

**AGILITY ADAPTABLE FURNITURE SYSTEM****PART 1 – GENERAL****1.00 SUMMARY**

A. Section Includes: Agility Adaptable Furniture System

B. Section Includes:

1. Utility Tables. T and TD styles.
2. Heavy Duty Welded Tables
3. Adjustable Height Tables.
4. C-Frame Single Tables
5. C-Frame Double Island Tables
6. Add-a-Bench - C-Frame Table System
7. Agility - *Plus* - C-Frame Single and Double Island Tables
8. Mobile Cart Workstations
9. Suspended Cabinets
10. Mobile Cabinets
11. Table Accessories

C. Related Sections:

1. Division 9 - Resilient base molding at walls and casework.
2. Division 11 Section - 11600 Laboratory Fume Hoods
3. Division 12 Section - 12345 Steel Laboratory Casework
4. Division 15 - Plumbing utilities final connections to casework and fume hoods.
5. Division 15 - Mechanical, HVAC ductwork, equipment, final connections to fume hoods.
6. Division 16 - Electrical utilities and final connection to casework and fume hoods.

**1.01 ALTERNATE PROPOSALS**

Proposals are invited from alternant manufacturers only if they comply with the minimum design requirements and the minimum performance requirements. A notarized letter stating full compliance must be included in alternant proposals signed by an officer of the manufacturer to ensure compliance.

**1.02 SUBMITTALS**

A. Submit shop drawings for laboratory furniture showing plan views, elevations, cross

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sections (where necessary), 3-D renderings, pipe spaces, countertops with locations of sinks and service fixtures and all pertinent details to ensure a complete assembly. Include layout of units with relation to surrounding walls, doors, windows and other building components.

- B. Coordinate shop drawings with other work involved.
- C. Submit manufacture's product data and installation instruction.
- D. Submit physical samples and/or color cards of available finishes including top material for selection by Architect and Owner.
- E. Include independent laboratory certification stating that applied finish complies with specified chemical and physical resistance requirements.

**1.03 GUARANTEES**

- A. Hanson Lab Furniture Inc. guarantees all materials and workmanship of equipment provided for a period of one year (1) from date final acceptance. Any defects due to the use of improper materials or workmanship (normal wear and tear, abuse or misuse excepted) occurring within that time frame shall be promptly rectified upon notification by the Owner or Architect.

**1.04 PRODUCT HANDLING**

- A. Ship all units packaged in protective cartons and labeled for location within the project site.
- B. Store all materials in a dry ventilated place, protected from the weather, until ready for installation.
- C. Protect finished surfaces from soiling and damage during handling and installation. Keep covered with polyethylene film or other protective covering.

**1.05 QUALITY ASSURANCE**

- A. Single source responsibility: Steel laboratory casework, fume hoods, work surfaces, and other equipment and accessories shall be manufactured or furnished by a single furniture company.
- B. Manufacturer's qualifications: Modern plant with proper tools, dies, fixtures and skilled employees to produce high quality casework and equipment, and shall meet

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the following minimum requirements:

1. Five years or more experience in manufacture of casework and equipment of type specified.
2. Ten installations of equal or larger size and requirements.

**PART 2 – PRODUCTS****2.01 MANUFACTURER**

Design, materials, construction and finish of casework specified are the minimum acceptable standard of quality for inset steel laboratory casework.

Laboratory Furniture Manufacturer:

Hanson Lab Furniture, Inc.  
814 Mitchell Road, Newbury Park, CA 91320  
805-498-3121

**2.02 CASEWORK MATERIALS**

- A. All steel used to be high quality cold rolled mild steel, free of scales, buckles, or other defects. Conforming to ASTM Specification No. A36672
- B. Casework shall be manufactured in accordance with the latest edition of SEFA “Metal Laboratory Furniture” and other applicable standards.

