

SECTION 12500

SYSTEM FURNITURE AND SEATING

LANL MASTER CONSTRUCTION SPECIFICATION

When editing to suit project, author shall add job-specific requirements and delete only those portions that in no way apply to the activity (e.g., a component that does not apply). To seek a variance from applicable requirements, contact the Engineering Standards Manual (ESM) Architectural POC.

When assembling a specification package, include applicable sections from all Divisions, especially Division 1, General Requirements.

Delete information within "stars" during editing.

Section developed for ML-3 / ML -4 projects. For ML-1 / ML-2, additional requirements and QA reviews are required.

This specification is required for new installations.

This section complies with EPA Comprehensive Procurement Guidelines and 40 CFR 247 on recovered/recoverable materials: The steel used in specified products is largely post-consumer recycled and, when no longer needed by LANL, these materials are almost entirely sold through Excess sales and therefore reused or refurbished.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Modular furniture with furniture components that consist of freestanding panels, work surfaces, tables, desks, lateral file storage, tackboards, marker boards, keyboard trays, seating, pedestal storage, and overhead storage.
- B. The following modular furniture components are allowed to be mounted to wall tracks: tackboards, marker boards, and overhead storage. Other components will require LANL approval.
- C. This specifications excludes the following:
 - 1. Accessories; paper management, coat hooks, map plan holders, mail boxes, and mailbox shelving.
 - 2. Name plates.
 - 3. Audio/Visual furniture
 - 4. Restroom lounge

5. Leather (not allowed)
6. Signage
7. Lockers
8. Wood (not allowed)

1.2 PRODUCT DEFINITIONS

A. Freestanding:

1. Consists of product that can be self-supporting, easily relocated and resides within an office or paneled workstation. System can include:
 - a. Office meeting table
 - b. Right or left hand return worksurface
 - c. Corner or straight computer worksurface
 - d. Chair
 - e. Storage (i.e., filing cabinet, tower, supply cabinet, pedestal)

B. Reception/Lounge Furniture:

1. Upholstered soft seating.
 - a. Two or three person sofa couch.
 - b. Arm chair (single occupant).
2. Occasional table (small).

C. Systems Furniture:

1. Fabric covered wall panels, powered or non-powered with data and voice capability.
2. Panel or wall track supported overhead storage (shelf with flipper door).
3. Hanging drawer(s).
4. Panel or wall track supported tackboard.

5. Panel supported worksurface, straight or corner.
6. Pencil drawer.
7. Transaction counter surface.
8. Task light.

D. Chairs

1. Conference Room Chair
2. Guest Chair
3. Ergonomic Office Chair (Task)

E. Conference Table

1. Monolithic Table (joined or single surface): racetrack, oval, rectangle, round or boat shape, smaller table groupings (ganged together) are acceptable (can be rectangle and may have quarter or half rounds to soften corners).
2. Size drives leg type (drum, C, T, V, or X, straight).
3. Options include cable management and/or grommets.

F. Keyboard/Mouse Tray

1. Ergonomically correct.
2. Non-handed or as specified.
3. Wrist rest for keyboard tray and mouse tray.

G. Storage

1. Consist of any or all of the following:
 - a. Bookcase (2, 3, 4 or 5 adjustable shelves).
 - b. Lateral filing cabinet (2 to 5 drawer with or without slide out flipper shelf).
 - c. Vertical filing cabinet (2 to 5 drawer).

- d. Tower (wardrobe, hutch, shelf/drawer combination) with or without doors.
- e. Supply cabinet (shelving) with or without doors.
- f. Stationary or mobile pedestal, 2 or 3 drawers.

H. Table

- 1. Freestanding
- 2. Fixed or adjustable (seated range or sit to stand range, electric or crank, pin height adjustable or torsion).

Torsion is not preferred for table adjustment.

- 3. Dual surface for computer is preferred.

I. Tasklight

- 1. Under shelf mounted light fixture: high efficiency electronic ballast and closest fit to shelf size.

