

## **ATTACHMENT B SCOPE OF WORK**

### Goal of project:

Scope of work includes replacement of casement and picture window units in six (6) cabins at the state park. Each of the cabins are historically significant, and this window replacement work has been approved by the State Historical Preservation Office (SHPO). As such, new window units must match the detailing and characteristics of the existing windows as much as possible. Each existing window will be removed. The head, jamb, and sill framing will be inspected for rot, plumbness and damage. Surrounding interior and exterior trims, sealants, flashings, and finishes shall also be inspected for damage. Items found to be damaged shall be repaired prior to installing new window units. New units shall be ordered to manufacturer Rough Opening (RO) standards and standard unit elevations. Custom window sizes are not anticipated and only standard window sizes should be accounted for during bidding (Note: If custom window sizes are appropriate, additional costs will be coordinated between DNR and contractor). Contractor shall submit shop drawings to DNR Field Engineer for review prior to ordering windows. Manufacturer approved head, jamb and sill flashings are required for new installations. Concealed expanding spray foam shall be used to insulate and seal between window unit frame and structural wall framing. Spray foam must be concealed and not visible from exterior or interior of building upon completion of work. Carefully removed existing interior/exterior window trim free of rot or deterioration may be reused where applicable. New, replacement interior/exterior trim to match existing trim saw marks texture, stain tone, lacquer or sealant, and profile. Exterior shutters to be removed, safely stored, and reinstalled similarly by contractor.

Door glazing replacement not required.

### **Window schedule as follows:**

(Window sizes are approximate for estimating purposes and will need to be field verified and approved via shop drawings prior to ordering)

**Window A (Qty. 4 per cabin):** (2)3046 Single-Hung (Operable) – Replicate Muntins with similar SDL's at exterior and interior at all window locations. Include SDL's in all single-hung windows.

**Window B (Qty. 1 per cabin):** 3224 Picture Window (Non-Operable) - Replicate Muntins with similar SDL's at exterior and interior at all window locations. Include SDL's in all picture windows.

**Window C (Qty. 1 per cabin):** 2832 Picture Window (Non-Operable) - w/obscure privacy glass @ exterior IGU pane. Exterior SDL's only.

*Note: See window specification for requirements, options, and approved manufacturers.*

### **Work restrictions**

It is the intent of these work restrictions to allow for use of the cabins by the public during peak periods and minimize loss of revenue to the Department.

- No work is permitted Friday, Saturday, or Sunday.
- No work is permitted May 25th through May 28th.
- To ensure cabins remain usable by the public during the non-working periods above:
  - Individual window replacement must be completed in accordance with the Contract Documents by the beginning of the non-working period.
  - Do not begin a window replacement if completion in accordance with the Contract Documents by the beginning of the non-working period is uncertain.
  - Not all windows in a cabin need to be replaced by the beginning of the non-work period. For example, a cabin with three windows completed in accordance with the Contract Documents and three that have not had work begun at the end of Thursday is acceptable. In this example, the remaining windows can be completed beginning on the following Monday.
- There shall be no evidence of the project in or around the cabins during the non-work periods. This includes materials, tools, supplies, vehicles, etc. Coordinate with the Engineer a suitable storage/staging area in the park.

(Pictures of cabins on following pages)





**ATTACHMENT C  
SPECIFICATIONS**

**SECTION 085200  
WOOD WINDOWS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Factory-fabricated wood windows.
- B. Glazing.
- C. Metal infill panels.
- D. Operating hardware.
- E. Insect screens.
- F. Wood trim for exterior finishing.

**1.02 REFERENCE STANDARDS**

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights; 2022, with Errata (2023).
- B. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products; 2021.
- C. AAMA 611 - Specification for Anodized Architectural Aluminum; 2024.
- D. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- E. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022.
- F. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- G. ASHRAE Std 90.1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- I. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors; 2002 (Reapproved 2018).
- J. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference; 2015 (Reapproved 2023).
- K. ASTM E1332 - Standard Classification for Rating Outdoor-Indoor Sound Attenuation; 2022.
- L. ASTM E2112 - Standard Practice for Installation of Exterior Windows, Doors and Skylights; 2023.
- M. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- N. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.

### **1.03 ADMINISTRATIVE REQUIREMENTS**

#### **1.04 SUBMITTALS**

- A. Product Data: Show component dimensions, anchorage and fasteners, glass, internal drainage details, and flashing details.
- B. Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work, installation requirements, and manufacturer name and warranty requirements.
- C. Manufacturer's Certificate: Certify that products furnished meet or exceed specified requirements.
- D. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
  - 1. Evidence of AAMA Certification; label or other documentation.
  - 2. Evidence of WDMA Certification.
  - 3. Evidence of CSA Certification.
  - 4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.
- E. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.
- F. Manufacturer's qualification statement.
- G. Installer's qualification statement.
- H. Specimen warranty.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Protect factory finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.

