

**SECTION 123100**  
**MANUFACTURED METAL CASEWORK**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Manufactured standard and custom casework, with cabinet hardware.
- B. See Part 2 "Performance Criteria" for specific work performance criteria required for this contract and other Prime Contracts as part of the Work of this section.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Blocking and nailers for anchoring casework.
- B. Section 079200 - Joint Sealants: Sealing joints between casework and countertops and adjacent walls, floors, and ceilings.
- C. Section 092116 - Gypsum Board Assemblies: Reinforcements in metal-framed partitions for anchoring casework.
- D. Section 123600 - Countertops.

**1.03 REFERENCE STANDARDS**

- A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.

**1.04 DESIGN REQUIREMENTS**

- A. Flush construction: Surfaces of doors, drawers and panel faces shall align with cabinet fronts without overlap of case ends, top or bottom rails. Horizontal and vertical case shell members (panels, top rails and bottoms) shall meet in the same plane without overlap.
- B. Self-supporting units: Completely welded shell assembly without applied panels at ends, backs or bottoms, so that cases can be used interchangeably or as a single, stand alone unit.
- C. Interior of case units: Easily cleanable, flush interior. Base cabinets, 30" and wider, with double swinging doors shall provide full access to complete interior without center vertical post.
- D. Drawers: Sized on a modular basis for interchange to meet varying storage needs, and designed to be easily removable in field without the use of special tools.
- E. Case openings: Rabbeted-like joints all four sides of case opening for hinged doors and two sides for sliding doors in order to provide dust resistant case.
- F. Structural performance requirements: Casework components shall withstand the following minimum loads without damage to the component or to the casework operation:

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1. Steel base unit load capacity: 500 lbs. per lineal foot.
2. Suspended units: 300 lbs.
3. Drawers in a cabinet: 150 lbs.
4. Utility tables (4 legged): 300 lbs.
5. Hanging wall cases: 300 lbs.
6. Load capacity for shelves of base units, wall cases and tall cases: 40 lbs. per square foot

#### 1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Component dimensions, configurations, construction details, joint details, and attachments; manufacturer's catalog literature on hardware, accessories, and service fittings, if any.
- C. Shop Drawings: Indicate casework types, sizes, locations, using large scale plans, elevations, cross sections. Include rough-in and anchors, placement dimensions and tolerances, clearances required, and keying information.
- D. Samples for Finish Selection: Fully finished, for color selection. Minimum sample size: 2 inches by 3 inches.
- E. Samples: Submit two samples, minimum size 6 x 6 inch of each color of base metal, or other finish.
- F. Manufacturer's Installation Instructions: Indicate special installation requirements .
- G. Maintenance Data: Manufacturer's recommendations for care and cleaning.

#### 1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

#### 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect items provided by this section during handling and installation, including finished surfaces and hardware items. For metal surfaces, use polyethylene film or other protective material standard with the manufacturer.
- B. Accept casework on site. Inspect on arrival for damage.
- C. Coordinate size of access and route to place of installation.

## **PART 2 PRODUCTS**

### **2.01 PERFORMANCE CRITERIA**

- A. Provide labor and materials necessary to provide a complete system.
- B. Perform all work of this section with experienced workmen familiar with the work, and in accordance with industry standards and manufacturer's recommendations.
- C. Plumbing Contractor is responsible for the following:
  - 1. Furnish, install, and connect sinks, fixtures, outlets, strainers, tailpieces, traps, vacuum breakers, stops, and other related plumbing components in accordance with the Building Code of New York State, local building codes, and authorities having jurisdiction.
  - 2. Coordinate with General Construction Contractor.
- D. Mechanical Contractor is responsible for the following:
  - 1. Furnish, install, and make final connections of ductwork to range hoods and other related mechanical components in accordance with the Building Code of New York State, local building codes, and authorities having jurisdiction.
  - 2. Coordinate with General Construction Contractor.
- E. Electrical Contractor is responsible for the following:
  - 1. Furnish, install, and make final connections of ductwork to wiring, conduit, and other related electrical components within the casework in accordance with the Building Code of New York State, local building codes, and authorities having jurisdiction.
  - 2. Coordinate with General Construction Contractor.

### **2.02 MANUFACTURERS**

- A. Metal Casework:
  - 1. Jamestown Metal Products; ICI Stainless Steel: [www.jamestown.com](http://www.jamestown.com).
  - 2. Mott Manufacturing; Product "Stainless Steel Laboratory Casework": [www.mott.ca](http://www.mott.ca).
  - 3. Substitutions: See Section 016000 - Product Requirements.

### **2.03 FABRICATION**

- A. Assembly: Shop assemble casework items for delivery to site in units easily handled and to permit passage through building openings.
- B. Casework: Die-formed metal sheet; each unit self-contained and not dependent on adjacent units or building structure for rigidity; factory-fabricated, factory-assembled, and factory-

finished.

