SECTION 12300 – ADAPTABLE LABORATORY FURNITURE SYSTEM

PART 1 – GENERAL

1.1 DESCRIPTION

A Furnish and install all Lab Crafters Dimension adaptable laboratory furniture systems as specified herein complete and ready for intended use.

1.2 REFERENCES

A Scientific Equipment and Furniture Association, SEFA 8-M-2010 Laboratory Grade Metal Casework

B Scientific Equipment and Furniture Association, SEFA 2-2010 Installation of Scientific Laboratory Furniture and Equipment

C Underwriters Laboratories, UL 962 Household and Commercial Furnishings, Third Edition, 2008

1.3 SUBMITTALS

A Product Data: Submit complete catalogue data, including a chart of manufacturer's standard finishes for all materials, equipment and products for work in this section.

B Shop Drawings: Submit complete shop fabrication and installation drawings, including plans, elevations, sections, details, and schedules. Show relationship to adjoining materials and construction. Shop drawings shall not exceed 11 inches x 17 inches in size.

1.4 PRODUCT HANDLING

A Protection: Take necessary precautions to protect the work of this section before, during and after installation.

B Coordination: Coordinate delivery and installation of laboratory casework with that of the fume hoods, plumbing, and electrical work.

C Project Conditions: Delivery shall take place when site conditions meet the guidelines outlined in SEFA 2-2010 Installation of Scientific Laboratory Furniture and Equipment, or most current published edition.

1.5 QUALITY ASSURANCE

A Contractor for work in this section shall have an established organization and production facilities including all tools, equipment, and special machinery necessary for specializing in the fabrication and installation of the type of products specified with skilled personnel, factory trained workmen and an experienced engineering department. Each shall have the demonstrated knowledge, ability, and proven capability to produce the specified equipment of the required quality and the proven capacity to complete an installation of the size and scope of this project within the required time limits. A minimum of 10 years experience in the manufacture of laboratory casework is required. Contractor must manufacture and assemble all products in a factory located in the United States of America.

B Product Standard (General): Comply with SEFA 8M-2010, Laboratory Grade Metal Casework, or most current published edition.

C Product Standard (General): The furniture system must be manufactured in compliance with UL 962 and the bench must be shipped from the manufacturer with the UL 962 LISTED label affixed to the bench system complete and ready for use, with all plumbing services factory installed and pre-plumbed and all electrical services factory installed and pre-wired. Wiring and plumbing within the furniture system that is performed in the field is not acceptable as it is not covered by the UL Listing.

PART 2 – PRODUCTS

2.1 DIMENSION ADAPTABLE LABORATORY FURNITURE SYSTEM

A Manufacturers: Subject to compliance with specified requirements, provide products by one of the following:

1 Lab Crafters, Inc. (www.lab-crafters.com)
Ronkonkoma, NY
Phone: 631.471.7755
Email: info@lab-crafters.com

2 Owner/Architect Approved Equal

B Materials:

1 All materials shall be of the highest quality and appropriate for intended use.

C Construction Features:

1 All Dimension adaptable laboratory benches shall be of modern design and constructed in accordance with the highest standards and practices in the metal casework industry.

2 All Dimension adaptable laboratory benches shall be a modular dimensioned system and shall be comprised of Work Surface Support Frames adjustable from 30" to 36" AFF, and a Rear Frame Support Structure, single or double sided, incorporating a vertical post and horizontal support. The vertical supports shall incorporate individual slots for adjustable shelving and accessories. The vertical support shall incorporate a chase for plumbing and wiring of services.

3 All Dimension adaptable laboratory benches shall be modular units suitable for wall, peninsula, or island configurations.

4 Adjustable height shall be 30" to 36" AFF including 1" work surface.

5 Front leg members shall be 12-gauge outer steel tubes, 2" outside diameter and 14 gauge 1.75" diameter inner telescoping stainless steel leg capable of vertical adjustment in 1" increments.

