

Leonard Peterson Vanguard Line Wood Laboratory Furniture Specifications

Part 1: General Requirements

1.01 Product

1. Wood laboratory casework and equipment covered by this specification and/or equipment schedule, and accompanying drawings to be the product of one manufacturer or dealer thereof and shall be supplied under his direction to eliminate divided responsibility, unless directly called out in Contract Documents to be of another manufacturer or dealer thereof.
 - A. The manufacturers catalog and model numbers listed on the drawings and/or in equipment schedule are those of Leonard Peterson & Co., Inc., Auburn, Alabama, except where noted otherwise.
 - B. Refer to details and/or equipment schedule for location of materials to be provided. Although not necessarily shown on details or listed in schedule, casework supplier must provide all materials necessary (i.e. finished ends, finished backs, fillers, scribes, etc.) to make for a complete installation
2. Bidders must be prepared to shown the following proof of their ability to perform under this contract. Failure to meet requirements and qualifications will be sufficient cause for rejection of any or all bids.
 - A. Minimum of five (5) years experience in the manufacture of wood laboratory casework and equipment.
 - B. Minimum of ten (10) completed installations of equal size and requirements which can be inspected prior to award of contract.
 - C. Financial and technical resources of sufficient scope to insure prompt and satisfactory performance in the production and delivery of all equipment specified.
 - D. Financial and technical resources of sufficient scope to insure prompt and satisfactory installation and/or connection of the equipment when this work is part of the specified scope or a condition of purchase.
3. The owner reserves the right to reject the manufacturer or subcontractor proposed for this section of work, if such manufacturer or subcontractor cannot meet the requirements of these specifications or has a past record of poor performance. Rejected manufacturer shall be replaced by another whose product complies with the requirements of this specification.
4. Equipment may be inspected by the owner at the equipment manufacturer's plant prior to shipment. Any equipment failing to meet with these specifications and approved shop drawings will be rejected.

1.02 Standards of Quality

1. The prime intent of this specification, applicable drawings, and equipment schedule is to shown and define the essential minimum requirements as to the quality of materials, construction, finish and overall workmanship to be supplied, thus providing an installed project that will be functional, provide long life with a minimum of maintenance and be operationally safe. Equipment differing from that specified or shown on the drawings cannot be considered unless ample proof is submitted with the proposal in the form of complete drawings and samples, indicating all essential requirements of the specifications are strictly adhered to.
2. The owner, or his designated representative, reserves the right to reject proposals offering equipment which do not meet the standard of quality established by these specifications. Any such decision will be considered final and not subject to further recourse.

1.03 Description of Work Required (Scope)

1. Wood laboratory casework and equipment as specified herein and/or as scheduled, or as noted on the drawings is to be furnished, delivered, and installed in the location required by the drawings, and left ready for installation and connection of plumbing fixtures and electrical fixtures by others.
2. In general, casework, equipment, service fixtures and related work shall include:
 - A. Furnishing, delivery to the building, uncrating, setting in place and leveling all casework and equipment listed in this specification or equipment schedule and/or shown on the drawings.
 - B. Furnishing plumbing fixtures and fittings as defined in this specification, complete with tank nipples and lock nuts for mounting fixtures and fittings to tops or curbs. Fixtures shall be furnished assembled, tank nipples loose, in properly marked cartons for installation and final hookup or connection by others. Nipples for water (except deionized water) and gasses to be brass.
 - C. Furnishing electrical service fixtures directly attached to the casework or equipment as called for in this specification, equipment list and/or shown on the drawings. Fixtures shall be furnished assembled in properly marked cartons for installation and final hookup or connection by others. Duplex electric boxes located in cabinetry or aprons shall be installed at the factory by the equipment manufacturer.
 - D. Furnishing of sink bowls and cupsinks, complete with required sink supports, overflows, and outlets with plugs and strainers, as

called for in this specification, equipment schedule and/or shown on the drawings. Units shall be assembled and installed by casework contractor. Separate outlets shall not exceed four inches in length. Outlets shall be furnished less couplings or tailpieces required to connect to the drain piping system. Installation of outlets by others.

