

## Addendum #3

Date: April 27, 2015

Project: Price Building 2<sup>nd</sup> Floor South Window Replacement

Contract: FD-15-012

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The work herein shall be considered part of the bid documents for the referenced project and carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Acknowledge receipt of addendum on the bid form as indicated.

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### General Information:

1. **BID SUBMISSION DEADLINE HAS BEEN EXTENDED.** Bids will be accepted until 3:00pm local time on Friday, May 01, 2015.

### Clarifications:

1. The spandrel panels are aluminum panels, not glass panels, but the description of these panels is found in the attached spec. section titled "Glazing".

### Changes to Specifications:

1. Revisions were made to section 00 11 16 - invitation to bid and section 00 41 13 Bid Form-Bid Bond. **See attached**
2. GLAZING
3. Section 08 80 00
4. Replaces the original Specification Section 08 80 00. **See attached.**

### Changes to Drawings:

1. Drawing A3.2: At "CONSTRUCTION NOTES", Note #2, change to read as follows, "REMOVE EXISTING **SOFFIT** AT NORTH, EAST AND SOUTH SIDES OF THE BUILDING AND REPLACE WITH NEW **METAL** SOFFIT."
2. Drawing A3.2: At "STOREFRONT / CURTAINWALL TYPES", "GLAZING TYPES", change Glazing Type "G-2" to read as follows: "G-2 - 1" THICK INSULATED SPANDREL PANEL WITH .062 PAINTED ALUM. FINISH BOTH SIDES. **COLOR BY ARCHITECT.**"
3. Drawing A3.3: At First Floor Plan-South Wing, exterior door to Classroom #110, remove designation for "RS-1" from the drawing (no roller shade required at door location).
4. Drawing A3.4: Replace "Detail 2/6.1 – S-3 VERTICAL SECTION" with the revised version on attached sketch "SK-A.1" (not to scale). **See attached.**
5. Drawing A3.4: Replace "Detail 3/6.1 – S-3 VERTICAL SECTION" with the revised version on attached sketch "SK-A.2" (not to scale). **See attached.**

6. Drawing A3.4: Replace “Detail 5/6.1 – S-3 VERTICAL SECTION” with the revised version on attached sketch “SK-A.3” (not to scale). **See attached.**

**General Information:**

2. Pre-Bid Sign-in Sheet: Please see attached sheet for a list of the attendees at the mandatory pre-bid. **See attached.**
3. Pre-Bid Meeting Minutes: These minutes are now integral to the bidding documents. **See attached.**
4. Dates and key events have been revised. **See attached.**

**Questions:**

- Q.** Drawing 3.2 Detail 3/3.2 references drawing 5.2. We do not have this drawing.
- A.** At the section tags on Detail “3/3.2 – STOREFRONT / CURTAINWALL TYPES”, change all references to drawing “5.2” to drawing “6.1”.
- Q.** Also sheet 3.2 Detail 3/3.2 - window note states that this occurs at 1st and 2nd floors. But Drawing 3.1 rear elevation 3/3.1 does not show S 2 windows at the 1st floor. Please advise.
- A.** At the storefront elevation of storefront “S-2” on Detail “3/3.2 – STOREFRONT / CURTAINWALL TYPES”, delete the note saying “OCCURS AT 1<sup>ST</sup> AND 2<sup>ND</sup> FLOORS”. The storefronts of this type occur only on the 2<sup>nd</sup> floor (1<sup>st</sup> floor storefronts were replaced in the previous project).
- Q.** Drwg 3.3 detail 2/3.3 is calling for S1 and S2 windows at the first floor, but drawing 3.1 detail 2/3.1 and detail 3/3.1 are not showing new windows. Please advise.
- A.** At “2/3.3 FIRST FLOOR PLAN – SOUTH WING” delete all references to “S1” AND “S2” storefronts. The scope of work being shown on this plan is the installation of roller shades (1<sup>st</sup> floor storefronts were replaced in the previous project).
- Q.** Will Roller shades be supplied and installed by GC at all new windows or just where RS1 is noted?
- A.** Roller shades are included in the scope of work for all new storefront installations. Roller shades are not included in the scope of work for the curtainwall installations (“C6”).
- Q.** Will contractors be allowed to work on the weekends?
- A.** Yes.

