SECTION 08530 - WOOD WINDOW RESTORATION/REPLACEMENT

PART 1 - GENERAL

1.1 DESCRIPTION
A. This Section includes maintenance, repair and restoration, re-glazing and replacement of existing wood window assemblies as follows:
1. Removal, repair, restoration of existing wood window assemblies and reinstallation in the opening from which they were removed.
2. Repair and restoration of existing wood window assemblies which remain in place.
3. Removal of existing wood windows and installation of new factory glazed replacement wood window sash assemblies in existing window openings.
4. Removal, repair, restoration of existing wood window interior and exterior trim both in place and off site. Where trim is removed it shall be reintalled at it's original opening location.
5. Provision and installation of new interior and exterior window trim to match existing wood window trim at existing or new wood window assemblies.
6. Removal, repair, restoration of existing wood window screens and reinstallation in the opening from which they are removed.
7. Removal of existing wood windows screens and installation of new replacement wood window screens in existing window openings.
8. Removal and replacement of existing wood window anchors.
9. Re-glazing of existing wood window assemblies.
B. Related Sections:
1. Division 1 Section "Special Procedures for Historic Treatment"
2. Division 2 Section "Lead Paint Remediation"
3. Division 9 Section "Painting"

1.2 DEFINITIONS/REFERENCES
A. Basis-of-Design: The design is based on the product named. Subject to compliance with requirements, provide either the named product or comparable product, approved by the Architect prior to submission of bids, or by one of the other manubfacturers specified where a list of alternate manufacturers is provided for the item.
B. Reference: "Save your wood windows" by John Leeke. Available from www.HistoricHomeworks.com

1.3 SUBMITTALS
A. Written restoration program as required by Division 1 Section "Special Procedures for Historic Treatment"
1. Show sequence of window removal, transport, restoration and reinstallation work for each building with proposed dates for each step in the process.
2. Show proposed shut down dates for each interior space that will be required for removal and reinstallation procedures.
B. Written description (with drawings as required to provide a clear understanding) for protection of existing wood windows and frames from weather and intrusion.
C. Qualification Data: For restoration specialists, including field supervisors and restoration workers.
D. Manufacturer's Product Data: For each product indicated herein.
E. Shop drawings for each new window assembly type including a schedule showing dimensions, frame details and finish trim to existing walls.
1. Take necessary field dimensions and verify field conditions prior to preparing shop drawings for replacement members.
F. Shop drawings for replacement trim, and dutchman repairs for existing trim, and frame.
1. Replacement or dutchman members shall be fabricated to match existing profiles.
G. Full scale, 6" long by 3 1/2" wide by 1"(+/-) thick, sample of wood for dutchman repair, replacement window frames and replacement trim.
H. Manufacturer's product data for restoration glues and epoxy adhesives.

1.4 QUALITY ASSURANCE
A. Restoration Specialist Qualifications: Engage an experienced restoration and cleaning firm with a minimum of five years experience in millwork and carpentry restoration work on projects of similar size and shall have the capacity to produce items without causing undue delay to the approved project schedule. Firm shall have completed work similar in material, design, and extent to that indicated for this Project with a record of successful in-service performance.
1. At Contractor's option, work may be divided between two specialist firms: one for cleaning work and one for repair work.
B. At a window location selected by the Resident Engineer restore an existing window and frame trim using methods and materials of this Section and in accord with the approved plan of operations.
C. The work of this section shall comply with Architectural Woodwork Institute (AWI) "Architectural Woodwork Quality Standards", latest edition. Unless otherwise noted, work shall comply with Custom Grade".

1.5 DELIVERY, STORAGE, AND HANDLING
A. After window assemblies have been removed from their openings, wrap the assemblies in suitable plastic wrap to prevent the disbursement of paint particles in the air or onto adjacent surfaces. See Division 2 "Lead Paint Removal" Section. Package or crate the window assemblies to prevent wracking, warping or breakage of existing units and their glazing.
B. Store removed packaged window assemblies under cover and up off the ground in a secure location to prevent weather damage to, or theft of, assemblies.
C. Transport removed packaged window assemblies to restoration facility as required so as to avoid breakage, weather damage or theft of assemblies.
D. Package restored window and screen assemblies to be delivered to site for installation in their original openings as required to prevent wracking, warping, breakage or theft during transport and deliver to a designated storage facility approved by the Resident Engineer.
E. The Contractor shall be responsible for the full cost of replacement, or additional restoration, required for removed or restored window assemblies due to damage or theft during removal, packaging, storage, transport or reinstallation operations carried out as a part of the Work of this Contract.

