

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE PAGE OF PAGES

| | | | | |
|-------------------------------|------|---|----------------------------------|--------------------------------|
| 2. AMENDMENT/MODIFICATION NO. | | 3. EFFECTIVE DATE | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO. (If applicable) |
| 6. ISSUED BY | CODE | 7. ADMINISTERED BY (If other than Item 6) | | CODE |

| | | |
|---|---------------|---|
| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code) | (X) | 9A. AMENDMENT OF SOLICITATION NO. |
| | | 9B. DATED (SEE ITEM 11) |
| | | 10A. MODIFICATION OF CONTRACT/ORDER NO. |
| | | 10B. DATED (SEE ITEM 11) |
| CODE | FACILITY CODE | |

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers is extended, is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment your desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM ONLY APPLIES TO MODIFICATION OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

| | |
|-----------|---|
| CHECK ONE | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. |
| | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |
| | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: |
| | D. OTHER (Specify type of modification and authority) |

E. IMPORTANT: Contractor is not, is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

| | | | |
|---|------------------|--|------------------|
| 15A. NAME AND TITLE OF SIGNER (Type or print) | | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) | |
| 15B. CONTRACTOR/OFFEROR | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA | 16C. DATE SIGNED |
| <i>(Signature of person authorized to sign)</i> | | <i>(Signature of Contracting Officer)</i> | |

Item 14. Continued.

CHANGES TO THE SPECIFICATIONS

1. Replacement Sections - Replace the following section with the accompanying new section of the same number and title, bearing the notation "ACCOMPANYING AMENDMENT NO. 0001 TO SOLICITATION NO. DACA63-02-B-0013:"

12345 WOOD LABORATORY CASEWORK AND EQUIPMENT*

*Note: Amendment changes are located in Paragraph 3.10 SCHEDULES.

CHANGES TO THE DRAWINGS

2. Replacement Drawings.- Replace the drawing listed below with the attached new drawing of the same number, bearing the notation "AM #0001":

a10.cal Seq 23 a10 DETAILS

END OF AMENDMENT

SECTION 12345

WOOD LABORATORY CASEWORK AND EQUIPMENT
AM# 0001

PART 1 GENERAL

1.1 RELATED DOCUMENTS

Drawings, General Conditions of the Contract for Construction, Supplementary Conditions and Division 1 - General Requirements apply to Work of this Section.

1.2 SECTION INCLUDES

- A. Laboratory equipment.
- B. Service fittings and outlets.

1.3 RELATED SECTIONS

- A. Section 03300 - Cast-in-Place Concrete: Concrete equipment pads and bases for equipment where scheduled.
- B. Section 09900 - Painting: Field painting of exposed metal frame.
- C. Division 15 Sections: Utility supplies to equipment.
- D. Division 16 Sections: Conduit and electrical power for equipment.

1.4 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Materials; G
Casework; G
Equipment; G

Show plans, elevations, end cross-sections, service run spaces, location and type of service fixtures with lines thereto, based on actual measurements obtain in the field. Show details and locations of anchorages and fillings to floors, walls and bases. Include layout of units with relations to surrounding doors, walls, windows, and other building components. Coordinate with other trades involved.

SD-03 Product Data

Hardware; G
Casework; G

Provide manufacturer's data sheets for all relevant equipment and devices.

SD-04 Samples

Hardware; G
Casework; G

Samples shall be submitted to the Owner to demonstrate the supplier's ability to furnish the required laboratory casework and equipment furnishings in accordance with this specification. Acceptable sample units will be retained until completion and acceptance of the work. Failure to comply with the submittal requirements will be sufficient grounds for rejection of the bid. Remove sample units from the premises when directed by the Owner.

1.5 SUBMITTALS FOR INFORMATION

- A. Section 01330 - Submittals: Procedures for submittals.
- B. Manufacturer's Installation Instructions: Indicate special installation requirements.
- C. Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.
- D. Certificates
 - 1. Submit laboratory certificate of performance to SEFA-8 testing certifying that the laboratory furniture proposed for this project has been tested in conformance with the full requirements of the SEFA-8 recommended practice. SEFA-8/1998 form F1, F2, and F3 shall be submitted with the shop drawings, signed by an office for review and approval by the Contracting Officer.
 - 2. Submit notarized test reports on each different top material specified.

