

## SECTION 12 35 53.16

### PLASTIC LAMINATE LABORATORY FURNITURE V1.1

#### PART 1: DESCRIPTION OF WORK

##### 1.1 GENERAL REQUIREMENTS

- .1 Comply with requirements of Division 1 and requirements specified herein.

##### 1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM)
  - .1 ASTM A 167- 94a, Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
  - .2 ASTM A 653/A 653M- 95 , Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
  - .3 ASTM B 117- 95, Practice for Operating Salt Spray (Fog) Apparatus.
  - .4 ASTM B 456- 95, Specification for Electrodeposited coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
  - .5 ASTM E 54- 80(1996), Test Methods for Chemical Analysis of Special Brasses and Bronzes.
  - .6 ASTM E 478- 89a (1996), Test Methods for Chemical Analysis of Copper Alloys.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-11.3- M87, Hardboard.
  - .2 CAN/CGSB-12.1- M 90, Tempered or Laminated Safety Glass.
  - .3 CAN/CGSB-12.3- M 91, Flat, Clear Float Glass.
  - .4 CAN/CGSB-71.20- M88, Adhesive, Contact, Brushable.
- .3 Canadian Standards Association (CSA)
  - .1 CAN3-A172- M79 (R1996), High Pressure Paper Base, Decorative Laminates.
  - .2 CAN3-0188.1- M78, Interior Mat-Formed Wood Particleboard.
  - .3 CSA B111- 1974, Wire Nails, Spikes and Staples.
  - .4 CSA 0112 Series- M1977, CSA Standards for Wood Adhesives.
  - .5 CSA 0115- M1982, Hardwood and Decorative Plywood.
  - .6 CSA 0121- M1978, Douglas Fir Plywood.
  - .7 CAN/ CSA 0141-91, Softwood Lumber.
  - .8 CSA 0151- M1978, Canadian Softwood Plywood.
  - .9 CSA 0153- M1980, Poplar Plywood.
- .4 National Hardwood Lumber Association (NHLA).
- .5 AWMAC Standards (latest edition at time of tender)
- .6 NEMA LD 3-95 Grade VGL-HGL, Thermofused melamine.

- .7 ANSI A208.1 1993 Grade M2, Particle Board for interior use.
- .8 ANSI-A161.2-1998: performance for fabricated high-pressure decorative laminate countertops.
- .9 SEFA, ULC, and CSA Standards for Fume hoods

### 1.3 DESCRIPTION

- .1 System
  - .1 Supply and install all casework, *tall storage cabinets, wall cabinets, fixed wall shelving, coat rack & shelf, countertops, pegboards with drip trough, and fume hoods with base cabinets* as per drawings and specifications.
  - .2 All casework shall be manufactured as individual cabinets. Each module shall be self-supporting with interior and exterior gables finished to allow removal and relocation of the cabinet without alteration to the cabinet.
- .2 Supply and set in place all *grommets, sinks, service fittings, eyewashes, emergency showers and electrical back boxes/ pedestals/ raceways* mounted on or in laboratory benching.
- .3 In addition to requirements specified above, provide other work and perform other services, whether or not specifically required by contract documents, necessary for completion of work of this Section.

### 1.4 RELATED WORK

- .1 Mechanical service lines from rough-in points to fixtures on the furniture: Division 15 Mechanical.
- .2 Conduit and wiring from rough-in points to fixtures on the furniture: Division 16 – Electrical
- .3 Vinyl base: Supply and install by Division 9, Finishes
- .4 Connection of service fixtures and sinks, gas, water, etc., bench top service turrets: all Division 15 – Mechanical.
- .5 Connection to pedestal and flush mounted electrical outlets in bench tops, service turrets and raceways: Division 16 – Electrical.