1. Style: Flush overlay - square edge.
2. Primary Cabinet Material: Stainless steel.
3. Steel Sheet Metal:
  - a. Gables, Front and Back Panels, Gusset Plates, Aprons, and Rails: 18 gage, 0.0478 inch minimum thickness.
  - b. Drawers, Cabinet Floors, Shelves, Filler Panels and Drawer Dividers: 20 gage, 0.0359 inch minimum thickness.
  - c. Backing Sheet to Door and Door Fronts: 22 gage, 0.0299 inch minimum thickness.
4. Structural Performance: Provide components that safely support the following minimum loads, without deformation or damage:
  - a. Base Units: 500 pounds per linear foot across the cabinet ends.
  - b. Drawers: 125 pounds.
  - c. Hanging Upper Cases: 300 pounds.
  - d. Shelves: 100 pounds.
5. Corners and Joints: Without gaps or inaccessible spaces or areas where dirt or moisture could accumulate.
6. Edges and Seams: Smooth. Form counter tops, shelves, and drain boards from continuous sheets.
7. Shelf Edges: Turned down 3/4 inch on each side and returned 3/4 inch front and back.
8. Ends: Close open ends with matching construction.
9. Welding: Electric spot welded; joints ground smooth and flush.
10. Drawers and Doors: Fabricate drawer and door fronts of sandwiched sheets of sheet steel welded together and reinforced for hardware.
  - a. Fill with sound-deadening core.
11. Filler Panels: Flanged on both sides, of matching construction and finish, for locations where cabinets do not fit tight to adjacent construction.
12. Separation: Use bituminous paint or non-conductive tape to coat metal surfaces in contact with cementitious materials, and to separate dissimilar metals.

## 2.04 CABINET HARDWARE

- A. Manufacturer's standard types, styles and finishes.

## 2.05 MATERIALS

- A. Stainless Steel Sheet: ASTM A666 Type 304.
- B. Counter Tops, Back Splash, and Side Splash: Stainless steel.
- C. Sound Deadening Material: Inorganic, for sandwich panel fabrication.
- D. Cabinet Locks: Lock with 4 pin cylinder and 2 keys per lock; master keyed.
- E. Hinges: Institutional type, five knuckle projecting barrel; minimum 2-1/2" long; type 304 stainless steel. Provide two hinges for doors up to 36" high; three hinges for doors over 36" high.
- F. Turn down edges of shelves 1 inch on each side and return 1 inch front and back. Reinforce shelves 36" long and longer with hat channel reinforcement the full width of shelf.
- G. Component Thicknesses, minimum:
  - 1. Gables, Front and Back Panels, Case Tops, Gusset Plates and Rails: 18 gage.
  - 2. Drawers, Door Fronts, Cabinet Floors, Cabinet Toe Kick, Shelves, Filler Panels and Drawer Dividers: 18 gage.
  - 3. Backing Sheet to Door and Drawer Fronts: 20 gage.

## 2.06 FINISHES

- A. Stainless Steel: No. 4 finish.
- B. Shop finish all components.

# PART 3 EXECUTION

## 3.01 EXAMINATION

- A. Verify adequacy of support framing and anchors.

## 3.02 INSTALLATION

- A. Install casework, components and accessories in accordance with manufacturer's instructions.
- B. Set casework items plumb and square, securely anchored to building structure, with no distortion.
  - 1. Base Cabinets: Examine floor levelness and flatness of installation space. Do not proceed with installation if encountered floor conditions require more than 3/4 inch leveling

adjustment. When installation conditions are acceptable, for each space, establish the high point of the floor. Set and make level and plumb first cabinet in relation to this high point.

2. Wall Cabinets: Examine wall surfaces in installation space. Do not proceed with installation if the following conditions are encountered:

- C. Align cabinets to adjoining components.
- D. Secure upper and floor cabinets to concealed reinforcement at gypsum board assemblies.
- E. Separate dissimilar metals to prevent galvanic action.
- F. Field weld joints in stainless steel work, without open seams. Grind smooth and polish to match adjacent surfaces.
- G. Field touch-up blemishes to original finish.

### 3.03 ADJUSTING

- A. Adjust operating parts, including doors, drawers, hardware, fixtures to function smoothly.
  1. Doors shall swing freely, catches shall hold securely, and all doors shall be aligned both vertically and horizontally. Drawers shall open and close smoothly, without binding and without excessive slide play.

### 3.04 CLEANING

- A. See Section 017419 - Construction Waste Management and Disposal, for additional requirements.
- B. Clean casework, counters, shelves, legs, hardware, fittings and fixtures.

