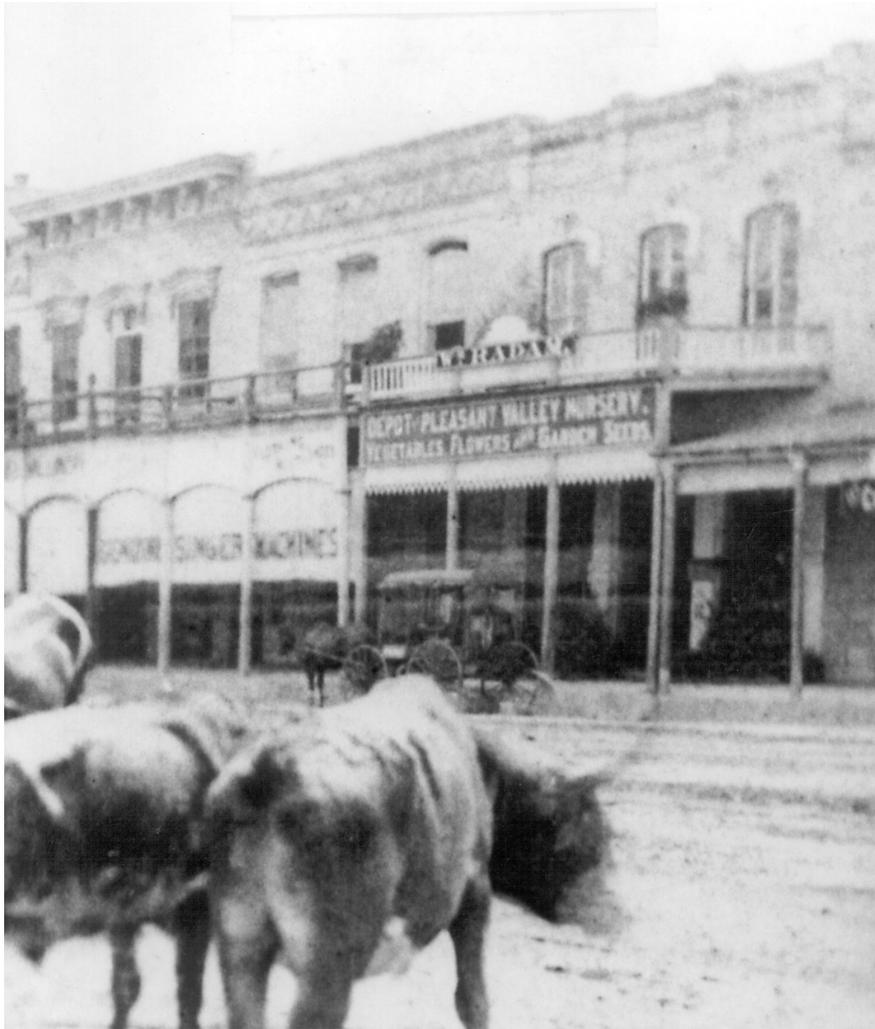


Specifications for  
Historic Façade Related Work for  
911 Congress Avenue



Hatch Partnership Architects  
June 03, 2010

# **The Restoration of the Facades of 911 Congress Avenue**

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**SECTION 01010 - SUMMARY OF THE WORK****PART 1 - GENERAL****1.01 Summary**

The restorations of and additions to the façades of 911 Congress Avenue will fall into three phases.

**Phase One** – Includes the careful deconstruction of the facades of 911 Congress. The Austin Common Brick materials will be reused according to the specifications and all excess Brick will be cleaned and stored for future use. All window and door systems will be carefully removed to be used as reference for construction of new windows and doors.

**Phase Two** – Includes the careful reconstruction of the facades of 911 Congress Avenue per architect's drawings and specifications.

**Phase Three** – Will include the construction of the remainder of the project which includes the third and fourth floor facades.

The General Conditions of the Contract, Supplementary Conditions, and General Requirements as listed in Division 1 apply to all Specification sections and the Contractor shall consult them in detail for instructions pertaining to the various portions of the Work.

**1.02 Work Covered by Contract Documents**

General:

The Work under this Contract shall include all labor, materials, equipment, and services required to complete construction of the facilities in accordance with the drawings and specifications, and in compliance with all applicable codes, regulations and City of Austin Landmark Commission approvals. All work will also be in compliance with the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings.

Contractor's duties:

Unless specifically noted otherwise, the Contractor shall provide and pay for the following:

- Labor, materials, and equipment
- Tools, construction equipment, and machinery
- Other facilities and services necessary for proper execution and completion of the Work
- Notify Architect of any unique construction elements discovered during demolition

Permits, Fees, and Notices:

Contractor shall secure and pay for, as necessary for proper execution and completion of the Work, all permits, government fees, and licenses as described in Division 0. Contractor shall also give all required notices.

**1.05 Work by Others**

Any work performed by other contractors shall be coordinated by the General Contractor to assure smooth performance of the work and timely completion of the various components. Work by other contractors shall be coordinated and supervised by General Contractor for quality control.

**1.06 Contractor Use of Premises**

Confine operations at site to areas permitted by law, permits, ordinances, and Contract Documents. Coordinate use of premises under direction of the Architect and Owner. Do not unreasonably encumber site with materials or equipment. Do not load structure with weight that will damage or endanger the Work. Assume full responsibility for protection and safekeeping of products stored on premises. Move any stored products which interfere with operations of Owner. Obtain and pay for use of additional storage or work areas needed for operations. Maintain public and fire department access to adjacent properties at all times. Any use of the existing site and facilities other than the areas specifically indicated for construction purposes shall be coordinated in advance with Owner's agent.

**1.07 Coordination**

Coordinate Work of the various specification sections to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed by others, and at a later date, with particular focus on excavation related work.

In the event other contractors are doing work in the same area simultaneously with this project, the Contractor shall coordinate his proposed construction with that of the other contractors.

Verify that characteristics and elements of interrelated operating equipment are compatible; coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service such equipment.

Coordinate space requirements and installation of mechanical and electrical Work which are indicated diagrammatically on drawings. Follow routing shown for pipes, ducts, and conduits as closely as practicable; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

Piping and conduit interference shall be resolved by giving precedence to pipelines which require a stated grade for proper operation.

In finished areas, conceal pipes, ducts and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.

In areas to be demolished insure complete protection from weather during reconstruction.

**PART 2 - PRODUCTS** Not Used

**PART 3 - EXECUTION** Not Used

**END OF SECTION**

## **SECTION 01015 - ENVIRONMENTAL PROTECTION GUIDELINES**

### **PART 1 - GENERAL**

#### **1.01 Summary**

The Contract Documents and Specifications have been developed with the intent of achieving a high level of sustainable design and construction. The underlying commitment to sustainable architecture and construction practices shall be reflected in all aspects of the project. Value determinations for building elements and operational procedures are based upon considerations such as:

life cycle assessments (a “cradle to grave to reincarnation” process that evaluates environmental impacts throughout the stages of a building material’s life);

creating a job site with minimal impacts on the physical environment and is safe and healthy for those working on the project; and

energy saving criteria, such as the preference for materials and services from local, state or regional sources.

“Sustainability” themes and goals should inform not only the architectural considerations but also extend to on-site practices and procedures of the contractor and subcontractors. The Owner has established the following design and construction goals for the project:

1. **Improved indoor air quality** – through the use of non-toxic, non-volatile building and cleaning materials.
2. **Construction waste reduction** – through maximizing the efficiency of materials used, and through reuse, salvaging, and recycling.
3. **Increased building longevity** through durable materials and methods
4. **Maximize recycling** and reuse of masonry, framing materials, windows and disposal of demolition materials/construction waste.
5. **Water conservation** - efficient use of water resources and water reuse potential
6. **Preference for the use of least toxic materials**, including cleaning solutions
7. **Protect worker health**, including issues associated with material out gassing
8. **A preference for recycled-content materials**
9. **Avoidance of atmospheric ozone-depleting substances** in material content or as part of maintenance requirements
10. **Selection of materials with minimal packaging** that are reusable or recyclable
11. **Work practices that employ energy efficiently.**

The contents of this Section can be applied to virtually every section of these specifications. Each section should be examined to determine what are the sustainable options for materials and methods, using this section as a guideline. Many health and environmental improvements can be made at little or no extra cost to the Contractor or the Owner, and some even save money.

#### **1.02 Coordination**

The Architect will schedule and administer a pre-construction meeting with Steve Sadowsky with the City of Austin, General Contractor and all subcontractors to include general description of the sustainable building guidelines and the general commitment to historic restoration and sustainable architecture outlined herein. At that time, the Architect will prepare and distribute to each entity performing work at the project site a written memorandum of instructions on required coordination activities as they pertain to the restorations and additions to the Pease Mansion.

Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing the restoration activities and Environmental Protection Goals for the project.

The Contractor shall distribute copies of the Environmental Protection Goals to the Job Site Superintendent and each Subcontractor.

## **PART 2 - PRODUCTS**

### **2.01 Selection**

“Sustainability” material and performance goals have been established in the selection of the building and finish materials for the project. Standards for “sustainable” building and finish materials include:

1. Worker and occupant health issues associated with material outgassing
2. Favor recycled-content in the following order; post-consumer, post-industrial. Non-toxic industrial byproducts should also be favored.
3. Water-based rather than solvent based
4. Water soluble
5. Water cleanup, rather than solvent cleanup
6. Durable, low maintenance components and assembly
7. Use only domestic and imported woods that are certified “sustainably managed” for decorative and functional wood applications
8. Favor use of indigenous resources - wood species, regional stone, and brick
9. Specify low or non-VOC content for finishes, paints, adhesives, carpets, furnishings, furniture, cleaning compounds, reconstituted building materials
10. Avoid atmospheric ozone depleting substances in material content or as part of maintenance requirements
11. Favor durable, low maintenance material selections. Life cycle cost analysis should be employed.
12. Avoid materials from “old growth” forests unless certified sustainably managed
13. Select materials from manufacturers that have in-plant efficiencies in energy, recycling, and pollution control/minimization that are “state-of-the-art” or have significant recent improvements
14. Renewable material contents should be favored. Non-renewable materials should be from sources with “state-of-the-art” or significantly improved extraction management and site restoration
15. Material packaging should be minimal, durable, reusable or recyclable
16. Select materials that can be recycled readily in the following order - directly reusable, recyclable to another permanent use with minimal processing, recyclable to another permanent use with increased reprocessing (but less than virgin processing), compostable. Fuel uses (i.e. burning) are not considered recycling

### **2.02 Submittals/Substitutions**

The specifications herein have attempted to provide a listing of building materials which exemplify an efficient use of resources. While not necessarily representing typical current industry standards, these specifications refer to products that are currently on the market and available. Locating and securing these “environmentally friendly” products will, undoubtedly, require more initiative and persistence than typically required; lead-times may be longer and substitutions will be more difficult to locate. It is recommended that these factors be taken into account with regard to all bidding, scheduling and product submittals. The Architect and the Owner stand willing to assist the Contractor in meeting these sustainability goals.

It will be the Contractor’s responsibility to review shop drawings, product data, and samples prior to submittal to the Architect to ensure compliance with the sustainable building guidelines outlined herein. In cases of substitutions, the Contractor will bear the “burden of proof” guaranteeing that alternate products conform to those originally specified in material make-up , performance and with regard to laboratory

standards. A Material Safety Data Sheet (MSDS) will be a required for submittal for all alternate products during substitution.

### **PART 3 - EXECUTION**

#### **3.01 Required Construction Practices**

Required construction practices include:

1. Use trigger operated spray nozzles for water hoses to minimize water consumption.
2. Toxic substances such as pesticides and noxious cleaning products are forbidden unless specifically called for in the specifications.
3. Gasoline or diesel powered generators or equipment may not be placed inside a building at any stage of construction.
4. No construction debris may be disposed of on site unless it is organic matter approved for use as compost or mulch, or with explicit, advance approval of Owner.
5. Wet construction materials such as paints, glues, and sealants are to be scheduled and work completed prior to the installation of absorbent materials such as carpet, furniture, acoustic ceiling materials, and fabric.