- .6 Supply and installation of electrical and data outlets by Division 16. This section is to provide cutouts, back box, pedestals and raceways only.
- .7 Supply and installation of fume hood exhaust system and controls.
- .8 Supply and installation of tack/ white/ chalk boards

## 1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain laboratory casework, including tops, sinks, service fittings, and accessories, through one source from a single manufacturer.
  - 1. Obtain through same source from the same manufacturer as fume hoods specified in Division 11 Section "Laboratory Fume Hoods"
- B. Product Designations: Drawings indicate sizes and configurations of casework by referencing designated manufacturer's catalog numbers. Other manufacturers' casework of similar sizes, similar door and drawer configurations, and complying with the Specifications may be considered.
- C. Product Standard: Comply with SEFA 8, "Laboratory Furniture-Casework, Shelving and Tables-Recommended Practices"
- D. Manufacturers shall have at least (10) years experience manufacturing projects of similar size and complexity. Manufacturers are to provide documentation to the consultant proving the woodwork manufacturer has an MSQ certificate to the latest edition of AWMAC Standards.
- E. Acceptable manufacturers:
  - .1 Provincial Lab Systems Limited
  - .2 Kewaunee Scientific
  - .3 mottLAB
- F. Installers shall have at least (5) years experience installing projects of similar size and complexity. Manufacturers are to provide installer documentation to the consultant proving the installer has an ISQ certificate to the latest edition of AWMAC Standards.

## 1.6 SUBMITTALS

- .1 Submit detailed shop drawings for work of this section, showing assembly, connections, anchorage, materials, dimensions and finishes. Show locations, types and sizes of mechanical and electrical fixtures and fittings *per section 01300- Submittals*.
- .2 Submit samples of each type of Thermally Fused Melamine (TFM) [0.20 (General Purpose(GP)) (chemical resistant) plastic laminate] used in exposed work, complete with transparent finish per section 2.5.5. prior to start of fabrication.

- .3 Prior to fabrication submit a typical base cabinet with cupboard and drawer complete with specified bench top, splashback for Architects approval. No fabrication is to begin until the sample cabinets have been approved by the *Architect*.

## **1.7 PRODUCT DELIVERY, HANDLING AND STORAGE**

- .1 Protect against damage, including damage by excessive changes in moisture content, during delivery and storage. Maintain minimum storage temperature of 16 degrees Celsius and relative humidity 25% to 55%.
- .2 Cover counter tops at shop with heavy kraft paper.
- .3 Do not deliver components to site before all wet trades are completed, the building is closed in and humidity conditions on site are acceptable. Do not deliver during rain or damp weather.
- .4 Store materials on site in such a way as to prevent deterioration or loss or impairment of essential properties. Prevent moisture gain of kiln dried materials.

## **1.8 PROTECTION OF INSTALLED WORK**

- .1 Provide foam or kraft paper cover for countertops and casework to protect them from damage from ongoing construction finish work from time of installation to substantial completion.

## **1.9 WARRANTY**

- .1 Provide warranty of two years to make good or replace any goods under normal use. Provide the owner with a written warranty to this effect.

## **PART 2: PRODUCTS**

### **2.1 CASEWORK SYSTEM**

- .1 Provincial Lab Systems Limited shall be the basis for the casework.

### **2.2 MATERIALS**

- .1 **Epoxy Resin Countertops**

- .1 Chemical and abrasion resistant, durable top of 25mm thick material of 100% solid epoxy resin compound, cast flat, with a uniform low-sheen black surface. [Marine edged tops to be 19mm thick with a finished edge of 25mm thick as indicated on drawings]
- .2 Backsplash curb: same material as top. Include end curb where top abuts end wall. Backsplash to be supplied loose for field application.
- .3 Reagent ledges: same material as countertop and shall be silicone in place to permit removal in the future for access to service utilities.
- .4 Provide drip groove on underside of edges (including open ends and backs) to divert spillage away from cabinet faces.
- .5 Fabricate countertop and splashback sections to minimize joints and maximize length of sections.
- .6 Standard beveled finished edges of countertops and splashbacks
- .7 Factory cut holes for sinks, electrical boxes, fittings, accessories and grilles
- .8 Approved manufacturer: Durcon as supplied by Provincial Lab Systems Limited

## **.2 Epoxy Resin Sinks and Cup Sinks:**

- .1 Shall be fabricated of solid modified cast epoxy resin and shall be provided complete with tailpieces, cross strainer, plug, and overflow unless otherwise indicated. Sinks to be installed using acid resistant silicone to permit future replacement.
- .2 Sinks shall be drop-in type with standing overflow 25mm flood level as indicated on drawings.

