SECTION 06 40 00 – ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Provide the work of this Section in accordance with requirements of the Contract Documents

B. This Section includes the following, but is not limited to:

1. Plastic-laminate faced cabinets **PL**.
2. Plastic laminate paneling **PL.**
3. Solid phenolic wall paneling **PP**.
4. Shelving.
5. Shop finishing interior woodwork.
6. Cabinet hardware and accessories.

C. Furring, blocking, shims, hanging strips, unless concealed within other construction before woodwork installation.

D. Related Requirements:

1. Division 05, Section 05 50 00 "Miscellaneous Metal Fabrications" for miscellaneous metal required to support architectural woodwork.
2. Division 05, Section 05 75 00 "Decorative Formed Metal" for metal finishes applied to architectural woodwork.
3. Division 06, Section 06 10 53 "Miscellaneous Rough Carpentry" for wood furring, blocking, shims, and hanging strips concealed within other construction but required for woodwork installation.
4. Division 08, Section 08 80 00 "Glazing" for incorporation of glass types in interior architectural woodwork cabinetry specified in this section.
5. Division 09, Section 09 21 00 "Gypsum Board Assemblies" for blocking in partitions.
6. Division 09, Section 09 90 00 "Painting" for field finishing of architectural woodwork.
7. Division 12, Section 12 36 40 “Simulated Stone Countertops and Fabrications.”

1.2 DEFINITIONS

A. Architectural woodwork includes wood furring, blocking, shims, and hanging strips for installing woodwork items, that are not concealed within other construction before woodwork installation.

B. Exposed Surfaces:

1. Surfaces visible when doors and drawers are closed.
2. Bottoms of cases more than 4 feet above finish floor.
3. Back and edges of hinged doors exposed when opened.

C. Semi-exposed Surfaces:

1. Surfaces that become visible when drawers and doors are open.
2. Tops of cases 6 feet or higher above finish floor.

D. Concealed Surfaces: Surfaces not visible after installation.

1.3 ACRONYMS

A. MDF: Medium density fiberboard.

B. MDO: Plywood with a medium density overlay on the face.

C. PVC: Polyvinyl chloride.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated, including but not limited to hardboard, medium-density fiberboard, plywood, high-pressure decorative laminate, adhesive for bonding plastic laminate, thermoset decorative overlay, solid phenolic, fire-retardant-treated materials, cabinet hardware and accessories, and finishing materials and processes.

1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
2. Certification of compliance with the environmental performance requirements specified in this Section.

B. Sustainable Design Submittals:

1. Building Product Disclosure and Optimization - Sourcing of Raw Materials:

a. Extended Producer Responsibility (EPR): Submit documentation indicating that manufacturers have a take back or recycling program for the product purchased.
b. Bio-based Materials: For bio-based products and materials other than wood, submit documentation of product data and testing results in compliance with LEED requirements.
c. Wood Products: Submit documentation of Forest Stewardship Council or USGBC equivalent certification.
d. Materials Reuse: For products that are salvaged, refurbished, or reused, include a statement indicating costs for each product.
e. Recycled Content: For products having recycled content, indicate percentages by weight of post-consumer and pre-consumer recycled content.

1) Include statement indicating costs for each product having recycled content.

f. Regional Materials: For products that are required to comply with requirements for regional materials, indicating location of material manufacturer and point of extraction, harvest, or recovery for each raw material.

1) Include statement indicating distance to Project, cost for each regional material and the fraction by weight that is considered regional.

2. Indoor Environmental Quality, Low Emitting Materials: Building Products must be tested and compliant with the California Department of Public-Health (CDPH) Standard Method V1.1-2010 or v1.2 2017, using the applicable exposure scenario.

a. For paints, and coatings, wet applied, include printed statement of VOC content, showing compliance with the applicable VOC limits of the California Air Resources

Board (CARB) 2007, Suggested Control Measure for Architectural Coatings or the South Coast Air Quality Management District (SCAQMD) Rule 1113-2011.

b. Adhesives and Sealants: For wet applied on-site products, submit printed statement showing compliance with the applicable chemical content requirements of SCAQMD Rule 1168, effective July 1, 2005, and rule amendment date of January 7, 2005.
c. Alternative tests for VOC above include ASTM D2369-10; ISO 11890 part 1; ASTM D6886-03; or ISO 11890-2.
d. Methylene Chloride and perchloroethylene may not be added to paints, coating, adhesive or sealants
e. Composite Wood: Submit documentation showing that wood used in the project has low formaldehyde emissions that meet the California Air Resources Board ATCM for formaldehyde requirements for ultra-low emitting formaldehyde (ULEF) resins or no added formaldehyde resins.

C. Shop Drawings: Submit shop drawings of architectural woodwork for the fabrication and the installation of the Work. Include large scale details, dimensioned plans and elevations, and adjacent work of other trades. Shop drawings will not be reviewed until AWI Quality Certification Program letter of accreditation has been submitted

1. Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
2. Show locations and sizes of furring, blocking, and hanging strips, including required concealed blocking and reinforcement specified in other Sections.
3. Indicate room numbers, materials, thicknesses and finishes.
4. Show locations and sizes of cutouts and holes for plumbing fixtures, faucets, soap dispensers, electrical switches and outlets, and other items installed in architectural woodwork and paneling.
5. Show complete elevations of rooms to receive paneling as well as panel matching required by these specifications.
6. For paneling produced from premanufactured sets, show finished panel sizes, set numbers, sequence numbers within sets, and method of cutting panels to produce indicated sizes.
7. For countertops, show materials, finishes, edge and backsplash profiles, methods of joining, and cutouts for plumbing fixtures, locations and details of joints.
8. Show locations of fireblocking at furred construction.

