a 2” area. This gradual reduction in thickness helps conceal the patch and allows the elongation characteristics of the patching compound to work effectively.
  - 4. Allow patching compound to thoroughly cure before top coating.

- C. Cracks – 1/8" to 1/4":
1. Stucco cracks 1/8" to 1/4" should be routed larger than 1/4" wide and 1/4" deep to form a V-shape, flushed with water, and allowed to dry thoroughly.
  2. Seal with surface conditioner/primer.
  3. Insert appropriate sized closed cell foam backer rod, if needed.
  4. Apply polyurethane sealant. Gun material firmly into crack (firmly secure backer rod, if used), leaving no pockets.
  5. Allow polyurethane sealant to thoroughly cure.
  6. Allow sealant to dry and coat with knife grade elastomeric patching compound (smooth or textured), thickness should be min. 1/32" W.F.T at center.
  7. Using a broad knife or a brush, "feather" or stipple the material on each side, thickness of 1/32" at center should be smoothed to 0" over a 2" area. This gradual reduction in thickness helps conceal the patch and allows the elongation characteristics of the patching compound to work effectively.
  8. Allow patching compound to thoroughly cure before top coating.
- D. Cracks – 1/4" to 1/2", if any:
1. Saw-cut crack to create joint for backer rod and specified sealant.
  2. Rake-out with knife and clean.
  3. Seal with specified surface conditioner.
  4. Fit with backer rod.
  5. Install sealant.
  6. Allow sealant to dry in accordance with manufacturer's instructions until sealant has cured thoroughly.
  7. Apply specified patching compound or equal over the cured sealant, forming a slight crown over the center of the sealant and maintaining the crown the full length. Feather patching compound into the existing texture 2" on either side of the repair area. Stipple or texture to blend with adjacent surfaces.
  8. Allow drying in accordance with manufacturer's instructions; delay top coating should unexpected weather or surface changes occur, until the patching compound has cured thoroughly.

## 6.0 SEALANTS - GENERAL

- A. Install sealants at all specified transitions of the building's exterior wall envelope to protect from air and moisture infiltration by removing or replacing all failed existing sealants according to SWRI (Sealant Waterproofing Restoration Institute) and ASTM C 1521-13, Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints:
1. Sealants that are in adhesive failure.
  2. Sealants that are in cohesive failure.
  3. Sealants with a loss of sealant properties.
  4. Substrates with cohesive failure with sealants attached.
- B. Install specified sealant at all transitions listed and to all transitions where they have been omitted previously, unless specifically excluded by Owner or Owner's representative in writing. This includes, but is not limited to: door, window and fixture penetrations and perimeters; windowsills,

joints and perimeters of decorative stucco bands, quoins, joints at wall to wall (i.e., inside corners created by changes in direction of joining surfaces); flashing details; control joints and between separating dissimilar materials at expansion joints, etc.; and work provided by others including attachments or intrusions when penetrating exterior coating system (i.e., downspouts, screen enclosures, railings attached to sidewalls, etc.). Sealant installed over existing sealant is strictly forbidden unless accepted by specifiers.

C. Prior to sealant application:

1. Cut old sealant with a caulk cutter only using caution not to damage the substrate and brush clean all residuals. **Bridging/band-application over any existing sealants is unacceptable unless previously tested for adhesion.** Dispose of all cleaning residuals/old sealant, etc. in accordance with all local and state EPA/city/county requirements.
2. Seal stucco with surface conditioner and allow to dry.
3. Fit with backer rod or bond breaker (where necessary to control maximum depth of ½" and/or to prevent three (3) sided adhesion.
4. Solvent wipe all surfaces to be caulked to remove any substance that may adversely affect the performance of the sealant before the application process begins. Thoroughly caulk all joints, seams, miters, voids, top and bottom of bands, corners and junctures where any masonry and non-masonry surfaces meet.

- D. Install specified sealant. Sealant must be installed according to the manufacturer's directions. All sealant must be installed to maintain the proper width to depth ratio. All sealant will maintain a minimum of ½" width and have a minimum of ¼" intimate contact with the prepared substrate(s).

**7.0 NEW MASONRY/STUCCO SUBSTRATES – (BETTER min. 7 year system)**

**Pretreatment:** Contractor to test pH level of new stucco prior to installing primer coat. pH level of 9 or less is required.

**Material (Primer): Off Tinted, Must Achieve Angular Sheen When Dry – To Full Opacity**

1. Scott #405 – 100% Acrylic Stucco Primer
2. Sherwin Williams A24W00100 - Loxon Masonry Primer
3. Porter #4-809 – Perma-Crete Acrylic Sealer

**Application (Primer): One Coat** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Over a thoroughly cleaned surface, apply one coat of Primer to all surfaces receiving finish materials as per manufacturer's specifications.
2. Apply at a spread rate as per manufacturer's specifications to achieve a minimum dry film per manufacturer and until a solid and uniform "angular sheen" is achieved.

**Material (Finish):**

1. Scott #420 – Ultra 100% Acrylic Velvet Supercoat
2. Sherwin Williams A89W01151– Super Paint Exterior Acrylic Latex Satin
3. Porter #769 – Permanizer Acrylic Exterior Coating – (Note: 10 year system)

**Application (Finish): One/Two Coat per mfg.** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Apply one coat of manufacturer's top line 100% Acrylic at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply by brush, roller or spray application. Maintain a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum of eight hours curing time before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty requirement of a min. (7) year paint warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

8.0 NEW PAINTED CONCRETE MASONRY/STUCCO SUBSTRATES – (BEST - 10 year system)**Material (Primer): Off Tinted, Must Achieve Angular Sheen When Dry**

1. Scott #405 – Ultra 100% Acrylic Stucco Primer
2. Sherwin Williams A24W00100 - Loxon Masonry Primer
3. Porter #4-809 – Perma-Crete Acrylic Sealer

**Application (Primer): One Coat** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Over a thoroughly cleaned surface, apply one coat of Primer to all surfaces receiving finish materials as per manufacturer's specifications.
2. Apply at a spread rate as per manufacturer's specifications to achieve a minimum dry film per manufacturer and until a solid and uniform "angular sheen" is achieved.

**Material (Finish):**

1. Scott #8000 – MMAX-10 High Performance Protective Coating
2. Sherwin Williams K33W00151– Duration Coating Exterior Latex Satin (ASTM D6904-3 System)
3. Porter #4-22 – Perma-Crete High Build Acrylic Coating

**Application (Finish): One/Two Coat per mfg.** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Apply one coat of manufacturer's top line 100% Acrylic at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply by brush, roller or spray application. Maintain a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum of eight hours curing time before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty requirement of a min. (10) year paint warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

9.0 PREVIOUSLY PAINTED CONCRETE MASONRY/STUCCO SUBSTRATES – (BEST - 10 year system)**Material (Primer): Off Tinted, Must Achieve Angular Sheen When Dry**

1. Scott #690 – Aquaseak Latex Surface Conditioner Clear
2. Sherwin Williams A24W00100 - Loxon Masonry Conditioner
3. Porter #4-809 – Perma-Crete Acrylic Sealer

**Application (Primer): One Coat (Apply wet and dry mil thickness per Manufacturer Specifications UNO)**

1. Over a thoroughly cleaned surface, apply one coat of Primer to all surfaces receiving finish materials as per manufacturer's specifications.
2. Apply at a spread rate as per manufacturer's specifications to achieve a minimum dry film per manufacturer and until a solid and uniform "angular sheen" is achieved.

**Material (Finish):**

4. Scott #8000 – MMAX-10 High Performance Protective Coating
5. Sherwin Williams K33W00151– Duration Coating Exterior Latex Satin (ASTM D6904-3 System)
6. Porter #4-22 – Perma-Crete High Build Acrylic Coating

**Application (Finish): One/Two Coat per mfg. (Apply wet and dry mil thickness per Manufacturer Specifications UNO)**

1. Apply one coat of manufacturer's top line 100% Acrylic at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply by brush, roller or spray application. Maintain a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum of eight hours curing time before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty requirement of a min. (10) year paint warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

10.0 UNIT ENTRY DOORS**Note:**

Follow procedures under Section 4.0 Surface Preparation to prep and repair all areas as needed. Weather seal strips shall be removed and re-installed prior to painting. The Contractor is responsible to see that all surface rust and mill scale is removed in accordance with the Steel Structures Painting Council. This process should be performed to a minimum of SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning. See manufacturers' representative for description if necessary

**Material (Spot Primer Coat):** (Apply per Manufacturer Specifications)

1. Scott #435 – Allgrip Acrylic Semi-Gloss
2. Sherwin Williams – Loxon

**Application (Spot Primer Coat):** (Apply wet & dry mil thickness per Manufacturer Specifications UNO)

1. All surfaces to be coated shall be clean, dry, and free of dust, dirt, grease, oil, and other foreign contaminants and Solvent Wipe Prior to and after.
2. All surfaces to be coated shall be prepared in accordance with manufactures SSPC preparation requirements UNO. Flaking or otherwise damage areas must be scraped back to sound coatings and the perimeter feathered smooth.
3. Over a thoroughly cleaned surface, apply one coat of Primer to all surfaces receiving finish materials as per manufacturer's specifications.
4. Apply at a spread rate as per manufacturer's specifications to achieve a minimum dry film per manufacturer and until a solid and uniform "angular sheen" is achieved

**Material (Primer Coat):** (Apply per Manufacturer Specifications)

1. Scott #931 – Allgrip Acrylic Semi-Gloss
2. Sherwin Williams Loxon

**Application (Primer Coat): One Coat** (Apply wet & dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Material (Finish): One Coat** (Apply per Manufacturer Specifications)

1. Scott #435 – Allgrip Acrylic Semi-Gloss
2. Sherwin Williams K33W00151– Duration Coating Exterior Latex Satin

**Application (Finish): One Coat per mfg.** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

11.0 NON-FERROUS PATIO HANDRAILS AND STAIRWELLS STEEL FRAMES AND HANDRAILS**Note:**

Follow procedures under Section 4.0 Surface Preparation to prep and repair all areas as needed. The Contractor is responsible to see that all surface rust and mill scale is removed in accordance with the Steel Structures Painting Council. This process should be performed to a minimum of SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning. See manufacturers' representative for description if necessary

**Material (Primer Coat):** (Apply per Manufacturer Specifications)

1. Scott #7500 – Scott Thane Acrylic Urethane Enamel
2. Sherwin Williams – Loxon
3. Porter/ PPG – Durethane DTM Urethane Mastic Primer # 95-3300 Series

**Application (Primer Coat): One Coat** (Apply wet & dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Material (Finish): One Coat** (Apply per Manufacturer Specifications)

1. Scott #7500 – Scott-Thane Acrylic Urethane Enamel
2. Sherwin Williams B66W00311 Sher-Cryl HPA High Performance Acrylic Gloss Coating
3. Porter/ PPG – Durethane DTM Urethane Mastic Finish # 95-3300 Series

**Application (Finish): One Coat per mfg.** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

12.0 GALVANIZED METAL SURFACE (PAINTED)**Note:**

Follow procedures under Section 4.0 Surface Preparation to prep and repair all areas as needed. The Contractor is responsible to see that all surface rust and mill scale is removed in accordance with the Steel Structures Painting Council. This process should be performed to a minimum of SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning. See manufacturers' representative for description if necessary

**Material (Primer Coat):** (Apply per Manufacturer Specifications)

1. Scott # #692 - Aquaseal Latex Surface Conditioner
2. Sherwin Williams A24W00100 - Loxon Conditioner Guide-Coat
3. Porter/PPG - Pit-Tech DTM Acrylic Metal Primer #90-712 series

**Application (Primer Coat): One Coat** (Apply wet & dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Material (Finish): One Coat** (Apply per Manufacturer Specifications)

1. Scott #435-445 All-Grip Acrylic
2. Sherwin Williams K33W00151 Duration Coating Exterior Latex
3. Porter/PPG - Pitt-Tech DTM Semi-Gloss Enamel #90-1210 Series

**Application (Finish): One Coat per mfg.** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

13.0 GALVANIZED METAL SURFACE (UNPAINTED)**Note:**

Follow procedures under Section 4.0 Surface Preparation to prep and repair all areas as needed. The Contractor is responsible to see that all surface rust and mill scale is removed in accordance with the Steel Structures Painting Council. This process should be performed to a minimum of SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning. See manufacturers' representative for description if necessary

**Material (Primer Coat):** (Apply per Manufacturer Specifications)

1. Scott # #692 - Aquaseal Latex Surface Conditioner
2. Sherwin Williams - K33W00151 Duration Coating Exterior Latex
3. Porter/ PPG – Speed-Hide Galvanized Metal Primer #6-209 Series

**Application (Primer Coat): One Coat** (Apply wet & dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Material (Finish): One Coat** (Apply per Manufacturer Specifications)

1. Scott #435-445 All-Grip Acrylic
2. Sherwin Williams K33W00151 Duration Coating Exterior Latex
3. Porter/PPG – Acri-Shield 100% Acrylic

**Application (Finish): One Coat per mfg.** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

14.0 WOOD TIMBERS: TRIM AROUND DOORS, FASCIA, SOFFIT, PATIO AND DECKS HEADER BEAMS  
WOOD CEDILNGS, MAILBOX KIOSKS (WOOD AREAS) ETC.**Note:**

Follow procedures under Section 4.0 Surface Preparation to prep and repair all areas as needed. The Contractor is responsible to see that all surface rust and mill scale is removed in accordance with the Steel Structures Painting Council. This process should be performed to a minimum of SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning. See manufacturers' representative for description if necessary

**Material (Primer Coat):** (Apply per Manufacturer Specifications)

1. Scott #690 – Aquaseal Latex Surface Conditioner
2. Sherwin Williams A24W00100 - Loxon Conditioner
3. Porter/PPG - #515 Acri-Shield Acrylic Wood Bonding Primer (Acrylic) *OR* Seal-Grip Alkyd Primer #17-941 series (Oil)

**Application (Primer Coat): One Coat** (Apply wet & dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Material (Finish): One Coat** (Apply per Manufacturer Specifications)

1. Scott #420 or #8000 – Ultra 100% Acrylic Supercoat or MMAX 10 High Performance Protective Coating
2. Sherwin Williams K33W00151 Duration Coating Exterior Latex
3. Porter/PPG – Acri-Shield 100% Acrylic

**Application (Finish): One Coat per mfg.** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.

5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

15.0 STAIRWELL FLOORS, LANDINGS, AND STEPS (PAINTED)**Note:**

Follow procedures under Section 4.0 Surface Preparation to prep and repair all areas as needed. The Contractor is responsible to see that all surface rust and mill scale is removed in accordance with the Steel Structures Painting Council. This process should be performed to a minimum of SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning. See manufacturers' representative for description if necessary

**Material (Primer Coat):** (Apply per Manufacturer Specifications)

1. Scott - #700-709 – Silicone Acrylic Concrete Sealer Series
2. Sherwin Williams – Armor Seal Tread-Plex
3. Porter/PPG – ColorSeal "Xylene" Based #3249 OR ColorSeal WB / Water-Based #4-4210

**Application (Primer Coat): One Coat** (Apply wet & dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Material (Finish): One Coat** (Apply per Manufacturer Specifications)

1. Scott - #700-709 – Silicone Acrylic Concrete Sealer Series
2. Sherwin Williams – Armor Seal Tread-Plex
3. Porter/PPG – ColorSeal "Xylene" Based #3249 OR ColorSeal WB / Water-Based #4-4210

**Application (Finish): One Coat per mfg.** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

**16.0 METAL FLASHING, ELECTRICAL BOXES, GABLE VENT TRIM & DRYER VENTS, VERIZON CONDUIT ATTACHED TO BUILDING ETC.:****Note:**

Follow procedures under Section 4.0 Surface Preparation to prep and repair all areas as needed. The Contractor is responsible to see that all surface rust and mill scale is removed in accordance with the Steel Structures Painting Council. This process should be performed to a minimum of SSPC-SP-2, Hand Tool Cleaning or SSPC-SP-3, Power Tool Cleaning. See manufacturers' representative for description if necessary

**Material (Primer Coat):** (Apply per Manufacturer Specifications)

1. Scott #690 – Aquaseal Latex Surface Conditioner
2. Sherwin Williams A24W00100 Loxon Conditioner
3. Porter – PPG/Porter 95-245 Pitt-Guard Direct-to-Rust Epoxy Mastic Coating

**Application (Primer Coat): One Coat** (Apply wet & dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.
5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Material (Finish): One Coat** (Apply per Manufacturer Specifications)

1. Scott #8000 – MMAX 10 High Performance Protective Coating
2. Sherwin Williams K33W00151 Duration Coating Exterior Latex
3. Porter – PPG/Porter #739 Acri-Shield

**Application (Finish): One Coat per mfg.** (Apply wet and dry mil thickness per Manufacturer Specifications UNO)

1. Apply coating at a spread rate per manufacturer's specifications to achieve a minimum dry film and until a solid and uniform finish is achieved. It is the intent of this specification that the chosen finish coat to achieve a minimum of dry-film thickness as per manufacturer when installed.
2. Apply coating by manufactures requirements, while maintaining a wet edge. Apply at such a rate as to avoid runs and sags.
3. If airless spray is used on porous surfaces, back roll/brush all surfaces with a wet roller/brush. Work material into pores until a solid (pinhole free) finish is achieved.
4. Allow a minimum curing time as recommended by the manufacture before recoating.

5. Apply second coat if recommended by manufacturer or as otherwise noted to achieve the specified warranty.

**Note:**

Specification may list paint systems as one and/or two finish coat, due to certain tinted colors, low hiding colors or radical color changes, industry standards may require the addition of more finish coats.

**Limitations:**

*In the event of a conflict between these specifications and the manufacturer's instructions, recommendations, and/or warranty, the text of the manufacturer shall govern. The specifier shall be notified in writing of any conflicts therein prior to construction and reserves the right to clarify and modify these specifications.*

END OF SECTION

**CONFORMANCE SUBMITTAL**  
**Section 099113 – Exterior Painting**

\_\_\_\_\_ of

\_\_\_\_\_  
*(City, State)*

General Contractor: \_\_\_\_\_  
*(Company Name)*

\_\_\_\_\_  
*(Address, Phone Number)*

Sub-Contractor: \_\_\_\_\_  
*(Company Name)*

\_\_\_\_\_  
*(Address, Phone Number)*

The following product has been selected (check one box) for use in this project from the list of acceptable products specified:

Scott Paint Company: \_\_\_\_\_

Sherwin Williams: \_\_\_\_\_

PPG/ Porter Paints: \_\_\_\_\_

I represent to the Owner that the product selected will be installed in compliance with the applicable codes for the authorities having jurisdiction and in accordance with the project specification. If noncompliance is discovered the General Contractor shall make or cause to be made all necessary corrections to meet the applicable codes and specifications. Immediately or as directed by the Owner the work shall be completed without additional cost to the Owner and/or the contract.

General Contractor: \_\_\_\_\_  
*(Signature of the Authorized Agent of the General Contractor)*

\_\_\_\_\_  
*(Print Name of the Authorized Agent of the General Contractor)*

I represent to the Owner that the product selected will be installed in compliance with the applicable codes for the authorities having jurisdiction and in accordance with the project specification. If noncompliance is discovered the General Contractor shall make or cause to be made all Global Financial Advisory necessary corrections to meet the applicable codes and specifications. Immediately or as directed by the Owner the work shall be completed without additional cost to the Owner and/or the contract.

Sub-Contractor: \_\_\_\_\_  
*(Signature of the Authorized Agent of the Sub-Contractor)*

\_\_\_\_\_  
*(Print Name of the Authorized Agent of the General Contractor)*

## SECTION 313116

**TERMITE CONTROL****PART 1 - GENERAL****1.1 SUMMARY**

- A. Provide spot treatment of lumber for drywood termite control.

**1.2 SUBMITTALS**

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Warranty: Submit manufacturer's standard warranty. Include labor and materials to repair or replace defective materials.
  - 1. Warranty Period: As per manufacturer's warranty.

**1.3 QUALITY ASSURANCE**

- A. Comply with governing codes and regulations. Provide products of acceptable manufacturers that 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.

**PART 2 – PRODUCTS****2.1 MATERIALS**

- A. Treatment Materials: Treatment materials shall bear Federal registration number of U.S. Environmental Protection Agency and must be acceptable to authorities having jurisdiction. If acceptable, products may include chloropyrifos, permethrin, cypermethrine, fenvalerate and isofenphos.
- B. Product to be provided shall be "BORA-CARE". See attached data sheet.
- C. Amount: Per manufacturer's recommendations: *BORA-CARE* shall be applied to exposed wood to the point of wetness to all infested and susceptible wood. Two coats of solution need only be applied to those wood members with only one or two sides exposed. For quicker control apply an additional coat to heavily infested areas waiting at least 20 minutes between applications.
- D. Solution Mixing: Per manufacturer's recommendations: (Note: Solution shall be used immediately and not stored.)
- E. Foam Mixing: Per manufacturer's recommendations: Can be applied to bare wood surfaces and void areas as a foam by mixing two parts water with one part BORA-CARE (2:1) and adding 3 to 8 ounces of foaming agent per gallon of mixed solution. Apply foam being sure to completely fill the void. Foam will take approximately one hour to return to liquid state and soak into bare wood.

**PART 3 – EXECUTION****3.1 INSTALLATION & APPLICATION**

- A. Solutions or foam should be applied evenly to wood using a medium to coarse spray at low pressures (20-30psi). Application rate is 1 gallon per 200 square feet of wood surface area. Ensure all wood surfaces are thoroughly wetted. Wood absorbs Tim-bor at different rates. Surfaces that absorb solution rapidly can be resprayed immediately.
- B. All accessible bare wood surfaces should be spray-treated including: sill plates, top plates, wall studs, ledgers, joists, plywood sheathing, etc. Application should be performed after cedar siding, fiberboard sheathing and underlayment have been removed. Treatment per manufacturer's specifications.
- C. When accessible, drill and inject solution or dust directly into galleries and spray or foam all accessible wood surfaces. See manufacturer's recommendations on injecting and dusting applications.
- D. Pressure treated lumber should be treated when cut at a construction site because typical wood preservatives do not penetrate some wood species effectively. Spray, brush or dip the end-cuts over a plastic drop clothe to collect any runoff. Spray or brush generously until the wood will accept no more solution. Alternatively, dip each end-cut for about 5 minutes.
- E. Avoid spraying any electrical component. Protect treated wood from excessive rain.
- F. All new lumber shall be pre-treated with "Timbor" prior to installation.
- G. Treat lumber and interior space in strict compliance with National Pest Control Association standards and with manufacturer's printed instructions and recommendations. All treatments are to be performed by licensed pest control technicians.
- H. Treatment and methods should comply with manufacturer's recommendations per attached data sheet.
- I. Post signs and other warnings indicating that soil treatment has been applied. Protect persons and property from injury or damage from treatment work.