J. Wall Track

- 1. Strips that are fastened to a wall that ensures secure mounting and structural integrity (i.e., mounting of white marker board, overhead storage shelf with flipper door or tackboard).
- 2. Not to be confused with panel start/end connector strips to/from wall.

1.3 SUBMITTALS

A. Submit the following in accordance with Section 01330, Submittal Procedures:

- 1. Product Data: Manufacturer's product specifications, technical product data, recommendations, finishes, and accessories for each furniture product indicated.
- 2. Test Reports: Test data for panel flammability and acoustic properties.
- 3. Samples of Final Selection: Manufacturer's color samples showing the full range of textures, colors, and patterns available.

4. Anchoring/backer board detail for wall mounted panels and tracks.
5. Furniture Layout: Provide floor plans showing layout with furniture identifications, size and location, and noting all relevant field conditions.
6. Finish Schedule: Provide finish schedule for all areas.
7. Description of options for tables and chairs.

1.4 QUALITY ASSURANCE

A. Comply with the following standards or codes:

1. American National Standards Institute (ANSI) Standards and Business & Institutional Furniture Manufacturer's Association (BIFMA) x5.6 (ASTM) C-423-A, Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
2. American Society for Testing and Materials (ASTM) E84 Standard Method for Testing for Surface Burning Characteristics of Building Materials.
3. American National Standards Institute (ANSI) HFS 100 Standard for Human Factors Engineering of Visual Display Terminal Workstations.
4. National Fire Protection Association (NFPA) NFPA 255, Standard Method of Testing for Surface Burning Characteristics of Building Materials.
5. Public Building Service Documents, PBS-C.2 Procedure III-s, Test Method for the Sufficient Verification of Speech Privacy Potential.
6. Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities (ADAAG).
7. International Building Code (IBC).
8. National Electric Code (NEC).
9. LANL Engineering Standards Manual (ESM).

B. Warranty: Provide a written manufacturer's warranty for all products for a minimum period of 10 years. Exceptions to this warranty period include high wear items such as fabrics, laminates, painted surfaces, veneered surfaces, and pneumatic cylinders, glides, casters, and electrical systems which shall be warranted for a minimum of 5 years. Warranty shall include both parts and labor.

- C. Written guarantee from manufacturer, for the length of the Contract and for a minimum of 5 years following its termination, the availability of components, fabrics, and finishes compatible with any and all product available under the Contract.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. It is intended that all furniture be a standard product of the respective manufacturer.
- B. Additional products introduced after the initial acceptance shall be submitted to LANL for review and approval. The Contract Administrator's Technical Representative will coordinate reviews to determine if it is appropriate to add these items to the list of standard products and/or approved manufacturers.
- C. Available Approved Manufacturers: Upon request, FWO-FP will provide additional contractual product lines. Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include the following unless noted otherwise:
 - 1. Haworth – Places.
 - 2. Herman Miller – Action Office Series 1 and 2.
 - 3. Steelcase – Series 9000.

2.2 SYSTEM FURNITURE

- A. General:
 - 1. All storage units (i.e., flippers, files, pedestals, supply cabinets and storage towers) are required to be lockable.
 - 2. All storage units (i.e., flippers, files, pedestals, supply cabinets and storage towers) within each individual workstation are required to be keyed alike, but no two workstations are to be keyed alike without prior approval by LANL.
- B. Panels
 - 1. Provide panel systems and connectors for the following panel configuration:
 - a. 90 degree corner "L" connection with 2 panels.
 - b. 90 degree "T" connection with 3 panels.

