



CAPITAL PLANNING & CONSTRUCTION  
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BID ADDENDUM NO. 1 COVER SHEET

TO: **All Bidders of Record**  
FROM: Seamus Doran, Project Manager  
DATE: March 17, 2016  
RE: Ramapo College of New Jersey  
Padovano College Commons - Rebid  
RCNJ Project No. 2016-26-01C

The attached Addendum is issued for the purpose of amending certain requirements of the bid and is hereby made part of and incorporated in full force as part of the Contract Documents. Unless hereinafter specifically noted or specified otherwise, all work shall conform to the applicable provisions of the Contract Documents.

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BIDDERS OF RECORD ARE REQUIRED TO SIGN THIS ADDENDUM BELOW AND INCLUDE A COPY OF THE COMPLETE ADDENDUM WITH THE BID SUBMISSION TO ACKNOWLEDGE RECEIPT OF THIS DOCUMENT.

RECEIVED BY: \_\_\_\_\_

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

COMPANY: \_\_\_\_\_

Enclosure – Addendum No. 1 dated March 17, 2016

**RAMAPO COLLEGE OF NEW JERSEY  
PADOVANO COLLEGE COMMONS  
RCNJ PROJECT NO. 2016-26-01C**

**ADDENDUM NO.1  
Dated March 17, 2016**

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This addendum is hereby made part of the Project Manual and Drawings issued for bid February 11, 2016.

The Project Manual and Drawings shall be supplemented or amended as specified herein.

This Addendum contains changes to the requirement of the Project Manual. Such changes shall be incorporated into the Contract Documents and shall apply to work with the same meaning and force as if they had been included in the original Documents. Whenever this Addendum modifies a portion of a paragraph of the Project Manual, the remainder of the paragraph affected shall remain in force.

The conditions and terms of the basic Specifications shall govern work described in this Addendum unless specifically amended by this Addendum. Whenever the conditions of work, and the quality or quantity of materials, or workmanship are not fully described in this Addendum, the conditions of work and other related requirements included in the basic Specifications for similar items of work shall apply to the work described in this Addendum.

If no similar items of work are included in the basic Specifications, the best quality of material and workmanship shall apply and all work shall be subject to the written acceptance of the Architect.

**RESPONSE TO CONTRACTOR QUESTIONS:**

1. The rafters must be supported after demolishing the opening for the storefront windows/doors. Do we have to get a certified engineer's letter for means and methods?

*Response: Yes, a certified engineer's letter for means and methods is required as this is part of the main structure.*

2. There is a request for a signed engineer's letter for the form work inside the supporting concrete pilasters that need to be installed for the base bid and each add alternate. Are 3D drawings sufficient for this work, or does a form work engineers have to supply a letter for this work?

*Response: A letter from a form work engineer is required.*

3. I spoke with Unit Paver company (Hanover architectural) about the paver detail reading that they were the basis for design, the specified sub base as per detail for the unit pavers is specified out to be 2" of polymeric sand base. When I spoke to them, they said they would prefer a 1" sub base (above the 6" of crushed stone) of just a normal sand as polymeric sand isn't a stabilized base material. Would you prefer to use the polymeric sand for the joints as it locks them together, with a sand and/or quarry dust base over top the 6" crushed stone?

*Response: The pavers can be set with 1" of regular sand over a 6" gravel base course. The joints will be polymeric sand.*

4. Drawing D1.1 – Demolition Schedule; Note 1 states to remove gypsum board, and furring strips to remain, while Note 24 states to remove furring strips. Both notes are shown in the main area of the building. Please clarify which furring strips remain and which will be removed.

**Response:** Demolition Note 1 should read, “wood stud framing to remain” instead of “furring strips to remain.”

5. Drawing A6.2 – Door and Window Details; Door schedule has Alternate 1 Doors 3, 5, &6, but the Specification Section 01 23 00 Alternates has Alternate for Curtains? Alternate 2 Doors 1, 2, 3, 5, &6 but the Specification Section 01 23 00 Alternates has Alternate for Wood Flooring?

**Response:** The scope of the alternates is listed in the specification 01 23 00. Paragraph 3.1 has ADD Alternates, which are above the base bid. Paragraph 3.2 has DEDUCT Alternates, which are removed from the base bid.

As indicated on Drawing A6.2, adding aluminum doors on the north and east facades are ADD Alternate 1. ADD Alternate 2 changed all of the storefront and aluminum doors to steel.

The curtain is DEDUCT Alternate 1 and is the interior curtain only.

Wood flooring alternate is DEDUCT Alternate 2, which changes the finish species for the wood from walnut to maple.

6. Need at least the number of calendar days by which the college requires this project to be completed in order to have a full understanding of the Liquidated Damages of \$2,500/day. The way the specification is written, there is no start or end date. I assume the sample contract, which indicates project completion of 30 days, is just that...a sample contract.

**Response:** The start date will be the date the Notice to Proceed is issued. The duration and end date, provided by the contractor and finalized in the Contract with the awarded bidder, will be based on a reasonable construction schedule provided by the contractor. The determination will be based on factors to include, but not limited to scope of work, seasons, and lead time of materials. The final contract will indicate liquidated damages of \$1,000 per day.

## **ISSUED AND REVISED DOCUMENTS**

The following documents are issued as part of this addendum and shall be incorporated into the bid documents:

### **1. CONSTRUCTION DOCUMENT SPECIFICATIONS**

#### **A. SPECIFICATION SECTION 00 20 00 – INSTRUCTION TO BIDDERS**

Paragraph IB6.3, added (4) Plumbing to the list of Subcontractors required to be DPMC pre-qualified.

Changed “The bidder must include the names of each Subcontractor as requested on the proposal form and include the DPMC notice of classification and uncompleted contracts form for the bidder and each subcontractor listed above.”

Replace section with revised section dated March 17, 2016.

#### **B. SPECIFICATION SECTION 00 40 00-1 – BID COVER SHEET**

Added the document “Disclosure of Investment Activity in Iran”.

Deleted “and Uncompleted Contracts Form.”

Replace section with revised section dated March 17, 2016.

#### **C. SPECIFICATION SECTION 00 40 00-2 – BID PROPOSAL FORM**

Added the “E-Mail Address” field on page 5 of 5.

Replace section with revised section dated March 17, 2016.

**D. SPECIFICATION SECTION 08 11 00 – STEEL AND GLASS DOORS**

Changed muntins to be simulated divided lite, added muntin styles, added language that requires the steel doors, sidelites, and windows to be from a single manufacturer, added spacers in the insulated lite to match muntin pattern. Replace section with revised section dated March 17, 2016.

**E. SPECIFICATION SECTION 08 51 23 – STEEL WINDOWS**

Changed muntins to be simulated divided lite, added muntin styles, added language that requires the steel doors, sidelites, and windows to be from a single manufacturer, added spacers in the insulated lite to match muntin pattern.  
Replace section with revised section dated March 17, 2016.

**F. SPECIFICATION SECTION 08 80 00 – GLAZING**

At part 2.11(f), added note about spacers to match muntin pattern.  
Replace section with revised section dated March 17, 2016.

**2. ARCHITECTURAL DRAWING SHEETS**

N/A

**ATTACHMENTS:**

**1. SPECIFICATION SECTIONS:**

00 20 00	Instruction to Bidders
00 40 00-1	Bid Cover Sheet
00 40 00-2	Bid Proposal Form
08 11 00	Steel and glass Doors
08 51 23	Steel Windows
08 80 00	Glazing

2. Pre-Bid Conference Meeting Minutes

3. Pre-Bid Sign-in Sheet

4. Disclosure of Investment Activities in Iran

**END OF ADDENDUM NO. 1**

# I. INSTRUCTIONS TO BIDDERS

## IB1 Bid Proposals

IB1.1 Sealed proposals for the work described herein must be received and time-stamped at the College. The closing date and time for bids will be stated in the advertised Notice to Bidders. Bidders are cautioned that reliance on the U.S. Mail for timely delivery of proposals is at the Bidders risk. Failure by the Contractor to have sealed proposals reach the College by the prescribed time will result in a return of the submission unopened and unread.

IB1.2 Bids will be received for General Construction (LUMP SUM) inclusive of all trades as required in the bid documents including, but not limited to:

- (1) Structural Steel and Ornamental Iron Work
- (2) Plumbing and Gas Fitting Work
- (3) Heating and Ventilating Systems and Equipment
- (4) Electrical Work
- (5) All Other Work and Materials Required for the Completion of the Project

IB1.3 The College reserves the right to deny award to any Bidder who is not responsible, based upon experience, past performance, and financial capability to perform the work required hereunder, or other material factors.

IB1.4 Bid proposals based upon the Plans, Specifications, and Addenda, shall be deemed as having been made by the Contractor with full knowledge of the conditions therein. Bidders are required to visit the site prior to submitting proposals for the work herein described, and to have thoroughly examined the conditions under which the Contract is to be executed including those reasonably observable conditions of the premises which would hinder, delay, or otherwise affect the performance of the Contractor required under the terms of the Contract. The College will not allow claims for additional costs as a result of the Contractor's failure to become aware of the reasonably observable conditions affecting the required performance of the Contractor. The bidder is required to make appropriate allowances in the preparation of his Bid for the accommodation of such conditions. By submitting a bid, the Bidder confirms acknowledgement of existing conditions at the site at the time the Bid is submitted.

IB1.5 Bid proposals shall be submitted on the standard form provided by the College, enclosed in a sealed envelope. The name and address of the Bidder must be indicated on the envelope, as well as indication of the College Project Number, project location and other appropriate identification.

IB1.6 All amounts in the Bid Documents shall be stated in both words and numerical figures. In case of discrepancy between the words and numerical figures, the words shall govern.

IB1.7 The Bidder must submit the following documents in the bid envelope:

- (1) Bid Cover Sheet
- (2) Proposal Form
- (3) Non-Collusion Affidavit Form
- (4) Stockholder Discloser Form
- (5) Agreement of Surety
- (6) Bid Security Form
- (7) NJ Public Works Registration Certificate of the Bidder

The Bidder must submit the following documents in the bid envelope from the listed Structural Steel and Ornamental

Iron, Plumbing and Gas Fitting, Heating and Ventilating Systems and Equipment, and Electrical Subcontractors:

- (1) NJ Public Works Registration Certificate
- (2) NJ Licenses of Plumbing and Electrical Subcontractors

IB1.8 Proposals shall remain open for acceptance and may not be withdrawn for a period of sixty (60) days after Bid Opening Date.

IB1.9 Proposals not submitted and filed in accordance with instructions contained herein and in the Notice to Bidders may be rejected as non-responsive.

IB1.10 The Bidder shall make no additional stipulations in the Bid Proposal nor qualify his bid in any manner. Such qualification may result in the bid proposal being considered non-responsive.

## **1B2 Notice of Intent to Award & Bid Protest Procedures**

1B2.1 Within sixty (60) days of a bid opening, the College shall provide to all bidders a copy of a "Notice of Intent to Award a Contract;" and shall notify any nonresponsive/nonresponsible bidder of the basis for disqualification, unless, within the sixty (60) day period, the College requests that bidders agree to permit the bids to be held for a longer time period for consideration pending issuance of a "Notice of Intent to Award."

1B2.2 Any bidder, having submitted a proposal in response to this RFP and finding cause to protest the College's disqualification of a bid, or notice of intent to award, may make written request to the Contracting Officer setting forth, in detail, the specific grounds for challenging the disqualification of its bid or for challenging the College's intent to award the Contract, as applicable. The protest shall be filed within five (5) business days following the bidder's receipt of written notification that its bid is disqualified or of notice of the intent to award, as applicable.

1B2.3 The College shall consider the written record when deciding a bid protest. The written record may include, but is not limited to, the written protest, any written response to the protest submitted by the lowest responsible bidder, the terms, conditions and requirements of the RFP, the proposals submitted in response to the RFP, the evaluation committee report and/or the award recommendation document, pertinent administrative rules, statutes, and case law, and any associated documentation the College deems appropriate. In cases where no in-person presentation is deemed necessary pursuant to Section 1B2.4 below, the College shall afford the protester and other interested parties a fair opportunity to submit written statements and documents supporting the facts and the legal arguments relevant to the bid protest.

1B2.4 The Contracting Officer has the discretion to determine if an in-person presentation is necessary to reach an informed decision on the issues raised by the protester. An in-person presentation is a fact-finding hearing for the benefit of the College. The College has the discretion to permit attendance at an in-person presentation by those parties likely to be affected by the outcome of the protest. The in-person presentation shall be recorded electronically by the College and the electronic recording shall be available for public access as a "government record" under OPRA.

