

DIVISION 11 – EQUIPMENT
SECTION 11470 – PHOTO DARKROOM CASEWORK

PART 1 – GENERAL

1.01 Scope of Work

- A. Provide material, accessories, tools, equipment and labor as required for the complete fabrication and installation of the photo darkroom casework as indicated on the Drawings or specified herein.
- B. Components of the photo darkroom casework include all countertops, wall cabinets, base cabinets, work tables, tall storage cabinets, enlarger work stations, light baffles, print drying screens, print and film drying cabinets, light-tight drawer lids, view lights, acid storage cabinet, tote-tray cabinet, cupsink cabinet, and cut-outs for accessories.
- C. Installation shall include above items, excluding connection to mechanical and electrical services, concealed blocking and related finish materials.
- D. Contract Requirements, including General and Supplemental Conditions; and, General Requirements of the Specifications shall govern the Work of this Section.

1.02 Related Work

- A. Refer to Division 15 for “Basic Mechanical Requirements” for connection to mechanical services.
- B. Refer to Division 16 for “Basic Electrical Requirements” for connection to electrical services.
- C. Section 11475: Photo Darkroom Fume Exhaust Vent Hoods
- D. Section 11476: Photo Darkroom Sinks and Print Washers

1.03 Work by Others

- A. General millwork and wood trim items.
- B. Wall, floor and ceiling blocking; and, all other anchors that may be necessary.
- C. Rubber, vinyl or other finished bases, except where specifically noted; and, laminate plastic wallcovering and wall-to-cabinet caulking.
- D. Marking cabinets with key numbers, providing a key-cabinet and key organization.
- E. Final connection to mechanical systems.

F. Final connection to electrical systems.

1.04 Quality Assurance

- A. All darkroom casework in this Section shall be furnished by a single manufacturer unless specifically noted otherwise. Continuity and uniformity in design shall exist for all units. Units shall be functional and have the aesthetic essentials required to create pleasant, efficient surroundings, and designed to give long life and service.
- B. It is the intent of this Specification to establish a minimum performance and quality criteria for darkroom cabinets, counter tops and other casework features hereafter referred to as casework. Products not meeting these minimum requirements shall be unacceptable.
- C. Specific materials, finishes and construction detail shall be held in strict accordance to these Specifications.
- D. Installer Qualifications: An experienced installer who has completed installation of casework similar in material, design, and extent to that indicated for this Project, and whose work has resulted in construction with a record of successful in-service performance.
- E. Testing: All casework shall satisfy the following tests and be certified by a registered engineer or testing laboratory.
1. Structural test: A wall hung cabinet 36"W x 30"H x 13"D with two (2) horizontal shelves shall be mounted to a stud wall 16" on centers and covered with 5/8" thick gypsum board with three (3) No.10 screws anchored 3" down from the inside of the top member and three (3) No.10 screws anchored 3" up from the bottom of the cabinet directly into the studs. The cabinet shall be loaded with a total weight of 1,200 pounds. At the same time, a horizontal load of 600 pounds shall be exerted on the cabinet perpendicular to the wall. There shall be no signs of stress or failure to the cabinet. A shelf board 34-1/2" x 12" shall be supported at each end and resist a load of 400 pounds without failure.
 2. Drawer test: A drawer with minimum size of 24" x 22" x 4" high shall be loaded uniformly with 75 pounds of live load and then operated through 50,000 cycles by opening the drawer to two-thirds of its travel distance and returning it to the closed position at the rate of twenty (20) cycles per minute. Drawer shall remain operable at

the completion of his test. There shall be no failure in any part of the drawer assembly or operating system. The drawer bottom shall not deflect to a position that interferes with the drawer operation.

1.05 Submittals

- A. Shop drawings: Submit in accordance with “General Conditions” and “Supplemental General Conditions” showing floor plans of each room, elevations of all casework and locations of mechanical and electrical features that interrupt installation of casework for guidance of other trades.
- B. Samples:
 - 1. Submit actual samples of high pressure laminates included in the manufacturer’s standard offering of colors and patterns.
 - 2. Submit samples of hardware and edging when required.

