

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Board Sheathing to match.
2. Wood blocking and nailers.
3. Exterior plywood sheathing.

1.2 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
2. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.3 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review. ALL dimension lumber to be SFI or FSC certified.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
3. Provide dressed lumber, S4S, unless otherwise indicated.
4. Provide kiln dry lumber, unless otherwise indicated.

B. Wood Structural Panels:

1. Plywood: DOC PS 1.
2. Thickness: As needed to comply with requirements specified but not less than thickness indicated.
3. Factory mark panels according to indicated standard.

2.2 DIMENSION LUMBER

A. General: Provide dimension lumber of grades indicated according to the American Lumber Standards Committee National Grading Rule provisions of the grading agency indicated.

B. Framing, Rafters, Joists, and Partitions: No. 2 grade and any of the following species:

1. Spruce-pine-fir (south) or Spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA.

2.3 MISCELLANEOUS LUMBER

A. General: Provide lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.

B. For items of dimension lumber size, provide No. 2 grade lumber, kiln dried and any of the following species:

1. Spruce-pine-fir (south) or Spruce-pine-fir; NELMA, NLGA, WCLIB, or WWPA.

2.4 SHEATHING

A. Plywood Wall Sheathing: APA rated sheathing, Exposure 1, plywood.

1. Span Rating: Not less than 24/16.
2. Thickness: As indicated on the drawings.

2.5 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Brads, and Staples: ASTM F 1667.

- C. Power-Driven Fasteners: CABO NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Screws for Fastening to Cold-Formed Metal Framing: Hilti Kwik-Flex or Elco Dril-Flex; no substitutes,
 - 1. Plywood sheathing: 10-24 x 1-1/4 inch wafer head #3.
 - 2. 2 x wood blocking: 12-24 x 2-1/2 inch wafer head #3.
- F. Lag Bolts: ASME B18.2.1. (ASME B18.2.3.8M).
- G. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.
- H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

2.6 METAL FRAMING ANCHORS

- A. General: Provide framing anchors made from metal indicated, of type, and size indicated, By "Simpson Strong Tie" or Approved Equal, and as follows:
 - 1. Research/Evaluation Reports: Provide products acceptable to authorities having jurisdiction and for which model code research/evaluation reports exist that show compliance of metal framing anchors, for application indicated, with building code in effect for Project.
 - 2. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer that meet or exceed those indicated in "Simpson Design Catalog, C-2007". Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.
- B. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 (Z180) coating designation.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit.

Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

- B. Do not use materials with defects that impair quality of rough carpentry or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- C. Apply field treatment complying with AWWA M4 to cut surfaces of preservative-treated lumber and plywood.
- D. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. CABO NER-272 for power-driven fasteners.
 - 2. Published requirements of metal framing anchor manufacturer.
 - 3. Table 2304.9.1, "Fastening Schedule," in the International Building Code.
- E. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; pre-drill for Lag screws, and as required by fastener manufacturer.
- F. Use finishing nails for exposed work, unless otherwise indicated. Countersink nail heads and fill holes with wood filler.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.

3.3 WOOD FRAMING INSTALLATION, GENERAL

- A. Framing Standard: Comply with AFPA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- B. Do not splice structural members between supports.
- C. Where built-up beams or girders of 2-inch nominal- (38-mm actual-) dimension lumber on edge are required, fasten together with 2 rows of 16d nails spaced not less than 16 inches (406 mm) o.c. Locate one row near top edge and other near bottom edge.
 - 1. For continuous members, locate end joints over supports.

D. Fastening Methods: Fasten panels as indicated below:

1. Sheathing:

- a. Glue and screw to wood framing.
- b. Space panels 1/8 inch (3 mm) apart at edges and ends.

END OF SECTION 061000

SECTION 062100 – WOOD CONSOLIDATION AND REPAIR

PART 1 - GENERAL

0.1 RELATED DOCUMENTS

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

0.2 SUMMARY

- A. The work includes, but is not limited to, consolidation, repair, and filling of existing deteriorated wood running trim, wood doors and casings.
- B. Related Sections: The following sections contain requirements that relate to this Section.
 - 1. Section 062000 – “Finish Carpentry”

0.3 SUBMITTALS

- A. Qualification data for firms and persons specified in the “Quality Assurance” article.
- B. Product Data: Submit manufacturer's technical product literature for each product used for consolidation and repair. Include instructions for use and safety precautions.

0.4 QUALITY ASSURANCE

- A. Restoration Specialist: Work must be performed by a firm having not less than five (5) years successful experience in comparable wood consolidation work on at least three (3) buildings listed in the National Register of Historic Places under the direction of federal and state preservation agencies in the last five (5) years, and employing personnel skilled in the restoration processes and operations indicated.
 - 1. Only skilled workmen who are familiar and experienced with the methods specified are to be used for wood consolidation work.
 - 2. One skilled workman shall be present at all times during execution of the work and shall personally direct the work.
 - 3. In acceptance or rejection of wood consolidation work, no allowance will be made for lack of skill on the part of the workmen.
- B. Field Mock-up: Prior to start of work of this Section, perform one test area of wood consolidation and one test area of wood filling and repair, in locations selected by Architect. Repeat test areas if necessary until approved by Architect. Protect test areas from damage for the

remainder of the Work. Approved test areas shall represent the minimum acceptable standard for the work of this Section.