#### **3.02 Recycling And Disposal**

There are many organic and inorganic waste resources generated at the construction site that can be reused in one form or another. On average, over 60%, the bulk of this waste is made up of dimensional lumber, drywall, masonry, tile, and waste from manufactured wood products. Cardboard, paper and plastic packaging, asphalt, fiberglass, metals and other miscellaneous materials make up most of the difference.

In addition to the recycling issues, the most important environmental considerations are protection of workers and surroundings from potentially toxic wastes. Consult local departments of health for information on removal and disposal of hazardous waste materials.)

Following are guidelines and resources for construction waste and recycling:

##### **1. What to Recycle**

Before recycling construction waste, identify what can be reused on the project and who will accept materials not to be reused. This is important in designating type of waste to separate, and in making arrangements for drop-off or delivery of material. In Austin, materials that can be recycled include:

- Cardboard and Paper
- Lumber and Plywood (in reusable form)
- Masonry (in reusable form or as fill)
- Metals
- Plastics - numbered containers, bags and sheeting
- Roofing (in reusable form)
- Windows and Doors

##### **2. Materials Separation**

Containers for material recycling must be set up on site and clearly labeled. Construction personnel must be trained in material sorting policy and bins must be monitored periodically to prevent waste mixing as a result of crews or passersby throwing trash into the bins.

Some materials will require bins or storage that protect from rain. Other bins may be locked to prevent tampering.

Contractor shall appoint a person with responsibility for monitoring the materials separation process to be sure that potentially recyclable materials are not rendered un-recyclable because of improper mixing.

### **3. Recycling and Waste Minimization Guidelines**

#### **3.1 Lumber -**

Store all lumber removed during demolition for possible reuse during construction.

Develop detailed layouts to avoid waste when ordering lumber;

Store lumber on level blocking under cover to minimize warping, twisting, and waste;

Set aside lumber and plywood/OSB cut-offs that can be used later as blocking, spacers in header construction etc.;

Save small wood scraps to use as kindling for clients or crew members (no treated wood);

Larger pieces of leftover lumber (6' or more in length) can be donated to local charity organizations, such as the Habitat for Humanity Re-Store in Austin;

Save clean sawdust for use in landscaping. Avoid sawdust that might contain painted or treated wood. This should be bagged separately. Untreated bagged sawdust may be donated to local Community Gardens or perhaps even be used at the site.

#### **3.2 Drywall -**

Order drywall in optimal dimensions to minimize cut-off waste;

Large drywall scraps can be set-aside during hanging for use as filler pieces as required;

Reuse joint compound buckets for tool or material storage by clients or crews.

#### **3.3 Masonry -**

During construction collect, stack, and cover masonry materials to prevent soiling or loss;

Clean concrete chunks, old brick, broken blocks, and other masonry rubble can be buried on-site during foundation back-filling;

Salvage usable bricks and other masonry materials from construction. Store for use on project.

Check to see if your masonry supplier will accept the return of materials in good condition.

#### **3.4 Metals and Appliances -**

During construction separate metals for recycling, including copper piping, wire and flashing; aluminum siding, flashing and guttering; iron and steel banding from bundles; nails and fasteners, galvanized flashing and roofing, and rebar;

Local Recycling centers at city landfills will accept metal waste.

#### **3.5 Cardboard and Paper -**

Avoid excessively packaged materials and supplies. However, be sure packaging is adequate to prevent damage and waste;

Separate cardboard waste, bundle and store in a dry place. Recycle.

#### **3.6 Rigid Insulation -**

Develop detailed layouts to avoid waste when ordering.

3.7 *Plastic and Vinyl -*

Trash bags and plastic sheeting can be recycled.

3.8 *Paints, Stains, Solvents, and Sealants -*

Donate unused portions to local charity organizations;

Save unused portions for your next job;

Any other unused materials should be taken to hazardous waste collection facility. Regulation of hazardous wastes with subcontractor is imperative. Contract with local sanitary landfill.

3.9 *Miscellaneous -*

Branches and trees from brush clearing can be stored separately and chipped by Owner at the site for use as landscaping mulch;

Old nickel cadmium batteries from portable power tools should be disposed of at a hazardous waste collection facility. Contract with local sanitary landfill.

Mortar mix, hardware, nails, screws and plumbing fittings and supplies are all accepted by local charity organizations.

**END OF SECTION**

**SECTION 04220 – MASONRY****PART 1 – GENERAL****1.1 DESCRIPTION**

Provide all labor, materials, equipment and services necessary for and incidental to the installation of limestone masonry, complete with reinforcement and anchorages, as shown or called for on the drawings.

**1.2 QUALITY ASSURANCE**

- A. Perform masonry work in accordance with requirements of ANSI A 41.4 unless indicated otherwise herein.
- B. When requested by Architect, provide evidence and test data confirming that masonry units conform to standards stated herein.

**1.3 SUBMITTALS**

- A. The masonry sub-contractor shall submit shop drawings that illustrate the construction of fireplaces and chimneys where applicable.
- B. Provide samples of each type of limestone masonry and each accessory item required including inserts, anchors reinforcement and grout. Provide certification of pull-out strength for all masonry ties and anchors.
- C. Erect a sample panel approximately 4 feet long by 6 feet high of each type of masonry showing stone pattern, colors, textures, bond, mortar, corner treatment and quality of work. Coordinate mortar colors with Architect prior to construction of sample panels.
- D. Submit complete shop drawings showing overall coursing, special shapes, anchorage, details and layout of expansion joints as required for all veneer treatments.

**1.4 REFERENCE STANDARDS**

- A. ASTM C 150 – Portland Cement
- B. ANSI A 41.1 – Building Code Requirements of Masonry

**PART 2 - PRODUCTS****2.1 MATERIALS**

- A. Masonry Units:

Provide arched coursing, as shown on Drawings over three openings at 911 Congress Avenue and flush Austin Common Segmental Arches over main entry doors and three windows at 909 Congress Avenue. Mortar joints to range from 3/8" to 5/8". Depth of joints to be coordinated in field with construction of mock-up. Intent is to have mortar joints match original joints.

- B. Reinforcement and Anchorages:
1. Horizontal galvanized ladder reinforcing.
- C. Mortar:
1. Perform work in accordance with requirements of ASTM C 476.
  2. Reference Standards:  
ASTM C 150 – White non-staining Portland Cement  
ASTM C 207 - Hydrated Lime for Masonry Purposes.  
ASTM Type K Mix – 1-3.10  
  
Mortar Materials: Portland Cement: ASTM C 150, normal Type I.
- D. Aggregates:
- Standard masonry type, ASTM A 144, clean dry and protected against dampness, freezing and foreign matter.
- E. Hydrated Lime:
- Conforming to requirements of ASTM C 207, Type S.
- F. Water:
- Clean and free from injurious amounts of oil, alkali, organic matter or other deleterious material.
- G. Mixing Mortar:
1. Thoroughly mix mortar ingredients in quantities needed for immediate use.
  2. Do not use anti-freeze compounds to lower the freezing point of mortar.
  3. Use mortar within two hours of mixing at temperatures over 80 degrees F, and two and one-half hours at temperatures under 50 degrees F.
  4. If necessary, re-temper mortar within two hours of mixing to replace water lost by evaporation. Do not re-temper mortar after two hours of mixing.
  5. No admixtures to mortar.
- H. Through-wall flashing:
1. AFCO Aluminum Fabric Flashing, .004" or .005" or approved equal.
  2. For flashing chimneys into tile roofs provide 16 ounce copper sheet flashing.

### PART 3 - EXECUTION

### 3.1 WORKMANSHIP AND INSTALLATION

Lay no masonry unless temperature is 40 degrees and rising or higher.

Do not shift or tap masonry units after mortar has taken initial set. Where adjustment must be made, remove mortar and replace.

Lay stones in full bed of mortar, properly jointed with other work.

Protect sills, ledges and offsets from mortar droppings or other damage during construction. Remove misplaced mortar or grout immediately.

Maintain clear cavity between stone and backing material as shown on drawings. Remove excess mortar and projections.

Form recessed mortar joints.

### 3.2 POINTING AND CLEANING

Pointing: At final completion of work, cut out any defective joints or holes in exposed masonry and re-joint with mortar, tooling to match adjacent joints.

Cleaning: Dry brush masonry surface after mortar has set at the end of each day and after final pointing. Clean exposed, unglazed masonry with stiff brush and clean water. Cleaning agents may be used only with written approval of the Architect. Cleaning agents must be tested on sample wall area of 20 sq. ft. Protect adjacent materials from damage due to cleaning.

### 3.3 JOB COMPLETION

Any masonry left over at the completion of masonry work should be offered to the Owner for future repair or construction work. Masonry that the Owner does not accept for future repair or construction work become the property of Contractor and should be removed from the site.

END OF SECTION 04220

**SECTION 06100 - ROUGH CARPENTRY****PART 1 - GENERAL****1.01 Summary**

Description:

Furnish all labor, materials, equipment, and services necessary for and incidental to the complete installation of all rough carpentry work including framing, furring, sheathing, blocking and backing, wood nailers, and any other items required to give suitable nailing or attachment for adjoining work. Include furnishing and installation of all rough hardware such as nails, bolts, washers, screws, etc.

Related sections:

Finish Carpentry, Section 06200  
Solid Surfacing, Section 06650  
Gypsum Board, Section 09250  
Wood Ceilings, Section 09570  
Toilet and Bath Accessories, Section 10800.

See Structural Drawings for specific information pertaining to pre-engineered wood trusses, glue laminated structural units, structural insulated panels and plate connected wood trusses.

**1.02 Quality Assurance**

Dimension and board lumber shall be identified by grade mark of the recognized grading association or of an independent lumber grading inspection agency authorized to grade the species. Lumber grading rules and wood species shall conform with voluntary Product Standard PS 20-70. Softwood plywood shall conform with standard PS 1-74, and hardwood plywood with PS 51-71. All lumber and plywood must be inspected, graded and marked.

**1.02 Applicable Standards**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

a) AMERICAN PLYWOOD ASSOCIATION (APA)

APA-01 (Mar 1991) Source List - Adhesives for APA Glued Floor System

APA Form E30 (Jun 1990) Design/Construction Guide, Residential and Commercial

b) AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 307 Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength

c) AMERICAN WOOD PRESERVERS' ASSOCIATION (AWPA)

AWPA C20 Structural Lumber - Fire-Retardant Treatment by Pressure Processes

AWPA C27 Plywood - Fire-Retardant Treatment by Pressure Processes

AWPA M4 The Care of Preservative-Treated Wood Products

- d) AMERICAN WOOD PRESERVERS BUREAU (AWPB)
  - AWPB LP 2 Softwood Lumber, Timber and Plywood Pressure Treated with Waterborne Preservatives for Above Ground Use
  - AWPB LP 22 Softwood Lumber, Timber and Plywood Pressure Treated With Waterborne Preservative for Ground Contact Use
- e) CALIFORNIA REDWOOD ASSOCIATION (CRA)
  - CRA-01 Standard Specifications for Grades of California Redwood Lumber
- f) DEPARTMENT OF COMMERCE (DOC)
  - DOC PS 1 Construction and Industrial Plywood
- g) FEDERAL SPECIFICATIONS (FS)
  - FS FF-N-105 Nails, Brads, Staples and Spikes: Wire, Cut and Wrought
- h) NATIONAL FOREST PRODUCTS ASSOCIATION (NFOPA)
  - NFOPA-01 National Design Specification for Wood Construction
  - NFOPA-02 Manual for Wood Frame Construction
- i) NATIONAL HARDWOOD LUMBER ASSOCIATION (NHLA)
  - NHLA-01 Rules for the Measurement & Inspection of Hardwood and Cypress Lumber
- j) NORTHEASTERN LUMBER MANUFACTURERS ASSOCIATION (NELMA)
  - NELMA-01 Standard Grading Rules for Northeastern Lumber
- k) SOUTHERN CYPRESS MANUFACTURERS ASSOCIATION (SCMA)
  - SCMA-01 Standard Specifications for Grades of Southern Cypress
- l) SOUTHERN PINE INSPECTION BUREAU (SPIB)
  - SPIB 1001 Grading Rules
- m) WEST COAST LUMBER INSPECTION BUREAU (WCLIB)
  - WCLIB Std 16 Standard Grading Rules for West Coast Lumber
- n) WESTERN WOOD PRODUCTS ASSOCIATION (WWPA)
  - WWPA-01 Western Lumber Grading Rules 91

#### **1.04 Submittals**

Submit to the Architect/Engineer for review the manufacturer's certificates attesting that lumber and material not normally grade marked or exempt from being grade marked meets the specified requirements.