1.6 SUBMITTALS AT PROJECT CLOSEOUT

- A. Section 01770 - Contract Closeout: Procedures for submittals.
- B. Operation Data: Include description of equipment operation, adjusting, and testing required.
- C. Maintenance Data: Identify system maintenance requirements, servicing cycles, lubrication types required and local spare part sources.
- D. Record actual locations of concealed utility connections.

1.7 QUALITY ASSURANCE

- A. It is the intent of this specification to identify both performance requirements of casework as well as, certain material and hardware that shall be provided for laboratory casework.
 - 1. Performance requirements shall be based on furnishing laboratory furniture in accordance with the "Recommended Practices" for casework, shelving and tables as outlined in the SEFA-8-1999 publication.
 - 2. Materials and hardware shall be provided as outlined in the specification.

B. The specifications and drawings define and show the essential minimum requirements as to the quality of materials, hardware, finish, construction, design, functions and overall workmanship of the Casework and Equipment. All Casework and Equipment must strictly comply with these specifications.

C. Where a definite material or manufacturer is specified, it is not the intent to discriminate against any product of another manufacturer. However, it is the intent to provide for the Owner a quality and educationally functionally installation of laboratory equipment and casework, and to exclude laboratory equipment and casework, which does not comply with this specification.

D. Minimum standards are set forth herein. Laboratory Equipment and Casework manufacturer (s) are cautioned that only Equipment meeting the standards set forth in this specification will be acceptable.

E. Casework and Equipment manufacturer shall have been manufacturing Science Laboratory Casework for a minimum of ten (10) years.

F. Construction of Casework and Equipment shall be within the requirements for accessibility as required within the Equipment Schedule or shown on the drawings, and as governed by the "Federal Americans with Disabilities Act" (ADA). The successful bidder shall be responsible to ensure compliance with applicable ADA codes. Items where noted, shall be manufactured as described, with all materials and functions per this specification.

G. Any bidder proposing to supply Casework and Equipment differing from these standards must clearly state in writing how the Laboratory Casework and Equipment he proposes to furnish differs from the specification requirement. The burden of proof of the proposed change, modification, or substitution is upon the bidder. The Owner's decision of approval or disapproval of the proposal shall be final. Bidders shall not rely upon approvals made in any other manner.

H. If a bidder does not provide written documentation, it shall be rightfully construed as based upon supplying the essential requirements, design, construction, and materials as defined within this specification.

I. The Owner, or his designated representative, reserves the right to reject any proposal offering Casework and Equipment, which in his opinion does not meet the standard of quality, established by this specification. Any such decision will be considered final and not subject to further recourse.

J. Catalogs of Sheldon Laboratory Systems, Inc., Crystal Springs, MS, have been used for the purpose of identification, function and design. Where such catalog designations are given for the items of Casework and Equipment, these items shall be complete as described and shown in the catalog, unless exceptions are especially mentioned in the Equipment Schedule or described within these specifications.

K. The listed manufactures' Casework and Equipment have been determined to be representative of the requirements of the Owner.

1. Casework as manufactured by Sheldon Laboratory Systems, Inc., Crystal Springs, MS.

2. Casework and Equipment of other manufacturers shall be approved as a manufacturer; however, approval will be subject to compliance with the minimum standards as established by this specification.

3. All manufacturer's specification shall be modified as required to include construction, hardware, finish and operating features herein specified.

1.8 WORK BY LABORATORY EQUIPMENT CONTRACTOR

A. Furnishing, delivering to the building, uncrating, setting in place, leveling and anchoring all Casework and Equipment listed in the specification and/or shown on the drawings/Equipment Schedule.

B. Furnishing plumbing fixtures and fittings as defined within the specifications, complete with tank nipples and lock nuts for securing fixtures and fittings to tops. Installation will be by other respective trades as a part of their final connections.