- c. 90 degree "X" connection with 4 panels.
 - d. Variable angles with 2 or 3 panels.
 - e. Structural support panels as necessary.
2. Panel Sizes: Nominal widths (in inches): 12, 18, 24, 30, 36, 42, 48, and 60 (+/- 3). Nominal heights: 30 to 85 inches (+/- 3) as measured from the finished floor to the top of the panel. Nominal thickness: 2 to 3 inches, +/- 1/4 inch. Variations to these dimensions shall require written approval of the Contract Administrator's Technical Representative. Optional 12 to 28 inch stackable panel (fabric or glazed) capable of adding height to a panel where shown on furniture plan.
- a. Refer to furniture plan for panel size and location.
3. Panel Doors: Provide single door 35 or 36 inches wide and 65, 75 (no frame section at head), 80, 82 and 85 inches high with appropriate frame size.
- a. Door finish material: Fabric, laminate face or glazing.
 - b. Glazing: Clear, frosted or tinted tempered glass with optional decorative muntin kits if indicated on furniture plan.
 - c. See Specification 08710 Section, for hardware requirements.
 - d. Refer to furniture plan for direction of door swing, size, finish, glazing and location.
4. Panel Finishes: Fabric-coverings, painted hard surfaces, tempered glazing with optional decorative muntin kits or wainscot kits as indicated on furniture plan schedule.
5. Structural Support: Provide panels that are:
- a. Structurally capable of supporting components on both sides.
 - b. A minimum of 2 integral glides that support the panel and compensate for uneven floors.
 - c. Have glides with a minimum of 1-1/2 inch adjustment without compromising the stability or structural capability of the panel. Provide glides with a capability for a precise alignment of adjacent panels.

- d. Panels capable of supporting hanging components the full height of the panel with a nominal adjustment increment of 1 inch (the hanging slots shall be an integral part of the frame).
 - e. Able to support shelves or flipper door units in a double stack application.
6. Electrical/Communication Raceways: Incorporate integral electrical/communication raceways in the panel that comply with NEC Section 800.25 and EIA/TIA 569-A. Raceway(s) shall be capable of being retrofitted in the field with a NRTL-listed electrical distribution system without requiring any disassembly of the workstation. Provide knockouts for easy access to cable or for vertical management of cables outside of the panel.
- a. Provide a minimum of two ground wires per assembly for the electrical distribution system with independent hot, neutral, and ground wires. In addition, provide a minimum of two additional utility receptacles per panel cluster. Provide a factory-wired whip or pole to ceiling connection for powering a single station with a minimum of 15 ampere circuit. Isolated ground outlets shall be identified with an orange triangle.
 - b. Panel connection hardware shall not reduce the overall capacity of the electrical raceway. Raceway volume at connection points shall be the same as the raceway volume under the panel. Accommodate continuation of electrical distribution across any given panel connection in all directions.
 - c. Electrical and Communication cables are required to be separated from each other even if running in same power pole or raceway per NEC Section 800.25 and EIA/TIA 569-A.
7. Fabric: Provide fabric covered acoustical panels with a minimum NRC rating of not less than 0.65, STC rating of not less than 19 and meets Class A fire rating. The fabric applied to a panel, overhead door (flipper) door, or tackboard will be at minimum mid-grade (Grade B or better).

 NOTE: Provide capacity for four 4-pair UTP cables for each outlet served by the power pole.

- 8. Power Poles: If the building design requires power access from the ceiling, provide a system for ceiling power entry with a height capability of at least 9 feet. Accommodate up to [] 4-pair UTP Category 5 cable(s), including raceway, junction box with cover, ceiling bezel, and plug sub-assembly.

9. Flexibility/Reconfiguration: Provide a panel system with a high level of component interchangeability and reconfiguration flexibility. Provide connector systems that allow for removal of a single panel within a typical workstation configuration requiring disassembly of the workstation or removal/disruption of adjacent panels. Configure panels such that they can be easily replaced or recovered. Accommodate the recovering of panels without removing a panel from a panel run. Provide panels that can accommodate tackable surfaces between the shelving and the worksurfaces.
10. Manufacturer Fabric and Paint/Trim colors:
 - a. Haworth – Fabric: Basketweave, Oyster, F-EC or Basketweave, Natural, F-EA or Taccata, Smokewood – FL-AL, and Paint/Trim – Graphite, TR-00J.
 - b. Herman Miller – Fabric: Crackle, Rabbit, 5R01 or Crackle, Moth, 5R02 or Crackle, Opossum, 5R03 and Paint/Trim – Medium Tone, MT.
 - c. Steelcase (Panels up to and including 68 inches high) – Fabric: Boccie, Rice P300 or Boccie Almond, P301 or Boccie Opal, P304 and Paint/Trim – Slate, 7237
 - d. Steelcase (Panels over 68 inches high) – Fabric: Cordial, Whitelily E400 or Sesame E415 or Marind E416.
 - e. Refer to finish schedule for selected finish.