Provide Shop Drawings prepared and sealed by a Professional Engineer for all pre-engineered framing members.

### **1.05 Product Delivery, Storage, and Handling**

Store materials off ground, and protected from weather. Seasoned materials shall not be stored in wet or damp areas, and sheet materials shall be protected from damage to corners and surfaces during handling.

## **PART 2 - PRODUCTS**

### **2.01 General**

#### **A. Sustainability Considerations**

All dimensional lumber and all sheet materials should be certified to come have come from sustainably managed and harvested sources. Contractor shall provide documentation of certification, or provide justification (which may address issues such as cost, availability, unsuitability for the intended purpose, etc.) for the failure to provide certified lumber. Acceptable certification institutions include:

Scientific Certification Systems, Inc., Oakland, California  
Smart Wood Certification Program, Rainforest Alliance, New York, New York

Known sources of certified wood include:

Home Depot  
Menominee Tribal Enterprises, Neopit, Wisconsin (Tel: 715-756-2287)  
A.E. Sampson & Son, Warren, Maine (Tel: 207-273-4000)  
EcoTimber International, Berkeley, California (Tel: 510-549-3000)  
Natural Forest Products, Burlington, Vermont (Tel: 802-865-1111)  
Freeman Corporation, Winchester, Kentucky (Tel: 606-744-4311)  
Collins Pine Company, Portland, Oregon (Tel: 503-227-1219)  
States Industries, Eugene, Oregon (Tel: 800-626-1981)

Additional information can be obtained from:

Certified Forest Products Council, Beaverton, Oregon (503-590-6600)  
Good Wood Alliance, Burlington, Vermont (Tel: 802-862-4448)

#### **B. Indoor Air Quality/Formaldehyde:**

Do not use wood products containing urea formaldehyde glues (interior grade plywood and particleboard) except where specified or approved by architect. Do not use such materials inside the shell of the building unless they are completely sealed.

### **2.01 Materials**

#### **A. Lumber:**

All lumber shall be sound, thoroughly seasoned, well manufactured, straight, and free from cup, twist, or warp that cannot be corrected by bridging or nailing. Framing lumber shall be No. 1 kiln-dried Southern Yellow Pine or better except where noted otherwise on the plans. Moisture content at time of installation shall be as follows:

Framing lumber - 19%  
Board lumber 8" or less in width - 19%  
Board lumber wider than 8" - 15%.

B. Pressure Treated Lumber:

Pressure treated lumber shall be used only where called for by the drawings or specifications. If there are applications where the Contractor believes that pressure treated lumber should be used in lieu of untreated lumber, then Contractor shall contact the Architect to discuss what lumber to use.

For above ground applications where the lumber will be protected from moisture exposure, use Borate Pressure treated lumber. For other applications where pressure treated lumber is called for, use CCA (chromated copper arsenate) pressure treated lumber.

Where pressure treated CCA lumber is used, workers should take precautions to avoid breathing sawdust, and sawdust shall be vacuumed or otherwise collected for disposal, and ground contact of sawdust shall be avoided.

G. Sub Roofing – 90# Modified Bitumen:

I. Fasteners:

Furnish all nails, anchors, hangers, bolts, shot fasteners, screws, etc., of proper types and sizes to support the work and to draw the members into place and hold them securely. All bolt heads and nuts bearing on wood shall have standard washers. Siding, trim to have galvanized fasteners.

## **PART 3 - EXECUTION**

### **3.01 General**

Examine areas to receive work, and verify dimensions in field. Do not begin work until unsatisfactory conditions have been corrected. Frame wood members to a close fit, set accurately to required lines and levels, and secure rigidly in place in accordance with the drawings and specifications.

Protect framing from moisture during construction. Allow framing to dry for as long as feasible before enclosing, to reduce conditions favorable to growth of mold. Construct framing assemblies to allow moisture to escape.

Adequately brace and protect partially completed work to assure structural stability and safety until work is completely framed and secure. Any finished work damaged due to inadequate protection during construction operations shall be repaired and/or replaced by the Contractor at no additional cost to Owner.

### **3.02 Installation/Erection**

- a) General: Members shall be closely fitted, accurately set to required lines and levels, and rigidly secured in place. Nailing shall be in accordance with the recommended Nailing Schedule as contained in NFOPA-02. Where detailed nailing and screwing requirements are not specified, size and spacing shall be sufficient to develop an adequate strength for the connection without splitting the members. Members shall be framed for passage of ducts and pipes shall be cut, notched, or bored in accordance with applicable requirements of NFOPA-02.

- b) Structural Members: Members shall be adequately braced before erection. Members shall be aligned and all connections completed before removal of bracing.
- c) Stripping, Nailers and Nailing Strips: Stripping, nailers and nailing strips shall be provided as necessary for the attachment of finish materials. Nailers and stripping used in conjunction with roof deck installation shall be installed flush with the roof deck system. Stacked nailers and stripping shall be assembled with screws spaced not more than 18 inches on center and staggered. Beginning and ending screws shall not be more than 6 inches from the end. Ends of stacked nailers and stripping shall be offset approximately 12 inches in long runs and alternated at corners. Anchors shall extend through the entire thickness of the nailer. Strips shall be run in lengths as long as practicable, butt jointed, cut into wood framing members when necessary, and rigidly secured in place.
- d) Wood Grounds: Wood grounds shall be provided as necessary for attachment of trim, finish, and other work. Grounds shall be run in lengths as long as practicable, butt jointed, and rigidly secured in place.
- e) Rough Bucks and Frames: Rough bucks shall be set straight, true, and plumb, and secured with anchors near top and bottom of each wood member and at intermediate intervals of not more than 3 feet. Anchors for concrete shall be expansion bolts, and anchors for masonry shall be 3/16-inch by 1-1/4 inch steel straps extending not less than 8 inches into the masonry and turned down 2 inches into the masonry. Rough bucks and frames shall be attached to steel and metal studs with screws of proper type and length.

### **3.04 Waste Management**

- A. Separate wood waste in accordance with the Waste Management Plan.
- B. Separate the following categories for salvage or reuse on site:
  - 1. Sheet materials larger than 2 square feet.
  - 2. Framing members larger than 16".
  - 3. Multiple off cuts of any size larger than 12".
- C. The following categories may be reused in the manufacture of particleboard or medium-density fiberboard:
  - 1. Composite wood (for example, plywood, LVL, I-Joist, parallel strand, MDF, particleboard)
  - 2. Clean dimensional lumber
- D. Set aside damaged wood for acceptable alternative uses; for example, use as bracing, blocking, cripples, or ties.
- E. Do not burn lumber that is less than a year old.
- F. Separate the following categories for disposal and place in designated areas for hazardous materials.
  - 1. Treated, stained, painted, or contaminated wood.
- G. Sequence work to minimize use of temporary HVAC to dry out building and control humidity.

### **END OF SECTION**

## SECTION 01015 -ENVIRONMENTAL PROTECTION GUIDELINES

### PART 1 -GENERAL

#### 1.01 Summary

The Contract Documents and Specifications have been developed with the intent of achieving a high level of sustainable design and construction. The underlying commitment to sustainable architecture and construction practices shall be reflected in all aspects of the project. Value determinations for building elements and operational procedures are based upon considerations such as:

life cycle assessments (a “cradle to grave to reincarnation” process that evaluates environmental impacts throughout the stages of a building material’s life);

creating a job site with minimal impacts on the physical environment and is safe and healthy for those working on the project; and

energy saving criteria, such as the preference for materials and services from local, state or regional sources.

“Sustainability” themes and goals should inform not only the architectural considerations but also extend to on-site practices and procedures of the contractor and subcontractors. The Owner has established the following design and construction goals for the project:

- 1 **Improved indoor air quality** – through the use of non-toxic, non-volatile building and cleaning materials.
- 2 **Construction waste reduction** – through maximizing the efficiency of materials used, and through reuse, salvaging, and recycling.
- 3 **Increased building longevity** through durable materials and methods
- 4 **Maximize recycling** and reuse of masonry, framing materials, windows and disposal of demolition materials/construction waste.
- 5 **Water conservation** -efficient use of water resources and water reuse potential
- 6 **Preference for the use of least toxic materials**, including cleaning solutions
- 7 **Protect worker health**, including issues associated with material out gassing
- 8 **A preference for recycled-content materials**
- 9 **Avoidance of atmospheric ozone-depleting substances** in material content or as part of maintenance requirements
- 10 **Selection of materials with minimal packaging** that are

reusable or recyclable

11 **Work practices that employ energy efficiently.**

The contents of this Section can be applied to virtually every section of these specifications. Each section should be examined to determine what are the sustainable options for materials and methods, using this section as a guideline. Many health and environmental improvements can be made at little or no extra cost to the Contractor or the Owner, and some even save money.

**1.02 Coordination**

The Architect will schedule and administer a pre-construction meeting with Steve Sadowsky with the City of Austin, General Contractor and all subcontractors to include general description of the sustainable building guidelines and the general commitment to historic restoration and sustainable architecture outlined herein. At that time, the Architect will prepare and distribute to each entity performing work at the project site a written memorandum of instructions on required coordination activities as they pertain to the restorations and additions to the Pease Mansion.

Contractor shall designate an on-site party (or parties) responsible for instructing workers and overseeing the restoration activities and Environmental Protection Goals for the project.

The Contractor shall distribute copies of the Environmental Protection Goals to the Job Site Superintendent and each Subcontractor.

## **PART 2 -PRODUCTS**

### **2.01 Selection**

“Sustainability” material and performance goals have been established in the selection of the building and finish materials for the project. Standards for “sustainable” building and finish materials include:

1. Worker and occupant health issues associated with material outgassing
2. Favor recycled-content in the following order; post-consumer, post-industrial. Non-toxic industrial byproducts should also be favored.
3. Water-based rather than solvent based
4. Water soluble
5. Water cleanup, rather than solvent cleanup
6. Durable, low maintenance components and assembly
7. Use only domestic and imported woods that are certified “sustainably managed” for decorative and functional wood applications
8. Favor use of indigenous resources -wood species, regional stone, and brick
9. Specify low or non-VOC content for finishes, paints, adhesives, carpets, furnishings, furniture, cleaning compounds, reconstituted building materials
10. Avoid atmospheric ozone depleting substances in material content or as part of maintenance requirements
11. Favor durable, low maintenance material selections. Life cycle cost analysis should be employed.
12. Avoid materials from “old growth” forests unless certified sustainably managed
13. Select materials from manufacturers that have in-plant efficiencies in energy, recycling, and pollution control/minimization that are “state-of-the-art” or have significant recent improvements
14. Renewable material contents should be favored. Non-renewable materials should be from sources with “state-of-the-art” or significantly improved extraction management and site restoration
15. Material packaging should be minimal, durable, reusable or recyclable
16. Select materials that can be recycled readily in the following order - directly reusable, recyclable to another permanent use with minimal processing, recyclable to another permanent use with increased reprocessing (but less than virgin processing), compostable. Fuel uses (i.e. burning) are not considered recycling

## **2.02 Submittals/Substitutions**

The specifications herein have attempted to provide a listing of building materials which exemplify an efficient use of resources. While not necessarily representing typical current industry standards, these specifications refer to products that are currently on the market and available. Locating and securing these “environmentally friendly” products will, undoubtedly, require more initiative and persistence than typically required; lead-times may be longer and substitutions will be more difficult to locate. It is recommended that these factors be taken into account with regard to all bidding, scheduling and product submittals. The Architect and the Owner stand willing to assist the Contractor in meeting these sustainability goals.