## **.3 Plastic Laminate Countertops**

- .1 *Shall be chemical resistant plastic laminate GP thickness.*
- .2 *Colour to be selected by the Architect from manufacturers' standard colour range. Suede finish.*
- .3 *Provide a 45 lb. Particleboard core with plastic laminate backing sheet for overall thickness of 32mm. [7 ply 3/4" Veneer core plywood with 1/2" VC plywood buildup around the perimeter at all sink tops]*

- .4 *Provide drip groove at all exposed edges.*
- .5 *Provide splashbacks and return splashes where required.*
- .6 *Provide a 3mm thick PVC edge on the front and exposed ends.*
- .7 *Where joints occur, provide mechanical locktite fasteners and splines for a hairline joint. Seal joint with acid resistant silicone.*

#### **.4 Stainless Steel Sink Tops**

- .1 *Material: 18 gauge, type 316 stainless steel with #4 satin polished finish on all exposed surfaces. Apply stainless steel to particleboard core and coat underside of tops with waterproof emulsion.*
- .2 *Backsplash: Same material as top and shall be integral with a coved junction. Provide integral end backsplash where top abuts wall.*
- .3 *Sink tops: Shall have raised marine edges and have a ½" return on the underside. Provide sloping/fluted drain boards where indicated on drawings. Sinks shall be integrally welded into tops. Grind welds flush and polish to a satin finish. Sinks shall be complete with standing overflow 25mm below flood level and removable perforated corner guard 12mm below flood level as indicated on drawings.*
- .4 *Marine edges shall be 1" wide with a ¼" vertical drop at a 30 degree slope.*
- .5 *Fabricate countertops in as long a length as possible. When one-piece countertops will not permit entry into building, joints shall be waterproof slip joint type.*
- .6 *There shall be no evidence of spot welds in any area of the countertop.*

#### **.5 Service Fittings**

- .1 *Shall be **WaterSaver Faucet [Vandal Resistant]** laboratory service fixtures.*
- .2 *Provide all fixtures complete with shanks, coupling lock nuts, tailpieces and plastic index buttons.*
- .3 *Finish shall be [chrome plated].*
- .4 *Cold water and hot/cold mixing faucets to have serrated nozzle outlets. All faucets to have BARRIER FREE type wrist handles.*

- .5 Provide vacuum breakers on all faucets.
- .6 Provide Eyewash/Drench hose units as indicated on drawings.
- .7 Electrical fixtures:
  - .1 Pedestal fixtures shall be complete with anti twist pin, shank, locknut, duplex receptacle and stainless steel face plate. Pedestal shall have grounding screw and be CSA approved. Finish: Black
  - .2 Flush fixtures shall be complete with 1104 box, receptacle, and #4 finish stainless steel face plate.
  - .3 Electrical raceway to be 2 channel by Wiremold, complete with base, cover, divider, entrance end fittings and outlet mounting plates
  - .4 Receptacles, data outlets and wiring to same by Division 16

**.6 Pegboard Drying Rack**

- .1 *Fabricate from 304 stainless steel with a No. 4 satin finish complete with integral drip trough and catch drain as indicated on drawings. Model #PBSS 3036*
- .2 *Polypropylene pegs shall be removable without tools.*
- .3 *Provide wall a hanger to allow removal of pegboard without tools.*
- .4 *[Pegboard shall be complete with funnel rack, drain basket and screen insert and CS-30 Utility Shelf]*

**.7 Flammable Safety Storage Cabinets**

- .1 *Flammable Liquid Storage: Where cabinets are indicated for solvent or flammable liquid storage, provide units that are listed and labeled as complying with the requirements of NFPA 30 for design, construction, and capacity of storage cabinets by UL, Warnock Hersey, or another testing and inspection agency acceptable to authorities having jurisdiction.*
- .2 *Cabinet to have double walls of 18ga. Steel with ½" airspace and welded joints. Self-closing door with fusible link to assure automatic closing of door in case of fire in cabinet. Large red lettering on door reading: **Flammable - Keep Fire Away.***

