SECTION 062023 - INTERIOR FINISH CARPENTRY

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. RELATED DOCUMENTS
          1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
       2. SUMMARY
          1. Section Includes:

Revise subparagraphs below to suit Project and to distinguish interior finish carpentry from items that are specified as architectural woodwork in Section 064023 "Interior Architectural Woodwork."

Interior trim, including non-fire-rated interior door[**and sidelight**] frames.

Interior [**plywood**] [**hardboard**] [**board**] paneling.

Shelving[**and clothes rods**].

* + - * 1. Related Requirements:

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Retain option in first subparagraph below if structural wood is exposed to view.

Section 061000 "Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view[**and for framing exposed to view**].

Section 061053 "Miscellaneous Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view.

Section 099123 "Interior Painting" for priming and backpriming of interior finish carpentry.

* + - 1. DEFINITIONS

Retain terms that remain after this Section has been edited for a project.

* + - * 1. MDF: Medium-density fiberboard.
        2. MDO: Plywood with a medium-density overlay on the face.
        3. PVC: Polyvinyl chloride.
      1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.

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 and net amount of preservative retained. Include chemical-treatment manufacturer's written instructions for finishing treated material.

For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced before shipment to Project site to levels specified.

* + - * 1. Sustainable Design Submittals:

Retain "Samples" Paragraph below for single-stage Samples, with a subordinate list if applicable. Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs for two-stage Samples.

* + - * 1. Samples: For each exposed product and for each color and texture specified.
        2. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures.
        3. Samples for Verification:

For each species and cut of lumber and panel products with nonfactory-applied finish, with half of exposed surface finished; 50 sq. in. for lumber and 8 by 10 inches for panels.

For foam-plastic moldings, with half of exposed surface finished; 50 sq. in..

For each finish system and color of lumber and panel products with factory-applied finish, 50 sq. in. for lumber and 8 by 10 inches for panels.

* + - 1. QUALITY ASSURANCE
         1. Mill and Producers Mark: Each piece of lumber and plywood shall be gradestamped indicating type, grade, mill, and grading agency certified by the Board of Review of the American Lumber Standards Committee. Mark shall appear on unfinished surface, or ends of pieces with finished surfaces.

Pressure Preservative Treated Material: Accredited agency quality mark on each piece of wood indicating treatment.

Fire-Retardant Treated Material: Accredited testing agency mark on each piece of wood indicating compliance with the fire hazard classification.

* + - 1. DELIVERY, STORAGE, AND HANDLING
         1. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation.

Protect materials from weather by covering with waterproof sheeting, securely anchored.

Provide for air circulation around stacks and under coverings.

* + - * 1. Deliver interior finish carpentry materials only when environmental conditions comply with requirements specified for installation areas. If interior finish carpentry materials must be stored in other than installation areas, store only where environmental conditions comply with requirements specified for installation areas.
      1. FIELD CONDITIONS
         1. Environmental Limitations: Do not deliver or install interior finish carpentry materials until building is enclosed and weatherproof, wet-work in space is completed and nominally dry, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
         2. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

1. PRODUCTS

Manufacturers and products listed in SpecAgent and MasterWorks Paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

* + - 1. MATERIALS, GENERAL
         1. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with applicable rules of any rules-writing agency certified by the American Lumber Standard Committee's (ALSC) Board of Review. Grade lumber by an agency certified by the ALSC's Board of Review to inspect and grade lumber under the rules indicated.

Factory mark each piece of lumber with grade stamp of grading agency.

For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by grading agency.

* + - * 1. Softwood Plywood: DOC PS 1.
        2. Hardboard: ANSI A135.4.

Grades for MDF changed with the 2002 edition of ANSI A208.2. Grade 130 is approximately equivalent to the previous Grade MD.

* + - * 1. MDF: ANSI A208.2, Grade 130.
        2. Particleboard: ANSI A208.1, [**Grade M-2**] [**Grade M-2-Exterior Glue**].

Retain "Melamine-Faced Particleboard" Paragraph below if required for shelving. Product below contains urea formaldehyde.

