



SECTION 08 52 00  
WOOD WINDOWS

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Clad Wood Windows.
- B. All Wood Windows
- C. Glazing and Accessories

1.2 RELATED SECTIONS

- A. Section 04 22 00.16 - Surface-Bonded Concrete Unit Masonry.
- B. Section 05 40 00 - Cold-Formed Metal Framing.
- C. Section 06 10 00 - Rough Carpentry.
- D. Section 06 20 00 - Finish Carpentry.
- E. Section 07 21 26 - Blown Insulation.
- F. Section 07 46 33 - Plastic Siding.
- G. Section 07 62 00 - Sheet Metal Flashing and Trim.
- H. Section 07 90 00 - Joint Protection.

1.3 REFERENCES

- A. AAMA/NWWDA 101/I.S.2-97 - Voluntary Specifications for Aluminum, Vinyl (PVC) and Wood Windows and Glass Doors; 1997.
- B. AAMA CW-1 0 - Care and Handling of Architectural Aluminum from Shop to Site.
- C. AAMA 611-98 - Voluntary Specification for Anodized Architectural Aluminum.
- D. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels; 1998.
- E. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels; 1998.
- F. ANSI Z97.1 - Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.

G. FSC - Forest Stewardship Council Chain of Custody Certification.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. System Design: Design and size components to withstand dead and live loads caused by pressure and suction of wind acting normal to plane of folding glass wall as calculated in accordance with applicable code.
- B. All products are FSC Chain of Custody Certified.

#### 1.5 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings: Detailed drawings prepared specifically for the project by manufacturer. Show opening dimensions, framed opening tolerances, profiles, product components, anchorages, and accessories.
  - 1. Indicate material thickness, fastener locations, glazing and hardware arrangements.
  - 2. Include schedule identifying each unit, with marks or numbers referencing drawings.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples:
  - 1. Aluminum Finish: Two samples, minimum size 2 by 3 inches (50 by 75 mm), representing actual product and color.
  - 2. Glass: Two samples, minimum size 12 inches (300 mm) square, of specified glass, including coatings or frit pattern.
  - 3. Assembly Sample: 24 by 36 inch (600 by 900 mm) assembly complete with glazing, gaskets, fasteners, anchors, and finish; do not proceed with fabrication until workmanship and color are approved by Architect.
- F. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- G. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment and periodic cleaning and maintenance of all components.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this Section with minimum 5 years experience in fabrication and erection of glazed window wall systems for projects of similar scope.
- B. Installer Qualifications: Experienced in performing work of this section that has specialized in installation of work similar to that required for this project.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Finish areas designated by Architect.
  - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
  - 3. Refinish mock-up area as required to produce acceptable work.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store products out of contact with the ground, under a weather tight covering, so as to prevent bending, warping, or other damage. Do not cover with unventilated tarps, polyethylene film, or similar coverings.
- C. Protect factory finishes from damage, precipitation and construction materials until ready for installation.

## 1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

## 1.9 WARRANTY

- A. Wood Components: Five years limited warranty on products with aluminum exteriors or exterior aluminum cladding.
- B. Exterior Wood Product: Three years limited warranty on exterior wood products.
- C. Kynar Aluminum Finish: Ten year limited warranty.
- D. Insulated Glass: Twenty year limited warranty for up to 60 square feet with mill-finish stainless steel spacer or mill or bronze-finish aluminum spacer. Custom glass or glass over 60 square feet will carry whatever warranty period is provided by the manufacturer.
- E. Hardware: Standard hardware 10 year limited warranty against material defects in materials and workmanship. Includes Lift and Slide hardware, M-Series window locks and window hinges, Slide & Seal hardware, and R-Series window hardware and 3-point locks. Other hardware or custom hardware will be covered in accordance with the manufacturer's standard warranty.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Reveal Windows & Doors by Pacific Architectural Millwork, which is located at: 1435 W. Pioneer St.; Brea, CA 92821; Tel: 562-905-3200; Fax: 562-694-6794; Email:[request info \(info@revealwd\)](mailto:request info (info@revealwd)); Web:[www.pacmillwork.com](http://www.pacmillwork.com)[www.revealwd.com](http://www.revealwd.com)
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

### 2.2 WOOD WINDOWS - GENERAL

- A. Windows: Comply with AAMA/NWWDA 101/I.S.2-97; factory assembled and glazed, complete with weatherstripping, operating hardware and specified accessories.