### 3.05 PROTECTION

- A. Do not permit finished casework to be exposed to continued construction activity.
- B. Protect casework and countertops from ongoing construction activities. Prevent installers from standing on or storing tools and materials on casework or countertops.
- C. Repair damage that occurs prior to Date of Substantial Completion, including finishes, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.
- D. Repair or remove and replace defective work as directed upon completion of installation.
- E. Repair damage that occurs prior to Substantial Completion, including finishes, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.

**END OF SECTION**

**SECTION 123200**  
**MANUFACTURED WOOD CASEWORK**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Manufactured standard and custom casework, with cabinet hardware.

**1.02 RELATED REQUIREMENTS**

- A. Section 016000 - Product Requirements: Requirements for sustainably harvested wood.
- B. Section 061000 - Rough Carpentry: Blocking and nailers for anchoring casework.
- C. Section 079200 - Joint Sealants: Sealing joints between casework and countertops and adjacent walls, floors, and ceilings.
- D. Section 096500 - Resilient Flooring: Resilient wall base.
- E. Section 123600 - Countertops: Additional requirements for countertops.
- F. Section 224000 - Plumbing Fixtures: Sinks and fittings installed in casework.

**1.03 DEFINITIONS**

- A. Exposed: Portions of casework visible when drawers and cabinet doors are closed, including end panels, bottoms of cases more than 42 inches above finished floor, tops of cases less than 72 inches above finished floor and all members visible in open cases or behind glass doors.
- B. Semi-Exposed: Portions of casework and surfaces behind solid doors, tops of cases more than 72 inches above finished floor and bottoms of cabinets more than 30 inches but less than 42 inches above finished floor.
- C. Concealed: Sleepers, web frames, dust panels and other surfaces not generally visible after installation and cabinets less than 30 inches above finished floor.
- D. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test 2015.
- E. ASTM C1036 - Standard Specification for Flat Glass 2016.
- F. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.
- G. AWI (QCP) - Quality Certification Program Current Edition.
- H. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards 2014, with Errata (2018).
- I. BHMA A156.9 - American National Standard for Cabinet Hardware 2015.

J. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

#### 1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

#### 1.05 SUBMITTALS

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Component dimensions, configurations, construction details, joint details, attachments.
- C. Shop Drawings: Indicate casework types, sizes, and locations, using large scale plans, elevations, and cross sections. Include rough-in and anchors and reinforcements, placement dimensions and tolerances, clearances required, and keying information.
- D. Samples for Finish Selection: Fully finished, for color selection. Minimum sample size: 2 inches by 3 inches.
  - 1. Plastic laminate samples, for color, texture, and finish selection.
- E. Manufacturer's Installation Instructions.
- F. Manufacturer's Qualification Statement.
- G. Installer's Qualification Statement.
- H. Maintenance Data: Manufacturer's recommendations for care and cleaning.
- I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project:
  - 1. See Section 016000 - Product Requirements, for additional provisions.
- J. Finish touch-up kit for each type and color of materials provided.

#### 1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- B. Quality Certification: Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section.
- C. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience and approved by manufacturer.



## 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect items provided by this section, including finished surfaces and hardware items during handling and installation. For metal surfaces, use polyethylene film or other protective material standard with the manufacturer.
- B. Acceptance at Site:
  - 1. Do not deliver or install casework until the conditions specified under Part 3, Examination Article of this section have been met. Products delivered to sites that are not enclosed and/or improperly conditioned will not be accepted if warping or damage due to unsatisfactory conditions occurs.
- C. Storage:
  - 1. Store casework in the area of installation. If necessary, prior to installation, temporarily store in another area, meeting the environmental requirements specified under Part 3, "Site Verification of Conditions" Article of this section.

## 1.08 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a two year period after Date of Substantial Completion, at no additional cost to Owner. Defects include, but are not limited to:
  - 1. Ruptured, cracked, or stained finish coating.
  - 2. Discoloration or lack of finish integrity.
  - 3. Cracking or peeling of finish.
  - 4. Delamination of components.
  - 5. Failure of adhesives.
  - 6. Failure of hardware.

## PART 2 PRODUCTS

### 2.01 PERFORMANCE CRITERIA

- A. Provide labor and materials necessary to provide a complete system.
- B. Provide sink cutouts. Coordinate with the Plumbing Contractor.
- C. Plumbing Contractor is responsible for the following:
  - 1. Furnish, install, and connect sinks, fixtures, outlets, strainers, tailpieces, traps, vacuum breakers, stops and other related plumbing components in accordance with the Building

Code of New York, local building codes, and authorities having jurisdiction.

2. Coordinate with General Construction Contractor.

D. Mechanical Contractor is responsible for the following:

1. Furnish, install, and make final connections of ductwork to range hoods and other related mechanical components in accordance with the Building Code of New York, local building codes, and authorities having jurisdiction.
2. Coordinate with General Construction Contractor.