C. Furnishing electrical service fixtures directly attached to the Casework or Equipment as called for within the specifications, or as shown on the drawings/Equipment Schedule. Fixtures supplied only, not attached or assembled. Installation will be by other respective trades as a part of their final connections.

D. Furnishing sink bowls and cup sinks, complete with required overflow, plugs, strainers, and tailpieces as called for within the specifications, or as shown on the drawings/Equipment Schedule. Sinks supplied, not attached or assembled. Installation will be by other respective trades as a part of their final connections.

E. Furnishing and installing filler panels and scribes as required for a finished installation.

F. Removing all debris, dirt, and rubbish accumulated as a result of the installation of this Equipment, leaving premises broom clean and orderly.

1.9 WORK BY GENERAL CONTRACTOR

A. Furnishing all fume hood utility rough-in above lay-in ceiling.

B. Furnishing, installing, and connecting of all vents, revents, and special plumbing fixtures or piping to meet local codes, even though not specifically called for in the specifications and/or shown on the drawings.

C. Furnishing and installation of all rigid or flexible conduit, wire, pulling of wire, fittings and special electrical equipment and accessories, including boxes, receptacles, and flush plates set loose. All shall be in accordance with local codes even though not specifically called for in the specifications and/or shown on the drawings.

D. Providing framing and reinforcements of walls, floors and ceilings necessary to adequately support the Equipment, and all bucks and plaster grounds required for proper installation of Equipment.

E. Furnishing any miscellaneous materials, generally classified as maintenance or supply items.

F. Providing protection and security during and after Laboratory Equipment installation.

G. Hoisting or elevator services shall be provided by the general contractor at no charge to the equipment contractor.

1.10 STRICT COMPLIANCE

- A. All sinks shall be of the drop-in design as manufactured by Laboratory Tops, Inc., Taylor, TX. All sink sizes shall be as indicated within the Equipment Schedule or as shown on the drawings.
- B. All service fixtures shall be of vandal resistant design. All fixtures shall be of the Chicago Faucet Company VR-1 ALEF design, or the Sheldon Unicast/Unimix design. Provide all fixtures with vacuum breaker and aerator.
- C. All plywood not exposed to view shall be of hardwood Birch veneer, Sound Grade 2 or better. Plywood allowing knots, repaired knots, wormholes, or other defects will not be allowed.
- D. All manufacturers shall comply with the minimum SEFA (Scientific Equipment & Furniture Association) Recommended Practices for Laboratory Furniture, Casework, Shelving and Tables according to the SEFA 8-1999 publication. All manufacturers shall submit a signed copy of the SEFA Laboratory Furniture Certificate of Performance with all supporting documentation, indicating their proposed products comply with the above minimum testing performance standards ten (10) days prior to the day of the bid.

1.11 PRE-INSTALLATION MEETING

- A. Section 01320 - Coordination and Meetings: Pre-installation meeting.
- B. Convene one week before starting work of this section.

1.12 PRODUCT HANDLING/COORDINATION

- A. The Laboratory Casework and Equipment contractor shall coordinate all deliveries and installation of this equipment with the Contractor/Owner and all associated trades.
- B. The Laboratory Casework and Equipment shall not be delivered to the jobsite until the following conditions have occurred.
 - 1. Overhead ceiling work, ductwork, lighting, acoustical tile, etc. is complete.
 - 2. Windows and exterior doors are installed. Building is secure and weather tight.
 - 3. Air circulation control system is functional and maintaining relatively constant temperature and humidity conditions closely approximating those to be maintained by the Owner.
 - 4. Finish flooring installed.
- C. It is recommended that all finish painting be completed in the areas in which Laboratory Casework and Equipment is to be installed prior to such installation.
- D. Protect sanded and finished surfaces from soiling and damage during handling and installation. Keep covered with polyethylene film or other protective covering.

1.13 COORDINATION

- Leave building openings of sufficient size to permit transport of equipment to final position.