- E. Furnishing with special fume hoods, all service fixtures, fittings, remote control rods, escutcheon plates, valve handles and nipples. Service fixtures shall be furnished assembled in properly marked cartons for installation and final connection by others.
- F. Furnishings with special specified fume hoods, all electric fixtures, alarms and fittings, light fixtures, light switches, fan switches and pilot lights. Light fixtures shall be installed in the hoods. Items shall be furnished assembled and mounted where practical, ready for final hook up by others. Wiring is not included in this work.
- G. Furnishing and installing countertops as shown on the drawings, of the size and shape required on all laboratory casework.
- H. Remove all debris, dirt and rubbish accumulated as a result of installation of this equipment, leaving premises broom clean and orderly.
- I. Final Adjustment: It is recognized that wood doors and drawers will swell and stick because of unusually high ambient moisture in new construction work. Casework installer shall during the first year return after final inspection to make any final adjustments to drawers and doors to eliminate sticking or other problems. Any doors or drawers which cannot be corrected shall be replaced (see Part 3 – Execution).

1.04 Definitions

1. Service Fixtures are defined as gas, air and vacuum cocks, hot and cold water faucets, vacuum breakers and sinks. Service fixtures also include electrical convenience outlet boxes and single or multiple A. C. receptacles.
2. Service Lines are defined as gas, air, vacuum, hot and cold water piping, fittings and shut-off valves necessary to carry respective services from rough-in outlets in the walls or floors to the service fixtures. Service lines also include all conduits, junction boxes, conduit fittings and wire necessary to carry electrical services from building rough-in outlets in floors and walls to service fixtures.
3. “Others” are defined as separate and independent contractors who have no other connection whatsoever with the casework and laboratory equipment mentioned in these specifications except to complete “Work by Others”.

1.05 Related Work Performed by Others or Specified Elsewhere

1. Mounting of service fixtures, installation of sink outlets, connections of service fixtures to rough-ins, duct work installation and materials required for same or to support same to be furnished and/or installed by others. See mechanical, electrical and plumbing portions of specifications.
2. Furnishing and installing of all reinforcements for wall, floors and ceilings to adequately support or anchor laboratory equipment.
3. Furnishing fluorescent tubes, light bulbs, and other miscellaneous materials understood and considered to be maintenance or supply items.
4. Furnishing or making available necessary hoisting, elevator service, or unusual equipment required to distribute casework or equipment to its proper location.
5. Providing protection and security of laboratory furniture and equipment after delivery to jobsite.

1.06 Coordinating and References

1. The work of this specification may require close coordination with the work of other sections of the specifications and/or the work of other trades to obtain the proper sequence of operations and installation of material.
2. Refer to drawings for locations of various items. Check all drawings and equipment schedule to determine extent of work and special details.

1.07 Shop Drawings

1. For approval by owner or architect and for job site use, furnish seven (7) sets of shop drawings showing plans, elevations and rough-ins of all items described in equipment schedule and/or shown on drawings. Provide revised drawings as required. Initial submittal of complete shop details must be submitted 60 days after award or casework supplier must be considered in default and subject to termination of contract or order.
2. Verify building measurements prior to fabrication of adjust casework accordingly to insure proper fit of all items. Casework manufacturer is to prepare all top details showing joint, hole, sink and other cutout locations.

3. Submit three (3) sets of as-built shop drawings including top details, special construction details and equipment schedules upon completion of project for owners records.

1.08 Samples (As requested by owner or architect)

1. Samples to be submitted to and approved by the owner or architect before proceeding with any of the work. Submit full size working samples clearly showing the following:
 - A. Top construction as specified.
 - B. Drawer construction.
 - C. Corner and leg construction.
 - D. Cabinet construction.
 - E. Door construction.
 - F. Cabinet finish.
 - G. Hardware.
 - H. Plumbing fixtures if other than called out on the drawings.
 - I. Sink construction as specified.
2. Owner or architect will furnish contractor with sample approval in writing.

1.09 Warranty

1. Furniture shall be provided with a two year warranty covering materials and workmanship of product(s) furnished. Materials or components specified by the owner or architect by trade or brand name shall be warranted by the supplier to the extent of the manufacturer's warranty for such materials or components furnished.

Part 2 Wood Laboratory Furniture

2.01 General

1. Casework shall be lipped design and constructed in accordance with the best woodworking practices of the cabinet making industry. First class quality of casework shall be established by use of proper machinery and finishing procedures, tools, fixtures and skilled workmanship.
2. Casework units to incorporate blind mortised and tenoned type construction with all joints glued and screwed together, making each unit rigid and self-supporting. Doweled casework construction or face frame millwork type construction will not be acceptable.