E. Electrical Contractor is responsible for the following:

1. Furnish, install, and make final connections of ductwork to wiring, conduit and other related electrical components within the casework in accordance with the Building Code of New York, local building codes, and authorities having jurisdiction.
2. Coordinate with General Construction Contractor.

## 2.02 CASEWORK, GENERAL

A. Quality Standard: AWI/AWMAC/WI (AWS), unless noted otherwise.

B. Plastic Laminate Faced Cabinets: Custom Grade.

## 2.03 FABRICATION

A. Assembly: Shop assemble casework items for delivery to site in units easily handled and to permit passage through building openings.

B. Construction: As required for selected grade.

C. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

D. Scribes and Fillers: Panels of matching construction and finish, for locations where cabinets do not fit tight to adjacent construction.

E. Apron Frames: Construction similar to other cabinets, with modifications.

## 2.04 PLASTIC-LAMINATE-CLAD CASEWORK

A. Plastic-Laminate-Clad Casework: Solid wood and wood panel construction; each unit self-contained and not dependent on adjacent units or building structure for rigidity; in sizes necessary to avoid field cutting except for scribes and filler panels. Include adjustable levelers for base cabinets.

1. Style: Flush overlay. Ease doors and drawer fronts slightly at edges.

2. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline.
  - a. Finish: Matte or suede, gloss rating of 5 to 20.
  - b. Surface Color and Pattern: As selected by Architect from manufacturer's full line.
  - c. Exposed Interior Surfaces: Thermally fused laminate.
    - 1) Color: White.
  - d. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
  - e. Cap exposed plastic laminate finish edges with plastic trim.

## 2.05 COUNTERTOPS

- A. Countertops: As specified in Section 123600.

## 2.06 CABINET HARDWARE

- A. Locks: Provide locks on casework drawers and doors where indicated. Lock with 5 pin cylinder and 2 keys per lock.
  1. Hinged Doors: Cam type lock, satin chromium plated over nickel on base material.
  2. Frameless Sliding Glass Doors: Ratchet-type sliding showcase lock, satin chromium plated over nickel on base material.
    - a. Product: Item No. 962 as manufactured by Knape & Vogt Manufacturing Company, 2700 Oak Industrial Drive NE, Grand Rapids, MI 49505; Phone 800-253-1561.
  3. Keying: Key locks alike within a space; key each room separately.
  4. Master Key System: All locks operable by master key.
- B. Adjustable Shelf Supports: Standard back-mounted system using surface mounted metal shelf standards and coordinated cantilevered shelf brackets, satin chrome finish, for nominal 1 inch spacing adjustments.
  1. Product: 85 Series Standards & 185 Series Brackets manufactured by Knape & Vogt Manufacturing Company.
- C. Shelves in Cabinets:
  1. Adjustable Shelf Standards and Rests: Shelf support with collar, steel, zinc-plated, 5 mm..
    - a. 1-inch spacing adjustments.
    - b. Product: #282.43.905 manufactured by Hafele: [www.hafeleonline.com](http://www.hafeleonline.com).

D. Swinging Doors: Hinges, pulls, and catches.

1. Hinges: Concealed, number as required by referenced standards for width, height, and weight of door.
  - a. Concealed Hinges: Installed in cabinet edge, and on door back, nickel-plated.
    - 1) Product: Grass America; Product Nextis 170 Degree Self-Closing Hinges, doweled: [www.grassusa.com](http://www.grassusa.com).
    - 2) Substitutions: See Section 016000 - Product Requirements.
    - 3) Hinge Mounting Plates: Steel, base plate; 3 point fixing.
      - (a) Products: Grass America; Cam Base Plate with pre-mounted Euro screws: [www.grassusa.com](http://www.grassusa.com).
2. Continuous Hinges: Solid brass; bright brass finish; solid brass screws.
  - a. Products: Stanley Manufacturing Company; Product "314 Continuous Hinges": [www.blum.com](http://www.blum.com).
3. Catches: Adjustable tension ball type; 1-15/16 inch; dull chrome finish..
  - a. Product: "Tension Ball Catch #1012-DC" manufactured by EPCO/Engineered Products Company: [www.epcohardware.com](http://www.epcohardware.com).

E. Drawers:

1. Slides: Steel, full extension arms, ball bearings; self-closing; capacity as recommended by manufacturer for drawer height and width.
  - a. Static Load Capacity: 100 lbs.
  - b. Stops: Integral type.
  - c. Systems Screws: Flat head zinc screws #6 x 1/2 inch.
    - 1) Product: Accuride International, Inc; Product "3832": [www accuride.com](http://www accuride.com).
2. Pencil Drawer: KnollExtra: Backpack Pencil Drawer by Knoll, Inc.