**2.03 GENERAL CONSTRUCTION**

- A. General requirements for Agility tables:
  1. Nominal Table Frame dimensions:
    - a. Width: 34”, 46”, 58”, 70”.
    - b. Depth: 22”, 28”.
    - c. Height: 30”, 36”
  2. All steel used to be high quality cold rolled mild steel.
  3. Finish: Electrostatically applied chemical resistant powder coat finish, in manufacturers standard color selections.
  4. Leveling Glides: Heavy duty, 3/8” x 16 thread stem with chrome plated with nylon base, typical for all Agility table and Agility table frame systems.
  5. Leveling glide inserts in table legs shall be 3/8” x 16 threaded inserts. Inserts

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shall include a minimum of 1.5" (24 threads) of engagement and be secured to inner table leg in such a manner to increase stability of table system and to minimize table movement when used with automated laboratory equipment. Elongated engagement is required to be suitable for use with the optional 3/8" threaded stem castor. Mobile table stem castors can be subject to considerable lateral forces when in use, simple weld nuts or inserts are not acceptable.

6. All table and bench systems with above the countertop shelving systems will have a minimum of 1" clearance between back to back shelving or back of shelf to wall clearance for vertical integration of laboratory equipment cables cords and scientific equipment utility and supply lines.
7. Table accessories, suspended cabinets, shelving, to be compatible with other Agility table styles except utility tables.
8. All table and bench systems are designed to accommodate suspended cabinets, easily movable to any position inside the table legs without removing, or loosening any fasteners, or using hand tools.
9. End caps: ABS plastic, Color: Black

## B. Agility Table Types

1. Utility Tables: T, TD.
  - a. Apron and drawer housings shall be fabricated from 16 gauge steel. Housings consist of front and rear rails, 5" high formed into "C" channel with a 1" return, top and bottom. Channels to be spot welded to rails. 16 gage corner gussets welded to each corner to allow for insertion of legs. H-leg supports to be 16 gage all welded construction and have a lower horizontal brace. All legs to have bottom leveling bolts for height adjustment and include vinyl leg shoes. Tables 58" and longer to have a horizontal cross brace between the two H-legs. TD style tables to have pencil type drawers set into the apron. Drawers to operate with full extension drawer slides for smooth operation.
2. Heavy Duty Welded Tables – HDW, HDWU.
  - a. HDW Heavy Duty Welded.  
HDWU Heavy Duty Welded with Rear Upright Posts.
  - b. Construction: 11 gage steel, 2" x 2" side and back rails and legs, fully assembled and welded. Front rail to be 1"x2" to accommodate an optional suspended cabinet kit. Lower side and rear cross braces to be welded between legs. Legs to have leveling glides and vinyl leg shoes. Tables can

accommodate suspended cabinets, movable to any position inside the table legs without removing, or loosening any fasteners, or using hand tools. HDWU tables with rear double slotted uprights 78" high, can accommodate brackets, shelves and other table accessories. Brackets and shelving can be added, adjustable in height or removable without the use of tools. Legs to have adjustable height steel leveling glides with a 1-5/8" dia. nylon base.

### 3. Adjustable Height Tables – AHT, AHTU

#### a. AHT Adjustable Height Tables

AHTU Adjustable Height Tables with Rear Upright Posts.

#### b. Construction: 11 gage steel, 2" x 2" legs with welded 1"x2" front rail.

Front rail to accommodate an suspended cabinet kit.

8" high rear apron to be welded between right and left legs. 8" high side aprons are bolted into the front and rear legs with 2 each 1/4" - 20 hex bolts secured thru insert nuts on each leg. Aprons screwed to legs are not permitted. Bottom steel insert legs provide adjustment of counter height from 28" to 42" high. Legs to be infinitely adjustable within this range so as to minimize the extension of leveling leg and maximize the stability of the table system.

Tables can accommodate suspended cabinets, movable to any position inside the table legs without removing, or loosening any fasteners, or using hand tools. AHTU tables with rear double slotted uprights 78" high, to accommodate brackets, shelves and other table accessories. Brackets and shelving can be added, adjustable in height or removable without the use of tools. Legs to have adjustable height steel leveling glides with a 3-5/8" dia. nylon base.

### 4. C-Frame Single Tables – CFT, CFTU

#### a. CFT C-Frame Tables

CFTU C-Frame Tables with Rear Upright Posts.

#### b. Construction: 11 gage 2" x 2" horizontal side rails and back legs with 2" x 3" high front horizontal legs. Side rails are fully welded to back legs. A 1"x2" front rail to accommodate a optional suspended cabinet kit. 8" high top and bottom rear aprons to be secured to C-Frame legs.