D. Samples for Initial Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available for each type of material indicated.

1. Plastic laminates.
2. Solid phenolic.
3. Edge material.
4. Thermoset decorative panels and overlays.

E. Samples for Verification: For the following:

1. Plastic-laminate-clad panel products, 12 by 12 inches (300 by 300 mm), for each type, color, pattern, and surface finish, with separate samples of unfaced panel product used for core.
2. Phenolic panel products, 12 by 12 inches (300 by 300 mm) for each finish system and color, with exposed surface finished.
3. Thermoset decorative-overlay surfaced panel products, 8 by 10 inches (200 by 250 mm), for each type, color, pattern, and surface finish.
4. Corner pieces as follows:

a. Cabinet front frame joints between stiles and rail, as well as exposed end pieces, 18 inches (450 mm) high by 18 inches (450 mm) wide by 6 inches (150 mm) deep.
b. Miter joints for standing trim.
c. Stile and rail paneling, 18 inches (450 mm) high by 18 inches (450 mm) wide by 6 inches (150 mm) deep.

5. Exposed cabinet hardware and accessories, one unit for each type and finish.
6. Sealant: 3 inch samples of each sealant to match each plastic laminate types specified

F. Fabrication Engineering and Design Data Submittal: Submit for solid phenolic wall panels to verify compliance with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.6 INFORMATIONAL SUBMITTALS

A. Product Certificates:

1. Submit product certificates for the following:

a. Composite wood and agrifiber products.
b. Thermoset decorative panels.
c. High-pressure decorative laminate.
d. Adhesives.

B. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

C. Sustainable Design Submittals:

1. Building Product Disclosure and Optimization - Environmental Product Declarations

a. Submit product specific type III EPDs or Industry wide (generic) EPDs, USGBC approved program declaration or products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that have at least a cradle to gate scope.

2. Building Product Disclosure and Optimization - Material Ingredients

a. Material Ingredient Reporting: Submit documentation confirming chemical inventory of products to at least 0.1 % (1000pm) with at least one of the following:

1) Submit published manufacturer inventory of ingredients identified by name and Chemical Abstract Service Registration Number (CASRN)
2) Submit documentation that product has been certified as Cradle-to-Cradle v3 at the Bronze Level or better
3) Submit Declare product label indicating that all ingredients have been disclosed down to 1000 ppm or designated as Red List Free or Declared
4) Living Product Challenge
5) Product Lens Certification
6) USGBC approved program.

b. Material Ingredient Optimization: Submit documentation confirming chemical inventory of products to at least 0.01 % (100pm) and/or that has a compliant material ingredient optimization report with at least one of the following:

1) Submit GreenScreen V1.2 Benchmark: Third party report prepared by a licensed GreenScreen List Translator, or a full GreenScreen Assessment.
2) Submit third-party verified documentation that product has been certified as Cradle-to-Cradle v3 at the Bronze Level or better
3) Submit third-party verified Cradle to Cradle v3 Material Health certificate at the Bronze Level or better
4) Submit third-party verified Declare product label indicating that all ingredients have been disclosed down to 100 ppm
5) Submit third-party verified documentation that product is Living Product Challenge certified with a Red List Free or LBC Red List Free Declare label.
6) Submit documentation that product has a manufacturer prepared action plan with material inventory to at least 1000 ppm.

D. Evaluation Reports: For fire-retardant-treated materials, from ICC-ES.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Instructions: Furnish maintenance instructions for each item specified for use during construction and for use by the Owner after acceptance of the Work. Provide product data for care products used or recommended by installer/fabricator and names, addresses and telephone numbers of local sources for products.

1.8 QUALITY ASSURANCE

A. Quality Standard: Unless otherwise indicated, comply with the "North American Architectural Woodwork Association (NAAWS)" Latest Edition, for grades of interior architectural woodwork, construction, finishes, and other requirements.

B. Fabricator Qualifications: A firm with no less than 10 years' experience in producing architectural woodwork similar to that indicated for this Project and whose products have a record of successful in-service performance, as well as sufficient production capacity to produce required units complying with the requirements of this Section.

C. Installer Qualifications: An experienced installer with no less than 5 years' experience who has completed architectural woodwork similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

D. Fire-Test-Response Characteristics: Where fire-retardant materials or products are required by local code, provide materials and products with specified fire-test-response characteristics as determined by testing identical products according to test methods indicated by UL, ITS, or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify with appropriate markings of applicable testing and inspecting agency in the form of separable paper label or, where required by authorities having jurisdiction, imprint on surfaces of materials that will be concealed from view after installation.

1. Fire Retardant Treated Wood: Treat those items required by International Building Code to be treated and those items shown or specified as "Fire Retardant Treated Wood". Provide lumber, plywood, medium density fiberboard with an Underwriters Laboratories (UL) stamp certifying values as specified herein for each type of product

E. Mockups: Build mockups to demonstrate aesthetic effects and to set quality standards for materials and execution.

1. Build standalone visual mockups of the following:
    a. Gate assembly Ticket counter section.
    b. Self-service kiosk.
2. Build room corner mockups of the Gate and Boarding area to be constructed in the field include the following:
    a. Carpet tile.
    b. Transitions to terrazzo flooring.
    c. Ceiling
    d. Lighting in accordance with Division 26.
    e. Gate counter.
    f. Furniture.
3. Build room corner mockups of the public toilet room to be constructed in the field include the following:
    a. Wall tile.
    b. Floor tile / wall base,
    c. Corner guards.
    d. Acoustical panel ceiling system.
    e. Lighting in accordance with Division 26.
    f. Linear floor drain in accordance with Division 23.
    g. Toilet partitions.
    h. Water closets in accordance with Division 22.
    i. Washroom accessories.
    j. Typical countertop with plumbing fixtures in accordance with Division 22.
    k. Restroom traffic management system.
4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
5. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Protect woodwork during transit, delivery, storage, and handling to prevent damage, soilage, and deterioration.