1.6 PROJECT CONDITIONS
A. Weather Limitations: Conform to the requirements of Division 1 Section "Special Procedures for Historic Treatment".
B. Visit the site; survey existing windows designated for restoration to verify types of repairs required by the Drawings, and any additional repairs not shown. Survey will be reviewed by the resident Engineer prior to beginning work.

1.7 COORDINATION
A. Coordinate removal, restoration, cleaning and reinstallation of existing wood window assemblies with public circulation patterns at Project site. Some work is near public circulation patterns. Public circulation patterns cannot be closed off entirely, and in places can be only temporarily redirected around small areas of work. Plan and execute the Work accordingly.

1.8 SEQUENCING AND SCHEDULING
A. Order replacement materials at earliest possible date to avoid delaying completion of the Work.
B. Perform restoration work in the sequence and on the dates indicated in the submitted and approved written restoration program. See "Submittals" Article above.

PART 2 - PRODUCTS

2.1 REPLACEMENT UNITS
A. Basis-of-Design Product: Subject to compliance with the contract requirements, provide Kolbe & Kolbe "Traditional" double hung replacement sash kits with spring loaded block and tackle mechanical balances, double pane 'Cutlite' 1/2" LoE insulating glass with aluminum grilles between the panes and wood grilles at the interior and exterior faces to match existing muntin patterns, factory prefinished natural cotton on the exterior and primed on the interior for field painting, brass colored sash locks and keepers or a product approved as an equal during the bid period.

2.2 REPLACEMENT GLASS
A. ASTM C1036, Type 1, Class 1, Quality q3, 1/8" (3mm) thickness clear glass.
B. Size: match lite sizes of existing window openings.
C. Safety Glass: Provide ASTM C1048, Kind HS, Condition A, Type I, Class 1, Quality q3, thickness determined by muntin rabbet available.
1. Provide safety glass in all locations required by applicable building and fire codes.

2.3 NEW & REPLACEMENT SCREEN FABRIC
A. Match existing screening on building as follows:
1. Glass-Fiber Mesh Fabric: Charcoal gray 18-by-14 mesh of PVC-coated, glass-fiber threads; woven and fused to form a fabric mesh resistant to corrosion, shrinkage, stretch, impact damage, and weather deterioration complying with ASTM D 3656.
2. Aluminum Wire Fabric: Black 18-by-18 mesh of 0.011-inch diameter, coated aluminum wire.

2.4 WEATHERSTRIPPING
A. Woven-pile sliding type weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric with weather fin complying with AAMA 701/702.

2.5 WOOD
A. Replacement or dutchman sections of frames and trim shall be White Pine (Idaho), select stock, "B or Better Grade" where frame is painted.
B. Replacement or dutchman section of frames and trim shall be clear vertical grain fir, select stock where frame is naturally finished.

2.6 WOOD PRESERVATIVES
A. Commercially available product complying with National Wood Window & Door Association (NWWDA)I.S.4.

2.7 FASTENERS
A. Fasteners for restoration and reinstallation shall be non-ferrous.

2.8 EPOXY WOOD FILLER
A. "WoodEpox", by Abatron, Inc., Gilberts, Ill, or approved equal, manufactured for painted window and screen frames.

