Division 12 – FURNISHINGS

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SECTION 12 01 00 - OPERATION AND MAINTENANCE OF FURNISHINGS

PART 1 - GENERAL

1.1 SUMMARY

A. This section includes schedules and procedures for the routine maintenance of furnishings.
B. Related Sections: List of other sections that might be relevant (e.g., 12 50 00 - Furniture).

1.2 REFERENCES

A. List of industry standards, guidelines, and other references pertinent to the operation and maintenance of furnishings.

1.3 DEFINITIONS

A. Maintenance: Activities conducted regularly to keep furnishings in their original condition.
B. Routine Care: Day-to-day cleaning and maintenance tasks.

1.4 MAINTENANCE MATERIALS

A. Maintenance Instructions: Provide maintenance data for inclusion in the operation and maintenance manuals.
B. Cleaning Solutions: Manufacturer-approved products.
C. Touch-up Materials: As recommended by the manufacturer.
D. Reserved.

1.5 QUALITY ASSURANCE

A. Reserved.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Reserved.

1.7 PROJECT/SITE CONDITIONS

A. Environmental Limitations: Maintenance must be performed within the temperature and humidity ranges recommended by the manufacturer.
B. Lighting Conditions: Ensure adequate lighting for maintenance tasks.
C. Reserved.

1.8 SEQUENCING

A. Reserved.

1.9 WARRANTY

A. Manufacturer's Warranty: Report any deficiencies to the manufacturer according to the warranty terms.
B. Extended Warranty: Optional extended warranty details, if applicable.
C. Reserved.

PART 2 - PRODUCTS

(N/A for maintenance section; this would be included if there were specific products required for maintenance.)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Inspect furnishings upon delivery for any damage. Verify furnishings are installed as indicated on the contract documents before beginning maintenance.
B. Verify that the installation of furnishings has been completed before beginning maintenance.

3.2 PREVENTIVE MAINTENANCE

A. General: Perform maintenance at intervals recommended by the manufacturer or as required by the wear level.

3.3 CLEANING

A. General: Use cleaning materials and methods appropriate for the material composition of the furnishings.
B. Upholstery: Detail cleaning instructions for upholstered furniture.
C. Wood: Detail cleaning instructions for wood furniture.

3.4 MAINTENANCE AND REPAIR

A. Touch-Up Procedures: Describe methods for minor repairs to the finish of furnishings.
B. Carry out routine inspections and perform necessary adjustments and corrections.
C. Perform touch-up painting as required using materials specified by the manufacturer.
D. Replacement: Outline a procedure for replacing components or entire items if not repairable.
E. Reserved.

3.5 REPLACEMENTS

A. Maintain a stock of replaceable parts as suggested by the manufacturer to ensure minimal downtime.
B. Provide repair work in accordance with manufacturer's procedures.
C. Replace worn or defective parts with original manufacturer's replacement parts or equivalent.
D. Reserved.

3.06 SCHEDULE

A. Routine Cleaning: {details of daily, weekly, monthly cleaning schedules}.
B. Preventive Maintenance: {details of regular maintenance checks and tasks}.
C. Corrective Maintenance: {response times and methods for unscheduled repairs}.
D. Reserved.

END OF SECTION 12 01 00

This would represent professional, project-specific documentation that conforms to standardized practices in architectural and construction industries. Each project might have unique requirements and specifications, therefore the actual content of a maintenance section will vary. Moreover, all placeholders and references (like "Reserved" or "{details}") would be replaced with the actual, specific details relevant to the particular project.

SECTION 12 05 00 – COMMON WORK RESULTS FOR FURNISHINGS

This section is under review.

SECTION 12 10 00 - ART

This section is under review.

SECTION 12 20 00 - WINDOW TREATMENTS

PART 1 - GENERAL

Professional shall locate and specify treatment to windows applicable to the building design and functions. Window treatment, interior and exterior, is integral to the energy management of the building, the control of light and comfort of the occupants. Proposed products and hardware must be rated for heavy duty commercial use.

Lincoln University prefers roller shades.

1.1 SUSTAINABILITY REQUIREMENTS

A. Execute work of this section in a manner that support the University's goals for sustainability:
   1. Recycled content.

1.2 SUMMARY

A. This Section includes:
   1. Roller shades.
   2. Horizontal louver blinds with aluminum slats.
   3. Vertical louver blinds.
   4. Drapes and drapery tracks

1.3 MOCKUPS

A. Mockups for each form of construction.

1.4 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Provide products that pass NFPA 701 as determined by testing of fabrics that were treated using treatment-application method intended for use for this Project by a testing and inspecting agency acceptable to authorities having jurisdiction.

B. Fabric Fungal Resistance: No growth when tested according to ASTM G21.

Product specifications, accessory items, colors, finishes, applications and details are to be reviewed and approved by Lincoln University's Project Manager.

1.1 PRODUCTS

A. Roller Shades:

Shadecloth and other window coverings directly affect the HVAC efficiency and overall comfort of a space (brightness and glare). HVAC design may require a minimum shading coefficient or solar factor.

1. Shadecloth: Minimum opacity shall be 5% for offices, 1-3% for conference rooms and classrooms; black-out shades and treatment in audio visual areas when required. Colors shall be coordinated with University's Project Manager.

For high profile projects and areas that are receiving window shades as part of a new building standard, the shade material shall be reviewed by the University's Project Manager and University's Architect. A mock-up will be required for viewing the shadecloth from the exterior.

a. Shadecloth to be channel mounted to the shade tube. Do not use adhesives or tape.

2. Valances: Coordinate valance types required with other work. Valances provided by shade manufacturer shall match color of shade cloth. Provide light-proof shades with side and sill closure channels where required to meet project design requirements.

Coordinate with building automation system and sustainable design requirements. For proper coordination, include the typical window shade control location on finish and furniture plans to show ease of control access.

3. Control Mechanism: Motor operated and manually operated shades; provide types as required to meet project design requirements.

B. Horizontal Louver Blinds, Aluminum Slats:
1. Slat Width: 1 inch (25 mm).
2. Operating Mechanisms: Manual. Coordinate length of wand for operation no more than 48 inches above finished floor.
3. Tilt: Full.
4. Valance.
5. Installation: Between (inside) jamb.

Vertical Louver Blinds: Use of vertical louver blinds should be limited to housing and as required to meet Project Design Requirements.

C. Vertical Louver Blinds: PVC Vanes, Lead-free, UV-stabilized, integrally colored, opaque, permanently flexible, that will not crack or yellow:
1. Flame-Resistance Rating: Complying with NFPA 701.
2. Vane Width: 3-1/2 inches (89 mm).
3. Operating Type: [Manual corded] [Manual cordless].
4. Valance and Headrail: Channel, formed steel or extruded aluminum with long edges returned or rolled and ends capped.
5. Mounting Brackets: Wall to support headrail.
6. Manual Cordless Operation: Traverse and Rotation Operator: Single wand operates both traverse and rotation. Coordinate length of wand for operation no more than 48 inches above finished floor.