C. Panel - Mounted Worksurface

1. Provide worksurfaces that are integral components to the panel systems. Provide the capability of worksurfaces to abut end-to-end aligning evenly and producing a smooth continuous worksurface. When installed in this manner, the gap between them, if any, shall not exceed 1/2 inch. Provide corner-type surfaces available in depths and widths compatible with other worksurfaces offered.
2. Sizes: Nominal thickness: 1-1/2 inches (+/-1/4 inch). Nominal depths (in inches): 20, 24, or 30 (+/-2). Nominal widths (in inches): 24, 30, 36, 42, 48, 60 or 72. Worksurface options shall include curvilinear styles.
 - a. Refer to furniture plan for worksurface size and location.
3. Support: Provide heavy gauge metal cantilever brackets, in colors and finishes to match panel trim, in quantities required to support worksurfaces from the vertical uprights of the panels. Provide the capability to lock the worksurface in place without any panel modification. Include other support devices required to complete workstation assembly.

4. Power Accommodation: If required per drawing, accommodate under-surface wire management for power and communication lines. This shall not interfere with the installation of storage pedestals or file cabinets. Grommets in worksurfaces shall be available as an option. Include a UL-listed power distribution system option for freestanding worksurfaces to match-up with wall panel power distribution system.
5. Finishes: Provide high-pressure laminate worksurface tops with underside of each worksurface to have a smoothly finished surface. Provide surface finishes that are not affected by normal office use solvents such as mild acids, alcohol, or salt solutions and are capable of being cleaned using ordinary household cleaners. The worksurface edge that faces the user shall be laminate post formed edge or vinyl T-mold edge, radiused or sloping to provide comfortable interface with user. Provide matte finishes for work surfaces to reduce glare.
6. Manufacturer finish
 - a. Haworth – Laminates: Stone, H-AC or Smoke, H-3E or Beige, H-34.
 - b. Herman Miller – Laminates: Just Tan, JT or Inner Tone, HT or Light Grey, LG.
 - c. Steelcase – Laminates: Mist, 2811 or Dawn, 2810 or Warm White, 2759.
 - d. Refer to finish schedule for selected laminate.

D. Panel or Wall Track - Mounted Tackboards

1. Provide tackboards consisting of a seamless piece of Class A rated fabric stretched over the entire width of the panel.
2. Nominal height (in inches): 5, 11, 12, 16, 24, 34, 48 or 51 (+/- 2). Nominal thickness: 1 inch. Nominal width (in inches): 24, 30, 36, 42, 48, or 60.
 - a. Refer to furniture plan for tackboard size and location.
3. Manufacturer Fabric colors:
 - a. Haworth: Tellure, Lake, 3A-16 or Biscotti, Silver Ash, FN-AN or Biscotti, Opal Gray, FN-AG.
 - b. Herman Miller: Prairie, Purple Coneflower, 6E11 or Prairie, Thicket, 6E07 or Prairie, Tumbleweed, 6E05.

- c. Steelcase: Boccie Plume, P306 or Boccie Spearmint, P308 or Boccie Nutmeg, P302.
- d. Refer to finish schedule for selected fabric.

E. Panel or Wall Track –Mounted Dry Erase Marker boards/Whiteboards

- 1. Provide either magnetic or non-magnetic dry erase marker boards with laminate or porcelain finish.
- 2. Nominal height (in inches): 24, 28, 34, 48, or 54 (+/- 2). Nominal thickness: 1 inch. Nominal width (in inches): 30, 36, 42, 48, or 60.
 - a. Refer to furniture plan for marker board size, finish, and location.
- 3. Frame to match panel trim color.
- 4. Include chalk tray and dry erase maker set.