1B2.5 Any bidder who intends to be represented by an attorney at an in-person presentation must notify the Contracting Officer in advance to give the College an opportunity to have its counsel from the Attorney General's Office, Division of Law, attend in person or by telephone. If advance notification is not provided, the Contracting Officer may limit the bidder's attorney to advising and assisting the bidder by submitting questions to be asked of other participants/witnesses at the discretion of the Contracting Officer. The in-person presentation will not be rescheduled in this situation.

IB2.6 The Contracting Officer may award the Contract immediately, notwithstanding the receipt of a protest, if the failure to award the Contract will result in substantial cost to the College or if public exigency so requires. In such event, the College shall notify all interested parties. Award of the Contract shall be appealable to the Superior Court of New Jersey, Appellate Division, pursuant to N.J.S.A. 18A:3B-6(f).

IB2.7 The College reserves the right to waive any immaterial defects in the bid or the bidding process.

IB2.8 The College shall issue a written decision including findings of fact and conclusions and shall provide copies of the bid protest decision to all participants in the bid protest. The bid protest decision is a final decision of the “Contracting agent”, as that term is defined in the State College Contracts Law, N.J.S.A.18A:64-53(b). Notice of award of the Contract following a bid protest decision shall be provided to all bidders, and shall be appealable to the Superior Court of New Jersey, Appellate Division, pursuant to N.J.S.A. 18A:3B-6(f).

### **IB3 Bid Modification**

IB3.1 A bidder may modify his bid proposal by fax, email or letter at any time prior to the scheduled closing time for receipt of bids, provided such communication is received by the College prior to such closing time. A written confirmation of any bid modification signed by the Bidder must have been mailed and time-stamped by the Post Office prior to specified closing time. Such confirmation shall be accompanied by a newly executed affidavit of non-collusion.

IB3.2 Any bid modification request shall not reveal the basic Bid Price but only shall provide the amount to be added, subtracted or modified so that the final prices or terms will not be revealed until the sealed Proposal is opened. If written confirmation of the bid modification is not received within two (2) business days after the scheduled bid closing time, no consideration will be given to the bid modification request and the Bidder will be held to the original bid proposal amount.

IB3.3 Bids may be withdrawn upon written request received from Bidders prior to the time fixed for the Bid Opening. Right for withdrawal of a bid is lost after a bid has been opened. If any error has been made in the bid amount, request for the relief from the bid may be made in writing to the College. The written request shall be signed by an authorized corporate officer. A determination of whether the Bidder will be released shall be at the sole discretion of the College, who shall issue its finding within five (5) business days of his receipt of all pertinent information relating to such request for relief.

### **IB4 Consideration of Bids**

IB4.1 Award of Contracts or Rejection of Bids:

- a. Contracts will be awarded to the lowest responsible Bidder. The awards will be made, or the bids rejected, within sixty (60) days from the date of the opening of the bids.
- b. All bid deposits of unsuccessful Bidders (except the lowest three (3) Bidders) will be returned or refunded within five (5) days of the bid opening.
- c. The bid security deposits of the successful Bidder and the next two (2) lowest bidders will be retained by the College until the execution and delivery of a formal Contract and Performance and Payment Bonds by the low Bidder. At such time bid deposits of the other two (2) low Bidders will be returned.

- d. The College reserves the right to award the Contract upon the basis of a single bid for the entire work. Alternates will be accepted or rejected in numerical sequence as cited in the Bid Documents and shall not be selected at random except as provided herein. Add alternates and deduct alternates will be specified separately. The College may choose from the add and deduct alternates without priority between the two groups so long as selection within each group is in numerical sequence from the first to the last.
- e. The College reserves the right to waive in its sole discretion any bid requirements when such waiver is in the best interests of the College and where such waiver is permitted by law.
- f. The College reserves the right to reject any and all bids when such rejection is in the best interests of the College. The College also may reject the bid of any Bidder who, in its judgment, is not responsible or capable of performing the Contract based on financial capability, past performance, or experience

**IB4.2** The Bidder to whom the Contract is awarded shall execute and deliver the requisite Contract Documents including payment and performance bonds within the time specified. Upon his failure or refusal to comply in the manner and within the time specified, the College may either award the Contract to the next low responsible Bidder or re-advertise for new proposals. In either case, the College may hold the defaulting Bidder and his Surety liable for the difference between the applicable sums quoted by the defaulting Bidder and that sum which the College may be obligated to pay to the Contractor who undertakes to perform and complete the work of the defaulting Bidder.

## **IB5 Awards**

**IB5.1** In executing a contract, a successful bidder agrees to perform his work in a good and workmanlike manner to the reasonable satisfaction of the College and to complete all work within the contract duration as defined in the contract documents.

**IB5.2** Successful Bidders will be notified of the time and place for the signing of Contracts. Key requirements in the conduct of the Contract, including, but not limited to, the number of days for performance of the Contract, manner and schedule of payments and other administrative details will be reviewed at the award meeting. The time and place of the first job meeting also will be announced.

## **IB6 Qualification of Bidders**

**IB6.1** If the successful Bidder is a corporation, not organized under the laws of the State of New Jersey, or is not authorized to do business in this State, the Award of the Contract shall be conditioned upon the prompt filing by the said corporation of a Certificate to do business in this State and complying with the laws of this State in that regard. This filing must be made within the Department of Treasury, Division of Revenue. No Award of Contract will be made until the Department of State confirms this authorization.

**IB6.2** The College reserves the right to reject a Bidder at any time prior to the signing of a Contract if information or data is obtained which, in the opinion of the College, adversely affects the responsibility and/or the capability of the Bidder to undertake and to complete the work regardless of the Bidder's previous qualification or classification. The College may conduct any investigation as it deems necessary to determine the Bidder's responsibility and capacity and the Bidder shall furnish all information and data for this purpose as the College may request.



IB6.3 Bidder and the following Subcontractors must be pre-qualified with the New Jersey Department of Property Management and Construction for their respective trade classification and dollar amount of their bid amount:

- (1) General Construction – Alterations and Additions
- (2) Heating and Ventilating Systems and Equipment
- (3) Electrical Work
- (3) **Plumbing Work**

The Bidder must include its DPMC Notice of Classification and Uncompleted Contracts Form. The Bidder must include the name of each Subcontractor listed on the proposal form and include the DPMC Notice of Classification for each.

IB6.4 Pursuant to N.J.S.A. 52:32-44, the Bidder and Subcontractors listed on the proposal form must have a valid business registration certificate on file with the Division of Revenue. The certificates will be requested prior to the time of contract, purchase order, other contract documents execution.

IB6.5 Pursuant to P.L. 2012, c. 25, any bidder or business entity which, at the time of bid or award of this Contract, is identified on a list created by the N.J. Department of Treasury pursuant to this act as a person or entity engaging in investment activities in Iran as described in this act, shall be ineligible to, and shall not bid on or be awarded a contract for this Project.

## **IB7 Deposit and Bid Bond**

IB7.1 Each proposal shall be accompanied by a Bid bond or by a Certified Check, made payable to the College equal to ten percent (10%) of the total amount of the proposal, as an evidence of good faith, which guarantees that if the proposal submitted by the Bidder is accepted, the bidder will enter into the Contract and furnish the required Contract Documents and Surety Bonds. If a Bid Bond is submitted, it shall also provide that the Surety issuing the Bid Bond be bound to issue the required Payment and Performance Bonds, if the Bidder is awarded the Contract. If the Bidder whose proposal is accepted is unable to provide the Performance and Payment Bonds or fails to execute a Contract, then such Bidder and the Bid Bond Surety shall be obligated to pay to the College the difference between the amount of the bid and the amount which the College contracts to pay another party to perform the work. The College reserves the right to retain any Certified Check deposited hereunder as reimbursement for the difference as aforesaid, and shall return any unrequired balance to the Bidder. Should there be a deficiency in excess of the bid deposit, the Bidder and the Surety shall pay the entire amount of the College's difference in cost upon demand. Nothing contained herein shall be construed as a waiver of any other legal remedies the College may have by reason of a default or breach by the Contractor. Certified Checks or Bonds submitted by unsuccessful Bidders will be returned after the Contract has been executed. Contractors electing to furnish a Bid Bond must include Consent of Surety, both in form acceptable to the College.

IB7.2 Attorneys-in-fact who sign Bid Bonds or Contract Bonds must file a certified Power-of-Authority with the College indicating the effective date of that power.

## **IB8 Performance and Payment Bond**

IB8.1 The successful Bidder shall furnish within seven (7) calendar days after the issuance of the Notice of Intent to Award Contract the required Performance and Payment Bonds in statutory form in an amount equal to one hundred percent (100%) of the total Contract Price as security for the faithful performance and for the payment of all persons and firms performing labor and furnishing materials in connection with this Contract. The Performance Bond and the Payment Bond must be separate instruments. No Contract shall be executed unless and until each Bond is submitted to and approved by the College and the Surety must be presently authorized to do business in the State of New Jersey.

IB8.2 The cost of Bonds shall be paid for by the respective bidders.

IB8.3 If at any time the College, for justifiable cause, is dissatisfied with any Surety or Sureties who have issued, or propose to issue, the Performance or Payment Bonds, the Contractor shall, within seven (7) calendar days after notice from the College to do so, substitute an acceptable Bond (or Bonds) in such form and sum and executed by such other Surety or Sureties as may be satisfactory to the College. The premiums of such Bond shall be paid by the Contractor. No Contract shall be executed and/or no Payment made under a Contract until the new Surety or Sureties shall have furnished such an acceptance Bond to the College.

IB8.4 Bonds must be legally effective as of the date the contract is signed. Bonds must indicate Contractors' names exactly as they appear on the Contract. Current Attorney-in-Fact instruments and financial statement of the Surety must be included with Bond. Bonds must be executed by an authorized Officer of the Surety. Bonds furnished under this article shall conform in all respects to the requirement and language of N.J.S.A. 2A:44-143 to 147.

**IB9 Addenda and Interpretations**

IB9.1 No interpretation of the meaning of the Plans, Specifications or other Bid Documents will be provided to any Bidder unless such interpretation is made in writing to all prospective Bidders prior to Bid Opening. Any interpretations not made to all prospective Bidders shall be unauthorized and, not binding upon the College.

IB9.2 Every request for an interpretation or clarification of the Plans, Specifications or other Bid Documents shall be made in writing, addressed to Mr. Seamus Doran of Ramapo College via e-mail [sdoran@ramapo.edu](mailto:sdoran@ramapo.edu) and must be received by **5:00 PM, Wednesday, March 16, 2016**. Any and all interpretations or clarifications must be issued by the College, in the form of Addenda and e-mailed to all prospective Bidders no later than seven (7) business days prior to the date of the opening of Bids. All Addenda issued shall become part of the Contract Documents and shall be acknowledged on the Proposal Form. Failure of a Contractor to acknowledge receipt of all such Addenda on the proposal form may result in the Bidder's proposal being considered non-responsive, at the option of the College.

IB9.3 Each Bidder shall be responsible for thoroughly reviewing the Contract Documents prior to submission of bids. Bidders are advised that no claim for expenses incurred or damage sustained on account of any error, discrepancy, omission, or conflict in the contract Documents shall be recognized by the College unless, and only to the extent that, a written request for interpretation, clarification, or correction has been submitted in compliance with section IB9.2, and the matter has not been addressed by the issuance of Addenda interpreting, clarifying and/or correcting such error, discrepancy, omission, or conflict.

**IB10 Assignments**

IB10.1 The Contractor shall not assign the whole or any part of this Contract without written consent of the College. Money due or to become due the Contractor hereunder shall not be assigned for any purposes whatsoever.

**IB11 Federal Excise Taxes and State Sales Tax**

IB11.1 Bidders, in preparing their Bids, must take into consideration applicable Federal and State Tax Laws.

IB11.2 Under Chapter 32 of the Internal Revenue Code, an exemption certificate is on file with the Contracting Officer (Number 22-75-005).

IB11.3 Materials, supplies, or services for exclusive use in erecting structures or buildings or otherwise improving, altering or repairing all College-owned property are exempt from the State Sales Tax.

IB11.4 Bidders must make their own determinations as to the current status and applicability of any Tax Laws and the Contractor may make no claim based upon any error or misunderstanding as to the applicability of any Tax Laws.

IB11.5 Purchases or rentals of equipment are not exempt from any tax under the State Sales Tax Act.