* + - * 1. Melamine-Faced Particleboard: Particleboard complying with ANSI A208.1, Grade M-2, finished on both faces with thermally fused, melamine-impregnated decorative paper and complying with NEMA LD 3, Grade VGL, for Test Methods 3.3, 3.4, 3.6, 3.8, and 3.10.

Retain one option in "Color" Subparagraph below; if retaining first, indicate colors in additional subparagraphs.

Color: [**White**] [**Black**] [**Gray**] [**As indicated by manufacturer's designations**] [**Match Director’s Representative's samples**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - 1. WOOD-PRESERVATIVE-TREATED MATERIALS

See the Evaluations for discussion of preservative formulations. In "Preservative Treatment by Pressure Process" Paragraph below, Use Category UC1 is suitable for interior dry locations; Use Category UC2, for interior damp locations.

* + - * 1. Preservative Treatment by Pressure Process: AWPA U1; Use Category [**UC1**] [**UC2**].

Maximum moisture contents specified in first subparagraph below are standard limits for preservative-treated lumber and plywood that are kiln dried after treatment.

Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 18 percent, respectively.

See the Evaluations for information about treatment chemicals.

Preservative Chemicals: Acceptable to authorities having jurisdiction.

For exposed items indicated to receive transparent finish, do not use chemical formulations that contain colorants or that bleed through or otherwise adversely affect finishes.

Do not use material that is warped or does not comply with requirements for untreated material.

Mark lumber with treatment-quality mark of an inspection agency approved by the ALSC's Board of Review.

Retain only first option in first subparagraph below if authorities having jurisdiction require classification marking on all materials.

For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.

Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.

For exposed plywood indicated to receive a stained or natural finish, mark back of each piece.

Application: [**Where indicated on Drawings**] [**All interior lumber and plywood**].

* + - 1. INTERIOR TRIM
         1. Softwood Lumber Trim for Transparent Finish (Stain or Clear Finish):

Species and Grade:

Verify local availability before retaining species and grade in first seven subparagraphs below. Some grades in subparagraphs are considered "knotty." Other species and grades are available.

Eastern white pine; NeLMA or NLGA C Select.

Douglas fir-larch or Douglas fir south; NLGA, WCLIB, or WWPA Superior or C & Btr finish.

Southern pine; SPIB C & Btr finish.

Western red cedar; NLGA, WCLIB, or WWPA Clear Heart.

Maximum moisture content for seasoned or kiln-dried, board-size lumber varies, depending on species, grade, and grading agency. See the Evaluations.

Maximum Moisture Content: 15 percent.

Finger Jointing: Not allowed.

Face Surface: [**Surfaced (smooth)**] [**Saw textured**].

* + - * 1. Hardwood Lumber Trim for Transparent Finish (Stain or Clear Finish):

Fourth option in "Species and Grade" Subparagraph below includes light-colored, closed-grain species that will take stain; if retaining, delete undesirable species, if any, from list.

Species and Grade: [**Red oak**] [**White maple**] [**Alder**] [**Aspen, basswood, cottonwood, sap gum, sycamore, white maple, or yellow poplar**]; NeLMA 1 Common.

Maximum Moisture Content: 10 percent.

Finger Jointing: Not allowed.

Gluing for Width: Not allowed.

Veneered Material: Allowed.

Face Surface: [**Surfaced (smooth)**] [**Saw textured**].

Matching: Selected for compatible grain and color.

* + - * 1. Lumber Trim for Opaque Finish (Painted Finish):

Species and Grade:

Verify local availability before retaining species and grade in first seven subparagraphs below.

Eastern white pine; NeLMA or NLGA [**D Select**] [**Finish or 1 Common**] [**Premium or 2 Common**].

Grading rules for eastern white pine are not the same as those for western pine, so requirements in first subparagraph below will vary somewhat among species.

Eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine; NeLMA, NLGA, or WWPA Finish or 1 Common (Colonial).

Douglas fir-larch or Douglas fir south; NLGA, WCLIB, or WWPA [**Superior or C & Btr**] [**Prime or D**] finish.

Spruce-pine-fir; NeLMA, NLGA, WCLIB, or WWPA 2 Common.