***Limitations:***

*In the event of a conflict between these specifications and the manufacturer's instructions, recommendations, and/or warranty, the text of the manufacturer shall govern. The specifier shall be notified in writing of any conflicts therein prior to construction and reserves the right to clarify and modify these specifications.*

END OF SECTION

**APPENDIX A**  
**DRAWINGS**

## **APPENDIX B**

### **NOAs**



DEPARTMENT OF REGULATORY AND ECONOMIC RESOURCES (RER)  
BOARD AND CODE ADMINISTRATION DIVISION

**NOTICE OF ACCEPTANCE (NOA)**

MIAMI-DADE COUNTY  
PRODUCT CONTROL SECTION  
11805 SW 26 Street, Room 208  
T (786) 315-2590 F (786) 315-2599  
[www.miamidade.gov/economy](http://www.miamidade.gov/economy)

PGT Industries, Inc.  
1070 Technology Drive  
North Venice, FL 34275

**SCOPE:**

This NOA is being issued under the applicable rules and regulations governing the use of construction materials. The documentation submitted has been reviewed and accepted by Miami-Dade County RER - Product Control Section to be used in Miami Dade County and other areas where allowed by the Authority Having Jurisdiction (AHJ).

This NOA shall not be valid after the expiration date stated below. The Miami-Dade County Product Control Section (In Miami-Dade County) and/or the AHJ (in areas other than Miami-Dade County) reserve the right to have this product or material tested for quality assurance purposes. If this product or material fails to perform in the accepted manner, the manufacturer will incur the expense of such testing and the AHJ may immediately revoke, modify, or suspend the use of such product or material within their jurisdiction. RER reserves the right to revoke this acceptance, if it is determined by Miami-Dade County Product Control Section that this product or material fails to meet the requirements of the applicable building code.

This product is approved as described herein, and has been designed to comply with the Florida Building Code, including the High Velocity Hurricane Zone.-

**DESCRIPTION: Series "SH-700" Aluminum Single Hung Window - L.M.I.**

**APPROVAL DOCUMENT:** Drawing No. 4040-20, titled "Alum. Single Hung Window, Impact", sheets 1 through 11 of 11, dated 09/01/05, with revision F dated 05/05/16, prepared by manufacturer, signed and sealed by Anthony Lynn Miller, P.E., bearing the Miami-Dade County Product Control Revision stamp with the Notice of Acceptance number and expiration date by the Miami-Dade County Product Control Section.

**MISSILE IMPACT RATING: Large and Small Missile Impact Resistant.**

**LABELING:** Each unit shall bear a permanent label with the manufacturer's name or logo, city, state, model/series, and following statement: "Miami-Dade County Product Control Approved", unless otherwise noted herein.

**RENEWAL** of this NOA shall be considered after a renewal application has been filed and there has been no change in the applicable building code negatively affecting the performance of this product.

**TERMINATION** of this NOA will occur after the expiration date or if there has been a revision or change in the materials, use, and/or manufacture of the product or process. Misuse of this NOA as an endorsement of any product, for sales, advertising or any other purposes shall automatically terminate this NOA. Failure to comply with any section of this NOA shall be cause for termination and removal of NOA.

**ADVERTISEMENT:** The NOA number preceded by the words Miami-Dade County, Florida, and followed by the expiration date may be displayed in advertising literature. If any portion of the NOA is displayed, then it shall be done in its entirety.

**INSPECTION:** A copy of this entire NOA shall be provided to the user by the manufacturer or its distributors and shall be available for inspection at the job site at the request of the Building Official.

This NOA revises NOA# 15-0519.08 and consists of this page 1 and evidence pages E-1, E-2 and E-3, as well as approval document mentioned above.

The submitted documentation was reviewed by Manuel Perez, P.E.



*MP*  
8/12/16

NOA No. 16-0714.06  
Expiration Date: March 26, 2021  
Approval Date: August 18, 2016

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

**A. DRAWINGS**

1. Manufacturer's die drawings and sections.  
*(Submitted under NOA No. 05-1018.01 and 07-0322.06)*
2. Drawing No 4040-20, titled "Alum. Single Hung Window, Impact", sheets 1 through 11 of 11, dated 09/01/05, with revision F dated 05/15/16, prepared by manufacturer, signed and sealed by Anthony Lynn Miller, P.E.

**B. TESTS**

1. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC, TAS 202-94  
2) Large Missile Impact Test per FBC, TAS 201-94  
3) Cyclic Wind Pressure Loading per FBC, TAS 203-94  
along with marked-up drawings and installation diagram of a PVC sliding glass door, a PVC fixed window and an aluminum sliding glass door, using: Kodispace 4SG TPS spacer system, Duraseal® spacer system, Super Spacer® NXT™ spacer system and XL Edge™ spacer system at insulated glass, prepared by Fenestration Testing Laboratory, Inc., Test Reports No. FTL-8717, FTL-8968 and FTL-8970, dated 11/16/15, 06/07/16 and 06/02/16 respectively, all signed and sealed by Idalmis Ortega, P.E.
2. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94  
2) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94  
3) Water Resistance Test, per FBC, TAS 202-94  
4) Large Missile Impact Test per FBC, TAS 201-94  
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94  
6) Forced Entry Test, per FBC 2411.3.2.1, TAS 202-94  
along with marked-up drawings and installation diagram of an aluminum single hung window, with fin frame, prepared by Fenestration Testing Laboratory, Inc., Test Report No. FTL-4957, dated 10/03/06, signed and sealed by Edmundo Largaespada, P.E.  
*(Submitted under NOA No.07-0322.06)*
3. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94  
2) Large Missile Impact Test per FBC, TAS 201-94  
3) Cyclic Wind Pressure Loading per FBC, TAS 203-94  
along with marked-up drawings and installation diagram of an aluminum single hung window, with fin frame, prepared by Fenestration Testing Laboratory, Inc., Test Reports No. FTL-4958 and FTL-5063, dated 10/03/06 and 11/21/06, both signed and sealed by Edmundo Largaespada, P.E.  
*(Submitted under NOA No.07-0322.06)*

  
Manuel Perez, P.E.  
Product Control Examiner

NOA No. 16-0714.06  
Expiration Date: March 26, 2021  
Approval Date: August 18, 2016

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

**B. TESTS (CONTINUED)**

4. Test reports on: 1) Large Missile Impact Test per FBC, TAS 201-94  
2) Cyclic Wind Pressure Loading per FBC, TAS 203-94  
along with marked-up drawings and installation diagram of an aluminum single hung window, with fin frame, prepared by Fenestration Testing Laboratory, Inc., Test Report No. FTL-4645, dated 08/11/05, signed and sealed by Edmundo Largaespada, P.E.  
*(Submitted under NOA No. 07-0322.06)*
5. Test reports on: 1) Large Missile Impact Test per FBC, TAS 201-94  
2) Cyclic Wind Pressure Loading per FBC, TAS 203-94  
along with marked-up drawings and installation diagram of an aluminum single hung window, with fin frame, prepared by Fenestration Testing Laboratory, Inc., Test Reports No. FTL-4649 and FTL-4723, dated 10/05/05 and 08/11/05, both signed and sealed by Edmundo Largaespada, P.E.  
*(Submitted under NOA No. 05-1018.01)*
6. Test reports on: 1) Air Infiltration Test, per FBC, TAS 202-94  
2) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94  
3) Water Resistance Test, per FBC, TAS 202-94  
..4) Small Missile Impact Test per FBC, TAS 201-94  
5) Cyclic Wind Pressure Loading per FBC, TAS 203-94  
6) Forced Entry Test, per FBC 2411.3.2.1, TAS 202-94  
along with marked-up drawings and installation diagram of an aluminum single hung window, with fin frame, prepared by Fenestration Testing Laboratory, Inc., Test Reports No. FTL-4947 and FTL-4650, dated 08/11/05, both signed and sealed by Edmundo Largaespada, P.E.  
*(Submitted under NOA No.05-1018.01)*
7. Test reports on: 1) Uniform Static Air Pressure Test, Loading per FBC TAS 202-94  
..2) Large Missile Impact Test per FBC, TAS 201-94  
3) Cyclic Wind Pressure Loading per FBC, TAS 203-94  
along with marked-up drawings and installation diagram of an aluminum single hung window, with fin frame, prepared by Fenestration Testing Laboratory, Inc., Test Reports No. FTL-4948 and FTL-4646, dated 08/10/05, both signed and sealed by Edmundo Largaespada, P.E.  
*(Submitted under NOA No.05-1018.01)*

  
Manuel Perez, P.E.  
Product Control Examiner  
NOA No. 16-0714.06

Expiration Date: March 26, 2021  
Approval Date: August 18, 2016

NOTICE OF ACCEPTANCE: EVIDENCE SUBMITTED

**C. CALCULATIONS**

1. Anchor verification calculations and structural analysis, complying with **FBC-5<sup>th</sup> Edition (2014)**, dated 05/12/15, prepared by manufacturer, signed and sealed by Anthony Lynn Miller, P.E.  
*(Submitted under previous NOA No. 15-0519.08)*
2. Glazing complies with **ASTM E1300-09**

**D. QUALITY ASSURANCE**

1. Miami-Dade Department of Regulatory and Economic Resources (RER).

**E. MATERIAL CERTIFICATIONS**

1. Notice of Acceptance No. **14-0423.17** issued to **Eastman Chemical Company (MA)** for their "**Saflex Clear and Color Glass Interlayers**" dated 06/19/14, expiring on 05/21/16.
2. Notice of Acceptance No. **14-0916.10** issued to **Kuraray America, Inc.** for their "**Kuraray Butacite® PVB Glass Interlayer**" dated 04/25/15, expiring on 12/11/16.

**F. STATEMENTS**

1. Statement letter of conformance, complying with **FBC-5<sup>th</sup> Edition (2014)**, dated May 16, 2015, issued by manufacturer, signed and sealed by A. Lynn Miller, P.E.  
*(Submitted under previous NOA No. 15-0519.08)*
2. Statement letter of no financial interest, dated May 16, 2015, issued by manufacturer, signed and sealed by A. Lynn Miller, P.E.  
*(Submitted under previous NOA No. 15-0519.08)*
3. Laboratory compliance letter for Test Reports No. **FTL-4957, FTL-4958 and FTL-5063**, issued by Fenestration Testing Laboratory, Inc., dated 10/03/06, signed and sealed by Edmundo Largaespada, P.E.  
*(Submitted under NOA No. 07-0322.06)*
4. Laboratory compliance letter for Test Reports No. **FTL-4649, FTL-4723, FTL-4947, FTL-4650, FTL- 4948 and FTL-4646**, issued by Fenestration Testing Laboratory, Inc., dated 08/10/05, signed and sealed by Edmundo Largaespada, P.E.  
*(Submitted under NOA No. 05-1018.01)*
5. Proposal No. **16-0125** issued by the Product Control Section, dated March 09, 2016, signed by Ishaq Chanda, P.E.

**G. OTHERS**

1. Notice of Acceptance No. **15-0519.08**, issued to PGT Industries for their Series "**SH-700**" Aluminum Single Hung Window - L.M.I., approved on 07/09/15 and expiring on 03/26/21.

  
Manuel Perez, P.E.  
Product Control Examiner  
NOA No. 16-0714.06

Expiration Date: March 26, 2021  
Approval Date: August 18, 2016

**GENERAL NOTES: IMPACT SINGLE HUNG FLANGED AND INTEGRAL FIN WINDOWS**

STANDARDS USED:  
 \*2014 FLORIDA BUILDING CODE (FBC), 6TH EDITION  
 \*ASTM E1900-06  
 \*ANSI/CPA 105-2012 FOR WOOD CONSTRUCTION  
 \*ALUMINUM DESIGN MANUAL, ADM-2010  
 \*AISIS100-07/82-2010

1. GLAZING OPTIONS: (SEE DETAILS ON SHEET 2)

- A. 5/16" LAMI CONSISTING OF (2) LITES OF 1/8" ANNEALED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- B. 5/16" LAMI CONSISTING OF (1) LITE OF 1/8" ANNEALED GLASS AND (1) LITE OF 1/8" HEAT STRENGTHENED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- C. 5/16" LAMI CONSISTING OF (2) LITES OF 1/8" HEAT STRENGTHENED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- D. 7/16" LAMI CONSISTING OF (2) LITES OF 3/16" ANNEALED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- E. 7/16" LAMI CONSISTING OF (1) LITE OF 3/16" ANNEALED GLASS AND (1) LITE OF 3/16" HEAT STRENGTHENED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- F. 7/16" LAMI CONSISTING OF (2) LITES OF 3/16" HEAT STRENGTHENED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- G. 13/16" LAMI IG: (1) LITE OF 1/8" TEMPERED GLASS, AN AIR SPACE AND 5/16" LAMI CONSISTING OF (2) LITES OF 1/8" ANNEALED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- H. 13/16" LAMI IG: (1) LITE OF 1/8" TEMPERED GLASS, AN AIR SPACE AND 5/16" LAMI CONSISTING OF (1) LITE OF 1/8" ANNEALED GLASS AND (1) LITE OF 1/8" HEAT STRENGTHENED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- I. 13/16" LAMI IG: (1) LITE OF 1/8" TEMPERED GLASS, AN AIR SPACE AND 5/16" LAMI CONSISTING OF (2) LITES OF 1/8" HEAT STRENGTHENED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- J. 13/16" LAMI IG: (1) LITE OF 1/8" TEMPERED GLASS, AN AIR SPACE AND 7/16" LAMI CONSISTING OF (2) LITES OF 3/16" ANNEALED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- K. 13/16" LAMI IG: (1) LITE OF 1/8" TEMPERED GLASS, AN AIR SPACE AND 7/16" LAMI CONSISTING OF (1) LITE OF 3/16" ANNEALED GLASS AND (1) LITE OF 3/16" HEAT STRENGTHENED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- L. 13/16" LAMI IG: (1) LITE OF 1/8" TEMPERED GLASS, AN AIR SPACE AND 7/16" LAMI CONSISTING OF (2) LITES OF 3/16" HEAT STRENGTHENED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)
- M. 13/16" LAMI IG: (1) LITE OF 1/8" ANNEALED GLASS, AN AIR SPACE AND 5/16" LAMI CONSISTING OF (2) LITES OF 1/8" ANNEALED GLASS WITH A .090" KURARAY BUTACITE® PVB (BY KURARAY AMERICA, INC.) OR .090" SAFLEX® PVB INTERLAYER (BY EASTMAN CHEMICAL COMPANY)

2. CONFIGURATIONS: 'OX' (1/1, VIEW AND RADIUS TOP, ALL W/ LOW OR HIGH SILL OPTION)

3. DESIGN PRESSURES: (SEE TABLES, SHEETS 3)

A. NEGATIVE DESIGN LOADS BASED ON TESTED PRESSURE AND GLASS TABLES ASTM E 1300.

B. POSITIVE DESIGN LOADS BASED ON WATER TEST PRESSURE AND GLASS TABLES ASTM E 1300.

4. ANCHORAGE: THE 33 1/3% STRESS INCREASE HAS NOT BEEN USED IN THE DESIGN OF THIS PRODUCT. SEE SHEETS 8 THROUGH 11 FOR ANCHORAGE DETAILS.

5. SHUTTERS ARE NOT REQUIRED.

6. FRAME AND PANEL CORNERS SEALED WITH NARROW JOINT SEALANT OR GASKET.

7. REFERENCES: TEST REPORTS FTL-4645, FTL-4646, FTL-4647, FTL-4648, FTL-4649, FTL-4650, FTL-4651, FTL-4723, FTL-4857, FTL-4958 AND FTL-5063.

ANSI/WAF&PA STANDARDS FOR WOOD CONSTRUCTION  
 ALUMINUM DESIGN MANUAL

8. SERIES/MODEL DESIGNATION SH700, ALSO REFERRED TO AS SH701.

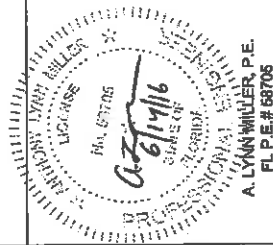
9. THIS PRODUCT HAS BEEN DESIGNED & TESTED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, INCLUDING THE HIGH VELOCITY HURRICANE ZONE (HVHZ).

10. FOR INSULATED GLASS INSTALLATIONS IN THE HVHZ ABOVE 30 FT, ONLY GLAZING OPTIONS WITH TEMPERED CAPS (G-L) ARE ALLOWED.

**NOA DRAWING MAP**

GENERAL NOTES	SHEET
GLAZING DETAILS	1
DESIGN PRESSURES	2
ELEVATIONS	3
VERT. SECTIONS	4
HORIZ. SECTIONS	5
PARTS LIST	6
EXTRUSIONS	7
CORNER DETAIL	7
ANCHORAGE	8-11

PRODUCT REVISED  
 as complying with the Florida  
 Building Code  
 Acceptance No. **IC-0714-06**  
 Expiration Date **12/31/16, DD21**  
 By **M. P. ...**  
 Miami Design Product Control



Revised By	Date	Revised By	Date	Revised By	Date	Revised By	Date
F.K.	8/1/06	J.J.	2/23/07				

1670 TECHNOLOGY DRIVE N. VENICE, FL 33576 P.O. BOX 1529 NOKOMIS, FL 32674	<b>PGI</b> Vastly Better	General Notes ALUM. SINGLE HUNG WINDOW, IMPACT
--	-----------------------------	---

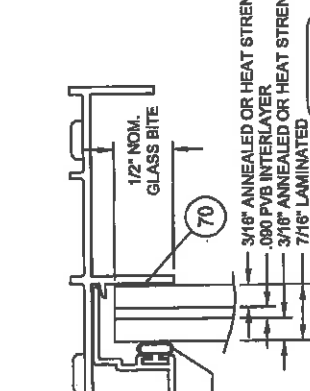
  

Quantity	Unit	Price	Total
1	ea	4040.20	4040.20

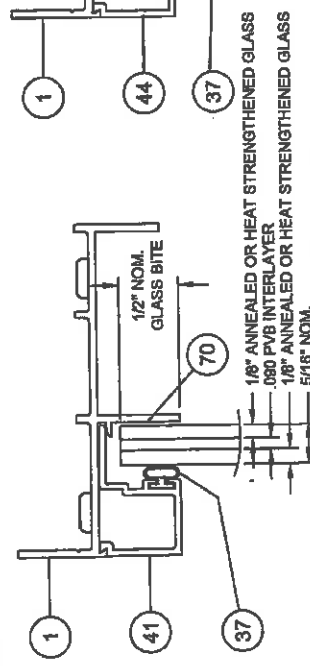
Part #	Description	Material
71	Kommerling 4SG TPS Spacer System	See this Sheet for Materials
72	Quanex Super Spacer nXT with Hot Melt Butyl	
73	Quanex Duraseal Spacer	
74	Cardinal XL Edge Spacer	

REFERENCE TEST REPORTS: FTL-8717, 8868 & 8870

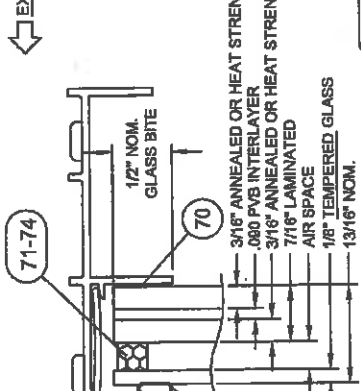
**NOTE:**  
LAMI IG OUTBOARD LITES MAY BE UPGRADED TO 3/16" WITH NO CHANGE IN DESIGN PRESSURE.



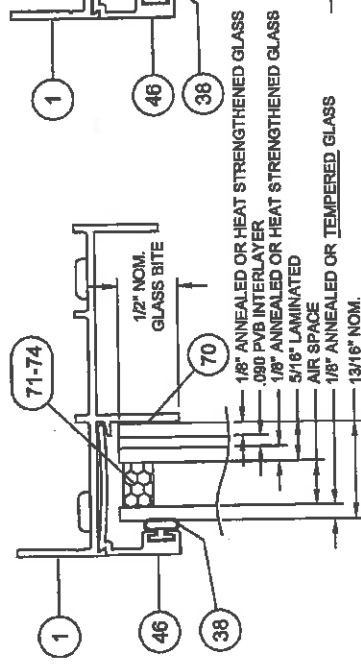
5/16" LAMINATED GLASS (80,81 or 82)



7/16" LAMINATED GLASS (83,84 or 85)

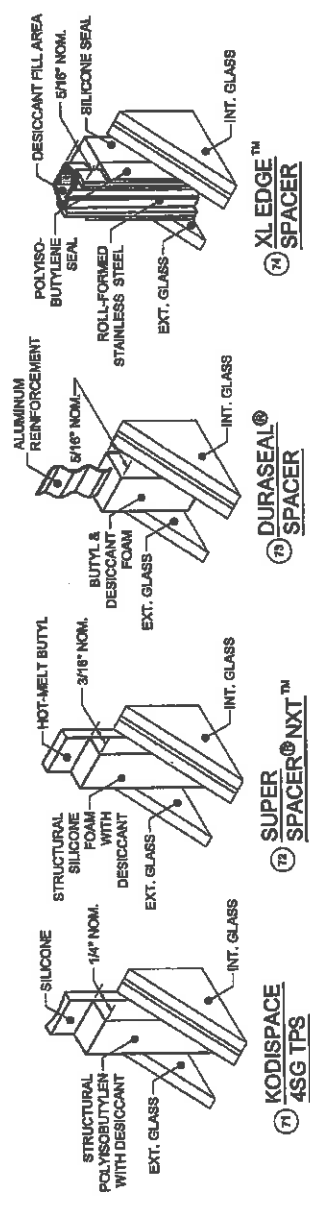


13/16" LAMI IG GLASS W/ 7/16" LAMI (89,90 or 91)



13/16" LAMI IG GLASS W/ 5/16" LAMI (86,87,88 or 92)

"PVB" =  
KURARAY BUTACITE®  
PVB INTERLAYER  
OR  
SAFLEX® PVB INTERLAYER BY  
EASTMAN CHEMICAL COMPANY



PRODUCT REVISED  
in compliance with the Florida  
Building Code  
Acceptance No. 16-0714-06  
Expiration Date 12/31/2021  
By: *Michael B. B...*  
Miami Trade Product Control



Model No. 08108716 Rev. 01/08 Date 2/23/07	Manufacturer F Add'l Spacers F	Description <b>GLAZING DETAILS</b> <b>ALUM. SINGLE HUNG WINDOW, IMPACT</b>	Part # Full 2 of 11 Rev. 4040-20 F
IUTL TECHNOLOGY DRIVE N. VENICE, FL 33579 P.O. BOX 1929 NONKOMIS, FL 34274			

**TABLE 1.**  
1/1" FLANGE OR INTEGRAL FIN WINDOWS W/ HIGH SILL OPTION  
BASED ON FLANGED WINDOW TIP-TO-TIP FRAME DIMENSIONS

WIDTH	GLASS TYPE	WINDOW HEIGHT													
		63"	65"	68"	70"	72"	74"	76"	78"	80"	82"				
48"	A,B,M	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0
60"	A,B,M	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0
62"	A,B,M	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0
63 1/8"	A,B,M	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0
UP TO 63 1/8"	C,D,E,F,G,H,I,J,K,L	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0

**TABLE 2.**  
STANDARD VIEW & RADIUS TOP FLANGE OR INTEGRAL FIN WINDOWS W/ HIGH SILL OPTION  
BASED ON FLANGED WINDOW TIP-TO-TIP FRAME DIMENSIONS

WIDTH	GLASS TYPE	WINDOW HEIGHT													
		38 3/8"	44"	50 9/8"	63"	72"	74"	76"	78"	80"	82"				
48"	A,B,M	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0
60"	A,B,M	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0
62"	A,B,M	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0
63 1/8"	A,B,M	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0
UP TO 63 1/8"	C,D,E,F,G,H,I,J,K,L	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0