F. Doors and Drawers:

1. Face Bumpers: Clear rubber bumper; 1/4 inch x 1/16" high.
2. Pulls: Chrome wire pulls, 3 1/2 inches wide.
  - a. Product: "116.07.418" manufactured by Hafele: [www.hafeleonline.com](http://www.hafeleonline.com).

G. Glass Shelf Support System:

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1. Standards: Item No. 85 as manufacture by Knape & Vogt Manufacturing Company, 2700 Oak Industrial Drive NE, Grand Rapids, MI 49505; Phone 800-253-1561.
    - a. Color: Anochrome (ANO).
  2. Brackets - Item No. 185 as manufacture by Knape & Vogt Manufacturing Company, 2700 Oak Industrial Drive NE, Grand Rapids, MI 49505; Phone 800-253-1561.
    - a. Color: Anochrome (ANO).
- H. Aluminum sliding door tracks for glass doors: Item No. P1092 ANOD as manufactured by Knape & Vogt Manufacturing Company, 2700 Oak Industrial Drive NE, Grand Rapids, MI 49505; Phone 800-253-1561.

## 2.07 MATERIALS

- A. Wood-Based Materials:
1. Solid Wood: Air-dried to 4.5 percent moisture content, then tempered to 6 percent moisture content before use.
  2. Composite Wood Panels: Containing no urea-formaldehyde resin binders.
- B. Particle Board: 3/4" thick, 45 lb. Density.
- C. Concealed Solid Wood or Plywood: 1/2" Russian Birch Plywood, exterior grade, finish grade B.
- D. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications. complying with Grade requirements, and standard with the manufacturer.
1. Provide specific types as follows:
    - a. Horizontal Surfaces: HGL, 0.039 inch nominal thickness, through color, colors as scheduled, finish as scheduled.
    - b. Vertical Surfaces of Cabinets, Doors, and Drawer Fronts: VGS, 0.028 inch nominal thickness, through color, color as selected, finish as selected.
  2. Manufacturers:
    - a. Formica Corporation: [www.formica.com](http://www.formica.com).
    - b. Panolam Industries International, IncNevamar: [www.nevamar.com](http://www.nevamar.com).
    - c. Wilsonart International, Inc: [www.wilsonart.com](http://www.wilsonart.com).
  3. Substitutions: See Section016000-Product Requirements.
- E. Thermally Fused Laminate (TFL): Melamine resin, NEMA LD 3, Type VGL laminate panels.

F. Glass: Fully tempered float; ASTM C1036, Type 1, Quality Q3; ASTM C1048, tempered using horizontal tempering and complying with ANSI Z97.1; 1/4 inch thick minimum; exposed edges ground, and cut or drilled to receive hardware; clear.

1. Provide ground in pulls in the face of the glass.

G. Wall Cabinets

1. Bottoms, Side Panels and Backs: Particle board with white melamine finish interior and plastic edge banding.
2. Unexposed Sides and Tops: Particle board with white melamine finish on both sides. Entire cabinet top area must be solid, allowing no chance for items to fall into or past cabinet from above.
3. Cabinet bottoms shall be Type B flush.

H. Cabinet Shelves

1. Adjustable Shelves Less than 32" in length: Particle board with white melamine finish, both sides; finish leading edge of shelf with plastic edge banding.
2. Adjustable Shelves Greater than 32" in length: Particle board with white melamine finish on both sides with 2" x 3/4" thick apron at front edge; finish leading edge of shelf and bottom of apron with plastic edge bonding.

I. Base Cabinets

1. Tops, Bottoms, Side Panels and Backs: Particle board with white melamine finish interior with plastic edge banding.
2. Unexposed Sides: Particle board with white melamine balanced material.
3. Horizontal Frame Rails (in multiple drawer units): Between drawers to be 3/4" thick x 3" white melamine with Type VGS high pressure decorative laminate face and plastic edge banding.
4. Kick Bases: Fabricated with 3/4" thick, white melamine balanced material, to receive resilient base by others, unless noted otherwise.

J. Doors and Drawer Faces

1. Particle board with Type VGS high pressure decorative laminate on both faces and plastic edge banding.
2. Provide plastic edge banding at bottom edges of doors and drawers.

K. Drawers

1. Boxes: Constructed of pre-finished plywood components joined in any manner allowed by the quality level specified.
2. Bottoms: 1/2" thick fiberboard with white melamine finish, trapped in 1/4" grooves at both sides, front and back, with minimum 3/8" standing shoulder.

#### L. ADJUSTABLE SHELVING

1. Plastic Laminate Shelving:
  - a. Supports at or less than 32" on center: 3/4" thick, 45 lb. particle board with high pressure laminate (GP-30) on both faces and PVC edge banding.
  - b. Supports at greater than 32" in length: 3/4" thick, 45 lb. particle board with high pressure laminate (GP-30) on both faces, and 2" x 3/4", thick apron at front edge with high pressure laminate (GP-30) on both faces; leading edge of shelf & bottom of apron to be finished with PVC edge bonding.