3. The following outlines minimum material and construction standards. Products meeting or exceeding these minimum standards will be acceptable.

2.02 Materials

1. Materials used for construction of cabinets, cases and tables shall be:
 - A. All exposed solid wood parts shall be Northern grown red oak, clean and free from defects. All interior solid wood shall be sound hardwood. All lumber to be kiln dried to a uniform moisture content of 6 percent.
 - B. Oak, birch or maple plywood shall be veneer core in thicknesses as specified, balanced construction, having face veneers not less than 1/28" in thickness. Exposed oak veneers shall be plain sliced (rotary cut not acceptable) selected for color – grade A-2. Semi-exposed or unexposed veneers shall be birch, maple or oak unselected for color. No particleboard will be acceptable for veneer cores except as core material in fully hardwood banded doors and leg panels.
 - C. Medium Density Fiberboard (MDF) is a fiberboard product made of softwood fibers compressed and cured under high temperature and pressure into a homogeneous stable panel with a density of 44 to 48 pounds per cubic foot. Panel thicknesses are obtained by a single pressing.
 - D. Tempered Hardboard is a panel manufactured from inter-felted lignocellulosic fibers which are consolidated under heat and pressure in a hot press to a density of 50-55 pounds per cubic foot. Both sides of the panel are smooth. Panel face is comprised of a layer of more highly refined aspen wood fibers that provide a superior finishing surface. Surface and strength properties are further enhanced by the addition of a drying oil to both sides, which is subsequently baked. This "tempering" process provides improved surface, modulus of rupture, internal bond (PTS) and water properties. No formaldehyde binders are used in tempered hardboard panels.
 - E. Glass to be 1/8" or 7/32" thick float glass without imperfections and with unmarred surfaces. Safety glass, where called for, shall be 7/32" combustion safety glass.
 - F. Glues shall be water resistant, with gluing done in presses, clamps and jigs.

2.03 Construction

1. Base cabinets and case units to be of lipped style construction having drawer heads and hinged doors with radius edges, overlapping cabinet and case openings on all edges. Units shall be integral, completely factory assembled and finished. Cabinets constructed with flush interiors having no offsets to maximize drawer and cupboard space and for ease of cleanability. Face frame constructed cabinets or cases are not acceptable. Cabinets shall be constructed so that hinges fasten to solid lumber. Cabinets to be assembled using blind mortised and tenoned (or rabbeted) joints, glued and screwed together in accordance with the best cabinet makers methods. Cabinet or casework featuring pinned or doweled construction is not acceptable. All exposed joints shall be closely fitted and tight showing no open joints when cabinet is finished. All exposed corners rounded to a radius of at least 3/16".
2. Materials to be used for cabinet and case parts shall be:
 - A. Solid Oak Hardwood:
 - Exposed rails of top frames.
 - Exposed rails.
 - Facers (exposed edges) of finished ends, finished backs, unfinished ends, partitions, bottoms, and shelves.
 - Glazed door frames, table aprons or rails, table legs, drawer heads, and case headers.
 - B. Solid Hardwood:
 - Internal cabinet frame members, concealed rails, cross rails in table aprons, drawer sides and backs, and corner blocks.
 - C. Oak Plywood:
 - Exposed ends, partitions, bottoms, backs and shelves.
 - Doors and file drawer heads.
 - D. Birch or Maple Plywood:
 - Semi-exposed or unexposed ends, partitions, bottoms, and shelves. Case tops and framed book compartment bottoms.
 - E. Tempered Hardboard (fiberboard):
 - Unexposed cabinet and case backs, drawer bottoms, book compartment bottoms, and security panels.
3. Base Cabinet Construction
 - A. Exposed ends, 3/4" oak plywood with 3/4" wide x 1-1/4" thick oak facer.
 - Unexposed ends, 5/8" birch or maple plywood with 3/4" wide x 1-1/4" thick oak facer.
 - Interior of sides machined for frame(s), rails and bottom, and bored for shelf support clips when required.
 - B. Top frames, 1" thick rectangular made of 4 pieces with center rail added on sections over 24" in length.