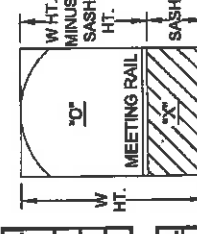
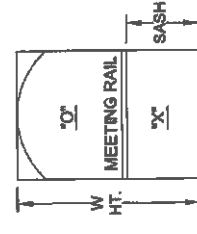
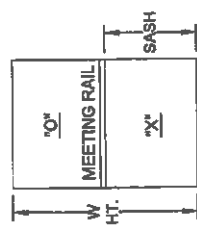
**TABLE 3.**  
CUSTOM VIEW & RADIUS TOP FLANGE OR INTEGRAL FIN WINDOWS W/ HIGH SILL OPTION  
BASED ON FLANGED WINDOW TIP-TO-TIP FRAME DIMENSIONS

WIDTH	GLASS TYPE	WINDOW HEIGHT MINUS SASH HEIGHT (MAX. WINDOW HT. W/ SASH = 78" FLANGED AND 76" INTEGRAL FIN)													
		17 1/8"	22 11/16"	28 3/16"	33 3/4"	39 5/16"	44 13/16"	50 3/8"	55 15/16"	60 1/2"	65 1/2"				
63 1/8"	D,E,F,J,K,L	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0	+80.0	-80.0

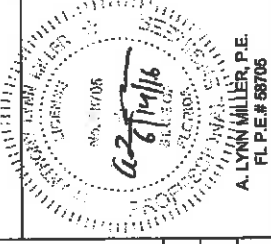
**TABLE 4.**  
GLASS TYPES:

GLASS TYPE	TEST REPORTS
A. 5/16" LAMI - (1/8" A, .090, 1/8" A)	FTL-4647, 4648, 4723, 4657
B. 5/16" LAMI - (1/8" A, .090, 1/8" HS)	FTL-4647, 4648
C. 5/16" LAMI - (1/8" HS, .090, 1/8" HS)	FTL-4647, 4648
D. 7/16" LAMI - (3/16" A, .090, 3/16" A)	FTL-4645, 4685
E. 7/16" LAMI - (3/16" A, .090, 3/16" HS)	FTL-4645
F. 7/16" LAMI - (3/16" HS, .090, 3/16" HS)	FTL-4645
G. 13/16" LAMI IG - 1/8" T, AIR SPACE, 5/16" LAMI - (1/8" A, .090, 1/8" A)	FTL-4646, 4723
H. 13/16" LAMI IG - 1/8" T, AIR SPACE, 5/16" LAMI - (1/8" A, .090, 1/8" HS)	FTL-4646
I. 13/16" LAMI IG - 1/8" T, AIR SPACE, 5/16" LAMI - (1/8" HS, .090, 1/8" HS)	FTL-4646
J. 13/16" LAMI IG - 1/8" T, AIR SPACE, 7/16" LAMI - (3/16" A, .090, 3/16" A)	FTL-4649, 4650
K. 13/16" LAMI IG - 1/8" T, AIR SPACE, 7/16" LAMI - (3/16" HS, .090, 3/16" HS)	FTL-4649, 4650, 4658
L. 13/16" LAMI IG - 1/8" T, AIR SPACE, 7/16" LAMI - (3/16" HS, .090, 3/16" HS)	FTL-4649, 4650
M. 13/16" LAMI IG - 1/8" A, AIR SPACE, 5/16" LAMI - (1/8" A, .090, 1/8" A)	FTL-5063

**NOTES:** 1. WINDOWS WITH THE LOW SILL OPTION ARE LIMITED TO A POSITIVE DESIGN PRESSURE OF +64.0 PSF OR LOWER AS SHOWN IN THE TABLES. NEGATIVE DESIGN PRESSURES ARE UNEXPECTED.  
2. FOR INTEGRAL FIN WINDOW DESIGN PRESSURES USE THE ABOVE TABLES BY DEDUCTING 1" FROM THE FLANGED TIP-TO-TIP FRAME DIMENSIONS.  
3. AVAILABLE SASH HEIGHTS FOR CUSTOM WINDOWS ARE 12 5/8" MINIMUM TO 38" MAXIMUM.  
4. GLASS TYPES C, G, H, AND I MAY BE USED IN SASH ONLY

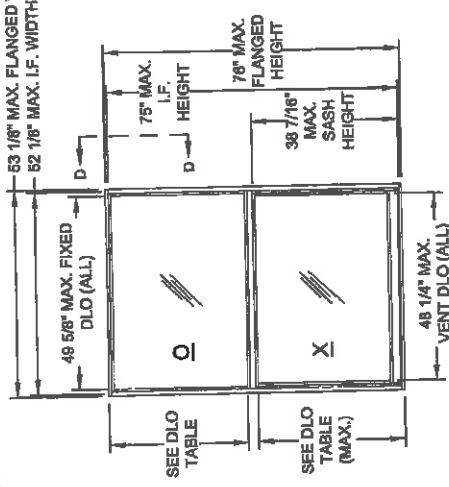


PRODUCT REVISED  
as complying with the Florida  
Building Code  
Acceptance No. 16-0714-CZ  
Expiration Date 12/31/2021  
By: *Submittal*  
Miami Trade Product Control

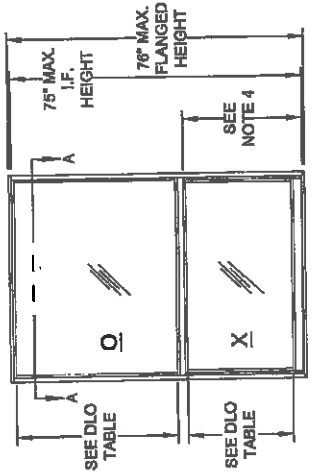


Revised By:	Date:	Revision:	1070 TECHNOLOGY DRIVE FT. WENDELL, FL 32276
Revised By:	Date:	Revision:	P.O. BOX 1020 NOKOMIS, FL 32274
Revised By:	Date:	Revision:	
Checked By:	Date:	Revision:	
Drawn By:	Date:	Revision:	
Scale:	1/8" = 1'-0"	Sheet No.:	2/23/07
Project No.:	4040-20	Quantity:	3 of 11
Product No.:	4040-20	Material:	NTS
Manufacturer:	PGI	Finish:	Brushed Aluminum
Product Name:	ALUM. SINGLE HUNG WINDOW, IMPACT	Finish:	Brushed Aluminum
Manufacturer:	PGI	Finish:	Brushed Aluminum
Manufacturer:	PGI	Finish:	Brushed Aluminum

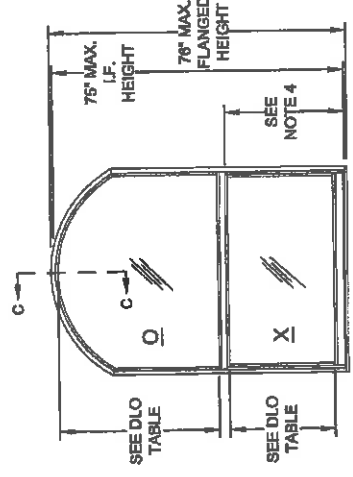
53 1/8" MAX. FLANGED WIDTH  
52 1/8" MAX. I.F. WIDTH



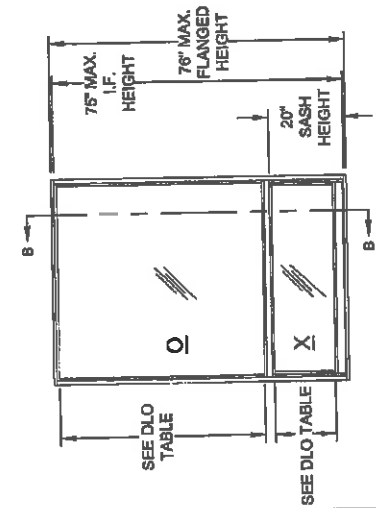
DETAIL A  
1/1



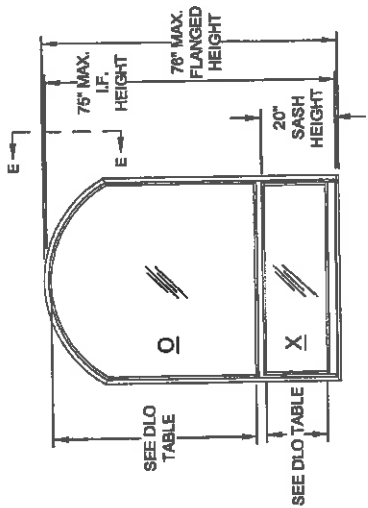
DETAIL B  
VIEW (STANDARD SASH)



DETAIL C  
RADIUS TOP (STANDARD SASH)



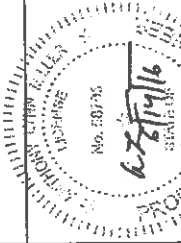
DETAIL D  
VIEW (CUSTOM SASH)



DETAIL E  
RADIUS TOP (CUSTOM SASH)

- NOTES:**
1. SEE SHEET 6 FOR VERTICAL AND HORIZONTAL SECTION DETAILS.
  2. SEE SHEET 7 FOR CORNER DETAIL VIEWS.
  3. SEE SHEETS 8 THROUGH 11 FOR ANCHORAGE INFORMATION.
  4. SASH HEIGHTS FOR STANDARD SASH WINDOWS (DETAILS B & C) ARE BASED ON A THREE OVER TWO FORMAT.

PRODUCT REVISED  
as complying with the Florida  
Building Code  
Adopting the  
Requirements of  
16-0714.06  
Effective Date 12/28/2021  
By: *[Signature]*  
Miami Price Fixing Counsel



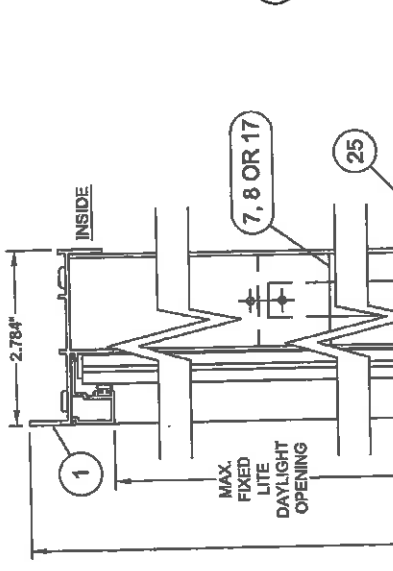
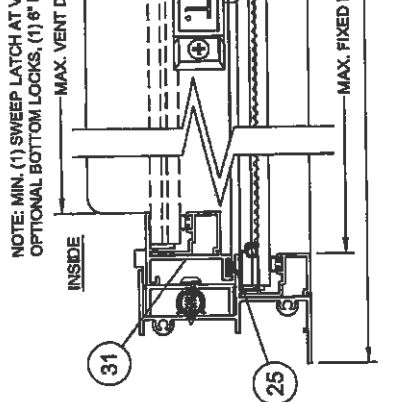
A. LYNN MILLER, P.E.  
FL P.E.# 58705

Prepared by: <i>[Blank]</i> Checked by: <i>[Blank]</i> Drawn by: <i>[Blank]</i> Title: <i>[Blank]</i>	1070 TECHNOLOGY DRIVE FT. WENDELL, FL 34275 P.O. BOX 1628 NOKOMIS, FL 34274	ELEVATIONS <b>PGT</b> Visibly Better	Product: <b>ALUM. SINGLE HUNG WINDOW, IMPACT</b> Part No: 89720 Scale: NTS Date: 4 of 11 Drawing No: 4040-20 Rev: F
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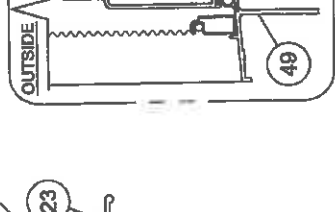
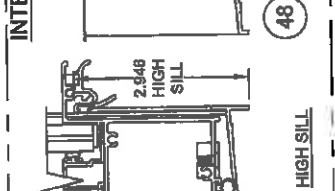
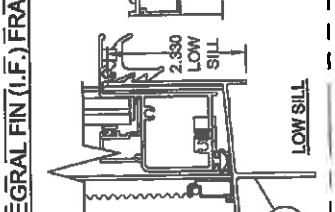
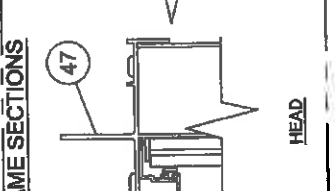
NOTE: BALANCE PARTS USED BASED ON SASH WEIGHT  
 9, 10, 11, 15, 16

NOTE: MIN. (1) SWEEP LATCH AT VENT CENTERLINE OR OPTIONAL BOTTOM LOCKS, (1) 6" FROM EACH SIDE OF SASH.  
 MAX. VENT DAYLIGHT OPENING  
 26 27

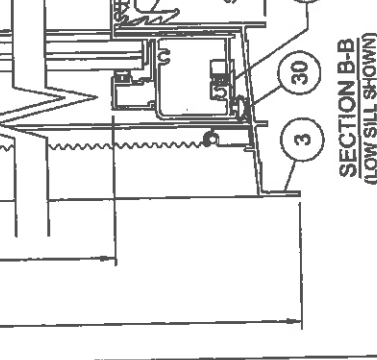
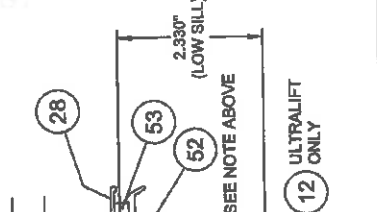
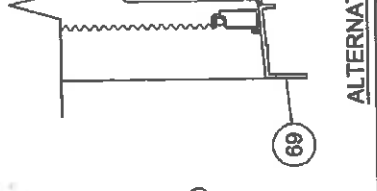
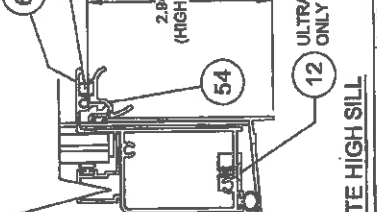
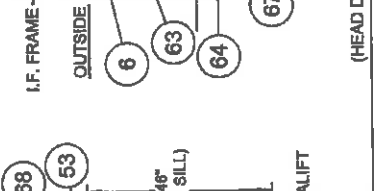
INSIDE  
 MAX. FIXED LITE DAYLIGHT OPENING  
 MAX. WIDTH  
 SECTION A-A



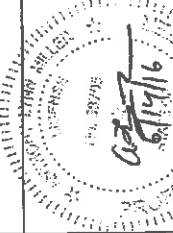
INSIDE  
 INTEGRAL FIN (I.F.) FRAME SECTIONS  
 JAMB OUTSIDE



INSIDE  
 I.F. FRAME  
 OUTSIDE  
 SECTION C-C  
 RADIUS TOP  
 (HEAD DETAIL - FLANGED VERSION)



PRODUCT REVISED as complying with the Florida Building Code 16-0714.06  
 Acceptance No. 16-0714.06  
 Registration Date: 10/26/2016  
 By: *M. Miller*  
 Licensed Professional Engineer



A. LYNN MILLER, P.E.  
 FL. P.E. # 58705

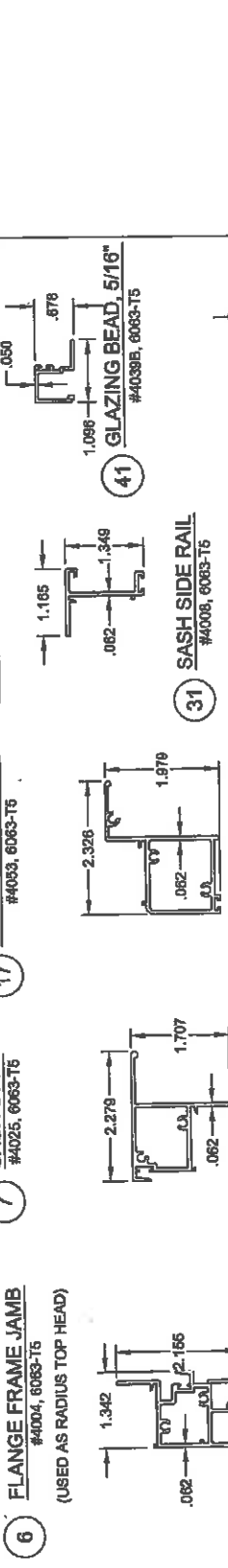
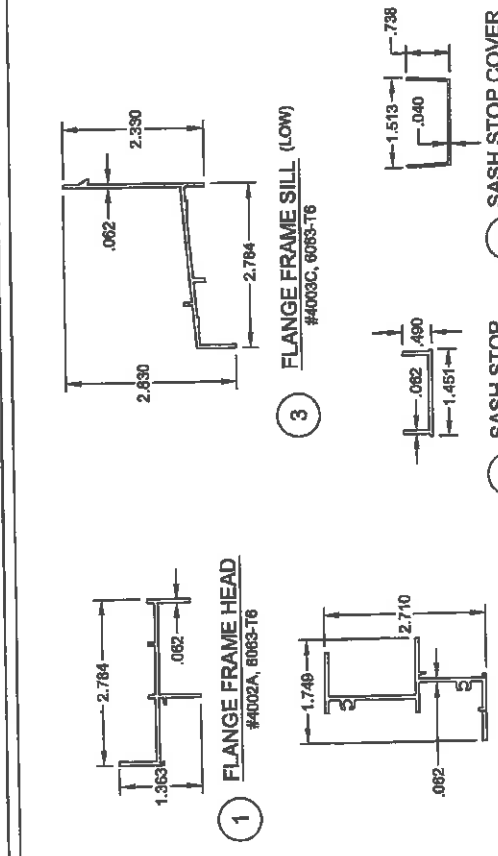
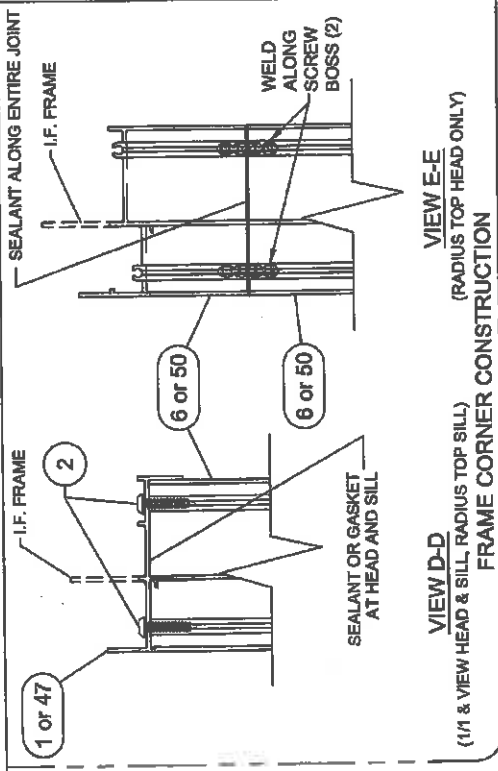
Model No.	517709	Series	5	of	11	Part No.	4040-20	Rev.	F
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**PGI**  
 Vandalia Baster

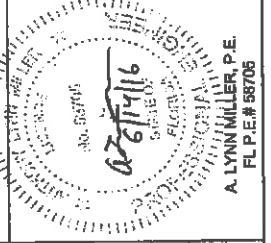
1070 TECHNOLOGY DRIVE  
 N. VENICE, FL 33575  
 P.O. BOX 1620  
 NOKOMIS, FL 34744

Drawn By:	Checked:	Reviewed:	Approved:	Date:
F.A.C.	B.Y./06	J.J.	2/23/07	





PRODUCT REVISED  
 as complying with the Florida  
 Building Code  
 Acceptance No. 16-C-714-06  
 Expiration Date 12/31/2021  
 By: *M. Miller*  
 Micrometric Product Control



<b>PGI</b> Visibly Better		1070 TECHNOLOGY DRIVE N. VENICE, FL 34276 P.O. BOX 1629 NOKOMIS, FL 34274	
Formed By: Date: _____ Revised By: Date: _____ Checked By: Date: _____ F.K. 8/1/05 J.J. 2/23/07	Drawing No: 617700 Part: 7 of 11 Title: ALUM. SINGLE HUNG WINDOW, IMPACT	Drawing No: 4040-20 Title: EXTRUSIONS & FRAME CORNER DETAIL	Date: F





**ANCHORAGE NOTES:**

- ANCHOR TYPES: 1 - 1/4" ELCO TAPCONS  
2 - 1/4" ELCO SS4 CRETE-FLEX  
3 - #12 SCREWS
- ANCHOR LOCATIONS ARE BASED ON THE FOLLOWING DIMENSIONS:  
HEAD - 18 1/2" MAX. FROM CORNERS  
JAMBS - 17 1/2" MAX. FROM TOP CORNERS  
11 1/2" MAX. ABOVE THE MEETING RAIL  
6" MAX. BELOW MTG. RAIL  
15" MAX. FROM BOTTOM CORNERS
- SILL - ANCHORS NOT REQUIRED  
DETERMINE THE ANCHOR QUANTITIES FOR CUSTOM VIEW WINDOWS FROM TABLES 7, AND 8, USING THE DIMENSIONAL CRITERIA OF NOTE 2. USE TABLE 7 FOR ABOVE THE MEETING RAIL AND TABLE 8 FOR BELOW.
- AVAILABLE SASH HEIGHTS FOR CUSTOM VIEW WINDOWS ARE 12 5/8" MIN. TO 38" MAX.
- TABLE WIDTH AND HEIGHT DIMENSION ARE FOR FLANGED WINDOWS. INTEGRAL FIN DIMENSIONS ARE 1" LESS.
- DESIGN PRESSURE LIMITATIONS:  
SIZE BLOCKS OF THE ADJACENT TABLE WITH A BOLD ITALICIZED VALUE ABOVE THEM, INDICATE A MAXIMUM DESIGN PRESSURE WITH THE QUANTITY OF ANCHORS SHOWN IN BOLD. OTHERWISE, THE MAXIMUM DESIGN PRESSURE FOR THE RESPECTIVE SIZE AND GLASS TYPE IS AVAILABLE.