F. Keyboard Trays

- 1. Provide adjustable low profile keyboard trays with the following feature characteristics: Range: 5 or 6 inches below work surface. Trays shall be a minimum 22 inch width with plastic laminate tops and radius edges. Provide keyboard trays that adjust smoothly and have a tilt range of 15 degrees negative and 10 degrees positive with ADA compliant lever-lock on the arm for ease of adjustment and to lock the keyboard height. Provide an arm track with 360 degree swivel. Provide a mousepad incorporated into the tray on an adjustable, reversible surface for either left or right hand use.

G. Task Lighting

- 1. Provide NRTL-listed task lights surface mounted under the base of shelves. Such lights shall be a standard component of the manufacturer's system furniture products. Provide a structurally sound mounting device for the task lights which will prevent accidental removal, but which can be easily removed and replaced. Fixture diffusers, grilles or other coverings shall be easily removable to permit cleaning and replacing.
- 2. Provide each fixture with energy efficient lamps, with color rendering index of 70 or better, color temperature 3500 degree K, electronic ballasts and an easily accessible on-off switch. Shared ballasts shall not be used. Provide each fixture with a minimum 6 foot factory-installed, heavy-duty electrical cord set with grounded plug.
- 3. Provide each fixture with acrylic lens having a "batwing" distribution pattern.

H. Panel or Wall Track - Mounted Overhead Storage

1. Provide panel mounted steel shelves of 18 gauge steel construction with formed edges to accommodate 3-ring binders. Shelves are to span the full width of the supporting panel. No off-module units. Provide a lip (stop) at the rear of the shelf to protect the wall surface and to prevent papers and other material from falling/slipping behind the shelving unit. Provide shelf support mechanism for the installation of surface mounted track lighting below.
2. Provide single or double-stacked overhead shelves. Nominal depth: 12-1/2 inches. Nominal widths (in inches): 24, 30, 36, 42, 48, or 60.
 - a. Refer to furniture plan for shelf size and location.
3. Provide locking overhead (flipper) door where indicated on drawings. Flipper door finish: fabric, laminate or steel front surface. Doors can be opened and stored on top of the assembled unit.
4. Manufacturer overhead (flipper) door fabric colors:
 - a. Haworth – Fabric: Savoy, Balsam, FJ-AD or Basketweave, Orchid, F-ED or Basketweave, Lavender, F-6Y.
 - b. Herman Miller – Fabric: Prairie, Blue Stem, 6E10 or Prairie, Prairie Dog, 6E04 or Prairie, Thicket, 6E07.
 - c. Steelcase – Fabric: Not available, Paint to match trim color.
 - d. Refer to finish schedule for selected fabric or paint color.

I. Worksurface Units (non-adjustable)

1. Provide freestanding worksurface units capable of being supported by freestanding legs and/or end supports that are independent of panels or of undersurface storage units. Provide the capability of worksurfaces to abut end-to-end aligning evenly and producing a smooth continuous worksurface. When installed in this manner, the gap between them, if any, shall not exceed 1/2 inch. Provide corner-type surfaces available in depths and widths compatible with other worksurfaces offered if required per drawings. Adjustable keyboard support shall be available that does not add to the overall depth of the surface.

2. Sizes: Nominal thickness: 1-1/2 inches (+/-1/4 inch). Nominal depths (in inches): 24 or 30 (+/-2). Nominal widths (in inches): 24, 30, 36, 42, 48, 60 or 72. Provide freestanding worksurfaces in widths that match those of manufacturer's panel mounted worksurfaces. A freestanding worksurface is to be able to replace a panel-mounted worksurface in an existing workstation.
 - a. Refer to furniture plan for worksurface size and location.
3. Finishes: Provide high-pressure laminate worksurface tops with the underside of each worksurface to have a smoothly finished surface. Provide surface finishes that are not affected by normal office use solvents such as mild acids, alcohol, or salt solutions and are capable of being cleaned using ordinary household cleaners. The worksurface edge that faces the user shall be post formed self edge or vinyl T-mold, radiused or sloping to provide comfortable interface with user. Provide matte finishes for work surfaces to reduce glare.
4. Modesty Panel: Provide freestanding worksurface units with a modesty panel. The modesty panel shall allow at a minimum approximately 18 inches of clear space at the floor to allow for cable routing.
5. Power Accommodation: If required per drawings, accommodate under-surface wire management for power and communication lines. This shall not interfere with the installation of storage pedestals or file cabinets. Grommets in worksurfaces shall be available as an option. Include a UL-listed power distribution system option for freestanding worksurfaces.