## **IB12 Product “Equivalent” Approval**

IB12.1 In accordance with N.J.S.A.18A:64-64, equal products, materials and equipment will be considered by the College for all products, materials and equipment specified in these bid documents regardless if the language “or equal” is not contained in each specification section. However, the process for submitting and receiving approval of proposed equivalent products, materials and equipment is outlined in IB12.2 below.

IB12.2 Should any Bidder wish to propose an equivalent product, material or equipment from a manufacturer that is not listed in the product specification section in order to receive competitive pricing, the Bidder shall submit a “Equivalent” Request for Approval form to the Construction Manager for review by the Architect. Approvals and/or rejections of the proposed products will be published in Addendums during the bidding process. All requests must be submitted no later than **5:00 PM, Wednesday, March 16, 2016** for consideration. No requests will be accepted after this date or after contract award. Rejection by the Architect of a proposed manufacturer and/or vendor shall be final and not subject to further review.

IB12.3 By submission of a bid, the Bidder confirms that all materials/equipment will be provided by the approved vendors and manufacturers as listed in the specifications and/or published addendums and the submitted bid amount reflects these vendor and manufacturer costs.

## **IB13 Offer of Gratuities**

IB13.1 N.J.S.A. 52:34-19 makes it a misdemeanor to offer, pay or give any fee, commission, compensation, gift or gratuity to any person employed by the State. It is the policy of the College to treat the offer of any gift or gratuity by any company, its officers, or employees, to any person employed by Ramapo College as grounds for debarment or suspension of such company from bidding on and providing work or materials on College contracts.

**RAMAPO COLLEGE OF NEW JERSEY  
BID COVER SHEET**

**Bid No.:** 2016-26-01C

**Opening Date:** Thursday, March 31, 2016

**Time:** 2:00 PM

**Title:** Ramapo College of New Jersey  
Padovano College Commons

The bid documents consist of the following:

**BASE BID DOCUMENTS**

Construction Documents Specifications Volumes 1 and 2  
Construction Documents Drawings

This bid consists of the following documents (marked 'X') attached hereto and made part hereof:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> *Proposal Form                             | <input checked="" type="checkbox"/> **DPMC Notice of Classification and Uncompleted Contracts |
| <input checked="" type="checkbox"/> *Non-Collusion Affidavit                   | <input checked="" type="checkbox"/> * <u>Disclosure of Investment Activities in Iran</u>      |
| <input checked="" type="checkbox"/> *Stockholder Disclosure Form               | <input checked="" type="checkbox"/> ** Subcontractor Documents:                               |
| <input checked="" type="checkbox"/> *Agreement of Surety Form                  | 1. DPMC Notice of Classification <del>and Uncompleted Contracts</del>                         |
| <input checked="" type="checkbox"/> *Bid Security Form                         | 2. NJ Public Works Registration Certificate   |
| <input checked="" type="checkbox"/> **NJ Public Works Registration Certificate | 3. Plumbing and Electrical Licenses   |
| <input type="checkbox"/>   |   |

\* Indicates forms that are included in the bid documents which must be returned with the Bid.

\*\* Indicates documents that are not included in the bid documents but must be returned with the Bid.

**By signing this form, the bidder acknowledges receipt and submission of the aforementioned checked-off documents.**

\_\_\_\_\_  
Name (Printed or Typed)

\_\_\_\_\_  
Signature

Firm Name: \_\_\_\_\_

**PROPOSAL FORM  
RAMAPO COLLEGE OF NEW JERSEY**

**Return this proposal in a sealed envelope marked with the Project Bid No. and indicate "Sealed Bid" in the lower left hand corner.**

**Date:** [DATE], 2016

**RCNJ Project No.:** 2016-26-01C

**Proposal Submitted To:**

Richard M. Roberts, Contracting Officer  
Ramapo College of New Jersey  
505 Ramapo Valley Road  
Mahwah, NJ 07430

**Project Title:** Padovano College Commons

**This proposal will be accepted no later than 2:00 PM, Thursday, March 31, 2016, after which time all proposals will be publicly opened and read.**

\*\*\*\*\*

Firm Name &

Address

\*\*\*\*\*

**The undersigned** propose to furnish all labor and materials as called for in the Bidding Documents for:

**BID AMOUNT (BASE BID)**

\_\_\_\_\_ (dollars) (\$\_\_\_\_\_).  
(Lump Sum all trades)

**ADD ALTERNATE PROPOSALS:**

**DEDUCT ALTERNATE PROPOSALS:**

\_\_\_\_\_  
**Signature of Principal**

\_\_\_\_\_  
**Printed Name**

**BIDDING DOCUMENTS:**

BASE BID DOCUMENTS

Construction Documents Specifications Volumes 1 & 2  
Construction Documents Drawings

**TIME:**

If awarded this Contract, the Bidder proposes to perform and complete the work in \_\_\_\_\_ calendar days.

**Pricing to hold good through 60 days after bid due date.**

The Bidder must complete required information on the original and all supplemental pages of this proposal. If the information is not properly completed and is not received on time, the bid proposal may not be read and may be rejected.

\*\*\*\*\*  
**A Certified Check or Bid Bond in amount of 10% of the base bid is required. A bid bond of lesser value is not acceptable and the bid will be considered non-responsive.**

\*\*\*\*\*  
Bidders must submit prices for all alternates and unit prices when requested, otherwise the bid will be considered non-responsive.

Having examined the plans and specifications with related documents and the site of the proposed work and being familiar with all of the conditions surrounding the construction of the proposed project including availability of materials and labor, Bidder hereby proposes to furnish all labor and materials, and supplies, and to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the price stated. This price is to cover all expenses incurred in performing the work required under the Contract Documents, of which this proposal is a part.

Bidder hereby agrees to commence work under this contract on or before a date to be specified in written "Notice to Proceed" of the Owner and to fully complete the project as stipulated in the specifications. Bidder further agrees to pay as liquidated damages, a sum for each consecutive calendar day thereafter as provided in the General Conditions.

Bidder acknowledges and affirms review of the valid prevailing wage rates for all trades involved in the project, the geographic location of the project as issued by the Commission of the Department of Labor and Industry, Trenton, NJ 08625, (609) 292-2259.

\_\_\_\_\_  
**Signature of Principal**

\_\_\_\_\_  
**Printed Name**

**FOR BIDDER**

Following are two (2) projects of similar scope and complexity, and value completed by our firm. Bidder acknowledges that the College may contact the Owners or their representatives for references.

1. Owner: \_\_\_\_\_  
Owner Contact: \_\_\_\_\_ Tel. No.: (    ) \_\_\_\_\_  
Construction Manager: \_\_\_\_\_  
CM Contact: \_\_\_\_\_ Tel. No.: (    ) \_\_\_\_\_  
Architect: \_\_\_\_\_  
Architect Contact: \_\_\_\_\_ Tel. No.: (    ) \_\_\_\_\_  
Location: \_\_\_\_\_  
Description: \_\_\_\_\_  
Original Bid Amount: \$ \_\_\_\_\_  
Contract Increases: \$ \_\_\_\_\_  
Original Contract Completion Date: \_\_\_\_\_  
Actual Completion Date: \_\_\_\_\_  
Was Project Free of Claims and Litigation: YES NO  
If NO, Please Explain:  
\_\_\_\_\_  
\_\_\_\_\_

2. Owner: \_\_\_\_\_  
Owner Contact: \_\_\_\_\_ Tel. No.: (    ) \_\_\_\_\_  
Construction Manager: \_\_\_\_\_  
CM Contact: \_\_\_\_\_ Tel. No.: (    ) \_\_\_\_\_  
Architect: \_\_\_\_\_  
Architect Contact: \_\_\_\_\_ Tel. No.: (    ) \_\_\_\_\_  
Location: \_\_\_\_\_  
Description: \_\_\_\_\_  
Original Bid Amount: \$ \_\_\_\_\_  
Contract Increases: \$ \_\_\_\_\_  
Original Contract Completion Date: \_\_\_\_\_  
Actual Completion Date: \_\_\_\_\_  
Was Project Free of Claims and Litigation: YES NO  
If NO, Please Explain:  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
**Signature of Principal**

\_\_\_\_\_  
**Printed Name**

**LIST OF SUBCONTRACTORS**

The Bidder confirms that the Subcontractors listed below will be awarded the subcontract for the work identified if the Bidder is awarded the contract for the Project. The College will not accept any change from the Subcontractors listed unless the listed Subcontractor provides the College with a letter authorizing the Bidder to award a subcontract to another company. The College has the right to reject any subcontractor with no impact to project schedule or bid amount.

**Structural Steel and Ornamental Iron Work (DPMC Prequalification Required):**

Company Name: \_\_\_\_\_  
City/State: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Bid Amount: \_\_\_\_\_

***\* Subcontractor is to provide a list of open contracts which supports the amount listed on the DPMC Uncompleted Contracts Form. List shall include project name, firm name that is holding the contract, contact name and information, total contract value, uncompleted value, and expected completion date.***

**Plumbing and Gas Fitting Work (DPMC Prequalification Required):**

Company Name: \_\_\_\_\_  
City/State: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Bid Amount: \_\_\_\_\_

***\* Subcontractor is to provide a list of open contracts which supports the amount listed on the DPMC Uncompleted Contracts Form. List shall include project name, firm name that is holding the contract, contact name and information, total contract value, uncompleted value, and expected completion date.***

**Heating and Ventilating Systems and Equipment (DPMC Prequalification Required):**

Company Name: \_\_\_\_\_  
City/State: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Bid Amount: \_\_\_\_\_

***\* Subcontractor is to provide a list of open contracts which supports the amount listed on the DPMC Uncompleted Contracts Form. List shall include project name, firm name that is holding the contract, contact name and information, total contract value, uncompleted value, and expected completion date.***

**Electrical Work (DPMC Prequalification Required):**

Company Name: \_\_\_\_\_  
City/State: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Bid Amount: \_\_\_\_\_

***\* Subcontractor is to provide a list of open contracts which supports the amount listed on the DPMC Uncompleted Contracts Form. List shall include project name, firm name that is holding the contract, contact name and information, total contract value, uncompleted value, and expected completion date.***

\_\_\_\_\_  
**Signature of Principal**

\_\_\_\_\_  
**Printed Name**



Bidder acknowledges receipt of the following Addenda:

<b>Addendum Number</b>	<b>Date of Addendum</b>
_____	_____
_____	_____
_____	_____

The Bidder agrees that this bid shall be good and may not be withdrawn for a period of 60 calendar days after the scheduled closing time for bids.

Upon receipt of written notice of the acceptance of this bid, Bidder will execute the formal contract within seven (7) calendar days and deliver Performance and Payment Bonds as required in Instructions to Bidders.

The bid security attached in the sum of \_\_\_\_\_ (\$\_\_\_\_\_ ) is to become the property of the State in the event the contract and bond are not executed within the time set forth, as liquidated damages for the delay and additional expense to the Owner caused thereby.

I certify that our firm is classified by the Division of Property Management and Construction in the approved amount of \$ \_\_\_\_\_ for \_\_\_\_\_ (trade), until \_\_\_\_\_ (expiration date). I further certify that the amount of this bid proposal, including all outstanding incomplete contracts, does not exceed my pre-qualification dollar limit.

Respectfully submitted,

*(Seal if bid is by a corporation)*

By: \_\_\_\_\_  
(Name of firm)

\_\_\_\_\_  
(Signature)

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

\_\_\_\_\_  
(Business Address)

Telephone No.

Facsimile No.

E-Mail Address

Any change in ownership information since filing your current financial/experience statement? If yes, attach explanation.

( ) YES      ( ) NO

**Federal Identification No.**

**Social Security No.**

SECTION 081100  
STEEL AND GLASS DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Preglazed steel and glass door assemblies including frames.
2. Preglazed steel and glass sidelite assemblies.

B. Related Requirements:

1. Section 076200 "Flashing and Sheet Metal."
2. Section 079200 for perimeter joint sealants.
3. Section 087100 for door hardware requirements.
4. Section 088000 for additional glazing requirements.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions.

B. Shop Drawings: Include the following:

1. Elevations of each door and sidelite design.
2. Details of doors, including vertical and horizontal edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Details and locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of anchorages, joints, and connections.
7. Glazing details.
8. Weather-stripping details.
9. Flashing details.
10. Operational clearances.

11. Perimeter sealants.

C. Samples (as requested by architect):

1. Submit minimum 18-inch x 18-inch sample showing door construction including muntins.
2. 6-inch square Samples of metal finish.

