SECTION 12312

STAINLESS STEEL CASEWORK

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for furnishing and installing custom stainless steel casework, countertops, shelving and wall cladding where indicated and scheduled.

B. Related Sections:

1. Custom plastic laminate cabinets and plastic laminate and enhanced epoxy countertops are specified in Section 06410.

2. Plumbing fixtures and trim are specified in Section 15400.

1.02 SUBMITTALS

A. Shop Drawings: Furnish shop fabrication and installation drawings, including relationship to adjoining materials and construction, details and location of anchors.

B. Samples:

1. Two pieces of 6-inch square stainless steel finished as specified, welded together with welds ground smooth and finished to match stainless steel sheet. Approved sample shall serve as a standard of quality for stainless steel and welds used in the Project.

2. 6-inch square sample of perforated stainless steel shelving.

3. Sample door pull, lock, hinges, and casework hardware.

1.03 PRODUCT HANDLING

A. Deliver metal casework to jobsite only after wet operations in building are completed and proper facilities are available for handling, storage, and protection.

PART 2 - PRODUCTS

2.01 STAINLESS STEEL CASEWORK

A. Stainless Steel: Type 304, ASTM A240. Exposed surfaces shall be a No. 4B finish. Stainless steel nuts, screws, bolts, and rivets shall be of the same type stainless steel as in the sheet material and shall have a tumbled finish closely resembling that of the casework.

1. Door pans, drawer fronts, scribing strips, filler panels, enclosures, drawer bodies, shelves, security side panels and sloping tops shall be 20-gauge.

2. Case tops, ends, bottoms, bases, backs, vertical posts, uprights, glazed door members, and access panels shall be 18-gauge.

3. Top front rails, top rear gussets, intermediate horizontal rails, table legs and frames, leg rails and stretchers shall be 16-gauge.

4. Door and case hinge reinforcements and front corner reinforcements shall be 14-gauge.

B. Hardware and Trim:

1. Drawer and Door Pulls: Solid metal, surface or recessed thru-bolt to door or drawer from back face. Pulls shall have a chemical-resistant finish. Provide two pulls on drawers wider than 24-inches.

2. Hinges: Stainless steel, brushed finish, institutional five-knuckle rounded edge barrel. Hinges shall be attached to both door and case with minimum of two tamper-resistant screws. Welding of hinges to door or case will not be permitted. Provide one pair for doors less than 36-inches in height and 1-1/2-pair for doors over 36-inches.

3. Locks: Five tumbler, heavy-duty cylinder type. Exposed nose shall be satin nickel plated and stamped with identifying numbers. Furnish two keys with each keyed different lock or lock series. Furnish two master keys with each system. Coordinate with Owner's keying requirements.

4. Door Catches: Minimum 7-pound pull, with metal strike plates. Provide two catches on doors over 5-feet high. Catches permitting rebound opening are not acceptable.

   a. Roller type shall be adjustable, spring actuated, cadmium plated steel.

   b. Magnetic catches shall be enclosed in a plastic case and be self-aligning.

5. Shelf Adjustment Clips: Nickel plated steel to engage in pre-formed shelf adjustment shapes.

6. Drawer Roller Guides: Provide a quiet smooth operation on ball bearing nylon rollers. Drawers shall have a self-closing feature such that they will roll into case when opened a nominal 5-inches. Provide integral drawer stops to prevent inadvertent drawer removal and contact with back of cabinet. Guides shall be corrosion-resistant, 100-pound capacity, full extension type; 150-pound capacity full extension type on drawers over 30-inches wide.

7. Leveling Device: Bolts shall be cadmium plated steel and accessible for adjustment through case bottoms, drawer openings, or toe space.

2.02 FABRICATION OF STAINLESS STEEL CASEWORK

A. Integrally joined parts shall result in a totally enclosed cabinet designed to protect the interiors from dust.

B. Units shall be flush front construction with intersection of vertical and horizontal case members, such as end panels, in same plane without overlap. Provide heavy back-up reinforcement at exterior corners. Face joints shall be welded and ground smooth to provide a continuous flat plane. Provide a uniform clearance around doors and drawers.

C. Base and Full Height Units:

1. Intermediate rails shall be provided between doors and drawers, but shall not be provided between drawers unless made necessary by drawer locks. When required, intermediate rails shall be recessed behind doors and drawer fronts, designed so that security panels may be added as required and be removable for field revision of cabinet configuration.

