

SECTION 06410 - CUSTOM CASEWORK

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Wall Cabinets.
- B. Base Cabinets.
- C. Open shelving Cabinets.
- D. Custom site constructed units and desks.
- E. Loose shelving units with standards and brackets.
- F. On-site applied high pressure laminate work.
- G. Plastic laminate counter tops and lavatories.

1.2 RELATED SECTION

- A. Section 06100 - Rough Carpentry: Blocking, bracing and back-up framing.
- B. Section 09900 - Painting: Shop and Field finishing work.

1.3 DEFINITIONS

- A. Exposed: Where used herein, "exposed" portions of casework includes surfaces visible when doors and drawers are closed. Bottoms of cases more than 4'-0" above finish floor are considered exposed. Visible surfaces in open cases or behind clear doors also are considered as exposed portions.
- B. Semi-Exposed: Where used herein, "semi-exposed" portions of cabinet work includes those members behind opaque doors, such as shelves, divisions, interior faces of ends, case backs, drawer sides, backs and bottoms, and back face of doors. Tops of cases 6 feet - 6 inch or more above finish floor shall be considered semi-exposed, unless exposed from balcony or floor above.

1.4 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. A161.2, Performance Standards for Fabricated High Pressure Decorative Laminate Countertops.
 - 2. A208.1, Mat-Formed Wood Particleboard.
- B. Architectural Woodwork Institute (AWI):
 - 1. Architectural Woodwork Quality Standards, 7th Edition, Version 1.2, 1999.
- C. American Plywood Association (APA):
 - 1. E30E-85 Residential Commercial Construction Guide.
- D. American Society for Testing of Materials:
 - 1. E84, Surface Burning Characteristics of Building Materials.
- E. American Wood Preserver's Association (AWPA):
 - 1. C20, Structural Lumber Fire Retardant by Pressure Treatment.
 - 2. C27, Structural Plywood Fire Retardant by Pressure Treatment.
- F. American Wood Preserver's Bureau (AWPB):
 - 1. LP-2, Standard for Softwood Lumber, Timber, Plywood Pressure Treated with Waterborne Preservations.
- G. Federal Specifications:
 - 1. FS MM-L-736C, Lumber Hardwood.
 - 2. FS MMM-A-1308, Adhesive, Contact.
- H. National Electrical Manufacturer's Association (NEMA):
 - 1. LD-3, High Pressure Decorative Laminates.
- I. Product Standards (PS)
 - 1. 1, Construction and Industrial Plywood.
 - 2. 20, American Softwood Lumber Standard.
 - 3. 51, Hardwood and Decorative Plywood.

4. 58, Basic Hardboard.

1.5 SUBMITTALS

- A. General: Submit following items in accordance with Section 01330.
- B. Product Data: Manufacturer's specifications and installation instructions for hardware and accessory items and for fire retardant treatment.
- C. Shop Drawings
 1. Indicate profiles, sections, and views of stock items as well as specially fabricated items for the work, at scale large enough to permit checking for design conformity.
 2. Indicate sizes, quantities, markings, materials, wood species, finishes and accessories.
 3. Include assembly and installation drawings to show methods of blocking, fastening, bracing, jointing, and connecting to work of other trades.
 4. Indicate dimensions necessary for fitting casework and adjacent equipment and appliances to fixed planes. Be responsible for details and dimensions not controlled by job conditions.
 5. Indicate cut-out locations.
- D. Samples
 1. Two samples of each type and species of plywood and finish lumber with applied finish.
 2. Sample rings of high pressure laminates.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabrication of custom casework of quality and having minimum of 3 years documented experience.
- B. Fabrication Standards: Fabricate products and items in accordance with AWI standards listed below using custom grade unless noted otherwise.
 1. Lumber grades: AWI Section 100.
 2. Standing and running trim: AWI Section 300.
 3. Counter tops: AWI Section 400.
 4. Shelving: AWI Section 600.
 5. Miscellaneous work: AWI Section 700.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, handle, and protect products in accordance with Section 01600.
- B. Protect materials from damage, soiling and deterioration.
- C. Do not deliver finish carpentry materials until job site conditions and operations which could damage, soil or deteriorate work are complete.
- D. Store products and materials in ventilated, interior locations under constant minimum temperature of 60 degrees F. and relative humidity not to exceed 55%.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Maintain temperature and moisture conditions as recommended by casework fabricator from date of installation through remainder of construction period.