### 2.3 M SERIES WINDOWS

- A. Fixed Windows: M-Series Fixed Window WA7000, Wood with Exterior Aluminum Cladding. Provide to fit the openings and configurations indicated on the Drawings. Provide complete

with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:

1. Product Parameters
    - a. Minimum Frame Height: 18 inches.
    - b. Maximum Frame Height: 103 inches, dependent on height/width and glass size.
    - c. Minimum Frame Width: 18 inches.
    - d. Maximum Frame Width: 103 inches Dependent on Height/Width and Glass Size.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches behind nail fin.
    - g. Sash Thickness: 2-3/4 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Interior: Traditional.
      - 3) Interior: Contemporary.
  2. Exterior: Extruded aluminum cladding.
  3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  4. Glazing:
    - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
    - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  5. Other Options
    - a. Concealed roll screens.
    - b. Jamb extensions.
    - c. Divided lites.
  6. Exterior aluminum finish:
    - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
    - b. Colors:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
    - c. Anodized Clad Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
      - 1) Light bronze.
      - 2) Medium bronze.
      - 3) Dark bronze.
      - 4) Extra dark bronze.
      - 5) Black.
  7. Interior finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- B. Fixed Windows: M-Series Fixed W6400 All Wood. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 16 inches.
    - b. Maximum Frame Height: 144 inches, dependent on height/width and glass size.
    - c. Minimum Frame Width: 16 inches.

- d. Maximum Frame Width: 144 inches, dependent on height/width and glass size.
  - e. Maximum Glass Size: 60 SF.
  - f. Stile Width: 3-3/4 inches
  - g. Minimum Jamb Depth: 3-5/8 inches behind nail fin.
  - h. Sash Thickness: 2-1/2 inches
  - i. Edge Detail:
    - 1) Exterior: Contemporary.
    - 2) Exterior: Traditional.
    - 3) Interior: Traditional .
    - 4) Interior: Contemporary.
2. Exterior: Extruded aluminum cladding.
  3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  4. Glazing:
    - a. 1 inch overall thickness clear Low-E insulated glass.
    - b. 1 inch overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  5. Other Options
    - a. Concealed blackout shades.
    - b. Divided lites.
  6. Exterior finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
  7. Interior finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- C. Crank-Out Casement Windows: M-Series Crank-Out Casement WA7000, Wood with Exterior Aluminum Cladding. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters
    - a. Minimum Frame Height: 18 inches.
    - b. Maximum Frame Height: \_\_\_\_\_.
    - c. Minimum Frame Width: 16 inches.
    - d. Maximum Frame Width: 32 inches, dependent on height/width and glass size.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 5-5/16 inches from back of nail fin.
    - g. Sash Thickness: 2-3/4 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Interior: Traditional.
      - 3) Interior: Contemporary.
  2. Exterior: Extruded aluminum cladding.
  3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.

- c. African Mahogany.
  - d. Custom.
  - 4. Glazing:
    - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
    - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  - 5. Other Options:
    - a. Fixed exterior screen.
    - b. Concealed roll screens.
    - c. Egress hinges.
    - d. Divided lites.
  - 6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. Contour Handle:
      - 1) Painted Dark Bronze.
      - 2) White.
      - 3) Oil Rubbed Bronze.
      - 4) Satin Nickel.
    - b. Custom hardware.
  - 7. Exterior aluminum finish:
    - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
    - b. Colors:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
    - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
      - 1) Light bronze.
      - 2) Medium bronze.
      - 3) Dark bronze.
      - 4) Extra dark bronze.
      - 5) Black.
  - 8. Interior finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- D. Push-Out Casement Windows: M-Series Push-Out Casement WA7000, Wood with Exterior Aluminum Cladding. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
- 1. Product Parameters:
    - a. Minimum Frame Height: 20 inches.
    - b. Maximum Frame Height: 78-1/4 inches.
    - c. Minimum Frame Width: 16 inches.
    - d. Maximum Frame Width: 36 inches, dependent on height/width and glass size.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches from back of nail fin or 5-5/16 inches with optional roll screen.
    - g. Sash Thickness: 2-3/4 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Interior: Traditional.
      - 3) Interior: Contemporary.
  - 2. Exterior: Extruded aluminum cladding.

3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  4. Glazing:
    - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
    - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  5. Other Options:
    - a. Concealed roll screens.
    - b. Jamb extensions.
    - c. Egress hinges.
    - d. Divided lites.
  6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle.
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle.
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.
      - 9) Antique Nickel.
  7. Exterior aluminum finish:
    - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
    - b. Colors:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
    - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
      - 1) Light bronze.
      - 2) Medium bronze.
      - 3) Dark bronze.
      - 4) Extra dark bronze.
      - 5) Black.
  8. Interior finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- E. Push-Out Casement Windows: M-Series Push-Out Casement W6400 All-Wood. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 24-1/2 inches.
    - b. Maximum Frame Height: 78 inches.
    - c. Minimum Frame Width: 16-1/16 inches.