J. Worksurface Units (Adjustable)

1. Provide adjustable tables that have a minimum adjustment range from 27.5 to 39 inches height of sit to stand range 26 to 32 inches height seated range by means of a front or top mounted mechanical retractable hand crank, torsion or pin adjustment. Provide adjustment mechanisms that allow easy and consistent operation and provide 1 inch adjustment per minimum 5 or 6.5 crank turns for micro adjustability and ease of operation. Provide a range of adjustment to provide sufficient adjustment to meet or exceed ANSI/HFS 100 standards for undersurface clearance. The adjustment lever shall not hinder the full use of worksurface area. Pneumatic adjustment mechanisms are acceptable subject to review by LANL. Accommodate loads up to 150 pounds without hindering the ease of height adjustment.

2. Support adjustable freestanding worksurface units by freestanding legs and/or end supports that are independent of panels or of undersurface storage units. Provide the capability of worksurfaces to abut end-to-end aligning evenly and producing a smooth continuous worksurface. When installed in this manner, the gap between them, if any, shall not exceed 1/2 inch. Provide split/dual corner or straight type surfaces available in depths and widths compatible with other worksurfaces offered.
3. Sizes: Nominal thickness: 1-1/2 inches (+/-1/4 inch). Nominal depths: 24 or 30 (+/-2) inches. Nominal widths (in inches): 30, 36, 42, 48, or 60. Dual surface corner units to be a minimum 24 inches by 42 inches by 42 inches. Provide freestanding worksurfaces in widths that match those of manufacturer's panel mounted worksurfaces.
 - a. Refer to furniture plan for size and location of worksurface, provide split/dual corner units where indicated on plan.
4. Finishes: Provide high-pressure laminate worksurface tops with the underside of each worksurface to have a smoothly finished surface. Provide surface finishes that are not affected by normal office use solvents such as mild acids, alcohol, or salt solutions and are capable of being cleaned using ordinary household cleaners. The worksurface edge that faces the user shall be post formed self edge or vinyl T-mold, radiused or sloping to provide comfortable interface with user. Provide matte finishes for work surfaces to reduce glare.
5. Keyboard: Provide adjustable keyboard surface with full positive/negative tilt angle and independent height adjustment from the adjacent rear surface. Provide keyboard with a tilt range of 15 degrees negative to 10 degrees positive, minimum height adjustment of 4 inches above and 5 inches below rear worksurface, and with ADA compliant lever-lock on the arm for ease of adjustment and to lock the keyboard height.
6. Modesty Panel: Provide freestanding worksurface units with a modesty panel. The modesty panel shall allow at minimum approximately 18 inches of clear space at the floor to allow for cable routing.
7. Power Accommodation: If required, accommodate under-surface wire management for power and communication lines. This shall not interfere with the installation of storage pedestals or file cabinets. Grommets in worksurfaces shall be available as an option. Include a UL-listed power distribution system option for freestanding worksurfaces.

2.3 FREESTANDING FURNITURE

A. General:

1. All storage units (i.e., flippers, files, pedestals, supply cabinets and storage towers) are required to be lockable.
2. All storage units (i.e., flippers, files, pedestals, supply cabinets and storage towers) within each individual workstation are required to be keyed alike, but no two workstations are to be keyed alike without prior approval by LANL.

B. Conference Room Table:

1. [Provide a monolithic table by means of either joined surfaces or single surface in the shape of one of the following: racetrack, oval, rectangle, round, or boat with quarter or half rounds to soften the corners.]

OR

2. [Provide smaller rectangle table groupings (ganged together) with optional quarter or half rounds to soften the corners.]
3. Provide tops that are finished in high-pressure laminate with the underside of each top to have a smoothly finished surface. Provide surface finishes that are not affected by normal office use solvents such as mild acids, alcohol, or salt solutions and are capable of being cleaned using ordinary household cleaners. Edge the top with a 1/2 inch radius or slope to provide comfortable interface with user.