It will be the Contractor’s responsibility to review shop drawings, product data, and samples prior to submittal to the Architect to ensure compliance with the sustainable building guidelines outlined herein. In cases of substitutions, the Contractor will bear the “burden of proof” guaranteeing that alternate products conform to those originally specified in material make-up , performance and with regard to laboratory standards. A Material Safety Data Sheet (MSDS) will be a required for submittal for all alternate products during substitution.

## **PART 3 -EXECUTION**

### **3.01 Required Construction Practices**

Required construction practices include:

- 1 Use trigger operated spray nozzles for water hoses to minimize water consumption.
- 2 Toxic substances such as pesticides and noxious cleaning products are forbidden unless specifically called for in the specifications.
- 3 Gasoline or diesel powered generators or equipment may not be placed inside a building at any stage of construction.
- 4 No construction debris may be disposed of on site unless it is organic matter approved for use as compost or mulch, or with explicit, advance approval of Owner.
- 5 Wet construction materials such as paints, glues, and sealants are to be scheduled and work completed prior to the installation of absorbent materials such as carpet, furniture, acoustic ceiling materials, and fabric.

### **3.02 Recycling And Disposal**

There are many organic and inorganic waste resources generated at the construction site that can be reused in one form or another. On average, over 60%, the bulk of this waste is made up of dimensional lumber, drywall, masonry, tile, and waste from manufactured wood products. Cardboard, paper and plastic packaging, asphalt, fiberglass, metals and other miscellaneous materials make up most of the difference.

In addition to the recycling issues, the most important environmental considerations are protection of workers and surroundings from potentially toxic wastes. Consult local departments of health for information on removal and disposal of hazardous waste materials.)

Following are guidelines and resources for construction waste and recycling:

#### **1. What to Recycle**

Before recycling construction waste, identify what can be reused on the project and who will accept materials not to be reused. This is important in designating type of waste to separate, and in making arrangements for drop-off or delivery of material. In Austin, materials that can be recycled include:

- Cardboard and Paper
- Lumber and Plywood (in reusable form)

- Masonry (in reusable form or as fill)
- Metals
- Plastics -numbered containers, bags and sheeting
- Roofing (in reusable form)
- Windows and Doors

## **2. Materials Separation**

Containers for material recycling must be set up on site and clearly labeled. Construction personnel must be trained in material sorting policy and bins must be monitored periodically to prevent waste mixing as a result of crews or passersby throwing trash into the bins.

Some materials will require bins or storage that protect from rain. Other bins may be locked to prevent tampering.

Contractor shall appoint a person with responsibility for monitoring the materials separation process to be sure that potentially recyclable materials are not rendered unrecyclable because of improper mixing.

### **3. Recycling and Waste Minimization Guidelines**

#### *3.1 Lumber*

Store all lumber removed during demolition for possible reuse during construction. Develop detailed layouts to avoid waste when ordering lumber; Store lumber on level blocking under cover to minimize warping, twisting, and waste; Set aside lumber and plywood/OSB cut-offs that can be used later as blocking, spacers in

header construction etc.;

Save small wood scraps to use as kindling for clients or crew members (no treated wood); Larger pieces of leftover lumber (6' or more in length) can be donated to local charity organizations, such as the Habitat for Humanity Re-Store in Austin; Save clean sawdust for use in landscaping. Avoid sawdust that might contain painted or treated wood. This should be bagged separately. Untreated bagged sawdust may be donated to local Community Gardens or perhaps even be used at the site.

#### *3.2 Drywall*

Order drywall in optimal dimensions to minimize cut-off waste; Large drywall scraps can be set-aside during hanging for use as filler pieces as required; Reuse joint compound buckets for tool or material storage by clients or crews.

#### *3.3 Masonry*

During construction collect, stack, and cover masonry materials to prevent soiling or loss;

Clean concrete chunks, old brick, broken blocks, and other masonry rubble can be buried on-site during foundation back-filling; Salvage usable bricks and other masonry materials from construction. Store for use on

project. Check to see if your masonry supplier will accept the return of materials in good condition.

#### *3.4 Metals and Appliances*

During construction separate metals for recycling, including copper piping, wire and flashing; aluminum siding, flashing and guttering; iron and steel banding from bundles; nails and fasteners, galvanized flashing and roofing, and rebar;

Local Recycling centers at city landfills will accept metal waste.

#### *3.5 Cardboard and Paper*

Avoid excessively packaged materials and supplies. However, be sure packaging is adequate to prevent damage and waste;

Separate cardboard waste, bundle and store in a dry place.  
Recycle.

#### *3.6 Rigid Insulation*

Develop detailed layouts to avoid waste when ordering.

### *3.7 Plastic and Vinyl*

Trash bags and plastic sheeting can be recycled.

### *3.8 Paints, Stains, Solvents, and Sealants*

Donate unused portions to local charity organizations;

Save unused portions for your next job;

Any other unused materials should be taken to hazardous waste collection facility. Regulation of hazardous wastes with subcontractor is imperative. Contract with local sanitary landfill.

### *3.9 Miscellaneous*

Branches and trees from brush clearing can be stored separately and chipped by Owner at the site for use as landscaping mulch;

Old nickel cadmium batteries from portable power tools should be disposed of at a hazardous waste collection facility. Contract with local sanitary landfill.

Mortar mix, hardware, nails, screws and plumbing fittings and supplies are all accepted by local charity organizations.

**END OF SECTION SECTION 04220 – MASONRY**

## PART 1 – GENERAL

### 1.1 DESCRIPTION

Provide all labor, materials, equipment and services necessary for and incidental to the installation of limestone masonry, complete with reinforcement and anchorages, as shown or called for on the drawings.

### 1.2 QUALITY ASSURANCE

- A. Perform masonry work in accordance with requirements of ANSI A 41.4 unless indicated otherwise herein.
- B. When requested by Architect, provide evidence and test data confirming that masonry units conform to standards stated herein.

### 1.3 SUBMITTALS

- A. The masonry sub-contractor shall submit shop drawings that illustrate the construction of fireplaces and chimneys where applicable.
  - B. Provide samples of each type of limestone masonry and each accessory item required including inserts, anchors reinforcement and grout. Provide certification of pull-out strength for all masonry ties and anchors.
  - C. Erect a sample panel approximately 4 feet long by 6 feet high of each type of masonry showing stone pattern, colors, textures, bond, mortar, corner treatment and quality of work. Coordinate mortar colors with Architect prior to construction of sample panels.
- D. Submit complete shop drawings showing overall coursing, special shapes, anchorage, details and layout of expansion joints as required for all veneer treatments.

### 1.4 REFERENCE STANDARDS

- A. ASTM C 150 – Portland Cement
- B. ANSI A 41.1 – Building Code Requirements of Masonry

## PART 2 -PRODUCTS

### 2.1 MATERIALS

#### A. Masonry Units:

Provide arched coursing, as shown on Drawings over three openings at

907 Congress Avenue and flush Austin Common Segmental Arches over main entry doors and three windows at 909 Congress Avenue. Mortar joints to range from 3/8" to 5/8". Depth of joints to be coordinated in field with construction of mock-up. Intent is to have mortar joints match original joints.

B. Reinforcement and Anchorages:

1. Horizontal galvanized ladder reinforcing.

C. Mortar:

- 1 Perform work in accordance with requirements of ASTM C 476.
- 2 Reference Standards:

ASTM C 150 – White non-staining Portland Cement ASTM C 207 - Hydrated Lime for Masonry Purposes. ASTM Type K Mix – 1-3.10

Mortar Materials: Portland Cement: ASTM C 150, normal Type I.

D. Aggregates:

Standard masonry type, ASTM A 144, clean dry and protected against dampness, freezing and foreign matter.

- E. Hydrated Lime: Conforming to requirements of ASTM C 207, Type S.

F. Water:

Clean and free from injurious amounts of oil, alkali, organic matter or other deleterious material.

G. Mixing Mortar:

- 1 Thoroughly mix mortar ingredients in quantities needed for immediate use.
- 2 Do not use anti-freeze compounds to lower the freezing point of mortar.
- 3 Use mortar within two hours of mixing at temperatures over 80 degrees F, and two and one-half hours at temperatures under 50 degrees F.
- 4 If necessary, re-temper mortar within two hours of mixing to replace water lost by evaporation. Do not re-temper mortar after two hours of mixing.
- 5 No admixtures to mortar.

H. Through-wall flashing:

1 AFCO Aluminum Fabric Flashing, .004" or .005" or approved equal.

2 For flashing chimneys into tile roofs provide 16 ounce copper sheet flashing.

PART 3 -EXECUTION

3.1 WORKMANSHIP AND INSTALLATION Lay no masonry unless temperature is 40 degrees and rising or higher. Do not shift or tap masonry units after mortar has taken initial set. Where adjustment must be made, remove mortar and replace. Lay stones in full bed of mortar, properly jointed with other work. Protect sills, ledges and offsets from mortar droppings or other damage during construction. Remove misplaced mortar or grout immediately. Maintain clear cavity between stone and backing material as shown on drawings. Remove excess mortar and projections. Form recessed mortar joints.

### 3.2 POINTING AND CLEANING

Pointing: At final completion of work, cut out any defective joints or holes in exposed masonry and re-joint with mortar, tooling to match adjacent joints.

Cleaning: Dry brush masonry surface after mortar has set at the end of each day and after final pointing. Clean exposed, unglazed masonry with stiff brush and clean water. Cleaning agents may be used only with written approval of the Architect. Cleaning agents must be tested on sample wall area of 20 sq. ft. Protect adjacent materials from damage due to cleaning.

### 3.3 JOB COMPLETION

Any masonry left over at the completion of masonry work should be offered to the Owner for future repair or construction work. Masonry that the Owner does not accept for future repair or construction work become the property of Contractor and should be removed from the site.

END OF SECTION 04220

## **SECTION 06100 -ROUGH CARPENTRY**

### **PART 1 -GENERAL**

#### **1.01 Summary**

Description:

Furnish all labor, materials, equipment, and services necessary for and incidental to the complete installation of all rough carpentry work including framing, furring, sheathing, blocking and backing, wood nailers, and any other items required to give suitable nailing or attachment for adjoining work. Include furnishing and installation of all rough hardware such as nails, bolts, washers, screws, etc.

Related sections:

Finish Carpentry, Section 06200 Solid Surfacing, Section 06650 Gypsum Board, Section 09250 Wood Ceilings, Section 09570 Toilet and Bath Accessories, Section 10800.

See Structural Drawings for specific information pertaining to pre-engineered wood trusses, glue laminated structural units, structural insulated panels and plate connected wood trusses.

#### **1.02 Quality Assurance**

Dimension and board lumber shall be identified by grade mark of the recognized grading association or of an independent lumber grading inspection agency authorized to grade the species. Lumber grading rules and wood species shall conform with voluntary Product Standard PS 20-70. Softwood plywood shall conform with standard PS 1-74, and hardwood plywood with PS 51-71. All lumber and plywood must be inspected, graded and marked.