Use of curtains and drapes is discouraged, except when the style of the interior absolutely requires it or for housing projects. If fabric window drapes are specified, the fabric must be inherently flame-resistant, or flame-resistant treated.

D. Drapery and Tracks: Manually operated.
1. Construction: Extruded aluminum, slotted for mounting at interval of not more than 24 inches (610 mm) o.c.
2. Draperies:
   a. Headings:
      1) Pinch (French) Pleats: 100 percent fullness.
   b. Drapery Fabric:
      1) Fiber Content: TBD.
      2) Textile Treatments: Stain repellent and flame retardant.
   c. Lining Type: Blackout.

1) Fiber Content: TBD.
2) Textile Treatments: Stain repellent and flame retardant.

d. Interlining: Acoustical.

Building design and Construction Documents must include structural requirements, blocking, services and construction coordination for the installation of Window Treatment.

1.2 INSTALLATION

A. Roller Shades: Install roller shades level, plumb, and aligned with adjacent units according to manufacturer's written instructions. Located so shadeband is not closer than 2 inches (51 mm) to interior face of glass.

B. Horizontal Louver Blinds: Install horizontal louver blinds level and plumb and aligned with adjacent units according to manufacturer's written instructions, and located so exterior slat edges in any position are not closer than 2 inches to interior face of glass.
1. Install intermediate support as required to prevent deflection in headrail.
2. Jamb Mounted: Install headrail flush with face of opening jamb and head.

C. Drapes and Tracks:
1. Install track systems according to manufacturer's written instructions, level and plumb, and at height and location in relation to adjoining openings as indicated on Drawings.
2. Isolate metal parts of tracks and brackets from concrete, masonry, and mortar to prevent galvanic action. Use tape or another method recommended in writing by track manufacturer.
3. Where drapes abut overhead construction, hang drapes so that clearance between headings and overhead construction is 1/4 inch (6.4 mm).
4. Where drapes extend to floor, install so that bottom hems clear finished floor by not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm).

D. Vertical Louver Blinds: Install vertical louver blinds level and plumb, aligned and centered on openings, and aligned with adjacent units in accordance with manufacturer's written instructions. Locate so exterior vane edges are not closer than 2 inches (51 mm) from interior faces of glass and not closer than 1-1/2 inches (38 mm) from interior faces of glazing frames through full operating ranges of blinds.

1.3 DEMONSTRATION

A. Factory-authorized service representative to provide training services for adjusting, operating, and maintaining motorized systems.

END OF SECTION 12 20 00

SECTION 12 30 00 - MANUFACTURED CASEWORK

1.1 SUSTAINABILITY REQUIREMENTS

A. Execute work of this section in a manner that support the University's goals for sustainability:
   1. Recycled content.
   2. Regional materials.
   3. Certified wood.
   4. Low-emitting composite wood products.
   5. Low-emitting adhesives.

1.2 SUMMARY

Manufactured Casework (or modular casework) is used for classroom and laboratory casework. May also be specified for residential projects. Classroom casework may be wood-veneered or plastic laminate clad and depends on programing requirements and use type. Laboratory casework is usually wood and/or metal. Selection of type of casework, wood or plastic laminate will be determined on a project by project basis and as described for building types and area elsewhere in these guidelines. Professional shall review with and obtain approval from University's Project Manager.

A. Section Includes:
   1. Wood-veneer-faced casework.
   2. Plastic-laminate-clad casework.

1.3 SUBMITTALS

A. Sample: Full-size base and wall cabinet.

Professional shall review selection of finish materials with and obtain approval from University's Project Manager.

B. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures, including but not limited to:
   1. Shop-applied transparent finishes.
   2. Shop-applied opaque finishes.
   3. Plastic laminates.
   4. Metal laminates.
   5. PVC edge material.
   6. Solid-surfacing materials.
   7. Composite stone/quartz surfacing.

1.4 QUALITY ASSURANCE

A. Reserved

B. Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.

C. Forest Certification: Fabricate cabinets and countertops with wood and wood-based products produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

D. Quality Standard: Unless otherwise indicated, comply with AWI's "Architectural Woodwork Quality Standards" for grades of interior architectural woodwork indicated for construction, finishes, installation, and other requirements.
   1. Provide AWI Quality Certification Program labels and certificates indicating that woodwork, including installation, complies with requirements of grades specified.

Laboratory casework and fixtures to meet the guidelines of Scientific Equipment and Furniture Association (SEFA).

The University has many different laboratory disciplines. Each is unique. The Professional shall design laboratory casework to meet project design requirements.

E. Prefabricated Casework for Laboratories: Comply with SEFA 8 W, "Laboratory Grade Wood Casework."
   1. Flammable Liquid Storage: Cabinets for solvent or flammable liquid storage shall be listed and labeled as complying with requirements in NFPA 30 by a qualified testing agency.
   2. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency.

F. Prefabricated Casework For Residences: Comply with ANSI/KCMA A161.1 and HUD "Minimum Property Standards," Housing 4910.1, paragraph 611-1.1.
   1. KCMA Certification: Provide casework with Kitchen Cabinet Manufacturers Association (KCMA) "Certified Cabinet" seal affixed in a semi-exposed location of each unit, showing compliance with above standard.
   2. Single-Source Responsibility: Obtain casework from one source of a single manufacturer.

G. Mockups for typical interior architectural woodwork.

Professional and University Project Manager shall approve mockups

   1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE AND HANDLING

A. Comply with the Architectural Woodwork Standards, Section 2.

B. Do not deliver interior architectural woodwork until painting and similar finish operations that might damage woodwork have been completed in installation areas.

C. Environmental Limitations without Humidity Control: Do not deliver or install interior architectural woodwork until building is enclosed, wet-work is complete, and HVAC system is operating and maintaining temperature and relative humidity at levels designed for building occupants for the remainder of the construction period maintaining temperature between 60 and 90 deg F (16 and 32 deg C) and relative humidity between 25 and 55.

D. Condition finish carpentry and millwork materials to average prevailing humidity in installation areas for a minimum of 24 hours unless a longer conditioning time is recommended by the manufacturer.

1.6 WARRANTY

A. Materials and Workmanship: Five years.

1.7 PERFORMANCE REQUIREMENTS

A. System Structural Performance: Laboratory casework and support framing system shall withstand the effects of the following gravity loads and stresses without permanent deformation, excessive deflection, or binding of drawers and doors:
   1. Support Framing System: 600 lb/ft. (900 kg/m).
   2. Suspended Base Cabinets (Internal Load): 160 lb/ft. (240 kg/m).
   3. Work Surfaces (Including Tops of Suspended Base Cabinets): 160 lb/ft. (240 kg/m).
   4. Wall Cabinets (Upper Cabinets): 160 lb/ft. (240 kg/m).
   5. Shelves: 40 lb/sq. ft. (200 kg/sq. m).

