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SECTION 06410 - CABINETS AND CASEWORK

**PART 1 GENERAL**

1.01 SUMMARY

- A. Section includes casework items, cabinets, counters, and related components, shown on the Drawings and requiring shop fabrication, complete with hardware, parts, and finishes necessary for their proper function and service, including, but not limited to:
  - 1. Snack Bar Counter and Cabinets.
  - 2. Athletic Equipment Storage Counter.
  
- B. Related Sections:
  - 1. Section 06100 - Rough Carpentry.
  - 2. Section 06210 - Finish Carpentry.
  - 3. Section 08710 – Finish Hardware.
  - 4. Section 08210 – Wood Doors.

1.02 REFERENCE STANDARDS

- A. Except as otherwise specified herein or shown on the Drawings, comply with the latest editions of all applicable codes and regulations including the applicable requirements of the following Reference Standards and Codes which are hereby made a part of this Section, as they relate to the cabinets and casework.
  - 1. Quality Standards and Guide Specifications of the Architectural Woodwork Institute (AWI), latest edition.
  - 2. ANSI/AHA A135.4 - Basic Hardwood.
  - 3. American Society for Testing and Materials (ASTM):
    - a. D1037-96a Test Methods for Evaluating the Properties of Wood-Base Fiber and Particle Panel Materials.
  - 4. BOCA, latest Edition.
  - 5. The Occupational Health and Safety Administration (OSHA) Code of Federal Regulations (CFR), Volume 29.

1.03 SUBMITTALS

- A. Manufacturer's Literature: Include specifications and catalog cuts for manufactured items such as hardware, plastic laminate and solid surfacing.

- B. Shop Drawings: Include construction and assembly details, fastenings and anchorage methods, hardware locations, roughing-in clearances for work by others, and installation procedure.
- C. Color chips for selection of plastic laminate and solid surfacing and finished samples of natural wood surfaces and stainless steel.
- D. Samples of hardware and other items for which selection by the Resident is required.
- E. Manufacturer's guarantee against defects of materials or workmanship, including warpage or delamination, for a period of two years after final approval.

1.04 QUALITY ASSURANCE

- A. Built-ins and casework shall be constructed and installed to carry intended loads, not have sharp corners, splinters, or any construction features or projections that would be hazardous to occupants and users. Casework and cabinets shall be constructed in conformance with applicable state and federal accessibility requirements.
- B. Cabinet work shall follow minimum requirements described in the latest edition of the Architectural Woodwork Institute (AWI) following "Custom Grade" standards.
- C. Particle board is not allowed.
- D. Casework shall be "Custom Grade" overlay design with plastic laminate finish.
- E. Only manufacturers with financial stability and 5 years experience in casework manufacture and installations of similar scope will be considered.
  - 1. The installer must be a company whose primary business is the manufacturing of plastic laminate casework and can demonstrate successful experience in installing architectural woodwork items similar in type and quality to those required for this project.
  - 2. The installer shall have adequate physical facilities and personnel for this size project with a qualified engineering department to provide layout and shop drawings for review before fabrication.
- F. Evidence of qualifications shall include product catalog, descriptive literature, and specifications for the proposed product. Submit a sample cabinet, complete with drawer, door hardware, and corner sample of counter top with the product literature.

1.05 PRODUCT DELIVERY AND STORAGE

- A. Deliver casework when the building is secure and weather tight.
- B. The air circulation control system shall be operating and maintaining humidity and

temperature conditions similar to the conditions to be maintained by the Board.

- C. Interior plaster and plaster veneer work shall be complete and dry.
- D. Painting and other finish work shall be complete in immediate and adjacent areas within the building where millwork/cabinet work/casework is stored.

#### 1.06 COORDINATION

- A. Fabricate work following field dimensions, unless roughing-in can be constructed to fit predetermined or shop drawing dimensions. In either case, improper fit will not be accepted.
- B. Bring to the attention of the Resident unusual field conditions identified during field verification, such as possible alignment problems due to structural deflection.
- C. Coordinate the work of this section to ensure proper positioning of plumbing stub outs and electrical outlets.

