1 GENERAL

1.01 RELATED REQUIREMENTS

.1 Division 1 – General Requirements

.2 Section 04 03 07 Historic – Masonry Repointing

.3 Section 09 03 61 Historic Repainting

1.02 REFERENCES

.1 CSA International
  .1 CSA-A440-00/A440.1- (R2005, Windows/Special Publication A440.1-00, User Selection Guide to CSA Standard A440-00,
  .2 CAN/CSA-Z809-08, Sustainable Forest Management.
  .3 CAN/CGSB-11.3-M87 - CSA Standards for Wood Adhesives

.2 AWMAC – Quality Standards for Architectural Woodwork, 1991.

.3 NHLA, National Hardwood Lumber Association

.4 NLGA, National Lumber Grades Authority, Standard Grading Rules for Canadian Lumber

1.03 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Shop Drawings:
  .1 Indicate materials and details in full size scale for head, jamb and sill, profiles of components, interior and exterior trim, elevations of unit, anchorage details, description of related components and exposed finishes and caulking. Indicate location of manufacturer's nameplates.

.3 Submit samples of wood and hardware for review. Sample species and details of profiles and sizes in conformance with historic fabric and drawings.

1.04 QUALITY ASSURANCE

.1 Use only Contractors competent to meet all performance criteria specified.

.2 Mock-up the following conditions
  .1 Epoxy skim coat of window frame
  .2 Wood Dutchman repair of a wood jamb or head.

1.06 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product.

.2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.

.3 Storage and Handling Requirements:
.1 Store materials indoorsand in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
.2 Store and protect windows from nicks, scratches, and blemishes.
.3 Replace defective or damaged materials with new.

2 PRODUCTS

2.01 MATERIALS

.1 Materials:

.2 Frame: Solid wood, clear pine: to National Lumber grades Authority requirements, with maximum moisture content of 7%. CAN/CSA-Z809.

.3 Adhesive: Glue for wood furniture and assemblies: CSA 0112.4-M, polyvinyl adhesive.

.4 Epoxy for wood repairs: Resin, slow hardener and microfibers filler. All components to be sourced from a single manufacturer.

.5 Putty for wood repair and window glazing: Maximum setting time of 48hrs.

.6 Glass: Existing to be cleaned and reused.

.7 Interior and Exterior sills: type and size as detailed, complete with jamb drip deflectors.

.8 Sealants:
.1 VOC limit 250 g/L maximum to SCAQMD Rule 1168.

.11 Window Hardware – 1 complete set to be provided for each interior window Type B and D.
.1 Latch – surface mounted, cast and polished brass with a steel retaining bolt and wash securing the handle. Surface mounted strike.
.2 Hinges – 75mm length, 2 per window, brass finish, no-mortise hinge.

.12 Refer to section 09 03 61 Historic Repainting for painting requirements.

2.02 WINDOW TYPE AND CLASSIFICATION

.1 Types:
.1 Type A and C - Fixed (exterior): With single pane glass.
.2 Type B - Casement (interior): With single pane glass.
.3 Type D – Awning (interior): With single pane glass.

2.03 FABRICATION

.1 General Workmanship

.1 Fabricate and install work in accordance with best practice by skilled

craftsmen of companies specializing in work specified and to requirements of other trades. Each item shall be as indicated on Drawings and as detailed on shop drawings.

.2 If duplicate profiles found in existing historic material on site or shown in architectural drawings, obtain custom cutters or otherwise arrange to produce an exactly matching profile at no additional cost to the Departmental Representative.

.3 Machine dressed work shall be slow fed using sharp cutter and finished work shall be free from drag, feathers, slivers or roughness of any kind. Remove machine marks by sanding.

.4 In finished work machine sand exposed surfaces in shop and hand sand on job to even smooth surfaces, free from scratches, ready for finishing.

.5 Frame materials with tight joints rigidly held in place. Use glue blocks where necessary.

.6 Accurately scribe, cope and mitre members where required.

.7 Finished woodwork shall be free from bruises, blemishes, mineral marks, knots, shakes and other defects and shall be selected for colour, grain and texture.

.8 Be responsible for methods of fabrication and for ensuring that materials are rigidly and securely attached and will not be loosened by installation of items on Site or by work of other trades.

.9 Take field dimensions and fabricate work to suit field dimensions.

.10 Check access clearance at Site before assembling large units or components in factory for shipment to work.

.11 Refer to glue manufacturer's recommendations for lumber moisture content, glue shelf life, pot life, working life, mixing, spreading, assembly time, time under pressure and ambient temperature. Glues shall be waterproof and of type suitable for work to be joined.

.2 Dutchman Repairs

.1 Survey the windows and the scope of work and identify work to be performed and deviations from the Contract Documents and report and review these with the Departmental Representative. As part of base bid assume that 25% of each frame will require Dutchman repair.