1.8 MATERIALS

A. Regional Materials: The following wood products shall be manufactured within 100 miles of Project site from materials that have been extracted, harvested, or recovered, as well as manufactured, within 100 miles of Project site.

B. General: Provide materials that comply with requirements of AWI's quality standard for each type of woodwork and quality grade specified, unless otherwise indicated.

C. Wood Species and Cut for Exposed Surfaces: Selection of wood species and cut will be determined on a project by project basis and with approval from the University's Project Manager. On existing historical projects, species shall match existing.

Typically, University prefers red oak with hardwood edge, plain sliced for manufactured wood casework.
   1. Wood Species: Red oak.
   2. Face Veneer Cut: Plain sliced.

D. Wood Products: Comply with the following:
   1. Recycled Content of Medium-Density Fiberboard and Particleboard: Provide products with an average recycled content so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 20 percent.
   2. Hardboard: AHA A135.4.
   3. Medium-Density Fiberboard: ANSI A208.2, Grade MD, made with binder containing no added urea formaldehyde.
   4. Particleboard: ANSI A208.1, Grade M-2.
   5. Softwood Plywood: DOC PS 1, Medium Density Overlay.

E. Thermoset Decorative Panels: Particleboard or medium-density fiberboard finished with thermally fused, melamine-impregnated decorative paper complying with LMA SAT-1.
   1. Provide PVC or polyester edge banding complying with LMA EDG-1 on components with exposed or semiexposed edges.

F. High-Pressure Decorative Laminate:
   1. High-Pressure Decorative Laminates: NEMA LD 3, grades as indicated or, if not indicated, as required by woodwork quality standard.
   2. Metal Laminates: Standard Grade 36; solid metal; sheet thickness of 0.035" (0.889mm) nominal.
   3. Color and Texture: As selected by Professional and approved by University's Project Manager.

G. Composite Stone / Quartz Surfacing for Countertops: Refer to Section 064000 "Architectural Woodwork" for guidelines on countertops and materials.

H. Solid-Surfacing Material for Countertops: Refer to Section 064000 "Architectural Woodwork" for guidelines on countertops and materials.

I. Epoxy Resin for Laboratory Casework:
   1. Epoxy: Factory-molded, modified epoxy-resin formulation with smooth, nonspecular finish.
      a. Physical Properties:
         1) Flexural Strength: Not less than 10,000 psi (70 MPa).
         2) Modulus of Elasticity: Not less than 2,000,000 psi (1400 MPa).
         3) Hardness (Rockwell M): Not less than 100.
         4) Water Absorption (24 Hours): Not more than 0.02 percent.
         5) Heat Distortion Point: Not less than 260 deg F (127 deg C).
   2. Chemical Resistance: Epoxy-resin material has the following ratings when tested with indicated reagents according to NEMA LD 3, Test Procedure 3.4.5:
      a. No Effect: Acetic acid (98 percent), acetone, ammonium hydroxide (28 percent), benzene, carbon tetrachloride, dimethyl formamide, ethyl acetate, ethyl alcohol, ethyl ether, methyl alcohol, nitric acid (70 percent), phenol, sulfuric acid (60 percent), and toluene.
      b. Slight Effect: Chromic acid (60 percent) and sodium hydroxide (50 percent).
   3. Color: Black as selected by Professional and University's Project Manager from manufacturer's full range from epoxy manufacturer's full range.

J. Tempered Float Glass for Cabinet Doors: ASTM C 1048, Kind FT, Condition A, Type I, Class 1 (clear), Quality-Q3, 6 mm thick, unless otherwise indicated.

K. Stainless Steel Cabinets:
   1. Stainless Steel: Type 304.
   2. Metal thicknesses and gages in accordance with SEFA 8 M.

1.9 CASEWORK, GENERAL

A. Quality Standard: AWI/AWMAC/WI's "Architectural Woodwork Standards."
   1. Grade: Premium.

Flush overlay is preferred; Professional shall verify with University's Project Manager. Lipped may be required for laboratory wood casework in certain applications.

B. Design: Frameless
   1. Flush overlay.

1.10 WOOD-VENEER-FACED CABINETS

A. Grain Direction:
   1. Doors: Vertical with continuous vertical matching.
   2. Drawer Fronts: Vertical with continuous vertical matching.

B. Exposed Materials:
   1. Plywood: Hardwood plywood with face veneer of species indicated, selected for compatible color and grain. Provide backs of same species as faces.
   2. Solid Wood: Clear hardwood lumber of species indicated and selected for grain and color compatible with exposed plywood.
   3. Edgebanding: Solid wood, minimum 1/8 inch (3 mm) thick and of same species as face veneer.

C. Wood-Veneer-Faced Cabinet Construction: As required by referenced quality standard, but not less than the following:
   1. Bottoms of Cabinets and Tops of Wall Cabinets: 3/4-inch- (19-mm-) thick, veneer-core hardwood plywood.
   2. Ends of Cabinets: 3/4-inch- (19-mm-) thick, hardwood plywood.
   3. Shelves: 3/4-inch- (19-mm-) thick, veneer-core hardwood plywood or 1-inch- (25-mm-) thick, particleboard-core hardwood plywood.
   4. Base Cabinet Subtops: 3/4-inch- (19-mm-) thick panel product, glued and pinned or screwed.
   5. Backs of Cabinets: 3/4-inch- (19-mm-) thick, particleboard-core hardwood plywood where exposed, 1/4-inch- (6.4-mm-) thick, veneer-core hardwood plywood dadoed into sides, bottoms, and tops where not exposed.
   6. Drawer Fronts: 3/4-inch- (19-mm-) thick, particleboard-core hardwood plywood or solid hardwood.
   7. Drawer Sides and Backs: 1/2-inch- (13-mm-) thick, solid-wood or veneer-core hardwood plywood, with glued dovetail or multiple-dowel joints.
   8. Drawer Bottoms: 1/4-inch- (6.4-mm-) thick, veneer-core hardwood plywood, glued and dadoed into front, back, and sides of drawers. Use 1/2-inch- (13-mm-) thick material for drawers more than 24 inches (600 mm) wide.
   9. Cabinet Doors:
      a. 48 Inches (1220 mm) or Less in Height: 3/4 inch (19 mm) thick, with solid hardwood stiles and rails, particleboard or MDF cores, and hardwood face veneers and crossbands.
      b. 48 Inches (1220 mm) or More in Height: 1-1/8 inches (29 mm) thick, with particleboard cores and hardwood face veneers and crossbands.
   10. Filler Strips: Provide as needed to close spaces between casework and walls, ceilings, and equipment. Fabricate from same material and with same finish as casework.