#### **1.02 Applicable Standards**

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only. a) AMERICAN PLYWOOD ASSOCIATION (APA) APA-01 (Mar 1991) Source List -Adhesives for APA Glued Floor System APA Form E30 (Jun 1990) Design/Construction Guide, Residential and Commercial b) AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) ASTM A 307 Carbon Steel Bolts and Studs,

60,000 psi Tensile Strength c) AMERICAN WOOD PRESERVERS'  
ASSOCIATION (AWPA) AWPA C20 Structural Lumber -Fire-Retardant  
Treatment by Pressure Processes AWPA C27 Plywood -Fire-Retardant  
Treatment by Pressure Processes AWPA M4 The Care of  
Preservative-Treated Wood Products

d) AMERICAN WOOD PRESERVERS BUREAU (AWPB)

AWPB LP 2 Softwood Lumber, Timber and Plywood Pressure  
Treated with Waterborne Preservatives for Above Ground Use  
AWPB LP 22 Softwood Lumber, Timber and Plywood Pressure  
Treated With Waterborne

Preservative for Ground Contact Use e) CALIFORNIA REDWOOD  
ASSOCIATION (CRA) CRA-01 Standard Specifications for Grades of  
California Redwood Lumber f) DEPARTMENT OF COMMERCE (DOC)  
DOC PS 1 Construction and Industrial Plywood g) FEDERAL  
SPECIFICATIONS (FS) FS FF-N-105 Nails, Brads, Staples and  
Spikes: Wire, Cut and Wrought

h) NATIONAL FOREST PRODUCTS ASSOCIATION (NFOPA)

NFOPA-01 National Design Specification for Wood

Construction NFOPA-02 Manual for Wood Frame Construction

i) NATIONAL HARDWOOD LUMBER ASSOCIATION (NHLA) NHLA-01

Rules for the Measurement & Inspection of Hardwood and Cypress

Lumber j) NORTHEASTERN LUMBER MANUFACTURERS

ASSOCIATION (NELMA) NELMA-01 Standard Grading Rules for

Northeastern Lumber k) SOUTHERN CYPRESS MANUFACTURERS

ASSOCIATION (SCMA) SCMA-01 Standard Specifications for Grades

of Southern Cypress l) SOUTHERN PINE INSPECTION BUREAU

(SPIB) SPIB 1001 Grading Rules m) WEST COAST LUMBER

INSPECTION BUREAU (WCLIB) WCLIB Std 16 Standard Grading

Rules for West Coast Lumber n) WESTERN WOOD PRODUCTS

ASSOCIATION (WWPA) WWPA-01 Western Lumber Grading Rules 91

#### **1.04 Submittals**

Submit to the Architect/Engineer for review the manufacturer's certificates attesting that lumber and material not normally grade marked or exempt from being grade marked meets the specified requirements.

Provide Shop Drawings prepared and sealed by a Professional Engineer for all pre-engineered framing members.

### **1.05 Product Delivery, Storage, and Handling**

Store materials off ground, and protected from weather. Seasoned materials shall not be stored in wet or damp areas, and sheet materials shall be protected from damage to corners and surfaces during handling.

## **PART 2 -PRODUCTS**

### **2.01 General**

#### **A. Sustainability Considerations**

All dimensional lumber and all sheet materials should be certified to come have come from sustainably managed and harvested sources. Contractor shall provide documentation of certification, or provide justification (which may address issues such as cost, availability, unsuitability for the intended purpose, etc.) for the failure to provide certified lumber. Acceptable certification institutions include:

Scientific Certification Systems, Inc., Oakland,  
California Smart Wood Certification Program,  
Rainforest Alliance, New York, New York

Known sources of certified wood include:

Home Depot Menominee Tribal Enterprises, Neopit,  
Wisconsin (Tel: 715-756-2287)  
A.E. Sampson & Son, Warren, Maine (Tel: 207-273-4000) EcoTimber  
International, Berkeley, California (Tel: 510-549-3000) Natural Forest  
Products, Burlington, Vermont (Tel: 802-865-1111) Freeman  
Corporation, Winchester, Kentucky (Tel: 606-744-4311) Collins Pine  
Company, Portland, Oregon (Tel: 503-227-1219) States Industries,  
Eugene, Oregon (Tel: 800-626-1981)

Additional information can be obtained from:

Certified Forest Products Council, Beaverton, Oregon (503-590-6600)  
Good Wood Alliance, Burlington, Vermont (Tel: 802-862-4448)

#### **B. Indoor Air Quality/Formaldehyde:**

Do not use wood products containing urea formaldehyde glues (interior grade plywood and particleboard) except where specified or approved by architect. Do not use such materials

inside the shell of the building unless they are completely sealed.

## **2.01 Materials**

### **A. Lumber:**

All lumber shall be sound, thoroughly seasoned, well manufactured, straight, and free from cup, twist, or warp that cannot be corrected by bridging or nailing. Framing lumber shall be No. 1 kiln-dried Southern Yellow Pine or better except where noted otherwise on the plans. Moisture content at time of installation shall be as follows:

Framing lumber -19% Board lumber 8" or less in width  
-19% Board lumber wider than 8" -15%.

**B. Pressure Treated Lumber:**

Pressure treated lumber shall be used only where called for by the drawings or specifications. If there are applications where the Contractor believes that pressure treated lumber should be used in lieu of untreated lumber, then Contractor shall contact the Architect to discuss what lumber to use.

For above ground applications where the lumber will be protected from moisture exposure, use Borate Pressure treated lumber. For other applications where pressure treated lumber is called for, use CCA (chromated copper arsenate) pressure treated lumber.

Where pressure treated CCA lumber is used, workers should take precautions to avoid breathing sawdust, and sawdust shall be vacuumed or otherwise collected for disposal, and ground contact of sawdust shall be avoided.

**G. Sub Roofing – 90# Modified Bitumen:**

**I. Fasteners:**

Furnish all nails, anchors, hangers, bolts, shot fasteners, screws, etc., of proper types and sizes to support the work and to draw the members into place and hold them securely. All bolt heads and nuts bearing on wood shall have standard washers. Siding, trim to have galvanized fasteners.

**PART 3 -EXECUTION**

**3.01 General**

Examine areas to receive work, and verify dimensions in field. Do not begin work until unsatisfactory conditions have been corrected. Frame wood members to a close fit, set accurately to required lines and levels, and secure rigidly in place in accordance with the drawings and specifications.

Protect framing from moisture during construction. Allow framing to dry for as long as feasible before enclosing, to reduce conditions favorable to growth of mold. Construct framing assemblies to allow moisture to escape.

Adequately brace and protect partially completed work to assure structural stability and safety until work is completely

framed and secure. Any finished work damaged due to inadequate protection during construction operations shall be repaired and/or replaced by the Contractor at no additional cost to Owner.

### **3.02 Installation/Erection**

- a) General: Members shall be closely fitted, accurately set to required lines and levels, and rigidly secured in place. Nailing shall be in accordance with the recommended Nailing Schedule as contained in NFOPA-02. Where detailed nailing and screwing requirements are not specified, size and spacing shall be sufficient to develop an adequate strength for the connection without splitting the members. Members shall be framed for passage of ducts and pipes shall be cut, notched, or bored in accordance with applicable requirements of NFOPA-02.

- b) Structural Members: Members shall be adequately braced before erection. Members shall be aligned and all connections completed before removal of bracing.
- c) Stripping, Nailers and Nailing Strips: Stripping, nailers and nailing strips shall be provided as necessary for the attachment of finish materials. Nailers and stripping used in conjunction with roof deck installation shall be installed flush with the roof deck system. Stacked nailers and stripping shall be assembled with screws spaced not more than 18 inches on center and staggered. Beginning and ending screws shall not be more than 6 inches from the end. Ends of stacked nailers and stripping shall be offset approximately 12 inches in long runs and alternated at corners. Anchors shall extend through the entire thickness of the nailer. Strips shall be run in lengths as long as practicable, butt jointed, cut into wood framing members when necessary, and rigidly secured in place.
- d) Wood Grounds: Wood grounds shall be provided as necessary for attachment of trim, finish, and other work. Grounds shall be run in lengths as long as practicable, butt jointed, and rigidly secured in place.
- e) Rough Bucks and Frames: Rough bucks shall be set straight, true, and plumb, and secured with anchors near top and bottom of each wood member and at intermediate intervals of not more than 3 feet. Anchors for concrete shall be expansion bolts, and anchors for masonry shall be 3/16-inch by 1-1/4 inch steel straps extending not less than 8 inches into the masonry and turned down 2 inches into the masonry. Rough bucks and frames shall be attached to steel and metal studs with screws of proper type and length.

### **3.04 Waste Management**

- A. Separate wood waste in accordance with the Waste Management Plan.
- B. Separate the following categories for salvage or reuse on site:
  - 1 Sheet materials larger than 2 square feet.
  - 2 Framing members larger than 16”.
  - 3 Multiple off cuts of any size larger than 12”.
- C. The following categories may be reused in the manufacture of particleboard or medium-density fiberboard:
  - 1 Composite wood (for example, plywood, LVL, I-Joist, parallel strand, MDF, particleboard)
  - 2 Clean dimensional lumber

D. Set aside damaged wood for acceptable alternative uses; for example, use as bracing, blocking, cripples, or ties.

E. Do not burn lumber that is less than a year old.

F. Separate the following categories for disposal and place in designated areas for hazardous materials.

1. Treated, stained, painted, or contaminated wood.

G. Sequence work to minimize use of temporary HVAC to dry out building and control humidity.

**END OF SECTION SECTION 08210 -WOOD DOORS**

## **PART I -GENERAL**

### **1.01 Summary**

Description: Extent and location of each type of wood door is indicated on Drawings and in Schedules. Provide single doors, double doors, doors with glass lites, wood veneer finished doors, wood panel doors and custom-fabricated exterior wood doors.

Doors to be finished as specified in Section 09900 and as indicated on the Drawings.

Related Sections:

Finish Carpentry, Section 06200; Metal Doors and Frames: Section 08100 Glazing: Section 08800 Hardware: Section 08700 Painting: Section 09900

### **1.02 Submittals**

#### **A. Product Data:**

Submit door manufacturer's technical data for each type and quality of door required, including details of construction relative to materials, dimensions of individual components, profiles, and finishes.

#### **B. Shop Drawings:**

Submit shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, dimensions and locations of cutouts for locksets and other cutouts adjacent to light and louver openings, fire ratings, requirements for factory finishing, and other pertinent data.

#### **C. Samples: Submit three corner samples, 1'-0" square or as**

indicated, for the following:

Door faces with solid wood edging representing typical range of color and grain of wood for solid lumber required.

### **1.03 Quality Assurance**

Comply with the following standards: NWDA Quality Standard:

I.S.1 "Industry Standard for Wood Flush Doors," of National Wood Window and Door Association (NWWDA).

AWI Quality Standards: "Architectural Woodwork Quality Standards".

Fire-Rated Wood Doors:

Provide wood doors which are identical in materials and construction to units tested in door and frame assemblies per ASTM E 152 and which are labeled and listed for ratings indicated by UL. Manufacturer: Doors in original structures to be custom fabricated as shown on drawings. Obtain each type of door from single manufacturer, except as otherwise approved by Architect.

#### **1.04 Product Delivery, Storage, and Handling**

Protect doors during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standards and recommendations of NWWDA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors," as well as with manufacturer's instructions.

Identify each door with individual opening numbers which correlate with designation system used on shop drawings for door, frames, and hardware, using temporary, removable, or concealed markings.

#### **1.05 Project Conditions**

Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period to comply with requirements of the following quality standard applicable to project's geographical location:

"Architectural Woodwork Quality Standards" including Section 100-S-3 "Moisture Content" of Architectural Woodwork Institute (AWI).

#### **1.06 Warranty**

General:

Warranties shall be in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents.

