

Addendum

TO:	COMPANY:	FAX NO/EMAIL:
All Bidders		
FROM:	ADDENDUM ISSUE DATE:	ADDENDUM NUMBER:
Bond Architects	10-11-2017	003
PROJECT:	PROJECT NO:	
Miriam School Addition & Renovation	16037	

TO ALL BIDDERS:

THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND MODIFIES THE ORIGINAL BID DOCUMENTS DATED 9-15-2017. PLEASE ACKNOWLEDGE RECEIPT OF THIS ADDENDUM ON THE BID FORM.

CHANGES TO THE PROJECT MANUAL

Spec Section No	Description
1. 064116	Plastic Laminate Face Architectural Cabinets: REMOVE 2.03.C
2. 085113	Aluminum Windows:
a.	REVISE 2.01.B.1.a LC
b.	REMOVE 2.01.C.1.a
c.	REMOVE 2.01.C.5

PRE-BID RFI'S

Pre-Bid RFI 008:

- AWI QCP-Quality Control Program – Page 1, 1.04, B., 5. Spec indicates to apply AWI QCP Label to shop drawing. Do you just want an AWI QCP Label on shop drawings & NOT AWI QCP Labels on P/L Casework? Please clarify. **AWI QCP label is required on shop drawings.**
- NAUF Particleboard Cores – Page 3, 2.02, B., 3. Spec indicates to provide no added urea formaldehyde particleboard cores. We will provide NAUF PB Cores per spec.
- Fire-Retardant Particleboard Cores – Page 4, 2.03, C. Spec indicates fire-retardant particleboard cores. We have not never seen this specified for casework before, as fire-retardant materials are usually spec in walls. Please advise. **Cores (2.03.C) are not required to be fabricated with fire retardant. The spec is not to be interpreted as fire rated.**

Pre-Bid RFI 017:

- The inside dimensions of an 8" block is 4.5" x 4.5". I do not believe it is possible to fit 2-#6 bar horizontal for the bond beam, and 2 vertical #6, plus 2 more vertical #6 for lap in this space. They are also calling for a #6 hook bar at the top of the wall. The tightest this bar can be bent is 4.5" inside diameter, and 6" O.D. Even if the rebar would fit the grout would never get passed it. In my opinion this wall should be changed to a 12" CMU. **#6 reinforcement bars will be required. A post bid ASI will clarify.**

Pre-Bid RFI 018:

- a. On Sheet E3.2 it states in the Luminaire Schedule (Note: These Fixtures Owner Furnished, Contractor Installed), but the Project Manual has...

SECTION 265100 LUMINAIRES PART 1 GENERAL 1.01 WORK INCLUDES

A. Base Bid:

1. Contractor Provide:

- a. Luminaires.*
- b. Exit signs.*
- c. Emergency Battery Backup*
- e. Lamps.*
- f. Luminaire accessories.*