END



## DELAWARE STATE UNIVERSITY

### OFFICE OF FACILITIES MANAGEMENT

1200 N. DuPont Highway  
Dover, Delaware 19901-2277

Date: April 27, 2015

Project: FD-15-012 – Price Building 2<sup>nd</sup> Floor South Window Replacement

The revised project schedule and key events shall be considered part of the bid documents for the referenced project above and carried out in accordance with the Contract Documents.

### **Revised key events and dates:**

<b>April 22, 2015</b>	<b>Mandatory Site Visit at Price Building Lobby (2:00PM EST)</b>
April 24, 2015	Deadline for Questions (4:00PM EST)
April 27, 2015	Posting of Answers to Contractor Questions (4:00PM EST)
April 27, 2015	Final Date for Addendums
<b>May 01, 2015</b>	<b>Proposals Due (3:00 PM EST)</b>
May 06, 2015	Contractor Selection Date
May 18, 2015	Anticipated Start of Construction Date (subject to change)
May 29, 2015	Latest Date for Contract Award
<b>September 31, 2015</b>	<b>Substantial Completion</b>

## INVITATION TO BID

Sealed bids for Delaware State University Contract No. **FD-15-012 – Price Building 2<sup>nd</sup> Floor South Window Replacement** will be received by the Delaware State University, in the reception area of the Purchasing Office in the Administration Building, 1200 N. DuPont Highway, Dover, DE 19901-2277 (Third Floor), until **3:00pm** local time on **May 01, 2015**, at which time they will be publicly opened and read aloud in the Conference Room. Bidder bears the risk of late delivery. Any bids received after the stated time will be returned unopened.

Project involves: The Project consists of the replacement of existing windows in the second floor south end and installation of new window treatment on first and second floor south end of the building and as per bid documents.

A **MANDATORY** Pre-Bid Meeting will be held on **April 22, 2015, at 1:00pm at Price Building Lobby** for the purpose of establishing the listing of subcontractors and to answer questions. Representatives of each party to any Joint Venture must attend this meeting. **ATTENDANCE OF THIS MEETING IS A PREREQUISITE FOR BIDDING ON THIS CONTRACT.**

Sealed bids shall be addressed to the Delaware State University c/o the Purchasing Department, Administration Building, Room 321 (Third Floor), Dover, DE 19901-2277, Attn: Jessica Wilson, Director of Purchasing. The outer envelope should clearly indicate: **"DSU CONTRACT NO. FD-15-012 – Price Building 2<sup>nd</sup> Floor South Window Replacement - SEALED BID - DO NOT OPEN."**

Contract documents may be obtained or reviewed at the office of StudioJaed, 2500 Wrangler Hill Road, Fox Run Office Plaza, Suite 110, Bear, DE 19701 upon receipt of \$150.00 per set/non-refundable, starting on the day of the mandatory pre-bid. Checks are to be made payable to "StudioJaed". Alternatively, in consideration of our environment, and in alignment with the University's sustainability initiatives, bidders may request an electronic copy of the bidding documents by submitting a written request to [constructionbid@desu.edu](mailto:constructionbid@desu.edu). Delaware State University will track all bidders and ensure plan holder receive all addenda.

### Summary of Events and Dates:

<b>April 22, 2015</b>	<b>Mandatory Site Visit at Price Building Lobby (1:00PM EST)</b>
<b>April 24, 2015</b>	<b>Deadline for Questions (4:00PM EST)</b>
<b>April 27, 2015</b>	<b>Posting of Answers to Contractor Questions (4:00PM EST)</b>
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<b>September 31, 2015</b>	<b>Substantial Completion</b>

Bidders will not be subject to discrimination on the basis of race, creed, color, sex, sexual orientation, gender identity or national origin in consideration of this award, and Minority Business Enterprises, Disadvantaged Business Enterprises, Women-Owned Business Enterprises and Veteran-Owned Business Enterprises will be afforded full opportunity to submit bids on this contract. Each bid must be accompanied by a bid security equivalent to ten percent of the bid amount and all additive alternates.

