PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Free standing tables.

1.2 RELATED SECTIONS

B. Division 11 Section 53 00, "Laboratory Equipment"
C. Division 12 Section 36 00, "Countertops"
D. Division 22 Section 40 00, "Plumbing Fixtures"
E. Related Work to be Performed by Others:

    a. Final connection to service lines of all plumbing and electrical fixtures attached to laboratory furniture, tables, service carriers and ceiling panels.

1.3 SYSTEM DESCRIPTION

A. The ATS Table consists of a laboratory grade height adjustable table available in a manual adjustment system with leveler glide legs. The table system has optional electrical and gas services that are routed and contained within the upright structure. The building connections to the table are then made at the top of the uprights. The table accepts optional accessories such as shelving in various depths and materials and lighting.

1.4 SUMBITTALS

A. Shop Drawings
    a. Drawings should include data and details for construction of the laboratory casework as well as information regarding the name, quantity, type and construction of materials (such as hardware, gauges, etc.), that will be used to complete the project.

1.5 QUALITY ASSURANCE

A. Qualification of Bidder/Manufacturer: The following list of information should be provided to the Architect at least ten (10) days prior to the bid opening:
    a. List of manufacturing facilities.
    b. list of five (5) installations of comparable stature completed within the past 3 years.
B. Source Limitations: All table systems, including countertops, service fittings and accessories, should be obtained from a single source to ensure consistency in project delivery.
C. Area mockups shall be as indicated on the shop drawings. Mockup areas must be priced for disassembly and reassembly and used within the project.

1.6 DELIVERY, STORAGE AND HANDLING

A. Packaging, Shipping, Handling and Unloading Packaging: Products should have packaging adequate enough to protect finished surfaces from soiling or damage during shipping, delivery and installation.
B. Handling: Care, such as the use of proper moving equipment, experienced movers, etc., should be used at all times to avoid damaging the tables. Until installation takes place, any wrapping, insulation or other method of protection applied to products from the factory should be left in place to avoid accidental damage.
C. Acceptance at Site: Table systems will not be delivered or installed until the conditions specified under Part 3, Installation section of this document have been met.
D. Storage: table systems should be stored in the area of installation. If, prior to installation, it is necessary for table systems to be temporarily stored in an area other than the installation area, the environmental conditions shall meet the environmental requirements specified under the Project Site Conditions article of this section.
E. Waste Management and Disposal: The Installer of the table systems is responsible for removing any waste or refuse resulting from the installation of, or work pertaining to the table systems; thereby leaving the project site clean and free of debris. Trash container/s to be provided by others.

1.7 PROJECT SITE CONDITIONS

A. Building must be enclosed (windows and doors sealed and weather-tight).
B. An operational HVAC system that maintains temperature and humidity at occupancy levels must be in place; Relative humidity must be regulated and stable between 25% and 55% per AWI standards before products are brought on site, throughout project completion and with the site moving forward while the building is in use by the owner.
C. Ceiling, overhead ductwork and lighting must be installed; prior to the delivery and installation of the table systems.
D. Site must be free of any further construction such as "wet work."

1.8 WARRANTY

A. Furnish a written warranty that Work performed under this Section shall remain free from defects as to materials and workmanship for a period of one (1) year from date of installation. Defects in materials and workmanship that may develop within this time are to be replaced without cost or expense to the Owner.
    a. Defects include, but are not limited to: Discoloration or lack of finish integrity, cracking or peeling finish, weld or structural failure and failure of hardware.
    b. The warranty specifically does not cover any product or hardware, which has been incorrectly installed, including poor climate conditions, exposed to excessive loads or abuse.
    c. The warranty is in effect while the product is being used as it was intended and owned by the original purchaser of the products and services covered.
    d. The purchaser shall notify the manufacturer immediately of any defective products. The manufacturer shall be given a reasonable opportunity to inspect the product prior to its return. No product shall be returned until written shipping instructions are received by purchaser. Repair or replacement of the non-conforming products or their parts, or refund of the purchase price shall be at manufacturers sole option. Manufacturer shall not be liable for any incidental or consequential damages, expenses or losses whether incurred in connection with injury to persons or property.

B. All non-casework items supplied, but not manufactured by casework manufacturer shall be covered under the original manufacturer's warranty.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product:
    a. BMC, P.O. Box 4089, Muskegon, MI 49444, 231-733-1206, www.bmclab.com.
B. Substitutions will be considered only when other manufacturers submit substitution requests in accordance with procurement substitution and/or substitution procedures, or provide a comparable product with the following support information:
    a. Written documentation stating specification compliance regarding construction, materials, and standard of quality and manufacturing techniques.
    b. Note all deviations to the drawings and/or specifications in writing.
C. The owner, or its designated representative, reserves the right to reject any proposal that in their opinion fails to meet the criteria established by this specification. Such a decision shall be final.
D. Manufacturer's that are listed as basis of design or approved are still obligated to hold all specification requirements as called out in this document. There will be no exceptions in materials or fabrication permitted that have not been requested in writing and responded to with approval, during an RFI period prior to bid.