#### 1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For operable hardware and finishes to include in operation and maintenance manuals.
- B. Warranties: Special warranties specified in this Section.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Member of the Steel Window Institute (SWI) with not less than 10 years experience in the fabrication of custom steel and glass door assemblies.
- B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of products required for this Project. A firm which is specialized in the erection of steel and glass door assemblies and who has successfully installed work similar in design and extent to that required for the project, in not less than three projects of similar scope to the satisfaction of the Architect, and whose work has resulted in construction with a record of successful in-service performance for a period of 5 years.
- C. SWI Publication: Comply with applicable requirements in SWI's "The Architect's Guide to Steel Windows and Doors" except where more stringent requirements are indicated.
- D. Accessible Design Standards: For hardware and other operating devices, comply with requirements of the following:
  1. New Jersey Barrier-Free Subcode including technical standard ICC/ANSI A117.1.
  2. U.S. Architectural & Transportation Barriers Compliance Board's "Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG).
- E. Safety Glazing Products: Comply with testing requirements in 16 CFR 1201 for Category II materials.
  1. Subject to compliance with requirements, obtain safety glazing products permanently marked with certification label of the Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.
- F. Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or

more methods including preconstruction testing, field testing, and in-service performance.

1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.

G. Preinstallation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review, discuss, and coordinate the interrelationship of door assemblies with other exterior wall components. Include provisions for structural anchorage, flashing, weeping, perimeter joint sealants and protection of finishes.
3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's instructions.
- B. Store products in designated areas in an upright position on wood slats or on a dry floor in a manner that will prevent damage. Ventilate canvas or plastic coverings to prevent humidity buildup.

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of door openings by field measurements before fabrication. Include measurement on Shop Drawings.

1.8 COORDINATION

- A. Coordinate installation of anchorages for door assemblies. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

1.9 WARRANTY

- A. Special Warranty: Manufacturer's form in which manufacturer agrees to repair or replace steel and glass doors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

- a. Failure to meet performance requirements.
  - b. Structural failures including excessive deflection.
  - c. Water leakage or air infiltration.
  - d. Faulty operation of door hardware.
  - e. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
  - f. Failure of insulating glass.
2. Warranty Period:
- a. Doors: 10 years from date of Substantial Completion.
  - b. Metal Finishes: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

A. Basis of Design: Project Design and Contract Documents are based on the following:

1. "5000 University Series Steel and Glass Doors"; Hope's Window, Inc.
2. "University Series Steel and Glass Sidelites"; Hope's Window, Inc.
- ~~2.3.~~ Comparable Manufacturers: Subject to compliance with requirements, comparable products of the following manufacturers may be considered:
  - a. A & S Window Associates, Inc.
  - b. Crittall Windows Ltd.
  - c. Optimum Window Manufacturing Corp.
  - d. Torrance Steel Window Co., Inc.

B. Single Source Responsibility: All steel and glass doors, sidelites, and steel windows shall be provided by a single manufacturer.

### 2.2 STEEL AND GLASS DOORS

A. Hot-Rolled Steel Members: Provide stile, rail, muntin and frame members formed from hot-rolled, new billet steel sections. For combined weight of frame and ventilator members and front-to-back depth of frame or ventilator members, comply with the following requirements:

1. Profiles and Styles: As indicated on Drawings.
2. Layout and Arrangement: As indicated on Drawings.
3. Heavy Custom Steel and Glass Door Assemblies: Not less than **3.9 lb/ft.** in combined weight and not less than **1-3/4 inches** deep.
4. Heavy Custom Frame Assemblies: Not less than **1.8 lb/ft.**
5. Muntins: Simulated True divided lites for the following profiles:
  - a. HW06 at exterior.
  - b. HW08 at interior.

6. All glazing rebate surfaces shall be perpendicular to the stem of the profile and shall provide a minimum 3/4-inch unobstructed glazing surface. Applied glazing rebate extensions and tapered rebate surfaces shall not be acceptable.
7. Metal Finish: High performance finish.
  - a. Color and Gloss: Match Architect's control sample.

8. Provide internal spacers in insulating glass units, aligned to match muntin layout.

- a. Color: Dark bronze or charcoal gray.

9. Slope glazing beads at exterior door surfaces.

- B. Glazing Stops: Manufacturer's standard extruded aluminum components; Alloy 6063-T5 with a minimum thickness of .063 inches.
- C. Fasteners: Provide fasteners of bronze, brass, or stainless steel that are warranted by manufacturer to be noncorrosive and compatible with hardware, anchors, and other components of door and sidelite assemblies.
  1. Exposed Fasteners: To greatest extent possible, do not use exposed fasteners. Where exposed fasteners are unavoidable, provide Phillips flat-head machined screws that match finish of member or hardware being fastened, as appropriate.
- D. Anchors and Clips: Provide units of stainless steel, bronze, or brass. Provide units with sufficient strength to withstand design pressure indicated.
- E. Compression-Type Weather Stripping: Provide compressible weather stripping designed for permanently resilient sealing under bumper or wiper action and for complete concealment when doors are closed.
  1. Weather-Stripping Material: Manufacturer's standard extruded EPDM, closed cell sponge, closed cell neoprene, or flexible silicone.
- F. Sealant: For sealants required within fabricated door and sidelite assemblies, provide manufacturer's standard, permanently elastic, nonshrinking, and nonmigrating type recommended by sealant manufacturer for joint size and movement.

## 2.3 GLAZING

- A. Insulating Glass Units: Provide products specified in Section 088000 "Glazing."
- B. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

## 2.4 DOOR HARDWARE

- A. Provide products specified in Section 087100 "Door Hardware."

## 2.5 FABRICATION

- A. General: Fabricate door and sidelite assemblies to the designs, shapes, sizes, thicknesses and configurations shown using the materials and components specified. To the greatest extent possible complete fabrication, assembly, finishing, hardware applications and other work before shipment to Project site. Carefully cut and fit all components.
  - 1. Factory glaze doors and sidelites.
  - 2. Factory assemble components and factory install hardware to greatest extent possible.
- B. Fabricate all door assemblies to accommodate swing direction shown.
- C. Fabricate door stile and rail members of hot-rolled steel of profile indicated. Miter or cope corners, and weld and dress joints smooth.
- D. Fabricate muntins slotted, cross notched and welded to stiles and rails. All interior and exterior muntin joints shall be welded and ground smooth.
- E. Glazing Stops: Provide snap-on glazing stops; coordinate with Section 08 80 00 "Glazing" and with glazing system indicated.
  - 1. Provide glazing stops to fit operable muntin profiles.
  - 2. Finish glazing stops to match doors.
- F. Lock boxes and lock stiles shall be composite profiles as shown on the shop drawings and glazed into the door leaves.
- G. Weatherstrips:
  - 1. Door Leaves: Continuous triple or neoprene weatherstripping applied to integral weatherstrip grooves in the interior and exterior contact surfaces of head and jambs of door stiles, rails, and frames.
    - a. Surface applied weatherstrips by means of additional retainers or screw fasteners shall not be accepted.
  - 2. Sill Members: Applied either to integral T-slot in threshold or to the underside of the door.

## 2.6 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

## 2.7 STEEL FINISHES

- A. High-Performance Finish: Manufacturer's high performance, ultrathane polyurethane finish; prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating manufacturers' written instructions.

1. Surface Preparation: Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning" or SSPC-SP 8, "Pickling".
  2. Pretreatments:
    - a. Alkaline cleaning spray.
    - b. Alkaline cleaning – submersion.
    - c. Water immersion rinse combo.
    - d. Water immersion rinse clean.
    - e. Acid immersion.
    - f. Neutralizing rinse.
    - g. Water immersion rinse clean.
    - h. Conditioner immersion.
    - i. Zinc phosphate immersion.
    - j. Rinse immersion.
    - k. Sealer immersion.
    - l. Water reverse osmosis rinse immersion.
  3. Epoxy E-Coat Primer: All pickled and pretreated frames and accessories are immersed into an electrostatic (E-coat) bath of PPG epoxy primer to ensure all substrates are encapsulated evenly and completely. Use of spray primers only will not be acceptable.
    - a. Permeate spray.
    - b. Permeate rinse.
    - c. Epoxy primer immersion and electrostatic encapsulation.
    - d. Water reverse osmosis rinse.
    - e. Oven-cure, 45 minutes @ 350 degrees F.
  4. Epoxy Powder Primer: Following pre-treatments and E-coat system, all frames and accessories shall receive an abrasion resistant powder coating prior to final top-coat.
    - a. Powder is applied electrostatically over cured E-coat to a dry film thickness (DFT) of 2.0-3.0 mils.
    - b. Parts oven baked at 325 degrees F to completely cure prior to final top coat.
  5. Ultrathane Polyurethane Top Coat: Following all pre-treatments, e-coat and powder abrasion layer, apply ultrathane polyurethane finish to all window components.
  6. Total Coating System: Combined overall dry film thickness shall be a minimum of 4.6 mils.
- B. Performance Standards: Comply with applicable requirements of the following:
1. Acid Pickling per SSPC-SP8.
  2. Paint Blistering testing per ASTM D 714.
  3. Humidity testing per ASTM D 4585.
  4. Painted Products in Corrosive Environment testing per ASTM D 1654.
  5. Salt Spray (Fog) testing per ASTM B117.
  6. Cyclic Fog/Dry Test (Prohesion) per ASTM G 85.
  7. Salt Fog/UV Painted Metal testing per ASTM D 5894.



8. Pull Off Strength of Coating testing per ASTM D 4541.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. General: Comply with manufacturer's written instructions for protecting, handling, and installing door assemblies and sidelites.
- B. Install products in accordance with manufacturer's written instructions and approved shop drawings unless project conditions require more stringent requirements for performance of the work.
  1. Install components and accessories to comply with accessible design standards.
  2. Do not install damaged components.
- C. Do not erect components which are warped, deformed, bowed, defaced or otherwise damaged to impair strength. Remove and replace members damaged in the process of erection.
- D. Set units level, plumb, and true to line, with uniform joints. Rigidly secure nonmovement joints.
- E. Install door hardware according to manufacturer's written instructions using concealed fasteners. Lubricate hardware and other moving parts according to manufacturer's written instructions.
- F. Maintain uniform clearances between adjacent components.

#### 3.3 ADJUSTING AND CLEANING

- A. Adjust doors and hardware to produce smooth operation and tight fit at contact points.
- B. Clean glass surfaces and exposed metal finishes using cleaning agents recommended by manufacturer.

END OF SECTION 08 11 00

## SECTION 085123

## STEEL WINDOWS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. Section Includes:

- 1. Preglazed steel window assemblies.

- B. Related Sections:

- 1. Section 076200 "Flashing and Sheet Metal."
  - 2. Section 079200 for perimeter joint sealants.
  - 3. Section 088000 for additional glazing requirements.

## 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

- 1. Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions.

- B. Shop Drawings: Include plans, elevations, sections, details of fabrication and installation, hardware, attachments to other work, operational clearances, and the following:

- 1. Joinery details.
  - 2. Glazing details.
  - 3. Flashing and drainage details.
  - 4. Weather-stripping details.
  - 5. Perimeter sealants.

- C. Samples for Verification: For steel windows and components required, prepared on Samples of size indicated below:

- 1. Window units including glazing: Submit minimum 18-inch x 18-inch sample showing frame, sash and window muntins.
  - 2. Hardware: Full-size units.
  - 3. 6-inch square Samples of metal finish.

- D. Product Schedule: Use same designations indicated on Drawings.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency.
- B. Field Quality-Control Reports.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For operable hardware and finishes to include in operation and maintenance manuals.
- B. Warranties: Special warranties specified in this Section.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Member of the Steel Window Institute (SWI) with not less than 10 years experience in the fabrication of custom steel window door assemblies; capable of fabricating steel windows that meet or exceed performance requirements indicated and of documenting this performance test reports and calculations.
- B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of products required for this Project. A firm which is specialized in the installation of steel window assemblies and who has successfully installed work similar in design and extent to that required for the project, in not less than three projects of similar scope to the satisfaction of the Architect, and whose work has resulted in construction with a record of successful in-service performance for a period of 5 years.
- C. SWI Publication: Comply with applicable requirements in SWI's "The Architect's Guide to Steel Windows and Doors" except where more stringent requirements are indicated.
- D. Product Options: Information on Drawings and in Specifications establishes requirements for systems' aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.
  - 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- E. Preinstallation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Review, discuss, and coordinate the interrelationship of steel windows with other exterior wall components. Include provisions for structural anchorage, flashing, weeping, perimeter joint sealants and protection of finishes.
3. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
4. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's instructions.
- B. Store products in designated areas in an upright position on wood slats or on a dry floor in a manner that will prevent damage. Ventilate canvas or plastic coverings to prevent humidity buildup.