- d. Maximum Frame Width: 36 inches, dependent on height/width and glass size.
  - e. Min. Stile Width: 3-7/8 inches.
  - f. Minimum Jamb Depth: 3-5/8 inches from back of nail fin or 5-5/16 inches with optional roll screen.
  - g. Sash Thickness: 2-1/2 inches.
  - h. Edge Detail:
    - 1) Exterior: Contemporary.
    - 2) Exterior: Traditional.
    - 3) Interior: Traditional.
    - 4) Interior: Contemporary.
  - 2. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  - 3. Glazing:
    - a. 1 inch overall thickness clear Low-E insulated glass.
    - b. 1 inch overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom,
  - 4. Other Options
    - a. Concealed roll screens.
    - b. Custom hardware.
    - c. Egress hinges.
    - d. Divided lites.
  - 5. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.
      - 9) Antique Nickel.
  - 6. Exterior finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
  - 7. Interior finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- F. French Casement Windows: M-Series French Casement WA7000, Wood with Exterior Aluminum Cladding. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:



1. Product Parameters:
  - a. Minimum Frame Height: 24-1/2 inches.
  - b. Maximum Frame Height: 78 inches.
  - c. Minimum Frame Width: 29-1/4 inches.
  - d. Maximum Frame Width: 70 inches, dependent on height/width and glass size.
  - e. Stile Width: 3 inches.
  - f. Minimum Jamb Depth: 2-13/16 inches from back of nail fin.
  - g. Sash Thickness: 2-3/4 inches.
  - h. Edge Detail:
    - 1) Exterior: Contemporary.
    - 2) Interior: Traditional.
    - 3) Interior: Contemporary.
2. Exterior: Extruded aluminum cladding.
3. Wood Species: FSC Certified products.
  - a. Pine.
  - b. Vertical Grain Douglas Fir.
  - c. African Mahogany.
  - d. Custom.
4. Glazing:
  - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
  - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
  - c. Custom.
5. Options:
  - a. Concealed roll screens.
  - b. Jamb extensions.
  - c. Egress hinges.
  - d. Divided lites.
6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
  - a. London Aluminum Handle:
    - 1) Silver.
    - 2) Grey Brown.
    - 3) Traffic White.
  - b. Verona Bronze Handle:
    - 1) Polished Brass.
    - 2) Antique Brass.
    - 3) Brushed Chrome.
    - 4) Polished Chrome.
    - 5) Oil-Rubbed Brass.
    - 6) Pure White.
    - 7) Matte Black.
    - 8) Satin Nickel.
    - 9) Antique Nickel.
7. Exterior aluminum finish:
  - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
  - b. Colors:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
  - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
    - 1) Light bronze.
    - 2) Medium bronze.
    - 3) Dark bronze.
    - 4) Extra dark bronze.
    - 5) Black.
8. Interior finish:

- a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
- G. French Casement Windows: M-Series French Casement W7000, All-Wood. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 24-1/2 inches.
    - b. Maximum Frame Height: 78 inches.
    - c. Minimum Frame Width: 29-1/4 inches.
    - d. Maximum Frame Width: 70 inches, dependent on height/width and glass size.
    - e. Min. Stile Width: 3-7/8 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches from back of nail fin.
    - g. Sash Thickness: 2-1/2 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Exterior: Traditional.
      - 3) Interior: Traditional.
      - 4) Interior: Contemporary.
  2. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  3. Glazing:
    - a. 1-1/8 inch overall thickness clear Low-E insulated glass.
    - b. 1-1/8 inch overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  4. Other Options:
    - a. Concealed roll screens.
    - b. Custom hardware.
    - c. Egress hinges.
    - d. Divided lites.
  5. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.
      - 9) Antique Nickel.
  6. Exterior finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.

- 2) Custom color as selected by the Architect.
- 7. Interior finish:
  - a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
- H. French Casement Windows: M-Series French Casement W6400, All-Wood. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
  - 1. Product Parameters:
    - a. Minimum Frame Height: 24-1/2 inches.
    - b. Maximum Frame Height: 78 inches.
    - c. Minimum Frame Width: 29-1/4 inches.
    - d. Maximum Frame Width: 70 inches, dependent on height/width and glass size.
    - e. Min. Stile Width: 3-7/8 inches.
    - f. Minimum Jamb Depth: 2-5/8 inches from back of nail fin.
    - g. Sash Thickness: 2-1/2 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Exterior: Traditional.
      - 3) Interior: Traditional.
      - 4) Interior: Contemporary.
  - 2. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  - 3. Glazing:
    - a. 1 inch overall thickness clear Low-E insulated glass.
    - b. 1 inch overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom,
  - 4. Other Options:
    - a. Concealed roll screens.
    - b. Custom hardware.
    - c. Egress hinges.
    - d. Divided lites.
  - 5. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.
      - 9) Antique Nickel.
  - 6. Exterior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.

- c. Prefinished with low gloss, two-component acrylic polyurethane:
        - 1) Standard color as selected by the Architect.
        - 2) Custom color as selected by the Architect.
  - 7. Interior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- I. Casement Windows: M-Series Tradewinds Casement WA7000, Wood with Exterior Aluminum Cladding. Hinged from the same side with stainless steel friction hinges and concealed multi-point locks. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 24-1/2 inches.
    - b. Maximum Frame Height: 78 inches.
    - c. Minimum Frame Width: 29-1/4, dependent on number of panels.
    - d. Maximum Frame Width: 70 inches, dependent on number of panels.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches, from back of nail fin no screen.
    - g. Sash Thickness: 2-3/4 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Interior: Traditional.
      - 3) Interior: Contemporary.
  2. Exterior: Extruded aluminum cladding.
  3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  4. Glazing:
    - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
    - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  5. Other Options:
    - a. Concealed roll screens.
    - b. Jamb extensions.
    - c. Egress hinges.
    - d. Divided lites.
  6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.

