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BID ADDENDUM NO. 1 COVER SHEET

TO: **All Bidders of Record**

FROM: Seamus Doran, Project Manager

DATE: October 19, 2015

RE: Ramapo College of New Jersey
Padovano College Commons
RCNJ Project No. 12-281C

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 October 19, 2015

RAMAPO COLLEGE OF NEW JERSEY
PADOVANO COLLEGE COMMONS
RCNJ PROJECT NO. 12-281C

ADDENDUM NO.1
Dated February 27, 2015

This addendum is hereby made part of the Project Manual and Drawings issued for bid September 28, 2015.

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. What is the Project Duration? The Bid Form states to see Section 011105 Time of Completion. That section is not listed on the Table of Contents or contained within the project manual.

   ***Response**: The project schedule and completion date have been updated in specification section 01 11 05 which is issued as part of this addendum. The Section 01 11 05 is attached.*

2. Will the project be inspected by the local building department or DCA?

   ***Response**: The project will be inspected by DCA inspectors.*

3. Has the respective agency reviewed the plans?

   ***Response**: Yes.*

4. The Project Manual contains Section 05 50 00 Metal Fabrications which contains a section regarding Metal Bollards. The only Metal Bollards shown on the D1.1 state that they are existing and will remain. Are new bollards required for theis project? If so please provide location(s).

   ***Response**: The metal bollards are for the push-button operator for the automatic doors. See drawing A5.3.*

5. The Project Manual contains Section 05 12 00 Structural Steel. The Plans show existing steel columns that will remain, however they do not show any new structural steel. There are new Glue Lam Beams called out to be installed. Please clarify and confirm that this section doesn't apply.

   ***Response**: There is structural steel for the screen wall on the southeast corner. See drawings A5.3, S-101, and S-202.*

6. Spec 00 60 00 Pg-2 (8) indicates substantial completion as 30 calendar days after permits received while in Prebid indicated as April 15, 2016. Please indicate number of days for construction period after permits along with expected NTP dates.

   ***Response**: Refer to Section 01 11 05 Time of Completion, attached.*

7. Spec 00 60 00 Pg-5 (13.3 & 4) refers to LABOR UNION. Please confirm that 100% Union labor is required on this project and it's a UNION job.

   ***Response**: Union participation is not a requirement for this project.*

8. Please provide any specific goal requirements for SBE, MBE, & WBE as referenced in Appendix C & Spec 00 60 00 Pg-6 (13.4).

   ***Response**: The College has no specific goal requirements aside from those prescribed by N.J.A.C. 17:27-7.2.*

9. There is contract statement about Utility Usage charges Per 00 70 00 Pg 33 (7.6.3); and 01 50 00-2 (1.3-D). Please clarify the responsibility of who pays what services.

   ***Response**: The College will pay for metered electric/water/sewer use charges. The Contractor shall provide and pay for all installation, operation, servicing, and removal of temporary facilities and services required of the site.*

10. Please provide details for asphalt walk, Concrete walk & Paver.

    ***Response**: Refer to the detail drawings on revised sheet A1.1 attached.*

11. Please confirm there are no any asbestos or hazardous material removals by this contract.

    ***Response**: It is unknown if asbestos is present and sampling and testing is in progress. If it is determined asbestos is present in the building, abatement will be under a separate contract.*

12. There are two separate ATC specification sections (section (23 09 00 & 23 09 23) that are contradicting each other. Which one is related with this project? Please clarify.

    ***Response**: Both specification sections 23 09 00 and 23 09 23 apply to this project. 23 09 00 is the instrumentation section and 23 09 23 specifies the Direct Digital Control Section. For bidding purposes, the more stringent of the requirement will apply.*

13. Are "Aaon", "Trane", "Daikin/McQuay", and "York" acceptable manufacturers for the "AHU-1/ACCU-1" system?

    ***Response**: The manufacturers listed above are acceptable as long as they meet the requirements of the contract documents.*

14. Specification Section 05 12 00 Structural Steel Section shows that a Structural Steel Contractor/Erector is required. Structural drawings don't reflect a required Steel Contractor. Please advise.

***Response**: As addressed during the pre-bid conference, this work can be performed by either the General Contractor or a named steel contractor at the discretion of the bidder.*

15. All Storefront Partitions, Doors, Windows for exterior Applications, to be constructed of a Steel, However it is not clear from the drawings, Is It Individual Lites Glazing? Or Architect intend to Use Division Muntins. Please Advise.

***Response**: The glazing will be simulated divided lite (NOT individual lites).*

16. All Exterior Gazing Specified as 1" Clear SOLARBAN-60 2nd Surface Glass. In case Architect would like to use Muntins for Glass division, Muntins going to be External Applications on Exterior surface #1 and #4. SOLOBAN-60 cannot be used with integral Muntins between glass lites. Please advise.

***Response**: The glazing will be simulated divided lite (NOT individual lites).*

17. We can use integral Muntins Only with Had cost Low-e on the 3rd surface. Please advise.

***Response**: Low-e coating on the #2 surface.*

18. Confirm all FFE will be purchased and installed by Ramapo College

***Response**: This is confirmed.*

19. Will there be any fees associated with United Fire placing the system on test and putting the system back on line during the course of construction and if so what will this cost be?

***Response**: Fees for placing the fire alarm system into test mode with in the building as required as part of the project will be paid for by the College.*

20. Specification calls for Fire Extinguishers and cabinets however I was unable to find any on the drawings. Can you direct me to their locations or if required at all.

***Response**: There is a Fire Extinguisher Cabinet in the alcover between Office 002 and Water Meter 003. There are three (3) extinguishers on brackets in Café Storage 006, Building Storage 011, and Mechanical 012.*

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 01 11 05 – TIME OF COMPLETION

Replace section with revised section dated October 19, 2015.

B. 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 October 19, 2015.

C. 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 October 19, 2015.

D. 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 October 19, 2015.

2. ARCHITECTURAL DRAWING SHEETS

A. SHEET D1.1 DEMOLITION PLAN

Changed note for contractor to dispose of all existing furniture and equipment. Replace sheet with revised sheet dated October 19, 2015.

B. SHEET A1.1 SITE PLAN

Added details for precast paver, cast in place concrete, and asphalt walkways. Replace sheet with revised sheet dated October 19, 2015.

C. SHEET A-2.1 FLOOR PLAN

Corrected partition type in Toilet 008. Replace sheet with revised sheet dated October 19, 2015.

D. SHEET A2.2 FINISH PLAN

Added Milliken to finish schedule, relocated text for clarity, changed wording of vestibule flooring material, amended general notes. Replace sheet with revised sheet dated October 19, 2015.

E. SHEET A3.1 REFLECTED CEILING PLAN

Corrected Drawing reference for lighting, corrected paint color for ceilings. Replace sheet with revised sheet dated October 19, 2015.

