SECTION 062013 – EXTERIOR 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. SUMMARY
          1. Section Includes:

Exterior [**wood**] [**medium-density overlay (MDO)**] [**primed hardboard**] [**cellular PVC**] [**and**] [**foam-plastic**] trim.

[**Lumber**] [**Plywood**] [**Engineered wood**] siding.

[**Lumber**] [**Plywood**] [**Engineered wood**] soffits.

* + - * 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 064400 "Ornamental Woodwork" for exterior ornamental wood columns.

* + - 1. DEFINITIONS

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

* + - * 1. MDO: Plywood with a medium-density overlay on the face.
        2. 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 half of exposed surface finished; 50 sq. in. for lumber and 8 by 10 inches for panels.

For wood [**siding**] [**and**] [**soffits**], 50 sq. in. for board types and 8 by 10 inches for panels.

For cellular PVC trim, with half of exposed surface finished; 50 sq. in..

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

* + - * 1. Compliance Certificates:

For lumber that is not marked with grade stamp.

For preservative-treated wood that is not marked with treatment-quality mark.

Design Consultant to review code references and verify that the referenced sections/tables are current. Note that code references shall be based on the current version of the Uniform Code.

* + - * 1. Evaluation Reports: For the following, from ICC-ES:

Wood-preservative-treated wood.

Cellular PVC trim.

Foam-plastic moldings.

* + - * 1. Sample Warranties: For manufacturer's warranties.
      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. FIELD CONDITIONS
         1. Weather Limitations: Proceed with installation only when existing and forecast weather conditions permit work to be performed and at least one coat of specified finish can be applied without exposure to rain, snow, or dampness.
         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. WARRANTY

When warranties are required, verify with Director’s Representative that warranties stated in this article are not less than remedies available under prevailing local laws.

Verify availability of warranties for engineered wood siding, soffits, and trim with manufacturers; not all manufacturers offer warranties. Do not include unrealistic warranty requirements.

* + - * 1. Manufacturer's Warranty for Engineered Wood Siding [**Soffits**] [**and**] [**Trim**]: Manufacturer agrees to repair or replace components that fail in materials or workmanship within specified warranty period.

Failures include, but are not limited to, deformation or deterioration beyond normal weathering.

Verify available warranties and warranty periods.

Warranty Period for Siding [**Soffits**] [**and**] [**Trim**] (Excluding Finish): 20 years from date of Substantial Completion.

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 inspection agency, indicating grade, species, moisture content at time of surfacing, and mill.

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 inspection agency**].

* + - * 1. Softwood Plywood: DOC PS 1.
        2. Hardboard: ANSI A135.4.
      1. WOOD-PRESERVATIVE-TREATED MATERIALS
         1. Water-Repellent Preservative Treatment by Nonpressure Process: AWPA N1; dip, spray, flood, or vacuum-pressure treatment.

Insert other formulations for option in "Preservative Chemicals" Subparagraph below only after verifying availability and compliance with environmental and regulatory controls in effect at Project location. Retain option if resistance to wood-destroying insects is also required.

Preservative Chemicals: 3-iodo-2-propynyl butyl carbamate (IPBC)[**, combined with an insecticide containing chloropyrifos (CPF)**].

Use chemical formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants in solution to distinguish treated material from untreated material.

Application: [**Items not required to be pressure-preservative treated**] [**Exterior trim**] [**and**] [**wood siding**].

See the Evaluations for discussion of preservative formulations. In "Preservative Treatment by Pressure Process" Paragraph below, Use Category UC3a is suitable for painted exterior siding and trim; Use Category UC3b, for unpainted exterior siding and trim.

* + - * 1. Preservative Treatment by Pressure Process: AWPA U1; Use Category [**UC3a**] [**UC3b**].

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.

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.

Unless all exterior lumber and plywood is required to be pressure-preservative treated, insert list of items to be treated in "Application" Subparagraph below or indicate on Drawings or in other articles where they are specified.

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

* + - 1. EXTERIOR TRIM
         1. Lumber Trim for [**Semitransparent-Stained Finish**] [**Clear Finish**] [**Unfinished Applications**]:

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

Species and Grade: Redwood; RIS Clear All Heart.

Species and Grade: Western red cedar; NLGA, WCLIB, or WWPA Clear Heart.

Species and Grade: Hem-fir; pressure-preservative treated; NeLMA, NLGA, WCLIB, or WWPA 2 Common.