#### M. FIXED SHELVING

1. Shelving:
  - a. Supports at or less than 32" on center: 3/4" thick, 45 lb. particle board with high pressure laminate (GP-30) on both faces and PVC edge banding.

### 2.08 ACCESSORIES

- A. Adhesive: Type recommended by AWI/AWMAC to suit application.
- B. Plastic Edge Banding: Extruded 3 mm PVC, flat shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
  1. Color: As selected by Architect from manufacturer's standard range.
  2. Use at exposed edges.
- C. Fasteners: Size and type to suit application.
- D. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
- E. Concealed Joint Fasteners: Threaded steel.
- F. Grommets: Standard 2-inch, round, plastic grommets for cut-outs, in color black.
- G. Closet Rods: Stanley: Adjustable round closet rod V7052 with center support.
  1. Finish: White

H. Bar Foot Rail: 2" diameter satin stainless steel foot rail.

1. Provide foot rail as a complete system including matching 90 degree and 135 degree elbows, flat end caps, and decorative combination brackets.
2. Provide splices per manufacturer's recommendations.
3. Provide brackets per manufacturer's instructions.
4. Manufacturer: ESP Metal Products & Crafts; Bohemia, NY; (631) 284-6383; <https://espmetalcrafts.com>.
5. Substitutions: See Section 016000-Product Requirements.

### **PART 3 EXECUTION**

#### **3.01 PREPARATION**

- A. Large Components: Ensure that large components can be moved into final position without damage to other construction.

#### **3.02 EXAMINATION**

A. Site Verification of Environmental Conditions:

1. Do not deliver casework until the following conditions have been met:
  - a. Building has been enclosed (windows and doors sealed and weather-tight).
  - b. An operational HVAC system that maintains temperature and humidity at occupancy levels has been put in place.
  - c. Ceiling, overhead ductwork, piping, and lighting have been installed.
  - d. Installation areas do not require further "wet work" construction.

- B. For Base Cabinets Installation: Examine floor levelness and flatness of installation space. Do not proceed with installation if encountered floor conditions required more than 1/2 inch leveling adjustment. When installation conditions are acceptable, for each space, establish the high point of the floor. Set and make level and plumb first cabinet in relation to this high point.

- C. For Wall Cabinets Installation: Examine wall surfaces in installation space. Do not proceed with installation if the following conditions are encountered:

1. Maximum variation from plane of masonry wall exceeds 1/4 inch in 10 ft and 1/2 inch in 20 ft or more, and/or maximum variation from plumb exceeds 1/4 inch per story.
2. Maximum Variation of finished gypsum board surface from true flatness: 1/8 inch in 10 feet in any direction.



- D. Verify adequacy of support framing and anchors.
- E. Verify that service connections are correctly located and of proper characteristics.

### 3.03 INSTALLATION

- A. Perform installation in accordance with manufacturer's instructions.
- B. Use anchoring devices to suit conditions and substrate materials encountered. Use concealed fasteners to the greatest degree possible. Use exposed fasteners only where allowed by approved shop drawings, or where concealed fasteners are impracticable.
- C. Set casework items plumb and square, securely anchored to building structure.
- D. Align cabinets to adjoining components, install filler and/or **scribe panels where necessary** to close gaps.
- E. Fasten together cabinets in continuous runs, with joints flush, uniform and tight. Misalignment of adjacent units not to exceed 1/16 inch. In addition, do not exceed the following tolerances:
  - 1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet.
  - 2. Variation of Bottoms of Wall Cabinets from Level: 1/8 inch in 10 feet.
  - 3. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
  - 4. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
  - 5. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.
- F. Secure wall and floor cabinets to concealed reinforcement at gypsum board assemblies.
- G. Base Cabinets: Fasten cabinets to service space framing and/or wall substrates, with fasteners spaced not more than 16 inches on center. Bolt adjacent cabinets together with joints flush, tight, and uniform.
- H. Install hardware uniformly and precisely.
- I. Countertops: Install countertops intended and furnished for field installation in one true plane, with ends abutting at hairline joints, and no raised edges.
- J. Replace units that are damaged, including those that have damaged finishes.

### 3.04 ADJUSTING

- A. Adjust operating parts, including doors, drawers, hardware, and fixtures to function smoothly.
  - 1. Doors shall swing freely, catches shall hold securely, and all doors shall be aligned both vertically and horizontally. Drawers shall open and close smoothly, without binding and without excessive slide play.

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### 3.05 CLEANING

- A. Clean casework and other installed surfaces thoroughly.

### 3.06 PROTECTION

- A. Do not permit finished casework to be exposed to continued construction activity.
- B. Protect casework and countertops from ongoing construction activities. Prevent workmen from standing on, or storing tools and materials on casework or countertops.
- C. Repair damage, including to finishes, that occurs prior to Date of Substantial Completion, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.

