ADDENDUM #1 & ACKNOWLEDGEMENT

To: All Vendors  
Date: April 3, 2019

Changes to Specifications

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Schedule of Events</td>
<td>Due to additional drawings and other materials, the Schedule of Events has been updated.</td>
</tr>
<tr>
<td>2</td>
<td>Questions &amp; Answers</td>
<td>Questions &amp; Answers have been posted as part of this Addendum.</td>
</tr>
</tbody>
</table>

The information contained herein revises, supplements and/or supersedes the specific parts of the documents referred to and shall be attached to and become part of those documents as if originally forming a part thereof. Except herein as modified, all other provisions of the documents shall remain in full force and, unless otherwise described in this Addendum, shall comply with the requirements originally specified. All other conditions of this project will remain in effect.

- Office of Contracting & Procurement website: [https://sites.rowan.edu/procurement/bids/index.html](https://sites.rowan.edu/procurement/bids/index.html)
- Please direct any questions to bids@rowan.edu

ADDENDUM # & ACKNOWLEDGEMENT

I acknowledge that I have received and reviewed this Addendum.

Company Name (please print)

Name (please print)

Signature

Date

**THIS ACKNOWLEDGEMENT IS REQUIRED WITH SUBMISSION.**
Schedule of Events Update

- **Questions Due:** April 8th, 2019
- **Answers Posted:** April 10th, 2019
- **Submissions Due:** April 17th, 2019 at 2:00 p.m.

*Note: These updates are also reflected in the updated IFB Document.*
## Questions & Answers

<table>
<thead>
<tr>
<th></th>
<th>Question &amp; Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I see alternates referenced on the plans but not reflected on the proposal page. Specifically K20 PARTIAL SECOND FLOOR WEST ENLARGED PLAN – ALTERNATE #5 on page A-421. Please clarify intent.</td>
</tr>
<tr>
<td></td>
<td>Omit any reference to ALTERNATE #5 - all work in this area is base bid.</td>
</tr>
</tbody>
</table>

| 2 | 1. We downloaded the drawings from your website and find the following discrepancies:  
   a. Cover sheet indicates drawing P-202, should this be correctly labeled at P-202A?  
   b. Cover sheet indicates drawing AV-202, however in the drawing set there is AV-202A and AV-202B.  
   c. Listed on the cover sheet but not included are all “IT” drawings (listed as IT-001, IT-201, IT-202 and IT-203) |
|   | a. P202A is correct – see attached revised drawing list  
   b. see attached revised drawing list  
   c. see attached revised drawing list |

| 3 | Please provide a specification Index as none was included to ensure accuracy and compliance. |
|   | Table of Contents was provided on pages 9-11 of the Project Manual. |

| 4 | The architectural drawings are missing dimensions. Specifically floor plans. Please provide. |
|   | • See attached drawing A20/A-101 for dimensions in Room 152  
   • See attached drawing A20/A-102 for dimensions in Room 223  
   • See drawing A-421 for dimension is Rooms 201, 202, 203 and 204. |

<p>| 5 | Reference specification section 123553 “Metal Laboratory Casework” page 2 section 1.5, “Manufacturer Qualification” a.1. Are all suppliers required to submit all this information including manufacturers listed in 2.1? |
|   | All manufacturers are required to submit all paperwork required in the specifications. |</p>
<table>
<thead>
<tr>
<th></th>
<th>Question &amp; Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Drawing P-202 indicates the acid waste drains are 1-1/2”. Detail 7 on P-501 indicates they are 2”, please clarify?</td>
</tr>
<tr>
<td></td>
<td>2” is correct.</td>
</tr>
<tr>
<td>7</td>
<td>Detail 6 on P-501 indicates drain lines on the fume hoods. Contract drawing P-202 does not indicate any underfloor piping for the drain. Is this existing and we are to connect to the existing drain above the floor?</td>
</tr>
<tr>
<td></td>
<td>Connect to existing drain below floor.</td>
</tr>
<tr>
<td></td>
<td>LS-1 integral epoxy sink.</td>
</tr>
<tr>
<td>9</td>
<td>Drawing P-002 plumbing fixture schedule indicates 2 Emergency Showers ES-1’s. How are we to decipher on P-202 which is which? Please advise.</td>
</tr>
<tr>
<td></td>
<td>ES-1 which indicates provided by arch will be removed. Specification for ES-1 is included in Section 115390 attached.</td>
</tr>
<tr>
<td>10</td>
<td>Schedule on lab equipment drawing P-002 indicates vacuum pipe as ¾”. Drawing P-202 shows all vacuum pipe and connections as ½”. Which is correct?</td>
</tr>
<tr>
<td></td>
<td>3/4” is correct.</td>
</tr>
</tbody>
</table>
11 | Question & Answer
---
Contract Drawings D-101 and D-102 note 16 indicates to remove fume hoods, yet we find no #16 on the drawings anywhere to remove. Also, specification 115313 “Fume Hoods” Page 4 item 2.1 A states “Existing Fume Hood to be relocated”. How many fume hoods get relocated and how many are existing to be removed? Drawing M-202B seems to indicate there are 4 fume hoods, please acknowledge that these are existing relocated?

