SECTION 12 32 16 – MANUFACTURED PLASTIC-LAMINATE-CLAD CASEWORK

PART 1 – GENERAL

1.1 SUMMARY

A. General Provisions:

1. Applicable provisions of General Conditions, Special Conditions and General Requirements shall apply to this section as if repeated in full herein. Reference other Sections and Divisions for work in connection with this section.

B. Section Includes:

1. Cabinets: Furnish prefabricated cabinetry and related components as specified herein. Refer to plans and equipment lists for details and requirements. Cabinetry shall include all fillers, scribes, finished ends, and finished backs and materials for completed installation.

2. Hardware: typically furnished by the casework manufacturer.

3. Locks: Install locks in cabinetry where shown on contract drawings.

C. Section Excludes:

1. Sinks, fixtures, and fittings, connection, piping, traps, supplies, shut-offs and special plumbing applicable to codes. Electrical fittings, devices, conduit, wiring, fans, blowers, motors, ductwork, and special grilles not specified as part of furnishings (specified in electrical, plumbing, and heating/ ventilation, air conditioning sections).

2. Blocking, framing, and reinforcements in walls, ceilings and floors for cabinetry anchorage and mountings (specified in rough carpentry section).

3. Solid surfacing countertops.

4. Plastic countertops.

5. Metal support brackets and fittings that are part of the building structure.

6. Rubber base (specified in rubber base section)

1.2 RELATED SECTIONS

A. Section 06 10 00 – Rough Carpentry: Blocking.

B. Section 09 65 00 – Rubber Base.

C. Section 12 36 23 – Plastic Countertops.

D. Section 12 36 61.19 – Quartz Agglomerate Countertops.

E. Division 22 – Plumbing: Sinks and fittings, connection, piping, traps, supplies, shut-offs and special plumbing applicable to codes. Electrical fittings, devices, conduit, wiring, fans, blowers, motors, ductwork and special grilles not specified as part of furnishings.

1.3 REFERENCES

A. Minimum standards for work in this Section shall be in conformity with the *Architectural Woodwork Standards*.

1.4 SUBMITTALS

A. Shop Drawings: Shall consist of floor plans indicating arrangement and relation to adjacent work and equipment and complete elevations of casework. Centerline of service requirements shall be noted for use by other trades.

B. Color Samples: Submit one set of initial samples of all of manufacturer's standard colors for plastic laminate and edgeband components for initial review and selection. Anticipate submitting up to four different full-size samples of each component for final selection.

C. Product Data: Submit product data for all substrate materials, hardware, and finishes.

D. Qualifications: Submit qualifications of supplier/ installer, indicating compliance with Quality Assurance requirements below.

1.5 QUALITY ASSURANCE

A. Work shall be in accordance with *AWI's Quality Standards Illustrated*, current edition.

B. The manufacturer and installer shall show evidence of having a minimum of five (5) years' experience in the manufacture and installation of casework for projects of similar size and complexity.

C. Single Source Responsibility: A single manufacturer shall provide and install the work of described in this Section.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protection: Protect casework and related materials during transit, delivery, storage, and handling to prevent damage, soiling and deterioration.

B. Delivery: Deliver materials only when the project is ready for installation and the general contractor has provided a clean storage area.

C. Storage: Store casework and related materials at project site in installation and storage areas with similar ambient conditions as final installation. Storage areas must be kept dry, heated with low relative humidity and away from construction work such as painting, wet work, grinding and similar operations.

D. Site Conditions: Shall be in accordance with *AWI's Quality Standards Illustrated*, current edition.

1.7 SCHEDULING

A. Coordinate fabrication, delivery, and installation with the general contractor and other applicable trades.

1.8 WARRANTY

A. Casework manufacturer shall warrant for a period of three (3) years that its manufactured product is free from defects in materials and workmanship when properly installed and under normal use and conditions.

B. Accessory equipment (sinks, fittings, etc.) shall be warranted by the appropriate manufacturer's guarantee to the limit of that manufacturer's standard warranties.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURER'S

A. Casework shall be high pressure plastic laminate. Catalog numbers and specification details shall be based on 1200 Traditional Series by Stevens Industries, Inc., Teutopolis, Illinois. Configuration, size, material options, offerings and quality to be adhered to.

B. Other acceptable manufacturers (must comply with specifications):

1. TMI Systems

2. Case Systems

C. Custom casework may be submitted only based on the following circumstances:

1. Lead times for the manufactured casework will not fit into the required construction duration.

2. Custom casework shall conform to the configuration, arrangement, design, material quality, joinery, panel thickness and surfacing of that specified and shown on the drawings and specifications.