**.8 Acid Storage Cabinets**

- .1 *Acid storage: Cabinets shall be double wall construction, 1 ½" air insulated cabinet. Bottoms and shelves to be corrosive- resistant polyethylene trays to contain spills. Ensure cabinet is vented to fume hood above with 1 ½" plastic vent kit.*

**.9 Retort Stands**

- .1 *Provide, where shown on drawings, AAP100 retort rod sockets complete with AAP110-24 vertical rods.*

**.10 Fume Hoods**

- .1 Fume hoods shall be constant volume [VAV] air flow units with sash and automatic [restricted] bypass system, remote control service fixtures mounted in front vertical posts: series Fume Hoods. *Provide Single and Double Sided Fume Hoods where indicated on drawings.*
- .2 Service Fixtures: (see schedule/ drawings for location and service fitting type)
- .1 Colour coded remote controlled epoxy coated cold water gooseneck with vacuum breaker.
  - .2 Colour coded remote controlled epoxy coated gas outlet (labelled).
  - .3 125V 15A electrical duplex, one each side.
  - .4 Externally mounted two-tube fluorescent light fixture and light switch.
  - .5 Motor start switch by Division 15
  - .6 Velocity Monitor/Alarm with LED digital display of face velocity and audio alarm.
- .3 Erect interior liner of 6mm non-asbestos white polyresin material supported on a metal pan frame. Size and locate liner within the structure to provide space at both ends of the fume hood between the exterior and the liner. This space shall accommodate service line and mechanical service fixtures; fit with adequately sized access panels to permit installation of services.
- .4 The front posts of the fume hood shall be constructed of 18 ga enamel steel and shall be designed to ensure a smooth, even flow of air into the hood with a minimum of eddying and turbulence. Across the bottom of the hood opening, provide a stainless steel air foil, so mounted as to provide a 25mm air space between the top of working surface and the foil.



- .5 Incorporate into the hood design, a constant volume feature that shall be automatically controlled by the sash position. The volume of air exhausted through the hood shall be constant regardless of the position of the sash. *[For a restricted bypass VAV design, the bypass area is to be closed off with a metal galvanized plate. Provide cutout in the fume hood front post for VAV controller supplied and installed by others.]* In the hood interior and across the full width of the back, provide a 6mm baffle. Install a round, stainless steel type 304 duct stub in the top rear section of the hood and extend 50mm above the interior liner.
- .6 Provide a sash limit stop at the 457mm height of the face opening of the fume hood. Provide a manual over ride to allow full access to fume hood to set up apparatus. Provide a sash lock for double sided fume hoods (each side). Locks to be stainless steel mechanical locks with a pin mechanism limiting movement in the track when locked. Locks to be key operated.
- .7 Sash counterweight system shall be a single weight, pulley, cable, counter balance systems which prevents sash tilting by means of a shaft driven system insuring non-tilting, non-binding and non-creeping operation. **Sash systems not using this type of counter balance are not acceptable.**
- .9 Average work area illumination shall be minimum 80- foot candles.
- .10 Provide closure panels from top of fume hood to underside of Gypsum Board Bulkhead at all exposed sides of fume hood. Panels are to match fume hood exterior and be easily removable for access to lights.
- .11 Machine holes into the front posts for mounting of remote controls, switches and electrical receptacles. Equip hood with a lead-weighted, counter balanced 6mm tempered glass sash suspended on stainless steel cables.
- .12 Externally mount hinged 2-lamp fluorescent fixture, protected from the hood interior by tempered glass sealed with silicone caulking. Provide hinged fixture for easy access to lighting fixture to permit relamping.
- .13 Work surface shall be solid cast epoxy resin with a dished surface. Overall thickness 32mm. Top to have a 75 x 150 epoxy resin cupsink.
- .14 Pre-plumb and pre-wire service fixtures in factory.
- .15 Electrical components: CSA approved.
- .16 *Acid storage (under fume hood) cabinet shall be double wall construction, 1 ½" air insulated cabinet. Bottoms and shelves to be corrosive- resistant polyethylene trays to contain spills. Ensure cabinet is vented to fume hood above with 1 ½" plastic vent kit.*