Please clarify Owner supplied or Contractor to Provide? **See RFI 010**

- b. In the casework specs for Miriam School, it says: Provide inspections of fabrication and installation together with labels and certificates from AWI certification program indicating that woodwork complies with requirements of grades specified. Is AWI Certification 100% mandatory? Several of the casework manufacturers build to AWI standards, but are not officially certified by AWI. Please advise. **See RFI 013**
- c. We have identified locations on the plans referencing a soils report in the specifications but have been unable to find a soils report anywhere. Has one been accomplished and if so, can it be provided? **See RFI 013**
- d. On Sheet A2.1 Key Note 28.101 indicates, "New Aiphone, See Spec". This Aiphone is not indicated on any electrical drawings or any electrical/security specifications. Please clarify. **see sheet T-1.2 outside vestibule 100, the IC symbol and keyed note 1 are the intercom station, this is not an Aiphone but an ip intercom with camera manufactured by Axis communications.**
- a. On Sheet A2.2 Key Note 10.106 indicates 'Interactive Monitor Screen, Provide Electrical & Data-See Electrical'. This Note exists in Rooms 164, 169, 175, 177, 179, 180 & 181. On EP2.2 Key Note #1 indicates 'Coordinate Installation of Receptacle with Electronic Display Installer. See T Series for Electronic Display Information.' This Note exists in Rooms 164, 165, 169, 173, 175, 177, 179, 180 and 181. On T-0.1 Device Legend contains 'LCD' which indicates "Wall Mounted Interactive Display' and 'AV3' which indicates the 'Wall mounted Display FSR PWB-320 or Equal.. 120v Power, Single Data Outlet and AV Device shall mount in Enclosure. Does 'LCD' refer to the heading 'Flat Panel Interactive' in the matrix on T-0.1? Does 'AV3' refer to the heading 'Apple TV' in the matrix on T-0.1? On T-1.1 and T1.2 the 'LCD' and 'AV3' symbol exists together in Rooms 139, 140, 148, 150, 156, 157, 164, 169, 173, 175, 177 and 179. 'LCD' is also in Rooms 180 and 181, while 'AV3' is in Room 127. These Rooms do not seem to match the matrix on T-0.1. On T-2.0 we are given specifications (Key Note #8) for the 'Flat Panel Display' and specifications (Key Note #9) for the 'Apple TV', but the drawings seem to indicate that for each 'Flat Panel Display'-Key Note #8 there is also a 'Apple TV'-Key Note #9. **Room 165 removed Interactive Monitor in Addendum 001. Room 173 is noted in architectural enlarged plan. The AV3 location consists of the FSR box, electrical outlet, data outlet with the HDMI receiver and AppleTV, this is typical for all of the locations with the LCD interactive display.**
- b. I can't find anywhere in the specs what they want us to use for the underground domestic water, the specs in the plumbing section just say to refer to civil plans and specifications. I don't see anything for what they want to be used. Please advise of pipe type requirements? **C05, the new water line is called out as 2" copper.**
- c. After review of the gypsum board specifications, there appears to be a Level 5 finish required at locations exposed to view. Is this correct as a Level 5 finish for all drywall will increase the cost of taping & finishing astronomically? **Level 5 finish required per specifications**
- d. There is a Partition Type P3-b on the New addition floor plan, but none in the partition schedule. Is this supposed to be E3-b? **See A12.2**
- e. Would the Owner consider providing a bid extension? **No extension anticipated.**

Pre-Bid RFI 019:

- a. Storm window will not turn corner. There needs to be a punched opening. Add 4x4 steel tube, ½ inch plate top and bottom anchored to CMU. Add blocking to attach storm windows. Conceal tube in break metal alum to match window frame.

END OF ADDENDUM 003

SECTION 064116

PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section Includes:
 - 1. Plastic-laminate-faced architectural cabinets.
 - 2. Wood furring, blocking, shims, and hanging strips for installing plastic-laminate-faced architectural cabinets that are not concealed within other construction.
- B. Related Requirements:
 - 1. Section 055000 Metal Fabrications
 - 2. Section 061000 Rough Carpentry for wood furring, blocking, shims, and hanging strips required for installing cabinets that are concealed within other construction before cabinet installation.
 - 3. Section 123623.13 Plastic-Laminate-Clad Countertops.

1.03 COORDINATION

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to support loads imposed by installed and fully loaded cabinets.
- B. Hardware Coordination: Distribute copies of approved hardware schedule specified in Section 087111 "Door Hardware (Descriptive Specification)" to fabricator of architectural cabinets; coordinate Shop Drawings and fabrication with hardware requirements.

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include data for fire-retardant treatment from chemical-treatment manufacturer and certification by treating plant that treated materials comply with requirements.
- B. Shop Drawings: For plastic-laminate-faced architectural cabinets.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Show large-scale details.
 - 3. Show locations and sizes of furring, blocking, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
 - 4. Show locations and sizes of cutouts and holes for items installed in plastic-laminate architectural cabinets.
 - 5. Apply AWI Quality Certification Program label to Shop Drawings.
- C. Samples: For each exposed product and for each color and texture specified, in manufacturer's or fabricator's standard size.
- D. Samples for Initial Selection: For each type of exposed finish.
- E. Samples for Verification: For the following:
 - 1. Plastic Laminates: 8 by 10 inches (200 by 250 mm) for each type, color, pattern, and surface finish required.
 - a. Provide one sample applied to core material with specified edge material applied to one edge.
 - 2. Thermoset Decorative Panels: 8 by 10 inches (200 by 250 mm) for each color, pattern, and surface finish.
 - a. Provide edge banding on one edge.
 - 3. Corner Pieces:
 - a. Cabinet-front frame joints between stiles and rails and at exposed end pieces, 18 inches (450 mm) high by 18 inches (450 mm) wide by 6 inches (150 mm) deep.