Laboratory Casework: There may be instances when the products used in labs will be corrosive to the surfaces and hardware listed herein. In those cases, Professional shall determine materials (e.g., stainless or epoxy-coated steel, etc.) that are reasonably resistant to the most corrosive chemicals commonly utilized in those areas.

D. Metal Cabinets with Wood Fronts - Laboratories (if required by project design parameters):
   1. Steel Sheet: Cold-rolled, commercial steel sheet, complying with ASTM A1008/A1008M; matte finish; suitable for exposed applications.
   2. Metal thicknesses and gages in accordance with SEFA 8 M.
   3. Wood: Door and drawer fronts shall be ¾ inch (19 mm) thick, square edge,

composite core, hardwood veneer plywood (HPVA HP-1) with 1/8 inch (3.2 mm) hardwood edging. Wood species as determined by project design between Professional and University's Project Manager.

1.11 PLASTIC-LAMINATE CABINETS

A. Laminate Cladding for Exposed Surfaces: High-pressure decorative laminate complying with the following requirements:
   1. Horizontal Surfaces Other Than Tops: Grade HGS (0.048 inch nominal thickness).
   2. Vertical Surfaces: Grade VGS (0.028 inch nominal thickness).
   3. Edges: 3mm PVC T-mold matching laminate in color, pattern, and finish.

B. Materials for Semiexposed Surfaces:
   1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, grade VGS.
      a. 3 mm PVC T-mold matching laminate in color, pattern, and finish.
      b. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, Grade VGS.
   2. Drawer Sides and Backs: Solid-hardwood lumber.
   3. Drawer Bottoms: Hardwood plywood.

C. Concealed Backs of Panels with Exposed Plastic Laminate Surfaces: High-pressure decorative laminate, Grade BKL (0.020 inch nominal thickness).

D. Colors, Patterns, and Finishes: As selected by Professional and approved by University's Project Manager.

E. Plastic-Laminate-Faced Cabinet Construction: As required by referenced quality standard, but not less than the following:
   1. Bottoms and Ends of Cabinets, and Tops of Wall Cabinets and Tall Cabinets: 3/4-inch particleboard, plastic-laminate faced on exposed surfaces, thermoset decorative panels on semiexposed surfaces.
   2. Shelves: 3/4-inch (19 mm) particleboard, plastic-laminate faced.
   3. Backs of Cabinets: 1/2-inch (13 mm) particleboard, plastic-laminate faced on exposed surfaces, thermoset decorative panels on semiexposed surfaces.
   4. Drawer Fronts: 3/4-inch particleboard, plastic-laminate faced.
   5. Drawer Sides and Backs: 1/2-inch (13 mm) thermoset decorative panels, with glued dovetail or multiple-dowel joints.
   6. Drawer Bottoms: 1/2-inch (13 mm) thermoset decorative panels glued and dadoed into front, back, and sides of drawers.
   7. Doors: 3/4-inch (19 mm) particleboard or MDF, plastic-laminate faced.
   8. Filler Strips: Provide as needed to close spaces between cabinets and walls, ceilings, and indicated equipment. Fabricate from same material and with same finish as cabinets.

1.12 HARDWARE

A. General: Manufacturer's standard units complying with ANSI A156.9, of type, material, size, and finish as selected from manufacturer's standard choices.

Concealed type hinges are preferred however this will be determined on a project-by-project basis, Professional shall verify with University's Project Manager. Butt hinges are preferred for Laboratory casework.

B. Hinges:
   1. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, 135 degrees of opening. Provide two hinges for doors less than 48 inches (1220 mm) high, and provide three hinges for doors more than 48 inches (1220 mm) high.
   2. Butt Hinges: 2-3/4-inch, 5-knuckle steel hinges made from 0.095-inch- thick metal.

Standard classroom pulls are usually back mounted wire pulls; decorative tab, ADA compliant pulls are acceptable; pulls will be determined on a project-by-project basis, verify with University's Project Manager. Below are examples.

C. Pulls:
   1. Wire Pulls: Back mounted, minimum 4 inches long, 5/16 inch diameter, and 1-13/32 inch deep wire pulls; satin stainless steel; ADA compliant; equal to Mocket Model DP57B.
   2. Pulls: Tab pull design, solid metal, 7-7/8 inches long, 1-5/8 inches projection, back mounted; brushed satin aluminum; ADA compliant; equal to Mocket Model DP212B- Medium.

D. Catches: Magnetic catches, BHMA A156.9, B03141 or Ball friction catches, BHMA A156.9, B03013.

Shelf standards and rest shall be metal; plastic is not acceptable, verify with University's Project Manager.

E. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.

F. Shelf Rests: BHMA A156.9, B04013; metal.

Heavy duty drawer slides shall be provided for all educational and office spaces; standard duty shall only be used on residential projects. Professional shall verify with University's Project Manager.

G. Drawer Slides: BHMA A156.9, B05091.
   1. Standard Duty (Grade 1): Side mounted and extending under bottom edge of drawer; full- extension type; epoxy-coated steel with polymer rollers.
   2. Heavy Duty (Grade 1HD-100): Side mounted; full- extension type; zinc-plated steel ball- bearing slides.
   3. Box Drawer Slides: Grade 1HD-100; for drawers not more than 6 inches high and 24 inches wide.
   4. File Drawer Slides: Grade 1HD-100; for drawers more than 6 inches high or 24 inches wide.
   5. Pencil Drawer Slides: Grade 1; for drawers not more than 3 inches high and 24 inches wide.
   6. Keyboard Tray and Slides: Powder-coated steel construction; 18 inch track with EZ- Glide system; 6 inches vertical height range; single paddle control height adjuster; 30^0 tilt range with +/- 15^0 negative and positive tilt; 360^0 swivel at track; 25 inch wide platform; equal to Knape and Vogt Model SD-34-18.

Professional shall verify requirements and location for locks on cabinet doors and drawers with the University's Project Manager. Locks will be determined on a project-by-project basis.

H. Door Locks: BHMA A156.11, E07121.

I. Drawer Locks: BHMA A156.11, E07041.

Grommets shall not be used in laboratory countertops.

J. Grommets for Cable Passage through Countertops: 3-inch OD, molded-plastic grommets and matching plastic caps with slot for wire passage; color as selected by Professional and approved by University's Project Manager.

In most cases, hardware finishes shall be satin stainless steel; renovation projects and historical projects shall match existing; finishes will be determined on a project-by-project basis, verify with University's Project Manager.

K. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
   1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.
   2. Satin Stainless Steel: BHMA 630.

L. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

1.13 QUARTZ AND SOLID SURFACE COUNTERTOPS

A. Refer to Section 064000 "Architectural Woodwork" for guidelines on countertops and materials.

1.14 RESIN EPOXY MATERIALS FOR LABORATORY COUNTERTOPS AND SINKS

A. Countertop Fabrication: Fabricate with factory cutouts for sinks, holes for service fittings and accessories, and butt joints assembled with epoxy adhesive and concealed metal splines.
   1. Countertop Configuration: Flat, 1 inch (25 mm) thick, with beveled or rounded edge and corners, and with drip groove and integral coved or applied four inch backsplash.

B. Sink Fabrication: Molded in one piece with smooth surfaces, coved corners, and bottom sloped to outlet; 1/2-inch (13-mm) minimum thickness.
   1. Provide integral sinks in epoxy countertops, bonded to countertops with invisible joint line.

1.15 SERVICE FITTINGS FOR LABORATORIES

A. Service Fittings: Provide units that comply with SEFA 7, "Laboratory and Hospital Fixtures - Recommended Practices." Provide fittings complete with washers, locknuts, nipples, and other installation accessories. Include wall and deck flanges, escutcheons, handle extension rods, and similar items.
   1. Provide units that comply with "Vandal-Resistant Faucets and Fixtures" recommendations in SEFA 7.

B. Materials: Fabricated from cast or forged red brass.

C. Finish: Chromium plated or acid- and solvent-resistant powder coating complying with requirements in SEFA 7 for corrosion-resistant finishes.

1.16 FINISHING

A. Transparent Finish for Wood Casework: Premium Grade. Shop finishing is preferred.

1. Shop finished; System 5, conversion varnish. Apply a two-coat, baked, clear finish consisting of a thermosetting catalyzed sealer and a thermosetting catalyzed conversion varnish. Sand and wipe clean between applications of sealer and topcoat.

B. Laboratory Casework Finishes:

1. Wood: Exterior and interior surfaces of cabinets receive the full finishing process consisting of highly chemical-resistant transparent finish consisting of two coats of protective moisture resistant sealer and two applications of a topcoat of clear catalyzed chemical resistant lacquer.
   a. Chemical and Physical Resistance of Finish System: Finish complies with acceptance levels of cabinet surface finish tests in SEFA 8 W. Acceptance level for chemical spot test shall be no more than for Level 3 conditions.
2. Metal: Highly chemical resistant electrostatically applied urethane powder coat, baked in controlled high temperature oven.

1.17 INSTALLATION OF CASEWORK

A. Grade: Install casework to comply with requirements for the same grade specified in Part 2 for fabrication of type of woodwork involved.
   1. Laboratory Casework: Comply with installation requirements in SEFA 2.3..

B. Install casework with no variations in flushness of adjoining surfaces using concealed shims. Where casework abuts other finished work, scribe and cut for accurate fit. Provide filler strips, scribe strips, and moldings in finish to match casework face. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing as required for complete installation.

C. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
   1. Base Cabinets: Set cabinets straight, level, and plumb. Adjust subtops within 1/16 inch (1.5 mm) of a single plane. Align similar adjoining doors and drawers to a tolerance of 1/16 inch (1.5 mm). Bolt adjacent cabinets together with joints flush, tight, and uniform.
   2. Wall Cabinets: Hang cabinets straight, level, and plumb. Adjust fronts and bottoms within 1/16 inch (1.5 mm) of a single plane. Fasten cabinets to hanging strips, masonry, framing, wood blocking, or reinforcements in walls and partitions. Align similar adjoining doors to a tolerance of 1/16 inch (1.5 mm).

D. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.
   1. Align adjacent solid-surfacing-material countertops and form seams to comply with manufacturer's written recommendations using adhesive in color to match countertop. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
   2. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other

variation from a straight line.

3. Secure backsplashes to tops with concealed metal brackets at 16 inches o.c. and to walls with adhesive.
4. Seal space between backsplash and wall with sealant specified in Division 07 Section "Joint Sealants."

E. Adjust operating hardware so doors and drawers operate smoothly without warp or bind. Lubricate operating hardware as recommended by manufacturer.

END OF SECTION 12 30 00

SECTION 12 35 00 – SPECIALTY CASEWORK

SECTION 12 40 00 – FURNISHINGS AND ACCESSORIES

SECTION 12 48 00 - ENTRANCE MATS

This section indicated three types of entrance systems that may be used. The University prefers entrance type carpet tiles in most instances. Rolled up, linked, surface applied mats with carpet or vinyl inserts are second preferred system. Recess grilles with pan and drain at least preferred systems. Professional shall discuss with University's Project Manager which entrance system is applicable for the project. Incorporate into the Project, Sustainable Design Requirements for walk-off mats and grilles.

Locations: Entrance mats shall be at least 4 feet in length and be provided in vestibules for indoor contaminant control. For renovation projects, evaluate recessed opportunities; specify a set-on unit if site conditions restrict other options; surface applied entrance mats shall be at least 10 feet in length.

The Professional shall detail metal-framed mats so as to reduce noise and clatter that occurs from walking on the mat.

1.1 SUSTAINABILITY REQUIREMENTS

Submit a product-specific Environmental Product Declaration (EPD) and Health Product Declaration (HPD) for each product specified; if EPDs and HPDs are not available, please provide documentation of other relevant third-party sustainability certifications. Cradle to Cradle, Declare, FloorScore, and Greenguard certifications are particularly applicable.

A. Execute work of this section in a manner that support the University's goals for sustainability:
   1. Low-emitting adhesives.
   2. Low-emitting flooring.
   3. Recycled content.

1.2 SUMMARY

A. This Section includes the following:
   1. Entrance carpet tiles.
   2. Roll-up, aluminum-rail hinged mats.
   3. Recessed floor grilles and frames.

1.3 MAINTENANCE MATERIAL SUBMITTALS

Attic Stock and Maintenance Issues: University usually does not have storage space for maintenance stocks of flooring materials. Since entrance mat materials always need repair and since repair material may need to be purchased many years after the installation is completed, the long term availability of the entrance material should be verified. Use products which are not "trendy", which are likely to be available far in the future, and which are common throughout the industry. Verify with University's Project Manager for the need of attic stock.

A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
   1. Entrance Tiles: Full-size units; two unopened manufacturer's cartons.

1.4 ENTRANCE MATS AND GRILLES

A. General:

1. Accessibility Standard: Comply with applicable provisions in the DOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1.

B. Entrance Carpet Tile Floor Mat:

1. Color and Pattern: As selected by Professional and University's Project Manager from manufacturer's full range.

Below are minimum standards for entrance carpet tiles.