**END OF SECTION**

**SECTION 123600  
COUNTERTOPS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wall-hung counters .
- B. Sinks molded into countertops.

**1.02 RELATED REQUIREMENTS**

- A. Section 079005 - Joint Sealers.
- B. Section 123100 - Manufactured Metal Casework.
- C. Section 123216 - Manufactured Plastic-Laminate Clad Casework
- D. Section 224000 - Plumbing Fixtures: Sinks.

**1.03 REFERENCE STANDARDS**

- A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2020.
- C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards 2014, with Errata (2018).
- D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 3.1 2017, with Errata (2019).
- E. IAPMO Z124 - Plastic Plumbing Fixtures 2017.
- F. ISFA 2-01 - Classification and Standards for Solid Surfacing Material 2013.
- G. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Specimen warranty.

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- C. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
- D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
- F. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
- G. Certificate: Submit labels and certificates required by quality assurance and quality control programs.
- H. Installation Instructions: Manufacturer's installation instructions and recommendations.
- I. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

#### 1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.
- B. Quality Certification:
  - 1. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
  - 2. Provide designated labels on shop drawings as required by certification program.
  - 3. Provide designated labels on installed products as required by certification program.
  - 4. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

#### 1.07 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

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- B. Field Measurements: Verify dimensions of construction to receive countertops by field measurements before fabrication and indicate measurements on Shop Drawings.

## 1.08 WARRANTY

- A. See Section 017800 - Closeout Submittals, for additional warranty requirements.
- B. Provide ten year manufacturer warranty after Date of Substantial Completion for repair or replacement of solid surfacing countertops that fail within specified warranty period.

## PART 2 PRODUCTS

### 2.01 COUNTERTOPS

- A. Quality Standard: Premium Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
  - 1. Flat Sheet Thickness: 1/2 inch, minimum.
  - 2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
    - a. Manufacturers:
      - 1) Avonite Surfaces: [www.avonitesurfaces.com](http://www.avonitesurfaces.com).
      - 2) Dupont; Corian: [www.corian.com](http://www.corian.com).
      - 3) Formica Corporation: [www.formica.com](http://www.formica.com).
      - 4) Wilsonart: [www.wilsonart.com](http://www.wilsonart.com).
      - 5) LG Hausys; Product "Hi-Macs": [www.lghimacsusa.com](http://www.lghimacsusa.com).
      - 6) Substitutions: See Section 016000 - Product Requirements.
    - b. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
    - c. NSF approved for food contact.
    - d. Sinks and Bowls: Integral castings; minimum 3/4 inch wall thickness; comply with IAPMO Z124.
    - e. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.

3. Substrate: 3/4" Plywood.
  4. Other Components Thickness: 1/2 inch, minimum.
  5. Exposed Edge Treatment: built-up eased edge, minimum 1-1/4 inch thick; waterfall edge.
  6. Back and End Splashes: Same sheet material, square top, slightly eased at corner; minimum 4 inches high.
    - a. Provide 6" high backsplash at accessible work surface as indicated on drawings.
  7. Skirts: As indicated on drawings.
  8. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 - Countertops, Premium Grade.
- C. Stainless Steel Countertops: ASTM A666, Type 304, stainless steel sheet; 16 gage, 0.0625 inch nominal sheet thickness.
1. Finish: 4B satin brushed finish.
  2. Exposed Edge Shape: Marine edge with return; edge raised 3/16 inch above counter with 45 degree transition, minimum 1 inch flat rim; 1-1/2 inch high turndown, 1/2 inch return to face of case; reinforced with hardwood or steel.
  3. Back and End Splashes: Same material; welded 1/4 inch radius coved joint to countertop; square top edge with 1 inch wide top surface and minimum 1/2 inch turndown.
  4. Splash Dimensions: 4 inch high by 1 inch thick, unless otherwise indicated.
  5. Fabricators:
    - a. Jamestown Metal Products; ICI Stainless Steel: [www.jamestown.com](http://www.jamestown.com).
    - b. Mott Manufacturing; Product "Stainles Steel Laboratory Casework": [www.mott.ca](http://www.mott.ca).

## 2.02 MATERIALS

- A. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- B. Joint Sealant: As specified in Section 079005.
- C. Counter Support Brackets: Extruded aluminum, "T"-shaped bracket, welded along 45 degree mitered sides and back, with 5/16-inch holes to accept 1/4-inch screws.
  1. Finish: Electrostatically-applied powder coat; color as selected by Architect from manufacturer's full range.
  2. Sizes: 18" vertical leg, 18" horizontal leg, 2 inches deep for 24-inch deep counters.