Tables can accommodate suspended cabinets, movable to any position inside the table legs without removing, or loosening any fasteners, or using hand tools. CFTU tables with rear double slotted uprights 2"x3"x78" high,

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can accommodate brackets, shelves and other table accessories. Brackets and shelving can be added, adjustable in height or removable without the use of tools. Legs to have adjustable height steel leveling glides with a 1-5/8 dia. nylon base.

## 5. C-Frame Double Island Tables – CFT-D, CFTU-D

## a. CFT-D C-Frame Double Island Tables

CFTU-D C-Frame Double Island Tables with Center Upright posts.

- b. Construction: 11 gage 2" x 2" horizontal side rails and back legs with 2"x 3" high front horizontal legs. Side rails are fully welded to three vertical center leg uprights. A 1"x2" front rail to accommodate a optional suspended cabinet kit. 8" high top and bottom rear aprons to be secured to the center leg uprights.

Tables can accommodate suspended cabinets on each side of the tables, movable to any position inside the table legs without removing, or loosening any fasteners, or using hand tools. CFTU tables with rear double slotted uprights 2"x3"x78" high, and can accommodate brackets, shelves and other table accessories on each side of the tables. Brackets and shelving can be added, adjustable in height or removable without the use of tools. Legs to have adjustable height steel leveling glides with a 1-5/8" dia. nylon base.

## 6. Add-a-Bench – C-Frame Table System

## a. CFT C-Frame Single Tables

CFTU C-Frame Single Tables with Rear Upright Posts.

CFT-D C-Frame Double Island Tables

CFTU-D C-Frame Double Island Tables with Center Upright Posts.

- b. Construction: Same construction and specifications details as # 4 and 5 above. Design basics allow workstations of the same or different widths to attach side by side, using common C-Frame end leg structures to create continuous workstations.

7. Agility - *Plus* - C-Frame Single and Double Island Tables.

## a. CFTU C-Frame Single Tables with Rear Upright Posts.

CFTU-D C-Frame Double Island Tables with Center Upright Posts.

- b. Construction: Tables to be manufactured using the same construction and specifications details as # 4 and 5 above, except Upright Posts to be 2"x5"x78" high to accommodate internal factory electrical and data wiring

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and factory internal piping for service fixtures specified

- c. *Agility – Plus* systems to be available in the Add-a-Bench system. Design basics allow workstations of the same or different widths to attach side by side, using common C-Frame end leg structures to create continuous workstations.

## 8. Mobile Cart Workstations

- a. MCW Lower Mobile Cart Workstation  
MCWU Full Height Mobile Cart Workstation with Rear Upright Posts.
- b. Construction: 11 gage 2-3/4" x 2-3/4" high front lower horizontal legs. 10" high rear aprons to be secured to 2"x3"d upright posts. A 1"x2" front an MCW tables to have 2"x3"x36" high rear double slotted upright posts. MCWU tables to have 2"x3"x78" high rear double slotted upright posts. 78" high rear upright posts can also accommodate brackets, shelves and other table accessories. Brackets and shelving can be added, adjustable in height or removable without the use of tools. Heavy duty lockable casters are attached to front horizontal legs.  
Both tables to accommodate a CTF counter top support frame.  
CTF – Counter top support frames to be available in 22-3/4" deep for a 30" deep counter top or a 28-3/4" deep for a 36" deep counter top.  
CTF frames to be adjustable in height without the use of hand tools.  
CTF frames to have 1"x2" front and back front and rear rails with a suspended cabinet kit for hanging underhung cabinets. suspended cabinets, easily movable to any position inside the table legs without removing, or loosening any fasteners, or the use of hand tools.

## 9. Suspended Underhung Cabinets

- a. Cabinet Construction: Suspended cabinets to be manufactured according to construction and hardware details outlined in HLF specification 12345 Steel Laboratory Casework and also have the following requirements:
- b. Suspended cabinets to be 24-3/4" high x 22" deep with the following widths: 15", 18-1/8", 24-1/8", 30" 35" and 42" wide.
- c. Suspended cabinets to have a fully finished flat panel, welded to the back of each cabinet.
- d. Each suspended cabinet to include a set of 11 gage, painted cabinet suspension bars used to hang cabinets onto the front and rear table rails so cabinets can easily be repositioned by sliding cabinets left or right as

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needed.

- e. Suspended cabinets fixed onto tables with screws, bolts or other hardware that needs to be removed or loosened before cabinets can be repositioned are not acceptable.