The successful bidder must post a performance bond and payment bond in a sum equal to 100 percent of the contract price upon execution of the contract. Delaware State University reserves the right to reject any or all bids and to waive any informalities therein. Delaware State University may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days' notice by certified delivery, facsimile machine or other electronic means to those bidders receiving plans.

**END OF ADVERTISEMENT FOR BIDS**



**BID FORM**

**Project:** FD-15-012 – Price Building 2<sup>nd</sup> Floor South Window Replacement

**Location:** Delaware State University  
Price Building, Main Campus  
1200 North DuPont Hwy  
Dover, Delaware

**For Bids Due:** May 01, 2015 at 3:00pm

**To:** Delaware State University  
Administration Bldg.  
Purchasing, Room 321  
1200 N. DuPont Highway  
Dover, DE 19901-2277  
Attn: Jessica Wilson  
Director of Purchasing

**Name of Bidder:** \_\_\_\_\_

**Delaware Business License No.:** \_\_\_\_\_ **Taxpayer ID No.:** \_\_\_\_\_  
(A copy of Bidder's Delaware Business License must be attached to this form.)

**(Other License Nos.):** \_\_\_\_\_

**Phone No.:** (       ) \_\_\_\_\_ - \_\_\_\_\_ **Fax No.:** (       ) \_\_\_\_\_ - \_\_\_\_\_

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

\$ \_\_\_\_\_ (Written Out).  
( \$ \_\_\_\_\_ ) (Figures).

**A. ALTERNATES (Note: project is subject to prevailing wages)**

1. Alternates: Alternate prices conform to applicable project specification section. Refer to the drawing specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossing out the part that does not apply.

a. **Alternate #1:** \_\_\_\_\_ Net - ADD / DEDUCT  
• \_\_\_\_\_ (Figures).

- \_\_\_\_\_ (Written Out).

b. **Alternate #2:** Net - ADD / DEDUCT

- \_\_\_\_\_ (Figures).
- \_\_\_\_\_ (Written Out).

c. **Alternate #3:** Net - ADD / DEDUCT

- \_\_\_\_\_ (Figures).
- \_\_\_\_\_ (Written Out).

B. UNIT PRICES

1. Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

	<u>ADD</u>	<u>DEDUCT</u>
UNIT PRICE No. 1: _____ (BRIEF DESCRIPTION)	\$ _____	\$ _____
UNIT PRICE No. 2: _____ (BRIEF DESCRIPTION)	\$ _____	\$ _____
UNIT PRICE No. 3: _____ (BRIEF DESCRIPTION)	\$ _____	\$ _____

C. WORK SCHEDULE

1. We understand that this contract is governed by liquidated damages and that submission of this bid is acceptance of the proposed contract completion date. Our proposed detailed project schedule shows more fully the sequence of activities necessary to meet the specified schedule. The project schedule is a required attachment of a complete bid and failure to submit a viable schedule will be a justifiable reason to deem the bid as incomplete.
2. I/We can begin work \_\_\_\_\_ calendar days after notification of award and will require \_\_\_\_\_ calendar days thereafter to complete the work. Work on the project will begin \_\_\_\_\_ calendar days after Letter of Intent.
3. Alternative Work Hours

Work during “regular hours” at this site is being performed on a single shift, eight hours per day, 7:30 AM to 4:30 PM, and five days per week, Monday through Friday. To meet the schedule established on the basis of Item 1 above, our proposed work hours will be \_\_\_\_\_ hours per day, \_\_\_\_\_ AM to \_\_\_\_\_ PM, and \_\_\_\_\_ days per week, \_\_\_\_\_ through \_\_\_\_\_ the cost of which is reflected in our lump sum price. Our lump sum price also includes any mandatory off-hours work required per special conditions.