ATTACHMENTS:

1. SPECIFICATION SECTIONS:

01 11 05	Time of Completion
08 11 00	Steel and glass Doors
08 51 23	Steel Windows
08 80 00	Glazing

2. DRAWING SHEETS:

Sheet D1.1 Demolition Plan
Sheet A1.1 Site Plan
Sheet A2.1 Floor Plan
Sheet A2.2 Finish Plan
Sheet A3.1 Reflected Ceiling Plan

3. Pre-Bid Conference Meeting Minutes

4. Pre-Bid Sign-in Sheet

5. Disclosure of Investment Activities in Iran

END OF ADDENDUM NO. 1

SECTION 01 11 05 – TIME OF COMPLETION (REVISED ADDENDUM NO. 1)

PART 1 - GENERAL

1.1 TIME OF COMPLETION AND SCHEDULING

A. In preparation of the CPM schedule, the Contractor must allow for the following activities and durations:

1. The Contractor can anticipate a Notice to Proceed to be issued no later than twenty-one (21) calendar days after the opening of the bids.

2. The Contractor can anticipate construction permits being issued by the New Jersey Department of Community Affairs (DCA) no later than forty-five (45) calendar days after the Contractor has submitted to DCA the permit technical applications and required signed/sealed drawings and specifications prepared by the Contractor.

B. The listed milestone dates represent the Contractor's contractual obligations to the College under this Contract:

File for Construction Permits:	Seven (7) calendar days after Notice to Proceed
Furnish All Submittals for Review:	Thirty (30) calendar days after Notice to Proceed (Submittals that require field verification and dimensions that cannot be prepared within this period are excluded of this milestone)
Substantial Completion:	**On or before April 29, 2016.**
Final Completion:	**On or before May 27, 2016.**

- END OF SECTION 01 11 05 -

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 an 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 MANUAFCTURERS

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 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 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.

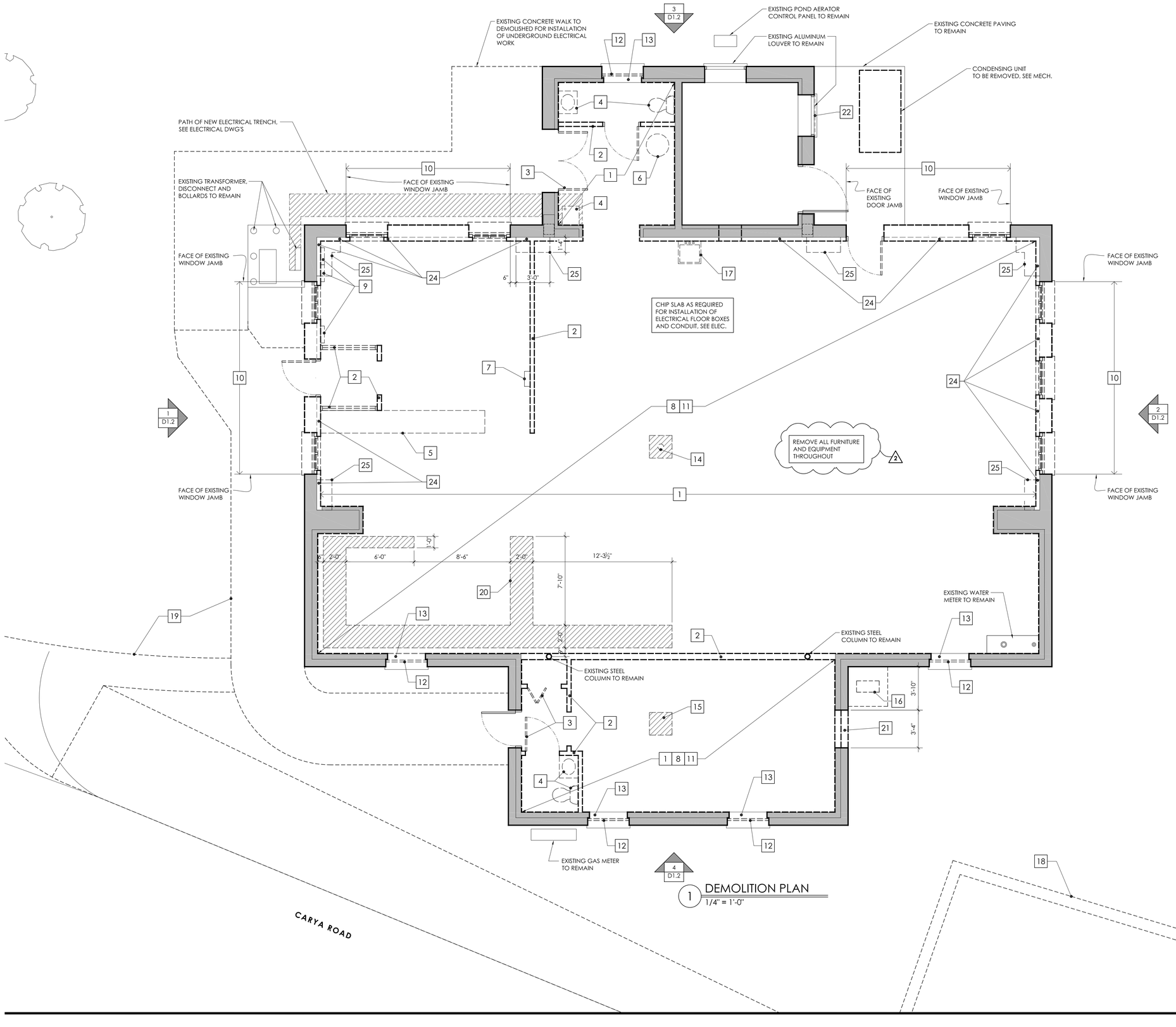
B. Protect glass from contact with contaminating substances resulting from construction operations. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.