Door Manufacturer's Warranty:

Submit written agreement on door manufacturer's standard form signed by Manufacturer, Installer and Contractor, agreeing to repair or replace defective doors which have warped, bowed, cupped or twisted or that show telegraphing of core construction in face veneers, do not conform to tolerance limitations of

referenced quality standards, or show any other defects not caused by abuse.

Warranty shall also include reinstallation which may be required due to repair or replacement of defective doors where defect was not apparent at time of hanging.

Contractor's Responsibilities include, though are in no way limited to replacing or refinishing doors where Contractor's work contributed to rejection or to voiding of manufacturer's warranty.

## **PART 2 -PRODUCTS**

### **1.01 Doors**

Custom-fabricated Exterior doors:

All doors for the original structure are to be custom fabricated per details as shown on the Drawings. Hinges and anchoring for hinges to be included with doors and installed by door fabricator. Species to be Long Leaf Yellow Pine.

### **2.03 Fabrication**

Fabricate wood doors to produce doors complying with following requirements in sizes indicated for job-site

fitting. Factory-pre-fit and pre-machine doors to fit frame opening sizes indicated with the following uniform clearances and bevels:

Comply with tolerance requirements of AWI for pre-fitting.

Comply with final hardware schedules and door frame shop drawings and with hardware templates.

Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory pre-machining. Cut and trim openings through doors to comply with applicable requirements of referenced standards for

kind(s) of doors required. Trim light openings with moldings of material and profile indicated.

## **PART 3 -INSTALLATION**

### **3.01 Installation**

Install wood doors to comply with manufacturer's instruction, reference AWI standards, and as indicated. Fitting Clearances for Doors: Provide 1/8" at jambs and heads; 1/16" per leaf at meeting stiles for pairs of doors; and 1/8" from

bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4" clearance from bottom of door to top of threshold. Bevel non-rated doors 1/8" in 2" in lock edge; trim stiles and rails only to extent permitted by labeling

agency. Pre-fit Doors: Fit to frames for uniform clearance at each edge.

### **3.02 Finishing**

Finish doors in compliance with products and procedures specified in Section 09900. Tops and bottoms of mineral core doors to be sealed prior to installation.

### **3.03 Adjusting and Protection**

Re-hang or replace doors which do not swing or operate freely.

Refinish or replace doors damaged during installation. Protect doors as recommended by door manufacturer to assure that wood doors will be without damage or

deterioration at time of Substantial Completion.

**END OF SECTION SECTION 08610 -WOOD WINDOWS PART 1 -**

**GENERAL**

### **1.1 Related Documents**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

### **1.2 Summary**

- A. This Section includes the following:
  - 1. Fabrication and installation of preassembled wood windows.
- B. Related Sections: The following Sections contain requirements that relate to this Section:

Rough Carpentry, Section 06100 Joint Sealers, Section 07900 Painting, Section 09900

### **1.3 Samples and Submittals**

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Shop drawings for each type of wood window required, including the following:
  - 1. Construction details and fabrication methods
  - 2. Profiles and dimensions of individual components.
  - 3. Data on hardware, accessories, and finishes.
  - 4. Recommendations for maintenance and cleaning of exterior surfaces.
- C. Samples for initial selection on 12-inch long sections of window members. Where finishes involve normal color variations, include Sample sets showing the full range of variations expected.
- D. Shop drawings for each type of window required, including information not fully detailed in Architect's drawings:
  - 1. Layout and installation details, including anchors.
  - 2. Elevations at 1/4 inch = 1 foot scale and typical window unit elevations at 3/4" = 1 foot scale.
  - 3. Full-size details of typical composite members, including reinforcement and stiffeners.
  - 4. Hardware, including operators.
  - 5. Single glazing details.

### **1.4 Quality Assurance**

- A. Manufacturer Qualifications: Firms whose windows have

been certified under the NWWDA "Hallmark Program" for wood window units are listed in the current NWWDA "Membership and Product Directory" and comply with requirements indicated.

1. Provide only wood window units bearing an NWWDA "Hallmark Program" label certifying compliance with requirements of NWWDA I.S. 2.
- B. Testing Agency Qualifications: To qualify for approval, an independent testing agency must demonstrate to Architect's satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM E 699, that it has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.

- C. Single-Source Responsibility: Obtain wood window units from one source and by a single manufacturer.
- D. Safety Glass Standard: Provide products complying with testing requirements of 16 CFR, Part 1201 for Category II materials.
  - 1. Subject to compliance with requirements, provide safety glass permanently marked with the certification label of the Safety Glazing Certification Council (SGCC) or another certification agency acceptable to authorities having jurisdiction.
- E. Glazing Standards: Comply with recommendations of the Flat Glass Marketing Association (FGMA) "Glazing Manual" and "Sealant Manual" except where more stringent requirements are indicated.
- F. Product Options: The Drawings indicate sizes, profiles, dimensional requirements, and aesthetic effects of wood windows and are based on the specific window types and models indicated. Other wood window manufacturers whose products have equal performance characteristics may be considered provided deviations in size, profile, and dimensions are minor and do not alter the aesthetic effect. Refer to Division 1 Section "Substitutions."

#### **1.5 Delivery, Storage, and Handling**

- A. Deliver materials to Project site in manufacturer's unopened bundles or containers with labels intact.
- B. Handle and store materials at Project site to prevent water damage, staining, or other physical damage. Comply with manufacturer's recommendations for job site storage, handling and protection.

#### **1.6 Project Conditions**

- A. Field Measurements: Check window openings by field measurements before fabrication and show recorded measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Where field measurements cannot be made without delaying the Work, guarantee opening dimensions and proceed with fabrication wood windows without field measurements. Coordinate wall construction to ensure that actual opening dimensions correspond to guaranteed dimensions.

### **1.7 Warranty**

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty executed by wood window manufacturer agreeing to repair or replace window components that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, the following:
  - 1 Structural failures including excessive deflection, water leakage, air infiltration, or condensation.
  - 2 Faulty operation of sash and hardware.
  - 3 Deterioration of finishes and other materials beyond normal weathering.

### **PART 2 -PRODUCTS**

WOOD WINDOWS

08

## 2.1 Manufacturers

- A. Custom fabricated windows

## 2.2 Materials

- A. General: Comply with requirements of NWWDA I.S. 2.
- B. Window types:

Shall be double hung as shown on drawings. Center upstairs unit of each building shall have identical profile as windows but will operate as doors.

Long Leaf Yellow Pine

- C. Wood: Clear ponderosa pine, long leaf yellow pine or other suitable fine-grain lumber, kiln dried to a moisture content of 6 to 12 percent at time of fabrication and free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than **1/32 inch** wide by **2 inches** long. Lumber shall be water-repellent preservative treated after machining per NWWDA I.S. 4.
- D. Jamb Extensions:

Provide matching wood jamb extensions for all window units in framed walls exceeding 4" nominal thickness.
- E. Anchors, Clips, and Accessories: Fabricate anchors, clips, and window accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel or iron complying with requirements of ASTM B 633 for SC 3 (severe) service condition; provide sufficient strength to withstand design pressure indicated.
- F. Fasteners: Comply with NWWDA I.S. 2 for fabrication and with manufacturer's recommendations and standard industry practices for type and size of installation fasteners.
  - 1 Use zinc-coated or nonferrous nails and screws for window fabrication and installation.
  - 2 Use brass screws for hardware and accessory installation.
- G. Compression-Type Weatherstripping: Provide compressible weatherstripping designed for permanently resilient sealing under bumper or wiper action, and completely concealed when sash is closed.
  - 1. Weatherstripping Material: Nonferrous spring metal.



### **2.3 Hardware**

- A. General: Provide manufacturer's standard hardware, necessary to operate, tightly close, and securely lock windows. Do not use aluminum in frictional contact with other metals.
  - 1. Provide "Bronze" finish metal hardware with a special coating finish and plated steel or brass/bronze operating bars and rods.
- D. Limit Device: Manufacturer's standard, concealed friction adjustor, adjustable stay bar, limit device designed to restrict ventilator opening.
- E. Limit Device: Manufacturer's standard, concealed support arms with an adjustable, limited, hold-open limit device designed to restrict ventilator opening.
- F. Counterbalancing Mechanism: Traditional rope and pulley system.

### **2.8 Fabrication**

- A. General: Fabricate wood window units to comply with indicated standards. Include a complete system for assembly of components and anchorage of window units.
  - 1. Comply with requirements of NWWDA I.S. 2 for moisture content of lumber at time of fabrication.
- B. Fabricate windows to produce units that are reglazable without dismantling sash framing. Provide openings and mortises precut, where possible, to receive hardware and other items.
  - 1. Provide weatherstripping at perimeter of each operating sash.
    - a. Groove Glazing: Factory-glazed units without removable stops or other provision permitting convenient field disassembly to facilitate replacement of broken glass will not be accepted.
- C. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to the Project site, to the maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

### **2.9 Finishes**

- A. Wood Finish: Provide the following finish on exposed interior wood in units:

Locations for clear-sealed, exposed wood surfaces on interior side of window units are noted on the Drawings. The exposed wood on the interior of these window units should be of such a quality and character that it need not be painted. Exterior wood surfaces to be factory primed for painting in field.

### **PART 3 -EXECUTION**

#### **3.1 Examination**

- A. Examine openings before installation. Verify that opening is correct and sill plate is level. Do not proceed with installation until unsatisfactory conditions have been corrected.

- Wood frame walls shall be dry, clean, sound, well-nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within **3 inches** of corner.
- Coordinate window installation with wall flashings and other built-in components.

#### **3.2 Installation**

WOOD WINDOWS

- A. Comply with manufacturer's instructions and recommendations for installing window units, hardware, operators, accessories, and other components of the Work.
- B. Set window units plumb, level, true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place.
- C. Set sill members in a bed of sealant or with joint fillers or gaskets, as indicated, to provide weathertight construction.

### **3.3 Adjusting**

- A. Adjust operating sash and hardware to provide a tight fit at contact points and weatherstripping for smooth operation and a weathertight closure. Lubricate hardware and moving parts.

### **3.4 Cleaning**

- A. Clean interior and exterior surfaces immediately after installation. Exercise care to avoid damage to protective coatings and finishes. Remove excess glazing and sealants, dirt, and other substances.
- B. Clean glass of factory-glazed units immediately after installing windows. Wash and polish glass on both faces before Substantial Completion. Comply with manufacturer's recommendations for final cleaning and maintenance. Remove nonpermanent labels from glass surfaces.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.

### **3.5 Protection**

- A. Protect window units from damage or deterioration until the time of Substantial Completion.



## **SECTION 08700 -HARDWARE**

### **PART 1 -GENERAL**

#### **1.01 Summary**

Description:

The finish hardware contractor shall carefully examine the drawings, scale details, and general specifications, and shall furnish and deliver to the job site the proper quantities, types, sizes, shapes, and functions of all items of finish hardware and weather-stripping required to complete the building, except such items specifically excluded or noted to be furnished by others. Any items of finish hardware not specifically shown or mentioned, but required for proper completion of the building and fulfillment of the finish hardware specifications, shall be supplied in the same finish and quality as adjacent hardware. Hardware for original and 1903 addition to be custom fabricated to replicate in design and material the existing hardware for doors, windows and shutters.

Related sections:

Rough Carpentry, Section 06100; Finish Carpentry, Section 06200; Metal Doors and Frames, Section 08100; Wood Doors, Section 08210; Aluminum Entrances and Storefronts, Section 08700.

#### **1.02 Quality assurance**

Whenever any item of finish hardware is mentioned herein by symbols, numbers, description, or manufacturer, it is understood to establish a standard of quality which shall be strictly maintained.