1.14 WARRANTY

A. Section 01770 - Contract Closeout.

B. The contractor shall guarantee all materials and workmanship of Casework and Equipment provided on this contract for a period of one year from the date of final acceptance. Any defective materials or faulty workmanship occurring within that time shall be replaced or corrected promptly without charge upon notification by the Owner or his designated representative.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Sheldon Laboratory Systems, Inc., Crystal Springs, Mississippi.

B. Section 01600 - Materials and Equipment: Product options and substitutions.

2.2 MATERIALS - GENERAL

Definitions: The following definitions apply to Laboratory Casework and Equipment:

1. Exposed portions of Casework include all surfaces visible when doors and drawers are closed. Bottoms of cases more than 4'-0" above the floor shall be considered exposed. All visible members in open cases or behind glass doors shall be considered as exposed portions.

2. Semi-exposed portions of Casework include those members behind opaque doors, such as shelves, divisions, interior faces of ends, dust panels, drawer sides, bottoms and the back face of doors. Top of cases 6'-6" or more above the floor shall be considered as semi-exposed.

3. Concealed portions of Casework include backs, sleepers, web frames, toe spaces, bottom underside, and other surfaces not usually visible after installation.

2.3 CASEWORK CONSTRUCTION - MINIMUM REQUIREMENTS

A. All manufacturers are cautioned, the Laboratory Casework and Equipment is not necessarily the standard of any one manufacturer. All manufacturers shall adhere to this specification, even though such construction features may vary from the standard construction or design practices of the manufacturer. Bids based upon "Manufacturer's Standard" will be rejected.

B. Cabinets and cases shall be assembled in accordance with Laboratory Grade Casework construction methods using reinforcing at all major points of strain, properly glued and further reinforced with screws, or steel power lock pins.

C. All base cabinets shall have a full four-sided top frame of solid hardwood for maximum stability. Base cabinet bottoms shall have a solid hardwood front and back rail securing a ½" thick hardwood plywood panel. Front and back frame members shall be a minimum 1-1/4" thick x 2" wide.

D. All upper cabinets and tall cases shall have solid hardwood horizontal frame members at the front and back, at the top and the bottom. All frame members a minimum 1-1/4" thick x 2" wide.

E. All end panels shall be ¾" thick, 7 ply hardwood plywood with a solid Oak front edge banding. Exposed ends shall be of Oak veneer.

F. All sink cabinets shall have a ¼" thick hardboard removable bottom panel secured to a hardwood frame. Wall type sink cabinets shall have a 6" +/- pipe chase at the back behind a half height removable back panel.

G. All tall cases and upper cabinets shall have a ½" thick hardwood plywood top and bottom panel secured between the front and back horizontal rails.

H. All cabinet back panels shall be ¼" thick. Base cabinets shall be hardboard; Upper cabinets and tall cases unexposed to view shall be hardboard. All exposed backs shall be of hardwood plywood.

I. All shelves shall be Laboratory Grade, ¾" thick in cabinets 30" or less, and 1" thick in cabinets above 30". All shelves of hardwood plywood with solid hardwood front edge banding.

J. All shelves to be adjustable on 1-1/4" centers.

K. All drawers supported on Laboratory Grade epoxy coated steel slides having a maximum load capacity of 100 lbs. per pair.

L. All drawer sides shall be constructed of solid hardwood or hardwood plywood a minimum of ½" thick, with the bottom a minimum of ¼" thick hardboard secured within groove and further secured with hot melt glue on the entire perimeter. Drawer fronts shall be removable/replaceable and not be a part of the drawer construction.

M. All casework front design/materials shall be of the "flush overlap" accent style, plastic laminate material with black PVC edge banding.

2.4 LABORATORY GRADE WOOD FINISH

A. All exposed wood parts shall be sanded and buffed in preparation for the finishing processes. The first coat shall be a stain and sealer of synthetic resin. The product is then cured at elevated temperatures. After the first sealer coat, the product shall be sanded, wiped clean and then two (2) additional coats of an acid resisting synthetic resin shall be applied and heat cured.