No part of cabinet frames to be less than 1-3/4" in width.
Frames assembled with tongue and grooved joints, with joints being glued together.

Ends of frames tenoned and bored for blind assembly with glue and reinforced with screws to cabinet walls. Depending upon cabinet style frames shall also be grooved to receive partitions.

- C. Bottoms, 3/4" thick plywood with 3/4" wide x 3/4" thick oak facer. Ends of bottoms tenoned and bored for blind assembly with glue and reinforced with screws to cabinet walls. Depending upon cabinet style bottoms shall be grooved to receive partitions.
- D. Intermediate rails, 3/4" thick x 2-1/2" wide solid oak. Rails furnished with tenons for blind assembly with glue and reinforced with screws to cabinet walls. Depending upon cabinet style rails shall be grooved to receive partitions and/or security panels.
- E. Partitions, 3/4" thick plywood with 3/4" wide x 3/4" thick oak facer. Sides to be machined for intermediate rails, and/or bored for shelf clips. Top and bottom partitions to be machined for assembly with glue and reinforced with screws into cabinet frame or bottom grooves.
- F. Backs, 1/4" thick secured to cabinet ends, frames and/or partitions. When required for access to plumbing, backs shall be removable without the use of tools. All base units provided with backs. Exposed finished backs on mobile, freestanding or island units 3/4" thick faced on exposed edges with solid oak 3/4" wide x 3/8" thick. Units up to 8' long requiring finished backs shall be provided with one piece backs and shipped assembled to cabinets.
- G. Shelves, 3/4" thick plywood faced with 3/4" wide x 3/4" thick oak facer. Shelves mount on double pinned nylon shelf clips adjustable on 1-1/4" centers fitting into bored holes in cabinet ends or partitions. Each clip has a rated 400 pound weight capacity.
- H. Drawer heads (fronts), 13/16" thick solid oak secured to 1/2" thick solid hardwood (beech, maple or oak) drawer sides and backs. Fronts secured to sides with interlocking lap joints and back fully rabbeted into sides. Joints glued and pinned. 1/4" bottoms shall be fully grooved into drawer fronts, sides and backs and secured with glue. Drawer heads over 8" in height may be furnished in 5-ply 13/16" thick lumber core plywood with sliced oak faces. All drawers furnished with 100 pound epoxy coated drawer slides. Slides shall have stops to prevent inadvertent removal. Drawers provided with pulls as described under Hardware. Drawers over 24" wide to have 2 pulls. Depth of drawers (front to back measurement) shall be no less

- than the cabinet depth minus 2".
- I. Security panels, 1/4" thick tempered hardboard fully grooved into cabinet intermediate face rails, cabinet walls and additionally furnished rear hardwood intermediate rail. Security panels shall be provided between all drawers or drawers and cupboards having locks which are keyed differently.
 - J. Doors, 13/16" thick 5-ply hardwood frames having solid cores with hardwood cross bandings, and with oak veneered faces. Paired cabinet doors to have matched grain pattern. Doors furnished with hinges, pulls and catches and described under Hardware.
 - K. Base cabinets have recessed toe space 4" high x 2-1/2" deep. Toe board made of 3/4" thick water resistant plywood.
4. Water, Upper, and Tall Case Construction
- A. Exposed ends for units 48" or less in height shall be 3/4" thick oak plywood with 3/4" wide x 1-1/4" thick oak facer. Exposed ends of units over 48" high 1" thick oak plywood with 1" wide x 1-1/4" thick oak facer.
Unexposed ends for units 48" or less in height shall be 5/8" thick birch or maple plywood with 3/4" wide x 1-1/4" thick oak facer. Unexposed ends for units over 48" high shall be 3/4" thick with 1" wide x 1-1/4" thick oak facer.
Interior of sides machined to receive top and bottom, and bored for shelf clips.
 - B. Top, 3/4" thick hardwood plywood furnished with oak header rail minimum 3/4" thick x 2-1/2" high. Header rail and top tenoned and bored for blind assembly with glue and reinforced screws to cabinet walls. (Case tops provided with header rails not acceptable.) Depending upon style of case, top shall further be provided with semi-concealed track located behind header to receive sliding doors.
 - C. Bottom of hanging wall cases and counter mounted cases, 1" thick hardwood plywood with 1" wide x 3/4" thick oak facer. Floor mounted bases furnished with 3/4" thick plywood bottoms with 3/4" wide x 3/4" thick oak facer.
Ends of bottoms tenoned and bored for blind assembly with glue and reinforced with screws to cabinet walls.
Depending on style of case, bottoms shall further be furnished with aluminum tracks to receive sliding doors.
 - D. Shelves, 3/4" thick plywood faced with 3/4" wide x 3/4" thick oak facer.
Shelves mount on double pinned nylon shelf clips adjustable on 1-1/4" centers fitting into bored holes in cabinet ends or partitions.
 - E. Back, 1/4" thick secured into unit ends, top, and bottom. Backs provided with 3/4" thick x 4" high batten strips behind case backs