2.9 ADHESIVES
A. Non-staining, waterproof, resorcinol type, CS-35, Type I.

PART 3 - EXECUTION

3.1 PROTECTION
A. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from harm resulting from restoration work.
B. Erect temporary protective covers over walkways and at points of pedestrian and vehicular entrance and exit that must remain in service during course of restoration and cleaning work.
C. Comply with chemical-cleaner manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent chemical cleaning solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
D. Cover adjacent surfaces with materials that are proven to resist chemical cleaners used unless chemical cleaners being used will not damage adjacent surfaces. Use materials that contain only waterproof, UV-resistant adhesives. Apply masking agents to comply with manufacturer's written instructions. Do not apply liquid masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.
E. Keep walls wet below area being cleaned to prevent streaking from runoff.
F. Do not clean exterior building surfaces during winds of sufficient force to spread cleaning solutions to unprotected surfaces.
G. Do not clean interior building surfaces without adequate ventilation to remove cleaning agent odors from the space.
H. Neutralize and collect alkaline and acid wastes for disposal off Owner's property.
I. Dispose of runoff from cleaning operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.

3.2 SCAFFOLDING
A. Use a trained scaffolding contractor licensed to provide and install exterior scaffolding in conformance with all applicable safety requirements.
B. Clear ground area of shrubs and similar low landscape items as required. Do not remove trees. Tree limbs may, with the approval of the Resident Engineer, be cut back or removed when they prevent the only feasible construction staging access to window restoration and replacement locations on the building facade.
C. Scaffolds may be attached to the building face when approved by the Resident Engineer and under the following conditions:
1. Attachment locations at brick and stone building facades shall be limited to mortar joints only. Do not attach scaffolding into the face of brick or stone elements.
2. All attachment devices shall be removed when the scaffold system is taken down.
3. Patch attachment holes at mortar joints per Division 4 Section "Masonry Restoration"
4. Attachment locations at wood siding shall be located in the center 1/3 of siding width.
5. Patch attachment holes at wood siding with solid fir dowels of same diameter as the hole and set with exterior grade glue so that the top of the dowel is flush with the surface of the siding. Patch, sand and prepare the plug for repainting so that, in the opinion of the Resident Engineer, the repair is not visible to the eye at a maximum distance of twenty feet from the building face.
D. Once scaffolding is removed engage a professional licensed landscape firm to replace the removed items with plantings of the same type and quantity that are capable of attaining a size at least half that of the removed item within four years of growth.

3.3 UNUSED ANCHOR REMOVAL
A. When window assemblies are removed from their openings, remove anchors, brackets, nailers, and other extraneous items no longer in use or required unless identified as historically significant or indicated to remain.
1. Remove items carefully to avoid spalling or cracking wood window frames and trim.
2. If a metal item cannot be removed without damaging surrounding assemblies, do the following:
a. Cut or grind off item as close as possible to the face of surrounding wood materials. Core drill or hand chisel out a recess in surrounding materials as close around the item as practical.
b. Immediately paint exposed end of metal items with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended dry film thickness per coat. Keep paint off sides of recess.
3. Patch and Plug the hole where each item was removed with solid plugs matching the surrounding materials unless directed by Resident Engineer to remove and replace the whole piece of surrounding material.

3.4 WINDOW REMOVAL AND REPLACEMENT
A. See Division 2 Section "Lead Paint Remediation" for listing of window assemblies with, and required treatment for, lead paint.
B. Removal and replacement of existing wood windows shall conform to the sequence, and on the dates indicated, in the submitted and approved written restoration program. See "Submittals" Article above.
C. Wherever possible, only remove window sash assemblies leaving frame assemblies for in-place restoration.
D. Where they occur, remove window frames that have deteriorated or are damaged beyond repair. Carefully demolish or remove entire units, as required by their existing condition at the time of start of work, including wood interior and exterior trim, from perimeter joint to perimeter joint, without damaging surrounding finish materials, substrate or trim.
E. Support and protect remaining materials that surround removal area as required to assure structural stability of the building wall. Maintain flashings, lintels, headers and adjoining construction in an undamaged condition.
F. Provide temporary weather and security closure, as approved by the Resident Engineer, at openings that remain to prevent weather intrusion and unauthorized access to interior space.
1. At the contractor's option, removal and replacement of wood windows may be scheduled so that both removal and installation of replacement windows operations both occur on the same day.
G. Notify Resident Engineer of unforeseen detrimental conditions including voids, cracks, bulges, and loose components in existing wall construction to remain.
H. Clean the surrounding area by removing scraps, dust, loose particles and debris in preparation for installation of new window assemblies.
I. Replace adjacent wall construction damaged during window and trim removal operations with new construction matching existing wall components in material types, function, load bearing capacity (where applicable), spacing, size, pattern and finish.
J. Set restored, or replacement, windows so that they completely fill the existing opening. Install new matching, or reinstall existing restored, trim in the same relationship to the window as that which existed prior to window removal. Replace existing anchors with new anchors of size and type recommended by window assembly manufacturer or that match removed anchors and brackets in size, type and function.
K. Prepare restored or replacement window assemblies and associated trim for painting as required by Division 9 Section "Painting".