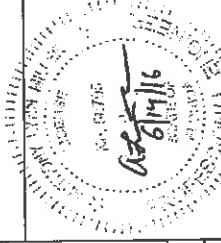
**TABLE 7. KEY:**

MAX. PSF (DP LIMITED)	112
HEAD	2
JAMB ABOVE	2
MTG. RAIL	

**TABLE 8. KEY:**

MAX. PSF (DP LIMITED)	112
JAMB BELOW	2
MTG. RAIL	

PRODUCT REVISED as complying with the Florida Building Code Acceptance No. 16-074-06 Issuance Date 02/13/2021  
By: *[Signature]*  
William Dale Proctor, Cabinet



**ANCHOR QUANTITIES ABOVE MEETING RAIL (HEAD & JAMBS), CUSTOM FLANGED WINDOW HEIGHT MINUS SASH HEIGHT TABLE 7.**

SUBSTRATE: ANCHOR TYPE: WINDOW GLASS WIDTH	WINDOW HEIGHT MINUS SASH HEIGHT FROM TABLE 8.											
	17.125	22.868	28.211	33.754	39.298	44.839	50.382	55.925				
18.125	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
24.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
32.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
37.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
40.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
44.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
48.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
53.125	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				

**ANCHOR QUANTITIES AT JAMBS BELOW MEETING RAIL, CUSTOM FLANGED WINDOWS BASED ON SASH HT. TABLE 8.**

SUBSTRATE: ANCHOR TYPE: WINDOW WIDTH	SASH HEIGHT											
	12.776	15.776	18.776	21.776	24.776	27.776	30.776	31.108				
18.125	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
24.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
32.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
37.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
40.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
44.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
48.000	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				
53.125	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1				

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Phone: \_\_\_\_\_  
 Fax: \_\_\_\_\_  
 E-Mail: \_\_\_\_\_  
 Date: 7/29/05  
 Checked By: J.J.  
 Drawn By: 2/23/07

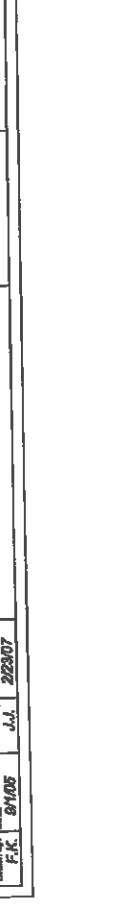
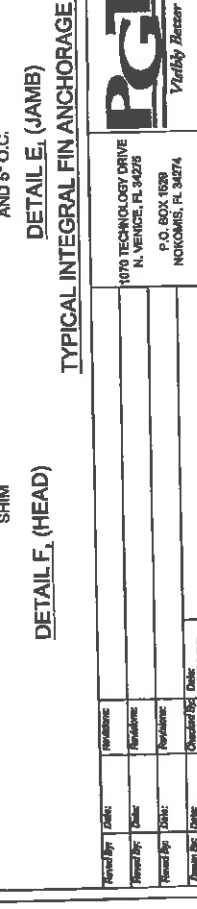
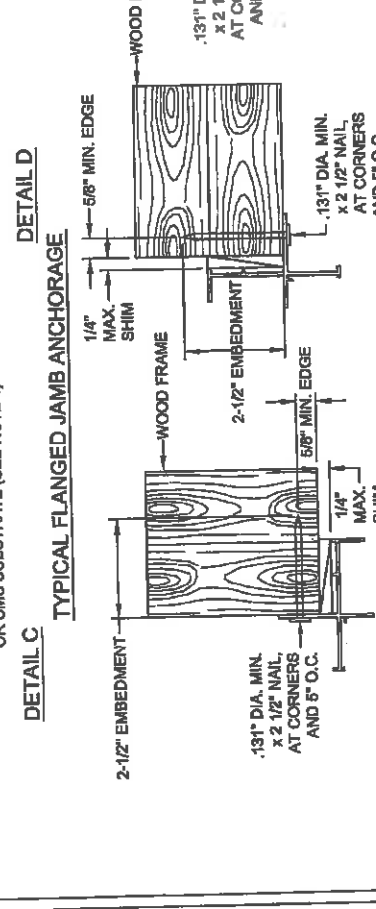
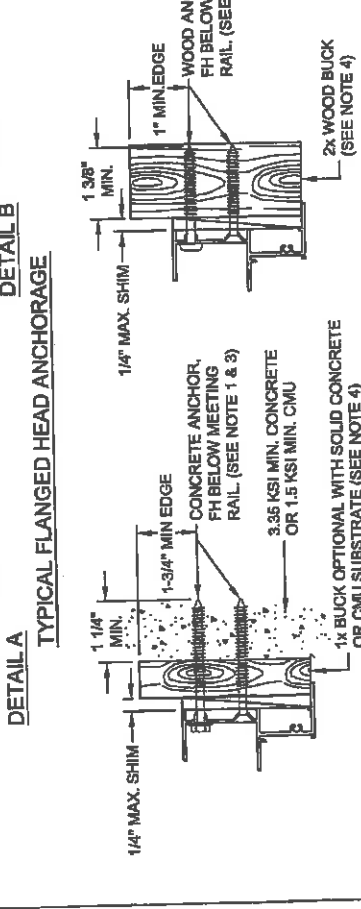
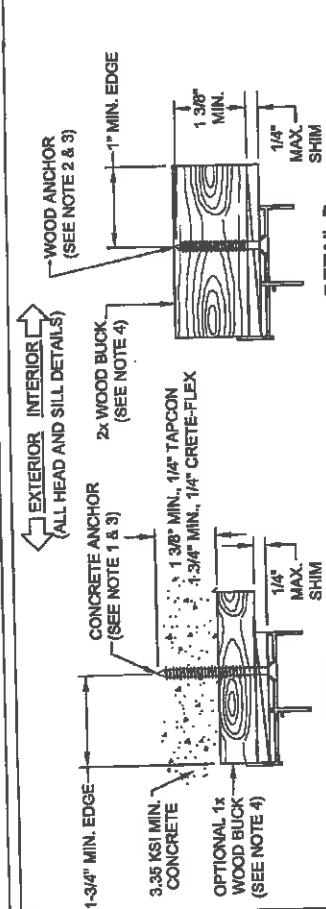
1070 TECHNOLOGY DRIVE  
 N. VENICE, FL 34675  
 P.O. BOX 629  
 NOKOMES, FL 34274

**PGI**  
 Viable Better

Description:  
**ANCHORAGE SPACING, CUSTOM VIEW**  
 The  
**ALUM. SINGLE HUNG WINDOW, IMPACT**

Scale: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Project No: 4040-20  
 Rev: F

- NOTES:**
- FOR CONCRETE APPLICATIONS IN MIAMI-DADE COUNTY, USE ONLY MIAMI-DADE COUNTY APPROVED 1/4" ELCO TAPCONS OR 1/4" SS4 CRETE-FLEX. MINIMUM DISTANCE FROM ANCHOR TO CONCRETE EDGE IS 1 3/4".
  - FOR WOOD APPLICATIONS IN MIAMI-DADE COUNTY, USE #12 STEEL SCREWS (35) OR 1/4" SS4 CRETE-FLEX.
  - FLAT HEAD ANCHORS, WHERE REQUIRED, MUST HAVE #12 TRIMFIT HEADS.
  - WOOD BUCKS DEPICTED IN THE SECTIONS ON THIS PAGE AS 1x ARE BUCKS WHOSE TOTAL THICKNESS IS LESS THAN 1 1/2". 1x WOOD BUCKS ARE OPTIONAL IF UNIT CAN BE INSTALLED DIRECTLY TO SOLID CONCRETE OR CMU. WOOD BUCKS DEPICTED AS 2x ARE 1 1/2" THICK OR GREATER. INSTALLATION TO THE SUBSTRATE OF WOOD BUCKS TO BE ENGINEERED BY OTHERS OR AS APPROVED BY AUTHORITY HAVING JURISDICTION.
  - FOR ATTACHMENT TO ALUMINUM: THE MATERIAL SHALL BE A MINIMUM STRENGTH OF 6083-T5 AND A MINIMUM OF 1/8" THICK. THE ALUMINUM STRUCTURAL MEMBER SHALL BE OF A SIZE TO PROVIDE FULL SUPPORT TO THE WINDOW FRAME. THE ANCHOR SHALL BE A #12 SHEET METAL SCREW WITH FULL ENGAGEMENT INTO THE ALUMINUM. IF THESE CRITERIA ARE MET, THE RESPECTIVE DESIGN PRESSURES AND ANCHORAGE SPACING FOR TAPCONS MAY BE USED. A FLANGED FRAME COMPONENT MAY BE SUBSTITUTED FOR AN INTEGRAL FIN FRAME COMPONENT FOR MULLED APPLICATIONS. FOR INTEGRAL FIN MULLED APPLICATIONS IT IS EXCEPTABLE TO REMOVE THE FIN AND ATTACH TO THE MULL THROUGH THE FRAME USING THE FLANGED FRAME ANCHORAGE REQUIREMENT.
  - ANCHORS ARE NOT REQUIRED AT THE SILL OF FLANGED UNITS.
  - MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL MEET THE REQUIREMENTS OF FBC CURRENT EDITION.



INTERIOR (ALL JAMB DETAILS)  
EXTERIOR (ALL HEAD AND SILL DETAILS)

PRODUCT REVISED as complying with the Florida Building Code Acceptance No. 16-0714-06 Registration Date August 16, 2021 By Howard Jay Miami Trade Products Control



A. LYNN MILLER, P.E.  
FL P.E. # 59705

PROJECT	ANCHORAGE DETAILS		
DESCRIPTION	ALUM. SINGLE HUNG WINDOW, IMPACT		
DATE	NTS	11 of 11	4040-20
SCALE			F

**PGI**  
Vulcraft Building Systems

1070 TECHNOLOGY DRIVE  
N. VENICE, FL 34268  
P.O. BOX 1039  
NOKOMIS, FL 34274

Revised By:	Checked By:	Date:
Drawn By:	J.J.	2/28/07
Approved By:		
Revised By:		
Checked By:		
Date:		

**APPENDIX C**  
**PROTOCOLS**



## Standard Test Methods for Measuring Adhesion by Tape Test<sup>1</sup>

This standard is issued under the fixed designation D 3359; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

*This standard has been approved for use by agencies of the Department of Defense.*

### 1. Scope

1.1 These test methods cover procedures for assessing the adhesion of coating films to metallic substrates by applying and removing pressure-sensitive tape over cuts made in the film.

1.2 Test Method A is primarily intended for use at job sites while Test Method B is more suitable for use in the laboratory. Also, Test Method B is not considered suitable for films thicker than 5 mils (125 $\mu$ m).

**Note 1**—Subject to agreement between the purchaser and the seller, Test Method B can be used for thicker films if wider spaced cuts are employed.

1.3 These test methods are used to establish whether the adhesion of a coating to a substrate is at a generally adequate level. They do not distinguish between higher levels of adhesion for which more sophisticated methods of measurement are required.

**Note 2**—It should be recognized that differences in wettability of the coating surface can affect the results obtained with coatings having the same inherent adhesion.

1.4 In multicoat systems adhesion failure may occur between coats so that the adhesion of the coating system to the substrate is not determined.

1.5 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.6 *This standard does not purport to address the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:

D 609 Practice for Preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Conversion Coatings, and

#### Related Coating Products<sup>2</sup>

- D 823 Practices for Producing Films of Uniform Thickness of Paint, Varnish, and Related Products on Test Panels<sup>2</sup>
- D 1000 Test Method For Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications<sup>3</sup>
- D 1730 Practices for Preparation of Aluminum and Aluminum-Alloy Surfaces for Painting<sup>4</sup>
- D 2092 Guide for Preparation of Zinc-Coated (Galvanized) Steel Surfaces for Painting<sup>5</sup>
- D 2370 Test Method for Tensile Properties of Organic Coatings<sup>2</sup>
- D 3330 Test Method for Peel Adhesion of Pressure-Sensitive Tape<sup>6</sup>
- D 3924 Specification for Standard Environment for Conditioning and Testing Paint, Varnish, Lacquer, and Related Materials<sup>2</sup>
- D 4060 Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser<sup>2</sup>

### 3. Summary of Test Methods

3.1 *Test Method A*—An X-cut is made through the film to the substrate, pressure-sensitive tape is applied over the cut and then removed, and adhesion is assessed qualitatively on the 0 to 5 scale.

3.2 *Test Method B*—A lattice pattern with either six or eleven cuts in each direction is made in the film to the substrate, pressure-sensitive tape is applied over the lattice and then removed, and adhesion is evaluated by comparison with descriptions and illustrations.

### 4. Significance and Use

4.1 If a coating is to fulfill its function of protecting or decorating a substrate, it must adhere to it for the expected service life. Because the substrate and its surface preparation (or lack of it) have a drastic effect on the adhesion of coatings, a method to evaluate adhesion of a coating to different

<sup>1</sup> These test methods are under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and are the direct responsibility of Subcommittee D01.23 on Physical Properties of Applied Paint Films.

Current edition approved Aug. 10, 2002. Published October 2002. Originally published as D 3359 – 74. Last previous edition D 3359 – 97.

<sup>2</sup> Annual Book of ASTM Standards, Vol 06.01.

<sup>3</sup> Annual Book of ASTM Standards, Vol 10.01.

<sup>4</sup> Annual Book of ASTM Standards, Vol 02.05.

<sup>5</sup> Annual Book of ASTM Standards, Vol 06.02.

<sup>6</sup> Annual Book of ASTM Standards, Vol 15.09.

substrates or surface treatments, or of different coatings to the same substrate and treatment, is of considerable usefulness in the industry.

4.2 The limitations of all adhesion methods and the specific limitation of this test method to lower levels of adhesion (see 1.3) should be recognized before using it. The intra- and inter-laboratory precision of this test method is similar to other widely-accepted tests for coated substrates (for example, Test Method D 2370 and Test Method D 4060), but this is partly the result of it being insensitive to all but large differences in adhesion. The limited scale of 0 to 5 was selected deliberately to avoid a false impression of being sensitive.

## TEST METHOD A—X-CUT TAPE TEST

### 5. Apparatus and Materials

5.1 *Cutting Tool*—Sharp razor blade, scalpel, knife or other cutting devices. It is of particular importance that the cutting edges be in good condition.

5.2 *Cutting Guide*—Steel or other hard metal straightedge to ensure straight cuts.

5.3 *Tape*—25-mm (1.0-in.) wide semitransparent pressure-sensitive tape<sup>7</sup> with an adhesion strength agreed upon by the supplier and the user is needed. Because of the variability in adhesion strength from batch-to-batch and with time, it is essential that tape from the same batch be used when tests are to be run in different laboratories. If this is not possible the test method should be used only for ranking a series of test coatings.

5.4 *Rubber Eraser*, on the end of a pencil.

5.5 *Illumination*—A light source is helpful in determining whether the cuts have been made through the film to the substrate.

### 6. Test Specimens

6.1 When this test method is used in the field, the specimen is the coated structure or article on which the adhesion is to be evaluated.

6.2 For laboratory use apply the materials to be tested to panels of the composition and surface conditions on which it is desired to determine the adhesion.

*Note 3*—Applicable test panel description and surface preparation methods are given in Practice D 609 and Practices D 1730 and D 2092.

*Note 4*—Coatings should be applied in accordance with Practice D 823, or as agreed upon between the purchaser and the seller.

*Note 5*—If desired or specified, the coated test panels may be subjected to a preliminary exposure such as water immersion, salt spray, or high humidity before conducting the tape test. The conditions and time of exposure will be governed by ultimate coating use or shall be agreed upon between the purchaser and seller.

### 7. Procedure

7.1 Select an area free of blemishes and minor surface imperfections. For tests in the field, ensure that the surface is

clean and dry. Extremes in temperature or relative humidity may affect the adhesion of the tape or the coating.

7.1.1 For specimens which have been immersed: After immersion, clean and wipe the surface with an appropriate solvent which will not harm the integrity of the coating. Then dry or prepare the surface, or both, as agreed upon between the purchaser and the seller.

7.2 Make two cuts in the film each about 40 mm (1.5 in.) long that intersect near their middle with a smaller angle of between 30 and 45°. When making the incisions, use the straightedge and cut through the coating to the substrate in one steady motion.

7.3 Inspect the incisions for reflection of light from the metal substrate to establish that the coating film has been penetrated. If the substrate has not been reached make another X in a different location. Do not attempt to deepen a previous cut as this may affect adhesion along the incision.

7.4 Remove two complete laps of the pressure-sensitive tape from the roll and discard. Remove an additional length at a steady (that is, not jerked) rate and cut a piece about 75 mm (3 in.) long.

7.5 Place the center of the tape at the intersection of the cuts with the tape running in the same direction as the smaller angles. Smooth the tape into place by finger in the area of the incisions and then rub firmly with the eraser on the end of a pencil. The color under the transparent tape is a useful indication of when good contact has been made.

7.6 Within  $90 \pm 30$  s of application, remove the tape by seizing the free end and pulling it off rapidly (not jerked) back upon itself at as close to an angle of 180° as possible.

7.7 Inspect the X-cut area for removal of coating from the substrate or previous coating and rate the adhesion in accordance with the following scale:

- |    |   |
|----|---|
| 5A | No peeling or removal.  |
| 4A | Trace peeling or removal along incisions or at their intersection.            |
| 3A | Jagged removal along incisions up to 1.6 mm (1/16 in.) on either side.        |
| 2A | Jagged removal along most of incisions up to 3.2 mm (1/8 in.) on either side. |
| 1A | Removal from most of the area of the X under the tape, and                    |
| 0A | Removal beyond the area of the X.   |

7.8 Repeat the test in two other locations on each test panel. For large structures make sufficient tests to ensure that the adhesion evaluation is representative of the whole surface.

7.9 After making several cuts examine the cutting edge and, if necessary, remove any flat spots or wire-edge by abrading lightly on a fine oil stone before using again. Discard cutting tools that develop nicks or other defects that tear the film.

### 8. Report

8.1 Report the number of tests, their mean and range, and for coating systems, where the failure occurred that is, between first coat and substrate, between first and second coat, etc.

8.2 For field tests report the structure or article tested, the location and the environmental conditions at the time of testing.

8.3 For test panels report the substrate employed, the type of coating, the method of cure, and the environmental conditions at the time of testing.

8.4 If the adhesion strength of the tape has been determined in accordance with Test Methods D 1000 or D 3330, report the

<sup>7</sup> Permacel 99, manufactured by Permacel, New Brunswick, NJ 08903, and available from various Permacel tape distributors, is reported to be suitable for this purpose. The manufacturer of this tape and the manufacturer of the tape used in the interlaboratory study (see RR: D01-1000), have advised this subcommittee that the properties of these tapes were changed. Users of it should, therefore, check whether current material gives comparable results to previous supplied material.

results with the adhesion rating(s). If the adhesion strength of the tape has not been determined, report the specific tape used and its manufacturer.

8.5 If the test is performed after immersion, report immersion conditions and method of sample preparation.

## 9. Precision and Bias<sup>8</sup>

9.1 In an interlaboratory study of this test method in which operators in six laboratories made one adhesion measurement on three panels each of three coatings covering a wide range of adhesion, the within-laboratories standard deviation was found to be 0.33 and the between-laboratories 0.44. Based on these standard deviations, the following criteria should be used for judging the acceptability of results at the 95 % confidence level:

9.1.1 *Repeatability*—Provided adhesion is uniform over a large surface, results obtained by the same operator should be considered suspect if they differ by more than 1 rating unit for two measurements.

9.1.2 *Reproducibility*—Two results, each the mean of triplicates, obtained by different operators should be considered suspect if they differ by more than 1.5 rating units.

9.2 Bias cannot be established for these test methods.

## TEST METHOD B—CROSS-CUT TAPE TEST

### 10. Apparatus and Materials

10.1 *Cutting Tool*<sup>9</sup>—Sharp razor blade, scalpel, knife or other cutting device having a cutting edge angle between 15 and 30° that will make either a single cut or several cuts at once. It is of particular importance that the cutting edge or edges be in good condition.

10.2 *Cutting Guide*—If cuts are made manually (as opposed to a mechanical apparatus) a steel or other hard metal straight-edge or template to ensure straight cuts.

10.3 *Rule*—Tempered steel rule graduated in 0.5 mm for measuring individual cuts.

10.4 *Tape*, as described in 5.3.

10.5 *Rubber Eraser*, on the end of a pencil.

10.6 *Illumination*, as described in 5.5.

10.7 *Magnifying Glass*—An illuminated magnifier to be used while making individual cuts and examining the test area.

### 11. Test Specimens

11.1 Test specimens shall be as described in Section 6. It should be noted, however, that multitip cutters<sup>10</sup> provide good results only on test areas sufficiently plane that all cutting edges

contact the substrate to the same degree. Check for flatness with a straight edge such as that of the tempered steel rule (10.3).

### 12. Procedure

12.1 Where required or when agreed upon, subject the specimens to a preliminary test before conducting the tape test (see Note 3). After drying or testing the coating, conduct the tape test at room temperature as defined in Specification D 3924, unless D 3924 standard temperature is required or agreed.

12.1.1 For specimens which have been immersed: After immersion, clean and wipe the surface with an appropriate solvent which will not harm the integrity of the coating. Then dry or prepare the surface, or both, as agreed upon between the purchaser and the seller.

12.2 Select an area free of blemishes and minor surface imperfections, place on a firm base, and under the illuminated magnifier, make parallel cuts as follows:

12.2.1 For coatings having a dry film thickness up to and including 2.0 mils (50 µm) space the cuts 1 mm apart and make eleven cuts unless otherwise agreed upon.

12.2.2 For coatings having a dry film thickness between 2.0 mils (50 µm) and 5 mils (125 µm), space the cuts 2 mm apart and make six cuts. For films thicker than 5 mils use Test Method A.<sup>11</sup>

12.2.3 Make all cuts about 20 mm (¾ in.) long. Cut through the film to the substrate in one steady motion using just sufficient pressure on the cutting tool to have the cutting edge reach the substrate. When making successive single cuts with the aid of a guide, place the guide on the uncut area.

12.3 After making the required cuts brush the film lightly with a soft brush or tissue to remove any detached flakes or ribbons of coatings.

12.4 Examine the cutting edge and, if necessary, remove any flat spots or wire-edge by abrading lightly on a fine oil stone. Make the additional number of cuts at 90° to and centered on the original cuts.

12.5 Brush the area as before and inspect the incisions for reflection of light from the substrate. If the metal has not been reached make another grid in a different location.

12.6 Remove two complete laps of tape and discard. Remove an additional length at a steady (that is, not jerked) rate and cut a piece about 75 mm (3 in.) long.

12.7 Place the center of the tape over the grid and in the area of the grid smooth into place by a finger. To ensure good contact with the film rub the tape firmly with the eraser on the end of a pencil. The color under the tape is a useful indication of when good contact has been made.

12.8 Within 90 ± 30 s of application, remove the tape by seizing the free end and rapidly (not jerked) back upon itself at as close to an angle of 180° as possible.

12.9 Inspect the grid area for removal of coating from the substrate or from a previous coating using the illuminated

<sup>8</sup> Supporting data are available from ASTM International Headquarters. Request RR: D01-1008.

<sup>9</sup> Multiblade cutters are available from a few sources that specialize in testing equipment for the paint industry. One supplier that has assisted in the refinement of these methods is given in footnote 10.

<sup>10</sup> The sole source of supply of the multitip cutter for coated pipe surfaces known to the committee at this time is Paul N. Gardner Co., 316 NE First St., Pompano Beach, FL 33060. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,<sup>1</sup> which you may attend.

<sup>11</sup> Test Method B has been used successfully by some people on coatings greater than 5 mils (0.13 mm) by spacing the cuts 5 mm apart. However, the precision values given in 14.1 do not apply as they are based on coatings less than 5 mm (0.13 mm) in thickness.

magnifier. Rate the adhesion in accordance with the following scale illustrated in Fig. 1:

- 5B The edge of the cuts are completely smooth; none of the squares of the lattice is detached.
- 4B Small flakes of the coating are detached at intersections; less than 5% of the area is affected.
- 3B Small flakes of the coating are detached along edges and at intersections of cuts. The area affected is 5 to 15% of the lattice.
- 2B The coating has flaked along the edges and on parts of the squares. The area affected is 15 to 35% of the lattice.
- 1B The coating has flaked along the edges of cuts in large ribbons and whole squares have detached. The area affected is 35 to 65% of the lattice.
- 0B Flaking and detachment worse than Grade 1

12.10 Repeat the test in two other locations on each test panel.

### 13. Report

13.1 Report the number of tests, their mean and range, and for coating systems, where the failure occurred, that is, between first coat and substrate, between first and second coat, etc.