D. SITE SUPERINTENDANT

We propose to use \_\_\_\_\_ as our site superintendent. A resume of his/her qualifications is attached.

We understand that DSU reserves the right to interview him/her prior to contract award/prior to start of work and to reject him/her if not considered acceptable. If rejected, we will propose alternate personnel for the position who will be subject to the same review and acceptance procedure, at no increase in our lump sum proposal.

We also understand DSU reserves the right to reject our bid if we are unable to provide a site supervisor acceptable to DSU within thirty (30) calendar days after submission of this bid.

#### E. REMARKS

1. I/We acknowledge Addendums numbered \_\_\_\_\_ and the price(s) submitted include any cost/schedule impact they may have.
2. This bid shall remain valid and cannot be withdrawn for thirty (30) days from the date of opening of bids (60 days for School Districts and Department of Education), and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.
3. The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.
4. This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.
5. Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within \_\_\_\_\_ calendar days of the Notice to Proceed.
6. Our Bid Price(s) are firm based on contract award within thirty (30) calendar days of the date of submittal of this bid.
7. I/We understand that we will not be compensated at a later date for claimed additional costs based on any information received during the bid period, but which is not identified in our proposal and subsequently accepted in writing by DSU.



The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By \_\_\_\_\_ Trading as \_\_\_\_\_  
(Individual's / General Partner's / Corporate Name)  
\_\_\_\_\_  
(State of Corporation)

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

Witness: \_\_\_\_\_ By: \_\_\_\_\_  
(SEAL) ( Authorized Signature )

\_\_\_\_\_  
( Title )

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

**ATTACHMENTS**

Sub-Contractor List  
Non-Collusion Statement  
Bid Security  
Construction Schedule  
Resume of Site Superintendent  
(Others as Required by Project Manuals)

**END OF SECTION 00 41 13**

STATE OF DELAWARE  
OFFICE OF MANAGEMENT AND BUDGET

**BID BOND**

TO ACCOMPANY PROPOSAL  
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_ in the County of \_\_\_\_\_  
and State of \_\_\_\_\_ as **Principal**, and \_\_\_\_\_  
\_\_\_\_\_ of \_\_\_\_\_ in the County of \_\_\_\_\_ and State of \_\_\_\_\_  
as **Surety**, legally authorized to do business in the State of Delaware ("**State**"), are held and firmly unto the **State**  
in the sum of \_\_\_\_\_ Dollars (\$\_\_\_\_\_),  
or \_\_\_\_\_ percent not to exceed \_\_\_\_\_  
\_\_\_\_\_ Dollars (\$\_\_\_\_\_) of amount of bid on Contract No. \_\_\_\_\_, to be  
paid to the **State** for the use and benefit of \_\_\_\_\_ (*insert State agency  
name*) for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors,  
administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bonded **Principal** who has  
submitted to the \_\_\_\_\_ (*insert State agency name*) a certain proposal to  
enter into this contract for the furnishing of certain material and/or services within the **State**, shall be awarded this  
Contract, and if said **Principal** shall well and truly enter into and execute this Contract as may be required by the  
terms of this Contract and approved by the \_\_\_\_\_ (*insert State  
agency name*) this Contract to be entered into within twenty days after the date of official notice of the award  
thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in  
full force and virtue.

Sealed with \_\_\_\_\_ seal and dated this \_\_\_\_\_ day of \_\_\_\_\_ in the year of our Lord two  
thousand and \_\_\_\_\_ (20\_\_\_\_).

SEALED, AND DELIVERED IN THE  
Presence of

Corporate  
Seal

By:

\_\_\_\_\_  
Name of Bidder (Organization)

\_\_\_\_\_  
Authorized Signature

Attest \_\_\_\_\_

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name of Surety

Witness: \_\_\_\_\_

By:

\_\_\_\_\_  
Title

**SUBCONTRACTOR LIST**

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

<b><u>Subcontractor Category</u></b>	<b><u>Subcontractor</u></b>	<b><u>Address (City &amp; State)</u></b>	<b><u>Subcontractors tax payer ID # or Delaware Business license #</u></b>
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

**NON-COLLUSION STATEMENT**

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date (*to the Office of Management and Budget, Division of Facilities Management*).