1.06 Substitutions

- A. Photo darkroom casework of other nationally recognized casework manufacturers may be considered for approval provided a written request is received within ten (10) working days prior to bid opening.
- B. Substitutionary casework must conform to design, quality of materials, workmanship and functions as specified and shown on the Drawings.
- C. Manufacturers requesting approvals shall submit all the following:
 - 1. Evidence of at least ten (10) years experience and twenty (20) installations of similar type and size.
 - 2. Financial stability, manufacturing facilities, qualified manufacturing personnel, catalogs & specifications.
 - 3. Full size sample with a written list of deviations from the Bidding Documents. Any item not listed shall be construed to be that which is specified.
 - 4. Test results and evaluation by an independent agency.
 - 5. Chemical corrosion resistance data as verified by an independent testing laboratory.
- D. Architect’s/Owner’s opinion and decision shall be final in the evaluation of substitutionary products.

1.07 Delivery, Storage, Handling and Protection

- A. In addition to compliance with the general provisions for delivering, storing, handling and protection of components of the Work required in the General Requirements:
 - 1. Do not deliver or install Work of this Section until building is enclosed, wet work is complete, painting and similar operations that could damage casework have been completed in installation areas, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
 - 2. If casework must be stored in other than installation areas, store only in areas where environmental conditions comply with requirements specified above.

1.08 Project Conditions

- A. Where casework is indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication and indicate measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.
- B. Where field measurements cannot be made without delaying the work, establish dimensions and proceed with fabricating casework without field measurements. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.
- C. Coordinate sizes and locations of framing, blocking, furring, reinforcements, and other related units of work specified in other sections to ensure that casework can be supported and installed as indicated. Field verify such locations and indicate measurements on shop drawings.
- D. If casework has been stored offsite, deliver casework and allow casework to acclimatize prior to installation.

1.09 Warranty

- A. Provide a written, signed and dated limited warranty indicating all Work is free from defects in material and workmanship for a period of one (1) year after original Owner's acceptance; and, that repair and replacements shall be performed in a timely manner at no additional expense to the Owner.

PART 2 – PRODUCTS

2.01 Manufacturer

- A. Photo darkroom casework indicated on the Drawings and/or specified herein shall be the products of Sebastian Darkroom Products, 32 N. Wood Rd., Camarillo, CA 93010 (email: calstainless@aol.com)
- B. Contact Sebastian Darkroom Products (1-888-712-7035)

2.02 Darkroom Casework Design

- A. Exposed exterior surfaces and semi-exposed surfaces shall be decorative high pressure laminate permanently bonded under pressure to both surfaces of a suitable substrate. Laminate shall have low luster and be chosen from the manufacturer's standard selection.
- B. Exterior and interior surfaces shall be cleaned with soap and water.
- C. Exposed edges shall be self-edged with PVC edgebanding.
- D. Shelf edges shall be edged with PVC edgebanding that matches the color of the shelf surfaces.
- E. Cabinets shall be manufactured with hinged doors, drawers and face panels factory attached in an overlay design. Doors shall be capable of opening a full 176 degrees with easy alignment adjustment capability. Easy access to adjustable shelves shall be maintained.
- F. Doors, drawers and face panels shall be manufactured with 1/4" reveal and continuously edgebanded. Hinges which require cutting the edgebanding will not be allowed.
- G. Shelves shall be adjustable on 1-1/4" centers and shall be furnished with shelf clips capable of securing the shelf in a fixed position.
- H. Maximum filler size allowed shall be 12" wide.

2.03 Casework Materials

- A. Base cabinet counter tops shall be 1-1/4" thick. The top surface and exposed edges shall be covered with .042" thick decorative high-pressure laminate with self edge on solid 45 pound particle board with a backer sheet on the bottom side of .020" minimum thickness.
- B. Cabinet component parts: A sandwich of decorative high-pressure laminate permanently pressure pressed on both surfaces of a suitable substrate.

C. Substrate: High grade monolithic particle board or flakeboard with an average of forty-five (45) pounds per cubic foot density and a maximum of 12 percent moisture content.