- 9) Antique Nickel.
  7. Exterior aluminum finish:
    - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
    - b. Colors:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
    - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
      - 1) Light bronze.
      - 2) Medium bronze.
      - 3) Dark bronze.
      - 4) Extra dark bronze.
      - 5) Black.
  8. Interior finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- J. Casement Windows: M-Series Tradewinds Casement W6400, All-Wood. Hinged from the same side with stainless steel friction hinges and concealed multi-point locks. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 24-1/2 inches.
    - b. Maximum Frame Height: 78 inches.
    - c. Minimum Frame Width: 29-1/4 inches.
    - d. Maximum Frame Width: 70 inches, dependent on height/width and glass size.
    - e. Min. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches from back of nail fin.
    - g. Sash Thickness: 2-3/4 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Interior: Traditional.
      - 3) Interior: Contemporary.
  2. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  3. Glazing:
    - a. 1 inch overall thickness clear Low-E insulated glass.
    - b. 1 inch overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  4. Other Options:
    - a. Concealed roll screens.
    - b. Custom hardware.
    - c. Egress hinges.
    - d. Divided lites.
  5. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.

- b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.
      - 9) Antique Nickel.
  - 6. Exterior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
  - 7. Interior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- K. Crank-Out Awning Windows: M-Series Crank-Out Awning WA7000, Wood with Exterior Aluminum Cladding. Hinged at the top and opens outward by rotating a handle located on the lower frame. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
  - 1. Product Parameters:
    - a. Minimum Frame Height: 18 inches.
    - b. Maximum Frame Height: 36 inches.
    - c. Minimum Frame Width: 18 inches.
    - d. Maximum Frame Width: 78-1/4 inches, dependent on height/width and glass size.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 5-5/16 inches from back of nail fin.
    - g. Sash Thickness: 2-3/4 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Interior: Traditional.
      - 3) Interior: Contemporary.
  - 2. Exterior: Extruded aluminum cladding.
  - 3. Wood Species: FSC Certified products:
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom
  - 4. Glazing:
    - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
    - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  - 5. Other Options:
    - a. Fixed exterior screen.
    - b. Jamb extensions.
    - c. Egress hinges.
    - d. Divided lites.

6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. Contour Handle:
      - 1) Painted Dark Bronze.
      - 2) White.
      - 3) Oil Rubbed Bronze.
      - 4) Satin Nickel.
    - b. Custom hardware.
  7. Exterior aluminum finish:
    - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
    - b. Colors:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
    - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
      - 1) Light bronze.
      - 2) Medium bronze.
      - 3) Dark bronze.
      - 4) Extra dark bronze.
      - 5) Black.
  8. Interior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- L. Crank-Out Awning Windows: M-Series Crank-Out Awning W6400, All-Wood. Hinged at the top and opens outward by rotating a handle located on the lower frame. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 16-1/16 inches.
    - b. Maximum Frame Height: 90-11/16 inches.
    - c. Minimum Frame Width: 24-1/2 inches.
    - d. Maximum Frame Width: 98-1/4 inches, dependent on height/width and glass size.
    - e. Min. Stile Width: 3-7/8 inches.
    - f. Minimum Jamb Depth: 3-5/8 inches, from back of nail fin or 5-5/16 inches with optional roll screen.
    - g. Sash Thickness: 2-1/2 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Exterior: Traditional.
      - 3) Interior: Traditional.
      - 4) Interior: Contemporary.
  2. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  3. Glazing:
    - a. 1 inch overall thickness clear Low-E insulated glass.
    - b. 1 inch overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  4. Other Options:

- a. Concealed roll screens.
  - b. Custom hardware.
  - c. Egress hinges.
  - d. Divided lites.
5. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
- a. London Aluminum Handle:
    - 1) Silver.
    - 2) Grey Brown.
    - 3) Traffic White.
  - b. Verona Bronze Handle:
    - 1) Polished Brass.
    - 2) Antique Brass.
    - 3) Brushed Chrome.
    - 4) Polished Chrome.
    - 5) Oil-Rubbed Brass.
    - 6) Pure White.
    - 7) Matte Black.
    - 8) Satin Nickel.
    - 9) Antique Nickel.
6. Exterior Finish:
- a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
7. Interior Finish:
- a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
- M. Stacked Awning Windows: M-Series Stacked Awning WA7000, Wood with Exterior Aluminum Cladding. Stainless steel friction hinges with multiple awning windows stacked on top of each other within a single frame with each sash in the Stacked Awning operated independently from the bottom with a smooth push-out motion. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
- 1. Product Parameters:
    - a. Minimum Sash Height: 13-13/16 inches.
    - b. Maximum Sash Height: 88-1/2 inches dependent on height/width and glass size.
    - c. Minimum Frame Width: 20 inches.
    - d. Maximum Frame Width: 98-1/4 inches, dependent on height/width and glass size.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2 13/16 inches from back of nail fin.
    - g. Sash Thickness: 2-3/4 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Interior: Traditional.
      - 3) Interior: Contemporary.
  - 2. Exterior: Extruded aluminum cladding.
  - 3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.