All the terms and conditions of (*Project or Contract Number*) have been thoroughly examined and are understood.

**NAME OF BIDDER:** \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE  
(TYPED):** \_\_\_\_\_

**AUTHORIZED REPRESENTATIVE  
(SIGNATURE):** \_\_\_\_\_

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

**ADDRESS OF BIDDER:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**E-MAIL:** \_\_\_\_\_

**PHONE NUMBER:** \_\_\_\_\_

Sworn to and Subscribed before me this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_.

My Commission expires \_\_\_\_\_. NOTARY PUBLIC \_\_\_\_\_.

**THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.**

## **SECTION 08 80 00**

### **GLAZING**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Glass.
- B. Glazing compounds and accessories.

##### **1.02 RELATED REQUIREMENTS**

- A. Section 07 90 05 - Joint Sealers: Sealant and back-up material.
- B. Section 08 41 13.20 - Aluminum Framed Entrances and Storefront - Exterior
- C. Section 08 44 13 - Glazed Aluminum Curtain Wall

##### **1.03 REFERENCE STANDARDS**

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings, Safety Performance Specifications and Methods of Test.
- C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- E. ASTM C1036 - Standard Specification for Flat Glass.
- F. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass--Kind HS, Kind FT Coated and Uncoated Glass.
- G. ASTM C1193 - Standard Guide for Use of Joint Sealants.
- H. ASTM E 773 - Standard Test Method for Accelerated Weathering of Sealed Insulating Glass Units.
- I. ASTM E 774 - Standard Specification for the Classification of the Durability of Sealed Insulating Glass Units; 1997.
- J. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings.
- K. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
- L. GANA (GM) - GANA Glazing Manual; Glass Association of North America.
- M. GANA (SM) - GANA Sealant Manual; Glass Association of North America.
- N. GANA (LGDG) - Laminated Glazing Reference Manual; Glass Association of North America.
- O. SIGMA TM-3000 - Glazing Guidelines for Sealed Insulating Glass Units; Sealed Insulating Glass Manufacturers Association.

##### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

##### **1.05 SUBMITTALS**

- A. See Section 01 33 00 - Administrative Requirements, for submittal procedures.
- B. Product Data on Glass Types: Provide structural, physical and environmental characteristics, size limitations, special handling or installation requirements.
- C. Product Data on Glazing Compounds: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors.

- D. Samples: Submit two samples 12 x12 inch in size of glass and plastic units, showing coloration and design.
- E. Certificates: Certify that products meet or exceed specified requirements.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
  - 2. Extra Insulating Glass Units: One of each glass size and each glass type.

#### **1.06 QUALITY ASSURANCE**

- A. Perform Work in accordance with GANA Glazing Manual and FGMA Sealant Manual for glazing installation methods.
- B. Installer Qualifications: Company specializing in performing the work of this section with minimum 10 years documented experience.

#### **1.07 FIELD CONDITIONS**

- A. Do not install glazing when ambient temperature is less than 50 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

#### **1.08 WARRANTY**

- A. Sealed Insulating Glass Units: Provide a five (5) year warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.

#### **1.09 PERFORMANCE REQUIREMENTS**

- A. General: Provide glass capable of withstanding thermal movement and wind and impact loads (where applicable) as specified in paragraph B following.
- B. Glass Design: Glass thickness designations indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites in the thickness designations indicated for various size openings, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:
  - 1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
    - a. Basic Wind Speed: 120 mph.
- C. Thermal Movements: Provide glazing that allows for thermal movements resulting from ambient and surface temperatures changes acting on glass framing members and glazing components.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:
  - 1. For monolithic-glass lites, properties are based on units with lites 1/4 inch (6.0 mm) thick.
  - 2. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite.
  - 3. Center-of-Glass Values: Based on using LBL-44789 WINDOW 5.0 computer program for the following methodologies:
    - a. U-Factors: NFRC 100 expressed as Btu/ sq. ft. per h per degree F.
    - b. Solar Heat Gain Coefficient: NFRC 200.
    - c. Solar Optical Properties: NFRC 300.