6 Legs shall include non-marring, 3/8" diameter, levelers.

7 Load rating shall be 100 lbs per linear foot of length to a maximum of 800lbs. With uniformly distributed load, the maximum allowable deflection shall be 0.125" measured at the center of the front rail.

D Double-sided Rear Frame Support Structure:

1 The rear frame support structure shall be 84" in height and available in nominal lengths of 48", 60", 72", and 96".

2 Rear frame support structures shall consist of two (2) 2" x 6" vertical members, with horizontal framing members.
3 The vertical members shall be able to accommodate up to three services each and a duplex electrical receptacle or data outlet and shall include removable closure panels for access to service wiring, piping, and fittings.
4 Each vertical member shall include two (2) non-marring, 3/8" diameter, levelers.
5 All rear frame support structures in widths of 60" wide and over shall have a center support to accommodate split shelving.
6 The vertical members shall have shelf/accessory slots punched on 1" increments on the front and back starting at 55" above AFF to top of upright.
7 Rear frame support structures shall incorporate upper and intermediate and lower horizontal cross rails. The upper cross rail shall provide a utility trough the full length of the table. The intermediate cross rail shall support an integral raceway with removable access panel. The raceway may be specified with electrical and data services as required. The lower horizontal chase shall be located at 36" AFF including a 1" thick work surface to match the specified countertops. The lower horizontal chase may be specified to include electrical and data services as required.

E Single-sided Rear Frame Support Structure:
1 The rear frame support structure shall be 84" in height and available in nominal lengths of 48", 60", 72", and 96".
2 Rear frame support structures shall consist of two (2) 2" x 3" vertical members, with horizontal framing members.
3 The vertical members shall be able to accommodate up to three services each and a duplex electrical receptacle or data outlet and shall include removable closure panels for access to service wiring, piping, and fittings.
4 Each vertical member shall include one (1) non-marring, 3/8" diameter, levelers.
5 All rear frame support structures in widths of 60" wide and over shall have a center support to accommodate split shelving.
6 The vertical members shall have shelf/accessory slots punched on 1" increments on the front and back starting at 55" above AFF to top of upright.
7 Rear frame support structures shall incorporate upper and intermediate horizontal cross rails. The upper cross rail shall provide a utility trough the full length of the table. The intermediate cross rail shall support an integral two channel raceway with removable access panel. The raceway may be specified with electrical and data services as required.

F Dimension Four Leg Adjustable Table
1 The Dimension four leg table shall consist of a worksurface support frame with four legs. Nominal lengths are 48", 60", 72" and 96". Four leg members shall be welded to the corners of the work surface support frame to provide a four-leg self-supporting table frame., adjustable in height from 30" to 36" AFF including 1" work surface.
2 Front and rear leg members shall be 12-gauge outer steel tubes, 1.75" outside diameter and 14 gauge 1.5" diameter inner telescoping stainless steel leg capable of vertical adjustment in 1" increments.
3 Legs shall include non-marring, 3/8" diameter, levelers.

4 Load rating shall be 100lbs per linear foot of length to a maximum of 800lbs. With uniformly distributed load, the maximum allowable deflection shall be 0.125" measured at the front center rail.

G Dimension adaptable laboratory benches Metal Gauges

The following table lists the metal gauges of Dimension components.

1 18 Ga. Cold Rolled Steel - shelves
2 16 Ga. Cold Rolled Steel – Uprights and center mullions
3 14 Ga. Cold Rolled Steel – Horizontal support rail
4 12 Ga. Cold Rolled Steel – Shelf Brackets
5 12 Ga. Cold Rolled Steel – Countertop support frame

H Work Surfaces:

1 Epoxy Resin: Molded epoxy resin tops shall be molded from a modified epoxy resin that has been especially compounded and cured to provide the optimum physical and chemical resistance properties required of a heavy-duty laboratory tabletop. Tops and curbs shall be a uniform mixture throughout their full thickness and shall not depend upon a surface coating that is readily removed by chemical and/or physical abuse. Tops and curbs shall be non-glaring, Architect to specify color from manufacturer's standard offering. Tabletops shall be 1" thick, with drip grooves provided on the underside at all exposed edges.