13.2 Report the substrate employed, the type of coating and the method of cure.

13.3 If the adhesion strength has been determined in accordance with Test Methods D 1000 or D 3330, report the results with the adhesion rating(s). If the adhesion strength of the tape has not been determined, report the specific tape used and its manufacturer.

13.4 If the test is performed after immersion, report immersion conditions and method of sample preparation.

### 14. Precision and Bias<sup>8</sup>

14.1 On the basis of two interlaboratory tests of this test method in one of which operators in six laboratories made one adhesion measurement on three panels each of three coatings covering a wide range of adhesion and in the other operators in six laboratories made three measurements on two panels each of four different coatings applied over two other coatings, the pooled standard deviations for within- and between-laboratories were found to be 0.37 and 0.7. Based on these standard deviations, the following criteria should be used for judging the acceptability of results at the 95% confidence level:

14.1.1 *Repeatability*—Provided adhesion is uniform over a large surface, results obtained by the same operator should be

CLASSIFICATION OF ADHESION TEST RESULTS		
CLASSIFICATION	PERCENT AREA REMOVED	SURFACE OF CROSS-CUT AREA FROM WHICH FLAKING HAS OCCURRED FOR SIX PARALLEL CUTS AND ADHESION RATING BY PERCENT
5B	0% None	
4B	Less than 5%	
3B	5 - 15%	
2B	15 - 35%	
1B	35 - 65%	
0B	Greater than 65%	

FIG. 1 Classification of Adhesion Test Results

considered suspect if they differ by more than one rating unit for two measurements.

14.1.2 *Reproducibility*—Two results, each the mean of duplicates or triplicates, obtained by different operators should be considered suspect if they differ by more than two rating units.

14.2 Bias cannot be established for these test methods.

### 15. Keywords

15.1 adhesion; crosscut adhesion test method; tape; tape adhesion test method; X-cut adhesion test method

# COATINGS QUALITY ASSURANCE PROTOCOL

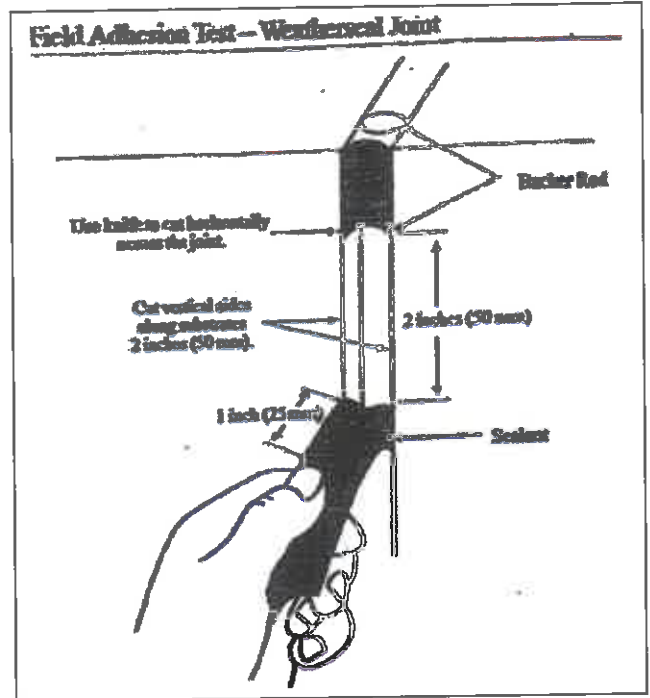
Coatings Manufacturers to provide the following list of procedures at no charge to the client:

- 1.0 Perform initial site-visit to evaluate the condition of the buildings, substrates and coatings in service. Photograph all noted exceptions / failures for verification / clarification for the subsequent specification development and Warranty Intent. A detailed report is provided with the photographic survey of the building.
- 2.0 Install Job Standards / Mock Ups for testing and validity of the specified coatings and high-performance sealants installation, prior to and during construction.
- 3.0 Provide Scheduled and Periodic Project Site Visits that includes "In-the-Air" monitoring of the technical provisions of the governing specifications and warranty compliance. The monitoring is accomplished via the staging and lifts provided by contractor of record. Each area will be subdivided by stacks and inspected for preparation, prime and finish coats.
- 4.0 All Project Site Visits include a detailed Site Visit Report of any noted exceptions and progress / completion of all critical phases of the scope of work.
- 5.0 Project Site Visits are provided at a minimum of one (1) weekly project visit performed by Coating Manufacturer's representative and/or a N.A.C.E. (National Association of Corrosion Engineers) International Certified Coating Inspector and Trained Professional Coatings Representative.
- 6.0 At completion of the project and compliance of the warranty / specification requirements and "Final" project evaluation, Coating Manufacturer shall submit for and provide the applicable project specific warranty.

## Standard Field Adhesion Test

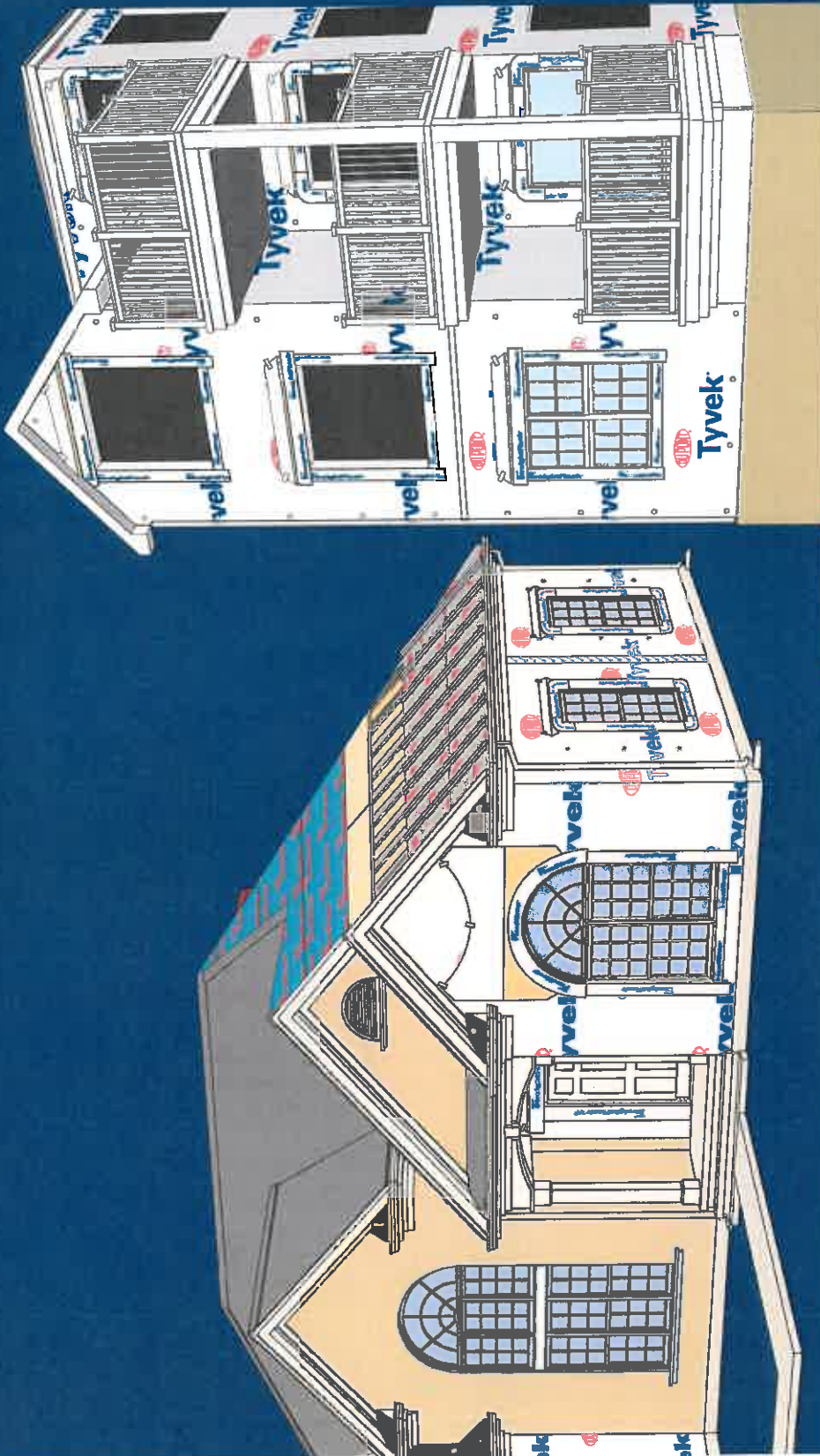
The field adhesion is a simple procedure that may help detect application problems such as improper cleaning, use of improper primer, poor primer application or improper joint configuration. As a check for adhesion, a simple hand pull test is required at the job site after the sealant is fully cured (usually within 7 to 21 days). Field adhesion testing should be documented using the field Adhesion Testing Log. It is suggested that 5 tests for the first 1000' (300 meters) and one test per 1000' (300 meters) thereafter be submitted or one test per floor per elevation. The hand pull test procedure is as follows:

- a. Make a knife cut horizontally from one side of the joint to the other.
- b. Make two vertical cuts (from the horizontal cut) approximately 3" (75 mm) long, at both sides of the joint.
- c. Place a 1" (25 mm) mark on the sealant tab as shown in the illustration.
- d. Grasp a 2" (50 mm) piece of sealant firmly just beyond the 1" (25 mm) mark and pull at 90° angle.
- e. If dissimilar substrates are being sealed, check the adhesion of sealant to each substrate separately. This is accomplished by extending the vertical cut along one side of the joint, checking adhesion to the opposite side, and then repeating for the other surface.
- f. If the sealant does not pass according to the guidelines provided, consult your local Manufacturer's Authorized Representative.
- g. Inspect the joint for complete fill. The joint should not have voids. Your Manufacturer's Authorized Representative can assist in determining when corrective action is required.
- h. Record the test results in a field Adhesion Test Log. This log will need to be retained as part of the warranty procedure. Some building officials may also require it.



**NOTE:** When a sealant is used to weatherseal between two dissimilar substrates, it is recommended that the sealant adhesion to each side of the joint be individually tested.

# Installation Instructions for Alternate Flanged Window Detail Aligned with FMA/AAMA 100-12 (Methods A, B and C)



## DuPont Self-Adhered Flashing Systems Installation Guidelines

ALTERNATE FLANGED WINDOW DETAIL ALIGNED WITH FMA/AAMA 100-12 (METHODS A, B AND C) BUILDINGS LESS THAN 5 STORIES AND LOW-RISE MULTI-FAMILY RESIDENTIAL BUILDINGS LESS THAN 6 STORIES



**Tyvek.**

**FOR BUILDINGS LESS THAN 5 STORIES**

**REVISION 1/15**

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**Applicable Products**

**DuPont™ Self-Adhered Flashing Systems Products**

PRODUCT	DIMENSIONS	AREA
DuPont™ FlexWrap™ NF	6 in x 75 ft 9 in x 75 ft	37.50 sq ft 56.20 sq ft
DuPont™ StraightFlash™	4 in x 150 ft 9 in x 125 ft	50 sq ft 93.75 sq ft
DuPont™ Flashing Tape	4 in x 75 ft 6 in x 75 ft 9 in x 75 ft	25 sq ft 37.5 sq ft 56.25 sq ft

**Required Materials Based on Project Requirements, Details, and Specifications\***

**PRODUCT**

DuPont™ Tyvek® Tape
DuPont™ Tyvek® Wrap Cap Fasteners or recommended fastening system
DuPont™ Window & Door Foam
DuPont™ Residential Sealant, or other recommended sealant*
DuPont™ Adhesive/Primer
Backer Rod
Brushes for Surface Preparation
J-Roller

\*Apply per manufacturers' guidelines. For non DuPont products, DuPont assumes no liability in use of recommended products; installers need to evaluate suitability of recommended products in their end-use applications.

### Warranty

Please refer to the [DuPont Weatherization Products 10-Year Limited Warranty for Buildings Less Than 5 Stories and Low-Rise Multi-Family Residential Buildings Less Than 6 Stories](#).

**NOTE:** In order to make a claim under the DuPont Weatherization Products 10-Year Limited Product and Labor Warranty, you must have met all of the terms and conditions of the warranty, including use of the applicable DuPont Installation Guidelines. In the event that a specific detail or installation technique is not covered in the DuPont Installation Guidelines at the time you are building, then the Key Installation Requirements outlined in this document must have been followed in order to make a claim under the warranty. It is in the sole discretion of DuPont to determine if full compliance with the Key Installation Requirements exists. Please contact DuPont or a DuPont™ Tyvek® Specialist if you have any questions in connection with any DuPont Installation Guideline.

### General Instructions

**For buildings less than 5 Stories and low-rise multi-family residential buildings less than 6 stories**

For performance requirements exceeding ASTM E1677, 65 mph equivalent structural load and 15 mph equivalent wind-driven rain water infiltration for buildings less than 5 stories, or for installations that specify a window/door design rating of DP45 or greater, it is recommended to install a high pressure skirt to help prevent water intrusion at the sill or threshold and follow the *DuPont Self-Adhered Flashing Systems Installation Guidelines for Buildings Greater Than 4 Stories and High Performance Installations of Any Height*.

DuPont™ self-adhered flashing systems products should be installed on clean, dry surfaces that are free of frost. Wipe surfaces to remove moisture, dirt, grease and other debris that could interfere with adhesion.

When cutting the Water-Resistive Barrier (WRB) to prepare the opening, remove an additional 1" strip of the WRB head flap to allow more room for the tape adhesive to seal the head flashing.

Apply pressure along entire surface of flashing for a good bond using a J-roller or firm hand pressure.

Remove all wrinkles and bubbles that may allow for water intrusion by smoothing surface and repositioning as necessary.

When flashing the sill area for windows and doors, DuPont recommends the use of 6" wide DuPont™ Flexwrap™ NF for 2" x 4" framing and 9" wide DuPont™ Flexwrap™ NF for 2" x 6" framing. As an option, if a rigid back dam is desired, cut the corner back dam the length of the sill and nail into place on the interior edge of the sill prior to installation of DuPont™ Flexwrap™ NF. Then install DuPont™ Flexwrap™ NF over sill and corner guard back dam. If using 6" DuPont™ FlexWrap™ NF with optional rigid back dam, seal ends of corner guard with DuPont™ Residential Sealant or recommended sealant.

Door and window rough sill framing must be level or slightly sloped to the exterior to ensure proper drainage to the exterior. This best practice ensures continuous support with positive slope to the exterior.

DuPont™ Residential Sealant should be tooled flat to allow the natural curing process to create a concave joint.

In lieu of temporarily taping, DuPont™ Tyvek® flaps at window head and jambs can be tucked under the DuPont™ Tyvek® WRB.

Please contact your local DuPont™ Tyvek® Specialist for additional information and installation support.

**DO NOT STRETCH** DuPont™ FlexWrap™ NF when installing along the length of sills or jambs. DuPont™ FlexWrap™ NF is only intended to be extended when covering corners or curved sections.

DuPont™ self-adhered flashing systems products perform best when installed at temperatures above 25°F (-4°C).

Avoid placing DuPont™ Tyvek® Wrap Cap Fasteners where flashing will be installed; however, DuPont™ Tyvek® Wrap Cap Fasteners can be applied over the flashing.

Adverse weather conditions or cold temperatures may require use of a primer to promote adhesion of DuPont™ self-adhered flashing products to most common building materials. Concrete, masonry, and fiber-faced exterior gypsum board require the use of DuPont™ Adhesive/Primer.

Please call 1-800-44-Tyvek (800-448-9835), visit [www.weatherization.tyvek.com](http://www.weatherization.tyvek.com), or consult your local DuPont™ Tyvek® Specialist for additional information and installation support.

## Key Installation Requirements for Drainable Window / Door Installation Under the Limited Product and Labor Warranty

When flashing windows or doors, the following principles must be followed:

- When installed properly, DuPont™ StraightFlash™, DuPont™ FlexWrap™ NF, and DuPont™ Flashing Tape provide nail sealability at window/door openings to help protect critical window-wall interfaces. Metal sill pan flashing may be used, but must not replace flexible sill flashing that provides nail sealability.
- DuPont™ self-adhered flashing systems comply with AAMA 711-13, *Voluntary Specification for Self Adhering Flashing Used for Installation of Exterior Wall Fenestration Products*, which has a modified version of ASTM D 1970 and it is more representative for vertical wall applications.
- Ensure that sill flashing does not slope to the interior. An exterior slope is recommended, but not required.
- Direct water onto an acceptable air and water barrier drainage plane with an unobstructed path to the exterior of the wall. Provide a drainage path for any water intrusion through the window/door attachment system that collects at the sill.
- Properly integrate flashing with acceptable DuPont™ Tyvek® WRB in accordance with the instructional drawing. DuPont™ self-adhered flashing systems products must be applied with a minimum 2" lap onto the WRB.
- DuPont requires that DuPont™ FlexWrap™ NF and StraightFlash™ be covered within nine months (270 days) of installation. DuPont requires that DuPont™ Flashing Tape be covered within four months (120 days) of installation.
- Ensure that window / door and flashing system design takes into account common factors that will impact performance, such as:
  - Climate considerations: Rainfall, Wind, Temperature (hot / cold cycles), Humidity
  - Building design: Window / Wall Design (overhangs, recessed openings, bump-outs), Wall Assembly (wood frame or masonry), Window System (wood or vinyl), New Construction or Replacement Window drainage path
  - UV exposure prior to the construction of the exterior facade
- Field testing the window / door and wall installation as a complete system is a recommended best practice.
- Use of trained installers is highly recommended.

## DuPont Self-Adhered Flashing Systems Installation Guidelines

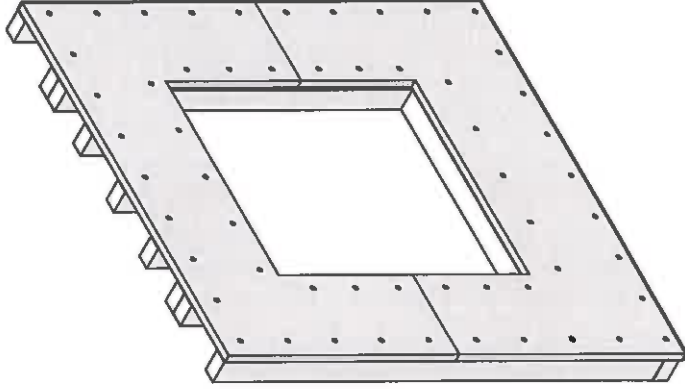
### Alternate Flanged Window Detail Aligned with FMA/AAMA 100-12 (Method A)

Method applies to following products:

- DuPont™ StraightFlash™
- DuPont™ FlexWrap™ NF
- DuPont™ Flashing Tape

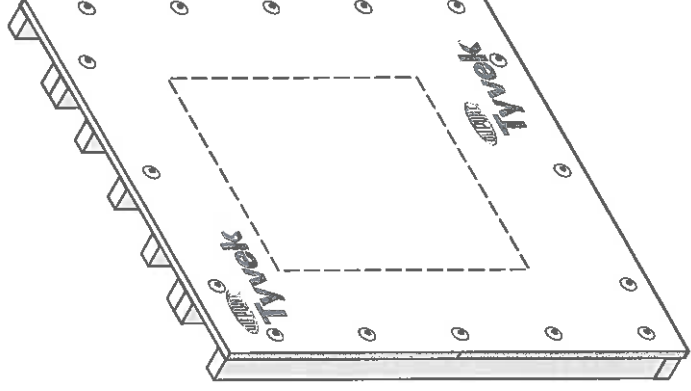
#### STEP 1

- A. Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.



#### STEP 2

- A. Wrap wall as shown in DuPont™ Tyvek® Water-Resistive and Air Barriers Installation Guidelines for Buildings Less Than 5 Stories that can be found at [www.weatherization.tyvek.com](http://www.weatherization.tyvek.com). Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

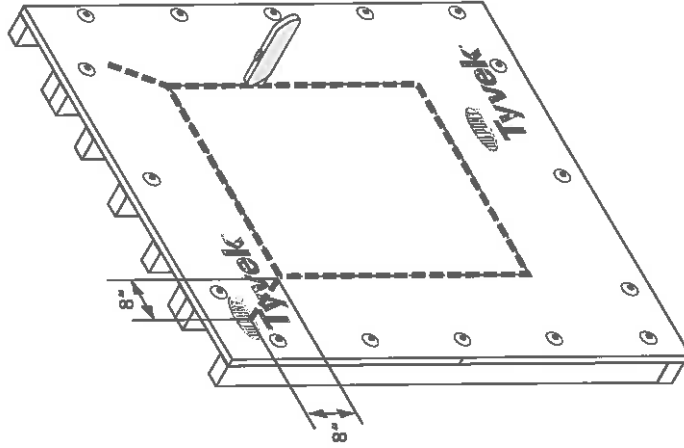


## DuPont Self-Adhered Flashing Systems Installation Guidelines

### STEP 3

Prepare the DuPont™ Tyvek® WRB for window installation.

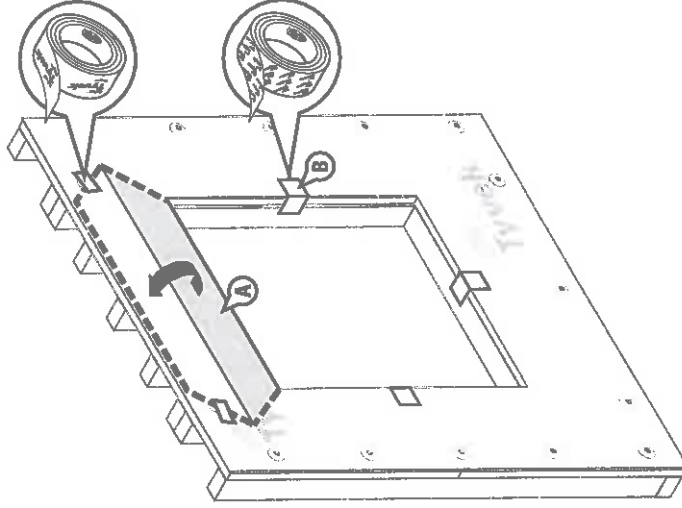
- A. Cut an opening in the DuPont™ Tyvek® WRB using a square cut around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the DuPont™ Tyvek® WRB is cut flush with the sheathing and is not wrapped into the rough opening.)
- C. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.



### STEP 4

- A. Flip the head flap up to expose the sheathing and temporarily secure with tape.
- B. Temporarily secure the DuPont™ Tyvek® WRB with DuPont™ Tyvek® Tape around rough opening before flashing is installed to help facilitate flashing installation.