Note: Size determines base type for tables.

4. Provide either drum, C, T, V, X, or straight leg type base for table. Base will be selected by LANL from options list.
5. Cable Accommodation: If required per drawings, provide under-surface wire management for power and communications lines. This shall not interfere with individuals seated at the table. Include a UL-listed power distribution system as an option.
6. If required, provide grommets at table for teleconferencing or power. Location to be specified by LANL.

7. Refer to furniture plan for size and location.

C. Storage

1. Lateral Files or Vertical Files

- a. Provide counter weight balance.
- b. Provide front to back and side to side rails for lateral files.
- c. Vertical files to be letter or legal size per drawing.
- d. Provide 2, 3, 4, or 5 drawers high, 5-high file has top drawer as a flip-top with pull out shelf.
- e. Provide adjustable leveling glides.
- f. Refer to furniture plan for size and location.

2. Storage/Supply Cabinet

- a. Provide a cabinet equal in height to 2, 3, 4, or 5-high file cabinets to match overall furniture plan, minimum 30 or 36 inches wide.
- b. Interior configuration can be for shelving, wardrobe or a combination of wardrobe and shelving.
- c. Provide adjustable leveling glides.
- d. Refer to furniture plan for size and location.

3. Tower Storage Cabinet

- a. Provide cabinet equal in height to 2, 3, 4, or 5-high file cabinets to match overall furniture plan, minimum width 23 inches.
- b. Provide cabinet with or without doors, interior configuration with shelving, wardrobe, drawers, or combination.
- c. Provide adjustable leveling glides.
- d. Refer to furniture plan for door(s) requirement, size, and location.

4. Bookcase

- a. Provide open shelf bookcase equal in height to 2, 3, 4, or 5 file cabinet, minimum of 30 or 36 inches wide.
- b. Provide vertically adjustable shelves in minimum increments of 1-1/4 inches.
- c. Provide adjustable leveling glides.

5. Pedestal Drawer

- a. Provide mobile, stationary, or suspended drawer unit.
- b. Unit shall have 1, 2 or 3 drawers, 15 inches wide and 20, 24, or 30 inches deep with drawer configuration of Box/File, Box/Box/File, Pencil/Box/File, or File/File.
- c. Refer to furniture plan for size, location and drawer configuration.

2.4 SEATING

A. ERGONOMIC OFFICE CHAIR (Task)

1. Provide ergonomic chairs with the following features/characteristics:
 - a. Adjustable back height and tilt angle.
 - b. Lumbar support.
 - c. Adjustable seat pan depth or waterfall edge.
 - d. Pneumatic seat height adjustment.
 - e. Five star base with casters for varying floor coverings.
 - f. Arms removed or installed in the field without any additional modification to the chair.
2. Provide finishes and fabrics compatible to those offered in the systems line.
3. Provide chairs with pneumatically adjustable seat height in a minimum range of 16 inches to 20.5 inches. Provide adjustment lever that is easily accessible from a seated position.

4. Provide seat pan tilt adjustment that is adjustable a minimum of 5 degrees forward and 10 degrees backwards and that locks at any angle within this range. Provide adjustment lever that is easily accessible from a seated position.
5. Comply with ANSI/HFS 100 Standard for angle between the seat back and seat pan adjustability of integral movement with the seat pan. If the back is adjusted, it shall lock in conformance with the above Standard.
6. Accommodate up and down adjustment of the seat back independent of the seat pan. Provide adjustment lever that is easily accessible from a seated position.
7. Chairs shall be available with electrostatic dissipative (ESD) options.
8. Provide chairs that comfortably and safely support and accommodate individuals varying from 80 pounds to 400 pounds.
9. Approved product lines: colors will be selected by LANL from manufacturer's standard colors.
 - a. ErgoGenesis (previously Bodybuilt)
 - b. HAG
 - c. Haworth: Improv or X-99
 - d. Herman Miller: Aeron, Equa, Eames, Ergon, or Mirra
 - e. Izzy Design (previously Superior)
 - f. Neutral Posture
 - g. RFM
 - h. Steelcase: Leap

B. Conference Room Chairs

1. [Provide fabric covered fixed stackable chairs either legged or sled based with rigid back. Provide chairs that comfortably and safely support and accommodate individuals varying from 80 pounds to 400 pounds.]