I Adjustable Shelves

1 Adjustable Shelves for Dimension tables shall be supported by 12-gauge brackets which mount to the slots in the rear frame support structure. They shall be adjustable in height on 1" increments.
2 Shelves shall be available in depths of 9", 12", and 15" and nominal lengths of 30", 36", and 48" to match the slots on the rear frame support structure.
3 Shelf Materials
4 Steel shelves shall be 1" thick with return bends on all sides. They shall attach to the shelf brackets with screws.
5 Optional: Bottom shelf shall feature integral LED task light. The on/off switch and occupancy sensor (if required) shall be located within the center horizontal raceway. Task light shall be mounted flush within steel shelves or surface mounted on wood shelves. LED transformer shall be housed within the Bench raceway and LED shall connect to bench via a dedicated plug into the raceway. The LED plug shall not utilize one of the outlets shown on the drawings.

J Casework:

The Dimension adaptable bench system shall integrate with floor mounted, mobile, and/or suspended styles of casework. See specification section xxxx and drawings for casework information.

K Plumbing Fixtures

1 See Plumbing Service Fixture specification xxxx for details on fixture type and finish.
2 See Drawings for plumbing service configuration per bench.
3 Dimension Bench shall allow for up to 3 plumbing service fixtures to be installed on each upright member.

4 Internal plumbing lines shall be appropriate material for media traveling through them. Black iron or stainless steel must be used for burning gasses.
5 Flexible tubing by Legris, Parkflex, Nycoil or approved equal may be used for vacuum and inert gas services. The flexible tubing must have a minimum diameter of 0.375" and a durometer of 95A or better. The flexible hose connects directly to the valve shank within the upright chase. Bending or kinking the flexible hose is unacceptable.
6 Plumbing lines must terminate with a quick disconnect at the top of the hose. The quick disconnect must be color coded and keyed differently for different services.

L Electrical Services
1 See Drawings for electrical/data service configuration per bench.
2 Dimension bench shall have an integral wire raceway with factory installed and pre-wired devices.
3 The top of the raceway shall be located 55" A.F.F.
4 Raceway shall be wired to 20A twist lock connection plug at the top of the upright.

M Dimension adaptable laboratory table finishes.
1 Performance Requirements: Cabinets' chemical resistance shall be "Laboratory Grade" as defined by SEFA 8M.

PART 3 – EXECUTION

3.01 INSTALLATION

1. Preparation: Prior to beginning installation of casework, check and verify that no irregularities exist that would affect quality of execution of work specified.
2. Coordination:
   Coordinate the work of the Section with the schedule and other requirements of other work being prepared in the area at the same time regarding both mechanical and electrical connections to and in the fume hoods and the general construction work.
3. Casework installation:
   a. Set casework components plumb, square, and straight with no distortion and securely anchored to building structure. Shim as required using concealed shims.
4. Work surface installation:
   a. Secure work surfaces to countertop support frame with material and procedures recommended by the manufacturer.
5. Accessory installation: Install accessories and fittings in accordance with manufacturer's recommendations. Turn screws to seat flat; do not drive.
6. Plumbing fixtures and fittings: Plumbing fittings that are integral to the Dimension adaptable furniture system are to be provided factory installed and pre-plumbed. The UL 962 Listing must cover the factory plumbing.
7. Electrical fixtures and fittings: Electrical fittings that are integral to the Dimension adaptable furniture system are to be provided factory installed and pre-wired. The UL 962 Listing must cover the factory wiring.

3.02 ADJUSTING

A. Repair or remove and replace defective work, as directed by Architect upon completion of installation.

B. Adjust doors, drawers, hardware, fixtures and other moving or operating parts to function smoothly.

3.03 CLEANING

A. Clean shop finished casework, touch up as required.

3.04 PROTECTION OF FINISHED WORK

A. Provide all necessary protective measures to prevent exposure of casework and equipment from exposure to other construction activity.

END OF SECTION