- c. African Mahogany.
    - d. Custom.
  - 4. Glazing:
    - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
    - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  - 5. Other Options:
    - a. Concealed roll screens.
    - b. Jamb extensions.
    - c. Egress hinges.
    - d. Divided lites.
  - 6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.
      - 9) Antique Nickel.
    - c. Custom hardware.
  - 7. Exterior aluminum finish:
    - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
    - b. Colors:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
    - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
      - 1) Light bronze.
      - 2) Medium bronze.
      - 3) Dark bronze.
      - 4) Extra dark bronze.
      - 5) Black.
  - 8. Interior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- N. Stacked Awning Windows: M-Series Stacked Awning W6400, All-Wood. Stainless steel friction hinges with multiple awning windows stacked on top of each other within a single frame with each sash in the Stacked Awning operated independently from the bottom with a smooth push-out motion. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
  - 1. Product Parameters:
    - a. Minimum Frame Height: 13-13/16 inches.
    - b. Maximum Frame Height: 88-1/2 inches.

- c. Minimum Frame Width: 24-1/2 inches.
  - d. Maximum Frame Width: 98-1/4 inches, dependent on height/width and glass size.
  - e. Min. Stile Width: 3-7/16 inches.
  - f. Minimum Jamb Depth: 3-5/8 inches, from back of nail fin or 5-5/16 inches with optional roll screen.
  - g. Sash Thickness: 2-1/2 inches.
  - h. Edge Detail:
    - 1) Exterior: Contemporary.
    - 2) Exterior: Traditional.
    - 3) Interior: Traditional.
    - 4) Interior: Contemporary.
2. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  3. Glazing:
    - a. 1 inch overall thickness clear Low-E insulated glass.
    - b. 1 inch overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom,
  4. Other Options:
    - a. Concealed roll screens.
    - b. Custom hardware.
    - c. Egress hinges.
    - d. Divided lites.
  5. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.
      - 9) Antique Nickel.
  6. Exterior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
  7. Interior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.

## 2.4 ZERO INTERIOR SIGHTLINE WOOD WINDOWS

- A. Fixed Windows: Z-Series Fixed Window WA9600 Wood with Exterior Aluminum Cladding. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 18 inches.
    - b. Maximum Frame Height: 103 inches, dependent on height/width and glass size.
    - c. Minimum Frame Width: 18 inches.
    - d. Maximum Frame Width: 103 inches Dependent on Height/Width and Glass Size.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 3-3/4 inches behind nail fin.
    - g. Sash Thickness: 3-13/16 inches.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Interior: Contemporary.
  2. Exterior: Extruded aluminum cladding.
  3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  4. Glazing:
    - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
    - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  5. Other Options:
    - a. Concealed roll screens.
    - b. Jamb extensions.
    - c. Divided lites.
  6. Exterior Aluminum Finish:
    - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
    - b. Colors:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
    - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
      - 1) Light bronze.
      - 2) Medium bronze.
      - 3) Dark bronze.
      - 4) Extra dark bronze.
      - 5) Black.
  7. Interior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- B. Casement Windows: Z-Series Casement Window WA9600 Wood with Exterior Aluminum Cladding. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 20 inches.

- b. Maximum Frame Height: 78-1/4 inches.
  - c. Minimum Frame Width: 16 inches.
  - d. Maximum Frame Width: 16 inches.
  - e. Stile Width: 2-3/4 inches.
  - f. Minimum Jamb Depth: 3-3/4 inches from back of nail fin, 6-1/4 inches with optional roll screen.
  - g. Sash Thickness: 3-13/16 inches.
  - h. Edge Detail:
    - 1) Exterior: Contemporary.
    - 2) Interior: Contemporary.
  - 2. Exterior: Extruded aluminum cladding.
  - 3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  - 4. Glazing:
    - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
    - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  - 5. Other Options:
    - a. Concealed roll screens.
    - b. Jamb extensions.
    - c. Egress hinges.
    - d. Divided lites.
  - 6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. Bronze Pop-Up Handle:
      - 1) Satin Nickel.
      - 2) Brushed Chrome.
      - 3) Polished Chrome.
      - 4) Bright Brass.
      - 5) White.
    - b. Custom hardware.
  - 7. Exterior aluminum finish:
    - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
    - b. Colors:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
    - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
      - 1) Light bronze.
      - 2) Medium bronze.
      - 3) Dark bronze.
      - 4) Extra dark bronze.
      - 5) Black.
  - 8. Interior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- C. Awning Windows: Z-Series Awning Window WA9600 Wood with Exterior Aluminum Cladding. Hinged at the top and opens outward by rotating a handle located on the lower frame. Provide to fit the openings and configurations indicated on the Drawings. Provide

complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:

1. Product Parameters:
  - a. Minimum Frame Height: 15-7/16 inches.
  - b. Maximum Frame Height: 90-7/8 inches.
  - c. Minimum Frame Width: 24-1/2 inches.
  - d. Stile Width: 2-3/4 inches.
  - e. Minimum Jamb Depth: 3-3/4 inches from back of nailing fin and 6-1/4 inches with optional roll screen.
  - f. Sash Thickness: 3-13/16 inches.
  - g. Edge Detail:
    - 1) Exterior: Contemporary.
    - 2) Interior: Contemporary.
2. Exterior: Extruded aluminum cladding.
3. Wood Species: FSC Certified products.
  - a. Pine.
  - b. Vertical Grain Douglas Fir.
  - c. African Mahogany.
  - d. Custom.
4. Glazing:
  - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
  - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
  - c. Custom.
5. Other Options:
  - a. Concealed roll screens.
  - b. Jamb extensions.
  - c. Egress hinges.
  - d. Divided lites.
6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
  - a. Bronze Pop-Up Handle:
    - 1) Satin Nickel.
    - 2) Brushed Chrome.
    - 3) Polished Chrome.
    - 4) Bright Brass.
    - 5) White.
  - b. Custom hardware.
7. Exterior Aluminum Finish:
  - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
  - b. Colors:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
  - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
    - 1) Light bronze.
    - 2) Medium bronze.
    - 3) Dark bronze.
    - 4) Extra dark bronze.
    - 5) Black.
8. Interior Finish:
  - a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.

## 2.5 TILT AND TURN WOOD WINDOWS

- A. Tilt and Turn Casement Windows: Tilt and Turn Casement WA6400, Wood with Exterior Aluminum Cladding. Opens to the interior when the handle is rotated 90 degrees, or tilts in slightly when the handle is rotated 180 degrees. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 16-3/8 inches. Based on width.
    - b. Maximum Frame Height: 97-13/16 inches.
    - c. Minimum Frame Width: 16-3/8 inches.
    - d. Maximum Frame Width: 58-3/8 inches.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches.
    - g. Edge Detail:
      - 1) Exterior: Traditional.
      - 2) Exterior: Contemporary.
      - 3) Interior: Traditional.
      - 4) Interior: Contemporary.
  2. Exterior: Extruded aluminum cladding.
  3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  4. Glazing:
    - a. 1 inches overall thickness clear Low-E insulated glass.
    - b. 1 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  5. Other Options:
    - a. Custom grille patterns.
    - b. Fixed exterior screen.
    - c. Brick exterior molding.
    - d. Stucco exterior molding.
  6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.
      - 9) Antique Nickel.
  7. Exterior Aluminum Finish:
    - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
    - b. Colors:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
    - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step

coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:

- 1) Light bronze.
  - 2) Medium bronze.
  - 3) Dark bronze.
  - 4) Extra dark bronze.
  - 5) Black.
8. Interior Finish:
- a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
- B. Tilt and Turn Casement Windows: Tilt and Turn Casement All Wood WA6400. Opens to the interior when the handle is rotated 90 degrees, or tilts in slightly when the handle is rotated 180 degrees. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 16-3/8 inches. based on width.
    - b. Maximum Frame Height: 97-13/16 inches.
    - c. Minimum Frame Width: 16-3/8 inches.
    - d. Maximum Frame Width: 58-3/8 inches.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches.
    - g. Edge Detail:
      - 1) Exterior: Traditional.
      - 2) Exterior: Contemporary.
      - 3) Interior: Traditional.
      - 4) Interior: Contemporary.
  2. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  3. Glazing:
    - a. 1 inches overall thickness clear Low-E insulated glass.
    - b. 1 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  4. Other Options:
    - a. Custom grille patterns.
    - b. Fixed exterior screen.
    - c. Brick exterior molding.
    - d. Stucco exterior molding.
  5. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.

- 7) Matte Black.
  - 8) Satin Nickel.
  - 9) Antique Nickel.
6. Exterior Finish:
- a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
7. Interior Finish:
- a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
- C. French Tilt and Turn Casement Windows: French Tilt and Turn Casement WA6400, Wood with Exterior Aluminum Cladding. Opens to the interior when the handle is rotated 90 degrees, or tilts in slightly when the handle is rotated 180 degrees. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
1. Product Parameters:
    - a. Minimum Frame Height: 16-3/8 inches, based on width.
    - b. Maximum Frame Height: 97-13/16 inches.
    - c. Minimum Frame Width: 16-3/8 inches.
    - d. Maximum Frame Width: 58-3/8 inches.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches.
    - g. Edge Detail:
      - 1) Exterior: Traditional.
      - 2) Exterior: Contemporary.
      - 3) Interior: Traditional.
      - 4) Interior: Contemporary.
  2. Exterior: Extruded aluminum cladding.
  3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  4. Glazing:
    - a. 1 inch overall thickness clear Low-E insulated glass.
    - b. 1 inch overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  5. Other Options:
    - a. Custom grille patterns.
    - b. Fixed exterior screen.
    - c. Brick exterior molding.
    - d. Stucco exterior molding.
  6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.