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3. Manufacturers:
  - a. Rakks; Product "EH Series Counter Support Bracket": [www.rakks.com](http://www.rakks.com)
  - b. Substitutions: See Section 016000 - Product Requirements.
- D. Grommets for Cable Passage through Countertops: 3-inch OD, molded-plastic grommets and matching plastic caps with slot for wire passage.
  1. Manufacturers:
    - a. Mockett; Product "XG Series": [www.mockett.com](http://www.mockett.com)
    - b. Substitutions: See Section 016000 - Product Requirements.

## 2.03 FABRICATION

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
  1. Join lengths of tops using best method recommended by manufacturer.
  2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
  3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
  1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
  2. Height: 4 inches, unless otherwise indicated.
- C. Stainless Steel: Fabricate tops up to 144 inches long in one piece including nosings and back and end splashes; accurately fitted mechanical field joints in lengths over that dimension are permitted.
  1. Weld joints; grind smooth and polish to match.
  2. Provide stainless steel hat channel stiffeners, welded or soldered to underside, where indicated on drawings.
  3. Provide wall clips for support of back/end splash turndowns.
  4. Sound Deadening: Apply water resistant, fire resistant sound deadening mastic to entire bottom surface.
- D. Wall-Mounted Counters: Provide backsplash as indicated on drawings, finish to match.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

### **3.02 PREPARATION**

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### **3.03 INSTALLATION**

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Attach stainless steel countertops using stainless steel fasteners and clips.
- C. Seal joint between back/end splashes and vertical surfaces.

### **3.04 TOLERANCES**

- A. Variation From Horizontal: 1/16 inch in 10 feet, maximum.
- B. Variation in Plane at Joints (Lipping): Do not exceed 1/64 inch difference between planes of adjacent units.
- C. Variation in Line of Edge at Joints (Lipping): Do not exceed 1/64 inch difference between edges of adjacent units, where edge line continues across joint.
- D. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- E. Field Joints: 1/8 inch wide, maximum.

### **3.05 CLEANING**

- A. In-Progress Cleaning: Clean countertops as work progresses. Remove adhesive and sealant smears immediately.
- B. Clean countertops surfaces thoroughly not less than six days after installation completion, using clean water and soft rags.

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### 3.06 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.
- C. Replace simulated stone countertops of the following description:
  - 1. Broken, chipped, stained, or otherwise damaged simulated stone. Simulated stone may be repaired if methods and results are approved by Architect.
  - 2. Defective countertops.
  - 3. Defective joints, including misaligned joints.
  - 4. Interior simulated stone countertops and joints not matching approved Samples and mockups.
  - 5. Interior simulated stone countertops not complying with other requirements indicated.

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**END OF SECTION**

**SECTION 124813**  
**ENTRANCE FLOOR MATS AND FRAMES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Carpet mat.
- B. Recessed mat frames.

**1.02 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating properties of walk-off surface, component dimensions and recessed frame characteristics.
- C. Shop Drawings: Indicate dimensions and details for recessed frame.
  - 1. For recessed frames located within a dimensionally restricted area, show dimensions of space within which the frame will be installed.
- D. Samples: Submit {CH#244522} samples, 3 by 3 inch in size illustrating pattern, color, finish {CH#244524}, and edging.
- E. Maintenance Data: Include cleaning instructions and stain removal procedures.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Floor Mats:
  - 1. Construction Specialties, Inc; Entrance Mats, Powerpoint: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
  - 2. Substitutions: See Section 016000 - Product Requirements.

**2.02 MATS**

- A. Carpet Mat: 100% solution-dyed UV resistant polypropylene fibers permanently bonded to all weather non-skid rubber backing.
  - 1. Size: Provide rolled carpet mat, 6 foot, 6 inch wide, by custom length to cover the entire floor.
  - 2. Thickness: 1/2 inch.
  - 3. Pile weight: 44 ounce.
  - 4. Colors: To be selected by Architect from manufacturer's standard range.

## 2.03 FABRICATION

- A. Construct recessed mat frames square, tight joints at corners, rigid. Coat surfaces with protective coating where in contact with cementitious materials.
- B. Fabricate mats in single unit sizes; fabricate multiple mats where indicated on drawings.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that floor opening for mats are ready to receive work.

### 3.02 PREPARATION

- A. Mats: Verify size of floor recess before fabricating mats.
- B. Vacuum clean floor recess.

### 3.03 INSTALLATION

- A. Recessed grills and gratings.
  - 1. Install frames to achieve flush plane with finished floor surface.
  - 2. Install walk-off surface in floor recess flush with finish floor after cleaning of finish flooring.
- B. Carpet matts.
  - 1. Roll cut carpeting to be adhered to floor surface using releasable adhesive supplied by manufacturer.

### 3.04 TOLERANCES

- A. Maximum Gap Formed at Recessed Frame From Mat Size: 1/4 inch.

**END OF SECTION**