for securing cases to walls. Exposed backs on Island Units shall be $\frac{3}{4}$ " thick faced on exposed edges with solid oak $\frac{3}{4}$ " wide x $\frac{3}{8}$ " thick.

- F. Tall storage cases provided with 4" high oak plywood toe rail set flush with faces of case to provide added safety from tipping. Toe rail shall be reinforced for rigidity.
- G. Hinged panel doors, minimum $\frac{13}{16}$ " thick up to 48" high and 1" thick over 48" high, 5-ply, hardwood framed, having solid cores with hardwood cross bandings with oak veneered faces. Paired case doors to have matched grain pattern. Doors up to 48" high shall have 1 pair of hinges and 1 catch. Doors over 48" high shall have 1- $\frac{1}{2}$ " pair of hinges and 2 catches as described under Hardware.
- H. Sliding panel doors of similar construction to hinged panel doors. Doors shall receive machined pulls recessed into door faces and operate on non-ferrous metal tracks. Doors up to 30" high shall be furnished with and operate on self-lubricating plastic slides. Doors over 30" high shall be furnished with and operate on ball bearing sheaves.
- I. Hinged glazed doors, minimum $\frac{13}{16}$ " thick up to 48" high and 1" thick over 48" high. Glazed doors made of solid hardwood (plywood not acceptable) with rails and styles tenoned, grooved and glued together with joints reinforced with dowels. Doors over 65" high furnished with center rail. Minimum width of all rail styles shall be 2- $\frac{1}{2}$ ". Doors up to 48" high shall have 1 pair of hinges and 2 catches. Doors over 48" high shall have 1- $\frac{1}{2}$ " pairs of hinges and 2 catches. Glass shall be $\frac{1}{8}$ " double strength and set with wood molding. Doors furnished with hinges, pulls and catches as described under Hardware.
- J. Sliding glazed doors, of similar construction to hinged glazed doors. Doors receive machined pulls recessed into door faces and operate on non-ferrous metal tracks. Doors up to 30" high shall be furnished with and operate on self-lubricating plastic slides. Doors over 30" high shall be furnished with and operate on ball bearing sheaves.

5. Table Frame Construction

- A. Table frames made of solid hardwood. Exposed table aprons minimum $\frac{3}{4}$ " thick x 4- $\frac{3}{4}$ " high solid oak grooved for acceptance of cross rails and corner blocks and further grooved and drilled for attachment of top fasteners.
- B. Reinforcing cross rails made of solid hardwood, screwed and glued into front and back rails.
- C. Table rail corner blocks, for attachment of legs, $\frac{3}{4}$ " thick x 4" high