1.9 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on shop drawings.

1.10 SEQUENCING AND SCHEDULING

- A. Verify that blocking is in place and backpriming complete before beginning work.

PART 2 PRODUCTS

2.1 MATERIALS

A. General

1. Comply with quality and grading standards contained herein for each material.
2. Sizes noted on drawings or indicated herein for lumber are nominal unless detailed by specific dimensions of actual size. Minimum thickness is nominal 1 x material - unless noted or shown otherwise.
3. Plywood and particleboard 3/4 inch thickness unless noted or detailed otherwise.
4. Products surfaced four sides, unless noted otherwise.

B. Softwood Lumber

1. Quality standard: PS 20.
2. Grading Standard: AWI custom grade.
3. Maximum moisture content: 6% for interior work; 10% for exterior work.
4. Species: Poplar.
5. Grain: Plain sliced.

C. Softwood Plywood

1. Quality standard: PS 1.
2. Grading standard: AWI custom.
3. Core material: C-D Plugged INT-APA.
4. Face quality: A-B INT-APA.
5. Species: Southern yellow pine.
6. Ply construction: 3 ply - 3/8 inch; 5 ply-1/2 inch; 7 ply - 3/4 inch.

D. Hardwood Lumber

1. Quality standard: FS MM-L-736C.
2. Grading standard: AWI custom grade.
3. Maximum moisture content: 6%.
4. Species: Clear white maple.
5. Grain: Quarter sawn.

E. Hardwood Plywood

1. Quality standard: PS51.
2. Grading standard: AWI custom.
3. Core material: Fir Veneer Lumber.
4. Face veneer: Clear white maple.
5. Grain: Quarter sawn.
6. Ply construction: 3 ply - 3/8 inch; 5 ply - 1/2 inch; 7 ply - 3/4 inch.

F. Particleboard

1. Quality standard: ANSI A208.1.
2. Grade: 1M2, sanded both faces.

G. Laminate Materials

1. High Pressure Laminate Surface
 - a. Quality standard: NEMA, LD-3.
 - b. Grade: General Purpose.
 - c. Thickness: 0.050 inch for horizontal grade; 0.028 inch for vertical grade.
 - d. Core: Standard.
 - e. Finish: Matte.
 - f. Acceptable Manufacturers
 - (1) Wilsonart by Ralph Wilson Plastics.
 - (2) Nevamar by Exxon Chemical Co.
 - (3) Formica by Formica Corp.
 - (4) Substitutions: Submit in accordance with Section 01600.
 - g. Colors: Refer to Section 09000 - Color Legend.
2. Laminate Backing Sheets
 - a. Composition: High pressure laminate of paper and melamine, without decorative finish, 0.020 inch thick minimum.

- b. Acceptable manufacturers: Same as for high pressure laminate surfacing.