## **PART 2 PRODUCTS**

### **2.01 GLAZING TYPES**

### **2.02 BASIS OF DESIGN - INSULATING GLASS UNITS**

- A. Type G-1 - Sealed Insulating Glass Units: Vision glazing, low-E.
  - 1. Application(s): All exterior glazing unless otherwise indicated.
  - 2. Substitutions: Refer to Section 01 60 00 - Product Requirements.
  - 3. Between-lite space filled with air.
  - 4. Tint: None.
  - 5. Basis of Design: Guardian Industries Corp: [www.sunguardglass.com](http://www.sunguardglass.com).
  - 6. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
    - a. Coating: SunGuard SNX 62/27 on #2 surface.
    - b. Tint: None (clear).
  - 7. Inboard Lite: Fully tempered float glass, 1/4 inch thick.
    - a. Tint: None (clear).
  - 8. Total Thickness: 1 inch.

### **2.03 GLAZING UNITS**

- A. Type G-2 - Insulated Metal Panel: Spandrel panel.
  - 1. Application: Exterior glazing where indicated.
  - 2. Veneer Metal Glazing Panels
    - a. Panels are to be 1" nominal thickness.
    - b. Face: .062 aluminum (smooth).
    - c. Finish: as selected from manufacturer's standard colors.
    - d. Substrate: 1/8" hardboard.
    - e. Core: expanded polystyrene (EPS) foam board.
    - f. Back: .062 aluminum (smooth).
  - 3. Fabrication
    - a. Panels are to be produced in a controlled environment using state of the art automated laminating equipment. Heated adhesive applied to each surface by an automated reciprocal spray system assuring an even coverage to the exact thickness required for proper adhesion of all parts. Minimum 100 lb. pressure evenly applied with an automated rotary pinch roller to assure a high strength bond.
  - 4. Accessories
    - a. Moldings, angles or stops as required, providing a weather tight installation.
    - b. Sealants as recommended for use as an infill panel component.
  - 5. Finishes
    - a. Exposed aluminum surfaces: All exposed surfaces of insulated metal glazing panels shall be finished with Polyvinyl-fluoride system meeting "Kynar 500". Duranar Fluoropolymer or equal manufacturer's standard 2-coat thermo-cured system composed of specially formulated inhibitive primer, fluorocarbon color coat with a dry film thickness not less than 1.5 mils, and conforming to AAMA 605.2. Exposed surfaces shall be clean of oils, dirt and free of blemishes. Color shall be selected by Owner from manufacturer's standard colors. Unless otherwise noted, the back face shall have either mill finish or random finish material.
  - 6. Total Thickness: 1 inch.

### **2.04 GLASS MATERIALS**

- A. Float Glass Manufacturers:
  - 1. Guardian Industries Corp: [www.sunguardglass.com](http://www.sunguardglass.com).
  - 2. Substitutions: Refer to Section 01 60 00 - Product Requirements.
- B. Float Glass: All glazing is to be float glass unless otherwise indicated.

1. Heat-Strengthened and Fully Tempered Types: ASTM C1048.
2. Thicknesses: As indicated; for exterior glazing comply with specified requirements for wind load design regardless of specified thickness.

## **2.05 SEALED INSULATING GLASS UNITS**

- A. Manufacturers:
  1. Any of the manufacturers specified for float glass.
  2. Substitutions: Refer to Section 01 60 00 - Product Requirements.
- B. Sealed Insulating Glass Units: Types as indicated.
  1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
  2. Edge Spacers: Aluminum, bent and soldered corners.
  3. Edge Seal: Glass to elastomer with supplementary silicone sealant.
  4. Purge interpane space with dry hermetic air.