1. Unexposed interior surfaces shall receive one (1) sealer coat and one (1) coat of acid resistant synthetic resin.

B. Cabinet Finish Chemical Test and Evaluation

1. All manufacturers proposing to submit a bid must provide certification that their finish will comply with the following requirements.

2. Chemical Resistance

a. Chemical Reagents: Withstand one (1) hour contact with ten (10) drops (1/2 ml) covered by watch glass, convex side down in center pool to prevent evaporation.

Hydrochloric Acid, all concentrations
Nitric Acid, 30%
Sulfuric Acid, 50%
Acetic Acid, all concentrations
Phosphoric Acid, 75%
Ammonium Hydroxide, all concentrations
Sodium Hydroxide, all concentrations
Potassium Hydroxide, all concentrations
Zinc Chloride, saturated

RESULT: No visible effect other than slight discoloration, change of gloss or temporary softening of film.

b. Solvents: Withstand contact with ten (10) drops (1/2 ml.) placed on surface until evaporated.

| | |
|----------------------|----------------|
| Benzene | Methyl Alcohol |
| Toluene | Ethyl Alcohol |
| Chloroform | Ethyl Ether |
| Carbon Tetrachloride | Acetone |
| Naptha | |

RESULT: No visible effect other than slight discoloration, change of gloss, or temporary softening of film.

c. Heat Resistance: Hot water (190-205 degrees) allowed to trickle down surface tilted 45 degrees for five minutes without visible effect.

d. Moisture Resistant: Cellulose sponge 2" x 3" x 1" soaked with water and placed on finish for 100 hours and kept constantly wet without effect.

e. Fade Resistance: 100 hours exposure to a Sylvania 275 R.S. sun lamp placed 10" above surface with only slight discoloration.

2.5 COLOR SELECTIONS

A. All Casework shall be finished on exposed and semi-exposed surfaces in a color selected from the manufacturer's standard color chart.

B. Door and drawer fronts shall be high-pressure plastic laminate as selected from manufacturer's standard Wilson Art color chart. Manufacturer shall provide a minimum of fourteen (14) plastic laminate patterns.

C. Color options of one basic wood stain for casework and up to two (2) accent plastic laminate colors for the door and drawer fronts per department. Only one (1) wood stain and one (1) accent color may be applied to any one cabinet.

D. Trim group:

1. Plastic laminate "flush overlap" fronts: Pulls and hinges, and extruded thermoplastic edge banding in black. All interior hardware furnished in manufacturer's standard finish.

2.6 HARDWARE

A. Pulls for doors and drawers: Black metal. Provide two (2) pulls for drawer over 24" wide.

B. Hinges: 2-1/2" high institutional type with hospital corners, tight pin, five knuckle with offset in leaf attaching to cabinet to establish a 5/16" door overlap of cabinet frame. "Flush overlap" accent front cabinet hinges shall be .095" thick black colored powder coat. All hinges shall be capable of supporting 150 lbs. of weight placed 12" from hinge center with door open 90 degrees, with a minimal deflection or distortion.

C. Drawer runners: Embossed and formed 20 gauge epoxy coated steel channel

shaped to accommodate rollers with nylon wheels and shall interlock into side tracks on cabinet. Runners have instant removal, with stop to prevent inadvertent removal, and positive closing action. Runners shall have a maximum load capacity of 100 lbs. per pair, based upon an 18" slide length.

D. Shelf supports: Nickel-plated metal clips fitted into holes on cabinet ends.

E. Locks: Provide locks and number plates where indicated within Equipment Schedule or shown on the drawings. Locks shall be 5-disc tumbler type of die cast zinc alloy plated cylinder. All locks provided with two (2) keys, master keyed and keyed differently unless specified otherwise.

F. Elbow catch: To be installed on the left door of double door base cabinets when locks are required. The elbow catch and strike plate shall be of cast or extruded aluminum. The elbow catch is provided with a coiled spring for positive secure action. The catch shall have two slotted adjustment screw holes. The strike plate shall be secured with one screw in a slotted adjustment hole and one screw for positive anchoring. Formed sheet metal elbow catch and strike plates are not considered of equal quality.