2. Fiber Content: Ultron Nylon 6,6.
3. Dye Method: Solution dyed.
4. Yarn Weight: 26.0.
5. Construction: Tufted Textured Loop.
6. Pile Thickness: 0.165 in/0.110 in/0.065 in..
7. Stitches: 6.3 per inch.
8. Gage: 5/64.
9. Primary Backing: AFIRM II Hardback Tile.
10. Size: 24 by 24 inches.
11. Applied Soil-Resistance Treatment: Manufacturer's standard material.
12. Antimicrobial Treatment: Manufacturer's standard material.
    a. Antimicrobial Activity: Not less than 2-mm halo of inhibition for gram-positive bacteria, not less than 1-mm halo of inhibition for gram-negative bacteria, and no fungal growth, according to AATCC 174.
13. Electrostatic Propensity: Less than 3.5 kV according to AATCC 134.
14. Emissions: Provide carpet tile that complies with testing and product requirements of CRI's "Green Label Plus" program.

C. Roll-up, Aluminum-Rail Hinged Mats: Continuous vinyl cushions.

1. Tread Inserts: As selected by Professional and University's Project Manager per project requirements.
    a. Carpet Tread Roll-Up Linked Mat: Exposed hinge rail connectors with carpet meeting CRI standard for good indoor air quality.
2. Performance: Capable of supporting a rolling load of 350 lb. (159-kg) per wheel (load applied to a solid 5 inch x 2 inch polyurethane wheel, 1,000 passes without damage).
3. Surface-Mounted Frames: Tapered aluminum.

D. Recessed Floor Grilles And Frames:

1. Recessed extruded aluminum grille assembly with nominal 1 inch wide tread strips running perpendicular to traffic flow, slots between treads, and perimeter frame forming sides of recess; grille hinged for access to recess.
2. Tread Inserts: As selected by Professional and University's Project Manager per project requirements.
3. Performance: Capable of supporting an uniform floor load of 300 lbf/sq. ft. (14.36 kN/sq. m) and a wheel load of 350 lb. (159-kg) per wheel without permanent deformation or noticeable deflection.
4. Drain Pans:
    a. Provide manufacturer's standard aluminum or stainless steel sheet drain pan with NPS 2 (DN 50) drain outlet for each floor-grille unit. Coat bottom of pan with protective coating recommended by manufacturer.
    b. Provide manufacturer's special deep-pit frame and support extrusion system with intermediate support beams, sized and spaced as recommended by manufacturer for indicated spans and equipped with

vinyl support cushions.

E. Roll-up, Vinyl-Rail Hinged Mats: Not permitted.

F. Resilient Link Mats: Not permitted.

G. Cocoa Mats: Not permitted.

H. Rubber-Tire Mats: Not permitted.

1.5 INSTALLATION

A. Entrance Carpet Tiles:
   1. General: Comply with carpet tile manufacturer's written installation instructions.
   2. Installation Method: Glue down; install every tile with full-spread adhesive.
   3. Maintain dye lot integrity. Do not mix dye lots in same area.
   4. Cut and fit carpet tile to butt tightly to vertical surfaces, edgings, and thresholds. Bind or seal cut edges as recommended by carpet tile manufacturer.

B. Roll-up, Aluminum-Rail Hinged Mats:
   1. Install surface-type units to comply with manufacturer's written instructions; coordinate with entrance locations and traffic patterns.
   2. Install recessed mat frames and mats to comply with manufacturer's written instructions so that tops of mats will be flush with adjoining finished flooring. Set mats with tops at height recommended by manufacturer for most effective cleaning action; coordinate tops of mat surfaces with bottoms of doors that swing across mats to provide clearance between door and mat.

C. Recessed Floor Grilles And Frames:
   1. Install recessed floor grilles and frames and drain pans to comply with manufacturer's written instructions at locations indicated and with top of floor grilles and frames in relationship to one another and to adjoining finished flooring as recommended by manufacturer. Set floor-grille tops at height for most effective cleaning action. Coordinate top of floor-grille surfaces with doors that swing across grilles to provide clearance under door.

END OF SECTION 12 48 00

SECTION 12 50 00 - FURNITURE

PART 1 - INTRODUCTION

1.1 PURPOSE

A. All furniture purchased must meet Lincoln University's requirements for addressing specific chemical classes of concern. This will require avoiding products containing:
   1. Persistent bio accumulative toxic compounds –Compounds that are toxic, persist in the environment and build up in the food chain, and can pose risks to public health by causing adverse effects to biological systems.
   2. Carcinogens, mutagens and reproductive toxic chemicals – Chemicals that have been shown to cause cancer, a mutation of the genes, or damage to the development or function of reproductive systems.

B. Further, any furniture procured as part of a university project must be free of chemical flame retardants, unless required by code. Chemical flame retardants are not required in spaces provided with automatic sprinkler systems (with the exception of detention facilities), but always consult a code specialist and the township Fire Marshal's 'Requirements for Furnishings, per Requirements of the 2019 Fire Safety Code, to verify.

PART 2 - GENERAL DESIGN REQUIREMENTS

A. All furniture shall comply with the restrictions on the following chemicals of concern as described in section 7.4.4 in ANSI/BIFMA e3-2019 Furniture Sustainability Standard, including:
   1. Flame Retardant Chemicals
   2. Formaldehyde and Volatile Organic Compounds (VOCs)
   3. Per and Poly-Fluoroalkyl Substances (PFASs) used as stain/water/oil resistant treatments
   4. Antimicrobials
   5. Polyvinyl Chloride (PVC)

B. Verification of compliance with the ANSI/BIFMA standard shall be provided to owner prior to contract award.

PART 3 - MINIMUM PRODUCT REQUIREMENTS

3.1 FLAME RETARDANTS

A. All upholstered seating complying with TB 117-2013 shall be labeled as not containing flame retardant chemicals consistent with the manner described in Section 19094 of the California Business and Professions Code.

B. If a product is required to have flame retardants by code or regulation, meeting the following criteria is required.

1. No halogenated flame-retardant chemical may be used at levels above 1,000 parts per million by weight of the homogeneous material, excluding electrical components.
2. Products that contain flame retardant chemicals that have been fully assessed using GreenScreen v1.2 (or newer) and meet the criteria for benchmark 2, 3, or 4 will be preferred.

SECTION 12 51 00 – OFFICE FURNITURE

PART 1 – GENERAL

1.1 SUMMARY

A. Only commercial grade furnishings suitable for higher education are to be procured.

B. All furniture purchased and installed on campus must meet or exceed institutional durability standards.

C. LU strives for consistency and compatibility of furniture components across campus.

D. LU Facilities and Program Management Department must review any non-standard furniture item for approval.

1.2 SUBMITTALS

A. LU Facilities and Program Management Department must review and approve all final furniture selections prior to order placement.

B. LU Facilities and Program Management Department must review all final furniture drawings for code compliance prior to order placement.