B. Do not deliver woodwork until painting and similar operations that could damage woodwork have been completed in installation areas. If woodwork must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified in "Field Conditions" Article.

1.10 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install paneling until building is enclosed, wet work is complete, and HVAC system is operating and will maintain temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Environmental Limitations: Do not deliver or install paneling until building is enclosed, wet work is completed, and HVAC system is operating and will maintain temperature between at occupancy levels 60 and 90 deg F (16 and 32 deg C) and relative humidity between 25 and 55

percent during the remainder of the construction period complying with the referenced AWI quality standard including "Moisture Content", so that woodwork will not be damaged by excessive changes. Obtain and comply with Woodwork Manufacturer's and Installer's coordinated advice for optimum temperature and humidity conditions for woodwork during its storage and installation. Do not install woodwork until these conditions have been attained and stabilized so that woodwork is within plus or minus 1.0 percent of optimum moisture content from date of installation through remainder of construction period.

1. Coordinate with General Requirements Article "Temporary Facilities and Controls" for provision of air filters and dustproof partitions, to mitigate the spread of construction debris and dust from construction areas to other areas that are occupied.

C. Field Measurements: Where paneling is indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1. Verify locations of concealed framing, blocking, and reinforcements that support paneling by field measurements before being enclosed and indicate measurements on Shop Drawings.

D. Established Dimensions: Where paneling is indicated to fit to other construction, establish dimensions for areas where woodwork is to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

1.11 COORDINATION

A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of Work specified in other Sections to ensure that interior architectural woodwork can be supported and installed as indicated.

B. Coordinate location of electrical outlets and power feeds with Electrical and Data Communications Trades as required to accommodate connection of these utilities through architectural woodwork to equipment housed within.

C. Coordinate locations of utilities that penetrate countertops or backsplashes.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fabrication Engineering and Design Data: Engage a qualified professional engineer, as defined in Section 01 33 16, "Fabrication Engineering Design Data," to design solid phenolic wall panels complying with requirements.

B. Fireblocking: Where plastic paneling is attached to furred construction, fireblock in every direction in accordance with the IBC Section 718.

2.2 ARCHITECTURAL WOODWORK FABRICATORS/INSTALLERS

A. Source Limitations: Engage a qualified woodworking firm to assume undivided responsibility for production of paneling and wood-veneer-faced architectural cabinets, ornamental woodwork, and wood trim.

2.3 WOOD MATERIALS

A. Quality Standard: Unless otherwise indicated, provide materials and fabrications, and install architectural woodwork to comply with the AWI "Architectural Woodwork Standards" for each type of woodwork quality grade specified, and required for construction, finishes, installation and other requirements.

B. Lumber, General:

1. Surfaces and Patterns: Provide lumber surfaced 4 sides (S4S) and worked to profiles shown.
2. Moisture Content: Kiln-dry lumber to the moisture content recommended by the NAAWS. Not to exceed 8-10% moisture content upon manufacturing

A. Composite Wood and Agrifiber Sheet Products: Provide materials that comply with NAAWS Section 4 for each type of wood and quality grade specified unless otherwise indicated, and the following:

1. Recycled Content of Medium-Density Fiberboard: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 50 percent.
2. Composite Wood and Agrifiber Products: Products shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
3. Cores:

a. Hardboard: AHA A135.4.
b. Medium-Density Fiberboard Cores for Interior High Moisture Areas: ANSI A208.2, Grade 155 MR 55, and NPA 9 and CARB Phase 2 requirements using ULEF (Ultra Low emitting formaldehyde) binders for allowable formaldehyde emissions. Subject to compliance with requirements, provide the following:

1) SierraPine Composite Solutions, "Medex." SCS-certified, no-added formaldehyde, moisture resistant MDF panel engineered for interior high moisture areas.

c. Medium-Density Fiberboard Cores for Interior Dry Areas: ANSI A208.2, Grade 155 MR 30 and NPA 9 for allowable formaldehyde emissions (made with binder containing no urea formaldehyde). Subject to compliance with requirements, provide the following:

1) SierraPine Composite Solutions, "Medite II." SCS-certified, no-added formaldehyde MDF panel engineered for interior non-structural applications.

d. Fire-Retardant Medium Density Fiberboard Cores: 100% recycled content with at least 25% post-industrial recycled fiber. Provide panels complying with ANSI A208.2, grade as appropriate for intended application and that have fire-retardant chemicals bonded to softwood particles at time of panel manufacture to achieve products identical to those tested for flame spread of 20 or less and for smoke developed of 25 or less per ASTM E84 by UL or other testing and inspecting organization acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting organization. No added

urea-formaldehyde is permitted. Subject to compliance with requirements, provide the following

1) "Pyroblock MDF Plus" (Panel Source International) or approved equal.

e. Softwood Plywood Cores: AWI DOC PS 1, Medium Density Overlay, veneer core plywood; fire retardant treated where required or shown.

f. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.