Species and Grade: Southern or Eastern pine; pressure-preservative treated; NeLMA, SPIB C & Btr.

Maximum moisture content for seasoned or kiln-dried, board-size lumber varies depending on species, grade, and grading agency. See the Evaluations. Pressure-preservative-treated lumber is usually specified to have a maximum moisture content of 19 percent.

Maximum Moisture Content: Pressure-preservative-treated lumber 19 percent; all other lumber 15 percent with at least 85 percent of shipment at 12 percent or less.

Allowing finger-jointed material may be inadvisable, because some mills do not use exterior-type glue.

Finger Jointing: Not allowed.

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

* + - * 1. Lumber Trim for [**Opaque-Stained**] [**Painted**] Finish:

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

Species and Grade: Redwood; RIS Grade B.

Species and Grade: Western red cedar; NLGA, WCLIB, or WWPA Grade B.

Species and Grade: Hem-fir; NeLMA, NLGA, WCLIB, or WWPA 2 Common.

Species and Grade: Eastern white pine, eastern hemlock-balsam fir-tamarack, eastern spruce, or white woods; NeLMA, NLGA, WCLIB, or WWPA Premium or 2 Common (Sterling).

Species and Grade: Northern white cedar; NeLMA or NLGA 2 Common.

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.

Allowing finger-jointed material may be inadvisable, because some mills do not use exterior-type glue.

Finger Jointing: Allowed if made with wet-use adhesive complying with ASTM D5572.

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

Factory Priming: Factory coated on both faces and all edges, with exterior primer compatible with topcoats specified.

Detail molding profiles on Drawings.

* + - * 1. Moldings for [**Semitransparent-Stained Finish**] [**Clear Finish**] [**Unfinished Applications**]: MMPA WM 4, N-grade wood moldings, without finger jointing, made from kiln-dried stock to patterns included in MMPA's "WM/Series Softwood Moulding Patterns."

Species: [**Redwood**] [**Western red cedar**] [**Eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine**].

Detail molding profiles on Drawings.

* + - * 1. Moldings for [**Opaque-Stained**] [**Painted**] Finish: MMPA WM 4, P-grade wood moldings, made from kiln-dried stock to patterns included in MMPA's "WM/Series Softwood Moulding Patterns."

Species: [**Redwood**] [**Western red cedar**] [**Eastern white, Idaho white, lodgepole, ponderosa, radiata, or sugar pine**].

Allowing finger-jointed material may be inadvisable, because some mills do not use exterior-type glue.

Finger Jointing: Allowed if made with wet-use adhesive complying with ASTM D5572.

Factory Priming: Factory coated on both faces and all edges, with exterior primer compatible with topcoats specified.

* + - * 1. MDO Trim: Exterior Grade B-B MDO plywood.
        2. Primed Hardboard Trim: ANSI A135.6, primed with manufacturer's standard exterior primer. Recommended by manufacturer for exterior use.
        3. Cellular PVC Trim: Extruded, expanded PVC with a small-cell microstructure, recommended by manufacturer for exterior use, made from UV- and heat-stabilized rigid material.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=1602) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

[AZEK Building Products, Inc](http://www.specagent.com/Lookup?uid=123457128747).

[CertainTeed Corporation; Saint-Gobain North America](http://www.specagent.com/Lookup?uid=123457128737).

[Kleer Lumber, LLC](http://www.specagent.com/Lookup?uid=123457128744).

Approved equivalent.

Revise values in subparagraphs below to match those for products retained, and insert other physical properties if desired.

Density: Not less than 31 lb/cu. ft.

Heat Deflection Temperature: Not less than 130 deg F, according to ASTM D648.

Coefficient of Thermal Expansion: Not more than 4.5 x 10(-5) inches/inch x deg F.

Water Absorption: Not more than 1 percent, according to ASTM D570.

Flame-Spread Index: 75 or less, according to ASTM E84.

* + - * 1. Foam-Plastic Moldings: Molded product of shapes indicated, recommended by manufacturer for exterior use, 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=5539) 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=123457128751).

[Fypon Ltd](http://www.specagent.com/Lookup?uid=123457128753).

[Melton Classics, Incorporated](http://www.specagent.com/Lookup?uid=123457128759).

Approved equivalent.