2. Intermediate vertical uprights shall enclose units when used in a unit in combination with a half width bank of drawers. No upright of any type shall be used at the center of double doors.

3. Case bottom shall be pan type formed from one piece of metal with both sides and back formed up with a radius or be sealed to sides to contain liquids and to provide for ease of cleaning, front shall be offset to provide a door and drawer recess rabbet.

4. Toe space rail shall extend up and forward to engage bottom rail to form a smooth surfaced fully enclosed toe space, minimum 3-inches deep and 4-inches high.

5. Gussets shall be furnished with leveling device in each bottom corner of base units.

6. Back construction shall provide access to utility chase through either access panels in integral fixed backs or pack panels removable from the interior of an installed case. Access shall be with the use of common tools. Open backed cabinets are not acceptable except at sink base units.

7. Knee space back panel shall be 18-gauge, finished same as cabinets, and easily removable for access to utility chase.

8. Drawers shall be mountable in any location in cabinet. Drawer guides shall prevent friction contact with other surfaces.

   a. Drawer front shall be double wall construction, fill with fire-resistant sound deadening material. Corners shall be welded and ground smooth.

   b. Drawer bodies shall be of one piece construction, including the bottom, two sides, back and inner front. Interior bottom shall be coved for easy cleaning. Top edges shall be smooth formed for strength and to provide a convenience hand hold when drawer is removed.

   c. Drawers designated as file drawers shall be capable of installation of letter size front to back hanging file folder system.

D. Doors shall consist of an inner and outer door pan. Welds, corners, and edges shall be ground smooth to prevent exposure of sharp edges of metal. Fill the space between door pans at time of assembly with fire-resistant sound deadening material.

1. Swinging doors shall have an outer door pan formed into a channel shape at pull side and flanged top, bottom, and hinge side. Inner door pan shall have a flange with an offset at pull side and flanged at top, bottom, and hinge side with hinge reinforcements welded in place. Hinges shall be applied to the case and door with tamper-resistant screws. Welding of hinges to either case or door will not be acceptable.

2. Sliding doors shall be hung with nylon rollers, operating in a top track, designed to prevent accidental removal of doors and yet be easily accessible. Doors shall close against resilient bumpers.

E. Adjustable shelves shall be full depth, constructed with a 3/4-inch double channel formation at front and rear edges, and flanged down at ends. Shelves over 42-inches long and shelves over 12-inches in depth shall be additionally reinforced by a flanged channel shaped member electro-welded to underside of shelf. Shelves shall be adjustable on 1/2-inch centers in base units and 1-inch centers elsewhere.

1. Open adjustable stainless steel shelving shall be perforated for drainage.

F. Install hardware uniformly and precisely after final finishing. Set hinges snug and flat. Turn screws to flat seat. Adjust and align hardware so that moving parts operate freely and contact points meet accurately. Allow for final field adjustment after installation. Exposed hardware shall be tamper-resistant.

2.03 STAINLESS STEEL WORKSURFACE

A. Materials:

1. Stainless steel shall be Type 304, ASTM A240.

2. Exposed surfaces shall be a No. 4B finish. Stainless steel nuts, screws, bolts, and rivets shall be of the same type stainless steel as in the sheet material and shall have a tumbled finish closely resembling that of the worksurface.

B. Open Stands and Frames:

1. Use tubular stringers and cross bracing.

2. Joining: Notch and weld continuous to achieve smooth joint. Do not flatten ends for joining.

3. Secure legs in reinforced leg sockets.

4. Legs secured to sockets without additional reinforcing members will be acceptable at sinks.

C. Drainboards and Sinks over Open Stands and Frames: 14-gauge stainless steel unless otherwise noted.

1. Where drainboard and sink are of same material, fabricate sink integral with drainboard.

2. Maintain working front at one elevation, but slope drainboard deck at 1/4-inch per foot from high point of marine edge as detailed or 1-1/2-inches below top or rolled edge to low point at sink rim.