- 3) Brushed Chrome.
  - 4) Polished Chrome.
  - 5) Oil-Rubbed Brass.
  - 6) Pure White.
  - 7) Matte Black.
  - 8) Satin Nickel.
  - 9) Antique Nickel.
7. Exterior Aluminum Finish:
- a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
  - b. Colors:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
  - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
    - 1) Light bronze.
    - 2) Medium bronze.
    - 3) Dark bronze.
    - 4) Extra dark bronze.
    - 5) Black.
8. Interior Finish:
- a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
- D. French Tilt and Turn Casement Windows: French Tilt and Turn Casement All Wood WA6400. Opens to the interior when the handle is rotated 90 degrees, or tilts in slightly when the handle is rotated 180 degrees. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
- 1. Product Parameters:
    - a. Minimum Frame Height: 19 inches. Based on width.
    - b. Maximum Frame Height: 92 inches.
    - c. Minimum Frame Width: 24 inches.
    - d. Maximum Frame Width: 116 inches.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches.
    - g. Edge Detail:
      - 1) Exterior: Traditional.
      - 2) Exterior: Contemporary.
      - 3) Interior: Traditional.
      - 4) Interior: Contemporary.
  - 2. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  - 3. Glazing:
    - a. 1 inches overall thickness clear Low-E insulated glass.
    - b. 1 inches overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.
  - 4. Other Options:
    - a. Custom grille patterns.
    - b. Fixed exterior screen.

- c. Brick exterior molding.
  - d. Stucco exterior molding.
  - 5. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
    - a. London Aluminum Handle:
      - 1) Silver.
      - 2) Grey Brown.
      - 3) Traffic White.
    - b. Verona Bronze Handle:
      - 1) Polished Brass.
      - 2) Antique Brass.
      - 3) Brushed Chrome.
      - 4) Polished Chrome.
      - 5) Oil-Rubbed Brass.
      - 6) Pure White.
      - 7) Matte Black.
      - 8) Satin Nickel.
      - 9) Antique Nickel.
  - 6. Exterior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
  - 7. Interior Finish:
    - a. Clear treated wood, no prime.
    - b. Primed.
    - c. Prefinished with low gloss, two-component acrylic polyurethane:
      - 1) Standard color as selected by the Architect.
      - 2) Custom color as selected by the Architect.
- E. Tilt Only Casement Windows: Tilt Only Casement WA8400, Wood with Exterior Aluminum Cladding. Tilts in slightly when the handle is rotated 180 degrees. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
- 1. Product Parameters:
    - a. Minimum Frame Height: 16-3/8 inches. Based on width.
    - b. Maximum Frame Height: 97-13/16 inches.
    - c. Minimum Frame Width: 16-3/8 inches.
    - d. Maximum Frame Width: 58-3/8 inches.
    - e. Stile Width: 3 inches.
    - f. Minimum Jamb Depth: 2-13/16 inches.
    - g. Edge Detail:
      - 1) Exterior: Traditional.
      - 2) Exterior: Contemporary.
      - 3) Interior: Traditional.
      - 4) Interior: Contemporary.
  - 2. Exterior: Extruded aluminum cladding.
  - 3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.
  - 4. Glazing:
    - a. 1 inch overall thickness clear Low-E insulated glass.
    - b. 1 inch overall thickness tempered Solarban Low-E insulated glass.
    - c. Custom.

5. Other Options:
  - a. Custom grille patterns.
  - b. Fixed exterior screen.
  - c. Brick exterior molding.
  - d. Stucco exterior molding.
6. Hardware: Includes stainless steel friction hinges and concealed multi-point locks.
  - a. London Aluminum Handle:
    - 1) Silver.
    - 2) Grey Brown.
    - 3) Traffic White.
  - b. Verona Bronze Handle:
    - 1) Polished Brass.
    - 2) Antique Brass.
    - 3) Brushed Chrome.
    - 4) Polished Chrome.
    - 5) Oil-Rubbed Brass.
    - 6) Pure White.
    - 7) Matte Black.
    - 8) Satin Nickel.
    - 9) Antique Nickel.
7. Exterior Aluminum Finish:
  - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
  - b. Colors:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
  - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
    - 1) Light bronze.
    - 2) Medium bronze.
    - 3) Dark bronze.
    - 4) Extra dark bronze.
    - 5) Black.
8. Interior Finish:
  - a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.

## 2.6 DIRECT SET WINDOWS

- A. Direct Set Windows: Direct Set Window WA4400, Wood with Exterior Aluminum Cladding. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
  1. Product Parameters:
    - a. Minimum Frame Height: 12 inches based on height.
    - b. Maximum Frame Height: 144 inches, dependent on height/width and glass size.
    - c. Minimum Frame Width: 12 inches.
    - d. Maximum Frame Width: 144 inches, dependent on height/width and glass size.
    - e. Total SF: 60 SF of glass.
    - f. Frame Sightline 1-3/4 inches.
    - g. Minimum Jamb Depth: 2-13/16 inches behind nail fin.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.