1) When used for countertops use marine grade plywood.

4. Panel Balancing Sheet: Provide balancing sheet on concealed side of panels, complying with NAAWS; same species/type as the face veneer/sheet for fully balanced construction.

2.4 FIRE-RETARDANT-TREATED MATERIALS

A. Fire-Retardant-Treated Wood Materials, General: Where fire-retardant-treated materials are indicated or required by code, use materials impregnated with fire retardant chemical formulations indicated by a pressure process or other means complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

1. Use treated material that complies with requirements of referenced woodworking standard. Do not use materials that are warped, discolored, or otherwise defective.
2. Use fire-retardant-treatment formulations that do not bleed through or otherwise adversely affect finishes. Do not use colorants in solution to distinguish treated material from untreated material.
3. Identify fire-retardant-treated materials with appropriate classification marking of qualified testing agency in the form of removable paper label or imprint on surfaces that will be concealed from view after installation.

B. Fire-Retardant-Treated Lumber and Plywood: Products with a flame-spread index of 25 or less when tested according to ASTM E84, with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.

1. Kiln dry lumber and plywood after treatment to a maximum moisture content of 19 and 15 percent, respectively.
2. Mill lumber after treatment within limits set for wood removal that do not affect listed fire-test-response characteristics, using a woodworking shop certified by testing and inspecting agency.
3. Mill lumber before treatment and implement special procedures during treatment and drying processes that prevent lumber from warping and developing discolorations from drying sticks or other causes, marring, and other defects affecting appearance of treated woodwork.
4. Low-Hygroscopic Formulation: Interior Type A per AWPA C20.

a. D-Blaze; Chemical Specialties, Inc.
b. Dricon; Hickson Corp.
c. Pyro-guard; Hoover Treated Wood Products, Inc.

C. Fire-Retardant Fiberboard: Medium-density fiberboard panels complying with ANSI A208.2, made from softwood fibers, synthetic resins, and fire-retardant chemicals mixed together at time of panel manufacture to achieve flame-spread rating of 25 or less and smoke-developed rating of 200 or less per ASTM E84 by UL, Warnock Hersey, or another testing and inspecting agency

acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting agency. Subject to compliance with requirements, provide one of the following:

1. Panel Source International, Inc.; Pyroblock Platinum.
2. Roseburg; Medite FR.

2.5 PLASTIC LAMINATE

A. Plastic Laminate Quality: High-Pressure Decorative laminate (HPDL) complying with NAAWS, and NEMA Publication LD3.

1. Face Sheets: HGS, 0.048 inch thick for horizontal, and HGL, 0.039 inch thick for vertical application.
2. Backing Sheets: BKL, 0.48 inch for horizontal and 0.039 inch thick for vertical application.
3. Fire Rated Sheets: Fire-Rated General Purpose Grade, HGF 0.048 in. nominal thickness. Provide sheets with UL label, Class 1. Provide fire rated backing sheets of equal thickness in panel products.
4. General Purpose Horizontal Post Forming Grade Face Sheets: HGP 0.039 in. nominal thickness.
5. Integrally Colored Solid Plastic Laminate: NEMA Publication LD3, Type HCS 62, 0.062 in. nominal thickness. Color as selected.
6. Cabinet Liner Sheets: Intended for use in cabinet interiors where shown or specified; NEMA Publication LD-3, Grade CL20, 0.020 in. nominal thickness.

B. Treatment of Edges: Edge plastic-laminate panels and shelves, with ABS (Acrylonitrile Butadiene Styrene) “Doelken”, 3mm thick x 3/4- inch or 1-1/2- inch wide edge (as shown on details) banding fabricated by Doelken Woodtape www.doellken-woodtape.com; complying with LMA EDG-1 on components with exposed or semi exposed edges in colors to match plastic laminate faces.

C. Manufacturers: Provide products by one of the following manufacturers, matching plastic laminate types listed.

1. Abet Laminati, Inc.
2. Formica Corporation.
3. Lamin-Art, Inc.
4. Nevamar Company, LLC; Decorative Products Div.
5. Panolam Industries International, Inc.
6. Wilsonart International; Div. of Premark International, Inc.

D. Plastic Laminate Types:

1. **PL-01**: Formica White Twill 9285.
2. **PL-02**: Wilsonart Grey 1500-60 Matte

E. Thermoset Decorative Panels: Medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper and complying with requirements of NEMA LD 3, Grade VGL, for test methods.

1. Provide PVC or polyester edge banding complying with LMA EDG-1 on components with exposed or semi exposed edges.

2.6 SPECIALTY PANELS

A. Phenolic Panel Cores: Decorative high-pressure compact laminates according to EN 438-4 of thicknesses indicated, shop fabricated panels with phenolic cores, consisting of layers of wood-based fibers (paper and/or wood) impregnated with thermosetting resins and surface layer(s) on both sides, having decorative colors or designs, and finished with surface layers impregnated with melamine based resins.

1. Fabrication

   a. Bond cores with simultaneous application of heat (≥ 150° C / ≥ 302° F) and high specific pressure (> 7 MPa) to obtain a homogeneous non-porous material with increased density and integral decorative surface
   b. Fabricate panels in Fire-Retardant grade (CGF) and use fire rated high pressure plastic laminate finish on exposed surfaces.
   c. For phenolic panel types and finishes refer to Paneling paragraphs

2. Colors and Patterns:

   a. **PP-02**: To match Formica Sarum Twill 8827-58.