3.5 CLEANING EXISTING WINDOWS IN PLACE
A. See Division 2 Section "Lead Paint Removal" for listing of window assemblies with, and required treatment for, lead paint.
B. Proceed with cleaning in an orderly manner; work from top to bottom of each window. Ensure that dirty residues and rinse water will not wash over cleaned, dry surfaces.
C. Use only those cleaning materials and methods indicated in Contractor's approved restoration plan.
D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging surfaces.
E. Chemical-Cleaner Application Methods: Apply chemical cleaners to window surfaces to comply with chemical-cleaner manufacturer's written instructions; use brush or spray application. Do not allow chemicals to remain on surface for periods longer than those indicated or recommended by manufacturer.
F. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.
G. After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.

3.6 PAINT REMOVAL
A. See Division 2 Section "Lead Paint Removal" for listing of window assemblies with, and required treatment for, lead paint.
B. Paint Removal with Solvent-Type Paint Remover:
1. Remove loose and peeling paint using low-pressure spray, scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
2. Apply thick coating of paint remover to painted wood with natural-fiber cleaning brush, deep-nap roller, or large paint brush.
3. Allow paint remover to remain on surface for period recommended by manufacturer. Agitate periodically with stiff-fiber brush.
4. Rinse with cold or hot water as recommended by paint remover manufacturer applied by low-pressure spray to remove chemicals and paint residue.
C. Paint Removal with Scraper:
1. See Division 9 Section "Painting"

3.7 WOOD WINDOW RESTORATION
A. See Division 2 Section "Lead Paint Remediation" for listing of window assemblies with, and required treatment for, lead paint.
B. Remove existing extraneous nails, staples, screws, hooks and other hardware not required for window and screen installation or function.
C. If necessary, remove existing original window, screen and trim from frame for repairing.
D. Protect existing openings and frames from weather and unauthorized intrusion during repairs. See Division 1 Section "Historic Treatment Procedures".
E. Scrape loose paint from frame and window if painted. Brush frame and sash with stiff bristle brush to remove dust and dirt. If window has multiple coats of paint which hinders determining the condition, strip paint with paint stripper to bare wood. See Division 9 Section "Painting" for stripper.
F. Remove existing glass from individual lites. See "Re-glazing" Article below for re-glazing requirements. Store removed glass for reuse or dispose of existing glass that is not listed for reuse.
G. Replace deteriorated members of window frame using dutchman repairs. If frame member is thoroughly deteriorated or missing, replace entire section or frame with new construction matching the original in dimension, detail and finish.
H. Use half lap type joints for dutchman repairs. Glue and screw to secure dutchman in place.
I. Tighten open joints with adhesive and, if painted, finishing nails properly countersunk. Fill joints that cannot be closed without complete dismantling of window or frame, and rebuild small gouges, dents, and missing portions with epoxy filler.
J. See "Re-glazing" Article below. for installing new glass in restored window frames.
K. Paint completed window reconditioned assembly per Division 9 Section "Painting".