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



1 DEMOLITION PLAN
1/4" = 1'-0"

DEMOLITION SCHEDULE

1. REMOVE GYPSUM BOARD FROM INTERIOR WALLS (FURRING STRIPS TO REMAIN)
2. DEMOLISH EXISTING INTERIOR PARTITION
3. REMOVE DOOR, FRAME & HARDWARE
4. DEMOLISH EXISTING PLUMBING FIXTURE AND CAP UTILITIES, SEE PLUMBING DRAWINGS
5. REMOVE EXISTING CABINETRY/COUNTERTOP
6. REMOVE EXISTING WATER HEATER AND CAP UTILITIES, SEE PLUMBING
7. REMOVE EXISTING FIRE ALARM CONTROL PANEL. SEE ELECTRICAL FOR NEW LOCATION
8. REMOVE EXISTING CEILING IN ENTIRETY - INCLUDING SUSPENSION SYSTEM, LIGHTS, DEVICES, GRILLES, DIFFUSERS, & ROOF LADDER
9. REMOVE EXISTING POWER PANEL (TYP. OF 3), SEE ELECTRICAL FOR NEW SINGLE PANEL LOCATION
10. REMOVE EXISTING EXTERIOR WALL IN ENTIRETY FROM FLOOR SLAB TO WOOD FASCIA TRIM FOR THE EXTENT SHOWN ON THE DEMO PLAN. STONE AT JAMBS TO BE CUT AND DRESSED. REMOVE STONE TO A DEPTH OF 8-in. BELOW GRADE THE FULL WIDTH OF OPENING.
11. REMOVE EXISTING CARPETING or VCT, ADHESIVE RESIDUE, & PREP FOR NEW FINISHES
12. REMOVE EXISTING WINDOW & FRAME (EXTERIOR CAST STONE SILL TO REMAIN)
13. REMOVE EXISTING INTERIOR WINDOW SILL
14. REMOVE EXISTING FLOOR CLEANOUT (CUT SLAB AS REQUIRED)
15. SAW CUT EXISTING SLAB TO INSTALL NEW CLEANOUT
16. REMOVE EXISTING SPLIT SYSTEM CONDENSING UNIT & CONCRETE PAD
17. REMOVE EXISTING MOP SINK & EYE WASH, CAP UTILITIES, SEE PLUMBING
18. DEMOLISH EXISTING PARKING AREA
19. DEMOLISH EXISTING EXTERIOR WALK
20. SAW CUT EXISTING SLAB FOR TIE-IN TO EXISTING SANITARY LINE
21. REMOVE EXISTING EXTERIOR WALL FROM FLOOR SLAB TO HEIGHT OF NEW DOOR. STONE JAMB AND HEAD TO MATCH LOOK OF EXISTING
22. REMOVE PLYWOOD PANEL OVER LOUVER
23. REMOVE EXISTING STONE FOUNDATION (APPROX. 8") (SEE DRAWING 4 ON SHEET A5.3)
24. REMOVE GYPSUM BOARD, FURRING STRIPS, PLASTER AND LATH, AND 2 X 4 FRAMING (2 X 6 FRAMING TO REMAIN)
25. SAW CUT CONCRETE FLOOR SLAB TO A DEPTH OF 3'-0" BELOW FOR THE WIDTH OF THE NEW CONCRETE REINFORCING PIER. REFER TO STRUCTURAL.

GENERAL DEMOLITION NOTES

1. REMOVE ALL HVAC SYSTEMS & DUCTWORK AS INDICATED - REFER TO MEP DRAWINGS.
2. REFER TO ELECTRICAL DEMOLITION DRAWINGS FOR EXTENT OF REMOVAL OF ALL ELECTRICAL LIGHTING, OUTLETS, AND DEVICES.
3. REMOVE ALL FIRE PULLS, SPEAKER STROBES, & ASSOCIATED WIRING.
4. SEE ELECTRICAL DRAWINGS FOR FLOOR BOXES. CHIP SLAB AS REQ'D FOR INSTALLATION OF BOXES AND CONDUIT.

DEMOLITION LEGEND

- EXISTING CONSTRUCTION TO BE DEMOLISHED
- EXISTING CONSTRUCTION TO REMAIN
- AREA AFFECTED BY DEMOLITION
- AREA OF SLAB REMOVAL

VERSIONS

No.	Date	Description
1	9-28-2015	Issue for Bid
2	10-28-2015	Addendum #1

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Professional License Number

PROJECT TITLE:

RAMAPO COLLEGE OF NEW JERSEY

COLLEGE COMMONS

RCNJ PROJECT No.12-281C

SHEET TITLE:

DEMOLITION PLAN

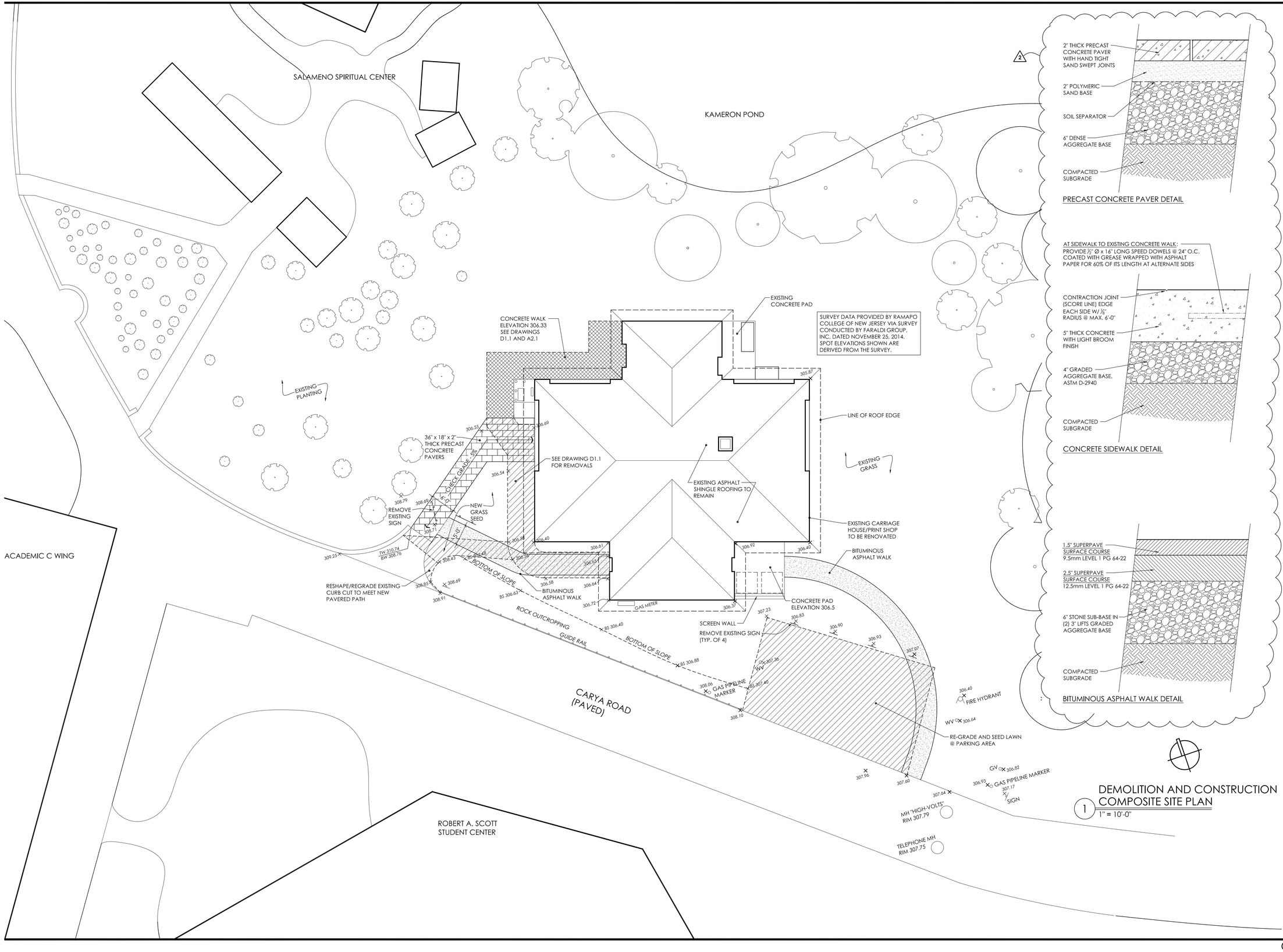
DATE: September 28, 2015

DRAWN BY:

DRAWING NO.:

D1.1

Oct 08, 2015 - 2:17pm



2" THICK PRECAST CONCRETE PAVER WITH HAND TIGHT SAND SWEPT JOINTS
2" POLYMERIC SAND BASE
SOIL SEPARATOR
6" DENSE AGGREGATE BASE
COMPACTED SUBGRADE

PRECAST CONCRETE PAVER DETAIL

AT SIDEWALK TO EXISTING CONCRETE WALK:
PROVIDE ½" Ø x 16" LONG SPEED DOWELS @ 24" O.C. COATED WITH GREASE WRAPPED WITH ASPHALT PAPER FOR 60% OF ITS LENGTH AT ALTERNATE SIDES

CONTRACTION JOINT (SCORE LINE) EDGE EACH SIDE W/ ½" RADIUS @ MAX. 6'-0"
5" THICK CONCRETE WITH LIGHT BROOM FINISH
4" GRADED AGGREGATE BASE, ASTM D-2940
COMPACTED SUBGRADE

CONCRETE SIDEWALK DETAIL

1.5" SUPERPAVE SURFACE COURSE 9.5mm LEVEL 1 PG 64-22
2.5" SUPERPAVE SURFACE COURSE 12.5mm LEVEL 1 PG 64-22
6" STONE SUB-BASE IN (2) 3" LIFTS GRADED AGGREGATE BASE
COMPACTED SUBGRADE

BITUMINOUS ASPHALT WALK DETAIL

DEMOLITION AND CONSTRUCTION COMPOSITE SITE PLAN

1 1" = 10'-0"

VERSIONS

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RAMAPO COLLEGE OF NEW JERSEY

COLLEGE COMMONS

RCNJ PROJECT No.12-281C

SHEET TITLE:

SITE PLAN

DATE: September 28, 2015

DRAWN BY:

DRAWING NO.:

A1.1

Oct 15, 2015 - 4:27pm

PLAN SYMBOLS LEGEND

COLUMN AND GRID
COLUMN #
COLUMN LINE

ROOM NAME & NUMBER
ROOM NAME
ROOM #
ROOM NAME
XXX

INTERIOR ELEVATION REFERENCE
ELEVATION #
DWG. #
OR

PARTITION TYPE REFERENCE
PARTITION TYPE
XXX

DOOR NUMBER REFERENCE
DOOR NUMBER
XXX

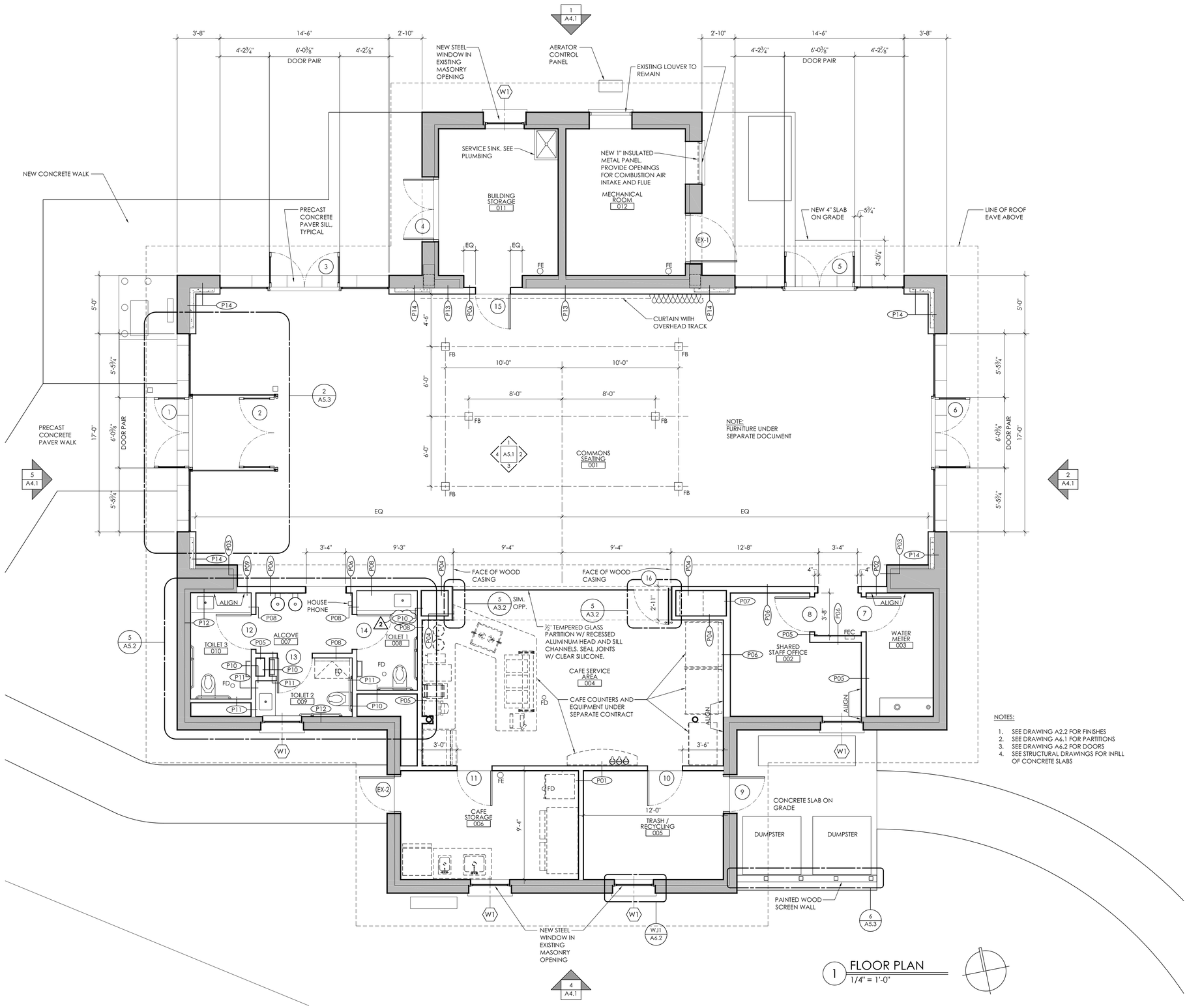
WINDOW NUMBER REFERENCE
WINDOW NUMBER
W1