C. The furniture specifications package will consist of, but not be limited to:

- Labeled/coded furniture plan
- Master furniture listing of all specified products, including code number
- Listing of all furniture dealers, including address, email, phone, and contact name
- Listing of all COM upholstery suppliers, including address, email, phone, contact name
- All sheets must be numbered and dated.
- Separate specifications sheet noting each coded item, including:
  i. Furniture code
  ii. Quantities
  iii. Manufacturer
  iv. Part or Model number
  v. Finishes, including: Full specifications of COM upholstery fabric, pattern number, fiber content, durability, and light-fastness.
  vi. Basic description
  vii. Basic dimensions (tables and desks only)
  viii. Special requirements/instructions (i.e. keying instructions, fabric stripe to be applied vertically, etc.)
  ix. Space/room numbers

D. Furniture Specification Example:

Floor	Room Number	Room Name	Qty	Tag	Item	Manufacturer	Model	Description	Finish	Upholstery	Comments
1	105	Office	2	C1	Guest Chair	Steelcase	Move	Armless, Hard Surface Casters, Poly Seat/Back	Black	Manufacturer, Pattern, Color, and number	N/A

1.3 QUALIFICATIONS

A. Acceptable Commercial-Grade Manufacturers include:

- Herman Miller
- Steelcase
- OFS
- Haworth
- Great Openings
- National
- Global Furniture Group
- Teknion
- Versteel
- Surfaceworks
- National Office Furniture
- JSI
- Savoy
- HON
- Sit On It
- Office Master
- KI
- Arcadia
- Knoll
- OFM
- NBF

B. Preferred Dealers – must be on PA state contract or be able to offer cooperative agreement pricing.

PART 2 – PRODUCTS

a. General:

- Furniture cannot be purchased from a home or office retailer. Most home and office retailers do not sell commercial grade furniture or fabrics with the smoke/flame spread ratings required for institutional use. Many home and office retailers do not provide the same warranties and service contracts that commercial retailers do.
- Freestanding furniture, rather than wall-mounted systems furniture, is preferred. This allows for easier reconfiguration and greater flexibility, as well as limiting the requirement for prevailing wage installation rates and fees.
- Furniture shall be selected that allows for easy cleaning of the floor surface below.

b. ADA Requirements: When new furniture is purchased, the layout within the given space must meet current ADA guidelines (request FPM guidance on this).

c. Furniture Finishes:

- Work surfaces should be matte finish, High Pressure Laminate. Wood veneer surfaces should be used only for staff in upper administration or high public exposure.
- Metal is preferred for storage units. Laminate and wood veneer can also be used, but this must be approved by Facilities and Program Management Department.
- Fabric Durability: Must meet or exceed ACT (Association for Contract Textiles) guidelines for Flammability, Wet & Dry Crocking, and Colorfastness to Light, Physical Properties, and High Traffic Abrasion. Additional details below.
- Seating Fabric Abrasion: Must meet or exceed 50,000 Double Rubs (Wyzenbeek method) for guest seating in private and public spaces.
- Light Fastness: Fabrics must be selected with light fastness rating that is appropriate for the space in which it will be installed.
- Other Fabric Standards: Write-Off fabric is preferred in public spaces, classrooms, and libraries. Vinyl or other durable coated fabric is to be used on ottomans or other furniture surfaces that might be vulnerable to foot resting.

d. Task Seating:

- Ergonomics must include, but are not limited to: Seat height and depth adjustability; back angle adjustability; lumbar support; arm height adjustability.
- Seat upholstery must meet or exceed durability requirements listed above.
- Chair frame finish to be black on base, arms, and any other mechanism that is not upholstered.
- Vendors should allow for trial use of a prospective chair for at least 10 working days prior to purchase

e. Desk Ergonomics:

- Height adjustable desks are preferred and should include wire management. Monitor arms and keyboard trays are optional, per user preference.
- If budget does not allow for height adjustable desks, fixed height desks are approved and should have the ability to attach a keyboard tray.

f. Furniture for New Staff: When a new position and offices are created, standard furniture options for new staff and faculty shall be designed per LU space standards. Consult Facilities and Program Management Department.

g. Surplus Furniture: A department can request used furniture from surplus inventory. If appropriate selections are available, the department requesting the furniture is responsible for all costs associated with moving and installation, as well as removal of existing furniture if required. For systems furniture, there is also a cost for Facilities and Program Management Department to design and coordinate layout of existing parts/pieces.

PART 3 – INSTALLATION

a. All items taller than 6'-0" must be secured to building structure.
b. No furniture may cover radiators, valves, environmental controls, equipment, or electrical outlets.
c. If powered-panel systems furniture is approved and installed, the department making the purchase is required to cover costs for any future reconfiguration that requires electricians. The department must engage Facilities and Program Management Department for plan review and approval prior to purchase.
d. It is either the purchaser's responsibility or FPM's responsibility to receive, inspect, and sign for the furniture at the scheduled delivery date. This will be determined at the point of purchase. If any issues arise with furnishings, the dealer must be contacted directly to help resolve the issue.
e. Prevailing Wage Rates (PWR) may be mandated by State and Federal entities for furniture installations if:
    - The furniture is attached to walls or other building components/infrastructure
    - Furniture installation is related to any Capital Project with a certain total project cost.

   Consult FPM for project-by-project clarification as some exceptions may apply.

PART 4 – MAINTENANCE

a. All furniture should be procured from manufacturers that demonstrate proven track records in the marketplace, and maintain stock levels that ensure replacement can be made in a timely manner. See section 1.3 Qualifications: Acceptable Commercial-Grade Manufacturers.

b. All furnishings should hold a manufacturer's warranty of at least 5 years.

c. Commercial furnishings shall be purchased to minimize the long term life cycle costs since funding for equipment replacement, repair, and maintenance are increasingly difficult to maintain.

SECTION 12 55 00 – DORMITORY FURNITURE –Needs Revision (Dawn Engle)

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies requirements for dormitory furniture including beds, desks, chairs, dressers, and wardrobes.

1.2 RELATED SECTIONS

A. Division 12 – Furnishings

B. Division 06 – Wood, Plastics, and Composites

1.3 REFERENCES

A. CSI MasterFormat current edition

B. ASTM International

1.4 SUBMITTALS

A. Submit shop drawings for each type of furniture including dimensions, materials, finishes, and assembly details.

B. Submit product data sheets for each product including manufacturer's specifications and installation instructions.

PART 2 - PRODUCTS

2.1 GENERAL DESIGN REQUIREMENTS

A. All furniture shall meet the requirements of relevant codes and regulations.

B. Furniture shall be durable, safe, and suitable for use in a dormitory setting.

C. Furniture shall be designed for easy maintenance and cleaning.

2.2 MINIMUM PRODUCT REQUIREMENTS

A. Beds:
1. Twin size with metal frame and mattress support.
2. Mattress shall be fire-retardant and meet all safety standards.
3. Headboard and footboard shall be sturdy and securely attached.