2.2 ACCESSORIES AND TREATMENT

- A. Contact Adhesive: FS MMM-A-I30B of type recommended by millwork manufacturer to suit application.
- B. Wall Adhesive: Solvent release cartridge type, compatible with substrate, capable of achieving durable bond.
- C. Bolts, Nuts, Washers, Lags, Pins, Nails, and Screws: Size and type to suite application.
- D. Fasteners: Size and type to suit application.
- E. Hardware:
 - 1. Cabinet hinges: European style, self-closing type hinge, US 26D finish.
 - 2. Cabinet Pulls: Armstrong model 1092 DBAC with antique copper finish.
 - 3. Full extension drawer slide: Knape and Vogt No. 8800 (200 lbs. capacity) with self-lubrication frictionless, oilite bronze oil cushion bearings, rubber bumpers, tracks, mounting brackets, all zinc plated steel.
 - 4. Ratchet locks: Knape and Vogt No. 986 series with polished chrome finish.
 - 5. Adjustable shelf standards within cabinets: Knape and Vogt No. 255, 5/8 inch wide, 1/2 inch adjustment intervals, US 26 finish.
 - 6. Shelf supports within cabinets: Knape and Vogt No. 256 and No. 256R, 3/4 inch wide, with and without rubber cushions, US 26 finish.
 - 7. Shelf standards: Knape and Vogt No. 83, 3/4 inch wide, 1 inch adjustment intervals, white finish.
 - 8. Shelf standards and supports: Knape and Vogt Co., No. 87 Standards and No. 187 brackets, white finish.
 - 9. Shelving Support: Knape and Vogt Co., model No. 348 pin support.
 - 10. Grommets: MG Series by Doug Mockett Co., No. MG-1-15, dark bronze finish. Size: 2-1/2 inch.
 - 11. Countertop Supports: Work station brackets by A & M Hardware, Inc. Manheim, Pa. (888-647-0200), 1/8 in. thick steel, 18 x 24 in. in black color powder coated.
- F. Fabric: Guilford of Maine Acoustic Fabric FA-1 and FA-2; color as indicated in Section 09000 - Color Legend.

2.3 SHOP FABRICATION

- A. Fabricate casework to AWI Custom standards as follows for reveal overlay construction as detailed (or as indicated in AWI Architectural Casework Details if details are not present).
- B. Identify components for proper grain matching during fabrication.
- C. Sanding/Filling
 - 1. Perform work in accordance with AWI.
 - 2. Sand work smooth and set exposed nails and screws.
 - 3. Apply wood filler in exposed nail and screw indentations and leave ready to receive applied finishes.
 - 4. On items to receive transparent finishes, use wood filler which matches surrounding surfaces and of types recommended for applied finishes.
- D. Prime seal concealed and semi-concealed surfaces. Brush apply only.
- E. Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes, and other fixtures. Verify locations of cutouts from site dimensions. Seal edge surfaces of cutouts.
- F. Before proceeding with millwork required to be fitted to other construction, obtain measurements and verify dimensions of shop drawings details for accurate fit.
- G. Fabricate casework to dimensions, profiles, and details shown.
- H. Route and groove back of flat trim members, kerf backs of other wide flat members except plywood or veneered members.
- I. Assemble casework in mill in as large of units as practicable to minimize field cutting and fitting.
- J. Miter trim joints, where required, by joining, splining, and gluing to complying with

- requirements for specified grade.
- K. Band exposed plywood and particleboard edges with hardwood trim, 3/8 inch x width of sheet unless otherwise noted.
- L. On high pressure laminate work:
1. Apply laminate finish in full, uninterrupted sheets of maximum practical lengths. Apply backing sheets to reverse side of items receiving laminate surfacing. Use decorative vertical grade laminate for cabinet interiors.
 2. Form corners and butt joints with hairline joints.
 3. Do not locate joints within 2 feet of sink cut-out.
 4. Cap all exposed edges with laminate.
- M. Construction
1. General
 - a. Construct casework bodies, bottoms, dividers, sides, tops, shelves, doors, drawer fronts and countertops of 3/4 inch sheet material.
 - b. Use 1/2 inch thick particle board material for drawer sides, back and sub-front.
 - c. Use 5/16 inch thick tempered hardboard for drawer bottoms and cabinet backs.
 2. Provide door and drawer fronts with reveal overlay style arrangement.
 3. Methods of Joinery
 - a. Provide face plates, paneled ends, and construction, glued under pressure.
 - b. Provide body web frames of stile plowed and stub tenoned construction.
 - c. Join case body members by dado or concealed dowel joints.
 - d. Do not use mechanical fasteners or metal clips for attachment of body members to other body members or to web frames.
 4. Base cabinets
 - a. Use finished end panels unless condition will be fully concealed.
 - b. Provide finished toe space fronts, finished to match cabinet front.
 - c. Construct drawers with rabbited (tongue and groove) construction.
 5. Wall cabinets
 - a. Use finished end panels unless condition will be fully concealed.
 - b. Provide continuous 1 x 3 inch anchor cleat at top and bottom of cabinet interior full width of unit. Secure cleat in rabbit over back, then glue and spot pin.
 6. Countertops
 - a. Provide with 2 inch deep face edge, faced with high pressure laminate unless noted or shown otherwise.
 - b. Provide loose 4 inch high pressure laminate covered splashes typically at countertops unless taller splashes shown or noted.
 7. Shelving
 - a. 3/4 inch thick up to 36 inch unsupported length.
 - b. 1 inch thick for over 36 inch unsupported lengths (maximum 48").