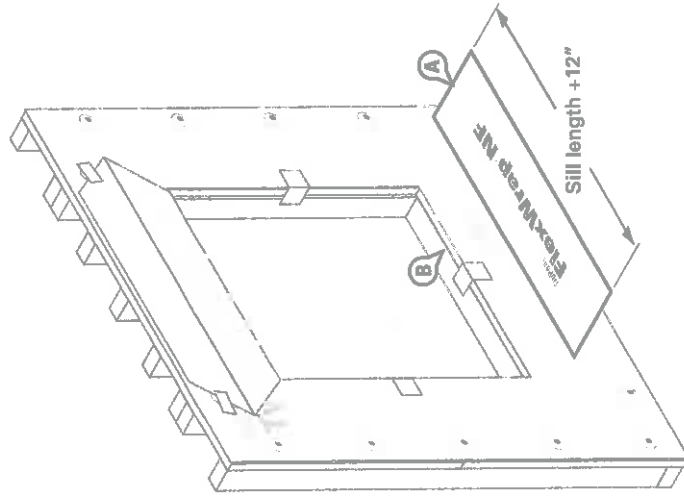
**NOTE:** In lieu of temporarily taping, DuPont™ Tyvek® flaps at the window head can be tucked under the DuPont™ Tyvek® WRB.



## DuPont Self-Adhered Flashing Systems Installation Guidelines

### STEP 5

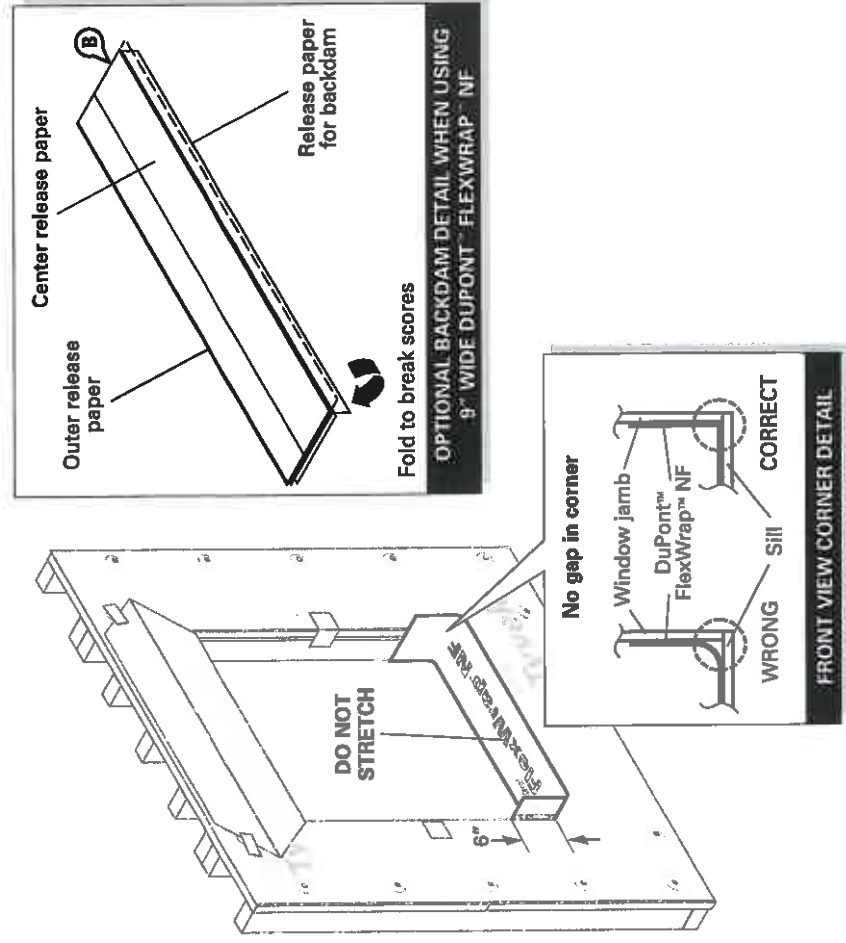
- A. Prepare the sill flashing by cutting a piece of DuPont™ FlexWrap™ NF that is at least 12" longer than sill length. Use 6" DuPont™ FlexWrap™ NF for 2" x 4" framing and 9" DuPont™ FlexWrap™ NF for 2" x 6" framing.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.



### STEP 6

- A. Install the sill flashing. Remove the largest strip of release paper, align the flashing with the interior edge of sill, and install into rough opening across sill and up jambs (min 6"). Apply working from the middle of the sill towards the sides. Secure DuPont™ FlexWrap™ NF tightly into the corners by first working in along the sill before adhering up the jambs.

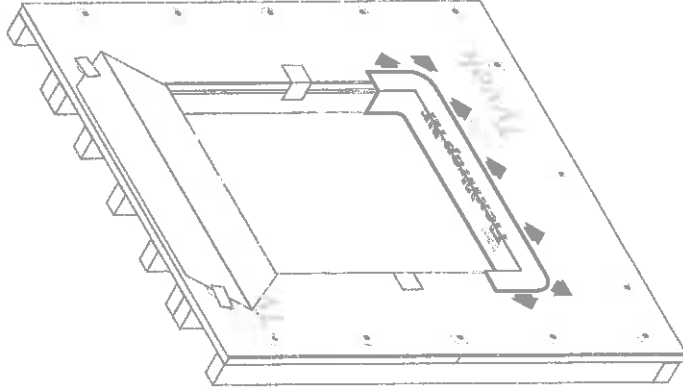
**DO NOT STRETCH MATERIAL ALONG THE SILL OR JAMBS.**



## DuPont Self-Adhered Flashing Systems Installation Guidelines

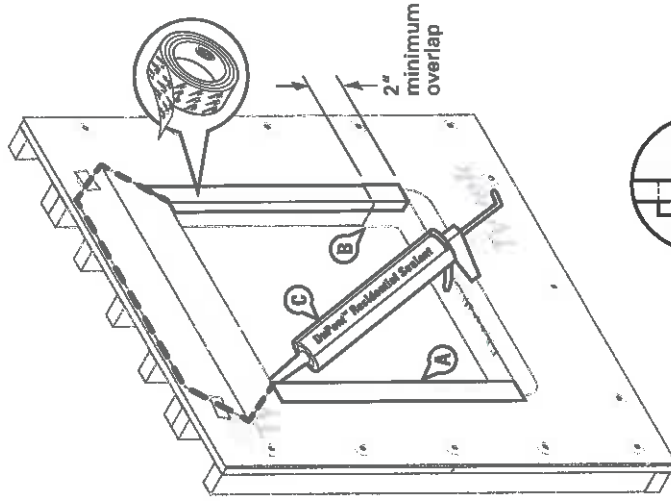
### STEP 7

- Remove second half of the release paper.
- Fan DuPont™ FlexWrap™ NF at bottom corners and adhere onto face of wall.
- Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.

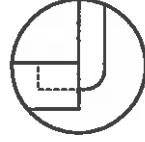


### STEP 8

- Install DuPont™ Flashing Tape or DuPont™ StraightFlash™ into the rough opening at each jamb and onto wall face. The flashing does not need to align with the interior edge of the jamb framing. Cut the jamb flashing the vertical length of the rough opening.
- Jamb flashing should be long enough to overlap the sill flashing by at least 2".
- Apply DuPont™ Residential Sealant, or recommended sealant to inside corners of rough opening at jamb/head.



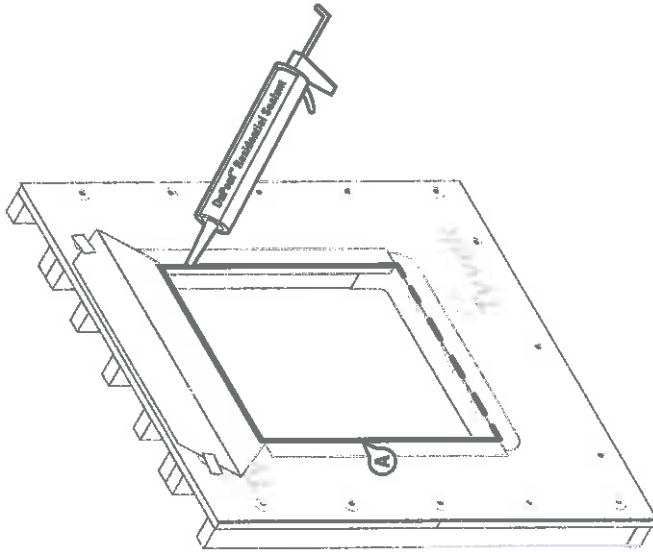
**INCORRECT**  
DuPont™ FlexWrap™ NF  
reverse flashed



**CORRECT**  
DuPont™ Flashing Tape or  
DuPont™ StraightFlash™  
overlaps  
DuPont™ FlexWrap™ NF

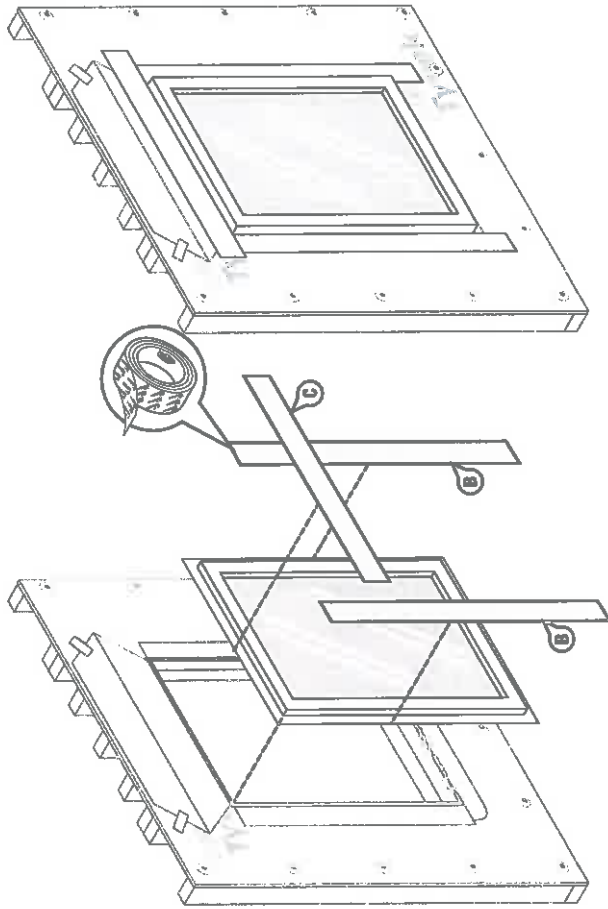
**STEP 9**

- A. Apply continuous bead of DuPont™ Residential Sealant, or recommended sealant, at the window head and jambs to wall or back side of window mounting flange. **DO NOT APPLY CONTINUOUS SEALANT BEAD ACROSS BOTTOM SILL FLANGE** to allow for drainage. If sealant is applied to the sill, ensure that there are at least two (2) 2" gaps in the sealant bead for every 4' of window to allow for drainage.



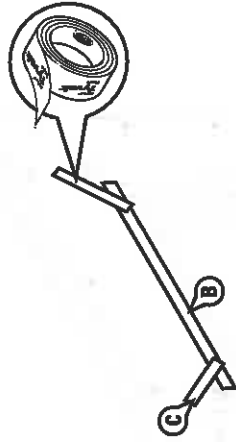
**STEP 10**

- A. Install window according to manufacturer's instructions.  
 B. Cut two pieces of DuPont™ Flashing Tape or DuPont™ StraightFlash™ for jamb flashing extending 1" above window head flange and 4" to 6" below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame.  
 C. Cut a piece of DuPont™ Flashing Tape or DuPont™ StraightFlash™ for head flashing, which extends beyond outer edges of jamb flashings. Remove release paper and install completely covering mounting flange and adhering to exposed sheathing or framing members.



**STEP 11**

- A. Flip down upper flap of DuPont™ Tyvek® WRB so it lays flat across head flashing, then **trim 1"–2" above the window opening.**
- B. Tape Seams as shown. **DO NOT TAPE** at bottom of window. At the head, continuous tape seams with DuPont™ Tyvek® Tape or DuPont™ Flashing Tape. Skip taping at the head is acceptable if an air barrier is not required or if additional drainage is desired.
- C. Tape diagonal seams of DuPont™ Tyvek® WRB.

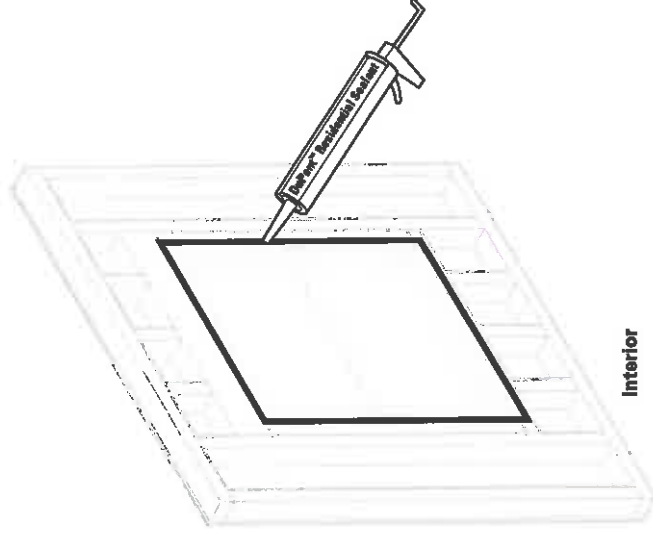


**STEP 12**

**Final Step**

Install DuPont™ Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use DuPont™ Window & Door Foam or recommended foam. The seal created by the sealant (and backer rod as necessary) or foam will also serve as a back dam. DuPont™ Residential Sealant should be tooled flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont™ FlexWrap NF™ around the sill.

**NOTE:** Installations that specify a window/door design rating of DP45 or greater require extra precautions. See General Instructions for performance requirements exceeding this design rating.



## DuPont Self-Adhered Flashing Systems Installation Guidelines

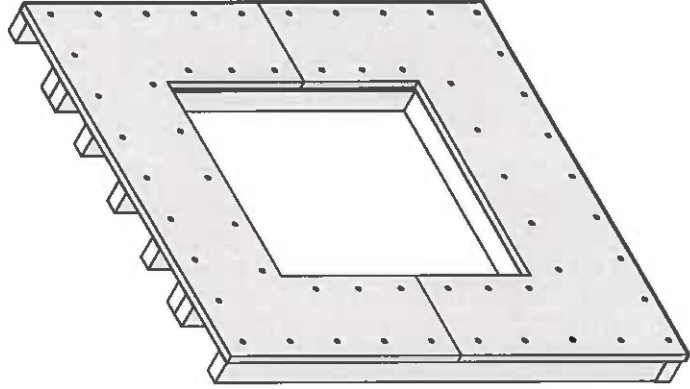
### Alternate Flanged Window Detail Aligned with FMA/AAMA 100-12 (Method B)

Method applies to following products:

- DuPont™ StraightFlash™
- DuPont™ FlexWrap™ NF
- DuPont™ Flashing Tape

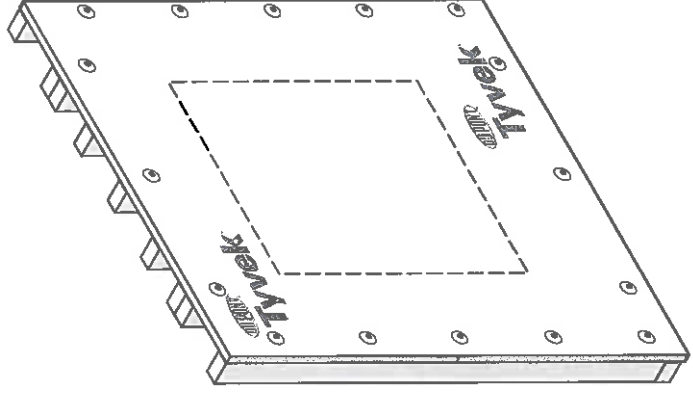
#### STEP 1

- A. Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.



#### STEP 2

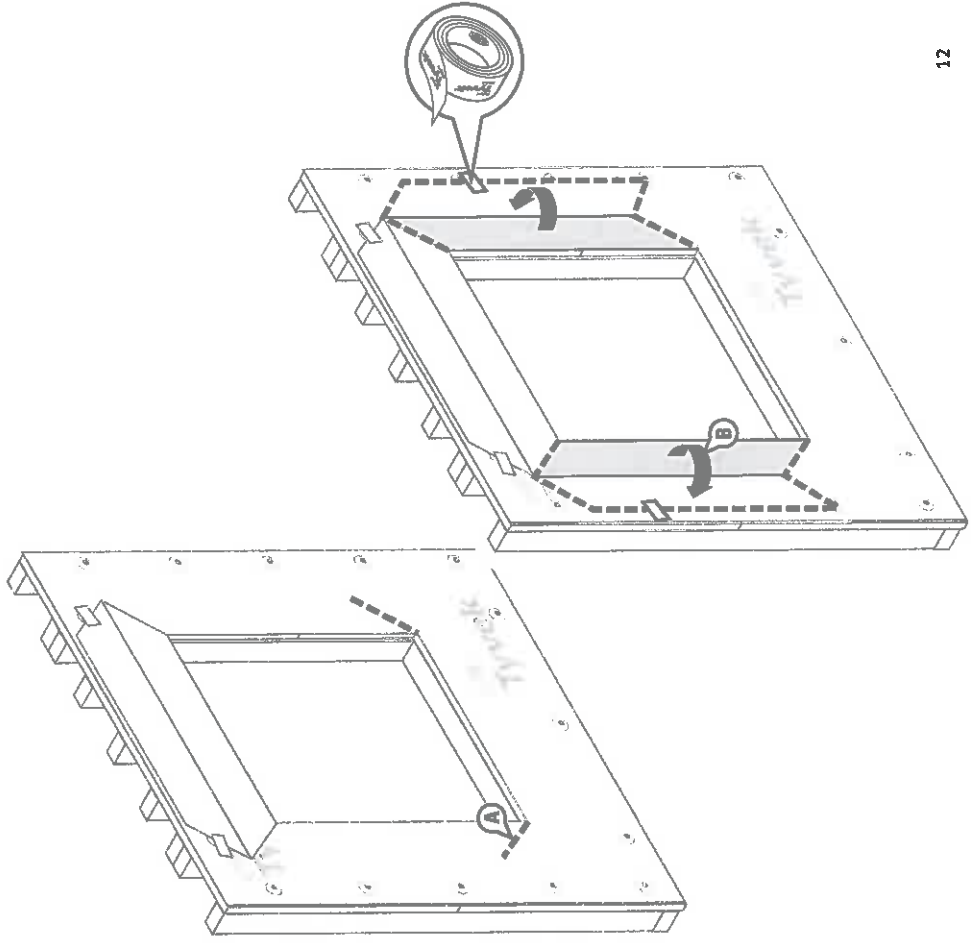
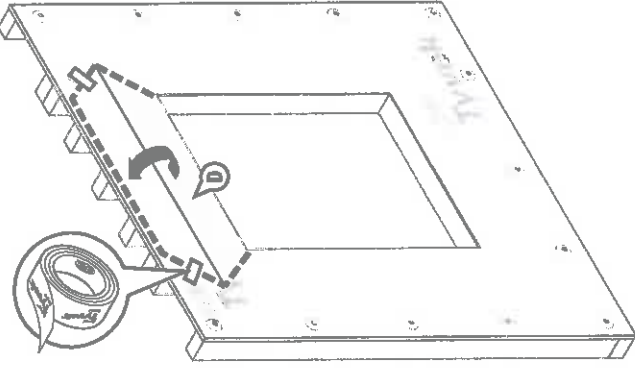
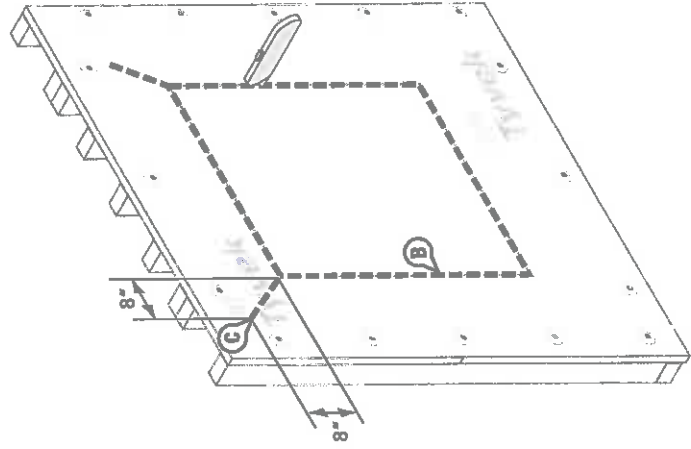
- A. Wrap wall as shown in DuPont™ Tyvek® Water-Resistive and Air Barriers Installation Guidelines for Buildings Less Than 5 Stories that can be found at [www.weatherization.tyvek.com](http://www.weatherization.tyvek.com). Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.



**STEP 3**

Prepare the DuPont™ Tyvek® WRB for window installation.

- A. Cut an opening in the DuPont™ Tyvek® WRB using a square cut around the perimeter of the rough opening.
- B. Cuts should be made along the dashed indicated lines. (Ensure that the DuPont™ Tyvek® WRB is cut flush with the sheathing and is not wrapped into the rough opening.)
- C. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.
- D. Flip the head flap up to expose the sheathing and temporarily secure with DuPont™ Tyvek® Tape.



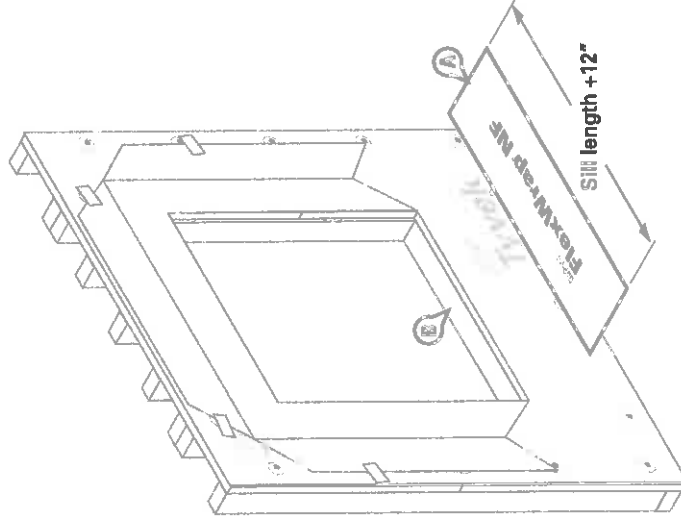
**STEP 4**

- A. Cut two 45° slits extending from the bottom corner up and away from the window opening to expose approximately 8" of sheathing. This will create a flap at each jamb to allow for jamb flashing installation.
- B. Flip the flaps to the side to expose the sheathing and temporarily secure with DuPont™ Tyvek® Tape.

**NOTE:** In lieu of temporarily taping, DuPont™ Tyvek® flaps at the window head and jumbs can be tucked under the DuPont™ Tyvek® WRB.