D. Properties of Substrate Material:

1. Modulus of Rupture: 2,700 psi
2. Modulus of Elasticity: 400,000 psi
3. Internal Bond: 100 psi
4. Dimensional Stability Percent: 22 %
5. Screw Holding Strength
 - a. Face: 350 pounds
 - b. Edge: 220 pounds
6. Density (pounds per cubic foot): 45 pcf
7. Thickness Tolerance; .005 inches

E. Hardboard: Pre-finished beige color, smooth on one side, uniform and free from defects.

F. Edgings: PVC edgebanding, resistant to all normal laboratory reagents, and guaranteed not to craze or crack.

G. Steel Parts: Light-tight covers and view light housings shall be made of steel paintlock sheet, 20 gauge and painted.

1. Light-tight covers: Flat back.
2. View lights: Flat white.

H. Drawer Box: Kiln-dried hardwood or hardwood plywood of 7/16" nominal thickness.

2.04 Hardware Materials

A. Hinges: Self-closing, fully concealed, nickel plated with an opening angle of 176 degrees, fully adjustable for door alignment on frameless box construction.

B. Pulls: "Wire" type, black plastic, 4" long x 1" deep, attached from the back of the door or drawer.

C. Catches: Not required with self-closing hinges.

D. Shelf support: Knappe & Vogt #607BN or equivalent.

E. Casters: Swivel, minimum 90 pound load capacity, 3" diameter x 0.81" width or equivalent.

F. Locks: (Optional) National Lock pin tumbler with National Lock master key, cam lock or equivalent.

- G. Assembly fitting: Knock down assembly fittings shall be Blum No. 42.070 malleable nylon with die cast cam or equivalent.
- H. Drawer slides: Standard drawers shall be white epoxy coated (Delrin-type) slide with 100 pound rating. File drawer slides shall be full extension.

2.05 Cabinet Construction

A. Cabinet Components

1. Doors, drawer front and finished sides: A sandwich of decorative high pressure laminate on face side and liner high pressure laminate on the back side, permanently bonded under pressure to both surfaces, with a PVC self edge. Core shall be 11/16" forty-five (45) pound particle board.
2. Unexposed surfaces shall have a melamine (or equivalent) laminate on one or both surfaces with PVC edgebanding on 11/16" forty-five (45) pound particle board.
3. Drawers: Sides shall be 7/16" thick sanded hardwood or hardwood plywood. Bottoms shall be 1/4" thick composition board dadoed into fronts, sides and backs. Drawers shall be installed with nylon roller, metal slides. All drawers shall be mounted with positive cushion stops to provide permanent alignment and quiet operation.
4. Partitions and fixed shelves: High pressure laminate on forty-five (45) pound particle board.
5. Adjustable shelves: A sandwich of high pressure laminate on both surfaces permanently bonded under pressure to both surfaces of 11/16" forty-five (45) pound particle board with PVC edgebanding. All shelves shall meet or exceed AWI Specification No: 400-G-5.

B. Cabinet Assembly and Detailed Requirements

1. All parts shall be accurately machined and fit for square and true cases. Case joints shall be rabbeted, glued, and attached with nails or screws. All backs, sub-tops and bottoms shall be secured with wooden dowels or mechanical fasteners. Upper cases shall also have nails 3" on center through back at top and bottom.
2. All structural supports shall be concealed. Installation of angles or rails shall be permitted on interior of cabinet.

3. All base units, except for sink cabinets, shall have a solid top of 11/16" thick particle board.
4. All exposed edges on bottom of end and back of wall cabinets shall be edgebanded.
5. Stretchers and rails shall be 3/4" edgebanded particle board attached to side panel with steel angle braces.

2.06 Casework Finishes

- A. Cabinets, counter tops and all other casework item finishes shall be selected from the manufacturer's standard offering.

PART 3 – EXECUTION

3.01 Examination

- A. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Verify that all concealed blocking is in place.
- C. Verify that preparation for mechanical and electrical connections have been completed.

3.02 Installation

- A. The installation shall be made by or supervised by factory authorized personnel, and shall be performed in a neat and professional manner in strict accordance with the manufacturer's standards.
- B. All cabinets shall be set square, plumb and level.
- C. Adjust all doors, drawers hinges, etc. after installation to provide proper operation, alignment and excellent appearance.
- D. Leave cabinetry clean and free of debris.
- E. Place temporary cardboard covers to protect all counter tops.

3.03 Clean up

- A. Upon completion of the Work under this Section, remove all dirt, debris, rubbish, crating, and excess material accumulated as a result of the Work; and, leave the area and installation in a neat, clean, proper and orderly manner.

END OF SECTION