0.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original unopened containers labeled with manufacturer's name, brand name, item name, and installation instructions.
- B. Store materials in compliance with manufacturer's requirements for temperature and other conditions.
- C. Discard and remove from the job site any materials damaged in handling or storage and any materials that have been subjected to conditions contrary to manufacturer's recommendations or whose maximum shelf life has expired.

0.6 PROJECT CONDITIONS

- A. **Coordination:** Coordinate wood consolidation and repair with painting work so that wood requiring treatment is treated as soon as practicable after being exposed and that consolidated and repaired wood is primed as soon as possible.
- B. **Weather:** Proceed with consolidation and repair only when existing and forecasted weather conditions permit work to be performed in accordance with manufacturers' recommendations.
- C. **Surface Conditions:** Proceed with work of this Section only when surfaces are completely dry.
- D. **Protection:** Use all necessary means to protect areas of wood not being consolidated or repaired and all other surfaces and areas of the building from damage or staining caused by the work of this Section.
- E. **Safety:** Use all necessary means to protect all persons, whether engaged in the work of this Section or not from any harmful effects of the work of this Section. Comply with all applicable laws, codes, and regulations.

PART 1 - PRODUCTS

1.1 MANUFACTURER

- A. Subject to compliance with requirements, provide products by one of the following, or Architect-approved equal:
 - 1. Conservation Services, Newton, NJ (973) 579-1112, www.conservepoxy.com

2. Abatron, Inc, Gilberts, Ill (708) 426-2200, www.abatron.com
3. West System Brand by Gougeon Brothers, Inc., Bay City, MI

1.2 MATERIALS

- A. Low Viscosity Epoxy Consolidant: Two-part epoxy consolidant of viscosity to thoroughly penetrate deteriorated wood.
 1. Liquid Wood, Abatron.
 2. ConServ Flexible Epoxy Consolidant 100.
- B. Medium Viscosity Epoxy Consolidant: Two-part epoxy consolidant suitable for mixing with fillers for patching and filling holes.
 1. WoodEpoxy, Abatron
 2. ConServ Flexible Patch 200.
- C. Fillers for Epoxies: As required to provide epoxy putty of correct viscosity for each application. Provide fillers specifically recommended by resin manufacturer and approved by Architect for use intended.
- D. Dispensers: Provide manufacturer's special pumps designed to be used in dispensing and measuring resins and hardeners.
- E. Other Materials: All other materials required but not specifically described shall be selected by the Contractor and subject to the approval of the Architect.

PART 2 - EXECUTION

2.1 COORDINATION

- A. Coordinate removal of wood window stops with removal and restoration of stain glass windows. Care should be taken during removal to preserve and salvage as much original wood material as possible for reuse.

2.2 INSPECTION

- A. After all loose and deteriorated coatings have been removed as specified in Section 099000 – “Painting”, inspect surfaces of all existing wood in conjunction with the Architect to verify method and extent of treatment.
 1. All surfaces where the wood is rotted or spongy require consolidation.
 2. All areas that do not match their original profiles require patching and repair.
 3. Areas of major damage and deterioration require replacement.

4. Architect's decision regarding extent of required consolidation and repair shall be final.

2.3 PREPARATION

- A. Cut back and remove all loose, soft, and flaking deteriorated wood.
- B. Scrape and sand as required to properly roughen surfaces without removing sound wood or changing existing profiles to remain.
- C. Take all steps necessary to ensure areas to be consolidated or repaired are free of dirt, paint, oil, grease, and other substances that might inhibit successful consolidation and repair.
- D. Take all steps necessary to ensure that wood is dry. No open flames shall be used.

2.4 EPOXY CONSOLIDATION

- A. Use low viscosity and medium viscosity epoxy consolidants as appropriate to each situation.
- B. Mix epoxy consolidant following manufacturer's directions. Drill holes in areas of deteriorated wood as required to ensure complete penetration of consolidant into deteriorated portions of member. Flow consolidant onto wood with a brush until wood is saturated. Cure following manufacturer's directions.

3.5 EPOXY PATCHING AND REPAIR

- A. When patching areas of wood that have been consolidated, apply patching mixture before epoxy consolidant has completely cured.
- B. Use consolidant filled with appropriate fillers as recommended by manufacturer to provide patching material of suitable viscosity for intended application.
- C. Mix consolidant following manufacturer's directions. Apply brush coat working well into wood. Add filler to form paste of desired consistency. Prepare only enough material to repair one element at each mixing. Work into areas of wood requiring repair. Strike off excess material forming exact, sharp and accurate profiles to match existing. Cure following manufacturer's directions. Repeat if required to match original profile.
- D. File and sand to match desired profile and to produce uniformly smooth surface. No coarse-grained sandpaper mark or other imperfections shall be permitted.

3.6 ADJUST AND CLEAN

- A. Remove and replace any repair or consolidation work that does not match existing surfaces and profiles and any consolidant that is loose and has not bonded or cured properly to the satisfaction of the Architect at no additional cost to the Owner.
- B. Clean all surfaces or materials damaged or stained by work of this Section.
- C. Protection: Protect wood consolidation work and maintain conditions necessary to ensure that work will be without damage or deterioration at time of acceptance.

END OF SECTION 062010