#### 1.8 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimensions of steel window openings by field measurements before fabrication. Include measurement on Shop Drawings.

#### 1.9 WARRANTY

- A. Special Warranty: Manufacturer's form in which manufacturer agrees to repair or replace steel windows or components of steel windows that fail in materials or workmanship within specified warranty period.
  1. Failures include, but are not limited to, the following:
    - a. Failure to meet performance requirements.
    - b. Structural failures including excessive deflection.
    - c. Water leakage or air infiltration.
    - d. Faulty operation of operable sash or ventilator and hardware.
    - e. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
    - f. Failure of insulating glass.
  2. Warranty Period:
    - a. Window Units: 10 years from date of Substantial Completion.
    - b. Metal Finishes: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

- A. Basis of Design: Project Design and Contract Documents are based on the following:
1. "University Series Casement Windows"; Hope's Window, Inc.
  2. Comparable Manufacturers: Subject to compliance with requirements, comparable products of the following manufacturers may be considered:
    - a. A & S Window Associates, Inc.
    - b. Crittall Windows Ltd.
    - c. Optimum Window Manufacturing Corp.
    - d. Torrance Steel Window Co., Inc.

B. Single Source Responsibility: All steel and glass doors, sidelites, and steel windows shall be provided by a single manufacturer.

## 2.2 WINDOW PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide steel windows capable of withstanding the effects of the following loads and stresses within limits and under conditions indicated, based on testing windows that are representative of those specified according to ASTM E 330:
1. Wind Loads: Determine loads in accordance with the Building Subcode based upon design wind speed, exposure and occupancy category indicated.
    - a. Design wind speed: 95 miles per hour.
    - b. Exposure category: B.
    - c. Occupancy category: II.
- B. Air Infiltration for Weather-Stripped Ventilators: Not more than **0.50 cfm/ft.** of ventilator crack length with a differential pressure across the window of **1.57 lbf/sq. ft.** when tested according to ASTM E 283.
- C. Water Penetration: No leakage for 15 minutes when window is subjected to a rate of flow of **5 gal./hr. per sq. ft.** with a differential pressure across the window of **2.86 lbf/sq. ft.** when tested according to ASTM E 331.

## 2.3 STEEL WINDOWS

- A. Window Type: Casement.
1. Sizes: As indicated on Drawings.
  2. Profiles and Arrangement: As indicated on Drawings.
- B. Hot-Rolled Steel Window Members: Provide frame and ventilator members formed from hot-rolled, new billet steel sections. For combined weight of frame and ventilator

members and front-to-back depth of frame or ventilator members, comply with the following requirements:

1. Heavy Custom Windows: Not less than **3.9 lb/ft.** in combined weight and not less than **1-3/4 inches** deep.
  2. Muntins: Simulated True divided lites for the following profiles:
    - a. HW06 at exterior.
    - b. HW08 at interior.
  3. Window Finish: High performance finish.
    - a. Color and Gloss: Match Architect's control sample.
  4. Provide internal spacers in insulating glass units, aligned to match muntin layout.
    - a. Color: Dark bronze or charcoal gray.
  - C. Glazing Stops: Manufacturer's standard extruded aluminum components; Alloy 6063-T5 with a minimum thickness of .063 inches.
  - D. Fasteners: Provide fasteners of bronze, brass, or stainless steel that are warranted by manufacturer to be noncorrosive and compatible with hardware, anchors, and other components of steel windows.
    1. Exposed Fasteners: To greatest extent possible, do not use exposed fasteners. Where exposed fasteners are unavoidable, provide Phillips flat-head machined screws that match finish of member or hardware being fastened, as appropriate.
  - E. Anchors and Clips: Provide units of stainless steel, bronze, or brass. Provide units with sufficient strength to withstand design pressure indicated.
  - F. Compression-Type Weather Stripping: Provide compressible weather stripping designed for permanently resilient sealing under bumper or wiper action and for complete concealment when steel window is closed.
    1. Weather-Stripping Material: Manufacturer's standard extruded EPDM, closed cell sponge, closed cell neoprene, or flexible silicone.
  - G. Sealant: For sealants required within fabricated windows, provide manufacturer's standard, permanently elastic, nonshrinking, and nonmigrating type recommended by sealant manufacturer for joint size and movement.
- 2.4 GLAZING
- A. Insulating Glass Units: Provide products specified in Section 088000 "Glazing."
  - B. Glazing System: Manufacturer's standard factory-glazing system that produces weathertight seal.

## 2.5 HARDWARE

- A. General: Provide manufacturer's standard nonremovable, solid bronze hardware, with operating components of stainless steel, carbon steel complying with AAMA 907, brass, bronze, or other corrosion-resistant material designed to operate smoothly, to close tightly, and to lock steel window ventilators securely. Provide hardware of sufficient strength to accommodate size and weight of ventilator for which it is intended.
- B. Operating Device: Combination lever-handle and cam-type latch.
- C. Hinges: Heavy duty, aluminum-bronze pivot assembly with stainless steel pin..
- D. Lock: Lift-type, cam-action lock.
- E. Friction Shoes: Adjustable friction shoes of bronze or brass.
- F. Limit Devices: Stainless steel.

## 2.6 FABRICATION

- A. General: Fabricate steel windows of type and in sizes indicated to comply with SWI standards. Include a complete system for assembly of components and anchorage of window units.
  - 1. Factory glaze window units.
  - 2. Provide units that can be reglazed without dismantling ventilator framing.
- B. Fabricate frame and ventilator members of hot-rolled steel of profile indicated. Miter or cope corners, and weld and dress joints smooth.
- C. Fabricate muntins slotted, cross notched and welded to frames. All interior and exterior muntin joints shall be welded and ground smooth.
- D. Provide weep holes and internal water passages to conduct infiltrating water to the exterior.
- E. Provide water-shed members above casement ventilators.
- F. Glazing Stops: Provide snap-on glazing stops; coordinate with Section 08 80 00 "Glazing" and with glazing system indicated.
  - 1. Provide glazing stops to fit operable ventilator profiles.
  - 2. Finish glazing stops to match window units.
- G. Weatherstrips: Provide continuous weatherstripping applied to integral weatherstrip grooves in interior and exterior contact surfaces of frame and ventilator sections.
  - 1. Surface applied weatherstrips by means of additional retainers or screw fasteners shall not be accepted.

## 2.7 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

## 2.8 STEEL FINISHES

- A. High-Performance Finish: Manufacturer's high performance, ultrathane polyurethane finish; prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating manufacturers' written instructions.
  - 1. Surface Preparation: Remove mill scale and rust, if present, from uncoated steel, complying with SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning" or SSPC-SP 8, "Pickling".
  - 2. Pretreatments:
    - a. Alkaline cleaning spray.
    - b. Alkaline cleaning – submersion.
    - c. Water immersion rinse combo.
    - d. Water immersion rinse clean.
    - e. Acid immersion.
    - f. Neutralizing rinse.
    - g. Water immersion rinse clean.
    - h. Conditioner immersion.
    - i. Zinc phosphate immersion.
    - j. Rinse immersion.
    - k. Sealer immersion.
    - l. Water reverse osmosis rinse immersion.
  - 3. Epoxy E-Coat Primer: All pickled and pretreated frames and accessories are immersed into an electrostatic (E-coat) bath of PPG epoxy primer to ensure all substrates are encapsulated evenly and completely. Use of spray primers only will not be acceptable.
    - a. Permeate spray.
    - b. Permeate rinse.
    - c. Epoxy primer immersion and electrostatic encapsulation.
    - d. Water reverse osmosis rinse.
    - e. Oven-cure, 45 minutes @ 350 degrees F
  - 4. Epoxy Powder Primer: Following pre-treatments and E-coat system, all frames and accessories shall receive an abrasion resistant powder coating prior to final top-coat.
    - a. Powder is applied electrostatically over cured E-coat to a dry film thickness (DFT) of 2.0-3.0 mils.
    - b. Parts oven baked at 325 degrees F to completely cure prior to final top coat.
  - 5. Ultrathane Polyurethane Top Coat: Following all pre-treatments, e-coat and powder abrasion layer, apply ultrathane polyurethane finish to all window components.



6. Total Coating System: Combined overall dry film thickness shall be a minimum of 4.6 mils.
- B. Performance Standards: Comply with applicable requirements of the following:
1. Acid Pickling per SSPC-SP8.
  2. Paint Blistering testing per ASTM D 714.
  3. Humidity testing per ASTM D 4585.
  4. Painted Products in Corrosive Environment testing per ASTM D 1654.
  5. Salt Spray (Fog) testing per ASTM B 117.
  6. Cyclic Fog/Dry Test (Prohesion) per ASTM G 85.
  7. Salt Fog/UV Painted Metal testing per ASTM D 5894.
  8. Pull Off Strength of Coating testing per ASTM D 4541.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sills, and operational clearances.
- C. Examine wall flashings, weather barriers, and other built-in components to ensure a coordinated, weathertight window installation.
  1. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
  2. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within **3 inches** of opening.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

#### 3.2 INSTALLATION

- A. General: Comply with manufacturer's written instructions for installing windows, hardware, operators, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112 and SWI Publications.
  1. Comply with manufacturer's written instructions and approved shop drawings unless project conditions require more stringent requirements for performance of the work.
  2. Do not install damaged components.
  3. Fit joints to produce hairline joints free of burrs and distortion.
  4. Rigidly secure nonmovement joints.

5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
  6. Seal joints watertight, unless otherwise indicated.
- B. Install windows level, plumb, square, true to line, without distortion or impediment to thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
  - C. Set sill members in bed of sealant or with gaskets, as indicated, to provide weathertight construction.
  - D. Install windows and components to drain condensation, water-penetrating joints, and moisture migrating within windows to the exterior.
  - E. Separate corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials according to ASTM E 2112, Section 5.12 "Dissimilar Materials."

### 3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Tests and Inspections:
  1. Testing Methodology: Testing of windows for air-penetration resistance and water resistance will be performed according to AAMA 502, Test Method A, by applying same test pressures required for performance.
  2. Testing Extent: Test all window assemblies. Windows shall be tested after perimeter sealants have cured.
- C. Window will be considered defective if it does not pass tests and inspections.
- D. Remove and replace noncomplying windows and retest as specified above.
- E. Prepare test and inspection reports according to AAMA 502. Testing agency will interpret test results and state in each report whether tested work complies with or deviates from requirements.

### 3.4 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjust operating sash and ventilators, screens, hardware, operators, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.
- B. Clean factory-finished steel surfaces immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Avoid damaging protective coatings and finishes.
- C. Clean glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.

1. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- D. Protect window surfaces from contact with contaminating substances resulting from construction operations. Remove contaminants immediately according to manufacturer's written recommendations.

END OF SECTION 08 51 23

## SECTION 088000

## GLAZING

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. Section includes glazing for the following products and applications, including those specified in other Sections where glazing requirements are specified by reference to this Section:
  - 1. Steel and glass door assemblies.
  - 2. All glass entrances.
  - 3. Steel windows.
- B. Related Requirements:
  - 1. Section 08 11 00 "Steel and Glass Doors."
  - 2. Section 08 41 26 "All-Glass Entrances."
  - 3. Section 08 51 23 "Steel Windows."

## 1.2 DEFINITIONS

- A. Glass Manufacturers: Firms that produce primary glass, fabricated glass, or both, as defined in referenced glazing publications.
- B. Glass Thicknesses: Indicated by thickness designations in millimeters according to ASTM C 1036.
- C. Interspace: Space between lites of an insulating-glass unit.

## 1.3 ACTION SUBMITTALS

- A. Product Data: Submit product data for each glass product and glazing material indicated.
- B. Samples: Label samples to indicate product, characteristics, and locations in the Work. Furnish samples of the following:
  - 1. Except for clear glass, submit samples of each glass type specified, in the form of **12 inch** square Samples.
- C. Shop Drawings: Include plans, elevations, and sections. Show fabrication and installation details. Include the following:
  - 1. Location of glass panels.

2. Size, thickness and edge profiles of glass materials.
  3. Full-size details of glazing methods, mounting and attachment to other work.
  4. Delegated-Design: For glass indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- D. Glazing Schedule: Use same designations indicated on Drawings for glass types in preparing a schedule listing glass types and thicknesses for each.
1. Glazing Schedule may be submitted as part of Shop Drawings.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Manufacturer Certificates: Submit a letter from glass manufacturer certifying that he has reviewed the glazing details proposed for the Project, including the use of gaskets and sealants, and that each product to be furnished is recommended for the application shown.
- B. Design Data: Submit the following from the glass manufacturer:
1. Wind Load Analysis: For each glass unit type, each building elevation. Submit analysis that clearly demonstrates indicate that the statistical probability of breakage at the design wind pressure will not exceed the specified statistical probability of breakage.
- C. Product Certificates: Signed by manufacturers of glass and glazing products certifying that products furnished comply with requirements.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: Submit data for each type of glass suitable to include in maintenance manuals.
- B. Warranties: Submit special warranties specified in this Section.