Alder, aspen, basswood, cottonwood, gum, magnolia, soft maple, sycamore, tupelo, or yellow poplar; NeLMA 2 Common.

"Maximum Moisture Content for Softwoods" Subparagraph below is for softwood boards. Maximum moisture content for seasoned or kiln-dried, board-size lumber varies, depending on species, grade, and grading agency. See the Evaluations.

Maximum Moisture Content for Softwoods: 15 percent.

"Maximum Moisture Content for Hardwoods" Subparagraph below is for hardwood boards. NHLA does not define any maximum moisture content values for kiln-dried hardwood lumber; purchaser must specify the value. Percentages in subparagraph are based on ranges given for optimum moisture content in AWI's "Architectural Woodwork Standards." First option applies to damp coastal areas of the southern United States and the Maritime Provinces. Second option applies to Ontario, Quebec, and most of the United States. Third option applies to the dry southwestern United States and to Alberta, Manitoba, and Saskatchewan.

Maximum Moisture Content for Hardwoods: 10 percent.

Finger Jointing: Allowed.

Face Surface: [**Surfaced (smooth)**] [**Saw textured**].

Optional Material: Primed MDF of same actual dimensions as lumber indicated may be used in lieu of lumber.

* + - * 1. Softwood Moldings for Transparent Finish (Stain or Clear Finish): MMPA WM 4, N-grade wood moldings. Made to patterns included in MMPA's "WM/Series Softwood Moulding Patterns."

Species: [**Eastern white pine**] [**Southern pine**] [**Western red cedar**] [**Douglas fir**].

Requirement in "Maximum Moisture Content" Subparagraph below is typical requirement of grading agencies for kiln-dried softwood moldings and molding stock.

Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.

Finger Jointing: Not allowed.

Matching: Selected for compatible grain and color.

* + - * 1. Be sure that moldings are detailed on Drawings. Hardwood Moldings for Transparent Finish (Stain or Clear Finish): MMPA WM 4, N-grade wood moldings made to patterns included in MMPA's "HWM/Series Hardwood Moulding Patterns."

Third option in "Species" Subparagraph below includes light-colored, closed-grain hardwood species that will take stain; if retaining, delete undesirable species, if any, from list.

Species: [**Red oak**] [**White Oak**][**White maple**] [**Aspen, basswood, cottonwood, , sycamore, white maple, or yellow poplar**][**Cherry** ][**Ash** ][**Beech** ][**Yellow or Sweet Birch**][**Walnut**].

Maximum Moisture Content: 9 percent.

Finger Jointing: Not allowed.

Matching: Selected for compatible grain and color.

Optional Material: Kiln-dried softwood or MDF, with exposed surfaces veneered with species indicated, may be used in lieu of solid wood.

Be sure that moldings are detailed on Drawings.

* + - * 1. Moldings for Opaque Finish (Painted Finish):

Softwood Moldings: MMPA WM 4, P grade.

Species: Eastern white pine.

Requirement in "Maximum Moisture Content" Subparagraph below is typical requirement of grading agencies for kiln-dried softwood moldings and molding stock.

Maximum Moisture Content: 15 percent with at least 85 percent of shipment at 12 percent or less.

Hardwood Moldings: MMPA WM 4, P-grade.

Species: Aspen, basswood, cottonwood, soft maple, or yellow poplar.

Maximum Moisture Content: 9 percent.

Finger Jointing: Allowed.

Optional Material: Primed MDF.

Be sure that moldings are detailed on Drawings.

* + - * 1. Foam-Plastic Moldings: Molded product of shapes indicated, with a tough outer skin on exposed surfaces; factory primed. Exposed surfaces shall not be shaped after molding.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=5546) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[Focal Point Architectural Products; Focal Point, Inc](http://www.specagent.com/Lookup?uid=123457168054).

[Fypon Ltd](http://www.specagent.com/Lookup?uid=123457168055).

[Melton Classics, Incorporated](http://www.specagent.com/Lookup?uid=123457168056).

Approved equivalent.

Requirements in "Density," "Flame-Spread Index," "Thickness," and "Width" subparagraphs below are based on requirements in the IBC for foam-plastic trim. Note that the IBC restricts such trim to not more than 10 percent of the wall and ceiling area of room or space in which it is installed.