## **PART 2 PRODUCTS**

#### 2.01 ACCEPTABLE MANUFACTURERS

- A. Plastic Laminate:
  - 1. Nevamar.
  - 2. Formica.
  - 3. Micarta.
  - 4. Pionite.
  - 5. Wilson Art.
- B. Equivalent products of other manufacturers are also acceptable subject to meeting the requirements of the Drawings and specifications in this Section.

#### 2.02 GENERAL

- A. Lumber Sizes: Conform with Prod. Std. PS 20; unless otherwise specified, surfaced on four sides. Sizes shown, unless otherwise indicated, are nominal, and actual size shall be within manufacturing tolerances allowed.
- B. Moisture content at time of delivery and when installed in the work:
  - 1. Treated and Untreated Millwork, Finish Lumber and Trim: 8% minimum to 13% maximum.
  - 2. Other Materials: In accord with standard under which product is produced.

2.03 MATERIALS

- A. Concealed Lumber Framing: Sound and dry wood of species optional with manufacturer.
  - 1. Exposed Solid Lumber Members in Cabinetwork: Clear grade teak or approved equal, free of defects, meeting the moisture content requirements specified above, selected for uniformity of grain and color, or similar hardwood selected by the Resident.
- B. Plywood: American Plywood Association conforming to PS 1-83, APA Exterior, Group 1, B-B Grade. Thickness indicated on drawings, AWI standards, or approved shop drawings. Faces exposed to the interior of cabinets, except doors and drawer fronts, shall have factory laminated white laminate liner.
- C. Plastic Laminate: Matte and polished finishes, colors and patterns, including solid colors (not Colorcore) and real hardwood veneers, to be selected by the Resident, thickness as follows:
  - 1. Counter and shelf tops and edges, back and end splashes: .062 inch thick.
  - 2. Vertical surfaces, and other exposed surfaces: .030 inch thick.
  - 3. Back Sheet for Bottom Areas of Plastic Laminate Clad Countertops, Doors, Drawer Fronts, and Shelf Bottoms: .020 inch thick, color to match plastic laminate on front surface.
- D. Solid Surfacing: Corian or Surell, solid non-porous polymer, fabricated in accordance with details and instructions from the manufacturer from sheets not less than 1/2 inch thick.
  - 1. Colors and Patterns: To be selected from complete range available on an individual unit basis.
  - 2. Fasteners, Anchors and Accessories: Comply with manufacturer's recommendations and limitations.
- E. Stainless Steel Cladding: Chromium-nickel alloy, type 304 or 302, 16 gauge, #4 satin finish:
  - 1. Welded Connections: Made in the shop, ground and finished to match the adjacent surfaces and present a smooth, invisible seam.
- F. Particleboard: Its use is not allowed.
- G. Finish Hardware: Top of the line quality, complying with the following specifications:
  - 1. Hinges for 3/4" Thick Doors:
    - a. US26D satin chrome plated steel, 5 knuckle, wrap around type allowing 270 degree swing at end of cabinet work unit, mounted with minimum 4 plated

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- No.8 self-tapping screws per hinge leaf. Concealed European type hinges are not allowed.
  - b. For doors up to and including 48 inches high: Provide 2 hinges.
  - c. For doors over 48 inches high: Provide 3 hinges.
  - d. Manufacturers:
    - (1) Stanley HT1592.
    - (2) RPC 21-232.
2. Door Catches: Stanley SP45, magnetic type catch.
- a. For doors up to and including 38 inches high: Provide 1 heavy duty magnetic type catch, slotted for adjustment. Attach with screws.
  - b. For door 38 inches high and over: Provide 2 heavy duty magnetic type catches, slotted for adjustment. Attach with screws.
3. Pulls: To be selected by the Resident from the manufacturer's standard (wire pulls unless otherwise noted).
4. Drawer Slides: Full extension, nylon rollers and steel ball bearings, cold rolled, zinc plated steel frame, stop and removal features, minimum deflection at full extension, 75 lb. capacity per pair.
5. Adjustable Shelves: Knappe & Vogt No. 255 cadmium plated surface mounted standards, No. 256 brackets.
6. Other Items: As required, to be selected by the Resident or matching items installed in Owner's existing facilities.
7. Carpet type ball or wide roller casters where indicated on Drawings.
8. Locks for 3/4" doors with plastic laminate finish: (Where indicated on drawings). Satin chrome or nickel plated steel 6 tumbler lock with grooved key.
- a. KV 987, with strike.
  - b. Yale 9660, with strike.
  - c. Corbin 0764L, with strike.
- H. Adhesives:
- 1. Plastic Laminates and Solid Surfacing: Waterproof contact adhesive recommended or approved by laminate and solid surfacing manufacturer.
  - 2. Wood to Wood: Waterproof urea type Fed. Spec. MMM-A-188 or water and mold resistant casein type Fed. Spec. MMM-A-125C, Type 11, or waterproof resorcinol type Fed. Spec. MMM-A-181C.
  - 3. Stainless Steel: As recommended by the manufacturer.