2.4 FINISH

- A. Sand work smooth and set exposed nails and screws.
- B. Apply wood filler in exposed nail and screw indentations.
- C. On items to receive transparent finishes, use wood filler which matches surrounding surfaces and of types recommended for applied finishes.
- D. Shop finish all material to the greatest extent possible. Refer to Section 09900 - Painting for additional finish requirements.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces openings and conditions are ready to receive work of this section. Notify Architect of any existing condition which will adversely affect execution. Beginning of execution will constitute acceptance of existing conditions.
- B. Verify that field measurements are as shown on shop drawings.
- C. Verify that mechanical, electrical, and other items affecting work of this section are in place and ready to receive the work.

3.2 PREPARATION

- A. Prime paint or seal concealed surfaces and items or assemblies which will be in contact with cementitious materials or surfaces.
- B. Make field cuts with extreme care to avoid splintering.

3.3 INSTALLATION

- A. Install work in accordance with AWI Custom Quality Standards. Handle materials to avoid dents and other damages.
- B. Set and secure materials and components, rigid, plumb, and square. Use joint fasteners to align and secure adjoining cabinets and countertops. Affix base cabinets to floor.
- C. Shim as required using concealed shims.
- D. Field Fitting
 1. Cut to fit and carefully scribe.
 2. Where casework abuts other finished work, scribe and cut for accurate fit.
 3. Where necessary to fit at site, provide ample allowance for cutting and fitting.
 4. Do not use overlay trim pieces to cover joints.
- E. Before making cutouts, drill pilot holes at corners.
- F. Distribute defects allowed in quality grade to best overall advantage when installing job assembled woodwork items.
- G. Install trim and molding in unjointed lengths for openings and for runs less than maximum length of lumber available. For longer runs, use only one piece less than maximum length available in straight run. Allow no joints closer than 12 feet apart.
- H. Stagger joints in adjacent members.
- I. Cope moldings at returns and miter at corners.
- J. Attach items securely in place with uniform joints providing for thermal and building movements; blind nail where possible.
- K. Use fine finishing nails where exposed.
- L. Set exposed heads for filling.
- M. Secure casework to anchors, built-in blocking, or directly attach to substrates where capable of adequately supporting load. Use toggle bolt type fasteners for wall mounted components. Secure countertops to base cabinets.
- N. Install hardware in accordance with manufacturer's recommendations.
- O. Cover exposed edges of sheet goods used for shelving and other items with 3/8 inch thick hardwood edging unless otherwise noted or shown to be trimmed with plastic.
- P. On field applied laminate plastic work:
 1. Apply plastic laminate finishes where indicated.
 2. Adhere with adhesive over entire surface. Make joints and corners hairline.
 3. Match patterns. Slightly bevel arises.
 4. Cap exposed edges with plastic laminate of same finish and pattern.
 5. Apply laminate backing sheet on reverse side of plastic laminate finished surfaces.

3.4 ADJUSTING

- A. Adjust work under provisions of Section 01600.
- B. Adjust moving or operating parts to function smoothly and correctly.

3.5 CLEANING/PROTECTION

- A. Protect casework from marring, defacement, or other damage until final completion.
- B. Clean spaces of debris and vacuum and wipe down casework. Leave in condition ready for use.

3.6 TOLERANCES FOR FIELD ASSEMBLIES/JOINED ITEMS

- A. Maximum Variation from True Position: 1/16 inch.
- B. Maximum Offset from True Alignment with Abutting Materials: 1/64 inch for plastic laminate countertops and splashes, 1/32 inch for other components.

END OF SECTION