- DEMO KEY NOTE #16 IS NOT REQUIRED FOR THIS SCOPE OF WORK
- In Specification Section 115313 delete line 2.1A.
- Fume Hood locations are shown on drawing A-421, scheduled on A-424 and specified in Section 115313.

12 | Question & Answer
---
Specification 211313 page 2 1.5 E indicates a fire hydrant flow test report, is this necessary for this project? Isn’t this an extension of the existing fire sprinkler system in the building? Where is the closest fire hydrant if we are to do the flow test, if required?

Sprinkler Contractor will need to determine if additional heads will be required as part of the sprinkler design. If additional heads are required, sprinkler contractor will be responsible for submitting hydraulic calculations. Part of the required hydraulic calculations will be a current hydrant flow test. Rowan University will provide their most recent flow test but DCA may require a more recent test. The water utility will determine the location of the hydrant.

13 | Question & Answer
---
Reference specification section 221116 “Domestic Water Pipe”, can pro press copper fittings and valves be used or shark bite fittings for smaller pipe so we wouldn’t require hot work permits?

Provide Solder-Joint as specified. Pro-Press is acceptable but need confirmation from Rowan.

14 | Question & Answer
---
We could not locate a specification for acid waste pipe, is CPVC acid pipe and fittings acceptable?

Yes.
<table>
<thead>
<tr>
<th>Question &amp; Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>15</strong> Reference Specification 123555 “Metal Laboratory Furniture”, paragraph 2.3.A.1,2. Please confirm that all the casework cabinetry is all steel overlay casework. If wood fronts, please specify the wood type.</td>
</tr>
<tr>
<td><strong>16</strong> Reference specification section 123654 “Epoxy Resin Counter Tops”. Please confirm the color of the counter top since color have different price points.</td>
</tr>
<tr>
<td><strong>17</strong> Reference drawing A-421, in room 202, please confirm if the 2 BC-48 fume hoods are “new”. If so, what type should be followed on the Fume Hood Schedule?</td>
</tr>
<tr>
<td><strong>18</strong> Please confirm that there are NOT any task lights on this project. The key notes on A-422 list them.</td>
</tr>
<tr>
<td><strong>19</strong> Please confirm extent of work at the existing trenches?</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>21</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>22</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>23</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>24</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Attachments:

- A7/G-001
- A20/A-101
- A20/A-102
- A-423
- A-425
- A20/A-901
- P202
- 115390 Miscellaneous Laboratory items
- 123552 Metal Laboratory Casework Pages 4 to 12

If you submitted questions to bids@rowan.edu by the due date indicated in the RFP document, but they were not received and answered here, please contact:

Robert Yufer
Office of Contracting & Procurement
Yufer@rowan.edu
856.256.4196
GENERAL NOTES

1. THESE DRAWINGS REPRESENT AN OVERALL DESIGN CONCEPT. THEY ARE PREPARED WITH THE INTENTION OF SHOWING THE PRINCIPAL LAYOUT AND ARRANGEMENT OF THE VARIOUS COMPONENTS OF THE BUILDING. THEY ARE INTENDED TO PROVIDE A GENERAL OVERVIEW OF THE VARIOUS SYSTEMS AND ARE NOT INTENDED TO BE COMPLETE IN THEMSELVES. THEY SHOULD BE READ IN CONJUNCTION WITH THE DRAWINGS AND SPECIFICATIONS THAT ARE ATTACHED.

2. THE CONTRACTOR IS ASSUMED TO HAVING REVIEWED THESE DRAWINGS, AND HAVING SEEN THE ARCHITECT FOR CLARIFICATION. MODIFICATIONS MAY BE REQUIRED BY THE CONTRACTOR TO ACCOMMODATE FOR MINOR VARIATIONS.