## 2.04 FABRICATION

- A. Construct cabinet work as shown on the Drawings and meeting the following requirements:

1. Face frames, mortise and tenon, screw, glue, and make all such joints concealed.
2. Cabinet members, bottoms, sub-top, sides, and back shall be joined by dado and rabbeted joints secured with glue and concealed mechanical fasteners. Case backs shall have a 3-inch anchor cleat the full width of the unit at the top.
3. Case construction of butt joints with dowel pins is not allowed.
4. Construct the toe space base from solid lumber and separately framed.
5. Drawers: Lock shouldered.
6. Drawer Sides and Backs:
  - a. Well sanded Southern Yellow Pine, Poplar, Gum, or Birch, with corners rounded and natural finish.
  - b. Plastic laminate on 1/2" plywood with plastic laminate interior and exterior.
7. Drawer Bottoms: 1/4" tempered fiberboard with factory applied gloss surface of color approved by A/E.
8. Cabinet interior sides drilled to receive shelf pins leaving exposed core is not acceptable.
9. Shelving:
  - a. 3/4" plywood for lengths less than 36 inches.
  - b. 1 inch plywood or 3/4" plywood with 3/4" x 1-1/2" hardwood edges at front and rear of shelf for lengths 36 inches or greater.
10. Adjustable Shelving: Use surface mounted standards and notched shelving ends.
11. Exposed Shelving: In storage rooms, utility rooms, kitchen pantries, shops, mechanical or electrical rooms, or in janitor closets, shall be "natural finish" constructed of plywood with edges banded of similar material and have outside face veneers of similar material of either:
  - a. Gum.
  - b. Poplar.
  - c. Beech.
  - d. Birch.
12. Ease edges to a 1/16 inch radius, for corners of cabinets and edges of solid wood members less than one inch in nominal thickness and to a 1/8 inch radius for edges of rails and similar members over one inch in nominal thickness.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine the areas and conditions under which the millwork/ cabinetwork is to be installed, and notify the Contractor in writing of conditions detrimental to the proper and timely completion of this phase of the Work. Do not proceed with this phase until the unsatisfactory

conditions have been corrected. Commencement of work shall be construed as acceptance of the conditions.

- B. Contractor shall take accurate field measurements and adjust the shop drawings accordingly before fabrication. The RESIDENT shall be informed in writing of any dimension changes resulting from such field measurement before fabrication.
- C. The casework shall be set in place, leveled, and secured to walls and floors as normal and standard to the trade. Fillers shall be used between casework and walls and shall be accurately scribed to walls for a neat installation. Casework shall be caulked where meeting walls, floors and soffits. Seal all counter joints and where backsplash meets counter top.
- D. The casework installer shall accurately cut openings required for sinks or other equipment as indicated on plans.

### 3.02 GENERAL REQUIREMENTS

- A. Workmanship and Assembly: Conform to custom grade standards of the Architectural Woodwork Institute. Assemble work at the mill, whenever practical, and deliver ready for erection. When it is necessary to cut and fit on the job, fabricate the work in accordance with measurements taken at the site, with ample provisions to allow proper fit. Sand exposed surfaces to an even, smooth surface, ready for finish.
- B. Join mill assemblies with concealed nails, staples and screws where practical, with mortise and tenons, or dowels, and glued blocks where required. Exposed nails countersunk. Do not use wood screws to fasten onto plywood faces. Provide countersunk inserts for machine bolts.
- C. Cover exposed wood surfaces of cabinets and counters with plastic laminate. Design counters to support the weight of the equipment built into them, plus a concentrated load of 200 lbs. applied to the edge at any point on their length, without appreciable deflection or deformation. Provide appropriate supports, grounds, or reinforcements in walls or adjacent construction to ensure a safe and secure attachment.
- D. Provide end splashes where counters abut a vertical surface.