#### 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who has completed glazing similar in material, design, and extent to that indicated for Project and whose work has resulted in construction with a record of successful in-service performance.
- B. Source Limitations for Glass and Glazing Accessories: Obtain glass and glazing accessories from one source for each product indicated below:
1. Primary glass.
  2. Coated glass.
  3. Heat-treated glass.
  4. Insulating glass.
  5. Glazing gaskets.

- C. Safety Glass: Comply with the applicable requirements of the laws, codes, ordinances and regulations of Federal and Municipal authorities having jurisdiction. Wherever requirements conflict, the more stringent shall be required. Obtain approvals from all such authorities. As a minimum, provide Category II materials complying with testing requirements in 16 CFR 1201 (Consumer Product Safety Commission "Safety Standard for Architectural Glazing Materials," as published in the Code of Federal Regulations) and ANSI Z97.1.
1. Building Subcode: Comply with Table 2406.2(1), "Minimum Category Classification of Glazing," in ICC's International Building Code 2009/New Jersey Edition.
  2. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction. Locate permanent markings in one corner, and in the same location, of each glass lite in accordance with the requirements of the SGCC labeling guidelines. Markings shall have a nominal size of no greater than 1-inch in diameter, and be located with glass edge clearances, at the corner, by not more than 3/4-inch up and 3/4-inch over.
- D. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
1. GANA Publications: GANA's "Glazing Manual."
  2. IGMA Publications: IGMA TM-3000, "Vertical Glazing Guidelines."
- E. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the Insulating Glass Certification Council (IGCC) or of the Associated Laboratories, Inc. (ALI).
- F. Quality Control (Production) Testing: As a minimum, provide the following quality control (production) testing for the exterior glass units:
1. Bow and Warp Distortion (Flatness) Tolerance Testing:
    - a. During the production of the heat-treated glass lites, measure for bow and warp in accordance with ASTM C 1048. Measure the lites on a vertical plane with an aluminum straight edge or fishing line.
      - 1) Measure the monolithic glass lites for compliance with the bow and warp tolerances under Article "Heat-Treated Float Glass," Paragraph "Flatness Tolerances," unless otherwise accepted by the Owner and Architect at the preconstruction glass mockup.
    - b. During glass production, and once an hour, randomly select a single heat-treated glass lite and measure it. Document and record results. Tag each glass lite that falls outside of the maximum bow and warp limits and certify that these non-conforming glass lites were not incorporated into the Work.
    - c. Provide written documentation of the bow and warp readings in fractions of an inch or millimeters for each tested glass lite to the Owner and Architect, if

requested. Provide additional written documentation as requested by the Owner and Architect.

2. Roll Ripple Distortion (Flatness) Tolerance Testing:
  - a. During the production of the heat-treated glass lites, measure each low emissivity coated, unfritted, monolithic glass lite having a 1/4-inch thickness or greater using a LiteSentry or Osprey Series type optical scanning measurement device complying with ASTM C 1652 for digital grid scanning glass devices. During the production of the 100 percent full screen, frit-coated monolithic heat-treated glass lites having a 1/4-inch thickness or greater, and at a frequency of at least once an hour, randomly select a monolithic single lite and measure it using a trolley type scanning measurement device complying with ASTM C 1651.
    - 1) Measure the monolithic glass lites for compliance with the flatness tolerances under Article "Heat-Treated Float Glass," Paragraph "Flatness Tolerances," unless otherwise accepted by the Owner and Architect at the preconstruction glass mockup.
  - b. Document and record results for each glass lite. Tag each glass lite that falls outside of the maximum flatness limits and certify that these non-conforming glass lites were not incorporated into the Work.
    - 1) Provide written documentation of the flatness readings in fractions of an inch, in millimeters, and in millidiopters, for each glass lite to the Owner and Architect, if requested. Provide additional written documentation as requested by the Owner and Architect.
3. Insulating Glass Unit Testing Requirements: During production, test insulating glass units as follows:
  - a. Butterfly Unit Adhesion Pull Testing:
    - 1) Adhesion Criteria: Comply with the pass/fail requirements of the sealant manufacturer's published guidelines and/or sealant manufacturer's certification audit requirements/recommendations. Minimum pull back to 30 degrees from horizontal with no adhesive failure.
    - 2) Frequency: Test one minimum 24-by-36-inch size unit each eight-hour shift and after each sealant drum change.
    - 3) Test units shall be fabricated on the same production line and processing equipment and with the same spacers and sealant used in the production of the insulating glass units fabricated for the Project.
  - b. Desiccant Temperature Rise Testing:
    - 1) Test Criteria: Comply with the desiccant manufacturer's written recommendations.
    - 2) Frequency: Test a minimum of once every eight-hour shift and after each drum change.

- c. Bow/Warp and Air Space Measurement Concave/Convex Testing:
  - 1) Measure and record bow and warp once every hour on a vertical plane with an aluminum straight edge or with a laser.
  - 2) Measure and record unit center air space a minimum of once an hour with a checking gage (FDR Designs, or equal) and visually inspect all units.
- d. Skips and voids in the primary or secondary seals are prohibited and maximum gap at primary/secondary seal interface shall be 1 inch in length and 3/32 inch in width.
- e. Document and record results. Provide additional documentation upon request by the Owner or Architect.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing materials according to manufacturer's written instructions and as needed to prevent damage to glass and glazing materials from condensation, temperature changes, direct exposure to sun, or other causes.
- B. For insulating-glass units that will be exposed to substantial altitude changes, comply with insulating-glass manufacturer's written recommendations for venting (using either breather or capillary tubes) and sealing.

#### 1.8 FIELD CONDITIONS

- A. Environmental Limitations: Do not proceed with glazing when ambient and substrate temperature conditions are outside limits permitted by glazing material manufacturers and when glazing channel substrates are wet from rain, frost, condensation, or other causes.
- B. Field Measurements: Verify actual dimensions of openings and construction contiguous with glazing by field measurements before fabrication and indicate measurements on Glazing Schedule.

#### 1.9 WARRANTY

- A. Manufacturer's Special Warranty on Insulating Glass: Written warranty, made out to Owner and signed by insulating-glass manufacturer agreeing to furnish replacements for insulating-glass units whose hermetic seal has failed within specified warranty period indicated below. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass. Upon notification of such deterioration within the warranty period, furnish replacement glass units for failed glass units at the convenience of the Owner.
  - 1. Warranty Period: 10 years from date of Substantial Completion.
- B. Manufacturer's Special Warranty on Coated Glass Products: Written warranty, made out to Owner and signed by coated-glass manufacturer agreeing to furnish replacements



for those coated-glass units whose coatings flake, peel, or crack within the specified warranty period indicated below. Upon notification of such deterioration within the warranty period, furnish replacement glass units for those glass units whose coatings have flaked, peeled, cracked or deteriorated at the convenience of the Owner.

1. Warranty Period: 10 years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. General: Provide and install watertight and airtight glazing systems capable of withstanding thermal movement and wind and impact loads without failure of any kind, including loss or breakage of glass, failure of seal or gaskets, exudation of glazing sealants, and excessive deterioration of glazing materials.
- B. Delegated Glass Design: Glass thicknesses and heat treatments indicated are minimum requirements. Glazing details shown are for convenience of detailing only and are to be confirmed by the Contractor relative to cited standards and final framing and glazing details. Confirm glass thicknesses and heat treatments, verified by analysis, as required to meet the performance and testing requirements specified in individual product sections for glazing assemblies, Project loads and in-service conditions.
  1. Glass Thicknesses for Exterior Glazing: Design glass including comprehensive engineering analysis by a qualified professional engineer to determine minimum glass thicknesses to comply with the Building Subcode and ASTM E 1300, according to the following requirements:
    - a. Design Wind Loads: Determine design wind loads applicable to Project based upon design wind speed, exposure category, occupancy category, and heights above grade indicated on Drawings, according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures":
      - 1) Basic Wind Speed: 95 miles per hour.
      - 2) Exposure Category: B.
      - 3) Occupancy Category: II.
    - b. Probability of Breakage for Vertical or Sloped Glazing: Not greater than 5 lites per 1000.
      - 1) Load Duration: 60 seconds or less.
    - c. Maximum Lateral Deflection: For glass supported on all 4 edges, provide thickness required that limits center of glass deflection at design wind pressure to not more than 1/50 times the short side length or 1 inch, whichever is less.
    - d. Minimum Glass Thickness for Exterior Lites: Not less than 6.0 mm, except as otherwise noted.
  2. Glass Thicknesses for Interior Glazing: Select minimum glass thicknesses to comply with published recommendations of glass product manufacturers and referenced glazing publications.

- C. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 degrees F, ambient; 180 degrees F, material surfaces.
- D. Thermal and Optical Performance Properties: Provide insulating glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:
1. For insulating-glass units, properties are based on units with lites 6 mm thick and a nominal 1/2 inch wide interspace.
  2. Center-of-Glass U-Values: NFRC 100 methodology using LBL WINDOW 6.3 computer program, expressed as Btu/ sq. ft. x h x deg F.
  3. Solar Heat Gain Coefficient and Visible Transmittance: Center-of-glazing values, according to NFRC 200 and based on LBL WINDOW 6.3 computer program.
  4. Visible Reflectance (Solar Optical) Properties: Center-of-glazing values, according to NFRC 300.

## 2.2 GLASS TYPES

- A. General: Refer to Drawings for locations and extent of glass types.
- B. Glass Type I-1: Solar-Control, Low-E, Insulating-Glass Units.
1. Basis of Design: "Solarban 60 (2) Clear + Clear"; PPG Industries, Inc.
  2. Overall Unit Thickness: 25 mm.
  3. Interspace Content: Air.
  4. Outdoor Lite: Class 1 (clear) float glass.
    - a. Kind HS (heat strengthened), in non-hazardous glazing applications.
    - b. Kind FT (fully tempered), in hazardous glazing applications.
    - c. Thickness: 6.0 mm, minimum.
    - d. Low-E Coating: Vacuum-deposited sputter-coating on second surface.
  5. Indoor Lite: Class 1 (clear) float glass.
    - a. Kind HS (heat strengthened), in non-hazardous glazing applications.
    - b. Kind FT (fully tempered), in hazardous glazing applications.
    - c. Thickness: 6.0 mm, minimum.
  6. Visible Light Transmittance: 70 percent.
  7. Visible Light Reflectance: 11 percent.
  8. Solar Heat Gain Coefficient: 0.38 maximum.
  9. Shading Coefficient: 0.44 maximum.
  10. Winter Nighttime U-Factor: 0.29 maximum.
  11. Summer Daytime U-Factor: 0.27 maximum.
  12. Application: Vision panels for exterior glazing.
  13. Glass Panel Sizes: Comply with requirements indicated on Drawings.

- C. Glass Type S-1: Single Monolithic Clear Float-Glass Units.
  - 1. Thickness: 6.0 mm.
  - 2. Heat Treatment: Kind FT (fully tempered) float glass.
  - 3. Application: Vision panels for interior glazing.
  - 4. Glass Panel Sizes: Comply with requirements indicated on Drawings.
  
- D. Glass Type S-2: Single Monolithic Clear Float-Glass Units.
  - 1. Thickness: 16.0 mm.
  - 2. Heat Treatment: Kind FT (fully tempered) float glass.
  - 3. Application: All glass entrance assemblies.
  - 4. Glass Panel Sizes: Comply with requirements indicated on Drawings.

## 2.3 PRIMARY FLOAT GLASS

- A. Float Glass: ASTM C 1036, Type I (transparent glass, flat), Quality q3 (glazing select), Class 1, (clear), as indicated in schedules.
  - 1. In order to reduce the possibility of glass color range rejection, the supplier of float (primary) glass products shall provide glass for the entire Project from a single facility using stockpiled batch run materials from a single source for the entire Project.
  - 2. Float Glass Quality Imperfection Limitations: In addition to the limitations included under ASTM C 1036, all glass shall be supplied meeting the following quality standards:
    - a. Point blemishes - seeds/stones with distortion, stain spots, dirt, surface damage - shall be limited to **0.060 inch** maximum separated by **12 inches** minimum.
    - b. Glass scratch/rubs shall be rejected if detectable at **10 feet**.
    - c. Water blow-off stains, tag residue, and handprints will not be permitted.