#### **1.07 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 after installation of sealants.

#### **1.08 WARRANTY**

- A. Correct defective Work within a five year period after Date of Substantial Completion.
- B. Manufacturer Warranty: Provide 5-year manufacturer warranty for insulated glass units against seal failure, interpane dusting or misting, and replacement of same. Complete forms in Owner's name and register with manufacturer.
- C. Manufacturer Warranty: Provide 2-year manufacturer warranty against defects listed. Complete forms in Owner's name and register with manufacturer or warrantor.
  - 1. Degradation of color finish.
  - 2. Delamination or separation of finish cladding from window member.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Wood Windows:
  - 1. Pella Corporation; Reserve Traditional(Wood Exterior): [www.pellacommercial.com/#sle](http://www.pellacommercial.com/#sle).
  - 2. Marvin Windows; Ultimate Wood Windows: [www.marvin.com/#sle](http://www.marvin.com/#sle).
  - 3. Quaker Window Products Company; Brighton Wood  
[www.quakerresidentialwindows.com/#sle](http://www.quakerresidentialwindows.com/#sle).
  - 4. Lincoln Windows; [www.lincolnwindows.com/](http://www.lincolnwindows.com/)
  - 5. Kolbe Windows; Heritage Series: <https://www.kolbewindows.com/>

### **2.02 WOOD WINDOWS**

- A. Wood frame and sash: factory fabricated and assembled.
  - 1. Exterior Finish(Wood): Factory finished. Colors for interior and exterior to be selected by architect from manufacturers standard line.
  - 2. Interior Finish(Wood): Factory finished. Colors for interior and exterior to be selected by architect from manufacturers standard line.
  - 3. Configuration: As indicated in window schedule. Replacement windows to match existing window detailing including muntin spacings and profile. Field verify all sizes and dimensions. Standard sized windows closest to original size shall be acceptable so as gaps between existing rough framing and window frame do not exceed 1 1/2". Existing rough framing at windows shall not be modified. Trim work at exterior and interior may be modified or replaced but must closely match existing trims in dimension, tone and finish.
  - 4. Factory glazed; dry glazing method.
  - 5. Wood Species: Clear pine or Fir, preservative treated using treatment type suitable for required finish.
  - 6. Frame and Sash Members: Mortise and tenon joints. Glue and steel pin joints to hairline fit, weather tight.
  - 7. Transparent Finish: Finger joints not permitted in units intended for transparent finish.
  - 8. Weather Stop Flange: Continuous at perimeter of unit.
  - 9. Clearances and Shim Spacing: Minimum required for installation and dynamic movement of perimeter seal.
  - 10. Fasteners: Concealed from view.
  - 11. Internal Drainage of Glazing Spaces to Exterior: Weep holes.
  - 12. Insect Screen: Minimal profile metal frame. Color selected by submittal from manufacturers full range of available colors. Location: Interior at casements and exterior at single and double hung operable.
  - 13. Operable Units: Double weatherstripped.

### **2.03 COMPONENTS**

- A. Glazing: Double glazed, clear, Low-E coated, argon filled, with glass thicknesses as recommended by manufacturer for regional wind conditions and related code requirements.
- B. Frames: Profile must closely match thickness and shape of existing windows; flush solid wood glass stops of screw fastened type, sloped for positive drainage.
- C. Muntins: Must closely match existing window spacings, tone/finish and profile. External wood muntins must be provided where existing window muntins or glass lites are external. Internal muntins may be provided only in addition to external.
- D. Sills: Wood. sloped for positive drainage; fits under sash and projects at least 1/2 inch (12 mm) beyond exterior face of wall; single piece full width of opening.

- E. Insect Screens: Extruded aluminum frame with mitered and reinforced corners; screen mesh taut and secure to frame; secured to window with adjustable supports allowing screen removal without use of tools.
  - 1. Supports: Spring-loaded steel pins; four per screen unit.
  - 2. Screen Mesh: Vinyl-coated fiberglass preferred or window manufacturer's high-transparency mesh.
  - 3. Frame Finish: Baked enamel or manufacturer series standard(color to be determined by Architect or project Engineer via submittal)
- F. Operable Sash Weatherstripping: Wool pile; permanently resilient, profiled to effect weather seal.
- G. Fasteners: Stainless steel.
- H. Sealant and Backing Materials:
  - 1. Perimeter Sealant: Appropriate for application.
  - 2. Sealant Used Within System (Not Used for Glazing): Appropriate for application.
- I. Wood for Casings and Trim: Clear pine or Fir, clear preservative treated, of type suitable for required finish.
  - 1. Finger joints not permitted in transparent finished exposed surfaces.
- J. Flashing: Provide related flashings, with necessary anchors and attachment devices.
- K. Sealant for Setting Sills, Stools, Aprons, and Sill Flashing: Non-curing butyl type.