- 2) Interior: Traditional.
      - 3) Interior: Contemporary.
    - 2. Exterior: Extruded aluminum cladding.
    - 3. Wood Species: FSC Certified products.
      - a. Pine.
      - b. Vertical Grain Douglas Fir.
      - c. African Mahogany.
      - d. Custom.
    - 4. Glazing:
      - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
      - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
      - c. Custom.
    - 5. Other Options:
      - a. Simulated divided lites.
      - b. Corner.
    - 6. Exterior Aluminum Finish:
      - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
      - b. Colors:
        - 1) Standard color as selected by the Architect.
        - 2) Custom color as selected by the Architect.
      - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
        - 1) Light bronze.
        - 2) Medium bronze.
        - 3) Dark bronze.
        - 4) Extra dark bronze.
        - 5) Black.
    - 7. Interior Finish:
      - a. Clear treated wood, no prime.
      - b. Primed.
      - c. Prefinished with low gloss, two-component acrylic polyurethane:
        - 1) Standard color as selected by the Architect.
        - 2) Custom color as selected by the Architect.
- B. Direct Set Windows: Direct Set Window WA3500, All Wood. Provide to fit the openings and configurations indicated on the Drawings. Provide complete with head, sill and jambs, glazing, weatherstripping, operating hardware and specified accessories:
- 1. Product Parameters:
    - a. Minimum Frame Height: 12 inches based on height.
    - b. Maximum Frame Height: 144 inches, dependent on height/width and glass size.
    - c. Minimum Frame Width: 12 inches.
    - d. Maximum Frame Width: 144 inches, dependent on height/width and glass size.
    - e. Total SF: 60 SF of glass.
    - f. Frame Sightline 1-3/4 inches.
    - g. Minimum Jamb Depth: 4-9/16 inches behind nail fin.
    - h. Edge Detail:
      - 1) Exterior: Contemporary.
      - 2) Interior: Traditional.
      - 3) Interior: Contemporary.
  - 2. Exterior: Extruded aluminum cladding.
  - 3. Wood Species: FSC Certified products.
    - a. Pine.
    - b. Vertical Grain Douglas Fir.
    - c. African Mahogany.
    - d. Custom.

4. Glazing:
  - a. 1-1/8 inches overall thickness clear Low-E insulated glass.
  - b. 1-1/8 inches overall thickness tempered Solarban Low-E insulated glass.
  - c. Custom.
5. Other Options:
  - a. Simulated divided lites.
  - b. Corner.
6. Exterior Aluminum Finish:
  - a. Fluoropolymer-modified acrylic topcoat over fluoropolymer primer meets AAMA 2605 requirements.
  - b. Colors:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.
  - c. Anodized Clad -Exterior anodized aluminum finish: Electrolytic two-step coloring method meets or exceeds AAMA 611 Class I requirements. Finishes:
    - 1) Light bronze.
    - 2) Medium bronze.
    - 3) Dark bronze.
    - 4) Extra dark bronze.
    - 5) Black.
7. Interior Finish:
  - a. Clear treated wood, no prime.
  - b. Primed.
  - c. Prefinished with low gloss, two-component acrylic polyurethane:
    - 1) Standard color as selected by the Architect.
    - 2) Custom color as selected by the Architect.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify openings are ready to receive work and dimensions and clearances are as indicated on the approved shop drawings.
- C. If preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install system in accordance with approved shop drawings and manufacturer's instructions.
- C. Install components level, plumb and true to line with uniform joints. Do not use defective parts that are warped, twisted, bowed, dented or abraded.
- D. Separate dissimilar materials using nonconductive tape, paint, or other material not visible in finished work.

- E. Provide attachments and shims to permanently fasten system to building structure.
- F. Maintain dimensional tolerances and alignment with adjacent Work.
- G. Anchor securely in place, allowing for required movement, including expansion and contraction.
- H. Fill perimeter frame to wall opening cavity with batt insulation. Do not use expansive foam insulation.
- I. Install glazing and sealants in accordance with manufacturer's instructions without exception, including surface preparations.
- J. Install flashings, closures, corners, and other accessories as required or detailed.
- K. Clean surfaces and install sealant in accordance with sealant manufacturer's instructions and structure manufacturer's guidelines.

#### 3.4 ADJUSTING AND CLEANING

- A. Adjust operating sash and hardware to provide tight fit at contact points and at the weather stripping for smooth operation.
- B. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions before owner's acceptance.
- C. Clean and maintain aluminum surfaces in accordance with AAMA 610.1.
- D. Remove from project site and legally dispose of construction debris associated with this work.

#### 3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

#### 3.6 SCHEDULES

- A. :
- B. :

END OF SECTION