Requirements in "Density," "Flame-Spread Index," "Thickness," and "Width" subparagraphs below are based on requirements in the IBC for interior foam-plastic trim.

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. If retaining first option, indicate patterns in additional subparagraphs.

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

* + - 1. LUMBER SIDING
         1. Provide kiln-dried lumber siding complying with DOC PS 20[**, factory coated with exterior primer compatible with topcoats specified**].

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

* + - * 1. Species and Grade: Redwood; RIS Clear All Heart.
        2. Species and Grade: Western red cedar; NLGA, WCLIB, or WWPA Clear VG (Vertical Grain) Heart.
        3. Species and Grade: Spruce-pine-fir; NeLMA, NLGA, WCLIB, or WWPA 1 Common.
        4. Species and Grade: Pressure-preservative-treated hem-fir; NLGA, WCLIB, or WWPA 1 Common.
        5. Species and Grade: Eastern white pine, eastern hemlock-balsam fir-tamarack, eastern spruce, or white woods; NeLMA, NLGA, WCLIB, or WWPA Finish or 1 Common (Colonial).
        6. Species and Grade: Northern white cedar; NeLMA or NLGA 1 Common.
        7. Species and Grade: Pressure-preservative-treated southern pine; SPIB C & Btr.

Many siding patterns and sizes are available. Options in three "Pattern" paragraphs below are examples only. Sizes are from DOC PS 20; other sizes are available.

* + - * 1. Pattern: Bevel siding, S1S2E, actual overall dimensions of [**5-1/2 by 11/16 inch**] [**5-1/2 by 3/4 inch**] [**7-1/4 by 3/4 inch**] [**9-1/4 by 3/4 inch**] [**9-1/4 by 1-3/32 inches**], measured on the face and thick edge.
        2. Pattern: Drop siding, SPIB or WWPA pattern No. 105, actual face width (coverage) and thickness of [**4-7/8 by 9/16 inch**] [**4-7/8 by 23/32 inch**] [**6-5/8 by 23/32 inch**] [**8-5/8 by 23/32 inch**].
        3. Pattern: V-edge, smooth-faced tongue and groove, actual face width (coverage) and thickness of [**3-1/8 by 9/16 inch**] [**3-1/8 by 23/32 inch**] [**5-1/8 by 23/32 inch**] [**6-7/8 by 23/32 inch**].
      1. PLYWOOD [**SIDING** ][**AND** ][**SOFFITS**]

* + - * 1. [Products:](http://www.specagent.com/Lookup?ulid=5540) Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:

[Georgia-Pacific Gypsum LLC](http://www.specagent.com/Lookup?uid=123457128777); Plytanium.

Louisiana Pacific; LP SmartSide.

[Roseburg](http://www.specagent.com/Lookup?uid=123457128773); DuraTemp.

Approved equivalent.

* + - * 1. Plywood Type: APA-rated siding, factory coated with exterior acrylic latex stain, in panel sizes indicated.

Retain one option in "Thickness" Paragraph below. Not all thicknesses, grades, and species are available; verify local availability before specifying. Plain, rough-sawn plywood is available in all thicknesses listed below; channel groove, in all but 19/32 and 5/8 inch; and Texture 1-11 and reverse board and batten, only in 19/32 and 5/8 inch.

* + - * 1. Thickness: [**11/32 inch**] [**3/8 inch**] [**15/32 inch**] [**1/2 inch**] [**19/32 inch**] [**5/8 inch**] [**As indicated**].
        2. Face Species: [**Southern pine**] [**Douglas fir**] [**Western red cedar**] [**Redwood**].
        3. Pattern: [**Plain.**] [**Channel groove; grooves 4 inches o.c.**] [**Texture 1-11; grooves 4 inches o.c.**] [**Reverse board and batten; grooves 12 inches o.c.**]
        4. Surface: [**Smooth**] [**Rough sawn**].
      1. LUMBER SOFFITS
         1. Provide kiln-dried lumber siding complying with DOC PS 20[**, factory coated with exterior primer compatible with topcoats specified**].