- solid hardwood, screwed and glued into table aprons, or
13 gauge formed plated steel grooved and screwed into aprons.
- D. Table legs, solid oak, minimum 2-1/4" square and furnished with specially designed bolt which passes through leg having exposed head conforming to corner rounding and furnished with washer and nut for secure attachment behind corner block.
Depending upon table requirements, legs are provided with leg shoes or adjustable glides, as described under Hardware.
 - E. Leg stretchers, where required, to be not less than 1" x 3" mortised and tenoned into legs and secured with bolts.
Cross stretchers shall be of similar construction, tenoned into stretchers and secured with bolts.
 - F. Book compartment bottoms furnished in 22 gauge black powder coated formed steel, tempered hardboard, birch or maple plywood depending on style of unit in which compartment occurs.
6. Cabinet, Case and Table Features
- A. Drawer I.D. depths shall be no more than 2" less in depth of cabinet.
 - B. Exposed edges and corners of cabinets, case walls, case bottoms, toe spaces, case tops, table aprons, table legs, table stretchers, finished backs, etc., shall be rounded minimum 3/16".
 - C. Joints between unfinished cabinet or case ends shall be chamfered, providing a neat V-joint when placed against cabinets that are joined together.
 - D. Fillers or scribes to be mounted flush with face of cabinet walls or providing neat v-joint when placed against cabinet faces or walls.
Fillers and scribes to be chamfered same as cabinet walls.
 - E. Adjustable shelves shall have facers half rounded, providing no sharp corners.
 - F. Exposed or semi-exposed screw heads attaching panels or fillers shall be set flush with panel or cabinet surfaces.
 - G. Cabinet assemblies shall be pre-factory assembled as they are to be installed on job site, inspected for conformance to details and uniformity in workmanship and overall appearance. Units shall be properly marked for re-assembly on job site.
7. Cabinet Finish
- A. Prior to the application of wood finish, exposed cabinet and case parts to be sanded smooth and loose fibers and dust removed.
 - B. Exposed cabinet and case parts then receive an application of stain. Excess stain to be removed by wiping with wood wool and/or cloth, and parts shall be allowed to thoroughly dry.
 - C. After drying, exposed parts, cabinet and case interiors, drawers and doors to receive a double coat of clear resinous wood sealer.

Exposed cabinet parts, drawers, doors, and cupboards and case interiors then receive a double coat of clear, chemical resistant synthetic varnish. Between all applications of sealer and varnish, cabinet parts to be lightly sanded and wiped. The resulting exterior finish shall be semi-gloss and provide an acid, alkali, solvent, water and abrasive-resistant surface. (Note: Interior of all cupboards and interior and exterior of all drawer bodies and tops of all cases shall be varnished having smooth surfaces.)

2.04 Hardware

1. Drawer and door pulls are extruded, bar-type, dull finish aluminum 4-1/2" long and 1/2" wide overall. Each pull is held in place by two No. 10 flat head machine screws (washer head or pan head screws not acceptable) on 4" centers. Screw heads are countersunk. Pulls are provided for all hinged base cabinet doors and drawers, hanging wall cabinets and counter mounted cabinets requiring same for proper function.
2. Latching handles, dull chrome plated die cast zinc alloy approximately 4-1/2" in length in streamlined design. Handle operates with one-quarter turn. Paired door cases have latching handle on right door and dummy matching handle on left door. A 3-point latching system provides positive engagement at top and bottom of door with 5/16" diameter tapered epoxy coated steel rods engaging in case top and bottom and latch plate engaging behind left door or into side wall of case depending upon design. Latching handles are provided on all case doors over 48" high.
3. Hinges, butt style, 5-knuckle, institutional type of dull finished stainless steel, 2-1/2" x 3-1/8", unequal winged, tight pinned and with wing thickness of .081". Each hinge is secured by seven plated No. 7 flat head screws. (Surface mounted hinges shall not be acceptable.) Doors hung with paired hinges are capable of supporting 175 pounds at 12" from pivot point of hinges with no distortion of hinges or degradation of casework. Hinged doors up to 48" high furnished with 1 pair of hinges. Hinged doors over 48" high furnished with 1-1/2" pair of hinges.
4. Drawer slides, 100 pound, dynamic load rated, with epoxy coating.
5. Shelf clips, double pin type made of nylon having anti-tipping seismic feature. Each clip is capable of supporting 400 pounds.
6. Catches for hinged doors are spring loaded, nylon roller type, designed for quiet operation. Cabinets with locked paired doors have elbow

catches inside left-hand doors. Cabinet and case doors provided with 2 catches, one at top and one at bottom, where elbow catches are not furnished.