3.8 WOOD WINDOW RE-GLAZING
A. Chisel out old glazing putty using a stiff putty knife, chisel or putty chaser. Do not push tool on edge of glass; work against the wood muntins and frame instead.
B. Carefully remove glazing putty to expose existing glazing points; pry out points to release glass in frame.
C. Remove existing paint. See Division 2 Section "Lead Paint Remediation" for paint removal requirements where lead paint is present.
D. Clean the wood rabbet down to the bare wood. Brush out rabbets with stiff bristle brush to remove dust and dirt.
E. Examine muntins and frame for deterioration or damage and repair or replace sections as required to restore frame to full use.
F. Apply one (1) coat of linseed oil to cleaned frame and let dry completely before completing re-glazing operation.
G. Cut new glass 1/8" smaller in both dimensions than the sash opening and install with new glazing points and putty.
H. Apply putty around perimeter of sash opening making sure to work putty so that there is a uniform thickness, depth and profile to the entire perimeter of the glass pane.
I. Paint sash per Division 9 Section "Painting"
1. For painted windows, treat unpainted wood surfaces with water repellent preservative. Apply 2 coats to surfaces. Allow 24 hours between coats, and 3 days prior to painting.
2. Where oil based paint is used, painting over glazing putty may be commenced immediately after putty installation.
3. Where oil based paint is not used, let putty dry seven calendar days before application of paint.
4. Paint over entire putty surface and run paint slightly onto glass in a neat straight line to assure a full watertight seal around the glass perimeter.
J. Where sash re-glazing occurs off site package and crate sash as required and transport to site for reinstallation.

3.9 WINDOW SCREEN RESTORATION
A. See Division 2 Section "Lead Paint Removal" for required treatment for lead paint.
B. Remove existing extraneous nails, staples, screws, hooks and other hardware not required for screen installation or function.
C. Remove screen assembly, package and transport to restoration facility in conformance with approved written restoration plan.
D. Remove existing paint per "Paint Removal" Article above.
E. Carefully remove screen restraint beads and screen fabric. Restore beads without cracks or splits. Provide new beads of matching shape and wood to replace beads that are cracked or split.
F. Square and tighten existing frames. Replace frame sections that are deteriorated beyond repair with new sections matching shape, dimension and wood of removed sections.
G. Paint restored frame. Install new screeningas specified above, with restored or new restraint beads. Reinstall screen frame hardware in original locations to match those on restored window frames.
H. Package and transport restored screens to site for reinstallation in original locations.

3.10 RESTORED WINDOW AND SCREEN REINSTALLATION
A. Reinstall restored window assembly in restored supporting frame.
B. Reinstall existing operating hardware, or install new to replace existing, after painting or finishing of sash and frame has been completed. See Division 9 Section "Painting" for paint finish. Secure all hardware with brass wood screws.
C. Reinstall windows in a true and plumb position, matching original tolerances, or with 1/8" clearance at head and jamb. Reuse existing hardware.
D. Install existing reconditioned wood interior and exterior trim.
E. Where relocating window hardware is required, repair former hardware locations with solid or veneer stock to match existing frame. Finish to match original.
F. Reinstall restored window screens.
G. Install new, or reinstall existing, storm windows.

3.11 FINAL CLEANING
A. After wood window and screen restoration has been completed and window re-installed, thoroughly clean exposed surfaces of foreign matter; use stiff-nylon or fiber brushes, and clean water, spray applied at low pressure.
1. Do not use metal scrapers or brushes.
2. Do not use acidic or alkaline cleaners.
B. Wash adjacent woodwork and other adjacent non-window surfaces. Use detergent and soft brushes or cloths.
C. Wash window glass with an approved glass cleaner.
D. Sweep and rake adjacent pavement and grounds to remove construction dust and debris. Where necessary, pressure wash pavement surfaces to remove dust, dirt, and stains resulting from window restoration scope of work.

END SECTION 08530 - WOOD WINDOW RESTORATION

REVISIONS | DATE

CAD FILE NAME:

XREF FILE NAME:

DRAWING TITLE: SEC.08530: WOOD WINDOWS

PROJECT TITLE: PAINT AND REPAIR PHASE III

DATE: 02/01/2012

PROJECT NO.: 531-09-104

APPROVED: DIVISION CHIEF

APPROVED: SERVICE DIRECTOR

BUILDING NUMBER: ---

CHECKED

DRAWN

LOCATION: VAMC BOISE, IDAHO

DRAWING NO.: TS-8.1

DWG. 27 OF 29

DEPARTMENT OF VETERANS AFFAIRS