Density: Not less than 20 lb/cu. ft..

Flame-Spread Index: Not more than 75 when tested according to ASTM E84.

Thickness: Not more than 1/2 inch.

Width: Not more than 8 inches.

Retain "Patterns" Subparagraph below or insert subparagraphs for various types of moldings required (such as crown molding, picture molding, and so forth). If retaining first option, include patterns in additional subparagraphs.

Patterns: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's samples**].

* + - 1. PANELING

Revise "Hardwood Veneer Plywood Paneling" Paragraph below for softwood veneer if required.

* + - * 1. Hardwood Veneer Plywood Paneling: Manufacturer's stock hardwood plywood panels complying with HPVA HP-1.

First six subparagraphs below are examples only. Revise to suit Project.

Face Veneer Species and Cut: [**Rotary-cut white birch**] [**Plain-sliced red oak**] [**Plain-sliced hickory**].

Veneer Matching: [**Random match**] [**Selected for similar color and grain**].

Backing Veneer Species: [**Same species as face veneer**] [**Any hardwood compatible with face species**].

Construction: Veneer core.

Thickness: [**1/8 inch**] [**5/32 inch**] [**3/16 inch**] [**1/4 inch**] [**5/16 inch**] [**7/16 inch**].

Panel Size:

[**48 by 96 inches**] [**48 by 120 inches**].

Glue Bond: Type II (interior).

Patterns in "Face Pattern" Subparagraph below are typical; others are available. Retain either option or revise to suit product.

Face Pattern: Manufacturer's standard [**V**] [**channel**]-grooved pattern, with grooves at edges, center, and third points of panels, and at other locations to provide pattern resembling random-width boards.

Retain one of four options in "Finish" Subparagraph below or revise if unfinished paneling is required. If retaining second, indicate finishes in additional subparagraphs.

Finish: [**Manufacturer's standard, transparent, UV-resistant, protective finish**] [**As indicated by manufacturer's designations**] [**Match Director’s Representative's samples**] [**As selected by Director’s Representative from manufacturer's full range**].

* + - * 1. Hardboard Paneling: Interior factory-finished hardboard paneling complying with ANSI A135.5.

Thickness: [**1/8 inch**] [**5/32 inch**] [**1/4 inch**].

Finish: Class I.

"Surface-Burning Characteristics" Subparagraph below is an example only. Retain or revise to suit finish class and products.

Surface-Burning Characteristics: As follows, tested according to ASTM E84:

Flame-Spread Index: 25 or less.

Smoke-Developed Index: 450 or less.

Retain one of three options in "Colors, Textures, and Patterns" Subparagraph below; if retaining first, indicate colors, textures, and patterns in additional subparagraphs.

Colors, Textures, and Patterns: [**As indicated by manufacturer's designations**] [**Match Director’s Representative's samples**] [**As selected by Director’s Representative from manufacturer's full range**].

Retain "Board Paneling" Paragraph below for softwood paneling graded according to, and made to, patterns of lumber-grading agencies.

* + - * 1. Board Paneling:

Species and Grade:

Eastern white pine; NeLMA or NLGA D Select.

Grading rules for eastern white pine are not the same as those for western pine, so requirements in first subparagraph below will vary somewhat among species.

Southern pine; SPIB C & Btr Paneling.

Western red cedar; NLGA, WCLIB, or WWPA Grade A.

Maximum moisture content for seasoned or kiln-dried, board-size lumber varies, depending on species, grade, and grading agency. See the Evaluations.

Maximum Moisture Content: 15 percent.

Pattern:

Retain one of first four subparagraphs below or revise to suit Project.

V-joint, tongue and groove, NeLMA EWP 4, SPIB SPP 54, or WWPA WP 4.

Pickwick, tongue and groove, NeLMA EWP 2, SPIB SPP 52, or WWPA WP 2.

Rounded-edge channel groove, tongue and groove, SPIB SPP 60, or WWPA WP 6.

Edge and center bead, tongue and groove, NeLMA E & CB, or WWPA E & CB Ceiling.