3. Score sink bottom to slope to centered drain.

4. Set overflow 2-inches below sink rim and center on back wall of each sink compartment.

5. Bring tube leader for overflow to underside of compartment and connect back of drain.

6. Provide 3 hole punch at 4-inches on center for faucet and trim as specified in Section 15400.

7. Provide 3-1/2-inch diameter drain hole for grid drain specified in Section 15400.

D. Shelves for Open Base Tables: Provide stainless steel wire shelves.

E. Countertops:

1. Stainless steel welding material shall be of type similar to the sheet material or a richer quality. Joints in stainless steel tops shall be welded. Welds shall be made without discoloration and shall be ground, polished, and passivated to blend with the worksurface finish.

2. Worksurface shall be 16-gauge. Stainless steel sides and backsplashes shall be integrally welded with worksurface top and finished to match. Edges shall be flanged down 1-inch and returned minimum 1/2-inch over wood core to simplify securing top material to cabinet or structural frame. Under surface shall be reinforced with 16-gauge steel channels as required to ensure rigidity and prevent buckling, warping, or oil canning. Underside of top shall have a heavy mastic agent coating and/or marine plywood provide sound deadening. The back side of exposed backsplashes shall be finished to match front and sides.

3. Worksurfaces shall be fabricated with a marine edge at sink units and shall be pitched to sink bowl for proper drainage. Marine edges shall be seamless die-formed. Other worksurfaces shall have a plain edge.

4. Sink bowls integral with worksurface shall be 16-gauge stainless steel. Sink units shall be designed and fabricated with sufficient reinforcement to prevent oil canning. Sink joints shall be butt welded, ground smooth and polished to the same finish as worksurface. Inside radii shall be 1-inch. Bottoms shall be pitched to the drain inlet. No soldering will be permitted in connection with sink construction. Sink bowl dimensions indicated are inside dimensions. Coordinate with plumbing fixtures specified in Section 15400.

F. Provide minimum 16-gauge stainless steel wall flashing at walls adjacent to stainless steel casework and worksurfaces.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install plumb, level, true and straight with no distortions. Shim as required, using concealed shims. Scribe work as required for close and accurate fit. Provide closure strips where required of same material and finish as casework, hem or ease edges. Utilize concealed fasteners, unless other fastening is acceptable to the Architect. Exposed fasteners shall be tamper-resistant.

B. Where required, assemble units into one integral unit with joints flush, tight, and uniform. Align similar adjoining units to a tolerance of 1/16-inch.

C. Wall Units:

1. Verify that required backing and reinforcement to support wall-mounted units is in place, secure, and accurately located.

2. Securely fasten to solid supporting material. Anchor, adjust, and align wall cabinets as specified for base cabinets.

D. Base Cabinets: Set cabinets straight, plumb, and level. Adjust sub-tops within 1/16-inch of a single plane. Fasten each individual cabinet to floor at toe space, with fasteners spaced 24-inches on center, front and back. Bolt continuous cabinets together. Secure individual cabinets with not less than 2 fasteners into floor front and back.

E. Adjust units and hardware so that doors and drawers operate smoothly with warp or bind. Lubricate operating hardware as recommended by manufacturer.

3.02 WORKSURFACE INSTALLATION

A. Field Joining: Where applicable, make in same manner as factory jointing using dowels, splines, adhesives, and fasteners recommended by manufacturer. Locate field joints as indicated on review shop drawings.

B. Abut top and edge surface in one true plane, with internal supports placed to prevent deflection. Provide flush hairline joints in top units using clamping devices. Where worksurface is intended to be moveable, use a clamping device that is removable.

C. Secure tops to support with concealed "Z" type, angle-type or equal fastening devices spaced no more than 2-feet on center, with one located within 6-inches of front and back edge.

D. Countersink exposed heads approximately 1/8-inch and plug flush with material equal in chemical resistance, color, hardness, and texture to adjoining surface.

E. Provide holes and cutouts as required for equipment and mechanical and electrical service fittings and fixtures. Verify size of opening with actual size of item to be used, prior to making openings. Form inside corners to a radius of not less than 1/8-inch. After cutting, rout and file cutouts to ensure smooth, crack-free edges. Seal exposed edges after cutting with a chemical-resistant sealer recommended by manufacturer.

3.03 CLEANING

A. Repair or remove and replace defective or damaged work as acceptable to the Architect.

B. Clean finished units, including wiping out of drawers, cabinets, and shelves.

C. Clean worksurfaces with diluted dishwashing liquid and water, leaving tops free of grease and streaks. Do not use any wax or oils.

3.04 PROTECTION

A. Cover for protection against soiling and deterioration during remainder of construction.

END OF SECTION