7. Base molding, pliable black vinyl, 1/8" thick x 4" high with top edge rounded. Molding secured with self-stick or applied waterproof adhesives. Formed stainless steel caps are fastened to exposed corners. Exposed cabinet work provided with base molding unless otherwise specified.
8. Drawer and hinged door locks, except tall case doors, are dead bolt style, heavy-duty, five tumbler, of non-ferrous metal and master-keyed having 3/8" bolt throw and single bitted style keyway. Barrel and back plate of locks are riveted together; lock bolts are non-removable (locks with cams held in place of machine screws or nuts are not acceptable). Locks are secured to rear of drawer and door fronts with flat head screws. Each lock furnished with two non-ferrous keys. Locks furnished as indicated on details or as is standard with catalog descriptions unless otherwise specified. Latching handles shall be provided with locks where required. Locks shall be keyed to same master key as locks provided for other drawer and hinged door cabinets.
10. Number plates, oval-shaped and made of non-ferrous metal with black numerals. Plates secured with brads (self-stick number plates are not acceptable). Number plates furnished only as specified.
11. Glides, for table legs, are black nylon minimum 1-3/4" in diameter. Glides adjustable on 3/8" diameter x 1-1/2" plated stem.
12. Support rods, 3/4" diameter aluminum with the upper ends rounded and the lower ends tapered to fit support rod plates. Support rod plates shall be made of aluminum secured into table top with heavy brass nut. Cross bars shall be made of hardwood, finished black and provided with wheel handle clamp screws which remain attached to cross bar when bar is removed. (3/4" diameter aluminum cross bar with rounded ends shall be furnished when so specified.)

2.05 Countertops

1. General
 - A. Countertops constructed per specification covering particular type.
 - B. Except stainless steel and plastic laminate, tops having sinks provided with drip grooves cut into underside of exposed edges.
 - C. Adhesives or fasteners to be provided for securing of tops to cabinet work. Such materials to allow for contraction or expansion

of tops where necessary.

- D. Tops shall be 1" thick unless otherwise specified and provided with 4" high curbs where tops abut walls, columns, case ends, etc.

2. Types

- A. Self-edged plastic laminate tops are 1-3/16" thick, constructed by cementing 1/16" thick laminated plastic (Wilsonart) to surface and 1-/32" thick laminated plastic backing sheet to underside of a one piece medium density fiberboard (minimum 45 pound) subtop. Exposed edges of tops shall have 1/16" thick laminated plastic. Edges applied before lamination of surfaces. Exposed edges and corners shall be eased. Color or pattern of surfaces to be provided as selected.
- B. Plastic laminate tops with oak edge bands are 1-3/16" thick constructed by cementing 1/16" thick laminated plastic (Wilsonart) to surface and 1/32" thick laminated plastic backing sheet to underside of a one piece medium density fiberboard (minimum 45 pound) subtop. Exposed edges of tops are minimum 5/16" thick oak, finished to match casework. Oak edges are applied before lamination of surfaces and chamfered back approximately 1/8" before finishing. Color or pattern of surfaces to be provided as selected. Oak edges finished to match casework.
- C. Edge grain maple tops are constructed of selected northern grown hard maple, kiln dried and seasoned before fabrication. Top laminations full length, 1" to 1-1/4" wide, and glued together under pressure with water resistant glue. Top, bottom and exposed edges to be sanded smooth before finishing. Exposed edges and corners to be chamfered back approximately 1/8". All surfaces and edges to be finished natural with transparent conversion varnish finish. Other finishes such as oil shall be provided when so specified.
- D. Epoxy resin tops are fabricated from a molded modified epoxy resin that has been especially compounded and cured to provide optimum physical and chemical resistance. Tops have a uniform mixture throughout, and do not depend on a surface coating that can be readily removed by chemical or physical abuse. Tops are non-glaring and black in color. All exposed edges shall be chamfered back approximately 1/8". Counters with integral curbs shall have a molded junction with a 3/4" radius, except around columns and special cutouts, which will have a standard applied mounted curb.
- E. Resistop is fabricated from composite panels comprised of multiple layers of selected papers impregnated with special phenolic resins, manufactured under heat and pressure to form a solid black chemical resistant composite throughout the entire thickness of the panel. Tops shall be furnished in color as selected having black exposed edges honed smooth and exposed

corners and edges chamfered back approximately 1/8". Tops shall have a non-glaring surface.

- F. Petstone is a natural quarried hardstone uniform in grain and texture, free of veins, strengthened by thorough impregnation and coated with a black highly chemical-resistant resin baked at high temperature to complete polymerization. Tops shall be furnished with exposed surfaces and edges honed smooth and exposed corners rounded to 3/16" radius before finishing.