#### **2.04 PERFORMANCE REQUIREMENTS**

- A. Comply with AAMA/WDMA/CSA 101/I.S.2/A440 requirements for the specific window type in accordance with the following:
  - 1. Performance Class (PC): R.
  - 2. Performance Grade (PG): 30, with minimum design pressure (DP) of 30.08 psf (1440 Pa).
- B. Overall Thermal Transmittance (U-value): 0.35, maximum, including glazing, measured on window sizes required for this project.
- C. Acoustic Performance: Minimum outdoor-indoor transmission class (OITC) rating of 38, when tested in accordance with ASTM E90 and ASTM E1332.

#### **2.05 HARDWARE**

- A. Locks and Pulls: To closely match existing style and finish.

#### **2.06 ALUMINUM 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. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44, electrolytically deposited colored anodic coating not less than 0.7 mils (0.018 mm) thick.
- C. Superior Performing Organic Coatings: AAMA 2605, multiple coat, thermally cured polyvinylidene fluoride system.
- D. Pigmented Organic Coatings: AAMA 2603, polyester or acrylic baked enamel finish.
- E. Color: To be determined from manufacturer full line of standard colors by Architect or Engineer.
- F. Touch-Up Materials: As recommended by coating manufacturer for field application.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify wall openings and adjoining water-resistive barrier materials are ready to receive wood windows

### **3.02 INSTALLATION**

- A. Install windows in accordance with manufacturer's instructions.
- B. Install windows in accordance with ASTM E2112.
- C. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- D. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- E. Set sill members and sill flashing in continuous bead of sealant.
- F. Neatly, apply window and door moderate expanding urethane spray foam in cavity between window frames and wall framing around perimeter of windows. Foam applicator straw should extend to interior surface of exterior wall sheathing to apply foam directly to sheathings interior surface. Resulting perimeter seal around window shall be air-tight and concealed from view from building interior and exterior.
- G. Install operating hardware.
- H. When specified or otherwise required, Finish exterior window surfaces and trims with transparent or semi-transparent stain coating to match existing trim tone and seal with matte finish UV resistant polyurethane top coats(2).
- I. When specified or otherwise required, Finish interior surfaces with transparent stain to match existing interior wood tone and seal with precatylyzed lacquer coatings(2);

### **3.03 TOLERANCES**

- A. Maximum Variation from Level or Plumb: 1/16 inch per 3 ft (1.6 mm per m) non-cumulative or 1/8 inch per 10 ft (3.2 mm per 3 m), whichever is less.

### **3.04 FIELD QUALITY CONTROL**

- A. DNR Field Engineer required to inspect installation of windows prior to installing interior and exterior trims.
- B. See Section 014000 - Quality Requirements for independent field testing and inspection requirements, and requirements for monitoring quality of specified product installations.
- C. Provide field testing of installed wood windows by independent laboratory in accordance with AAMA 502 and AAMA/WDMA/CSA 101/I.S.2/A440 during construction process and before installation of interior finishes.
  - 1. Field test for water penetration in accordance with ASTM E1105 using Procedure B - cyclic static air pressure difference; test pressure shall not be less than 1.9 psf (91 Pa).
  - 2. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 6.27 psf (300 Pa).
- D. Repair or replace fenestration components that have failed designated field testing, and retest to verify performance complies with specified requirements.

### **3.05 ADJUSTING**

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

### **3.06 CLEANING**

- A. Remove protective material from factory finished surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.

### **WINDOW SCHEDULE**

**Window A (Qty. 4 per cabin):** (2)3046 Single-Hung (Operable) – Replicate Muntins with similar SDL's at exterior and interior at all window locations. Include SDL's in all single-hung windows.

**Window B (Qty. 1 per cabin):** 3224 Picture Window (Non-Operable) - Replicate Muntins with similar SDL's at exterior and interior at all window locations. Include SDL's in all picture windows.

**Window C (Qty. 1 per cabin):** 2832 Picture Window (Non-Operable) - w/obscure privacy glass @ exterior IGU pane. Exterior SDL's only and only where existing.

**END OF SECTION**