- .17 *Flammable storage (under fume hood) that are indicated for solvent of flammable liquid storage, provide units that are listed and labeled as complying with the requirements of NFPA 30 for design, construction, and capacity of storage cabinets by UL, Warnock Hersey, or another testing and inspection agency acceptable to authorities having jurisdiction.*
- .18 *Cabinet to have double walls of 18ga. Steel with ½" airspace and welded joints. Self-closing door with fusible link to assure automatic closing of door in case of fire in cabinet. Large red lettering on door reading: **Flammable Keep Fire Away**.*
- .19 Manufacturer to provide certification that fume hood meets the performance requirements of ANSI/ASHRAE Standard 110-1995.
- .20 Manufacturer to provide Maintenance and Operation Manual with each fume hood.

#### **.11 Grommets**

- .1 *Provide 2 3/8" dia. Black plastic grommets where indicated on drawings.*

#### **.12 Fixed Shelving**

- .1 Provide 19mm maple wood veneer shelving as detailed on drawings.
- .2 Provide 3mm hardwood maple edging on all exposed edges

### **2.3 Casework**

- .1 All casework shall conform to AWMAC premium grade, sizes and configurations of modules shown and identified on the drawings and described in the specifications.
- .2 All cabinets whether for base, wall or tall floor storage cases shall be fabricated so that each is a self-contained module. Front, side, top and bottom, exterior and interior surfaces shall be finished allowing for future relocation of any module into any bench arrangement, without need of additional finishing.

### **2.4 Materials**

- .1 Thermally Fused Melamine (TFM) [0.20 (General Purpose(GP)) (chemical resistant) plastic laminate] on an ANSI-grade M-2 particleboard [MDF] core.

- .2 Cabinet ends, bottoms, tops, shelves and gables shall be fabricated of  $\frac{3}{4}$ " TFM [0.20 (GP) (chemical resistant) plastic laminate] on M-2 particle [MDF] core.
- .3 Door and drawer fronts shall be fabricated of  $\frac{3}{4}$ " TFM [0.20 (GP) (chemical resistant) plastic laminate] on M-2 particle [MDF] core, finished both sides.
- .4 Bottoms of wall cases shall be 1"-TFM [0.20 (GP) (chemical resistant) plastic laminate] on M-2 particle [MDF] core
- .5 Backs of all semi-exposed and unexposed base cabinets shall be  $\frac{1}{4}$ " tempered hardboard. Backs of all open cabinets shall be  $\frac{1}{2}$ " plywood with the face veneer matching the finish of the cabinet body.
- .6 Security panels where required shall be fabricated of  $\frac{3}{4}$ " TFM, banded with 3mm [0.5mm] PVC [matching plastic laminate].
- .7 Edging shall be 3mm [0.5mm] PVC [matching plastic laminate].
- .8 Glass shall be 6mm thick clear laminated safety for unframed, solid wood or TFM [plastic laminate] framed doors.

## 2.5 Casework Fabrication

### .1 Base Units

- .1 Cabinet ends shall be banded with  $\frac{1}{8}$ " PVC edge on all exposed surfaces.
- .2 Cabinet base shall be  $\frac{3}{4}$ " x 4" waterproof fir plywood separate from the cabinet body.
- .3 Front top horizontal rails shall be  $\frac{3}{4}$ " x 3  $\frac{3}{4}$ " TFM [0.20 (GP) (chemical resistant) plastic laminate] on M-2 particle [MDF] core with 3mm [0.5mm] PVC edge and fastened to cabinet ends with fluted dowels.
- .4 Rear top and bottom vertical support rails shall be  $\frac{3}{4}$ " x 3  $\frac{3}{4}$ " and fastened to cabinet with fluted dowels.
- .5 Cabinet bottoms shall be banded with 3mm [0.5mm] PVC [matching plastic laminate] on the front exposed edge. It shall be set flush and fastened to cabinet ends with fluted dowels.
- .6 Cabinet backs in semi-exposed cabinets shall be fabricated of one-piece  $\frac{1}{4}$ " white tempered hardboard. All base cabinet backs shall be removable.