Sizes in "Net Coverage Width" Subparagraph below represent 6-, 8-, and 10-inch nominal widths.

Net Coverage Width: Not less than [**5-1/16 inches**] [**6-3/4 inches**] [**8-3/4 inches**].

* + - 1. SHELVING AND CLOTHES RODS

Copy "(Exposed) (Closet) (Utility) Shelving" Paragraph below and re-edit as needed to describe different categories of shelving required. Consider specifying only wood-board or plywood shelving instead of particleboard or MDF as a way of eliminating urea formaldehyde.

* + - * 1. [**Exposed**] [**Closet**] [**Utility**] Shelving: Made from [**the following material**] [**one of the following materials**], 3/4 inch thick:

Particleboard with [**radiused and filled**] [**or**] [**solid-wood**] front edge.

MDF with [**radiused**] [**or**] [**solid-wood**] front edge.

MDO softwood plywood with solid-wood edge.

Melamine-faced particleboard with [**radiused and filled**] [**applied-PVC**] front edge.

Wood boards as specified above for [**lumber trim for opaque**] [**softwood lumber trim for transparent**] [**hardwood lumber trim for transparent**] finish.

If not retaining lumber trim paragraphs in "Interior Trim" Article, "Softwood Boards" Subparagraph below can be used to specify board shelving. Revise species and grade below, if required, by copying from lumber trim paragraphs in "Interior Trim" Article.

Softwood Boards:

Kiln-dried eastern white pine; NeLMA, NLGA, or WWPA D Select (Quality).

Kiln-dried Douglas fir-larch, Douglas fir south, or hem-fir; SPIB Prime or D finish; NLGA, WCLIB, or WWPA; or southern pine; C finish.

* + - * 1. Shelf Cleats: [**3/4-by-3-1/2-inch boards**] [**3/4-by-5-1/2-inch boards**] [**3/4-by-5-1/2-inch boards with hole and notch to receive clothes rods**], as specified above for shelving.
        2. Shelf Brackets with Rod Support: BHMA A156.16, B04051; white-painted formed steel; load capacity greater than or equal to 500 lbs per pair.

[Basis-of-Design Product:](http://www.specagent.com/Lookup?ulid=13293) Subject to compliance with requirements, provide [Knape & Vogt Manufacturing Company](http://www.specagent.com/Lookup?uid=123457168046); “Closet-Pro” [**WS46-12** ][**WS46-16** ]Fixed Shelf Bracket with WS46-CPS Rod Hook or equal product by one of the following:

[EPCO, Engineered Products Co](http://www.specagent.com/Lookup?uid=123457168045).

National Hardware

* + - * 1. Shelf Brackets without Rod Support: BHMA A156.16, B04041; white-painted formed steel; load capacity greater than or equal to 500 lbs per pair.

[Basis-of-Design Product:](http://www.specagent.com/Lookup?ulid=13294) Subject to compliance with requirements, provide [Knape & Vogt Manufacturing Company](http://www.specagent.com/Lookup?uid=123457168049); “Closet-Pro” [**WS46-12** ][**WS46-16** ]Fixed Shelf Bracket or equal product by one of the following:

[A&M Hardware, Inc](http://www.specagent.com/Lookup?uid=123457168047).

[EPCO, Engineered Products Co](http://www.specagent.com/Lookup?uid=123457168048).

* + - * 1. Standards for Adjustable Shelf Brackets: BHMA A156.9, B04102; [**powder-coat-finished**] [**brass-finished**] [**zinc-plated**] steel.
        2. Adjustable Shelf Brackets: BHMA A156.9, B04112; [**powder-coat-finished steel**] [**brass-finished steel**] [**zinc-plated steel**] [**bronze-anodized aluminum**] [**black-anodized aluminum**] [**natural aluminum**].
        3. Standards for Adjustable Shelf Supports: BHMA A156.9, B04071; [**powder-coat-finished**] [**brass-finished**] [**zinc-plated**] steel.
        4. Adjustable Shelf Supports: BHMA A156.9, B04081 or B04091; [**powder-coat-finished**] [**brass-finished**] [**zinc-plated**] steel.
        5. Wood Clothes Rods: 1-1/2-inch- diameter, clear, kiln-dried [**hardwood**] [**Douglas fir or southern pine**].
        6. Metal Clothes Rods: 1-5/16-inch- diameter, [**aluminum tubes**] [**chrome-plated-steel tubes**] [**color-coated-steel tubes**] [**stainless steel tubes**] [**chrome-plated-steel telescoping tubes with end brackets for mounting on shelf cleats**].