2.2 COMPONENTS

A. Cabinet:

1. Exposed finished ends, fronts, modesty panels, and finished backs shall be faced with vertical grade PF-28 (.028") High Pressure Laminate (HPL), tested under National Electrical Manufacturers Association (NEMA) LD3-2005. Decorative laminate shall be thermoset to core using catalyzed Polyvinyl Acetate (PVA) glue with minimum 80 Pounds per Square Inch (PSI) pressure and average 180-degree F temperature (lower pressure and cold curing glues are not acceptable).

2. Panels with exterior PF-28 surfaces shall have Cabinet Liner Surface (CLS) (.020") interior cabinet liner.

B. Interior: Semi-exposed surfaces shall be Thermally Fused Laminate (TFL) two (2) sides. Laminate shall be homogenous, thermofused to core face resulting in panel structure warranted against any delamination. TFL shall be tested under NEMA LD3-2005 vertical grade GP-28 standards. TFL lamination shall use high pressure 350-400 PSI with thermosetting temperatures of 380-400 degrees F under precision-controlled press cycle with textured surface finish.

C. Drawers: Shall be finished entirely in TFL.

D. Semi-Exposed Backs: Shall be prefinished Medium Density Fiberboard (MDF).

2.3 CORE MATERIALS

A. CARB Compliant Particleboard: Shall be high performance industrial grade M2 core. Particle board shall be 45# - 48# density 3-ply type formation conforming to American National Standards Institute (ANSI) A208.1 and American Society for Testing and Materials (ASTM) D1037-91A standards and current applicable California Air Resources Board (CARB) standards.

B. Moisture Resistant (MR) / No Added Formaldehyde (NAF) Particleboard: Shall be high performance industrial grade core. Particleboard shall be 45# - 48# density 3-ply type formation conforming to ANSI A208.1 and ASTM D1037-91A standards. Cores shall have MR and NAF resin formulation.

C. Medium Density Fiberboard (MDF): Core shall be minimum 48# density conforming to ANSI A208.2 MD-130 standards and current applicable CARB standards.

2.4 Edgings

A. Cabinet Edges: All vertical and horizontal leading cabinet edges, adjustable shelves and interior vertical and horizontal components shall be edged with (.020") flat edge Polyvinyl Chloride (PVC) extrusion. Automated hot melt adhesive application and trimming.

B. Door and Drawer Fronts: Edges shall have 3mm radius PVC extrusion banding. Automated hot melt adhesive application and trimming.

C. Drawer Components: 3/4" sides shall be edged with (.020") flat edge PVC extrusion. Automated hot melt adhesive application and trimming.

2.5 SELECTIONS AND APPLICATIONS

A. Cabinet: HPL for exposed finished ends, fronts, modesty panels and finished backs shall be selected from manufacturer’s standard offering.

B. Interior: Semi-exposed surfaces shall be standard white solid color.

C. Drawers: Drawer box shall be standard white solid color.

D. Edgings: Edgebanding shall be selected from manufacturer’s standard offering and commercially available stock patterns.

2.6 HARDWARE

A. 120 Degree Concealed Hinges: Shall be commercial grade 120-degree pivot overlay style. Hinges shall be two (2) piece construction with door hinge and cabinet mounting plate. Hinges shall be compact design with "minimal intrusive" mechanism into compartment space. Hinges shall have spring loaded self-close feature. Doors less than 48" in height shall have two (2) hinges per door. Doors 48" through 63" in height shall have three (3) hinges per door. Doors exceeding 63" in height shall have four (4) hinges per door. Concealed hinges shall have 3-way (vertical, in-out, horizontal) alignment adjustments. Hinges shall be mounted with 5mm thread fasteners and nylon screw mount inserts.

B. Door Catches: Shall be heavy duty spring loaded, large diameter (16mm) roller catches mounted at door bottom. Catch strike plate shall be injection molded with integral molded engagement ridge and wide face bumper door stop. Doors exceeding 48" shall have catches at both top and bottom. Provide catch if required where locks are specified. Catch shall be stainless steel.

C. Pulls: Shall be offered in standard 5" size, installed vertically on doors and horizontally on drawers, and shall be Stainless Steel.