      1) Thickness: 1/2 inch.
      2) Finish: Matte.

   b. **PP-03**: To match Wilsonart Grey 1500-60.

      1) Thickness: 3/8 inch.
      2) Finish: Matte.

   c. **PP-04**: To match Wilsonart Almond D30-60.

      1) Thickness: 1/2 inch.
      2) Finish: Matte.

   d. **PP-05**: To match Wilsonart Stainless Steel 4830-60.

      1) Thickness: 1/2 inch.
      2) Finish: Matte.

   e. **PP-06**: To match Wilsonart Frosty White 1573-60

      1) Thickness: 3/8 inch.
      2) Finish: Matte.

2.7 GLASS AND GLAZING

A. Clear Tempered Float Glass for Doors: ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality q3; manufactured by horizontal (roller hearth) process, with exposed edges seamed before tempering, 1/4 inch (6 mm) thick, unless otherwise indicated.

2.8 CABINET HARDWARE AND ACCESSORIES

A. General: Provide cabinet hardware and accessory materials associated with architectural cabinets, except for items specified in Division 08, Section 08 71 00 "Door Hardware":

B. Manufacturers:

1. Subject to compliance with requirements, provide products by one of the following:

   a. Accuride International.
   b. Blum, Julius & Co., Inc.
   c. Doug Mockett.

d. Hafale.
e. Knape & Vogt Manufacturing Company.
f. Stanley Hardware.

C. Hardware Standard: Comply with BHMA A156.9 "American National Standard for Cabinet Hardware" for items indicated by referencing BHMA numbers or items referenced to this standard. BHMA numbers are used below to designate hardware requirements. Provide the following architectural hardware, except where other items are indicated on drawings.

D. Hinges: Use number of hinges shown on drawings, but not less than the number and performance grade necessary to support door panels.

1. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 110 to 125 degrees of opening, self-closing; satin nickel plated.
2. Hinges for MDF Wood Doors: Provide "Tiomos Impresso, 110 Degree, Soft-Close Hinges" (Grass) for MDF core cabinet doors; nickel plated steel

E. Piano Hinge:

1. Continuous hinge. 1 1/4-inch-wide brass.
2. Product: Stanley Hardware No. STS 311 1/4.

F. Pulls, General: BHMA A156.9, B02011.

1. Drawer and Cabinet Pulls:

a. 3-1/2 inch (89 mm) aluminum pull.
b. Product: No. 4483-1/2 by Stanley Security Solutions, Inc.

2. Wire Pulls: Back mounted, solid metal, 4 inches (100 mm) long, 5/16 inch (8 mm) in diameter.

G. Catches:

1. Magnetic; top and bottom catches, BHMA A156.9, B03141
2. Product: V713 Magnecatch by Stanley Hardware.

H. Touch Latch: "245.50.301 Pressure Catch" (Hafele) non-magnetic, plastic, black touch latch; fabricated based on the concept of magnetic catches but without magnets, that will open upon push from the exterior and secure to not open from inside by falling objects. Provide with ball plate, catch mechanism and fasteners.

I. Rubber Silencers: Provide Hafele 937.93.007 rubber silencers on jamb and/or head and sill strike areas of all cabinet doors; 4 for paired doors, 3 for single leaf doors; Hafele White.

J. Adjustable Shelf Standards and Supports:

1. Knape and Vogt (standards and support clips) BHMA A156.9, B04071; with shelf rests, B04081:

a. Standards: 255E, zinc coated steel standards.
b. Shelf supports: 256R ZC, zinc coated steel standards with rubber cushion.

2. Knape and Vogt (standards and brackets) BHMA A156.9, B04102; with shelf brackets, B04112:

a. Standards: 87 ANO, satin finish extra heavy duty.
b. Brackets: 187 LL ANO 16 inch long for 18 inch shelves. 186 LL ANO 10 inch long for 12 inch shelves.

3. Knape and Vogt (drilled side supports) BHMA A156.9, B04013; metal, two-pin type with shelf hold-down clip:
    a. Shelf Rests: 333 or 346 supports.
4. Recess Mounted walls standards:
    a. Recessed Mounted Standards: "C-Standard" (Rakks) extruded aluminum wall standard; 0.7 inch x 0.535 inch outside dimensions, with anodized finish.
    b. Shelf Brackets: "Model BR2-10" Heavy duty shelf support for10 inch deep shelves, and 100 lbs. load capacity per bracket; clear anodized finish.

K. Drawer Slides: Side-mounted, full-extension, zinc-plated steel drawer slides with steel ball bearings, BHMA A156.9, B05091, and rated for the following loads:

1. For drawers not more than 3 inches (75 mm) high and not more than 24 inches (600 mm) wide, provide Grade 1.
2. For drawers more than 3 inches (75 mm) high, but not more than 6 inches (150 mm) high and not more than 24 inches (600 mm) wide, provide Grade 1HD-100.
3. For drawers more than 6 inches (150 mm) high or more than 24 inches (600 mm) wide, provide Grade 1HD-200.
4. For computer keyboard shelves, provide Grade 1HD-100.
5. For trash bins not more than 20 inches (500 mm) high and 16 inches (400 mm) wide, provide Grade 1HD-200.
6. Box Drawer Slides: Provide "3832EC" (Accuride) or "Dynamic NT" (Grass) complying with Grade 1HD-100 for drawers up to 100 lbs.; full extension, progressive movement, rail mounted.
7. File Drawer Slides: Provide soft closing/self-closing type from Accuride or Grass complying with Grade 1 HD-200 for drawers up to 200 lbs. and drawer width 30 in. and up.