**STEP 5**

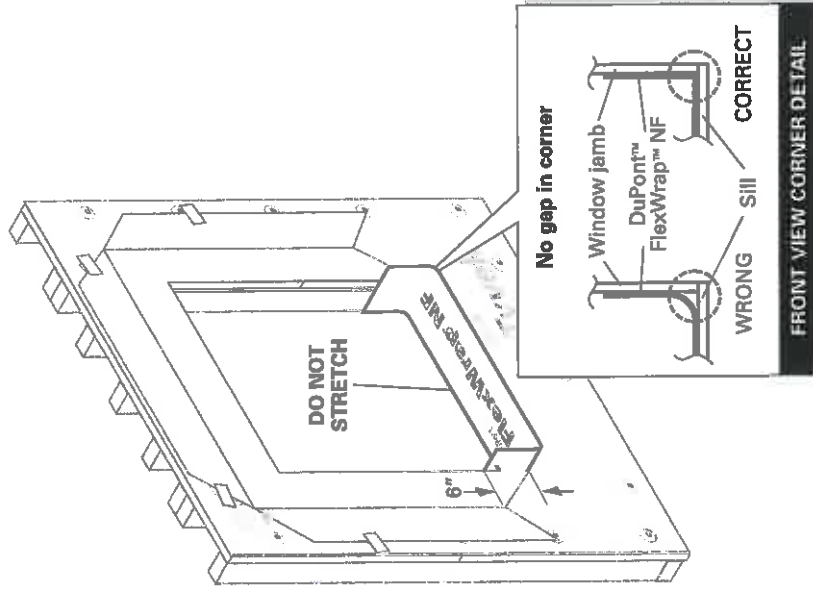
- A. Prepare the sill flashing by cutting a piece of DuPont™ FlexWrap™ NF that is at least 12" longer than sill length. Use 6" DuPont™ FlexWrap™ NF for 2" x 4" framing and 9" DuPont™ FlexWrap™ NF for 2" x 6" framing.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.



**STEP 6**

- A. Install the sill flashing. Remove the largest strip of release paper, align the flashing with the interior edge of sill, and install into rough opening across sill and up jambs (min 6"). Apply working from the middle of the sill towards the sides. Secure DuPont™ FlexWrap™ NF tightly into the corners by first working in along the sill before adhering up the jambs.

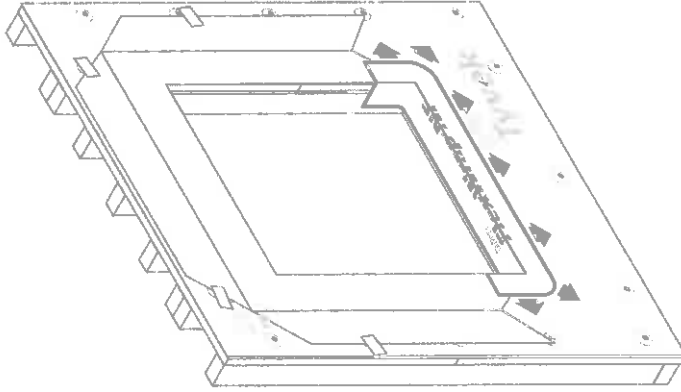
**DO NOT STRETCH MATERIAL ALONG THE SILL OR JAMBS.**



## DuPont Self-Adhered Flashing Systems Installation Guidelines

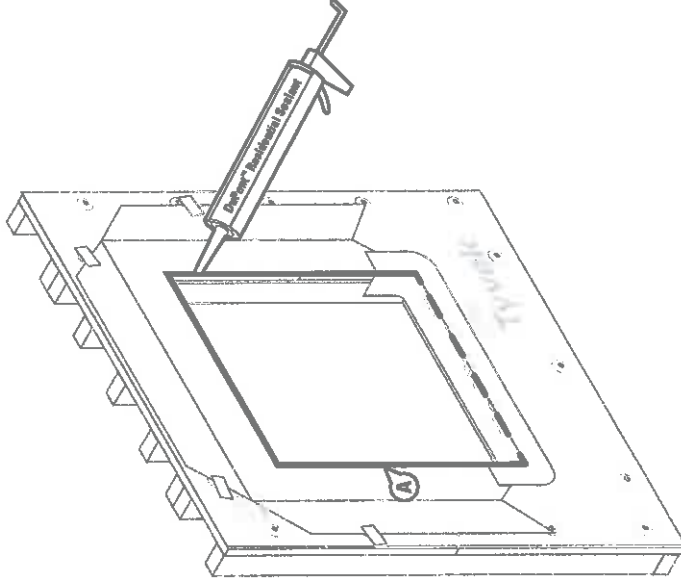
### STEP 7

- A. Remove second half of the release paper.
- B. Fan DuPont™ FlexWrap™ NF at bottom corners and adhere onto face of wall.
- C. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.



### STEP 8

- A. Apply continuous bead of DuPont™ Residential Sealant or recommended sealant at the window head and jambs to wall or back side of window mounting flange. **DO NOT APPLY CONTINUOUS SEALANT BEAD ACROSS BOTTOM SILL FLANGE** to allow for drainage. If sealant is applied to the sill, ensure that there are at least two (2) 2" gaps in the sealant bead for every 4' of window to allow for drainage.



**STEP 9**

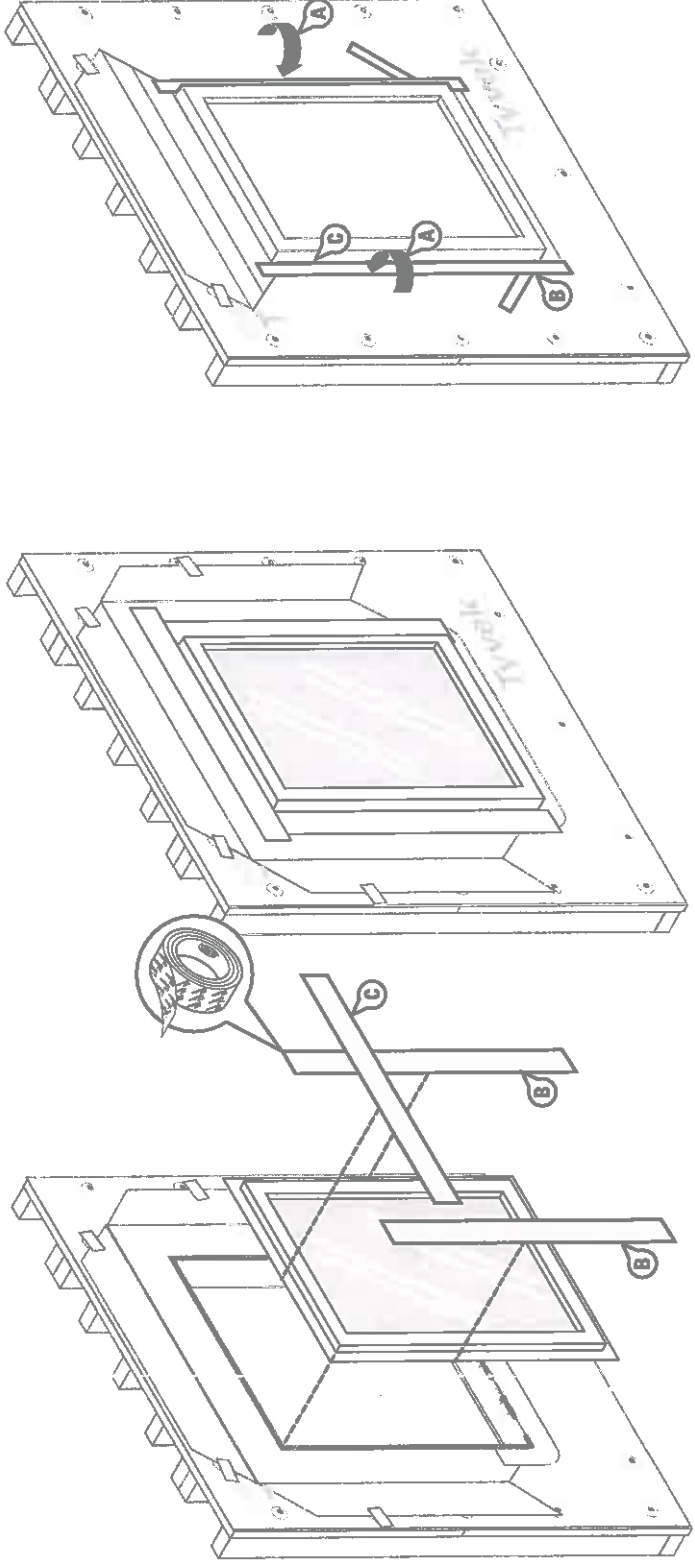
- A. Install window according to manufacturer's instructions.
- B. Cut two pieces of DuPont™ Flashing Tape or DuPont™ StraightFlash™ for jamb flashing extending 1" above window head flange and 4" to 6" below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame.
- C. Cut a piece of DuPont™ Flashing Tape or DuPont™ StraightFlash™ for head flashing, which extends beyond outer edges of jamb flashings. Remove release paper and install completely covering mounting flange and adhering to exposed sheathing or framing members.

**STEP 10**

- A. Flip over flaps of DuPont™ Tyvek® WRB so each lays flat across jamb flashing, then trim 1"–2" from the window opening using shears so as not to damage the DuPont™ self-adhered flashing systems product below.
- B. Starting at the bottom of the window, install DuPont™ Tyvek® Tape along the angled cut in the DuPont™ Tyvek® WRB.
- C. Install DuPont™ Flashing Tape, DuPont™ StraightFlash™ or DuPont™ Tyvek® Tape along the jamb flap.

Repeat on other side of window.

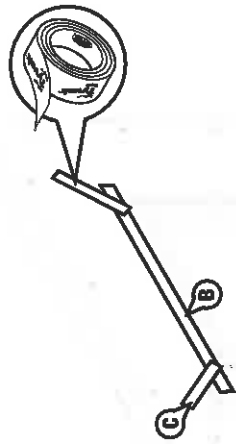
**NOTE:** Additional mechanical fasteners may be installed through the flashing at head flap and perimeter of window for application in areas of extreme exposure. For extreme weather conditions, performance requirements exceeding ASTM E1677, or window/door design ratings of DP45 or greater, see General Instructions.



## DuPont Self-Adhered Flashing Systems Installation Guidelines

### STEP 11

- A. Flip down upper flap of DuPont™ Tyvek® WRB so it lays flat across head flashing, then trim **1"–2"** above the window opening.
- B. Tape Seams as shown. **DO NOT TAPE** at bottom of window. At the head, continuous tape seams with DuPont™ Tyvek® Tape or DuPont™ Flashing Tape. Skip taping at the head is acceptable if an air barrier is not required or if additional drainage is desired.
- C. Tape diagonal seams of DuPont™ Tyvek® WRB.

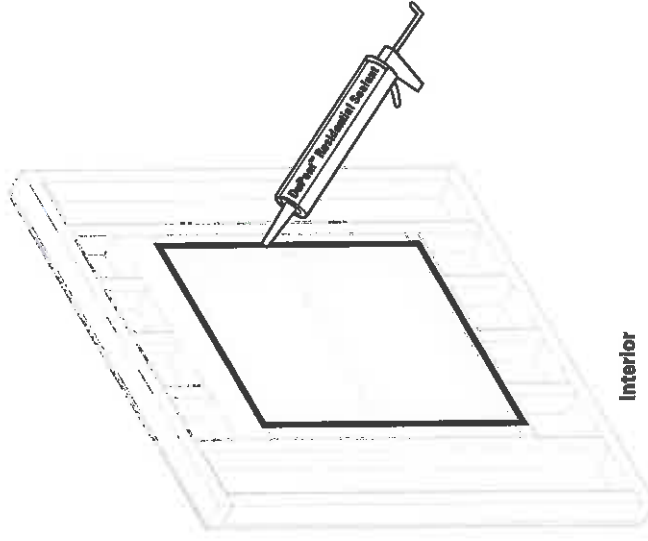


### STEP 12

#### Final Step

Install DuPont™ Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use DuPont™ Window & Door Foam or recommended foam. The seal created by the sealant (and backer rod as necessary) or foam will also serve as a back dam. DuPont™ Residential Sealant should be tooled flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont™ FlexWrap NF™ around the sill.

**NOTE:** Installations that specify a window/door design rating of DP45 or greater require extra precautions. See General Instructions for performance requirements exceeding this design rating..



## DuPont Self-Adhered Flashing Systems Installation Guidelines

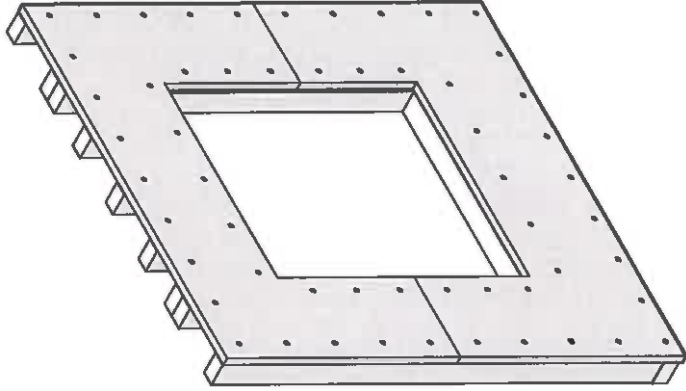
### Alternate Flanged Window Detail Aligned with FIA/AAWA 100-12 (Method C)

Method applies to following products:

- DuPont™ StraightFlash™
- DuPont™ FlexWrap™ NF
- DuPont™ Flashing Tape

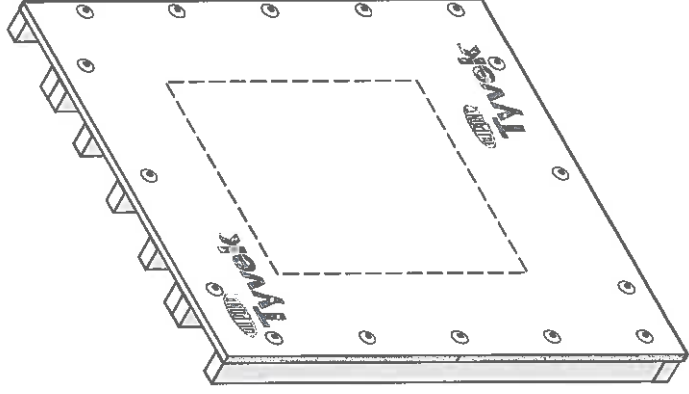
#### STEP 1

- A. Cut rough opening in sheathing for window. Ensure that sheathing is cut flush with, or slightly below the sill framing to allow for positive drainage.



#### STEP 2

- A. Wrap wall as shown in DuPont™ Tyvek® Water-Resistive and Air Barriers Installation Guidelines for Buildings Less Than 5 Stories that can be found at [www.weatherization.tyvek.com](http://www.weatherization.tyvek.com). Do not install fasteners within 6" of the sills and jambs of the openings and within 9" of the head of the openings.

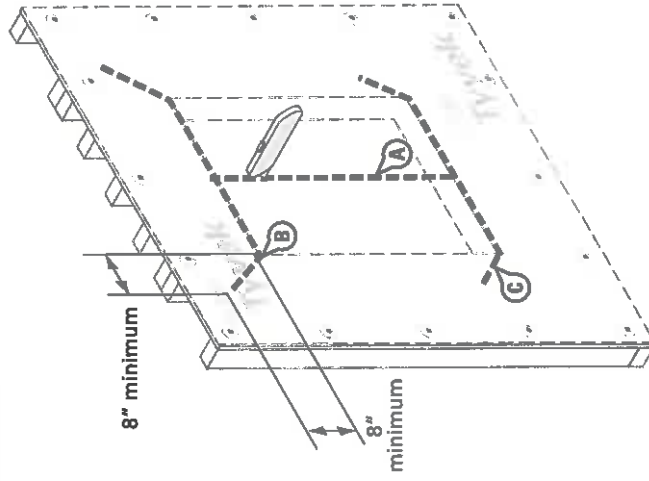


## DuPont Self-Adhered Flashing Systems Installation Guidelines

### STEP 3

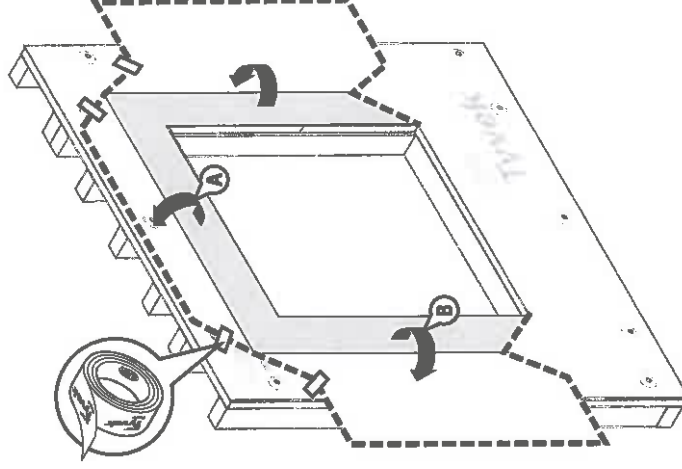
Prepare air and water barrier for window installation.

- A. Make an "I-Cut" in the DuPont™ Tyvek® WRB. For an "I-Cut" begin with a horizontal cut across the bottom and the top of the window frame (for round top windows, cut from the center cut straight down to the sill).
- B. Cut a head flap at a 45° angle to expose 8" of sheathing to allow for head flashing installation.
- C. Cut two 45° slits extending from the bottom corner up and away from the window opening to expose 6"–8" of sheathing. This will create a flap at each jamb to allow for jamb flashing installation.



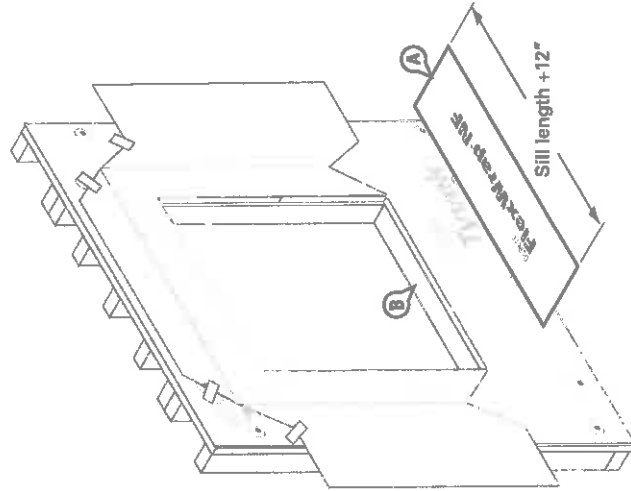
### STEP 4

- A. Flip the head flap up to expose the sheathing and temporarily secure with DuPont™ Tyvek® Tape.
- B. Flip the flaps to the side to expose the sheathing and temporarily secure with DuPont™ Tyvek® Tape.



## STEP 5

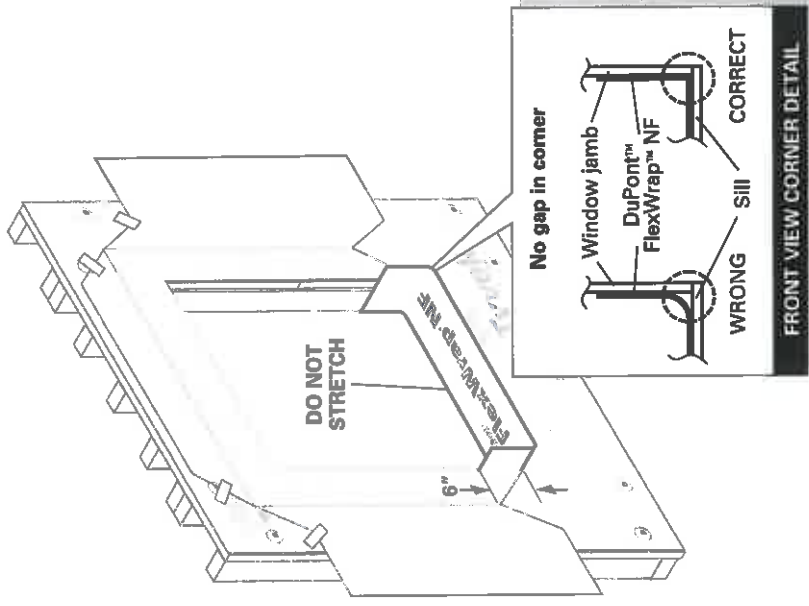
- A. Prepare the sill flashing by cutting a piece of DuPont™ FlexWrap™ NF that is at least 12" longer than sill length. Use 6" DuPont™ FlexWrap™ NF for 2" x 4" framing and 9" DuPont™ FlexWrap™ NF for 2" x 6" framing.
- B. Inspect installation surface to ensure surface is free of dirt or substances that could interfere with adhesion as well as any sharp protrusions.



## STEP 6

- A. Install the sill flashing. Remove the largest strip of release paper, align the flashing with the interior edge of sill, and install into rough opening across sill and up jambs (min 6"). Apply working from the middle of the sill towards the sides. Secure DuPont™ FlexWrap™ NF tightly into the corners by first working in along the sill before adhering up the jambs.

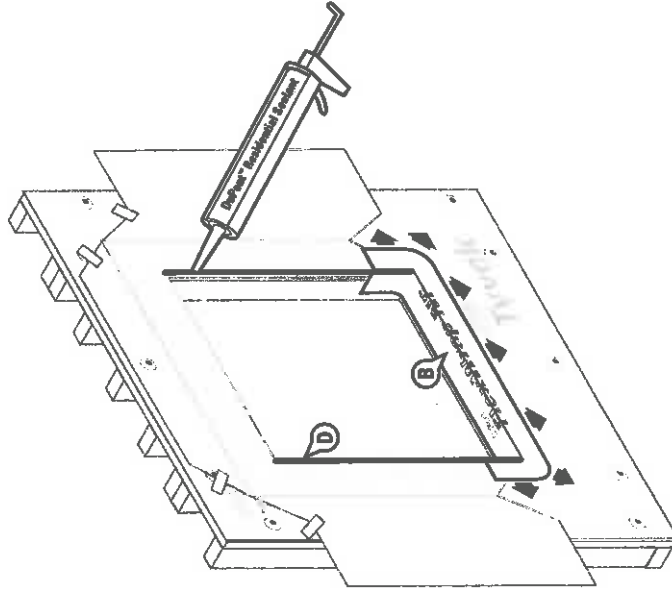
**DO NOT STRETCH MATERIAL ALONG THE SILL OR JAMBS.**



## DuPont Self-Adhered Flashing Systems Installation Guidelines

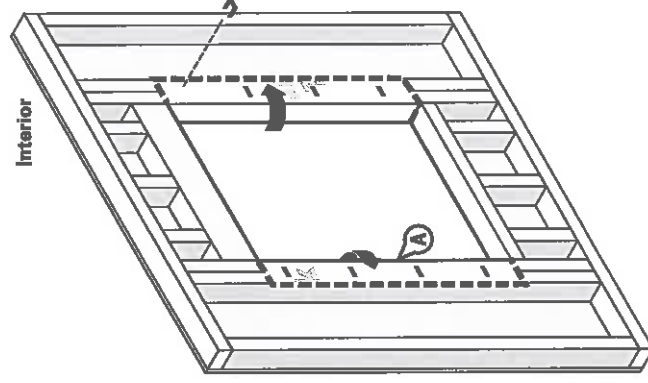
### STEP 7

- A. Remove second half of the release paper.
- B. Fan DuPont™ FlexWrap™ NF at bottom corners and adhere onto face of wall.
- C. Firmly press sill flashing to ensure full adhesion on all surfaces. Eliminate wrinkles and bubbles by smoothing surface and repositioning as necessary.
- D. Apply continuous bead of DuPont™ Residential Sealant, or recommended sealant, to wall at the window jambs.