Acceptable lock manufacturers for exterior and interior doors are: Sargent, Schlage, Best, Russwin, and Falcon. Other items as specified are Hager Hinge Co., Glynn Johnson Co., LCN, Dorma, H.B. Ives Co., Von Duprin, Pemko, Trimco Colonial Bronze Co., Knappe and Vogt Mfg., Quality Hardware, and May Weatherstrip. Panic hardware shall be by Von Duprin, Inc., or Sargent.

Hardware by other manufacturers will be acceptable if equal in all respects, and requested samples are approved by the Architect at least ten (10) days prior to bidding. Substitution of accepted manufacturers for those listed in this specification shall not relieve the Contractor of responsibility for meeting quality standards, or for proper coordination with the materials and systems of other trades.

### **1.03 Submittals**

The finish hardware contractor shall submit six (6) copies of the finish hardware schedule to the Architect for approval. The schedule shall be complete in every detail, listing all items of hardware to be furnished and the locations/applications for which they are proposed. Provide manufacturer's cut sheets of each item. Each item of hardware shall be correlated with the drawings by group headings and/or item number.

### **1.04 Guarantee**

All items furnished under this contract shall be guaranteed against defects in manufacture, materials, and workmanship, and shall be capable of performing the required functions for which it is designed for a period of one year from date of final acceptance and two years for door closers. Any item or material failing to comply with this guarantee shall be removed and replaced with satisfactory item or material at no cost to the owner, including necessary labor for removal and replacement.

### **1.05 Coordination**

The Contractor shall be responsible for arranging his schedule and securing delivery of all hardware so that the work progress without delay or interruption.

No extra cost will be allowed because of changes or corrections necessary to facilitate the proper installation of any hardware item. The Contractor shall be responsible for the proper fabrication of all work or material to receive hardware.

## **PART 2 -PRODUCTS**

### **2.01 Materials**

Finishes: Finish on new hardware shall be oil rubbed bronze. Knob locks and latches: All locks and latches shall be mortise type of weight, design, function, and material as scheduled. Door stops: As indicated on drawings, or as required by threshold, finish floor material, or other condition. Use either wall or floor type stops. Butts: Shall be of class as indicated by manufacturer's number in hardware sets. All butts shall have width to allow, sufficient throw to clear the door trim, plinth, or cove base, but shall have no more

throw than is necessary to open the door 180 degrees. Butts shall be sized as scheduled. Furnish two pair for all doors over 7'-2" in height. All butts for out-opening exterior doors shall have provision making it impossible to remove pins except while door is open. Butts shall be narrow, line design, with oilite bearings flush with knuckles. Butts shall have oilite or ball bearings on all doors with closers and on other doors if specifically noted.

Fasteners: All hardware shall be furnished with proper fasteners as required for anchoring to wood, metal, etc. Where noted in schedule, closers and holders shall be furnished with thru-bolts and grommet nuts. Lock trim: Knobs and trim for locks and latches shall be wrought, cast, or extruded as specified herein.

HARDWARE 08700 -2

Keying:

Furnish five duplicates of each separate key. Furnish one grand master key (five copies) that operates the exterior locks on all buildings. Other than the master key, each building shall be separately keyed. Furnish two (2) complete key control cabinets and systems; Lund wall type, capacity as required for this schedule, plus 25% capacity to enlarge.

Templates:

Contractor shall furnish blueprint templates as required for manufacture of wood and metal doors and frames.

**PART 3 -EXECUTION**

**3.01 Preparation**

Templates:

Until written approval of the hardware schedule is received from the Architect, do not order templates or materials. Do not deliver any templates or hardware schedules to anyone without authorization.

Packaging:

All items of finish hardware shall be securely boxed or wrapped, and shall include sufficient amount of the size and type of screws, bolts, anchors, or other fasteners for the installation. All fasteners shall match or harmonize with finish hardware as to material and finish. Each bag, box, or package shall be marked or labeled with a description of the opening or location in the building for which it is intended and/or with the proper schedule item numbers.

Manuals and tools:

Deliver to Owner upon completion of the work, manufacturer's written instructions for installing, operating, and maintaining finish hardware, as well as installation, adjustment and maintenance tools.

**3.02 Installation**

Hardware shall be installed by qualified door hardware installer with minimum 5 years experience. All hardware shall be fitted prior to painting operation, then removed and the painting completed before final installation. Protect all hardware from damage both prior to and after installation. All items shall be neatly and properly installed in

accordance with best practice, and to the satisfaction of the Architect. Key control cabinet to be located by Architect. Hardware must be thoroughly clean and free from damage at time of Final Acceptance by Owner. Any items splattered with paint, then cleaned with thinner or remover shall be replaced at no cost to the Owner.

**3.03 Hardware Schedule TBA**

**END OF SECTION**

HARDWARE 08700 -3

**SECTION 08210 - WOOD DOORS****PART I - GENERAL****1.01 Summary**

Description: Extent and location of each type of wood door is indicated on Drawings and in Schedules. Provide single doors, double doors, doors with glass lites, wood veneer finished doors, wood panel doors and custom-fabricated exterior wood doors.

Doors to be finished as specified in Section 09900 and as indicated on the Drawings.

Related Sections:

Finish Carpentry, Section 06200;  
Metal Doors and Frames: Section 08100  
Glazing: Section 08800  
Hardware: Section 08700  
Painting: Section 09900

**1.02 Submittals****A. Product Data:**

Submit door manufacturer's technical data for each type and quality of door required, including details of construction relative to materials, dimensions of individual components, profiles, and finishes.

**B. Shop Drawings:**

Submit shop drawings indicating location and size of each door, elevation of each kind of door, details of construction, location and extent of hardware blocking, dimensions and locations of cutouts for locksets and other cutouts adjacent to light and louver openings, fire ratings, requirements for factory finishing, and other pertinent data.

**C. Samples:**

Submit three corner samples, 1'-0" square or as indicated, for the following:

Door faces with solid wood edging representing typical range of color and grain of wood for solid lumber required.

**1.03 Quality Assurance**

Comply with the following standards:

NWDA Quality Standard:

I.S.1 "Industry Standard for Wood Flush Doors," of National Wood Window and Door Association (NWWDA).

AWI Quality Standards: "Architectural Woodwork Quality Standards".

Fire-Rated Wood Doors:

Provide wood doors which are identical in materials and construction to units tested in door and frame assemblies per ASTM E 152 and which are labeled and listed for ratings indicated by UL.

Manufacturer:

Doors in original structures to be custom fabricated as shown on drawings.

Obtain each type of door from single manufacturer, except as otherwise approved by Architect.

#### **1.04 Product Delivery, Storage, and Handling**

Protect doors during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standards and recommendations of NWWDA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors," as well as with manufacturer's instructions.

Identify each door with individual opening numbers which correlate with designation system used on shop drawings for door, frames, and hardware, using temporary, removable, or concealed markings.

#### **1.05 Project Conditions**

Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period to comply with requirements of the following quality standard applicable to project's geographical location:

"Architectural Woodwork Quality Standards" including Section 100-S-3  
"Moisture Content" of Architectural Woodwork Institute (AWI).

#### **1.06 Warranty**

General:

Warranties shall be in addition to, and not a limitation of, other rights the Owner may have under the Contract Documents.

Door Manufacturer's Warranty:

Submit written agreement on door manufacturer's standard form signed by Manufacturer, Installer and Contractor, agreeing to repair or replace defective doors which have warped, bowed, cupped or twisted or that show telegraphing of core construction in face veneers, do not conform to tolerance limitations of referenced quality standards, or show any other defects not caused by abuse.

Warranty shall also include reinstallation which may be required due to repair or replacement of defective doors where defect was not apparent at time of hanging.

Contractor's Responsibilities include, though are in no way limited to replacing or refinishing doors where Contractor's work contributed to rejection or to voiding of manufacturer's warranty.

**PART 2 - PRODUCTS****1.01 Doors**

Custom-fabricated Exterior doors:

All doors for the original structure are to be custom fabricated per details as shown on the Drawings. Hinges and anchoring for hinges to be included with doors and installed by door fabricator. Species to be Long Leaf Yellow Pine.

**2.03 Fabrication**

Fabricate wood doors to produce doors complying with following requirements in sizes indicated for job-site fitting.

Factory-pre-fit and pre-machine doors to fit frame opening sizes indicated with the following uniform clearances and bevels:

Comply with tolerance requirements of AWI for pre-fitting.

Comply with final hardware schedules and door frame shop drawings and with hardware templates.

Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory pre-machining.

Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of doors required.

Trim light openings with moldings of material and profile indicated.

**PART 3 - INSTALLATION****3.01 Installation**

Install wood doors to comply with manufacturer's instruction, reference AWI standards, and as indicated.

Fitting Clearances for Doors:

Provide 1/8" at jambs and heads; 1/16" per leaf at meeting stiles for pairs of doors; and 1/8" from bottom of door to top of decorative floor finish or covering. Where threshold is shown or scheduled, provide 1/4" clearance from bottom of door to top of threshold.

Bevel non-rated doors 1/8" in 2" in lock edge; trim stiles and rails only to extent permitted by labeling agency.

Pre-fit Doors:

Fit to frames for uniform clearance at each edge.

**3.02 Finishing**

Finish doors in compliance with products and procedures specified in Section 09900.

Tops and bottoms of mineral core doors to be sealed prior to installation.

**3.03 Adjusting and Protection**

Re-hang or replace doors which do not swing or operate freely.

Refinish or replace doors damaged during installation.

Protect doors as recommended by door manufacturer to assure that wood doors will be without damage or deterioration at time of Substantial Completion.

**END OF SECTION**

**SECTION 08610 - WOOD WINDOWS**  
**PART 1 - GENERAL**

**1.1 Related Documents**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

**1.2 Summary**

- A. This Section includes the following:
  - 1. Fabrication and installation of preassembled wood windows.
- B. Related Sections: The following Sections contain requirements that relate to this Section:

Rough Carpentry, Section 06100  
Joint Sealers, Section 07900  
Painting, Section 09900

**1.3 Samples and Submittals**

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Shop drawings for each type of wood window required, including the following:
  - 1. Construction details and fabrication methods
  - 2. Profiles and dimensions of individual components.
  - 3. Data on hardware, accessories, and finishes.
  - 4. Recommendations for maintenance and cleaning of exterior surfaces.
- C. Samples for initial selection on 12-inch long sections of window members. Where finishes involve normal color variations, include Sample sets showing the full range of variations expected.
- D. Shop drawings for each type of window required, including information not fully detailed in Architect's drawings:
  - 1. Layout and installation details, including anchors.
  - 2. Elevations at 1/4 inch = 1 foot scale and typical window unit elevations at 3/4" = 1 foot scale.
  - 3. Full-size details of typical composite members, including reinforcement and stiffeners.
  - 4. Hardware, including operators.
  - 5. Single glazing details.

**1.4 Quality Assurance**

- A. Manufacturer Qualifications: Firms whose windows have been certified under the NWWDA "Hallmark Program" for wood window units are listed in the current NWWDA "Membership and Product Directory" and comply with requirements indicated.
  - 1. Provide only wood window units bearing an NWWDA "Hallmark Program" label certifying compliance with requirements of NWWDA I.S. 2.
- B. Testing Agency Qualifications: To qualify for approval, an independent testing agency must demonstrate to Architect's satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM E 699, that it has the experience and capability to satisfactorily conduct the testing indicated without delaying the Work.

- C. Single-Source Responsibility: Obtain wood window units from one source and by a single manufacturer.
- D. Safety Glass Standard: Provide products complying with testing requirements of 16 CFR, Part 1201 for Category II materials.
  - 1. Subject to compliance with requirements, provide safety glass permanently marked with the certification label of the Safety Glazing Certification Council (SGCC) or another certification agency acceptable to authorities having jurisdiction.
- E. Glazing Standards: Comply with recommendations of the Flat Glass Marketing Association (FGMA) "Glazing Manual" and "Sealant Manual" except where more stringent requirements are indicated.
- F. Product Options: The Drawings indicate sizes, profiles, dimensional requirements, and aesthetic effects of wood windows and are based on the specific window types and models indicated. Other wood window manufacturers whose products have equal performance characteristics may be considered provided deviations in size, profile, and dimensions are minor and do not alter the aesthetic effect. Refer to Division 1 Section "Substitutions."