G. Clamp-on upright rods (Where required within this specification or indicated otherwise on drawings/Equipment Schedule.): Cast aluminum "C" clamp with integral threaded aluminum upright rod designed to clamp securely on any working counter or table having a 1" or more overhang, and from 5/8 inch to 1-1/2 inch thickness.

H. Upright rod base: Aluminum alloy with tapered hole to accept upright support rod. Rod base secured by washer and locking nut below the counter.

I. Upright support rod: 3/4 inch diameter aluminum alloy, 40 inches long with lower end tapered to rod base.

J. Horizontal support rod: 3/4 inch diameter aluminum alloy, 42 inches long, having both ends rounded.

K. 90-degree connector: Aluminum alloy block with thumbscrews for securing upright rod at a 90 degree to horizontal apparatus rods.

L. Tote trays: Trays of thermosetting reinforced fiberglass with heavy duty lipped rim. (Trays of polystyrene or other thermoplastic not acceptable.) Trays formed of one-piece homogeneous form with all corners coved and smooth surfaces. Trays light in color and weight. An inverted tray shall support 200 lbs. without buckling or distortion. Trays shall be heat resistant to withstand boiling water for 20 minutes without effect. A ten second application of a match flame shall not cause damage except slight discoloration.

M. Cabinet base molding: Extruded vinyl or rubber, black, 4" high. Provide on all exposed sides and fronts of floor-mounted cabinets. All outside corners shall be of formed stainless steel.

2.7 TOPS

A. All counter top depths shall be as shown on the floor plans.

B. Backsplash height shall be 4".

C. Molded epoxy resin for all applications (unless required otherwise by catalog description or noted within this specification).

1. A modified epoxy resin especially blended to produce a high chemical resistant material. Tops shall be 1" thick overall.

a. Physical and mechanical properties:

| | |
|---------------------------|--------|
| Tensile strength, psi | 10,700 |
| Compressive strength, psi | 30,600 |
| Flexural strength, psi | 12,800 |
| Hardness, Rockwell "M" | 105 |
| Density, gr/cc | 2.03 |

2.8 SINKS, TROUGHS, and SERVICE TURRETS

A. Epoxy resin

1. All wall counter epoxy resin sinks shall be of "drop-in" design.

2. One-piece construction, without cemented joints. Inside corners and bottoms coved for easy cleaning.

3. Surface shall be stain free, "non-glaring" black, inert to action of all chemicals in normal laboratory usage.

2.9 PLUMBING FIXTURES

A. All laboratory fixtures to meet SEFA standards with all working parts removable and interchangeable with fixtures of same type and number. Index buttons clearly marked in accordance with SEFA standard color code. All fixtures provided with vacuum breaker and aerator.

B. Vandal resistant laboratory fixtures required at all sink locations. Fixtures shall be designed specifically to provide extra protection against student abuse and vandalism. All fixtures shall have the main body cast in one-piece 5A-ASTM-30 brass. Tubing shall not be a part of the fixture structure.

C. Vandal resistant laboratory fixture finish shall be a special epoxy powder coating applied over a sand blasted surface and baked at elevated temperatures to provide a smooth, corrosion resistant, Laboratory Grade finish.

D. Acceptable Alternate: Chicago Faucet Company VR-1 ALEF. Provide fixture with E3-2 aerator and E22 vacuum breaker. Where hot and cold mixing fixture indicated within drawings/Equipment Schedule, provide (1) Chicago Faucet Company 1333-LH-ALEF, and (1) Chicago Faucet Company 1333-RH-ALEF. Each to include appropriate vacuum breaker and aerator. (No other substitutions will be allowed or considered.)

2.10 DRAIN FITTINGS

All sinks provide with acid resistant outlet, stopper, and tailpiece.

2.11 ELECTRICAL FIXTURES

A. Electrical fixtures, a part of, or installed in the equipment shall be approved by the National Board of Underwriters and must conform to city and state building ordinances.