Retain "Wood Rod Flanges" or "Metal Rod Flanges" Paragraph below if applicable.

* + - * 1. Wood Rod Flanges: Clear, kiln-dried, [**Douglas fir or southern pine**] [**eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine**] [**red oak**] [**white maple**] [**aspen, basswood, cottonwood, sap gum, white maple, or yellow poplar**] turnings[**with clear finish**].
        2. Metal Rod Flanges: [**Aluminum**] [**Chrome-plated steel**] [**Stainless steel**].
      1. MISCELLANEOUS MATERIALS

Retain materials in this article to suit Project.

* + - * 1. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

Aliphatic-resin glues in "Glue" Paragraph below are sold as "carpenter's wood glue;" polyurethane, as "gorilla glue;" and resorcinol glues, as "waterproof plastic resin glue."

* + - * 1. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

Retain "Installation Adhesive for Foam-Plastic Moldings" Paragraph below if required.

* + - * 1. Installation Adhesive for Foam-Plastic Moldings: Product recommended for indicated use by foam-plastic molding manufacturer.
        2. Paneling Adhesive: Comply with paneling manufacturer's written instructions for adhesives.

Retain "Multipurpose Construction Adhesive" Paragraph below if required.

* + - * 1. Multipurpose Construction Adhesive: Formulation, complying with ASTM D3498, that is recommended for indicated use by adhesive manufacturer.
      1. FABRICATION
         1. Back out or kerf backs of the following members, except those with ends exposed in finished work:

Interior standing and running trim, except shoe and crown molds.

Wood-board paneling.

Revise paragraph below to describe conditions where eased edges are required. Delete if eased edges are not required.

* + - * 1. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
          2. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.
          3. Proceed with installation only after unsatisfactory conditions have been corrected.
       2. PREPARATION
          1. Clean substrates of projections and substances detrimental to application.
          2. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.
       3. INSTALLATION, GENERAL
          1. Do not use materials that are unsound; warped; improperly treated or finished; inadequately seasoned; too small to fabricate with proper jointing arrangements; or with defective surfaces, sizes, or patterns.
          2. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials.

Use concealed shims where necessary for alignment.

Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.

Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.

Revise tolerances in first subparagraph below to suit Project.

Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.

Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

* + - 1. INSTALLATION OF STANDING AND RUNNING TRIM
         1. Install trim with minimum number of joints as is practical, using full-length pieces from maximum lengths of lumber available.

Do not use pieces less than 24 inches long, except where necessary.

Stagger joints in adjacent and related standing and running trim.

Miter at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint.

Use scarf joints for end-to-end joints.

Plane backs of casings to provide uniform thickness across joints where necessary for alignment.

Consider deleting first subparagraph below. Match of color and grain is subject to interpretation; below may be difficult to enforce.

Match color and grain pattern of trim for transparent finish (stain or clear finish) across joints.

Install trim after gypsum-board joint finishing operations are completed.

Install without splitting; drill pilot holes before fastening where necessary to prevent splitting.

Fasten to prevent movement or warping.

Countersink fastener heads on exposed carpentry work and fill holes.

* + - 1. INSTALLATION OF PANELING

Retain paneling types in this article to suit Project.

* + - * 1. Plywood Paneling: Select and arrange panels on each wall to minimize noticeable variations in grain character and color between adjacent panels.

Leave 1/4-inch gap to be covered with trim at top, bottom, and openings.

Install with uniform tight joints between panels.

Attach panels to supports with manufacturer's recommended panel adhesive and fasteners.

Space fasteners and adhesive as recommended by panel manufacturer.

Conceal fasteners to greatest practical extent.

Retain subparagraph below if using grooved panels.

Arrange panels with grooves and joints over supports.