### **1.5 Delivery, Storage, and Handling**

- A. Deliver materials to Project site in manufacturer's unopened bundles or containers with labels intact.
- B. Handle and store materials at Project site to prevent water damage, staining, or other physical damage. Comply with manufacturer's recommendations for job site storage, handling and protection.

### **1.6 Project Conditions**

- A. Field Measurements: Check window openings by field measurements before fabrication and show recorded measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - 1. Where field measurements cannot be made without delaying the Work, guarantee opening dimensions and proceed with fabrication wood windows without field measurements. Coordinate wall construction to ensure that actual opening dimensions correspond to guaranteed dimensions.

### **1.7 Warranty**

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Special Warranty: Submit a written warranty executed by wood window manufacturer agreeing to repair or replace window components that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, the following:
  - 1. Structural failures including excessive deflection, water leakage, air infiltration, or condensation.
  - 2. Faulty operation of sash and hardware.
  - 3. Deterioration of finishes and other materials beyond normal weathering.

## **PART 2 - PRODUCTS**

**2.1 Manufacturers**

- A. Custom fabricated windows

**2.2 Materials**

- A. General: Comply with requirements of NWWDA I.S. 2.
- B. Window types:

Shall be double hung as shown on drawings. Center upstairs unit of each building shall have identical profile as windows but will operate as doors.

Long Leaf Yellow Pine

- C. Wood: Clear ponderosa pine, long leaf yellow pine or other suitable fine-grain lumber, kiln dried to a moisture content of 6 to 12 percent at time of fabrication and free of visible finger joints, blue stain, knots, pitch pockets, and surface checks larger than  $\frac{1}{32}$  inch wide by 2 inches long. Lumber shall be water-repellent preservative treated after machining per NWWDA I.S. 4.
- D. Jamb Extensions:

Provide matching wood jamb extensions for all window units in framed walls exceeding 4" nominal thickness.
- E. Anchors, Clips, and Accessories: Fabricate anchors, clips, and window accessories of aluminum, nonmagnetic stainless steel, or hot-dip zinc-coated steel or iron complying with requirements of ASTM B 633 for SC 3 (severe) service condition; provide sufficient strength to withstand design pressure indicated.
- F. Fasteners: Comply with NWWDA I.S. 2 for fabrication and with manufacturer's recommendations and standard industry practices for type and size of installation fasteners.
  - 1. Use zinc-coated or nonferrous nails and screws for window fabrication and installation.
  - 2. Use brass screws for hardware and accessory installation.
- G. Compression-Type Weatherstripping: Provide compressible weatherstripping designed for permanently resilient sealing under bumper or wiper action, and completely concealed when sash is closed.
  - 1. Weatherstripping Material: Nonferrous spring metal.

### 2.3 Hardware

- A. General: Provide manufacturer's standard hardware, necessary to operate, tightly close, and securely lock windows. Do not use aluminum in frictional contact with other metals.
  - 1. Provide "Bronze" finish metal hardware with a special coating finish and plated steel or brass/bronze operating bars and rods.
- D. Limit Device: Manufacturer's standard, concealed friction adjustor, adjustable stay bar, limit device designed to restrict ventilator opening.
- E. Limit Device: Manufacturer's standard, concealed support arms with an adjustable, limited, hold-open limit device designed to restrict ventilator opening.
- F. Counterbalancing Mechanism: Traditional rope and pulley system.

### 2.8 Fabrication

- A. General: Fabricate wood window units to comply with indicated standards. Include a complete system for assembly of components and anchorage of window units.
  - 1. Comply with requirements of NWWDA I.S. 2 for moisture content of lumber at time of fabrication.
- B. Fabricate windows to produce units that are reglazable without dismantling sash framing. Provide openings and mortises precut, where possible, to receive hardware and other items.
  - 1. Provide weatherstripping at perimeter of each operating sash.
    - a. Groove Glazing: Factory-glazed units without removable stops or other provision permitting convenient field disassembly to facilitate replacement of broken glass will not be accepted.
- C. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to the Project site, to the maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

### 2.9 Finishes

- A. Wood Finish: Provide the following finish on exposed interior wood in units:

Locations for clear-sealed, exposed wood surfaces on interior side of window units are noted on the Drawings. The exposed wood on the interior of these window units should be of such a quality and character that it need not be painted. Exterior wood surfaces to be factory primed for painting in field.

## **PART 3 - EXECUTION**

### 3.1 Examination

- A. Examine openings before installation. Verify that opening is correct and sill plate is level. Do not proceed with installation until unsatisfactory conditions have been corrected.
  - 1. Wood frame walls shall be dry, clean, sound, well-nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches of corner.
  - 2. Coordinate window installation with wall flashings and other built-in components.

### 3.2 Installation

- A. Comply with manufacturer's instructions and recommendations for installing window units, hardware, operators, accessories, and other components of the Work.
- B. Set window units plumb, level, true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place.
- C. Set sill members in a bed of sealant or with joint fillers or gaskets, as indicated, to provide weathertight construction.

### **3.3 Adjusting**

- A. Adjust operating sash and hardware to provide a tight fit at contact points and weatherstripping for smooth operation and a weathertight closure. Lubricate hardware and moving parts.

### **3.4 Cleaning**

- A. Clean interior and exterior surfaces immediately after installation. Exercise care to avoid damage to protective coatings and finishes. Remove excess glazing and sealants, dirt, and other substances.
- B. Clean glass of factory-glazed units immediately after installing windows. Wash and polish glass on both faces before Substantial Completion. Comply with manufacturer's recommendations for final cleaning and maintenance. Remove nonpermanent labels from glass surfaces.
- C. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during the construction period.

### **3.5 Protection**

- A. Protect window units from damage or deterioration until the time of Substantial Completion.

**SECTION 08700 - HARDWARE****PART 1 - GENERAL****1.01 Summary**

## Description:

The finish hardware contractor shall carefully examine the drawings, scale details, and general specifications, and shall furnish and deliver to the job site the proper quantities, types, sizes, shapes, and functions of all items of finish hardware and weather-stripping required to complete the building, except such items specifically excluded or noted to be furnished by others. Any items of finish hardware not specifically shown or mentioned, but required for proper completion of the building and fulfillment of the finish hardware specifications, shall be supplied in the same finish and quality as adjacent hardware. Hardware for original and 1903 addition to be custom fabricated to replicate in design and material the existing hardware for doors, windows and shutters.

## Related sections:

Rough Carpentry, Section 06100;  
Finish Carpentry, Section 06200;  
Metal Doors and Frames, Section 08100;  
Wood Doors, Section 08210;  
Aluminum Entrances and Storefronts, Section 08700.

**1.02 Quality assurance**

Whenever any item of finish hardware is mentioned herein by symbols, numbers, description, or manufacturer, it is understood to establish a standard of quality which shall be strictly maintained.

Acceptable lock manufacturers for exterior and interior doors are: Sargent, Schlage, Best, Russwin, and Falcon. Other items as specified are Hager Hinge Co., Glynn Johnson Co., LCN, Dorma, H.B. Ives Co., Von Duprin, Pemko, Trimco Colonial Bronze Co., Knappe and Vogt Mfg., Quality Hardware, and May Weatherstrip. Panic hardware shall be by Von Duprin, Inc., or Sargent.

Hardware by other manufacturers will be acceptable if equal in all respects, and requested samples are approved by the Architect at least ten (10) days prior to bidding. Substitution of accepted manufacturers for those listed in this specification shall not relieve the Contractor of responsibility for meeting quality standards, or for proper coordination with the materials and systems of other trades.

**1.03 Submittals**

The finish hardware contractor shall submit six (6) copies of the finish hardware schedule to the Architect for approval. The schedule shall be complete in every detail, listing all items of hardware to be furnished and the locations/applications for which they are proposed. Provide manufacturer's cut sheets of each item. Each item of hardware shall be correlated with the drawings by group headings and/or item number.

**1.04 Guarantee**

All items furnished under this contract shall be guaranteed against defects in manufacture, materials, and workmanship, and shall be capable of performing the required functions for which it is designed for a period of one year from date of final acceptance and two years for door closers. Any item or material failing to comply with this guarantee shall be removed and replaced with satisfactory item or material at no cost to the owner, including necessary labor for removal and replacement.

### **1.05 Coordination**

The Contractor shall be responsible for arranging his schedule and securing delivery of all hardware so that the work progress without delay or interruption.

No extra cost will be allowed because of changes or corrections necessary to facilitate the proper installation of any hardware item. The Contractor shall be responsible for the proper fabrication of all work or material to receive hardware.

## **PART 2 - PRODUCTS**

### **2.01 Materials**

#### Finishes:

Finish on new hardware shall be oil rubbed bronze.

#### Knob locks and latches:

All locks and latches shall be mortise type of weight, design, function, and material as scheduled.

#### Door stops:

As indicated on drawings, or as required by threshold, finish floor material, or other condition. Use either wall or floor type stops.

#### Butts:

Shall be of class as indicated by manufacturer's number in hardware sets. All butts shall have width to allow, sufficient throw to clear the door trim, plinth, or cove base, but shall have no more throw than is necessary to open the door 180 degrees. Butts shall be sized as scheduled. Furnish two pair for all doors over 7'-2" in height.

All butts for out-opening exterior doors shall have provision making it impossible to remove pins except while door is open. Butts shall be narrow, line design, with oilite bearings flush with knuckles. Butts shall have oilite or ball bearings on all doors with closers and on other doors if specifically noted.

#### Fasteners:

All hardware shall be furnished with proper fasteners as required for anchoring to wood, metal, etc. Where noted in schedule, closers and holders shall be furnished with thru-bolts and grommet nuts.

#### Lock trim:

Knobs and trim for locks and latches shall be wrought, cast, or extruded as specified herein.

**Keying:**

Furnish five duplicates of each separate key. Furnish one grand master key (five copies) that operates the exterior locks on all buildings. Other than the master key, each building shall be separately keyed. Furnish two (2) complete key control cabinets and systems; Lund wall type, capacity as required for this schedule, plus 25% capacity to enlarge.

**Templates:**

Contractor shall furnish blueprint templates as required for manufacture of wood and metal doors and frames.

**PART 3 - EXECUTION****3.01 Preparation****Templates:**

Until written approval of the hardware schedule is received from the Architect, do not order templates or materials. Do not deliver any templates or hardware schedules to anyone without authorization.

**Packaging:**

All items of finish hardware shall be securely boxed or wrapped, and shall include sufficient amount of the size and type of screws, bolts, anchors, or other fasteners for the installation. All fasteners shall match or harmonize with finish hardware as to material and finish. Each bag, box, or package shall be marked or labeled with a description of the opening or location in the building for which it is intended and/or with the proper schedule item numbers.

**Manuals and tools:**

Deliver to Owner upon completion of the work, manufacturer's written instructions for installing, operating, and maintaining finish hardware, as well as installation, adjustment and maintenance tools.

**3.02 Installation**

Hardware shall be installed by qualified door hardware installer with minimum 5 years experience. All hardware shall be fitted prior to painting operation, then removed and the painting completed before final installation. Protect all hardware from damage both prior to and after installation. All items shall be neatly and properly installed in accordance with best practice, and to the satisfaction of the Architect. Key control cabinet to be located by Architect. Hardware must be thoroughly clean and free from damage at time of Final Acceptance by Owner. Any items splattered with paint, then cleaned with thinner or remover shall be replaced at no cost to the Owner.

**3.03 Hardware Schedule**      TBA**END OF SECTION**