## **2.06 GLAZING COMPOUNDS**

- A. Manufacturers:
  1. Pecora Corporation: [www.pecora.com](http://www.pecora.com).
  2. Substitutions: Refer to Section 01 60 00 - Product Requirements.
- B. Glazing Putty : Polymer modified latex recommended by manufacturer for outdoor use, knife grade consistency; grey color.
- C. Butyl Sealant : Single component; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; Shore A hardness of 10 to 20; black color; non-skinning.
- D. Acrylic Sealant : Single component, solvent curing, non-bleeding; ASTM C 920, Type S, Grade NS, Class 12-1/2, Uses M and A; cured Shore A hardness of 15 to 25; color as selected.
- E. Polysulfide Sealant : Two component; chemical curing, non-sagging type; ASTM C 920, Type M, Grade NS, Class 25, Uses M, A, and G; cured Shore A hardness of 15 to 25; color as selected.
- F. Polyurethane Sealant : Single component, chemical curing, non-staining, non-bleeding; Shore A Hardness Range 20 to 35; color as selected.
- G. Silicone Sealant : Single component; neutral curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C 920, Type S, Grade NS, Class 25, Uses M, A, and G; cured Shore A hardness of 15 to 25; color as selected.

## **2.07 GLAZING ACCESSORIES**

- A. Setting Blocks: Neoprene, 80 to 90 Shore A durometer hardness, ASTM C864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness, ASTM C 864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
- C. Glazing Tape: Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; black color.
  1. Manufacturers:
    - a. Pecora Corporation: [www.pecora.com](http://www.pecora.com).
    - b. Substitutions: Refer to Section 01 60 00 - Product Requirements.
- D. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option I; black color.
- E. Glazing Clips: Manufacturer's standard type.



## **2.08 SOURCE QUALITY CONTROL AND TESTS**

- A. Provide shop inspection and testing for all glass.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that openings for glazing are correctly sized and within tolerance.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and ready to receive glazing.

### **3.02 PREPARATION**

- A. Clean contact surfaces with solvent and wipe dry.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant.
- D. Install sealants in accordance with ASTM C1193 and GANA Sealant Manual.
- E. Install sealant in accordance with manufacturer's instructions.

### **3.03 GLAZING METHODS**

#### **3.04 INSTALLATION - EXTERIOR DRY METHOD (TAPE AND GASKET SPLINE GLAZING)**

- A. Cut glazing tape to length; install on glazing pane. Seal corners by butting tape and sealing junctions with butyl sealant.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure to attain full contact.
- D. Install removable stops without displacing glazing spline. Exert pressure for full continuous contact.
- E. Trim protruding tape edge.

#### **3.05 INSTALLATION - INTERIOR DRY METHOD (TAPE AND TAPE)**

- A. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch (1.6 mm) above sight line.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.
- C. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- D. Place glazing tape on free perimeter of glazing in same manner described above.
- E. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- F. Knife trim protruding tape.

### **3.06 MANUFACTURER'S FIELD SERVICES**

- A. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.
- B. Monitor and report installation procedures and unacceptable conditions.