- b. Miter joints for standing trim.
- 4. Exposed Cabinet Hardware and Accessories: One full-size unit for each type and finish.

1.05 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of product
- B. Quality Standard Compliance Certificates: AWI Quality Certification Program
- C. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

1.06 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
 - 1. Shop Certification: AWI's Quality Certification Program accredited participant
- B. Installer Qualifications: AWI's Quality Certification Program accredited participant

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Do not deliver cabinets until painting and similar finish operations that might damage architectural cabinets have been completed in installation areas. Store cabinets in installation areas or in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.08 FIELD CONDITIONS

- A. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.
- B. Environmental Limitations: Do not deliver or install cabinets until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature between 60 and 90 deg F (16 and 32 deg C) and relative humidity between 25 and 55 percent during the remainder of the construction period.
- C. Field Measurements: Where cabinets are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
 - 1. Locate concealed framing, blocking, and reinforcements that support cabinets by field measurements before being enclosed/concealed by construction, and indicate measurements on Shop Drawings.
- D. Established Dimensions: Where cabinets are indicated to fit to other construction, establish dimensions for areas where cabinets are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

PART 2 PRODUCTS

2.01 PLASTIC-LAMINATE-FACED ARCHITECTURAL CABINETS

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of cabinets indicated for construction, finishes, installation, and other requirements.
 - 1. Provide inspections of fabrication and installation together with labels and certificates from AWI certification program indicating that woodwork complies with requirements of grades specified.
 - 2. The Contract Documents contain requirements that are more stringent than the referenced quality standard. Comply with requirements of Contract Documents in addition to those of the referenced quality standard.
- B. Grade: Premium
- C. Type of Construction: Frameless
- D. Door and Drawer-Front Style: Flush overlay.

1. Reveal Dimension: As indicated.
- E. High-Pressure Decorative Laminate: NEMA LD 3, grades as indicated or if not indicated, as required by quality standard.
- F. Laminate Cladding for Exposed Surfaces:
 1. Horizontal Surfaces: Grade HGS.
 2. Postformed Surfaces: Grade HGP.
 3. Vertical Surfaces: Grade HGS.
 4. Edges: Grade HGS
 5. Pattern Direction: Vertically for drawer fronts, doors, and fixed panels.
- G. Materials for Semiexposed Surfaces:
 1. Surfaces Other Than Drawer Bodies: Thermoset decorative panels].
 - a. Edges of Plastic-Laminate Shelves: PVC banding
 - b. Edges of Thermoset Decorative Panel Shelves: PVC or polyester edge banding.
 - c. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.
 2. Drawer Sides and Backs: Thermoset decorative panels with PVC or polyester edge banding.
 3. Drawer Bottoms: Thermoset decorative panels.
- H. Dust Panels: 1/4-inch (6.4-mm) plywood or tempered hardboard above compartments and drawers unless located directly under tops.
- I. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.
- J. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.
 1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners or glued dovetail joints.
- K. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 1. As indicated by laminate manufacturer's designations.

2.02 WOOD MATERIALS

- A. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 1. Wood Moisture Content: 5 to 10 percent.
- B. Composite Wood and Agrifiber Products: Provide materials that comply with requirements of referenced quality standard for each type of architectural cabinet and quality grade specified unless otherwise indicated.
 1. Composite Wood Agrifiber Products: Products shall comply with the testing and product requirements of the California Department of Health Services "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small Scale Environmental Chambers".
 2. Medium Density Fiberboard: ANSI A208.2, Grade 130, made with binder containing no urea formaldehyde.
 3. Particleboard: ANSI A208.1, Grade M-2, made with binder containing no urea formaldehyde
 4. Veneer Faced Panel Products: HPVA HP-1 made with adhesive containing no urea formaldehyde
 5. Thermoset Decorative Panels: Particleboard or medium density fiberboard finished with thermally fused, melamine impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods 3.3, 3.4, 3.6, 3.8 and 3.10.