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

* + - * 1. Species and Grade: Redwood; RIS Clear All Heart.
        2. Species and Grade: Western red cedar; NLGA, WCLIB, or WWPA Grade A.
        3. Species and Grade: Spruce-pine-fir; NeLMA, NLGA, WCLIB, or WWPA 1 Common.
        4. Species and Grade: Hem-fir; NLGA, WCLIB, or WWPA 1 Common.
        5. Species and Grade: Eastern white pine, eastern hemlock-balsam fir-tamarack, eastern spruce, or white woods; NeLMA, NLGA, WCLIB, or WWPA Finish or 1 Common (Colonial).
        6. Species and Grade: Northern white cedar; NeLMA or NLGA 1 Common.
        7. Species and Grade: Southern pine; SPIB C & Btr.
        8. Pattern: V-edge, smooth-faced tongue and groove, actual face width (coverage) and thickness of [**3-1/8 by 9/16 inch**] [**3-1/8 by 23/32 inch**] [**5-1/8 by 23/32 inch**] [**6-7/8 by 23/32 inch**].
        9. Pattern: Rounded-edge channel groove, tongue and groove, actual face width (coverage) and thickness of [**3-1/8 by 9/16 inch**] [**3-1/8 by 23/32 inch**] [**5-1/8 by 23/32 inch**] [**6-7/8 by 23/32 inch**].
        10. Pattern: Edge and center bead, tongue and groove, actual face width (coverage) and thickness of [**3-1/8 by 9/16 inch**] [**3-1/8 by 23/32 inch**] [**5-1/8 by 23/32 inch**] [**6-7/8 by 23/32 inch**], measured at 19 percent moisture content.
        11. Pattern: Beaded ceiling, tongue and groove, actual face width (coverage) and thickness of [**3-1/8 by 3/8 inch**] [**3-1/8 by 7/16 inch**].
      1. MISCELLANEOUS MATERIALS
         1. Fasteners for Exterior Finish Carpentry: Provide nails or screws, in sufficient length to penetrate not less than 1-1/2 inches into wood substrate.

Retain first subparagraph unless countersunk sinker nails are used to fasten siding. Nails specified below provide better holding power.

For face-fastening siding, provide ringed-shank siding nails unless otherwise indicated.

California Redwood Association recommends stainless steel fasteners or hot-dip galvanized-steel fasteners.

For redwood, provide stainless steel fasteners.

For prefinished items, provide matching prefinished aluminum fasteners where face fastening is required.

For pressure-preservative-treated wood, provide stainless steel fasteners.

For applications not otherwise indicated, provide hot-dip galvanized-steel fasteners.

* + - * 1. Wood Glue: Waterproof resorcinol glue recommended by manufacturer for exterior carpentry use.
        2. Adhesive for Cellular PVC Trim: Product recommended by trim manufacturer.
        3. Flashing: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim" for flashing materials installed in exterior finish carpentry.

Retain "Horizontal Joint Flashing for Panel Siding" Subparagraph below for plywood or engineered wood panel siding. Use stainless steel flashing if siding is preservative treated.

Horizontal Joint Flashing for Panel Siding: Preformed, [**galvanized-steel**] [**aluminum**] [**prefinished-aluminum**] [**stainless steel**], Z-shaped flashing.

* + - * 1. Insect Screening for Soffit Vents: Aluminum, 18-by-16-inch black mesh.
        2. Continuous Soffit Vents: Aluminum hat channel shape with stamped louvers or perforations, 2 inches wide and in lengths not less than 96 inches.

Net-Free Area: Not less than [**4 sq. in./linear ft.**] [**6 sq. in./linear ft.**] [**8 sq. in./linear ft.**][**value indicated on drawings**].

Finish: [**Mill finish**] [**White paint**] [**Brown paint**].

* + - * 1. Round Soffit Vents: Stamped aluminum louvered vents, not less than [**2 inches** in diameter] [**2-1/2 inches** in diameter] [**3 inches** in diameter] [**4 inches** in diameter][**size and spacing indicated on drawings**] , made to be inserted in round holes cut in soffit.

Finish: [**Mill finish**] [**White paint**] [**Brown paint**].

* + - * 1. Round Soffit Vents: Molded-plastic louvered vents, not less than [**2 inches** in diameter] [**2-1/2 inches** in diameter] [**3 inches** in diameter] [**4 inches** in diameter][**size and spacing indicated on drawings**], made to be inserted in round holes cut in soffit.

Revise "Sealants" Paragraph below to specify an elastomeric sealant if considered necessary or to specify another type or grade of latex sealant. ASTM C834 includes Type P (opaque sealants containing color or extended pigments), Type C (clear or translucent sealants), Grade NF (does not have to be tested for low-temperature flexibility), and Grade minus 18 deg C and Grade 0 deg C (must meet requirements for flexibility at minus 18 deg C and 0 deg C, respectively).