2.06 Reagent and Utility Racks

1. Reagent and Utility Racks, made of solid maple unless otherwise specified. Shelves to be a minimum of 3/4" thick. When used for reagent storage, shelves shall be furnished with lips minimum 1/4" high and made of solid maple. Reagent rack standards made of solid maple minimum 1-1/4" thick. Reagent shelves and standards coated with a black acid, alkali and solvent resistant finish. Utility shelves and standards shall be finished natural or stained to match casework with a finish providing acid, alkali and solvent resistance.

2.07 Sinks

1. Epoxy resin sinks, cupsinks and drain troughs, are cast of black modified epoxy resin having high resistance to chemicals, heat and shock as normally encountered in laboratories. Castings are done in permanent molds producing sinks, cupsinks and drain troughs with all inside corners coved and bottoms dished. Drain troughs, over 6' in length, furnished in sections for assembly on jobsite. Sinks and drain troughs furnished with proper supports and caulking.
Epoxy resin sinks provided with 1-1/2" epoxy resin outlets.
Tailpieces, traps and drain lines to be furnished by Others unless otherwise noted on details or in equipment schedule.
2. Stainless steel sinks are made of 18 gauge, type 302 (1808) stainless steel. Sinks are self-rimmed, punched to receive basket strainer outlets, and sound deadening. Sink interiors polished to #4 satin finish.
Stainless steel sinks provided with 1-1/2" basket strainer outlets.
3. Sinks shall be installed by Casework Contractor.
Outlets shall be installed by Others.

2.08 Plumbing Fixtures

1. Plumbing fixtures furnished in laboratory grade chrome plated brass as manufactured by Water Saver Faucet Company, The Chicago Faucet Company, or T&S Brass Works.

Fixtures provided with brass tank nipples complete with locknuts and washers for attachment to countertops.

Water fixtures provided with inline vacuum breakers unless otherwise indicated.

Fixtures supplied assembled (tank nipples loose).

2. Pedestal electric boxes, cast aluminum finished in black textured coating furnished with tank nipples and locknuts for attachment to countertops. Electrical boxes mounted in table or cabinet aprons shall be steel. Electrical receptacles, switches, etc., shall be specification grade 20 amp and UL approved. Receptacles located within 6'0" of sinks to be G.F.I. type.
Cover plates for receptacles shall be stainless steel.
Mounting of electric boxes in table aprons or cabinet units to be by Casework Manufacturer.

2.09 Fume Hood Superstructures

1. Fume hood superstructures to be as manufactured by Air Master System Corp. or BMC Equipment Corp.
2. Fume hoods furnished in style(s) as indicated on details and provided with the following features as required:
 - A. Exterior: Cold rolled steel finished in color as indicated from manufacturers standard.
 - B. Interior: LC-210 white Wesliner.
 - C. Light fixture: Vapor-proof fluorescent re-lampable from outside of hood.
 - D. Face: Furnished with bypass grille for constant volume.
 - E. Sash: Stainless steel glazed with 7/32" safety glass.
 - F. Exhaust duct collars: 10" diameter for 4'0" hoods.
12" diameter for 5' and 6' hoods.
 - G. Hood countertop: Dished epoxy resin (with 3"x6" oval cupsink as required).
 - H. Fixtures: Furnish as indicated on plans.
 - I. Air Foil: Stainless steel.

Part 3 Execution

1. For approval by owner or architect, within 60 days after receipt of order submit shop details showing floor plans, rough-ins and elevations of casework and equipment being supplied. Floor plans with rough-in details to be in 3/16" scale. Elevation drawings to be in 3/8" scale.

2. Prior to fabrication of casework field check project site to assure proper fit of materials being provided. Adjust drawers as necessary to insure proper fit of all casework and equipment to building conditions.
3. Deliver casework only after wet operations are complete and building is closed in, dry and has proper climate control for installation of casework. (Area in which laboratory casework is installed to be maintained between 65 and 75 degrees F. with relative humidity maintained between 45 and 55 percent.)
If these conditions are not met and maintained, product warranty is void.
4. Install casework in accordance to manufacturers recommended practice by qualified casework installer having a minimum of 3 years experience in the installation of institutional casework.
5. Adjust casework and hardware so that doors and drawers operate smoothly. Lubricate operating hardware as recommended by manufacturer.
6. Advise owner or contractor on procedures and precautions to be taken to protect casework and other materials installed from damage by work performed by other trades.
7. During installation keep job site clean and remove debris on a daily bases. Floors are to be broom cleaned upon completion.