B. Knock out boxes, where indicated, installed by the equipment installation contractor.

C. Receptacles, grounded type, voltage and amperage as indicated. All receptacles, switches, indicator lights, motor starters and light fixtures to be quality equal to Hubbel, Arrow, Bryant or Killark specification. All receptacles shall be of GFCI type.

2.12 STRUCTURAL POLYESTER

A. Glass fiber reinforced structural polyester where required for counter tops, sinks or lab station understructures as required within this specification.

B. One piece molded construction. All curbs, raised edges, sinks and service turrets shall be integral with all surfaces.

C. Material shall be non-burning when submitted to the ASTM D-635 test. When required, bidder shall provide a notarized certificate stating that all polyester materials furnished on this project complies with the following test criteria which is a part of the ASDTM test criteria:

| Test | Non-burning |
|-----------------------------|-------------|
| HTL-15 (average) | 60 |
| Oxygen index (average) | 30 |
| Smoke development (average) | 300 |

2.13 LABORATORY EQUIPMENT

A. Rinse Away Station - Sheldon #27875 with sink on right end.

B. Eye Wash-Panel Mounted - Sheldon #G1814.

C. Eye Wash-Hand Held - Sheldon #G5020.

D. Student Lab Tables - Sheldon #TEII flat work surface-electric only.

E. Teacher Demonstration Table - Sheldon #20650.

F. Flammable Storage - Fisher/Hamilton #950S7900 manual closing doors and 3 inch diameter hard rubber casters comply with OSHA and NFPA regulations.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01320 - Coordination and Meetings: Verification of existing conditions before starting work.

B. Verify that rough-in frames, anchors and supports are accurately placed.

3.2 PREPARATION

A. Examination of Site:

1. The Laboratory Furniture Contractor shall visit the site and thoroughly check all conditions affecting the installation of the work.
2. The Laboratory Furniture Contractor shall be responsible for the taking of field dimensions required for the proper fitting of his equipment. If any discrepancies exist between the drawings and the field dimensions, the Laboratory Furniture Contractor shall, in writing, report this condition to the Architect and shall not proceed

with that portion of the work in question until all discrepancies are clarified.

- a. Provide rough-in frame and anchors for placement by other trades.

3.3 FABRICATION

A. Fabricate Laboratory Casework and Equipment to dimensions, profiles, and details shown or described on the floor plans/Equipment Schedule to fit actual field conditions.

B. Assemble the units in the shop in as large components as practicable to minimize field cutting and jointing. Mortise and tenon, glue and screw joints for maximum strength using precision jigs and clamps to insure square corners and vertical plumb surfaces.

3.4 CASEWORK INSTALLATION

A. Install plumb, level, true and straight with no distortions. Shim as required, using concealed shims. Where laboratory furniture abuts other finished work, scribe and apply filler strips for accurate fit with fasteners concealed where needed.

B. Base cabinets:

1. Set cabinets straight, plumb and level. Adjust tops within 1/16" of a single plane. Fasten each individual cabinet with no less than two (2) fasteners into floor, where they do not adjoin other cabinets.
2. Where required, assemble units into one integral unit with joints flush, tight and uniform. Align similar adjoining doors and drawers to a tolerance of 1/16".

C. Wall cabinets:

1. Securely fasten to solid supporting material, not plaster, lath, or wallboard. Anchor, adjust, and align wall cabinets as specified for base cabinets.
2. Reinforcement of stud walls to support wall-mounted cabinets will be done during wall erection by trades involved. However, the responsibility for accurate location and sizing of the reinforcement is part of this work.

D. Adjust casework and hardware so that all doors and drawers operate smoothly without warp or bind. Lubricate operating hardware as recommended by the manufacturer.

3.5 TOPS INSTALLATION

A. Field jointing, where practicable, make in same manner as factory jointing using dowels, splines, adhesives, and fasteners recommended by manufacturer. Locate field joints as shown on acceptable shop drawings so there is no job site processing of top or edge surfaces.

B. Workmanship:

1. Abut top edge surfaces in one true plane with internal supports placed to prevent deflection.
2. Provide holes and cutouts as required for mechanical and electrical service fixtures.