2.03 FIRE-RETARDANT-TREATED MATERIALS

- A. Fire-Retardant-Treated Materials, General: Where fire-retardant-treated materials are indicated, use materials that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.
 - 1. Use treated materials that comply with requirements of referenced quality standard. Do not use materials that are warped, discolored, or otherwise defective.
 - 2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants to distinguish treated materials from untreated materials.
 - 3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.
- B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.
 - 1. Kiln-dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
 - 2. For items indicated to receive a stained or natural finish, use organic resin chemical formulation.
 - 3. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking shop certified by testing and inspecting agency.
 - 4. Mill lumber before treatment and implement procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of architectural cabinets.
- C. Fire-Retardant Fiberboard: MDF panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread index of 25 or less and smoke-developed index of 200 or less per ASTM E 84.

2.04 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets except for items specified in Section 087111 "Door Hardware (Descriptive Specification)."
- B. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 135 degrees of opening, self closing.
- C. Wire Pulls: Back mounted, solid metal, 4 inches (100 mm) long, 5/16 inch (8 mm) in diameter.
- D. Catches: Roller catches, BHMA A156.9, B03071.
- E. Adjustable Shelf Standards and Supports: BHMA A156.9, B04102; with shelf brackets, B04112.
- F. Shelf Rests: BHMA A156.9, B04013; metal, two-pin type with shelf hold-down clip.
- G. Drawer Slides: BHMA A156.9.
 - 1. Grade 1HD-100 and Grade 1HD-200: Side mounted; full extension type; zinc-plated-steel ball-bearing slides.
- H. Door Locks: BHMA A156.11, E07121.
- I. Drawer Locks: BHMA A156.11, E07041.
- J. Door and Drawer Silencers: BHMA A156.16, L03011.
- K. Grommets for Cable Passage: 2-inch (51-mm)OD, molded-plastic grommets and matching plastic caps with slot for wire passage.

1. Color: Match countertop.
- L. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 1. Satin Stainless Steel: BHMA 630.
- M. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.05 MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Fire-retardant-treated softwood lumber, kiln-dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
- C. Adhesive for Bonding Plastic Laminate: Do not use adhesives with urea formaldehyde.
 1. Adhesive for Bonding Edges: Hot-melt adhesive.

2.06 FABRICATION

- A. Fabricate architectural cabinets to dimensions, profiles, and details indicated.
- B. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 1. Notify Architect seven days in advance of the dates and times architectural cabinet fabrication will be complete.
 2. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.
- C. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

PART 3 EXECUTION

3.01 PREPARATION

- A. Before installation, condition cabinets to humidity conditions in installation areas for not less than 72 hours.

3.02 INSTALLATION

- A. Grade: Install cabinets to comply with quality standard grade of item to be installed.
- B. Assemble cabinets and complete fabrication at Project site to extent that it was not completed in the shop.
- C. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with wafer-head cabinet installation screws.
- D. Install cabinets level, plumb, and true in line to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm) using concealed shims.
 1. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
 2. Install cabinets without distortion so doors and drawers fit openings and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

3. Fasten wall cabinets through back, near top and bottom, and at ends not more than 16 inches (400 mm) o.c. with No. 10 wafer-head screws sized for not less than 1-1/2-inch (38-mm) penetration into wood framing, blocking, or hanging strips.

3.03 ADJUSTING AND CLEANING

- A. Repair damaged and defective cabinets, where possible, to eliminate functional and visual defects. Where not possible to repair, replace architectural cabinets. Adjust joinery for uniform appearance.
- B. Clean, lubricate, and adjust hardware.
- C. Clean cabinets on exposed and semiexposed surfaces.

END OF SECTION

SECTION 085113
ALUMINUM WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Extruded aluminum windows with fixed sash for Fixed Windows and Storm Windows
- B. Factory glazing for storm window.

1.02 RELATED REQUIREMENTS

- A. Section 079200 - Joint Sealants: Sealing joints between window frames and adjacent construction.
- B. Section 042000 - Unit Masonry
- C. Section 088000 - Glazing.