EXTERIOR ELEVATION REFERENCE
DETAIL #
DWG. #

SECTION REFERENCE
DETAIL #
DWG. #

DETAIL REFERENCE
DETAIL #
DWG. #

DETAIL REFERENCE
DETAIL #
DWG. #



NOTES:

1. SEE DRAWING A2.2 FOR FINISHES
2. SEE DRAWING A6.1 FOR PARTITIONS
3. SEE DRAWING A6.2 FOR DOORS
4. SEE STRUCTURAL DRAWINGS FOR INFILL OF CONCRETE SLABS

1 FLOOR PLAN
1/4" = 1'-0"

VERSIONS

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PROJECT TITLE:

RAMAPO COLLEGE OF NEW JERSEY

COLLEGE COMMONS

RCNJ PROJECT No.12-281C

SHEET TITLE:

FLOOR PLAN

DATE: September 28, 2015

DRAWN BY:

DRAWING NO.:

A2.1

INTERIOR FINISH SYMBOL LEGEND

INTERIOR FINISH SCHEDULE

ABBREVIATIONS FOR FINISH SCHEDULE: REFER TO ARCH'L SPECIFICATION

- CPT: CARPET
- CT: CERAMIC TILE
- CTN: TEXTILE CURTAIN
- EX: EXISTING FINISH TO REMAIN
- P: PAINT
- PGB: PAINTED GYPSUM BOARD
- RB: RUBBER BASE
- SC: SEALED CONCRETE
- ST: STONE
- TR: FLOORING TRANSITION
- WD: WOOD FLOORING / BASE

***BASIS OF DESIGN INDICATED.** PRODUCTS WILL BE CONSIDERED AND APPROVED AS AN EQUAL IF ALL FINISH CRITERIA ARE MET (TO BE DETERMINED BY THE ARCHITECT).

	MATERIAL	MANUFACTURER	PRODUCT NAME	COLOR	COMMENTS
FLOORS	CPT-1	***SHAW**	**GRADIENT/5A153**	**34505 TOTAL ECLIPSE**	**24" X 24" CARPET TILE**
	2	MILLIKEN	FORMWORK - AMERICAS	FWK119 GABLE	
	WD-1	***VERMONT HARDWOODS**	**0002-09640-1**	**WALNUT**	**8" WIDTHS, QUARTER SAWN, SELECT & BETTER, ENGINEERED FLOORING**
		CARLISLE WIDE PLANK FLOORS	STILL SUEDE	WALNUT	
		COUNTRY PLANK	OLD GROWTH AMERICAN GUNSTOCK GRADE	WALNUT	
	VCT-1	***MANNINGTON COMMERCIAL**	**PROGRESSIONS**	**55102 STONE GREY**	
	CT-1	***AMERICAN OLEAN**	**INFUSION**	**IF66**	**12" X 24" CERAMIC TILE**
BASES	RB-1	***ROPPE**		**100 BLACK**	**4" RUBBER BASE, STRAIGHT BLADE @ CARPET, TOED @ HARD SURFACES**
	WD-2	**-----**	**WALNUT**	**TRANSPARENT FINISH**	**SOLID STOCK, QUARTER SAWN, MATCH FLOORING**
WALLS	CT-2	***DALTILE**	**MATTE**	**0799-PEARL WHITE**	**3" X 6" GLAZED CERAMIC TILE**
		CROSSVILLE	SAVOY	VS130 WHITE	
	CT-3	**GUSTIN CERAMICS**	**WALL TILE**	**GLAZE #106**	**3" X 6" CUSTOM GLAZED TILE (FIELD 90%)**
	CT-4	**GUSTIN CERAMICS**	**WALL TILE**	**GLAZE #1906**	**3" X 6" CUSTOM GLAZED TILE (ACCENT 10%)**
	P	*** BENJAMIN MOORE**	**-----**	**-----**	**SEE PAINT SCHEDULE BELOW**
MISC.	CTN	**CREATION BAUMANN**	**BASILICA II - 5515**	**216**	**9' X 24' CEILING HUNG CURTAIN/ w/ TRACK**
	STN-1	**COLD SPRING GRANITE**	**GRANITE**	**MESABI BLACK**	**NATURAL STONE, POLISHED FINISH, EASED SQUARE EDGES**

GENERAL NOTES

2
1. SEE ARCHITECTURAL INTERIOR ELEVATIONS, FLOOR PLANS, REFLECTED CEILING PLANS, AND ALL ASSOCIATED DETAILS FOR EXTENT AND LOCATION OF MATERIALS AND FINISHES.
2. SEE SPECIFICATIONS FOR FULL DESCRIPTION OF FINISH MATERIALS.
3. REFER TO CEILING PLANS FOR CEILING FINISHES.
4. ALL PGB WALLS TO BE P3 UNLESS NOTED OTHERWISE.
5. DOORS AND FRAMES TO BE PAINTED THE SAME PAINT COLOR AS THE WALL. INTERIOR WOOD DOORS ARE TO BE PAINTED THE SAME COLOR AS THE ADJACENT WALL IN THE SHEEN SHOWN IN THE SCHEDULE BELOW.

PAINT SCHEDULE (BENJAMIN MOORE COLORS)