OR

2. [Provide ergonomic chairs with adjustable back height and tilt angle and pneumatic height adjustment. Provide a 5 star base with casters for varying floor coverings. Provide ergonomic chairs with lumbar support.]
3. Approved product lines: colors will be selected by LANL from manufacturer's standard colors.
 - a. Global.
 - b. Haworth: Improv or X-99.
 - c. Herman Miller: Eames or Equa.
 - d. Paoli Furniture.
 - e. Steelcase: Criterion – Model 453, Protégé – Model 433 or Sensor – Model 458.

C. Guest chair

1. Provide fabric covered fixed stackable seating with rigid back. Provide chairs that comfortably and safely support and accommodate individuals varying from 80 pounds to 400 pounds.
2. Provide chair with either legged base or sled base (can be stackable), and with or without arms.
3. Approved product lines: colors will be selected by LANL from manufacturer's standard colors.
 - a. Haworth: Improv or X-99.
 - b. Herman Miller: Aside.
 - c. Steelcase: Ally – Model 463, Parade – Model 470, Player – Model 475 or Protégé – Model 433.

D. Lounge furniture

1. Sofa (3-seat): Provide a fully upholstered approximately 60 to 70 inches wide by 22 to 32 inches deep and seat height of 15 to 19 inches high. Fabric will be selected by LANL from manufacturer's standard selection.
2. Settee (2-seat): Provide a fully upholstered approximately 50 to 60 inches wide by 22 to 32 inches deep and seat height of 15 to 19 inches high. Fabric will be selected by LANL from manufacturer's standard selection.

3. Chair: Provide a fully upholstered approximately 25 to 32 inches wide by 22 to 32 inches deep and seat height of 15 to 19 inches high. Fabric will be selected by LANL from manufacturer's standard selection.
4. Table (small): Provide approximately 24 inches wide by 24 inches deep by 20 inches high pressure laminate, wood grain laminate or top inset table. Refer to furniture plan for location.
5. Approved product lines: table material and finish will be selected by LANL from manufacturer's standard selection.
 - a. Brayton.
 - b. Haworth: Improv.
 - c. Kinetics.
 - d. Paoli Furniture.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Prior to any installation, the appropriate Facility Manager or designee must be contacted to ensure all LANL safety, security, site-specific requirements, and Federal, State, and local codes are addressed and adhered to.
- B. Carefully inspect the room to receive furniture and verify that scheduled trades have completed their work.
- C. Secure panels to walls per manufacturer's recommendations where required.
- D. Field drill grommets at direction of LANL. Finish with a pre-molded grommet sleeve.

3.2 FIELD QUALITY CONTROL

- A. Install electrical components and connection in accordance with the NEC.
- B. Install telecommunication components and connection in accordance with the NEC and EIA/TIA 569-A. Coordinate installation of telecommunication outlets and cables with the LANL Telecommunication Group.
- C. Make installation in accordance with manufacturer's installation instruction; have installation instruction available at the job site.

- D. Perform electrical work using qualified electrical workers.
- E. Test each receptacle for proper connection, polarity, voltage drop and grounding using a tester acceptable to the Electrical AHJ.
- F. Completed installation will be inspected and spot tested by the Electrical AHJ.
- G. Provide full as-built record documents (i.e., plans, layouts, outlet location and circuits, connection to building power and telecommunication system) and manufacturer's O&M instructions to the Facility Manager or Project Leader.
- H. Provide all appropriate operational instructions / material at the site upon completion.
- I. Remove all packaging materials and leave area clean and free of debris.
- J. Wipe clean all installations. Note any damage incurred during installation to LANL.

END OF SECTION

Do not delete the following reference information:

FOR LANL USE ONLY

This project specification is based on LANL Master Construction Specification Rev. 0, dated 12/05/03.