D. Drawer Slides:

1. Standard Drawer Slides: Extension slides shall be bottom and side mounted epoxy powder coated steel slides. Lateral stability is achieved through a formed captive slide profile, and slides shall glide on nylon rollers. Slides shall have both in and out positive stop with self-close feature. Slides shall meet AWI 100# static load rating, exceeding Grade 1 as tested SEFA 8 Section 6.0 and/or PL 6.5.1 drawer suspension systems under ANSI/BHMA (Builders Hardware Manufacturers Association) A156.9.

2. File and Paper Storage Drawer Slides: Shall have full extension side mounted ball bearing slides. Ball bearing slides shall be tested under The Business and Institutional Furniture

Manufacturer's Association (BIFMA) X5.5 Section 7. Slides shall pass 50,000 cycle test with 120# load.

3. Lateral File Drawer Slides: Shall have full extension side mounted ball bearing slides with 200# load rating.

E. Hanger Bars: Shall be heavy chrome plated oval tubing mounted in adjustable end wall sockets.

F. Trays and Bins: High impact polystyrene or polyethylene formed trays and bins shall be provided where indicated by model numbers. Trays and bins shall be suspended on welded wire powder coated rack system. System includes side suspension rack uprights with top and bottom horizontal guideways to avoid inadvertent tip out.

G. Shelf Supports: Adjustable shelf supports shall be injection molded clear polycarbonate. Supports shall incorporate integral molded lock tabs to retain shelf from tipping or inadvertent lift out. Supports shall have 5mm diameter double pin engagement into precision bored cabinet vertical hole patterns. Adjustment shall be 1-1/4" (32mm) spacing. Supports shall have a compression ridge effecting force against shelf edge to maintain positive pin engagement. Supports shall have molded-in screw attachment feature. Static test load shall exceed 200# per clip. Shelf spans above 27" shall have 5-point support with backs drilled to receive a mid-span shelf support, further reducing deflection. Shelf spans 27" or less shall have end 4-point support.

H. Locks: Shall be provided where indicated on drawings. Provide Cylinder Cam Lock by CompX Timberline with Nickel finish. Type 290 series for single doors. Type 250 series for Double Doors. Type 280 series for drawers. Locks shall have removable and interchangeable core for easy field and customer re-keying options. Key to be removable in both locked and unlocked positions. Locks shall be master keyed and available key-alike or key-different. Locks types shall be coordinated with drawers, single door, and double door configurations.

I. Sliding Doors: Solid 3/4" doors shall have double channel extrusion tracks both top and bottom. Glass sliding doors shall be tempered and have aluminum top and bottom channel track (bottom track with fiber inserts). Tempered glass doors above 30" tall shall include door bottom extrusion with track rollers.

2.7 COMPONENT DETAILS AND CONSTRUCTION

A. Fronts:

1. Door and Drawer Fronts: Shall be 3/4" thick, with face laminate as described in 2.2.A. Fronts shall be edged with 3mm radius edge PVC extrusion. Automated hot melt adhesive application and trimming.

2. Glazed Framed Doors: Shall be 3/4" thick, one (1) piece panel with cutout for insertion of tempered glass pane, held in place with extruded trim mounting.

3. Glass Doors: Sliding glass or hinged glass doors shall be tempered glass.

B. Mounting Frames: Shall be 3/4" thick structural members.

C. Wall Cabinets: Components shall be 3/4" thick members throughout. Wall cabinet tops and bottoms shall include back groove and minimum four (4) dowel pins per joint for insertion into cabinet ends. Wall cabinet ends shall be 3/4" thick with back groove and precision Computer Numerical Control (CNC) drill pattern for accurate location of fixed members, hardware and shelf supports. Wall cabinets shall have two (2) integral (dowel into end) mounting frames. (Designs with simple spacer rails or rails without dowel pin engagement into ends are not acceptable.)

D. Tall Cabinets: Components shall be 3/4" thick members throughout. Tall cabinet tops and bottoms shall include back groove and up to eight (8) total dowels per end joint (based on cabinet depth). Tall cabinet ends shall be 3/4" thick with back groove and precision CNC drill pattern for accurate location of fixed members, hardware and shelf supports. Tall cabinets shall have three (3) integral (dowel into end) mounting frames. (Designs with simple spacer rails or rails without dowel pin engagement into ends are not acceptable.)