3. DETAILS AND SECTIONS ON THE DRAWINGS ARE SHOWN AT SPECIFIC LOCATIONS AND ARE INTENDED TO SHOW GENERAL REQUIREMENTS THROUGHOUT. CONDITIONS NOT SPECIFICALLY INDICATED ARE TO BE CONSTRUCTED IN A SIMILAR FASHION OR BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

4. ALL PENETRATIONS SHALL BE PATCHED, SEALED, AND FIRE STOPPED AS REQUIRED BY THE NEC. WHEN THEY PASS THRU THE FLOOR/CEILING ASSEMBLY OR THRU RATED WALLS.

5. THE CONTRACTOR MUST COORDINATE LOCATION OF PIPING / ELECTRICAL WITH PLUMBING AND/OR COMPRESSOR ROOMS, AND PROVIDE DETAILS ON THE DRAWINGS.

6. INSTALL ALL FIXTURES, MATERIALS, AND FINISHES IN STRICT COMPLIANCE WITH MANUFACTURER'S GUIDELINES.

7. DETAILS OF CONSTRUCTION TO BE CONSTRUCTED IN A SIMILAR FASHION OR BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION.

8. CONTRACTOR TO DETAIL XXX.

9. HAPPY NEW YEAR.

10. ALL ATTACHMENTS BE EFFECTIVE, AND SHOULD BE READ IN CONJUNCTION WITH THE DRAWINGS AND SPECIFICATIONS.

11. MAY ALL CONSTRUCTION PERSONNEL HAVE A SAFE AND HAPPy NEEw YEAR.

12. DETAILS AND SECTIONS ON THE DRAWINGS ARE SHOWN AT SPECIFIC LOCATIONS AND ARE INTENDED TO SHOW GENERAL REQUIREMENTS THROUGHOUT. CONDITIONS NOT SPECIFICALLY INDICATED ARE TO BE CONSTRUCTED IN A SIMILAR FASHION OR BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

13. THE CONTRACTOR MUST COORDINATE LOCATION OF PIPING / ELECTRICAL WITH PLUMBING AND/OR COMPRESSOR ROOMS, AND PROVIDE DETAILS ON THE DRAWINGS.

14. INSTALL ALL FIXTURES, MATERIALS, AND FINISHES IN STRICT COMPLIANCE WITH MANUFACTURER'S GUIDELINES.

15. DETAILS OF CONSTRUCTION TO BE CONSTRUCTED IN A SIMILAR FASHION OR BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION.

16. UTILIZE OSHA SAFETY PRECAUTIONS AS REQUIRED.

17. START OF ANY CONSTRUCTION AND COORDINATE ANY DISCREPANCIES ON THE PLANS WITH THE ARCHITECT FOR CLARIFICATION.

18. THE CONTRACTOR MUST COORDINATE LOCATION OF PIPING / ELECTRICAL WITH PLUMBING AND/OR COMPRESSOR ROOMS, AND PROVIDE DETAILS ON THE DRAWINGS.

19. INSTALL ALL FIXTURES, MATERIALS, AND FINISHES IN STRICT COMPLIANCE WITH MANUFACTURER'S GUIDELINES.

20. DETAILS OF CONSTRUCTION TO BE CONSTRUCTED IN A SIMILAR FASHION OR BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION.

21. GENERAL CONTRACTOR TO VERIFY ALL DIMENSIONS AND QUANTITIES PRIOR TO ORDERING.

22. CONTRACTOR MUST COORDINATE LOCATION OF PIPING / ELECTRICAL WITH PLUMBING AND/OR COMPRESSOR ROOMS, AND PROVIDE DETAILS ON THE DRAWINGS.

23. INSTALL ALL FIXTURES, MATERIALS, AND FINISHES IN STRICT COMPLIANCE WITH MANUFACTURER'S GUIDELINES.

24. DETAILS OF CONSTRUCTION TO BE CONSTRUCTED IN A SIMILAR FASHION OR BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION.

25. UTILIZE OSHA SAFETY PRECAUTIONS AS REQUIRED.

26. GENERAL CONTRACTOR TO COORDINATE WITH OTHER CONTRACTS ON SITE HIRED UNDER MECHANICAL, PLUMBING, ELECTRICAL, AND FIRE PROTECTION SYSTEMS. DRAWINGS MUST SHOW LOCATION OF PIPING / ELECTRICAL WITH PLUMBING AND/OR COMPRESSOR ROOMS, AND PROVIDE DETAILS ON THE DRAWINGS.