#### 10. Mobile Cabinets

- a. Cabinet Construction: Mobile cabinets to be manufactured according to construction and hardware details outlined in the HLF specification 12345 Steel Laboratory Casework and also have the following requirements:
- b. Mobile cabinets to be 22" deep manufactured in the following widths: 15", 18-1/8", 24-1/8", 30", 35", 42", and 47" wide. Mobile cabinets to be provided in both low and medium heights per customer requirements.
- c. Mobile cabinets to have painted steel flat back panels, and a painted steel top welded to the back and top of each cabinet. Optional counter tops in alternate materials are also available.
- d. Each mobile cabinet to have 4 each 220 lb. capacity heavy duty casters with grey non-marking wheels. The front two casters to be swivel type with a locking break.

#### 11. Table Accessories:

- a. Bottom Shelves.

Shelves shall be constructed of 18 gage painted steel, turned down and back to form a 1" high 4 sided shelf. A full length hat channel shall be welded under each shelf and include a 2"x2" center cross brace for added support.

- b. Top Adjustable Shelves.

Shelves shall be constructed of 18 gage painted steel, turned down and back to form a 1" high, 4 sided shelf with a front 1-1/2 inch front lip and a 1/2 rear lip.

Shelves and shelving brackets are constructed in such a manner to allow inward or outward adjustment of shelf by user groups to allow additional space between rear opposing shelves to increase vertical integration as needed.

Top Adjustable Shelving may include optional material including Laminates or Phenolic materials. Additional epoxy powder coated 16 gage front and 14 gage rear stiffener rails shall be supplied to minimize shelving deflection.



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c. Bookend Shelf Brackets.

Shelf brackets shall attach to Agility Tables with Rear Upright Posts and be adjustable in 1" increments. Brackets to be offset style, 7" high manufactured in 11 gage steel painted to match the shelves.

### 12. Specialty Finishes

- a. Utility Chases, per project finishes schedule, shall be capable of accommodating a wide range of finishes including 3Form, or other composite materials as specified. Chases shall be constricted out of formed metal side channels in stainless steel or epoxy powder coated finishes. Side channels shall include integral threads for front and rear closure panels and integral supports for equipment to be mounted to face of chase.
- b. Top adjustable Shelves, per project finishes schedule, shall be capable of accommodating a wide range of finishes including 3Form, or other composite materials as specified. Shelving materials, listed in section 11b, shall be capable of accommodating these materials at front of shelf lip for material retention without visible means of connection. Connections utilizing visible screws and fasteners are not acceptable.

### 13. Standard MEP Utility Distribution

- a. Standard field installation of utilities, including electrical will be field distributed by appropriate trades and shall terminate in the Agility utility box to be located per plan, upright posts shall incorporate mounting positions for unistrut connections by trades.
- b. The utility box shall be constructed such that the utility box and removable face plate may be prewired and pre plumed by the in the field prior to Installation of countertop appropriate trades to prevent field MEP countertop damage.
- c. Utility boxes shall be capable of supporting standard, emergency and UPS power.
- d. Utility boxes shall be capable of supporting up to 3 standard lab gasses.

### 14. Agility Plus MEP Distribution

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- a. Standard field installation of utilities, including electrical, data and standard lab gases will be field distributed by appropriate trades and shall terminate at the Agility ceiling service panel. Ceiling panels will be supplied in advance of systems furniture installation and are designed to be pre-installed and final connections completed by appropriate trades prior to systems furniture installation.
- b. Agility upright post shall be factory prewired and pre plumed with wiring, plumbing and data connections clearly identified for ease of connection by appropriate trades. Electrical, data and lab gas utilities shall be separated, shielded and isolated in the upright post to prevent electrical interference with the data signal.
- c. All Utility distribution will be provided in a vertical configuration. The fixed horizontal distribution of utilities impedes the front to rear usability of the laboratory work surface and are not acceptable.
- d. The Agility utility box shall be fully prewired and pre-plumbed by the manufactures at the manufactures facility prior to delivery. Utility raceways and all the electrical components included will be UL listed and will be constructed in such a manner that the utility box shall have a removable face plate that shall remain readily to accommodate future MEP changes as needed.
- e. Utility boxes shall be capable of supporting standard, emergency and UPS power.
- f. Utility boxes shall accommodate up to 4 duplexes per box utilizing up to 3 circuits as needed. Electrical shall be hard wired to junction box in ceiling panel. Junction box shall have a removable face plate easily accessible from below the ceiling for ease of access for connection and disconnection of utilities.
- g. Utility boxes shall be capable of supporting up to 3 standard lab gasses. Lab gas supply shall have one point of connection at lab gas fixture and shall run continuously through the system to the point of connection at the ceiling utility panel to eliminate potential for leaks at additional connections. Systems with more than one point of connection are not acceptable. All gas tubing in the lab gas distribution system shall be rated at 150 psi. All lab gas