2.2 MATERIALS

A. Steel
    a. Sheet steel: High quality cold rolled mild steel meeting the requirements of ASTM A1008 CS Type B in 18ga, 16ga, 14ga and 11ga U.S. Standard.
    b. Tube steel: High quality tube meeting the requirements of ASTM A513 Type 5 for various wall thicknesses.
B. Hardware
    a. Leveler glides
        i. Plastic base glide with metal cap and integral hex nut and metal threaded stem.
        ii. Thread type is 3/8-13 x 1 1/2" long.
        iii. Base diameter is 1 3/4".
C. Countertops
    a. Epoxy Resin Countertops: Countertops are to be flat, black, 1" thick with beveled, rounded top, front edge and all corners. Ends of countertop to be square. Front overhangs should have a drip groove on the underside. Tops should be manufactured of one piece and cut to the maximum lengths possible.
    b. Phenolic Resin Countertops: Countertops are to be 1" inch thick with beveled, rounded top, front edge and all corners. Ends of countertop to be square. Front overhangs should have a drip groove on the underside. Tops should be manufactured of one piece and cut to the maximum lengths possible.
    c. Plastic Laminate Countertops: Particleboard core material for plastic laminate surfaced countertops is to be 1 inch thick industrial grade M3 rated

particleboard. Fabrication shall be with horizontal grade laminate surface with a backer sheet. Edges shall be edged with 3mm PVC edge banding.

D. Shelving
    a. Epoxy resin shelf: Shelf is to be 3/4" or 1" thickness and finished on both sides and all edges.
    b. Phenolic resin shelf: Shelf is to be 3/4" or 1" thickness and finished on both sides and all edges.
    c. Plastic Laminate shelf: Shelf is to be 3/4" or 1” thickness industrial grade M3 rated particleboard core material. Fabrication shall be with vertical grade laminate surface with a balancing backer sheet. Edges shall be edged with 3mm PVC edge banding or .020" thick banding.
    d. Metal shelf: Shelf is to be 3/4" or 1" thickness, 18ga, powder coated cold rolled steel with hat channel reinforcement.

2.3 FABRICATION

A. Table Assembly
    a. Formed steel upright and deck sections utilizing various thickness of steel including 18ga, 16ga, 14ga & 11ga
    b. Flat steel parts are laser cut ensuring a high quality edge, component fit and finish.
    c. Joints are tight fitting and welded or bolted construction.
    d. All exterior and exposed surfaces are finished in a powder-coated finish.
B. Front Table Legs
    a. The main outer legs consist of 2” square 16 gauge tubing welded to work surface frame with height adjustment holes spaced at 1” on center at the bottom.
    b. The adjustable inner leg consists of a 1 ¾” square, formed 16 gauge tube with adjustment holes spaced at 1” on center.
    c. Leveler plate is welded to the bottom of the inner leg with a 3/8' threaded fitting to accept the leveler glides.
    d. Height adjustment is achieved by removing two ¼-20 machine screws per leg, moving the leg to desired height, and replacing the screws.
    e. Table height range is a nominal 30" to 36" including a 1" countertop thickness. Adjustments are on 1" increments. Further fine adjustments can be made with the leveler glides at the bottom of the front legs and uprights to gain +-1" of height range and to level the table.
C. Work Surface Frame
    a. A fully welded 2" tall frame constructed of 16ga, 14ga and 11ga cold rolled steel.
    b. Cabinet hanging rails are welded to the main frame and allow for cabinet positioning anywhere along the width of the frame.
    c. All corners are welded and braced to ensure rigidity and strength.
    d. The work surface frame is attached to the upright structure with two 3/8" bolts at each rear corner.
D. Rear / Center Uprights
    a. The outer and center vertical uprights are formed from 14ga cold rolled steel. The shelving slots are 1" on center running from top of upright to bottom horizontal rail.

b. Uprights have a removable outer cover to give access to the plumbing and electrical systems. The cover is formed cold rolled steel and has no visible fasteners on the outside face.
c. The center upright is an enclosed, welded structure that has welded in 14ga cold rolled steel top and bottom plates. It is bolted to the horizontal rails with two ¼-20 screws at top and bottom.