## 2.4 HEAT-TREATED FLOAT GLASS

- A. General: Heat-treat glass where the need is determined by thermal stress analyses, by wind load analyses, and where required to meet safety glazing requirements.
  - 1. Provide Kind FT (fully tempered) float glass for all safety glazing applications or hazardous condition locations, except as otherwise indicated.
  - 2. Provide Kind HS (heat-strengthened) float glass wherever fully tempered float glass is not required, except as otherwise indicated.
  
- B. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of installed glass unit.
  
- C. Sizes and Cutting: Prior to heat treatment, cut glass to required sizes as determined by accurate measurement of openings to be glazed, making allowance for required edge clearances. Cut and process edges in accordance with glass manufacturer's recommendations. Do not cut or treat edges in the field.

- D. Heat-Strengthened Glass: Provide glass complying with ASTM C 1048 Kind HS. Surface compression range shall be between 4,000 psi and 7,000 psi for 1/4 inch thick glass.
1. Heat-Strengthened Glass Quality Imperfection Limitations: In addition to the limitations included under ASTM C 1048, all glass shall be supplied meeting the following quality standards:
    - a. Chill cracks, roller marks, and picture framing shall not be permitted.
    - b. Tracking/cloud and heat dimples shall be rejected if detectable at 10 feet.
- E. Fully Tempered Glass: Provide glass complying with ASTM C 1048 Kind FT and meeting the requirements of ANSI Z97.1. Surface compression shall be equal to or greater than 10,000 psi.
1. Tempered Glass Quality Imperfection Limitations: In addition to the limitations included under ASTM C 1048, all glass shall be supplied meeting the following quality standards:
    - a. Chill cracks, roller marks, and picture framing shall not be permitted.
    - b. Tracking/cloud and heat dimples shall be rejected if detectable at 10 feet.
- F. Flatness Tolerances: All heat-treated glass shall be fabricated to the following flatness tolerances. Verification of compliance for overall bow and warp shall be in accordance with ASTM C 1048. Verification of compliance for flatness shall be via an optical scanning device such as LiteSentry or Osprey Series.
1. Overall Bow and Warp: Not greater than the maximum bow and warp tolerances in any direction as listed in ASTM C 1048 Table 2. Localized warp limited to 1/32 inch in 12 inches.
  2. Roll Ripple: The deviation from flatness at any peak (peak to valley deviation) shall not exceed 0.003 inches for 6 mm thick glass in the glass center, with leading and trailing edge deviation not to exceed 0.008 inches for 6 mm thick glass.
- G. Millidiopter Criteria: Maximum +/- 120 millidiopters overall or the highest overall measurement from the approved visual mockup that is less than +/- 120 millidiopter overall whichever is less when viewed outdoors.

## 2.5 COATED FLOAT GLASS

- A. General: Provide coated glass complying with requirements indicated in this Article, under Paragraph "Insulating Glass," and in schedules.
1. Sputter-Coated Float Glass: Float glass with the coating(s) specified in schedules, deposited by magnetron sputtered vacuum deposition process after manufacture and heat treatment (if any). Pyrolytic and wet chemical deposition glass coatings will not be permitted.
  2. Coating Quality: The allowable range of defects in coatings applied to glass shall be as accepted through glass sample submissions. Installed coated glass products which are outside of the accepted sample range shall be subject to rejection by the Architect. In order to reduce the possibility of glass rejection, the supplier of coated glass products shall provide glass coating production runs for the entire

Project from a single coating facility. All coated glass shall be provided from a single coating facility. The allowable range of defects are defined as follows:

- a. The vision glass area is defined as the field of glass which is greater than **1 inch** from the glass unit edge.
  - 1) Pinholes: At an indoor viewing distance of **10 feet** for non-reflective and reflective low emissivity coatings:
    - a) Pinholes greater than **1/16 inch** in diameter shall not be permitted in 80 percent of the central portion of the vision glass area and separated by greater than or equal to **12 inches**. Pinholes larger than **3/32 inch** are not allowed in the outer 20 percent of the perimeter vision glass area and separated by greater than or equal to **12 inches**;
    - b) No more than two readily apparent blemishes are allowed in a **3 inch** diameter circle and no more than five readily apparent blemishes are allowed in a **12 inch** diameter circle.
  - 2) Scratches: At an indoor viewing distance of **10 feet** for non-reflective and reflective low emissivity coatings, and **15 feet** for reflective coatings:
    - a) Scratches are allowed in 80 percent of the central glass area if not detectable at the viewing distance, and scratches less than or equal to **1 inch** are allowed in the outer 20 percent area if not detectable at the viewing distance. Concentrated scratches or abraded areas are not allowed.
    - b) Scuffs, rub marks, cup marks, or abraded areas shall not be permitted in any glass area.
  - 3) Reflectance and Transmission Inspection: When viewed outdoors against a bright uniform opaque background at a distance of **10 feet** for low emissivity coatings, color, reflectance and transmission will be permitted to have a slight variance subject to Architect's acceptance.
    - a) Mottling and streaking of the coating shall not be permitted.
    - b) Coating arcing will not be permitted.
    - c) Water blow-off stains will not be permitted.
    - d) Handprints will not be permitted.
    - e) Roller marks shall not be permitted.
    - f) Positive and negative air distortion shall not be permitted.
    - g) Tag residue shall not be permitted.

## 2.6 INSULATING GLASS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:
  1. AFG Industries, Inc.
  2. JE Berkowitz, LP.

3. Cardinal Glass Industries.
4. Guardian Industries Corporation.
5. Oldcastle Glass, Inc.
6. Pilkington North America.
7. PPG Industries, Inc.
8. Viracon, Inc.

B. Insulating-Glass Units: Preassembled units, with dehydrated entrapped air, consisting of sheets of glass hermetically sealed at all edges with a polyisobutylene primary and a black silicone secondary elastomeric sealant. The lites of glass shall be separated by dessicant containing mill finished aluminum spacers. All insulating glass units shall be IGCC certified to comply with ASTM E 2190 and with requirements specified in this Article and in the Glass Schedule.

1. Provide Kind HS (heat-strengthened) float glass where needed to comply with "Performance Requirements" Article. Provide Kind FT (fully tempered) where safety glass is indicated.

C. Overall Unit Thickness and Thickness of Each Lite: Dimensions indicated in the Glass Schedule are nominal and the overall thicknesses of units are measured perpendicularly from outer surfaces of glass lites at unit's edge.

## 2.7 GLAZING FILMS

A. PVC Film Overlay: Translucent, dimensionally stable cast PVC film, 2-mil (0.05-mm) minimum thickness, with pressure-sensitive clear, adhesive back for adhering to glass substrates indicated and releasable protective backing.

## 2.8 GLAZING SEALANTS

- A. General: Provide products of type indicated, complying with the following requirements:
1. VOC Content: For sealants used inside of the weatherproofing system, not more than 250 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  2. Sealant shall have a VOC content of 250 g/L or less.
- B. Gasket, Blocking, and Spacer Wet Glazing Materials: Silicone, compatible with and adherent to each material it will be in contact with, as recommended by the manufacturer to fulfill performance requirements.

## 2.9 GLAZING TAPES

A. Back-Bedding Mastic Glazing Tape: Preformed, butyl-based elastomeric tape with a solids content of 100 percent; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; packaged on rolls with a release paper backing; and complying with ASTM C 1281 and AAMA 800 for products indicated below:

1. AAMA 806.3 tape, for glazing applications in which tape is subject to continuous pressure.
2. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.

## 2.10 GLAZING GASKETS

- A. Lock-Strip Gaskets: Neoprene extrusions in size and shape indicated, fabricated into frames with molded corner units and zipper lock strips, complying with ASTM C 542, black.
- B. Dense Compression Gaskets:
  1. Neoprene: Continuous extruded neoprene with, cross sectional profile, physical properties, and tolerances as recommended by the window and curtain wall manufacturer, and as required, to comply with the performance requirements specified and shown all in compliance with the applicable provisions of ASTM C 864, Option II. Provide injection molded corners.
  2. EPDM: Continuous extruded EPDM with cross sectional profile, physical properties, and tolerances as recommended by the window and curtain wall manufacturer, and as required, to comply with the performance requirements specified and shown all in compliance with the applicable provisions of ASTM C 864, Option II. Provide injection molded corners.
  3. Silicone: Continuous extruded silicone with cross sectional profile, physical properties, and tolerances as recommended by the window and curtain wall manufacturer, and as required, to comply with the performance requirements specified and shown all in compliance with the applicable provisions of ASTM C 1115, Type C. Provide injection molded corners.
  4. Thermoplastic Polyolefin Rubber: Continuous extruded thermoplastic polyolefin rubber with cross sectional profile, physical properties, and tolerances as recommended by the window and curtain wall manufacturer, and as required, to comply with the performance requirements specified and shown all in compliance with the applicable provisions of ASTM C 1115. Provide injection molded corners.
  5. Any material indicated above.
- C. Soft Compression Gaskets: Continuous extruded expanded foam with, cross sectional profile, physical properties, and tolerances as recommended by the window and curtain wall manufacturer, and as required, to comply with the performance requirements specified and shown all in compliance with the applicable provisions of ASTM C 509, Option II, Type II; provide the following:
  1. Neoprene.
  2. EPDM.
  3. Silicone.
  4. Thermoplastic polyolefin rubber.
  5. Any material indicated above.

## 2.11 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for

application indicated, and with a proven record of compatibility with surfaces, and wet glazing materials, contacted in installation.

B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.

C. Setting Blocks:

1. EPDM complying with ASTM C 864 (Option II), blocks, 85 +/- 5 Shore A durometer hardness, **1/16 inch** less than the channel width, and length based on the face area of the glass unit to be supported in accordance with GANA standards and glass manufacturer recommendations, but not less than **4 inches**.
2. Silicone complying with ASTM C 1115 (Type C), blocks, 85 +/- 5 Shore A durometer hardness, **1/16 inch** less than the channel width, and length based on the face area of the glass unit to be supported in accordance with GANA standards and glass manufacturer recommendations, but not less than **4 inches**.

D. Edge Blocks:

1. Silicone complying with ASTM C 1115 (Type C), blocks, 65 +/- 5 Shore A durometer hardness, minimum **4 inches** long and sized to allow **1/8 inch** clearance between edge of glass and block.
2. EPDM complying with ASTM C 864 (Option II), blocks, 65 +/- 5 Shore A durometer hardness, minimum **4 inches** long and sized to allow **1/8 inch** clearance between edge of glass and block.

E. Spacers: Elastomeric blocks or continuous extrusions with a Shore, Type A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.

F. Spacers for Simulated Divided Lites at Muntins: Provide internal spacers in insulating glass units, aligned to match muntin layout.

1. Color: Dark bronze or charcoal gray.

## 2.12 HARDWARE COMPONENTS

A. Hardware: Comply with requirements indicated on Drawings for profiles, configuration and arrangement of components.

1. Material and Finish: Fabricate hardware components from Type 304 stainless steel.
2. Manufacturer: Subject to compliance with requirements, provide products manufactured by one of the following:

- a. CHMI Custom Hardware Manufacturing, Inc.
- b. Laurence, C. R. Co., Inc.

B. Fasteners, Anchors and Inserts: Provide stainless steel fasteners and devices as required for hardware installation.



## 2.13 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

- A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.
  - 1. Edge and Surface Conditions: Comply with the recommendations of AAMA "Structural Properties of Glass" for "clean-cut" edges, except comply with manufacturer's recommendations when they are at variance therewith.
- B. Cutting: Do not nip glass edges. Edges may be wheel cut or sawed and seamed at manufacturer's option. For glass to be cut at site, provide glass **2 inches** larger than required in both dimensions, so as to facilitate cutting of clean cut edges without the necessity of seaming or nipping. Do not cut, seam, nip or abrade heat-treated glass.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine glass framing, with glazier and glass framing erector present, for compliance with the following:
  - 1. Compliance with the specified manufacturing and installation tolerances, including those for size, squareness, and offsets at corners.
  - 2. Presence and functioning of weep system.
  - 3. Minimum required face or edge clearances.
  - 4. Effective sealing between joints of glass-framing members.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Clean glazing stops, glazing channels, and rabbets which will be in contact with the glazing materials immediately before glazing. Loose particles present or resulting from fabrication and cleaning shall be removed by blowing out joints with oil-free compressed air, or by vacuuming joints. Remove protective coatings, oils from cutting and drilling operations, and residue on metallic surfaces with solvents that leave no residue. Do not allow solvent to air dry without wiping. Use only lint-free towels for wiping of surfaces. Wipe metal surfaces with IPA (isopropyl alcohol) unless otherwise required by compatibility and adhesion testing results.
  - 1. Prime surfaces to receive glazing compounds. When priming, comply with wet glazing manufacturer's recommendations.
- B. Inspect each glass unit immediately before installation. Do not install any units which are improperly sized or have damaged edges, scratches or abrasion or other evidence of damage. Remove labels from glass immediately after installation.