B. Desks:
1. Laminate surface with integrated storage compartments.
2. Keyboard tray and wire management system.
3. Sturdy legs and adjustable height.

C. Chairs:
1. Ergonomic design with adjustable height and backrest.
2. Upholstered seat for comfort.
3. Five-point base with casters for mobility.

D. Dressers:
1. Wood construction with drawers on metal glides.
2. Durable finish resistant to scratches and stains.
3. Anti-tip device for safety.

E. Wardrobes:
1. Metal or wood construction with hanging rod and shelves.
2. Secure locking mechanism to protect personal belongings.
3. Adjustable feet for stability on uneven floors.

2.3 FURNITURE SPECIFICATION EXAMPLE

A. Bed:
1. Manufacturer: ABC Furniture Co.
2. Model: Dormitory Bed Classic
3. Material: Steel frame with powder-coated finish
4. Dimensions: 36" W x 80" L x 36" H
5. Mattress: Twin size, fire-retardant foam
6. Headboard and footboard: Attached with screws for easy assembly
7. Finish: Black

PART 3 - EXECUTION

3.1 EXECUTION

A. Install all furniture in accordance with manufacturer's instructions.

B. Ensure all furniture is securely anchored to the floor or wall as required for safety.

C. Coordinate delivery and installation with other trades to avoid damage to furniture.

D. Inspect furniture upon delivery for damage and ensure all components are present.

E. Clean and polish furniture as necessary before occupancy.

END OF SECTION

SECTION 12 61 00 - FIXED AUDIENCE SEATING

Fixed audience seating can be used in auditoriums, lecture halls, recital halls and other large gathering areas. Professional shall discuss with University's Project Manager the selection process for fixed audience seating applicable to project requirements. A full size sample showing features, materials, and finishes shall be delivered to the University's Project Manager.

1.1 SUSTAINABILITY REQUIREMENTS

A. Execute work of this section in a manner that support the University's goals for sustainability:
   1. Low-emitting composite wood products.
   2. Recycled content.

1.2 SUMMARY

A. This Section includes the following:
   1. Fixed audience seating.

1.3 QUALITY ASSURANCE

A. Mockups for each type of seating.

1.4 WARRANTY

A. Materials and Workmanship:
   1. Structural: Five years.
   2. Operating Mechanisms: Five years.
   3. Plastic, Wood, and Paint Components: Five years.

1.5 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics of Upholstered Chairs: Class A or chemically treated.

1.6 FIXED AUDIENCE SEATING

A. Chair Mounting:
   1. Standards: Floor attached preferred; steel or cast iron.
   2. End Panels: Plastic laminate or hardwood-veneer plywood.

B. Fabric Upholstered Chairs:
   1. Backs: Padded.
      a. Outer Back Surface: Steel or molded plastic.
      b. Upholstery: Upholstery fabric to be a minimum 200,000 double rubs composed of nylon, nylon blend or polyolefin.
   2. Seats: One part, fully upholstered construction.
      a. Seat Bottom: Steel sheet seat pan or molded-plastic shell.
      b. Provide minimum of 23 inches (58 cm) seat width on center and 18 inches (46 cm) seat depth.

C. Plastic Chairs: Double-wall molded plastic.
   1. Back: Textured surface.
   2. Seat: Textured surface.
   3. Upholstered Inserts: Padding and fabric covering over 1/8-inch (3-mm) plywood or MDF backing board, recessed 3/16 inch (5 mm) into plastic surface, centered, and attached with hidden, vandal-resistant fasteners.

D. Back Height: Minimum 35 inches (89 cm).

E. Back Pitch: Fixed.

F. Chair Seat Hinges: Self-rising, gravity actuated.

G. Armrests: Arm caps and armrests shall be finished wood or molded polyurethane material. Plastic laminate and upholstered armrests are prohibited. Provide minimum arm rest width of 2 inches (51 mm).

H. Power and Data Service Package: Power receptacles and data ports to each seat location.

Unless otherwise noted by the University, auditorium and lecture hall seating are required to have articulating one motion tablet arms.

I. Tablet Arms: Tablet construction to be laminated lumber core plywood with laminated on both sides with plastic laminate edged 3 mm PVC. Tablet arms are to be full size without curves and indents that reduce useable work surface. Minimum tablet arm size is to be a rectangular shape 143 square inches (363 cm^2) or more with no cutouts within the rectangle. Ten to twelve percent (10-12%) of the tablet arms are to be left-handed. Left-handed seats shall be located to avoid interference with right-handed tablets. Provide clearance of 8" or more from top of seat to underside of tablet arm when open.

J. Accessible Seating:
   1. Removable or swing-away chairs where wheelchair spaces are indicated.
   2. Chairs with folding armrests at 5 percent of aisle seats.

K. Wheelchair-Accessible Seating: Provide wheelchair-accessible seating to match Fixed Audience Seating. Seating shall be designated on the seating layout drawings and designed to allow an individual to transfer from a wheelchair to the chair. The aisle standard shall be equipped with an armrest capable of lifting to a position parallel with the support column, opening sideways access to the seat. Aisle standards so equipped shall be provided with a label, displaying an easily recognizable "handicapped" symbol. Decorative requirements of aisle standards are waived for the handicapped access standards.

1.7 LECTURE-HALL TABLES

A. Supports: Attached to floor or moveable.

B. Table Top: Plastic laminate on MDF.

C. Modesty Panels: Full or partial-height panels, matching table top.

D. Power and Data Service Package: Power receptacles and data ports in table top at each seat location.

1.8 INSTALLATION

A. Install seating in locations indicated and fasten securely to substrates according to manufacturer's written installation instructions.

END OF SECTION 126100

SECTION 12 92 00 - SITE FURNISHINGS

Lincoln University is still developing standards for site furnishings. Professional shall discuss with University's FF&E Project Manager selection of site furnishings required for project.

Custom bins and built-in casework containing bins are strongly discouraged. Preference is to maintain continuity of containers/signage across the University and provide flexibility for potential operational changes.

1.1 SUSTAINABILITY REQUIREMENTS

A. Execute work of this section in a manner that support the University's goals for sustainability:
   1. Low-emitting composite wood products.
   2. Recycled content.

1.2 PRODUCTS

A. Bicycle Racks: Provide secure bicycle racks and/or storage within 200 yards of the building entrance for 5% or more of building users, measured at peak periods. Coordinate types and quantities with University's Project Manager:

B. Trash/Recycling/Compost Receptacles: Plaza style receptacles designed to meet the University's commitment for sustainability requirements and project design requirements. Coordinate types, styles and quantities with University's Project Manager.

C. Benches: Plaza style benches selected to meet project design requirements. Coordinate types and styles with University's Project Manager.

D. Mounting: Mounting hardware, fasteners, and anchors for all Site Furnishing items shall be Type 316 stainless steel.

END OF SECTION 12 92 00