E. Upper Utility Channel
   a. 4” x 2 1/2" horizontal rail is formed into a channel shape with welded in end plates and threaded studs. They are bolted to the vertical uprights with four ¼-20 screws at each end. The upper utility channel has a removable cover to allow access to the electrical wiring.
F. Lower Utility Channel
   a. 4” x 2 1/2" horizontal rail is formed into a channel shape with welded in end plates and threaded studs. They are bolted to the vertical uprights with four ¼-20 screws at each end. The upper utility channel has a removable cover to allow access to the electrical wiring.
   b. 5 3/4” x 2 1/2" horizontal rail is formed into a channel shape with welded in end plates and threaded studs. They are bolted to the vertical uprights with four ¼-20 screws at each end. The lower utility channel has a removable cover to allow access to the electrical wiring.
G. Shelving
   a. Shelf brackets are formed from 14ga cold rolled steel and available in an angled style and bookend style. The brackets hook into the upright slots with a notched tab design.
   b. Optional rear shelf lips are 2" tall overall and screw into the bottom of the shelf.
   c. Optional front retainer rods are ¼” diameter type 304 stainless steel and are supported by ½” diameter type 304 stainless steel stand offs.
H. Electrical Service
   a. Three UL listed electrical harnesses (one for the upper utility channel, one for the leg and one for the lower utility channel) make up the wiring assembly.
   b. Internal wire is 12 AWG MTW. External wire for connection to ceiling service panel is S00W-4-12AWG.
   c. Connection to the ceiling service panel is made with a NEMA L14-20P plug.
   d. Electrical outlets are NEMA 5-20R duplexes, also available with GFCI protection. Tables 48” wide and under have two outlets, tables over 48” wide have three outlets. Double sided tables have outlets on both sides.
I. Plumbing Service
   a. Services fixtures are incorporated into the rear upright and can accommodate up to three single or double sided fixtures per table.
   b. Service lines are routed in the upright and exit at the top of the upright.
   c. Burning gas service lines have an inner core of corrugated stainless steel and a braided stainless steel exterior layer.
   d. All other service lines are reinforced PVC hose.
   e. Service lines include quick connects which are to be keyed and color coded so services cannot be intermixed.
   f. Connection to the ceiling service panel is made with a mating keyed and color coded connector.

g. The removable outer upright cover allows full access to service the gas fixtures and connections.

2.4 METAL FINISHES

A. Powder Coating
   a. Preparation: Spray parts to clean with a heated cleaner/phosphate solution, rinse with water, spray to pretreat with phosphate solution, rinse with water on two steps to finish. Dry immediately in temperature controlled heated oven.
   b. Application: Electrostatically apply powder coat of selected color and immediately bake in temperature controlled oven to assure a smooth, hard finish. Surfaces to have a chemical resistant, high grade furniture finish.
   c. Exposed finish thickness to be between 2.0 mil & 3.0 mil.

PART 3 – EXECUTION

3.1 INSTALLERS

A. Installer Qualifications
   a. For installation and maintenance of units, an authorized representative of the manufacturer required for this project.

3.2 EXAMINATION

A. Site Verification of Conditions
   a. Casework will not be delivered or installed until the following conditions have been met:
      i. Building must be enclosed (windows and doors sealed and weather-tight).
      ii. An operational HVAC system that maintains temperature and humidity at occupancy levels must be in place; Relative humidity must be regulated and stable between 25% and 55% per AWI standards before products are brought on site, throughout project completion and with the site moving forward while the building is in use by the owner.
      iii. Ceiling, overhead ductwork and lighting must be installed.
      iv. Site must be free of any further construction such as "wet work."

3.3 INSTALLATION

A. Table Systems
   a. The table should be set in the intended place and leveler glides adjusted so that the table is level and all four glides are contacting the floor.
B. Countertop Installation
   a. Countertops are to have been fabricated in lengths to fit the table dimensions and should not need to be cut or altered to fit.
   b. Tops will be anchored to the table system with screws running through brackets already affixed to the table structure. Pilot holes will need to be drilled by the installer appropriate to the screw size. Epoxy and Phenolic resin counter tops should also utilize 100% pure silicone adhesive between the

table deck structure and underside of the countertop for a secure, permanent mounting method.

C. Cleaning
    a. Wipe all surfaces down with a mild general purpose cleaner. Do not wash down or immerse any part of the table with liquid or water for cleaning purposes, but rather use a damp cloth.
    b. Countertops and any shelving should be cleaned and free of grease or streaks.
D. Weight Rating & System Loading
    a. The load rating listed below is for static loads that are evenly distributed over the entire area of the table system. The entire area encompasses loads applied to the countertop, weight of hanging cabinets and loads placed within the cabinets, and loads placed on shelving above and below the countertop.
        i. Shelves: 2.5lbs per inch of width, less the weight of shelf.
        ii. Work surface 4.7lbs per inch of width or 200lbs (whichever is greater), less the weight of work surface.

END OF SECTION