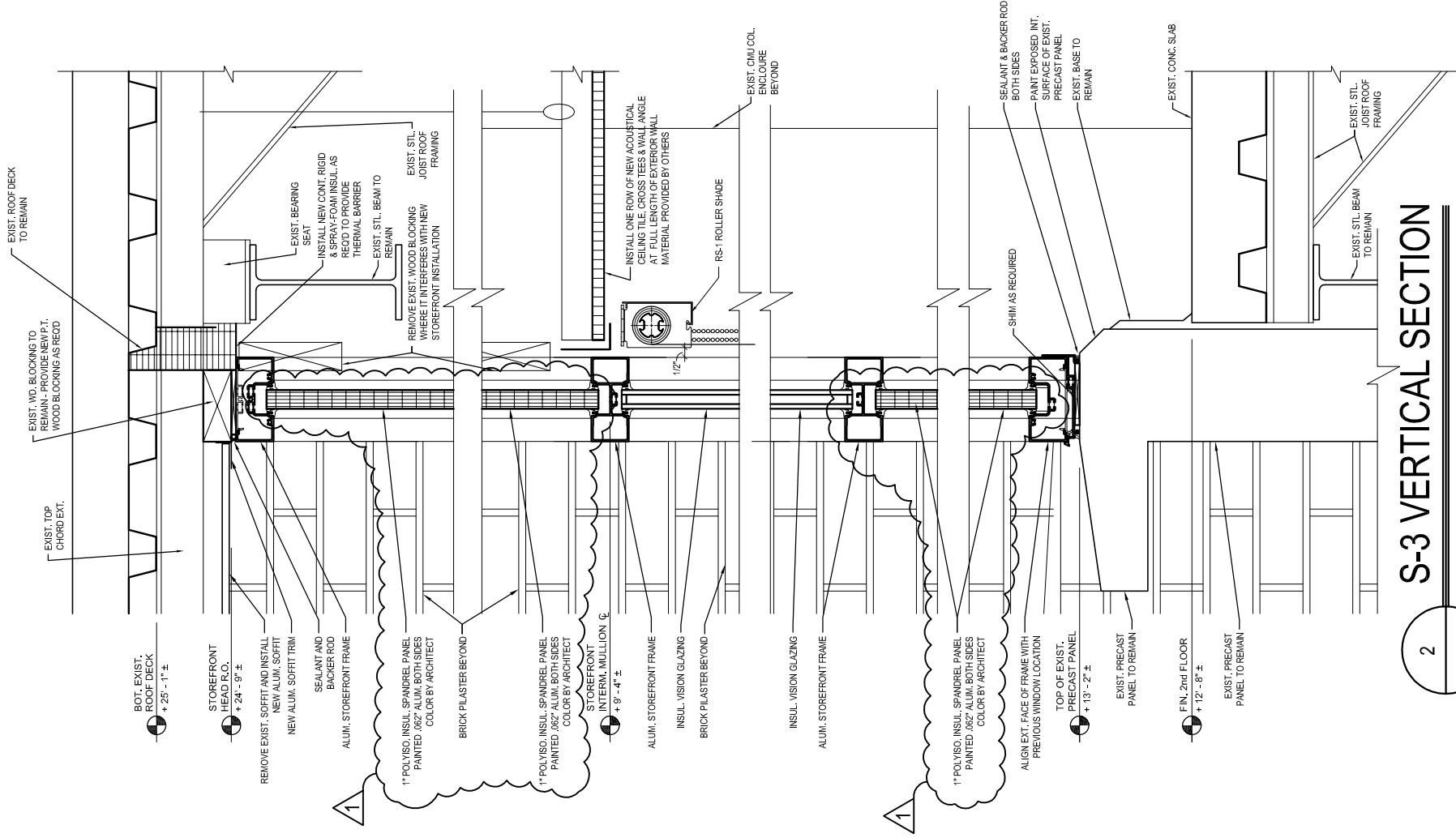
### **3.07 CLEANING**

- A. Remove glazing materials from finish surfaces.
- B. Remove labels after Work is complete.
- C. Clean glass and adjacent surfaces.

**3.08 PROTECTION**

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

**END OF SECTION**



## S-3 VERTICAL SECTION

2

SK-A.1 NOT TO SCALE

PROJECT: **DELAWARE STATE UNIVERSITY**  
**2ND FLOOR SOUTH WINDOW**  
**REPLACEMENT PROJECT**  
**JOHN R. PRICE BUILDING**  
1200 NORTH DUPONT HIGHWAY  
DOVER, DE 19901

4/27/16  
DATE

A6.1  
SHEET NO.

15003  
PROJECT NO.

SK-A.1



REVISIONS:  
▲ ADDENDUM #2

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