### 3.03 FABRICATION

- A. Fabricate, assemble, finish and apply hardware at the plant.
- B. Clean and inspect work for defects before shipment to the site. Remove glue marks, scratches, trademark names and defects from plastic surfaces.
- C. Anchorage: Provide counters with the necessary members for fastening to each other and with rigid anchorage to walls.

- D. Application of Plastic Laminate Finish:
1. Apply in accordance with manufacturer's published directions using recommended waterproof adhesive. Materials and workmanship to conform with AWI quality grade standard.
  2. Apply laminate to countertop edges before top and bottom, with the latter overlapping the edge. Finish exposed edges with a 45 degree chamfer. Provide trim and closures.
  3. When possible, use the hot plate pressure method for laminating work, in a manner to assure warp-free and stable panels.
- E. Application of stainless steel covered countertops.
1. Return metal sheet on both vertical and bottom edges, with sharp straight corners.
  2. Make panels as large as possible consistent with the size of plywood sheets and the joint pattern shown on the approved shop drawings.
  3. Provide concealed anchor clips on the back of each panel for anchoring subsurfaces.
- F. Finish for Exposed Solid Wood Members and Real Wood Veneers: Factory applied standard lacquer, complying with requirements of AWI System # 1, stained or clear, flat, satin or high gloss surface sheen to be selected. Submit samples for approval of proposed finish, after consultation with the Resident.

### 3.04 INSTALLATION

- A. Install millwork plumb, level and rigidly secured, in accordance with approved shop drawings. Miter joints at corners, tight and uniform. Provide moldings or fittings, as required, to cover the joint between millwork items and walls or floors. Install to a tolerance of 1/8 inch in 8 feet for plumb and level; and with no variations in flushness of adjoining surfaces.
- B. Make sure that proper grounds and substantial backing for the secure, rigid and accurate installation of millwork are provided in the walls or partitions on which they will be mounted.
- C. Installation:
1. Provide first quality construction following best trade practices.
  2. Cuts, miters, joints, etc. shall be well sawn and joined. Nail heads or holes shall not be exposed in finish work. Drive nails and screws true and straight. Glue joints securely together. Sand all surfaces thoroughly, leaving clean and ready for finishing.
  3. Bond plastic laminate to surfaces with technique and contact cement approved by laminated plastic manufacturer.
  4. Install cabinet hardware according to requirements of the finish hardware as specified and in accurate positions as indicated on the drawings.



5. Field cut and scribe counter tops and splashes to fit job conditions. Do not use unbacked plastic laminate for cover. Place plastic laminate tops and end filler panels on base cabinets carefully fitting all field joints.
  6. Draw countertop and backsplash joints tight with concealed tite-joint type assembly fasteners.
  7. Seal countertop, backsplash and end splash field joints watertight on assembly with silicone or polysulfide sealant. Secure tops to base cabinets with galvanized screws from inside cabinets.
  8. Provide plastic laminate surfaces on underside of front lip to match edge and top.
- D. Anchor woodwork to anchors or blocking built-in or directly attached to substrates.
1. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation.
  2. Except where prefinished matching fasteners heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork, and matching final finish where transparent finish is indicated.
- E. Cabinets: Install without distortion so that doors and drawers fit openings properly and are accurately aligned.
1. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.
  2. Complete the installation of hardware and accessory items as indicated.
- F. Tops: Anchor securely to base units and other support systems as indicated.
- G. Wood Storage Shelving: Complete the assembly of units and install in the areas indicated, including hardware and accessories as indicated.
- 3.05 ADJUSTING, CLEANING, AND PROTECTION
- A. Repair damaged and defective woodwork where possible to eliminate defects functionally and visually; 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.
  - D. Complete the finishing work to whatever extent not completed at shop or prior to installation of woodwork.
  - E. Provide protection and maintain conditions, in a manner which ensures architectural woodwork being without damage or deterioration at time of substantial completion.

\*\*\*END OF SECTION\*\*\*