3.6 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install in accordance with standards required by authority having jurisdiction.
 - 1. All installation work shall be performed under the direction of a factory-trained supervisor.
 - 2. Care shall be taken during installation to prevent damage of any adjacent floors, walls or trim surface. All crating and debris of this contractor shall be promptly removed from site and all equipment cleaned. The premises shall be maintained in like condition by "Others".
- C. Anchor equipment securely in place.
- D. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
- E. Touch-up minor damaged surfaces caused during installation. Replace damaged components as directed by Architect/Engineer.

3.7 ADJUSTING

- A. Section 01770 - Contract Closeout: Cleaning installed work.
- B. Adjust operating equipment to efficient operation.

3.8 CLEANING AND PROTECTION

- A. Repair or remove and replace defective work as directed upon completion or installation.
- B. Clean shop finished casework. Touch-up as required and remove and refinish damaged or soiled areas.
- C. Protection: Advise contractor of procedures and precautions for protection of materials and installed Casework and Equipment from damage by the work of other trades until acceptance of the work by the Owner. Advise the Contractor of the required temperature/humidity conditions, which must be maintained during the remainder of the construction period.
- D. Cover all Casework and Equipment with a 4-mil polyethylene film for protection from damage during the remainder of construction.

3.9 DEMONSTRATION AND INSTRUCTIONS

- A. Section 01770 - Contract Closeout: Demonstrating installed work.
- B. Demonstrate equipment operation. Provide a technical qualified representative for a full half day to thoroughly instruct the owner's personnel in correct procedures and maintaining this equipment.

3.10 SCHEDULES

ITEMS:

- 1. 4 STUDENT SERVICE ISLAND: TE-II - Model #14123, with flat working surface, 56 inches x 56 inches x 67-1/2 inches. Height shall be adjustable from 33-1/8 to 37-1/8 inches to accommodate wheelchair confined students. Unit consisting of two (2) - 120V GFCI electrical duplex outlets flush mount in face of apron of support structure.

Counter top to be 1 inch thick shelresin with integral 3/16 inch raised edge at perimeter. Provide 4 #88320 rod bases and 4 complete rod assemblies, each consists of two upright rods, two 90 degree connectors and one horizontal apparatus crossbar. Provide four (4) storage cubicles to be installed in prepared locations on the unit at each student table.

[AM# 0001]

2. Student ADA Service Island. Same as regular student service island except for a recessed counter top area on one side to accomodate two wheelchairs: Equal to Model #14127.

3. INSTRUCTOR DEMONSTRATION CENTER: Model #20650, 96" l X 31" w X 36" H. Unit to include 16" x 16" x 8"D epoxy resin sink with outlet and stopper, vandal resistant combination hot and cold water and gas fixture, one GFCI duplex electrical receptacle, and one complete upright rod assembly consisting of two uprights, two 90 degree connectors, and one horizontal apparatus crossbar.

4. RINSE AWAY STATION: Model # 27875, 9 foot 6 inches long x 24 inches wide x 33 inches height with accessible sink. Unit to include a 16 inches x 12 inches x 5 inches diameter epoxy resin sink with outlet and stopper, vandal resistant combination hot and cold water fixture, and epoxy resin counter top with full length drain grooves, applied front lip and back and side curbs. Knee space to be ADA compliant with a removable formed steel access panel.

5. ADA COMPLIANT EYE WASH STATION: Model #77270 ADA, 37 inches long x 24 inches diameter x 31- $\frac{3}{4}$ inches high. One inch thick epoxy resin top with lip on 3 sides. **[AM# 0001] Install a Water Saver Faucet Co. (312)666-5500 Model # FE775 Deck mounted eye/face wash with two fine spray outlet heads, stay open valve and 90 degree swivel feature over a** 10 inches x 12 inches x 2- $\frac{1}{4}$ inches diameter special stainless steel sink, and a G-5020 hand held safety sprayer. Knee space to be ADA compliant with a removable formed steel access panel.

-- End of Section --