L. Locks:

1. Door Locks:
    a. BHMA A156.11, E07121; brushed chrome.
    b. Door lock type and finish for liquid dumping station cabinetry shall match existing.

M. Grommets and Wire Management:

1. Brush Grommet: Doug Mockett & Company BREXT2 brush grommet and extrusion. Size: 1 3/16 inch deep, 2 foot lengths. Brush and extrusion color: As selected by Architect.
2. Paper Slot Grommet: Doug Mockett & Company Paper Slot Gommet-CP3, 6 inch grommet. Color: As selected by Architect.
3. Round Grommet: Doug Mockett "ABG3" 3-1/2 in. diameter aluminum grommet with brush (satin) anodized finish. Provide with opposing arc cap with oval cord slot lined with radiused brush finish. Fabricated from extruded and machined aluminum.
4. Wire Management Tray: Doug Mockett & Company 1 piece J Shape wire manager WM2A; with light grey finish.

N. Panel Trim: Wall Panel Systems, Inc. "Shadow Line System" and "Recessed Reveal System" or approved equal from Monarch Metal Fabrication, Fry Reglet Architectural Metals, or Gordon Incorporated, of heavy duty extruded aluminum, 6063-T5 alloy, factory finished including shadow line and recessed reveal trims, edge and corner profile accessories, etc., attaching to horizontal and vertical reveals.

1. Profile: Outside corners, inside corners, and edge trim; minimum 10 foot (3050 mm) length.

2. Accommodate 3/4-inch (19 mm) thick panels with 1/4-inch (6.3 mm) reveals.
3. Class II, Clear Anodic Finish: AA-M12C22A31 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.010 mm or thicker) complying with AAMA 611.

O. Countertop Brackets: Rakks surface mounted brackets to support countertops, except where flush mounted is shown on drawings. Provide brackets with aluminum t-extrusions and fasteners, clear anodized finish, as follows:

1. EH-1209 for up to 13 inch counters
2. EH-1212 for up to 18 inch counters
3. EH-1818 for up to 25 inch counters
4. EH-1824 for up to 30 inch counters Levelers: Heavy duty steel channel type.

P. Medium Duty Levelers: "Polybase Fixed Stud Glides with Rubber Pad, #IL8-7BSx2-P" (International Equipment Component Inc.); Stainless steel stud and black polypropylene base 3/8-inch-thick, with top broached hex allen drive; with 1/8 inch thick rubber pad; 1-1/2 inch round x 2 inch high x 11/16 inch top chamfered base capable of supporting 2000 lbs. weight.

Q. Panel Clips: Aluminum interlocking offset panel fasteners; "Panel Fastening Systems" (Panel Fastening Systems, Inc.) or approved equal; type, size and quantity for the condition of use.

R. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.

1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
2. Satin Stainless Steel: BHMA 630.

S. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.9 INSTALLATION MATERIALS

A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, Fire-retardant-treated, kiln dried to less than 15 percent moisture content.

B. Fastenings: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible. Where finish carpentry materials are exposed in areas of high humidity, provide fasteners and anchorages with hot-dip galvanized coating complying with ASTM A 153.

1. Screws: Select material, type, size, and finish required for each use. Comply with ASME B18.6.1 for applicable requirements.
2. Nails: Select material, type, size, and finish required for each use. Comply with FS FF-N-105 for applicable requirements.
3. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide nonferrous-metal or hot-dip galvanized anchors and inserts on inside face of exterior walls and elsewhere as required for corrosion resistance. Provide toothed-steel or lead expansion sleeves for drilled-in-place anchors.

C. Adhesives: Crosslinked polyvinyl acetate (PVA) without urea formaldehyde.

1. Use adhesives that meet the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Plastic Seam Filler: Plastic seam and repair filler in color to match plastic laminate.

E. Colored Sealant: Acrylic latex sealant in color to match plastic laminate.

1. Product: Colorflex, Kampel Enterprises, Inc.

F. VOC Limits for Installation Adhesives and Sealants: Use products that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Wood Glues: 30 g/L.
2. Multipurpose Construction Adhesives: 70 g/L.
3. Structural Wood Member Adhesive: 140 g/L.
4. Architectural Sealants: 250 g/L.

G. Low-Emitting Materials:

1. Architectural paints and coatings wet-applied inside the weather-proofing system must meet the VOC general emissions testing criteria of CDPH Standard Method v1.2.
2. All paints and coatings wet-applied inside the weather-proofing system must have VOC content in compliance with the applicable VOC limits (g/L) found in tables in Division 01, Section 01 81 13 "Sustainable Design Requirements - LEED v4 BD+C."
3. Adhesives and Sealants wet-applied inside the weather-proofing system must meet the VOC general emissions testing criteria of CDPH Standard Method v1.2.
4. All adhesives and sealants wet-applied inside the weather-proofing system must have VOC content in compliance with the applicable VOC limits (g/L) found in tables in Division 01, Section 01 81 13.14 "Sustainable Design Requirements - LEED v4 BD+C."
5. Provide non-structural composite wood products that contain either No Added Formaldehyde (NAF) resins or Ultra Low Emitting Formaldehyde (ULEF) resins per CARB ATCM criteria noted in Division 01, Section 01 81 13.14 "Sustainable Design Requirements - LEED v4 BD+C.".
6. Provide structural composite wood products tested per EN 717-1:2014 as compliant with emissions class E1.Structural composite wood, with no added urea-formaldehyde resins or surface treatments, and certified per the following: PS 1-09 or PS 2-10 for plywood, PS 2-10 for OSB, ASTM D 5446-13 for structural composite lumber.