* + - * 1. Sealants for PVC trim: As recommended by sealant and substrate manufacturers for intended application.
      1. FABRICATION
         1. Back out or kerf backs of standing and running trim wider than 5 inches, except members with ends exposed in finished work.

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. Prime lumber and moldings to be painted, including both faces and edges, unless factory primed.

Cut to required lengths and prime ends.

* + - 1. INSTALLATION, GENERAL
         1. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.

Retain subparagraph below if using manufactured units.

Do not use manufactured units with defective surfaces, sizes, or patterns.

* + - * 1. Install exterior finish carpentry level, plumb, true, and aligned with adjacent materials.

Use concealed shims where necessary for alignment.

Scribe and cut exterior finish carpentry to fit adjoining work.

Refinish and seal cuts as recommended by manufacturer.

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 exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.

Coordinate exterior finish carpentry with materials and systems in or adjacent to it.

Provide cutouts for mechanical and electrical items that penetrate exterior finish carpentry.

* + - 1. INSTALLATION OF STANDING AND RUNNING TRIM
         1. Install flat-grain lumber with bark side exposed to weather.
         2. Install cellular PVC trim to comply with manufacturer's written instructions and warranty requirements.
         3. 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.

Use scarf joints for end-to-end joints.

Stagger end joints in adjacent and related members.

* + - * 1. Fit exterior joints to exclude water.

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

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

* + - * 1. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
      1. INSTALLATION OF SIDING
         1. Install siding to comply with manufacturer's written instructions.

Revise "Horizontal Lumber Siding" Paragraph below for tongue-and-groove siding if required.

* + - * 1. Horizontal Lumber Siding:

Apply starter strip along bottom edge of sheathing or sill.

Install first course of siding, with lower edge at least 1/8 inch below starter strip and subsequent courses lapped 1 inch over course below.

Nail at each stud.

Do not allow nails to penetrate more than one thickness of siding.

Leave 1/8-inch gap at trim and corners unless otherwise recommended by manufacturer, and apply sealant.

Butt joints only over framing or blocking, nailing top and bottom on each side and staggering joints in subsequent courses.

Retain subparagraph below if using prefabricated corners.

Install prefabricated outside corners as recommended by manufacturer of siding materials.

Revise "Diagonal Lumber Siding" Paragraph below for vertical application if required.

* + - * 1. Diagonal Lumber Siding:

Begin application at corner, with tongue edge up.

Install subsequent courses with tongue-and-groove edges tightly fitted together.

Nail at each stud.

Leave 1/8-inch gap at trim and corners unless otherwise recommended by manufacturer, and apply sealant.

Butt joints only over framing or blocking, nailing top and bottom on each side and staggering joints in subsequent courses.

Retain subparagraph below if using prefabricated corners.

Install prefabricated outside corners as recommended by manufacturer of siding materials.

* + - * 1. Plywood Siding:

Install panels with edges over framing or blocking.

Nail at 6 inches o.c. at panel perimeter and 12 inches o.c. at intermediate supports unless manufacturer recommends closer spacing.

Leave 1/16-inch gap between adjacent panels and 1/8-inch gap at perimeter, openings, and horizontal joints unless otherwise recommended by panel manufacturer.

Seal butt joints at inside and outside corners and at trim locations.

Install continuous metal flashing at horizontal panel joints.

Apply battens and corner trim as indicated. Countersink nail heads, fill flush, and sand filler.

Retain option in subparagraph below if countersunk casing nails are required; countersunk casing nails do not hold as well as siding nails.

Conceal fasteners to greatest practical extent by countersinking and filling, by placing in grooves of siding pattern or by concealing with applied trim or battens as detailed.

Do not nail through overlapping pieces.

* + - * 1. Flashing: Install metal flashing as indicated on Drawings and as recommended by siding manufacturer.

Procedure in "Finish" Paragraph below is recommended to prevent sun and weather damage to siding.

* + - * 1. Finish: Apply finish within two weeks of installation.
      1. ADJUSTING
         1. Replace exterior finish carpentry that is damaged or does not comply with requirements.

Exterior 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 exterior finish carpentry on exposed and semiexposed surfaces.
         2. Touch up factory-applied finishes to restore damaged or soiled areas.
      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 062013