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systems will be factory pressure tested to 125 psi N2 for 15 minutes and will include 6 a cycle UHP N2 factory pre-cleaning process. Documentation of N2 pressure cycle Pre-cleaning to be available upon request.

- h. Utility boxes will be capable of accommodating up to 4 Cat 6 shielded data lines per box. Data lines will be labeled to corresponding data face plates ports for ease of final connections by appropriate trades.
- i. Ceiling service panel's shall be capable of accommodating additional future or specialty electrical and lab gases as needed.

**2.04 STEEL FINISH**

- A. Pretreatment: Thoroughly clean surface of grease, dirt and oil in an alkaline solution, rinse, then bathe in a phosphatizing solution. Bake entire unit with metallic phosphate coating to provide excellent bond for subsequent finish and aid in the prevention of corrosion.
- B. Finish: Finish shall have electrostatically applied, baked on Powder Coat Epoxy paint finish. This material shall meet the most stringent air quality standards. Solvent based alkyd melamine enamels are not acceptable. The final finish shall meet the following test data with no more than slight discoloration but no change of gloss and no loss of adhesion with exposure to the following chemicals:

- Acetate, Amyl
- Acetate, Ethyl
- Acetic Acid 98%
- Acetone
- Acid Dichromate 5%
- Alcohol, Butyl
- Alcohol, Ethyl
- Alcohol, Methyl
- Ammonium Hydroxide 28%
- Benzene
- Carbon Tetrachloride
- Chloroform
- Chromic Acid 60%
- Cresol
- Dichloroacetic Acid
- Dimethylformamide
- Dioxin
- Ethyl Ether

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Formaldehyde 37%  
Formic Acid 90%  
Furfural  
Gasoline  
Hydrofluoric Acid 37%  
Hydrofluoric Acid 48%  
Hydrogen Peroxide 30%  
Iodine, Tincture of  
Methyl Ethyl Ketone  
Methylene Chloride  
Monochlorobenzene  
Naphthalene  
Nitric Acid 20%  
Nitric Acid 30%  
Nitric Acid 70%  
Phenol 90%  
Phosphoric Acid 85%  
Silver Nitrate, Saturated  
Sodium Hydroxide 10%  
Sodium Hydroxide 20%  
Sodium Hydroxide 40%  
Sodium Hydroxide, Flake  
Sodium Sulfide, Saturated  
Sulfuric Acid 33%  
Sulfuric Acid 77%  
Sulfuric Acid 96%  
Sulfuric Acid 77%, and Nitric Acid 70%, equal parts  
Toluene  
Trichloroethylene  
Xylene1  
Zinc Chloride, Saturated

- C. Adhesion and flexibility: No peeling, cracking or exposure of metal when painted surface is bent 180 degrees over 1/4" diameter mandrel.
- D. Unless otherwise specified, casework colors are to be selected from manufacturer's standard color palette and shall be designed by the Architect/Owner.



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- A. Agility system tables to be assembled and Install plumb, level, true and straight with no distortions. Tables are not secured to the building structure unless specified.
- B. Accessory installation: Install accessories and in accordance with manufacturer's recommendations.

**3.02 CLEANING AND PROTECTION**

- A. After installation is completed, all casework shall be thoroughly cleaned inside and out. Touch-up as required.
- B. Clean countertops with diluted dishwashing liquid and water leaving tops free of all grease and streaks. Use no wax or oils.
- C. Protect top materials and installed laboratory furniture from damage by other trades. If damaged is incurred on protected areas by other trades, repair and or replacement costs shall be borne by that contractor.
- D. Repair or remove and replace defective work as directed by the Architect/Owner.
- E. Remove all cardboard and packing materials from the jobsite.

— END OF SPECIFICATION —