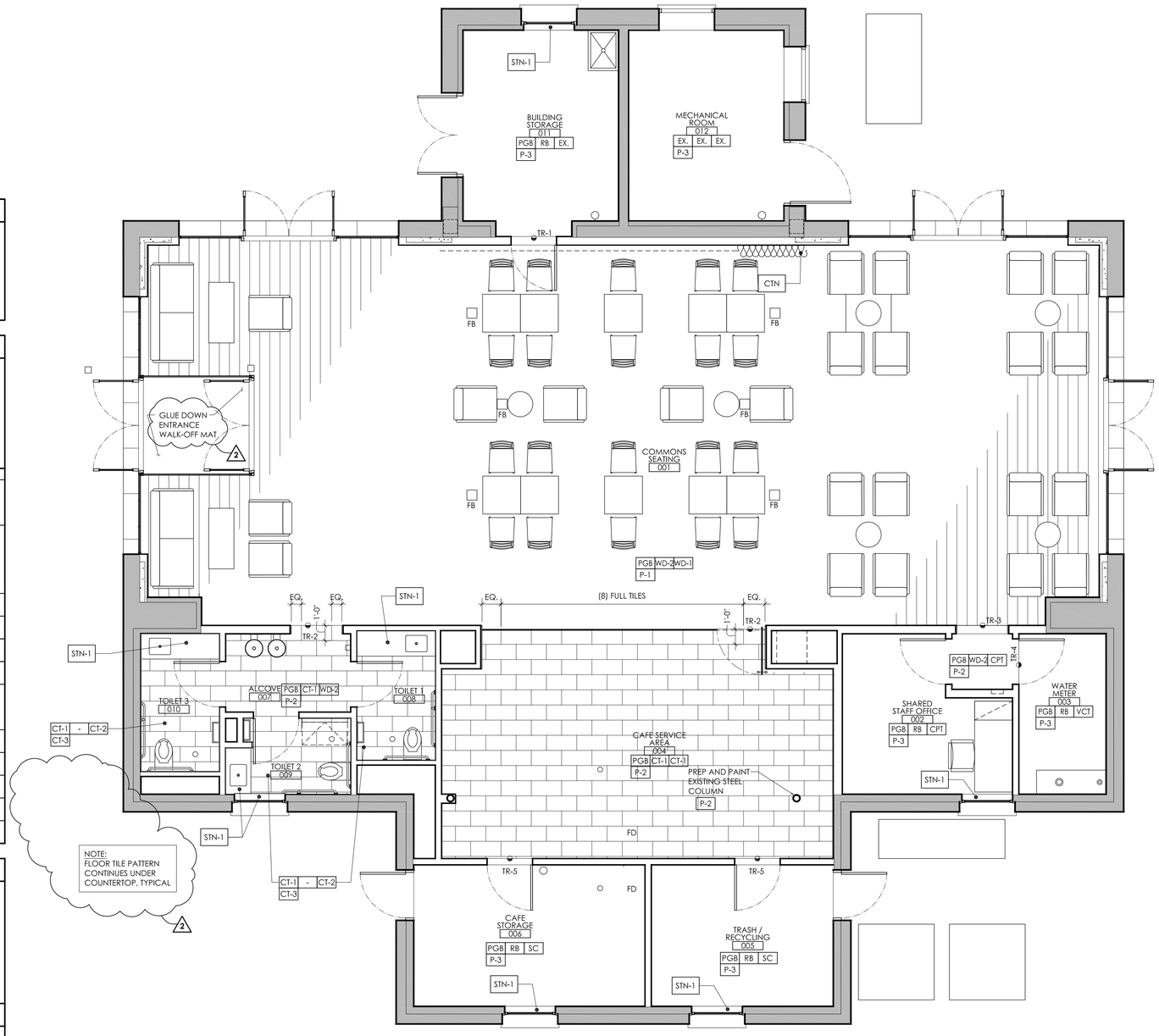
P1	BENJAMIN MOORE OC-56 MOONSHINE
P2	BENJAMIN MOORE HC-164 PURITAN GRAY
P3	BENJAMIN MOORE WHITE
P4	BENJAMIN MOORE CEILING WHITE

PAINT SHEEN SCHEDULE (U.O.N.)

WALLS	SATIN OR EGGSHELL
CEILINGS	FLAT
DOORS & FRAMES	SEMI-GLOSS
WOOD TRIM	SEMI-GLOSS

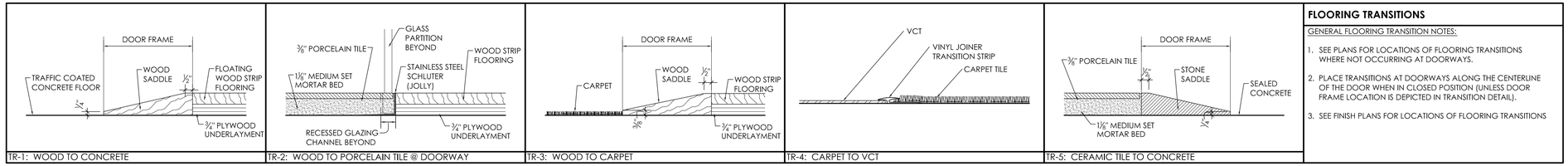
FLOORING TRANSITION SCHEDULE

TR-1	WOOD TO TRAFFIC COATING
TR-2	WOOD TO PORCELAIN TILE
TR-3	WOOD TO CARPET
TR-4	CARPET TO VCT
TR-5	CERAMIC TILE TO SEALED CONCRETE



1 FINISH PLAN
1/4" = 1'-0"

FLOORING TRANSITIONS



FLOORING TRANSITIONS

GENERAL FLOORING TRANSITION NOTES:

1. SEE PLANS FOR LOCATIONS OF FLOORING TRANSITIONS WHERE NOT OCCURRING AT DOORWAYS.
2. PLACE TRANSITIONS AT DOORWAYS ALONG THE CENTERLINE OF THE DOOR WHEN IN CLOSED POSITION (UNLESS DOOR FRAME LOCATION IS DEPICTED IN TRANSITION DETAIL).
3. SEE FINISH PLANS FOR LOCATIONS OF FLOORING TRANSITIONS

VERSIONS

No.	Date	Description
1	9-28-2015	Issue for Bid
2	10-28-2015	Addendum #1

RAMAPO COLLEGE OF NEW JERSEY
Ramapo College of New Jersey
505 Ramapo Valley Road
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ikon.5 architects
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609.919.0099
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www.ikon5architects.com

Professional License Number

PROJECT TITLE:

RAMAPO COLLEGE OF NEW JERSEY

COLLEGE COMMONS

RCNJ PROJECT No.12-281C

SHEET TITLE:

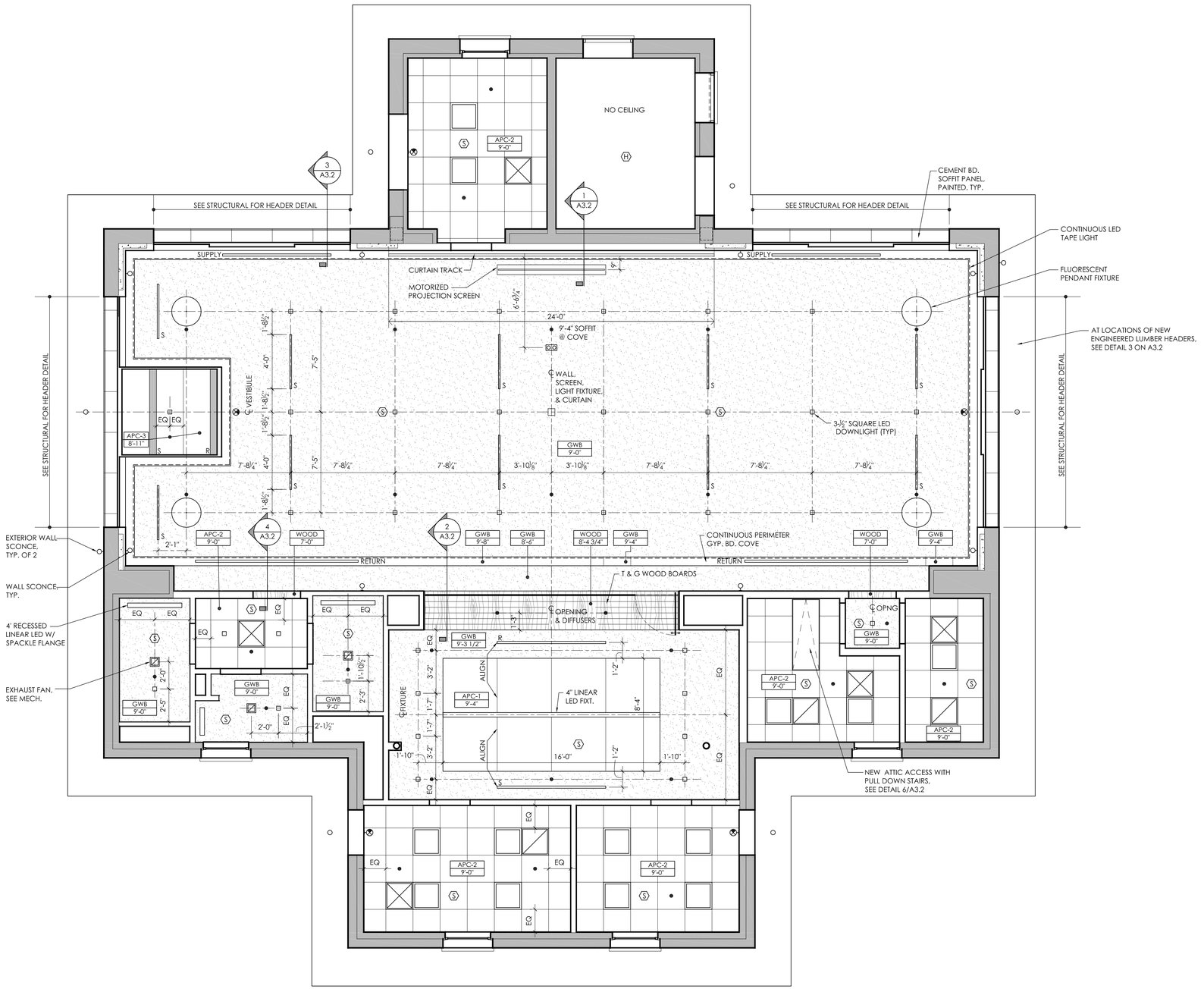
FINISH PLAN

DATE: September 28, 2015

DRAWN BY:

DRAWING NO.:

A2.2



1 REFLECTED CEILING PLAN
1/4" = 1'-0"

CEILING SYMBOLS LEGEND

CEILING MATERIAL & HEIGHT
CEILING MATERIAL — APC-1
CEILING HEIGHT — 8'-0"

SECTION REFERENCE
DETAIL # — X
DWG. # — A-XXX

DETAIL REFERENCE
DETAIL # — X
DWG. # — A-XXX

CEILING PLAN LEGEND

- EXISTING TO REMAIN
- APC-1 : ACOUSTICAL CEILING PANEL 4' x 4' ACP
- APC-2 : ACOUSTICAL CEILING PANEL 2' x 2' ACP
- APC-3 : ACOUSTICAL CEILING PANEL 2' x 6'-4" ACP
- PGB: PAINTED GYPSUM BOARD
- WD: WOOD TRIM
- SUPPLY DIFFUSER
- LINEAR DIFFUSER (S)
- 3½" SQUARE RECESSED DOWNLIGHT
- 2'x2' LAY IN LIGHT FIXTURE
- RECESSED LINEAR SLOT LIGHT FIXTURE
- EXIT SIGN (CLG. MTD.)
- EXIT SIGN (WALL MTD.)
- SMOKE DETECTOR (S)
- FIRE ALARM DEVICES (F F)

CEILING PLAN NOTES

1. ALL LIGHTS, MECHANICAL GRILLES, DEVICES, ETC. TO BE CENTERED ON CEILING PANELS UNLESS NOTED OTHERWISE. THE LOCATION OF DEVICES NOT INDICATED ON THIS DRAWING ARE TO BE DETERMINED BY ARCHITECT
2. REFER TO DRAWING E3.1 FOR LIGHTING FIXTURE SCHEDULE
3. PAINT GYP. BD. CEILINGS COLOR P-4, U.O.N.

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PROJECT TITLE:

RAMAPO COLLEGE OF NEW JERSEY

COLLEGE COMMONS

RCNJ PROJECT No.12-281C

SHEET TITLE:

REFLECTED CEILING PLAN

DATE: September 28, 2015

DRAWN BY:

DRAWING NO.:

A3.1

Oct 08, 2015 - 2:37pm

ikon.5 architects

meeting minutes

October 8, 2015

Padovano College Commons

RCNJ Project: 12-281C

Date Prepared: October 8, 2015

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. Richard Roberts welcomed the contractors and gave a brief description of the history of the building and its intended repurposing as a faculty dining area during the day and a student lounge in the evenings.

2. Steve Sondey reviewed the important dates in the schedule, as listed in the Notice to Bidders in the project manual.

    a. Estimated completion date: April 15, 2016
    b. Last day for questions: October 16, 2015, 4pm
        i. Questions shall be sent via email to Seamus Doran, sdoran@ramapo.edu
    c. Addendum #1 issued October 19, 2015
        i. Addenda will be emailed to bidders in attendance and will be available for download on the project website: www.ramapo.edu/construction-projects/college-commons.
        ii. Addenda will answer all question along with any specification or drawing revisions.
    d. Bids due: October 28, 2015, 2pm
        i. Bids must be received at Purchasing in the Academic Complex D-wing, Room D-116

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3. Steve Sondey listed the components of the front end documents in the project manual and reminded potential bidders that *all* the procurement and project forms need to be 100% complete to be considered a responsive bid. The list of forms is included in the table of contents under Procurement Requirements and Contracting Requirements and the blank forms are in the project manual.

4. Michael Herbst gave a more detailed explanation of the scope of work to be completed in the project.

5. The estimated construction cost will not be made public. Contingencies are inclusive of the final bid price.

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. Steel, plumbing & gas, HVAC, and electrical sub-contractors are required to be DPMC pre-qualified as well.

7. Steel can be miscellaneous metals? Or is it an erector? This is minimal and thereby may be performed by either the GC or a named steel contractor at the discretion of the bidder.

8. A Notice of Intent to Award will be issued as per the Instructions to Bidders, paragraph IB2.1. It is the College's intentions to issue the notice as soon as possible after receipt of the bid opening.