1.03 REFERENCE STANDARDS

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for windows, doors, and skylights; 2011.
- B. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site; 2015.
- C. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document); 2015.
- D. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum; 2014 (2015 Errata).
- E. AAMA 612 - Voluntary Specification, Performance Requirements, and Test Procedures for Combined Coatings of Anodic Oxide and Transparent Organic Coatings on Architectural Aluminum; 2015.
- F. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.
- G. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric); 2014.
- H. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.
- I. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric); 2013.
- J. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009 (Reapproved 2016).
- K. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen; 2004 (Reapproved 2012).
- L. ASTM E1332 - Standard Classification for Rating Outdoor-Indoor Sound Attenuation; 2010a.
- M. ASTM F588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact; 2014.
- N. Miami (APD) - Approved Products Directory; Miami-Dade County; database at www.miamidade.gov/building/pc-search_app.asp.
- O. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); 2002 (Ed. 2004).
- P. FEMA 361-2008
- Q. ICC 500

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide component dimensions, information on glass and glazing, and descriptions of hardware and accessories.
- C. Shop Drawings: Indicate opening dimensions, elevations of different types, framed opening tolerances, method for achieving air and vapor barrier seal to adjacent construction, anchorage locations, _____, and installation requirements.
- D. Samples: Submit two samples, 12 by 12 inch (300 by 300 mm) in size illustrating typical corner construction, accessories, and finishes.
- E. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
 - 1. Evidence of FEMA 361-2008 and ICC 500 Certification
 - 2. Evidence of AAMA Certification.
 - 3. Evidence of WDMA Certification.
 - 4. Evidence of CSA Certification.
 - 5. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.
- F. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.
- G. Manufacturer's Installation Instructions: Include complete preparation, installation, and cleaning requirements.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Comply with requirements of AAMA CW-10.
- B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C).
- B. Maintain this minimum temperature during and 24 hours after installation of sealants.

1.09 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 WINDOWS

- A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with operating hardware, related flashings, and anchorage and attachment devices.
 - 1. Frame Depth: 4 inches (101.6 mm).
 - 2. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
 - 3. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.

4. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
 5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
- B. Performance Requirements: Fixed Windows (Observation Room, Media Room, all other fixed fram windows unless noted as Storm Window). Provide products that comply with the following:
1. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
 - a. Performance Class (PC): LC.
 2. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
 3. Forced Entry Resistance: Tested to comply with ASTM F588 requirements for performance level of Grade 10 for specific window style required.
 4. Acoustical Performance: STC 34, when tested in accordance with ASTM E90 and ASTM E1332.
- C. Basis of Design: Storm Windows: SD-TH600 FEMA Tornado Window. Provide products that comply with the following:
1. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
 2. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
 3. Wind-Borne-Debris Resistance: Identical full-size glazed assembly without auxiliary protection, tested by independent agency in accordance with ASTM E1996 for Wind Zone 4 - Additional Protection for Large and Small Missile impact and pressure cycling at design wind pressure.
 4. Forced Entry Resistance: Tested to comply with ASTM F588 requirements for performance level of Grade 10 for specific window style required.
- D. Fixed, Non-Operable Type:
1. Construction: Non-thermally broken.
 2. Glazing: Single; clear; transparent. See Section 088000 and 088717 for film applied to non-Storm Windows. Storm Windows to have factory set glazing.
 3. Exterior Finish: Class I natural anodized.
 4. Interior Finish: Class I natural anodized.

2.02 COMPONENTS

- A. Frames: Match Section 084313 Aluminum Famed Storefronts
- B. Glazing: As specified in Section 088000.
- C. Glazing Materials: As specified in Section 088000.

2.03 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

2.04 FINISHES

- A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils (0.018 mm) thick.
- B. Finish Color: As selected by Architect from manufacturer's standard range.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that rough construction is able to secure windows to meet performace requirements for wind, forced entry and acoustics.

3.02 INSTALLATION

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

- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- D. Install glass in accordance with requirements specified in Section 088000.

3.03 TOLERANCES

- A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft (1.5 mm/m) non-cumulative or 1/8 inches per 10 ft (3 mm/3 m), whichever is less.

3.04 FIELD QUALITY CONTROL

- A. Manufacturer to verify installation meets requirements.

3.05 ADJUSTING

- A. Adjust hardware for smooth operation and secure weathertight closure.

3.06 CLEANING

- A. Remove protective material from factory finished aluminum surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.
- D. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

END OF SECTION