2.10 FABRICATION, GENERAL

A. Interior Woodwork Grade: Provide interior woodwork complying with " NAAWS for Premium Grade for wood veneered architectural woodwork and for plastic laminate clad woodwork. Provide Custom Grade for painted finish, unless otherwise specified.

B. Wood Moisture Content: Comply with requirements of referenced quality standard for wood moisture content in relation to ambient relative humidity during fabrication and in installation areas.

C. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication.

D. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:

E. Complete fabrication, including assembly, finishing, and hardware application, to maximum extent possible, before shipment to Project site. Disassemble components only as necessary

for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

F. Shop cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs. Sand fire-retardant-treated wood lightly to remove raised grain on exposed surfaces before fabrication. Smooth edges of cutouts and, where located in countertops and similar exposures. Seal edges in countertops with a water-resistant coating.

1. Provide lumber framing for architectural woodwork, with bracing and fastening devices required for rigid installation, and as required to sustain imposed loads.
2. Accurately fit all joints, corners and miters. Conceal fasteners, and tighten threaded connections so that threads are concealed. Provide stock items and components whenever possible.

G. Install glass to comply with applicable requirements in Division 08, Section 08 80 00 "Glazing" and in GANA's "Glazing Manual."

2.11 PLASTIC-LAMINATE FACED CABINETS

A. Grade: Premium.

B. Type of Construction: Frameless.

C. Door and Drawer Front Style: Flush overlay.

D. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:

1. Horizontal Surfaces Other Than Countertops: HGS.
2. Postformed Surfaces: HGP.
3. Vertical Surfaces: VGS.
4. Edges: PVC edge banding, 0.12 inch (3 mm) thick, matching laminate in color, pattern, and finish.

E. Materials for Semiexposed Surfaces:

1. Surfaces Other Than Drawer Bodies: High pressure decorative laminate, NEMA LD 3, Grade VGS.
    a. Edges of Plastic Laminate Shelves: PVC T mold matching laminate in color, pattern, and finish.
    b. Edges of Thermoset Decorative Panel Shelves: PVC or polyester edge banding.
    c. For semi-exposed backs of panels with exposed plastic laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.
2. Drawer Sides and Backs: Thermoset decorative panels with PVC or polyester edge banding.
3. Drawer Bottoms: Hardwood plywood.

F. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.

G. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.

H. Join subfronts, backs, and sides with glued dovetail joints.

2.12 PANELING, GENERAL

A. Panels shall be in accordance with NAAWS manual "Countertops", Premium Grade construction.

B. Panel joints shall be flush type unless otherwise shown or specified.

C. Provide wood blocking and framing, anchors, clips, splines, supporting and attaching devices

D. Provide cut-outs to receive attachments, mechanical and electrical work as required. Shop-cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Smooth edges of cutouts

E. Provide panel clips in quantity and spacing to sustain loading and prevent warping and bowing of panels

F. Where trims are indicated, route surfaces of panels and laminate trim material to plywood backup

2.13 PHENOLIC PANELING

A. Fabricate panels to profiles and dimensions shown.

B. Comply with phenolic manufacturer's recommendations for heat and pressure lamination of high pressure laminate surfacing to phenolic cores.

C. Provide balanced construction using same thickness laminate on both sides of core to equalize pull, and provide balanced construction free from warp, twist, bow, or other defects

D. Provide heat seamed abs edging matching look of face laminate. Provide edging at all cutouts and penetrations

E. Fabricate panels with concealed fastenings.

F. Fabricate panels for butt joined installation, unless otherwise shown.

2.14 STORAGE SHELVING

A. Grade: Provide storage shelving in accordance with Custom Grade, unless otherwise shown or specified.

B. Shelf Material: 3/4 inch thick panel cores of MDF with solid edge. Provide plastic laminate cladding of top and bottom surfaces. Exposed edges shall have ABS laminate tape edge banding in color to match face laminate.

C. For sizing of shelves and spacing of supports, comply with NAAWS. Shelf deflection shall not be greater than 1/4 in. between supports.

2.15 MISCELLANEOUS ARCHITECTURAL WOODWORK ITEMS

A. Fabricate and install miscellaneous items of Architectural Woodwork not specified herein, which are shown on the drawings, or required to complete the Contract, in accordance with requirements of referenced standards.

2.16 SHOP FINISHING

A. Quality Standard: Comply with NAAWS unless otherwise indicated.

1. Grade: Provide finishes of same grades as items to be finished.
2. Finish architectural woodwork at fabrication shop as specified in this Section. Defer only final touchup, cleaning, and polishing until after installation.

B. Preparations for Finishing: Comply with referenced quality standard for sanding, filling countersunk fasteners, sealing concealed surfaces, and similar preparations for finishing architectural woodwork, as applicable to each unit of work.

1. Backpriming: Apply one coat of sealer or primer, compatible with finish coats, to concealed surfaces of woodwork. Apply two coats to back of paneling and to end-grain surfaces.

a. Concealed surfaces of plastic-laminate-clad woodwork do not require backpriming when surfaced with plastic laminate, backing paper, or thermoset decorative overlay.

C. Field Painted Woodwork: Prime and back prime lumber for painted finish exposed on the exterior. Comply with requirements for surface preparation and application in Division 9, Section 09 90 00 "Painting" for field painted woodwork.