   Substantial completion shall be within 120 days after the College issues the Notice to Proceed. The application of liquidated damages will be as per the defined section in the general conditions.

9. 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. Work at the Student Center is scheduled to commence soon after the winter break.

10. Satellite dishes will be removed by Ramapo College.

11. 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.

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

864 Mapleton Road, Suite 100
Princeton, NJ 08540
609.919.0099
fax 609.919.0088
www.ikon5architects.com

Direct Fax	(908) 481-1122
Cell	(908) 251-7221
Office	(908) 688-0300 x245

13. The audio visual scope of work consists of the provisioning and installation of the overhead projection screen, power for the projector in the ceiling, and a controller for the projector at the wall. The purchase and installation of the projector, system wiring, and tele/data structured cabling will be handled by the College and coordinated with the construction of the Commons.

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,

Michael Herbst
Project architect

cc: all attendees

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www.ikon5architects.com

RAMAPO COLLEGE OF NEW JERSEY Sign-In Sheet

BID NUMBER: *12-281C College Commons*

MANDATORY PRE-BID MEETING/SITE INSPECTION: *10/08/15 10:00 AM Carriage House (Print Shop)*

BID SUBMISSION DEADLINE: *10/28/15 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
1	BENARD ASSOCIATES	SEE CARD	SEE CARD	Scott Thomas	SEE CARD	
2	BROCKWELL & CARRINGTON	"	"	FRANK MELLUS	"	
3	BRAHMA CORP.	"	"	BOB TURNER	"	
	Stackpole Contracting	65 Pascack Ave River Vale NJ 07650	(201) 383 1571	Andrew Taplin	andrew@ stackpolecontracting.com	
4	BILLY CONTRACTING @ RESTORATION INC	12 N SEE CARD	SEE CARD	TOMMY VELKOSKI	SEE CARD	
5	SLATE CONSTRUCTION LLC	"	"	BOB DURIC	"	
6	GMT Contracting Grp	"	"	Mohan Joshi	"	
7	PRACTICAL LLC	"	"	Aydin Atakent	"	
8	Beach Electric	"	"	Jonathan Smith	"	
9	UNIMAK LLC Lupcho Mucoski	"	"	Lupcho Mucoski	"	

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Company Name	Address	Phone	Contact Name	Email	Signature
—	—	—	—	—	—
QPC	SEE CARD	SEE CARD	JERRY RUSSANO	JERRY@GRAFFAS.NET	
HILT CONSTRUCTION	120 OLD CAMPLAIN RD. HILLSBOROUGH, NJ 08844	908 938 6474	Mehul Desai	mehul@hilt-construction.com	
DASKAL	164 LINCOLN PLACE GARFIELD 07026	973 653 6789	DAMJAN	DAMJAN@DASKALGC COM	
PAUL OTTO BUILDING CO.	118 NORTH AVE WEST SUITE 201 CRANFORD NJ	908 709 9500	HUMAYUN MIAN	HMIAN@PAULOTTOCO.com	
Viaco Construction Corp.	1208 Rt. 34 Suite 19 Aberdeen, NJ 07747	732. 707. 0643	Art Christy	achristy@viaconstruction.com	

Beach Electric Company, Inc.
Electrical Contractor Lic. #14420
Electrical Contractor Bus. Permit #14420A

Jonathan D. Smith

67-69 Grove Street
Paterson, NJ 07503
www.BeachElectricCo.com
jonathans@beachelectricco.com

Direct: 973-413-1844
Office: 973-413-1900
Fax: 973-684-7681
Cell: 862-686-4388

Scott Thomas

BENARD ASSOCIATES

321 Hamburg Turnpike, Wayne, New Jersey 07470
Phone: (973) 942-4500 • Fax: (973) 942-4558
www.benardassociates.com
scott@benardassociates.com

Tommy Velkoski
Project Manager

Billy Contracting & Restoration Inc

tome@billycontracting.com

12 Maple Ave. Bldg F
Pine Brook NJ 07058

Ph. 973.396.2579
Fax 973.396.2580
Cell 973.388.5597

Brockwell & Carrington Contractors, Inc.

Frank A. Melhus
Estimator

Tel: 973-237-1222 ◦ Fax: 973-237-1223
Cell: 201-788-3744
Email: fmelhus@brockwellcarrington.com
www.brockwellcarrington.com
1 Como Court, Towaco, NJ 07082

BRAHMA CONSTRUCTION CORPORATION
www.brahmacorp.com

Bob Turner
PROJECT SUPERVISOR

58 Wallington Avenue
Suite B
Wallington, NJ 07057
P 973.249.1818
C 201.572.3791
F 973.249.1955

E-MAIL
bturner@brahmacorp.com

GENERAL CONTRACTING • CONSTRUCTION MANAGEMENT • BUDGET ESTIMATING

Jerry Russano
GPC, Inc.

20 East Willow Street
Millburn, NJ 07041
Phone: 973-376-6116
Fax: 973-376-0599
Cell: 201-618-8488
E-mail: jerry@gpcfas.net

GMT CONTRACTING CORP.

MOHAN JOSHI

Tel: (201) 459-6313 • Fax: (201) 604-5464
E-mail: gmtcontracting@msn.com
7206 Tonnele Avenue, North Bergen, NJ 07047

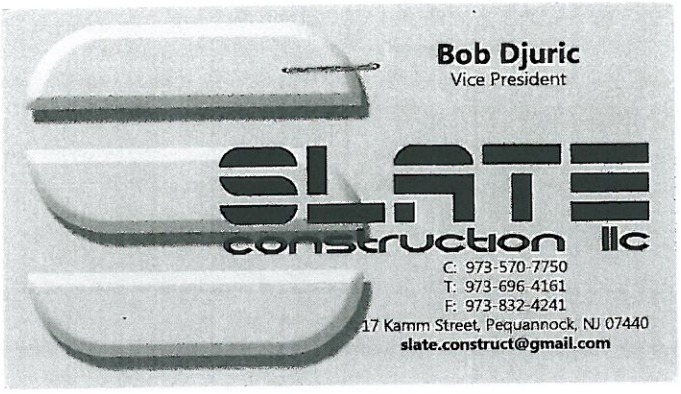
Practical LLC

General Contractors - Construction - Remodeling - Renovations

AYDIN ATAKENT

987 E. Glen Ave.
Ridgewood, NJ 07450
E-mail: aydinatakent@yahoo.com

Ph: (201) 659-9309
Cel: 347-739-7951
Fax: (201) 839-4697



UniMak, LLC

Your Vision is Our Commitment

Lupcho Mucoski

office: 973-478-4925
fax: 973-200-3673
email: lupcho.mucoski@unimakllc.com

82 Midland Ave, Suite D ▪ Saddle Brook ▪ New Jersey 07663

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: _____