.2 Where existing sealant abuts wood to be removed, sealant bead shall be cut out for full depth and cleaned away from wood and adjacent abutting surfaces. Cleaning of sealant residue from historic masonry shall be performed by a qualified restoration craftsman.

.3 Sand wood to bare material within an area of a minimum of 200mm around the area under repair.

.4 Remove and cut out unsound wood.

.5 Carefully score with sharp utility knife and cut out deteriorated wood for full depth of element with neat, plumb and true vertical and horizontal cuts meeting at square corners. Cuts cannot cause splintering of adjacent surfaces.

.6 Remove debris from cracks and clean wood using pressurized air and vacuums. Sand surfaces if size of joints permits it.

.7 Wipe down area to remove grease, dust and other debris that will interfere with the bond of repair material to wood.

.8 Dry set wood Dutchman repair into the prepared cut out to confirm alignments of surfaces and consistency of profiles, sizes etc.

.9 Apply to the cut edge of the host wood and those of the wood dutchman repair with adhesive conforming to he manufacturers' requirements. Clamp, wedge and brace the repair using means specified by the adhesive manufacturer for the required time to achieve a durable bond impervious to the entry of water. Remove excess adhesive immediately from the repair.

.10 Mechanically fasten the dutchman in place using wood dowel with minimum 25mm embedment into host wood. Dowel diameter to be 8mm minimum..

.11 Bracing and clamping methods cannot damage adjacent wood and masonry elements.

.12 After adhesive has cured, sand the repair and adjacent wood surfaces to a consistent smooth finish in preparation for painting.

.3 Putty Repairs

.1 Survey the windows and the scope of work and identify work to be performed and deviations from the Contract Documents and report these to the Departmental Representative. As part of base bid assume that putty repairs will be required to 15% of window frames. Remove and cut out unsound wood at deep checks, unstable prior epoxy repairs, and cracks in existing wood element back to sound material.

.2 Sand wood to repaired and adjacent wood surfaces to bare material within an area of a minimum of 200mm around the area under repair.

.3 Remove debris and former epoxy and other repair material from cracks and clean wood using pressurized air and vacuums. Sand surfaces if size of joints permits it.

.4 At shallow cracks and checking, use sharp tools to remove build-up of accumulated paint and epoxy and other repair material and expose bare wood.

.5 Wipe down area to remove grease, dust and other debris that will interfere with the bond of repair material to wood.

.6 Where skim coat is required, entire surface of wood shall be sanded to bare wood prior to epoxy application.

.8 Apply putty repair material as recommended by the manufacturer without cracking, shrinking and opening of the joint between wood and repair material.

.9 Putty shall be trowelled to a smooth finish prior to sanding.

.10 Sand repair when set to a smooth finish aligned with adjacent surfaces.

2.07 FINISHING

.1 See section 09 03 61 Historic Repainting. Finishing and refinishing of all window woodwork to be by the section unless otherwise determined by the General Contractor and pre-approved by the Departmental Representative.

2.08 HARDWARE

.1 Remove existing hardware. Patch and fill holes in accordance with Dutchman and putty repair instructions.

.2 Install new specified hardware as per the manufacturer’s instructions to ensure smooth operation.

3 EXECUTION

3.01 EXAMINATION

.1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's written instructions.
- .1 Visually inspect substrate in presence of Departmental Representative.
- .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied [and after receipt of written approval to proceed from Departmental Representative.

3.02 INSTALLATION

.1 Window installation General:

.1 Remove, salvage, reinstate, construct and install work as indicated on Contract Documents.

.2 Install work in accordance with best practice by skilled craftsmen specializing in work specified and to requirements of other trades. Each item shall be as indicated on Drawings and as detailed on shop drawings.

.3 Erect work plumb, level, square and to required lines.

.4 When installing items distribute to best overall advantage defects allowed in quality grade specified.

.5 Disinfect all existing wood to be salvaged for reuse or to remain in place in preparation for priming and painting.

.2 Prepare, use preservative treatments and co-ordinate painting with Section 09 03 61 Historic Repainting before installation of new elements.

.3 Sill installation:
.1 Install new wood sills with uniform wash to exterior, level in length, straight in alignment with plumb upstands and faces. Use one piece.
.3 Secure sills in place with anchoring devices located at ends joints of continuous sills and evenly spaced 600 mm on centre in between.

.4 Caulking:
.1 Seal joints between windows and window sills with sealant. Caulk between sill upstand and window-frame.
.2 Apply sealant in accordance with Section 07 92 00 - Joint Sealants. Conceal sealant within window units except where exposed use is permitted by Departmental Representative.

.5 Apply waterproofing membrane between masonry and restored window during installation.

3.03 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.04 PROTECTION

.1 Protect installed products and components from damage during construction.

.2 Repair damage to adjacent materials caused by window installation.

END OF SECTION