PART 3 - EXECUTION

3.1 PREPARATION

A. Condition woodwork to average prevailing humidity conditions in installation areas before installation.

B. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including removal of packing and backpriming.

C. Coordinate with installation of architectural woodwork items attached to wall partitions with the installation of fire retardant wood and gypsum drywall partitions to support imposed items.

3.2 INSTALLATION

A. Grade: Install woodwork to comply with NAAWS requirements for the same grade specified in Part 2 for fabrication of the type of woodwork involved.

B. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.

C. Install woodwork level, plumb, true, and straight. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm), with no variations in flushness of adjoining surfaces. Shim as required with concealed shims.

D. Scribe and cut woodwork to fit adjoining work, and refinish cut surfaces and repair damaged finish at cuts.

E. Fire-Retardant-Treated Wood: Handle, store, and install fire-retardant-treated wood to comply with recommendations of chemical treatment manufacturer, including those for adhesives used to install woodwork.

F. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds. stripping and blocking with countersunk, concealed fasteners, z-clips, and blind nailing as required for complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails or finishing screws for exposed fastening, countersunk and filled flush with woodwork and matching final finish if transparent finish is indicated.

G. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.

1. Install cabinets with no more than 1/8 inch in 96-inch (3 mm in 2400-mm) sag, bow, or other variation from a straight line.
2. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches (400 mm) o.c. beginning 3 inches of outside end, vertically within 3 inches of outside top or bottom of the cabinet penetrating the anchor strip and as follows:
    a. Wood Framing, Blocking, or Hanging Strips: Provide No. 10 x 3 inch wafer-head screws sized for 1-1/2 inch (38-mm) penetration.
    b. Metal Backing or Framing: Provide No. 10 wafer-head sheet metal screws of sufficient length to penetrate total thickness of material including gaps, with a minimum of 3 exposed threads.
    c. Where wall mounted cabinets are greater than 48 inches in height, fasten not more than 12 inches on center.
3. Fasten adjacent cabinets together at the front with min. two #8 x 1-1/4 inch flat, oval or pan head screws max. 30 inches on center.
4. Seal seams between plastic laminate panels with plastic seam fill.

H. Countertops, General: Install countertops level to a tolerance of 1/8 inch in 8 feet, 1/4 inch maximum. Do not exceed 1/64-inchdifference between planes of adjacent units.

1. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Predrill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
2. Fasten subtops to cabinets by screwing through subtops into cornerblocks of base cabinets. Shim as needed to align subtops in a level plane.
3. Secure countertops to subtops with adhesive according to solid surface material manufacturer's written instructions. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
4. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Make cutouts to accurately fit items to be installed, and at

right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.

5. Install backsplashes and end splashes by adhering to wall and countertops with adhesive. Mask areas of countertops and splashes adjacent to joints to prevent adhesive smears.
6. Apply sealant to gaps at walls; comply with Division 07, Section 07 92 00 "Joint Sealants."

I. Paneling: Install paneling in accordance with NAAWS and as follows:

1. Provide a system of concealed panel hanger clips and corresponding wall clips to support the panel systems to total system depth as indicated on Drawings. Face nailing shall not be permitted.
2. Install paneling in designated locations level, plumb, true, and straight with no distortions. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches (3 mm in 2400 mm). Install with no more than 1/16 inch in 96-inch (1.6 mm in 2400-mm) vertical cup or bow and 1/8 inch in 96-inch (3 mm in 2400-mm) horizontal variation from a true plane.
3. For flush paneling with revealed joints, install with variations in reveal width, alignment of top and bottom edges, and flushness between adjacent panels not exceeding 1/32 inch (0.8 mm).
4. Scribe and cut paneling to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
5. Anchor paneling to supporting substrate with concealed panel-hanger clips.

J. Hardware Adjustment: Adjust and lubricate operable hardware according to hardware manufacturer's written instructions for proper operation. Set hinges on in-swinging doors to hold doors open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors to return doors to fully closed position.

K. Complete the finishing work specified in this Section to extent not completed at shop or before installation of woodwork. Fill nail holes with matching filler where exposed. Apply specified finish coats, including stains and paste fillers if any, to exposed surfaces where only sealer/prime coats were applied in shop.

L. Apply sanitary sealant to seal gaps between countertops and wall finishes, items penetrating countertops, including sinks, soap dispensers, trash chutes and millwork, and elsewhere as indicated.

M. Touch up finishing work specified in this Section after installation of woodwork. Fill nail holes with matching filler where exposed. Comply with VOC requirements for touch up work.

N. Refer to Division 09, Section 09 90 00 “Painting” for final finishing of installed architectural woodwork.

3.3 FIELD QUALITY CONTROL

A. Inspections: Provide inspection of installed work through certifying that woodwork, including installation, complies with requirements of NAAWS for the specified grade.

B. Inspect the in-wall blocking and other concealed support elements before walls are completed.

C. Verify that wall mounted casework is properly fastened.

D. Submit inspection reports as part of Closeout Submittals.

3.4 PROTECTION

A. Provide final protection and maintain conditions, in a manner acceptable to fabricator and Installer that ensures exposed horizontal surfaces are without damage or deterioration at the time of Substantial Completion.

3.5 ADJUSTING AND CLEANING

A. Repair damaged and defective woodwork, where possible, to eliminate functional and visual defects; where not possible to repair, replace woodwork. Adjust joinery for uniform appearance.

B. Clean, lubricate, and adjust hardware.

C. Clean woodwork on exposed and semi exposed surfaces. Touch up shop-applied finishes to restore damaged or soiled areas.

END OF SECTION