Fasten to supports with nails of type and at spacing recommended by panel manufacturer.

Use fasteners with prefinished heads matching groove color.

* + - * 1. Hardboard Paneling: Install according to manufacturer's written instructions.

Leave 1/4-inch gap to be covered with trim at top, bottom, and openings.

Butt adjacent panels with moderate contact.

Use fasteners with prefinished heads matching paneling color.

Retain "Wood Stud or Furring Substrate" and "Plaster or Gypsum-Board Substrate" subparagraphs below if required.

Wood Stud or Furring Substrate: Install with 1-inch annular-ring shank hardboard nails.

Plaster or Gypsum-Board Substrate: Install with 1-5/8-inch annular-ring shank hardboard nails.

Nailing: Space nails 4 inches o.c. at panel perimeter and 8 inches o.c. at intermediate supports unless otherwise required by manufacturer.

* + - * 1. Board Paneling: Install according to manufacturer's written instructions.

Arrange in random-width pattern suggested by manufacturer unless boards or planks are of uniform width.

Retain first subparagraph below if end joints are unacceptable; second subparagraph, if acceptable.

Install in full lengths without end joints.

Stagger end joints in random pattern to uniformly distribute joints on each wall.

Retain one of first two subparagraphs below if retaining last subparagraph above. First below is for tongue-and-groove pattern; second, for other patterns.

Install with uniform end joints with only end-matched (tongue-and-groove) joints within each field of paneling.

Install with uniform end joints. Locate end joints only over furring or blocking.

Select and arrange boards on each wall to minimize noticeable variations in grain character and color between adjacent boards.

Install with uniform tight joints between boards.

Retain one of five subparagraphs below.

Fasten paneling by face nailing, setting nails, and filling over nail heads.

Fasten paneling with trim screws, set below face and filled.

Fasten paneling by blind nailing through tongues.

Fasten paneling with paneling system manufacturer's concealed clips.

Fasten paneling to gypsum wallboard with panel adhesive.

* + - 1. INSTALLATION OF SHELVING AND CLOTHES RODS
         1. Cut shelf cleats at ends of shelves about 1/2 inch less than width of shelves and sand exposed ends smooth.

Install shelf cleats by fastening to framing or backing with finish nails or trim screws, set below face and filled.

Space fasteners not more than 16 inches o.c. Use two fasteners at each framing member or fastener location for cleats 4 inches nominal in width and wider.

Retain subparagraph below if required.

Apply a bead of multipurpose construction adhesive to back of shelf cleats before installing.

Remove adhesive that is squeezed out after fastening shelf cleats in place.

* + - * 1. Install shelf brackets according to manufacturer's written instructions, spaced not more than 36 inches o.c. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.
        2. Install standards for adjustable shelf supports according to manufacturer's written instructions. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors. Space fasteners not more than 12 inches o.c.
        3. Install standards for adjustable shelf brackets according to manufacturer's written instructions, spaced not more than 36 inches o.c. and within 6 inches of ends of shelves. Fasten to framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.
        4. Cut shelves to neatly fit openings with only enough gap to allow shelves to be removed and reinstalled.

Install shelves, fully seated on cleats, brackets, and supports.

Retain first subparagraph below if shelves do not need to be removed for painting.

Fasten shelves to cleats with finish nails or trim screws, set flush.

Usually retain subparagraph below so shelves provide lateral support for shelf brackets.

Fasten shelves to brackets to comply with bracket manufacturer's written instructions.

* + - * 1. Install rod flanges for rods as indicated.

Fasten to shelf cleats, framing members, blocking, or metal backing, or use toggle bolts or hollow wall anchors.

Install rods in rod flanges.

* + - 1. ADJUSTING
         1. Replace interior finish carpentry that is damaged or does not comply with requirements.

Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing.

* + - * 1. Adjust joinery for uniform appearance.
      1. CLEANING
         1. Clean interior finish carpentry on exposed and semiexposed surfaces.
         2. Restore damaged or soiled areas and touch up factory-applied finishes if any.
      2. PROTECTION
         1. Protect installed products from damage from weather and other causes during construction.
         2. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 062023