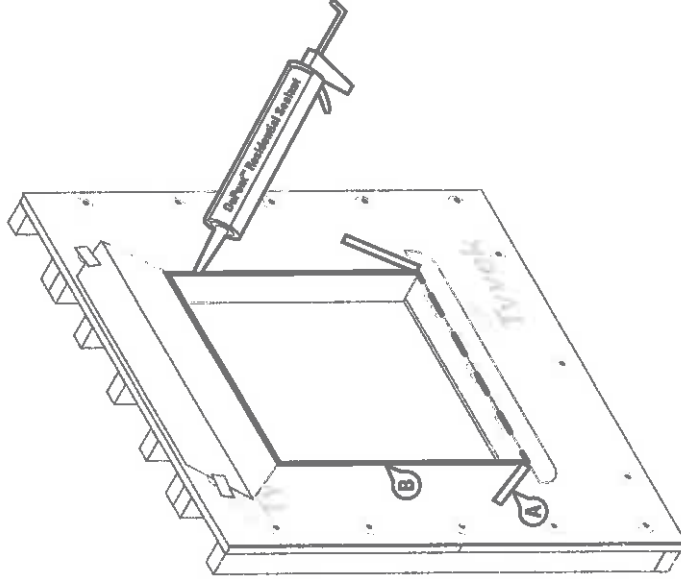
### STEP 8

- A. Fold flaps into rough opening and secure to inside wall. Cut off excess flaps if desired.



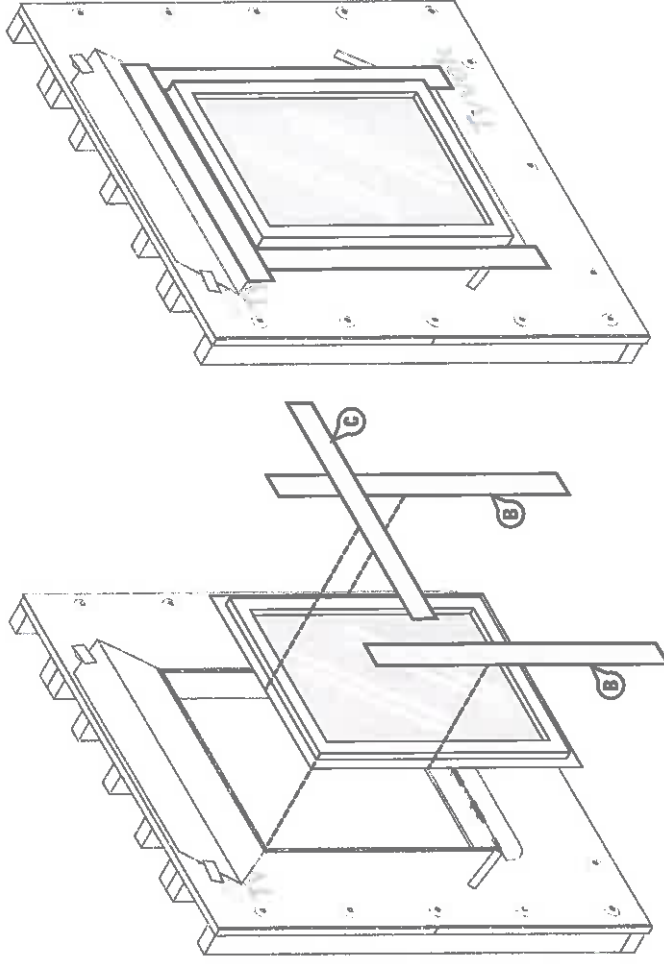
**STEP 9**

- A. Starting at the bottom of the window, install DuPont™ Tyvek® Tape or DuPont™ Flashing Tape along the angled cut in the DuPont™ Tyvek® WRB.
- B. Apply continuous bead of sealant at the window head and jamba to wall or back side of window mounting flange. **DO NOT APPLY CONTINUOUS SEALANT BEAD ACROSS BOTTOM SILL FLANGE** to allow for drainage. If sealant is applied to the sill, ensure that there are at least two (2) 2" gaps in the sealant bead for every 4' of window to allow for drainage.



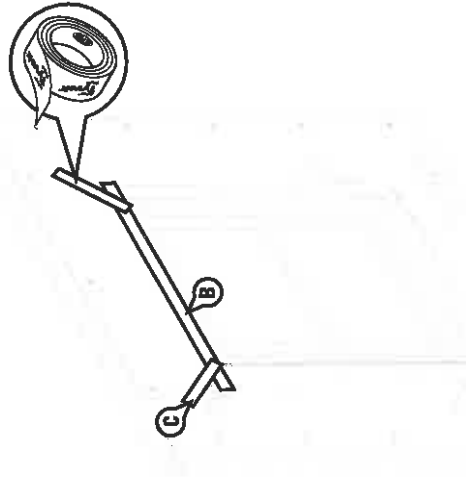
**STEP 10**

- A. Install window according to manufacturer's instructions.
- B. Cut two pieces of DuPont™ Flashing Tape or DuPont™ StraightFlash™ for jamb flashing extending 1" above window head flange and 4" to 6" below bottom edge of sill flashing. Remove release paper and press tightly along sides of window frame.
- C. Cut a piece of DuPont™ Flashing Tape or DuPont™ StraightFlash™ for head flashing, which extends beyond outer edges of jamb flashings. Remove release paper and install completely covering mounting flange and adhering to exposed sheathing or framing members.



**STEP 11**

- A. Flip down upper flap of DuPont™ Tyvek® WRB so it lays flat across head flashing, then trim **1"–2" above the window opening**.
- B. Tape Seams as shown. **DO NOT TAPE** at bottom of window. At the head, continuous tape seams with DuPont™ Tyvek® Tape or DuPont™ Flashing Tape. Skip taping at the head is acceptable if an air barrier is not required or if additional drainage is desired.
- C. Tape diagonal seams of DuPont™ Tyvek® WRB with DuPont™ Tyvek® Tape or DuPont™ Flashing Tape.

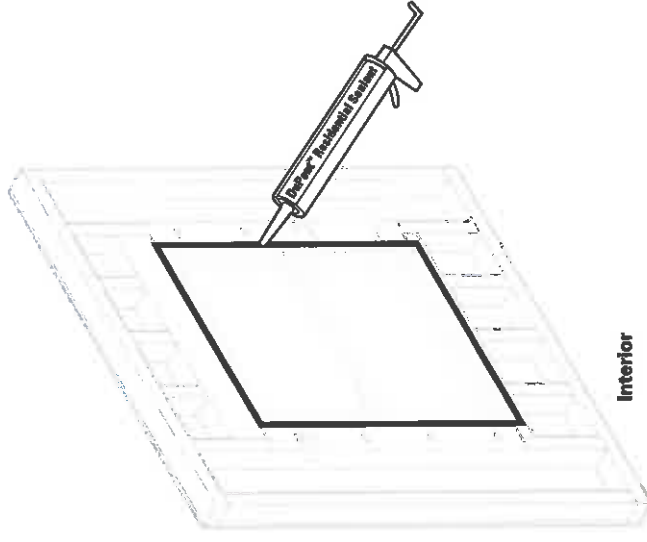


**STEP 12**

**Final Step**

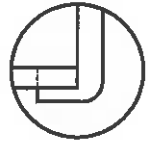
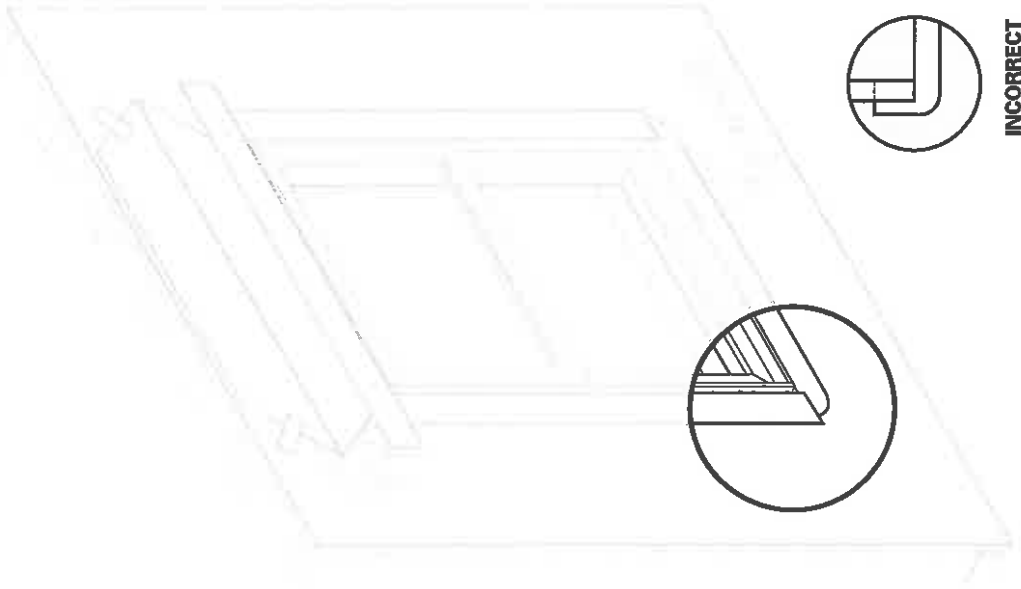
Install DuPont™ Residential Sealant or recommended sealant (and backer rod as necessary) around the window opening at the interior. It is also acceptable to use DuPont™ Window & Door Foam or recommended foam. The seal created by the sealant (and backer rod as necessary) or foam will also serve as a back dam. DuPont™ Residential Sealant should be tooled flat to allow the natural curing process to create a concave shape. Be sure that the sealant penetrates the grooves of the DuPont™ FlexWrap NF™ around the sill.

**NOTE:** Installations that specify a window/door design rating of DP45 or greater require extra precautions. See General Instructions for performance requirements exceeding this design rating.

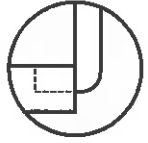


# DuPont Self-Adhered Flashing Systems Installation Guidelines

## Proper overlap for water management



**INCORRECT**  
DuPont™ FlexWrap™ NF  
reverse flashed



**CORRECT**  
DuPont™ Flashing Tape or  
DuPont™ StraightFlash™  
overlaps  
DuPont™ FlexWrap™ NF

### Technical Specifications

DuPont™ Tyvek® WRBs used in construction products are made from 100% flash spunbonded high density polyethylene fibers which have been bonded together by heat and pressure, without binders or fillers, into a tough durable sheet structure. Additives have been incorporated into the polyethylene to provide ultraviolet light resistance. DuPont requires that DuPont™ Tyvek® CommercialWrap® and CommercialWrap® D be covered within nine months (270 days) of installation and that all other DuPont™ Tyvek® WRB's be covered within 4 months (120 days) of installation.

DuPont™ self-adhered flashing products are made from a synthetic rubber adhesive and a laminate of polyethylene film, polypropylene film, elastic fiber, synthetic rubber adhesive, polyurethane adhesive, and a top sheet of flash spunbonded high density polyethylene fibers or polypropylene film. Additives have been incorporated into these materials to provide ultraviolet light resistance. DuPont requires that DuPont™ FlexWrap™ NF, StraightFlash™ and StraightFlash™ VF be covered within nine months (270 days) of installation. DuPont requires that DuPont™ Flashing Tape be covered within four months (120 days) of installation.

### Warning

**DuPont™ Tyvek® WRBs are slippery and should not be used in any application where they will be walked on. In addition, because they are slippery, DuPont recommends using kickjacks, scaffolding, or lifts for exterior work above the first floor. If ladders must be used, extra caution must be taken to use them safely by following the requirements set forth in ANSI Standards 14.1, 14.2, and 14.5 for ladders made of wood, aluminum, and fiberglass, respectively. DuPont™ Tyvek® products are combustible and should be protected from flames and other high heat sources. DuPont™ Tyvek® products will melt at 275°F (135°C) and if the temperature of DuPont™ Tyvek® reaches 750°F (400°C), it will burn and the fire may spread and fall away from the point of ignition. For more information, call 1-800-44-Tyvek.**

**DuPont™ self-adhered flashing products and their release paper are slippery and should not be walked on. Remove release paper from work area immediately. DuPont™ self-adhered flashing systems products will melt at temperatures greater than 250°F (121°C). DuPont™ self-adhered flashing systems products are combustible and should be protected from flames and other high heat sources. DuPont™ self-adhered flashing systems products will not support combustion if the heat source is removed. However, if burning occurs, ignited droplets may fall away from the point of ignition. For more information, call 1-800-44-Tyvek.**

**DuPont™ Residential Sealant is irritating to skin, eyes, and respiratory tract. For proper usage, follow directions stated on the product label. For health information, refer to the Material Safety Data Sheet or call Chemtrec at 1-800-424-9300.**

### Note

When installed in conjunction with other building materials, DuPont™ self-adhered flashing products must be properly shingled with these materials such that water is diverted to the exterior of the wall system. DuPont™ Tyvek® products are air and water barriers and not the primary water barrier. The outer facade is the primary barrier. You must follow facade manufacturer's installation and maintenance requirements for all facade systems in order to maintain water holdout properties and ensure performance of DuPont™ Tyvek® WRBs. Use of additives, coatings or cleansers on or in the facade system may impact the performance of DuPont™ Tyvek® WRBs. DuPont™ Tyvek® Weatherization Systems products are to be used as outlined in this installation guideline. DuPont™ self-adhered flashing products should only be used to seal penetrations and flash openings in houses or buildings. DuPont™ self-adhered flashing products are not to be used in roofing applications. For superior protection against bulk water penetration, DuPont suggests a system combining a quality exterior facade, a good secondary air and water barrier and exterior sheathing, high quality windows and doors, and appropriate flashing materials paying attention to proper installation of each component. In a system where no exterior sheathing is used and DuPont™ Tyvek® WRBs are installed directly over the wall studs, exterior facade materials should be selected to ensure maximum protection against water intrusion. Careful workmanship and proper installation of each component is very important.

DuPont believes this information to be reliable and accurate. The information may be subject to revision as additional experience and knowledge is gained. It is the user's responsibility to determine the proper construction materials needed.

For complete warranty information please visit [www.weatherization.tyvek.com](http://www.weatherization.tyvek.com) or call 1-800-44-Tyvek.

This information is not intended to be used by others for advertising, promotion, or other publication for commercial purposes.

For more information about DuPont Weatherization Systems, please call 1-800-44-Tyvek or visit us at [www.weatherization.tyvek.com](http://www.weatherization.tyvek.com)



**Tyvek.**

## INSPECTION PROTOCOL WOOD FRAME DAMAGE

### 1.0 GENERAL

- 1.1 PROJECT IDENTIFICATION: Inspection Protocol – Wood Frame Damage
- 1.2 PROJECT OWNER: Vintage Grand Condominium Association, Inc.
- 1.3 SPECIFIER: Steven. J. Mainardi, PE  
Delta Engineering & Inspection, Inc.  
10405 Technology Terrace, Lakewood Ranch, FL 34211
- 1.4 PROTOCOL SUMMARY:

This protocol is intended to provide a basis for the assessment of the building. This protocol describes the methods for examining the building's exterior wood framing, to determine the existence of damage due to insect, wood decay, moisture, vermin, or other wood-destroying organisms. This protocol has been prepared for the exclusive use of Vintage Grand Condominium Association, Inc. and its authorized representatives.

### 2.0 PROCEDURE

- 2.1 The scope of work is to be performed under the terms and conditions of the contract which includes the furnishing of all materials, labor, services, utilities, permit fees, supervision, quality control, inspection and equipment required of incidental to address the work as described below.
- 2.2 Install protection, i.e. drop cloths, protection board, and plastic sheeting at all areas surrounding the area of work to prevent damage to the property. Protection shall include but not limited to the installation of protection at floor surfaces in the areas of work as well as but not limited to installing plastic protection adjacent to the area of work which may be affected.
- 2.3 Staging, scaffolding, shoring, and/or other methods will be required as needed to facilitate the Work. The staging shall remain in place for use by the Engineer and Inspectors to conduct inspections and punch out.
- 2.4 The Contractor shall remove and dispose of the stucco and sheathing located along the exterior walls with the intent to assess the damage to the wood framing members in accordance with these specifications and details. The Contractor shall continue to remove stucco and sheathing at the direction of the Engineer until sound wood is encountered.
- 2.5 Remove and legally dispose of all demolished building components and finishes, damaged timber, insulation, drywall and wall components affected by insect, wood decay, moisture, vermin, or other wood-destroying organisms.
- 2.6 Once the exterior wall framing has been completely exposed, the condition of the framing shall be assessed for damages where the integrity of the timber has been compromised by insect, wood decay, moisture, vermin, or other wood-destroying organisms to the extent of which that member would not be permissible for use in new construction.
- 2.7 Damage shall be confirmed through visual examination and by probing the timber with a tool such as a screwdriver, awl, or pick by jabbing the member with the probe and prying

down. The resistance to the probe and the condition of the pried splinters can be evaluated. Sound wood is dense and hard and when pried into will break into long splinters. Damaged wood is soft and brittle and will break into short splinters.

- 2.8 The Contractor shall provide all shoring, bracing, or support for all existing structural elements and shall remain in place until all structural modifications have been completed and accepted for their intended use. The Contractor shall be responsible for the design and erection of all load-bearing shoring.
- 2.9 All damaged wood framing and associated components shall be repaired or replaced with members in accordance with these specifications, details, and as directed by the Engineer. The Contractor shall contact the Engineer to assess the damage.
- 2.10 Install straps, ties, and supplemental fastening and members in accordance with these specifications, details, and manufacturers' instruction.
- 2.11 After framing repairs and connectors have been installed and prior to re-sheathing, the Contractor shall contact the Engineer to assess the repairs prior to the installation of the sheathing.
- 2.12 Install new exterior wall sheathing to exterior framing in accordance with these specifications and details. The Contractor shall contact the Engineer to assess the work prior to the installation of the weather-resistive barriers.
- 2.13 Install weather-resistive barriers in a shingled fashion over sheathing in accordance with these specifications, details, and manufacturers' instructions.
- 2.14 Install self-furring expanded metal lath per ASTM C1063. The Contractor shall contact the Engineer to assess the lath prior to the installation of the stucco.
- 2.15 Install accessories, flashing, and 7/8" stucco in accordance with ASTM C1063 / C926 and these specifications, details, and manufacturers' instruction. The exact matching of the stucco texture is required.
- 2.16 Repair, prepare, and paint all exterior areas repaired or damaged during execution of the work to include but not limited to stairs, railings, stucco, ceiling, etc. in accordance with these specifications, details, and manufacturers' instruction. Stucco and paint touch-up repairs are to match existing surfaces.

### 3.0 DEFINITIONS

- 3.1 Provide: To furnish, install or apply.
- 3.2 Approved: Acceptance of item.
- 3.3 Match Existing: Match existing as acceptable to the Owner.
- 3.4 Intent: Aim or purpose. Anything not expressly set forth but which is reasonably implied or necessary for proper examination of the framing shall be included.
- 3.5 Writing style: Protocols are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Administrator of the protocol. For example, 'Provide openings' means 'Administrator shall provide openings.'

END OF SECTION

## WINDOW REMOVAL AND REPLACEMENT SCOPE

### 1.0 DEMOLITION

#### A. Protection:

1. Prior to starting demolition operations, provide necessary protections of existing spaces to remain.
2. Protect existing finish work that is to remain in place and becomes exposed during demolition operations.
3. Erect and maintain dust resistant partitions and enclosures as required to prevent the spread of dust or fumes to occupied portions of the structure.

#### B. Demolition Operations:

1. Cut and remove elements as designated in the project specification herein.
2. Execute demolition in a careful and orderly manner with least possible disturbance or damage to adjoining surfaces and structure.
3. Exercise extreme caution in cutting and demolition of portions of existing structure. Do not cut or remove structural members for any reason without proper shoring and protection.
4. Contractor shall maintain a dust free operation and remove debris from work areas in a responsible manner.
5. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution.

#### C. Disposal:

1. Materials, equipment and debris resulting from demolition operations shall become property of Contractor. Remove demolition debris at least once each day in accordance with applicable City, State, and Federal Laws.
2. Do not store or burn materials on site. Remove combustible waste materials in a manner approved by local Fire Department. Remove, handle and dispose of any hazardous waste and debris in accordance with applicable City, State, and Federal Laws.
3. Transport demolition debris to off-site disposal area and legally dispose of the debris.

#### D. Cleaning and Repair:

1. Leave building broom clean and free of debris.
2. Repair demolition performed in excess of that required. Return structure and surfaces not designated for alteration to condition existing prior to commencement of selection demolition.
3. Keep areas clean during the repair operation. Remove and clean promptly.
4. Collect and maintain the site in a clean, safe, and orderly condition.

- 2.0 THE INSTALLATION process of the windows is to conform to the manufacturer's **Florida Product Approvals and to conform with the current Florida Building Code, FMA/AAMA 100-12 Method 'C' Standard Practice for the Installation of Windows with Flanges or Mounting Fins in Wood Frame Construction for Extreme Wind/Water Conditions**, and the following:

- A. Install rough opening protective flashing in accordance with specifications, details and manufacturer's instructions.
- B. Property protection.
  - 1. Owner's Responsibility:
    - a. Removal/reinstallation of window treatments.
    - b. Provide clear access to the work areas and remove all furnishings and fixtures from the work area. All furniture is to be moved at least 4' away from the work area.
  - 2. Contractor Responsibility:
    - a. Provide appropriate protection of the floor surfaces at work areas and through the unit.
    - b. Vacuum and cleanup of work areas.
- C. Verify that openings provide an acceptable anchoring surface, being clean, level, plumb, and dimensionally within the manufacturer's tolerance of clearance spacing.
- D. Correct unacceptable openings as required prior to installation.
- E. Install windows and accessories in accordance with approved shop drawings and manufacturer's recommendations.
- F. Securely fasten frames and set units level, plumb, and square with respect to the surrounding structure, without twist or bow.
- G. Place insulation materials around shim spaces as required to ensure continuity of the thermal barrier of the structure.
- H. Apply a bead of one part urethane sealant to inside of window fins prior to installation. Urethane sealant shall be BASF NP1 or approved equal.
- I. Apply a closed cell backer rod into all exterior annular spaces.
- J. Apply a ½" flexible urethane sealant exterior to window to ensure a tight weather seal.
- K. Install new marble sills to match existing as closely as possible.
- L. Repair of drywall returns if necessary:
  - 1. New drywall cut into the returns, new corner bead secured to existing wall and new return.
  - 2. A first coat of drywall compound applied and when set, a second finish coat of compound will be applied and sanded until ready for owner to paint.
- M. Ensure that units freely operate in a normal fashion, and that vents make proper contact with weather-stripping perimeter seal. Adjust frame, vent, or hardware as needed.
- N. Leave units thoroughly clean and free of dirt other construction residue.

3.0 STUCCO INSTALLATION:

- A. Replace water damaged exterior wall framing elements as needed (replacement of damaged framing beyond exterior walls will require additional charges).
- B. Install new Owens Corning Brand R-13 insulation if necessary.
- C. Installation of new code compliant 7/8" stucco system.
- D. Interior drywall will be replaced as needed at locations of exterior wall framing replacement and window installation. Drywall will be taped, finished, primed, and painted to match existing as closely as possible.

END OF SECTION