E. Base Cabinets: Components shall be 3/4" members throughout. Base unit bottoms shall incorporate back groove and up to eight (8) dowel pins per end joint (based on cabinet depth). Base units shall have wide subtop rail and back frame feature. A subtop rail (8" wide) in the flat horizontal plane at cabinet front shall provide stable squaring of the top area. A mounting frame (8" wide) in the vertical plane behind back shall provide stable side-to-side rack resistance. Construction shall provide lateral and vertical stability. A second mounting frame shall be doweled into ends at lower rear. Open rear top area allows for easy wall mounting and ease of installation of mechanical services. (Subtops without horizontal and vertical plane ridged frame members not acceptable.) Base cabinet ends shall be 3/4" thick with back groove and precision CNC drill pattern for accurate location of fixed members, hardware and shelf supports.

F. Toe Kicks: Base and Tall cabinets shall be an integral base design. Construction of end panels, cabinet bottoms and horizontal toe kick members shall be integrally joined together for greater structural strength. This design facilitates load transfer from upper loaded areas directly through cabinet end to floor, reducing lower joint stresses. (Separate attached bases not acceptable.)

G. Backs:

1. Cabinet Back System: Shall be composed of 1/4" prefinished MDF back captured in side and horizontal grooves. Unit back shall be further integrated with attachment to 3/4" doweled-in mounting frames. Fixed backs shall be mechanically fastened into grooves and sealed with hot melt adhesive. Combination of back with 3/4" frame shall create a 1" integrated structural mounting system. (Compliant to AWI Premium Grade and SEFA Performance Testing)

2. Removable Backs: Shall be in sink cabinets, set in bottom groove and attached to back frames with screws.

H. Adjustable Shelves: Shelves 36" or less in length shall be 3/4" thick. Shelves over 36" in length shall be 1" thick.

I. Drawers: Four (4) sided full box design with separate attached front shall be provided. Drawer members shall be 3/4" thick with dowel pin construction at all four (4) corners. Drawer bottoms shall be 1/4" MDF trapped in groove four (4) edges as well as mechanically fastened. Entire drawer box shall be TFL laminated. (Drawers with overlay applied bottoms, non-captured groove or with staple butt or lap joint construction not acceptable.)

J. File Drawers: Shall be a four (4) sided box design with separate attached front. Drawer members shall be laminated and have dowel pin construction at all four (4) corners. Drawer bottom shall be laminated 1/4" MDF core trapped in groove four (4) edges, as well as mechanically fastened. 1/2" file drawer sides shall include file hanging rails. Full extension ball bearing suspensions shall be BIFMA 120# load tested slides.

K. Lateral File Drawers: Shall have dowel pin and bolt-through construction. Lateral file drawers shall have full extension side mounted ball bearing slides with 200# load rating.

PART 3 – EXECUTION

3.1 EXAMINATION

A. The installer shall examine the job site and the conditions under which the work in this section is to be performed and notify the contractor in writing of any unsatisfactory conditions. Do not proceed with work under this section until unsatisfactory conditions have been corrected in accordance with *AWI's Quality Standards Illustrated*, current edition. The examination shall include, but not be limited to, the following:

1. Verify the adequacy and proper location of any required backing or support framing.

2. Verify that mechanical, electrical, plumbing, and other building components affecting work in this Section are in place and ready.

3.2 PREPARATION

A. Casework, countertops, and related materials to be conditioned to average prevailing humidity condition in installation areas prior to start of work.

3.3 INSTALLATION

A. Install all work in conformance with the *AWI's Quality Standards Illustrated,* latest edition.

B. All work shall be installed plumb, level, true, and straight with no distortions (shim as required).

C. Casework shall be securely attached to building structure with anchorage devices of appropriate type, size, and quantity to meet applicable codes, specifications, and safety conditions.

D. All work abutting other building components, scribe and trim to accurate fit and caulked as required.

3.4 ADJUSTING & TOUCH UP

A. Adjust all moving and operating parts to function smoothly and correctly. Lubricate operating hardware as required.

B. All nicks, chips, and scratches in the finish shall be filled and retouched. Damaged items that cannot be repaired shall be replaced.

C. Repair, remove, or replace defective work as directed upon completion of installation.

3.5 CLEANUP

A. Upon completion of installation, the installer shall clean all installed items of pencil and ink marks and broom clean the area of operation, depositing debris in containers provided by the general contractor.

3.6 PROTECTION

A. Advise project site superintendent of problems and precautions for protection of casework and countertops from damage by other trades until acceptance of the work by the owner.

B. Cover tops with a satisfactory corrugated material and casework with 4-mil polyethylene film for protection against soiling and deterioration during remainder of construction period.

- END OF SECTION 12 32 16 -