- .7 Cabinet backs on open cabinets will match the material and finish of the cabinet body. Thickness shall be ½". All base cabinet backs shall be removable.
- .8 Vertical dividers (full height and half height) shall be 1 ½" of matching material and finish to cabinet body. Dividers shall be secured to bottom, front top rail and rear top rail with screws. Exposed edges shall be banded to match TFM [*plastic laminate*].
- .9 Adjustable shelves shall be set on metal [*double pin, plastic locking*] shelf supports at 1¼" spacing. Front edges of shelves shall be banded with a 3mm [*0.5mm*] PVC [*matching plastic laminate*]. Shelves shall be full depth in standard cupboards and full depth in open base units. Adjustable shelf thickness shall be as per the latest edition of AWMAC standards.
- .10 Drawer Construction: Drawer bodies shall be Blum Metabox system with ½" white melamine bottoms and backs. The exposed top edge of backs shall be edge banded with white .018" thick PVC.
- .11 Doors and drawer fronts shall be TFM [*0.20 (GP) (Chemical Resistant) plastic laminate*] on M-2 particle [*MDF*] core edge banded on all sides to match cabinet faces. Construction shall be full overlay. Grain direction on doors and drawer fronts shall be vertically matched where applicable.
- .12 Back panels with electrical outlets shall be fabricated in two pieces.

## **.2 Wall and floor cases**

- .1 Case ends shall be ¾" TFM [*0.20 (GP) (chemical resistant) plastic laminate*] on M-2 particle [*MDF*] core banded with 3mm [*0.5mm*] PVC [*matching plastic laminate*] on exposed edges.
- .2 Case tops shall be ¾" TFM [*0.20 (GP) (chemical resistant) plastic laminate*] on M-2 particle [*MDF*] core banded with 3mm [*0.5mm*] PVC [*matching plastic laminate*] on exposed edges and fastened to ends with fluted dowels.
- .3 Bottoms of wall cases shall be 1" thick, banded with 3mm [*0.5mm*] PVC [*matching plastic laminate*] on exposed edge, set flush and fastened to cabinet ends with fluted dowels.
- .4 Bottoms of floor cases shall be ¾" thick with 3mm [*0.5mm*] PVC [*matching plastic laminate*] on exposed edges, fastened to cabinet with fluted dowels.

- .5 Backs of closed cabinets shall be ½" white TFM on M-2 particle core. Backs will be glued, screwed and stapled into rebates on back edge of ends and as per latest edition of AWMAC standards.
- .6 Backs of open cabinets shall be of ½" material, with finish matching that of the cabinet body. Backs will be glued, screwed and stapled into rebates on back edge of ends and as per latest edition of AWMAC standards.
- .7 Fixed center shelves on floor cases shall be 1" thick with matching 3mm [0.5mm] PVC [matching plastic laminate] on exposed edges on all open, hinged and sliding door cabinets. Fixed center shelves shall be fastened to ends with fluted dowels.
- .8 Adjustable shelves shall be set on metal [double pin, plastic locking] shelf supports at 1 ¼" spacing. Front edges of shelves shall be banded with a 3mm [0.5mm] PVC [matching plastic laminate]. Shelves shall be full depth in standard cupboards and full depth in open units. Adjustable shelf thickness shall be as per the latest edition of AWMAC standards.

### **.3 Doors**

#### **.1 Solid Doors**

- .1 Full overlay construction doors shall be fabricated of ¾" TFM [0.20 (GP) (chemical resistant) plastic laminate] on M-2 particle [MDF] core. Full overlay construction tall case doors (for a single door larger than 750mmW x 800mmH) shall be 1" M-2 particle [MDF] core. Provide 3mm [0.5mm] PVC [matching plastic laminate] banding on all edges.
- .2 Provide two hinges on all doors up to 36" in height and a minimum of three hinges on any doors exceeding this height.