- C. Seal vent (breather or capillary) tubes in insulating glass units in accordance with the insulating glass manufacturer's written recommendations.

### 3.3 GLAZING, GENERAL

- A. Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
  - 1. All glass units shall be installed in accordance with the glass manufacturer's recommendations.
- B. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, with reasonable tolerances. Adjust as required by Project conditions during installation.
- C. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
- D. Apply primers to surfaces indicated to receive glazing materials. Use primers as determined by preconstruction compatibility and adhesion testing.
- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless more stringent requirements are recommended by glass manufacturer. Place blocks to allow water passage to weep holes. Set blocks in thin course of silicone sealant.
  - 1. For Glass Units Less Than **72 inches**: Locate setting blocks at sill one-quarter of the width in from each end of the glass, unless otherwise recommended by the glass manufacturer.
  - 2. For Glass Units **72 inches** or Greater: Locate setting blocks at sill one-eighth of the width in from each end of the glass, but not less than **6 inches**, unless otherwise recommended by the glass manufacturer.
- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where the length plus width is larger than **50 inches** as follows:
  - 1. Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
  - 2. Provide **1/8 inch** minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.

- H. Provide edge blocking to prevent glass lites from moving sideways in glazing channel, sized and located to comply with the glass manufacturer's recommendations and the requirements in referenced glazing publications.
  - 1. Edge blocking will not be required at structural glazed window and curtain walls unless specifically required by the glass manufacturer for the conditions shown.
- I. Set glass lites with uniform pattern, draw, bow, and similar characteristics, producing the greatest possible degree of uniformity in appearance on the entire exterior wall elevation.
  - 1. Set glass units with void between edge of units and glazing channel.
  - 2. Orient and install insulating glass units made up with one lite of low emissivity coated glass with the uncoated glass lite on the inboard (building) side.
  - 3. Orient and install insulating glass units made up with one lite of tinted glass with the untinted glass lite on the inboard (building) side.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
- K. Miter cut gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away and join with sealant recommended by gasket manufacturer which will provide an airtight and watertight seal at the joint.

#### 3.4 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Where framing joints are vertical, cover these joints by applying tapes to heads and sills first and then to jambs. Where framing joints are horizontal, cover these joints by applying tapes to jambs and then to heads and sills.
- D. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
- E. Do not remove release paper from tape until just before each glazing unit is installed.
- F. Apply heel bead of elastomeric sealant.
- G. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
- H. Apply cap bead of elastomeric sealant over exposed edge of tape.

### 3.5 LOCK-STRIP GASKET GLAZING

- A. Comply with ASTM C 716 and gasket manufacturer's written instructions. Use special tool to install and remove filler strips; lubricate in accordance with manufacturer's instructions. Provide supplementary wet seal and weep system, unless otherwise indicated.

### 3.6 DECORATIVE FILM OVERLAY

- A. Decorative Film Overlay:
  - 1. Install products only within ambient and substrate temperature ranges recommended by manufacturer.
  - 2. Apply film to cleaned glass substrate squarely aligned to glass edges.
  - 3. Apply film uniformly smooth and free from tears, air bubbles, wrinkles, and rough edges.
  - 4. Apply in single sheet completely overlaying glass substrate according to manufacturer's written instructions.

### 3.7 PROTECTION AND CLEANING

- A. Protect glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.
- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way and from any source, including natural causes, accidents, and vandalism.
- E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

END OF SECTION 08 80 00

# meeting minutes

**March 2, 2016**

Padovano College Commons

RCNJ Project: 2016-26-01C

**Date Prepared:** March 2, 2016

**Location:** Ramapo College of New Jersey  
Carriage House (formerly the Copy Center/Print Shop)

**Attendees:** Steve Sondey RCNJ, Director of Purchasing  
Richard Roberts RCNJ, Contracting Officer  
Seamus Doran RCNJ, Sr. Project Manager  
Michael Herbst ikon.5 Architects  
Contractors – see sign-in sheet

**Purpose:** Mandatory pre-bid conference and walkthrough

## Discussion:

1. Steve Sondey welcomed the contractors and outlined the topics of discussion.
2. Key dates in the schedule, as listed in the Notice to Bidders in the project manual.
  - a. Last day for questions: March 16, 2016, 4pm
    - i. Questions shall be sent via email to Seamus Doran, sdoran@ramapo.edu
  - b. Addendum #1 will be issued: March 17, 2016
    - i. Addendum #1 will be emailed to bidders in attendance and will be available for download on the project website:  
[www.ramapo.edu/construction-projects/college-commons-rebid](http://www.ramapo.edu/construction-projects/college-commons-rebid)
    - ii. Addendum #1 will answer all questions along with any specification or drawing revisions.
  - c. Bids due: March 31, 2016, 2pm
    - i. Bids must be received at Purchasing in the Academic Complex D-wing, Room D-116
3. Steve Sondey listed the components of the front end documents in the project manual. The list of forms included in the table of contents under Procurement Requirements and Contracting Requirements and the blank forms are in the project manual.
  - a. Include form “Disclosure of Investment Activities” in Iran with bid. Form is available on the project website.
  - b. Subcontractors are not required to submit DPMC Uncompleted Contracts requirements in the bid.

4. Michael Herbst gave a more detailed explanation of the scope of work to be completed in the project. The list of add and deduct alternates was described. Summarize what was stated in explanation and description of the alternates.
5. The estimated construction cost is \$1,000,000.
6. All general contractors bidding on the project are required to be prequalified by the New Jersey State Department of Property Management and Construction (DPMC) under classification C006, C008, and/or C009. Plumbing & gas, HVAC, and electrical sub-contractors are required to be DPMC pre-qualified as well.
7. Steel work may be performed by either the GC or a named steel contractor at the discretion of the bidder. Steel subcontractor does not need DPMC pre-qualification.
8. Vehicle access to and from the site is only by way of the campus loop road and the service access road behind the physical plant. The existing parking lot adjacent to the Carriage House can be used as a staging area prior to completing the site work. Parking, deliveries, and access will need to be coordinated with a simultaneous project at the Student Center across the service access road.
9. Procurement and installation of the kitchen equipment will be under a separate contract. Installation of the equipment will be coordinated with the construction of the Commons. Infrastructure for the food service is provided within the Commons project.
10. The construction schedule will be determined and finalized with the awarded bidder. Liquidated damages are in the contract.
11. A conformed set of drawings will be issued to the awarded bidder once the scope of alternates is determined.
12. United Fire Protection is the preferred alarm vendor by RCNJ. The primary contact is:

Bob Farm  
United Fire Protection Corp.  
1 Mark Road  
Kenilworth, NJ 07033  
Direct Line (908) 481-1121  
Direct Fax (908) 481-1122  
Cell (908) 251-7221  
Office (908) 688-0300 x245

This confirms and records our interpretation of the discussions which occurred and our understanding reached during this meeting. Unless notified in writing three (3) calendar days of the date issued, the minutes will be considered accurate and part of the project record.

Respectfully submitted,










A handwritten signature in black ink, appearing to read "Michael Herbst". The signature is written in a cursive style with a long horizontal stroke at the end.

Michael Herbst  
Project Architect

cc: All Attendees

BID NUMBER: 2016-26-01C College Commons REBID  
 MANDATORY PRE-BID MEETING/SITE INSPECTION: 03/02/16 10:00 AM Carriage House (Print Shop)  
 BID SUBMISSION DEADLINE: 03/31/16 AT 2:00PM Location Purchasing Office D-116

\*\* Please sign-in, print all information and leave a business card. Thank You \*\*  
 \*\* If you leave a business card you can enter "See business card" in the address and phone number columns. \*\*

Company Name	Address	Phone	Contact Name	Email	Signature
BRADMA CONSTR.	SEE CARD	SEE CARD	C. CATERINO	SEE CARD	
PRACTICAL LLC	SEE CARD	SEE CARD	AYDIN ATAKUT	SEE CARD	
BILLY CONTRACTING & RESTORATION INC.	12 MAPLE AVE. PINE BROOK, NY 07058	973 388 5547	TOMMY VELKOSKI	TVELKOSKI@YAHOO.COM	
GPC INC	SEE CARD	SEE CARD	JARLY RUSSANO	SEE CARD	
DOBSTOL Construction	SEE CARD	SEE CARD	STAN TOLSTUNOV	SEE CARD	
GL GROUP	SEE CARD	SEE CARD	MICHAEL SOCAKOV	SEE CARD	
SMAC CORP	SEE CARD	SEE CARD	BOBCE GJOSKOSKI	SEE CARD	
DuCarolis	33 DuCarolis Rd Hackensack, NJ	907-520-4556	Richard Perrin	R.DuCarolis@comcast.net	KEVIN CAROTONE
ATG INC	SEE CARD	SEE CARD	STEVE ANASTASAFOS	SEE CARD	
Vinco Construction	108 RIVERVIEW SKYLINE Newark, NJ 07102	732-707-0643 x301	Anthony Christy	techristy@vincoconstruction.com	







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**TY ZAKU**  
 Project Coordinator  
 tyalimibuilders@gmail.com

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 Wyckoff, NJ 07481  
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7680

**ATG Inc.**  
 Alexander The Great Inc.

**Steve Anastasatos**  
 Project Manager

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Tommy Velkoski  
 Project Manager

Billy Contracting & Restoration Inc

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 Cell 973.388.5597

**BRAHMA CONSTRUCTION CORPORATION**  
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*CCATERING @ BRAHMACORP.COM*



**Bob Turner**  
 PROJECT SUPERVISOR

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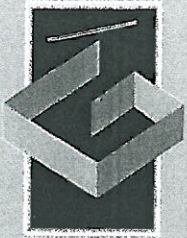
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 ☎ : (201) 844-6084

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140 Hamburg Turnpike Bloomingdale, NJ 07403



Jerry Russano  
GPC, Inc.

20 East Willow Street  
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Phone: 973-376-6116  
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Cell: 201-618-8433  
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## Practical LLC

General Contractors - Construction - Remodeling - Renovations

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Cel: 347-739-7951  
Fax: (201) 839-4697

Bob Djuric  
Vice President

**SLATE**  
construction llc

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17 Kamm Street, Pequannock, NJ 07440  
slate.construct@gmail.com

**SMAC CORP.**   
General Contractors

Borce Gjorsoski  
President

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732-707-0643 x301  
Anthony Christy  
tchristy@viacconstruction.com

**RAMAPO COLLEGE OF NEW JERSEY**  
**DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN**

Solicitation Number: \_\_\_\_\_ Bidder/Offeror: \_\_\_\_\_

**PART 1: CERTIFICATION**

**BIDDERS MUST COMPLETE PART 1 BY CHECKING EITHER BOX. FAILURE TO CHECK ONE OF THE BOXES MAY RENDER THE PROPOSAL NON-RESPONSIVE.**

Pursuant to P. L. 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the Division's website at <http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf>. Bidders must review this list prior to completing the below certification. Failure to complete the certification may render a bidder's proposal non-responsive. If the Director finds a person or entity to be in violation of law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party

PLEASE CHECK THE APPROPRIATE BOX:

I certify pursuant to P. L. 2012, c. 25 that neither the bidder listed above nor any bidder's parents, subsidiaries, or affiliates is listed on the N.J. Department of the Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and am authorized to make this certification on its behalf. I will skip Part 2 and sign and complete the Certification below.

OR

I am unable to certify as above because the bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below. Failure to provide such may result in the proposal being declared as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

**PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN**

You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below. PROVIDE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PROVIDE THOROUGH ANSWERS TO EACH QUESTION.

Name _____	Relationship to Bidder/Offeror _____
Description of Activities _____	
_____	
Duration of Engagement _____	Anticipated Cessation Date _____
Bidder/Offeror Contact Name _____	Contact Phone Number _____

If you need to make additional entries, attach on a separate page.

Certification: I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the above-referenced person or entity. I acknowledge that the State of New Jersey is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of any contracts with the State to notify the State in writing of any changes to the answers of information contained herein. I acknowledge that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreement(s) with the State of New Jersey and that the State at its option may declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): \_\_\_\_\_ Signature: \_\_\_\_\_

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