#### **.2 Framed Glazed Doors**

- .1 Framed glazed hinged doors for full overlay construction shall be fabricated of TFM [0.20 (GP) (chemical resistant) plastic laminate] on M-2 particle [MDF] core with cutout for glass edged with matching .5mm PVC tape.
- .2 Provide two hinges on all doors up to 36" in height and a minimum of three hinges on any doors exceeding this height.
- .3 Sliding doors shall be fabricated as hinged door cabinets except doors shall slide in top channels and with a nylon wheel operating on an inset plastic track.

- .4 Glass shall be 6mm laminated safety glass and held in place with a removable clear vinyl gasket.
- .3 Unframed Sliding Glass Doors
  - .1 Glass shall be 6mm laminated safety glass set in extruded aluminum shoe with nylon wheel assemblies and top and bottom extruded aluminum track.
  - .2 Provide silencer guides fitting on top of glass panel for smooth and noiseless operation.
  - .3 Pulls shall be ground into sliding glass door.
- .4 **Hardware**
  - .1 Pulls shall be 4" wire type *[flush mount]*. Finish shall be satin chrome *[stainless steel]*. Mount drawer pulls horizontally *[vertically]*.
  - .2 Hinges shall be an institutional grade 1 63mm 5 knuckle satin chrome *[stainless steel]* wrap around design
  - .3 Door catches: Adjustable type, spring activated nylon roller catches.
  - .4 Self closing drawer slides shall be integral to the epoxy coated metal drawer side and shall operate on a nylon roller with ball-bearing wheel. Provide a mechanism for horizontal and vertical adjustment of drawer faces. When fully extended, a double stop shall prevent accidental removal. Drawer system shall be Blum Metabox system. *[shall be 100lb capacity full extension drawer slide with hold in detent, steel ball bearing, zinc finish. Accuride #3832 or approved equal]*
  - .5 Elbow catches shall be spring actuated and come complete with strike plate. Provided where locks occur in hinged double door units.
  - .6 Locks: 5 pin (disc) tumbler cam locks with offset cam. Exposed face chrome plated. Keying: Keyed alike per room where indicated on drawings. Provide 2 master keys.
  - .7 Tracks for solid sliding doors to be aluminum for upper track and single plastic lower track for each door and complete with plastic glide.
  - .8 Adjustable shelf supports shall be metal *[double pin, plastic locking]* type, able to accommodate both  $\frac{3}{4}$ " and 1" thick shelves.

- .9 Unframed sliding glass door track shall be K&V assembly #1092.

#### **.5 Casework Finish**

- .1 Colour to be selected by the Architect from manufacturers' standard colour range *[colour]*.
- .2 Manufacturer's standard matte/suede finish
- .3 Cabinet liner, vinyl covered board, foil board or laminates that are cold pressed are not acceptable.

### **PART 3: EXECUTION**

#### **3.1 INSTALLATION**

- .1 Install casework components plumb, true and level and securely fasten in place. Accurately scribe and closely fit components to irregularities of adjacent surfaces.
- .2 Accurately fit joints in true plane, locate joints over bearing or supporting surfaces.
- .3 Provide mechanical fastening devices such as nails, screws and bolts required for fastening plastic laminate components. Provide concealed fastening of all components.
- .4 Where permitted, nail with small headed finishing nails. Countersink nail heads with nail setter.
- .5 Install counter tops using concealed fastening devices.
- .6 Where cabinet work abuts other building elements provide wood trim matching cabinet work except where otherwise detailed.
- .7 Check operation of all movable parts and if necessary, adjust to ensure proper and smooth function.
- .8 Upon completion of installation inspect work of this Section and touch-up, where required, **minor** damaged surface finish to restore it to original condition. All other damaged components shall be replaced.

### **3.2 CLEANING**

- .1 On completion, touch up marred or abraded finished surfaces.
- .2 Wipe down surfaces to remove fingerprints and markings and leave in clean condition.

**END OF SECTION**