27. INSTALL ALL FIXTURES, MATERIALS, AND FINISHES IN STRICT COMPLIANCE WITH MANUFACTURER'S GUIDELINES.

28. DETAILS OF CONSTRUCTION TO BE CONSTRUCTED IN A SIMILAR FASHION OR BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION.

29. UTILIZE OSHA SAFETY PRECAUTIONS AS REQUIRED.

30. GENERAL CONTRACTOR TO COORDINATE WITH OTHER CONTRACTS ON SITE HIRED UNDER MECHANICAL, PLUMBING, ELECTRICAL, AND FIRE PROTECTION SYSTEMS. DRAWINGS MUST SHOW LOCATION OF PIPING / ELECTRICAL WITH PLUMBING AND/OR COMPRESSOR ROOMS, AND PROVIDE DETAILS ON THE DRAWINGS.

31. ALL PENETRATIONS SHALL BE PATCHED, SEALED, AND FIRE STOPPED AS REQUIRED BY THE NEC. WHEN THEY PASS THRU THE FLOOR/CEILING ASSEMBLY OR THRU RATED WALLS.

32. INSTALL ALL FIXTURES, MATERIALS, AND FINISHES IN STRICT COMPLIANCE WITH MANUFACTURER'S GUIDELINES.

33. DETAILS OF CONSTRUCTION TO BE CONSTRUCTED IN A SIMILAR FASHION OR BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION.
ROWAN UNIVERSITY
GLASSBORO, NJ
RENOVATIONS TO ROWAN HALL
PHASE III

PLUMBING CONNECTIONS TO OME SERVICE CARRIER; MC-01 AND MC-02 ONLY
PWR PLUG TO OME SERVICE CARRIER; MC-01 AND MC-02 ONLY

MOBILE CASEWORK MC-01 / MC-01AV
OVERHEAD SERVICE CARRIER

GAS CYLINDER BRACKET, TYP.
GAS CYLINDER RACK, TYP.
LOCAL EXHAUST VENTILATION ARM (SNORKEL) MOUNTING DETAILS

OVERHEAD SERVICE CARRIER

NOTE: PROVIDE 02 MONITOR ADJACENT TO ALL GAS CYLINDERS

DRAWINGS COPYRIGHT © 2016
CLARKE CATON HINTZ, PC

4/3/19 ADDENDA #1
SECTION 11 5390 MISCELLANEOUS LABORATORY ITEMS

PART 1 – GENERAL

1.0 RELATED DOCUMENTS: This section is only a portion of the Contract Documents. All of the Contract Documents, including Conditions of the Contract and Division 1 General Requirements, apply to this section.

1.1 SECTION INCLUDES:

A. Furnish and Install: Miscellaneous Laboratory Items including, without limitation:
   1. Drying Rack / Peg Boards
   2. Safety Shower/Eye wash
   3. Fire extinguisher cabinet
   4. Compressed air valve
   5. Vacuum valve
   6. Overhead Service Carrier
   7. BioSafety Cabinet

B. Related Sections: Without limitation, related sections include:
   Division 11 000 Equipment
   Division 12 3555 Metal Laboratory Furniture
   Division 12 Epoxy Counter Tops
   Division 22 Plumbing
   Division 26 Electrical

1.2 INSTALLER QUALIFICATIONS: The manufacturer or its certified, factory trained installer.

1.3 DELIVERY, STORAGE, HANDLING: Comply with Division 1 General Requirements and manufacturer’s instructions and recommendations.

PART 2 – PRODUCTS

2.1 Drying Rack / Peg Boards Custom fabricate:

A. Pegboard:
   1. Size: 1” thick x height and width shown on lab elevations.
   2. Epoxy Color: Match Bench tops.

B. Back Panel Material: Comply with Section 12 3654 Epoxy Counter Tops:
   1. Back Panel Material Color: As shown or selected by Architect.
   2. Back Panel Thickness: 1 inch

C. Pegs: Solid Polyethylene
   1. Peg Diameter: 0.375 inches
   2. Peg Length: 4.5 inches
   3. Number of pegs: As shown or, if not shown 1 for every 18 square inches of back panel area.
   4. Peg Color: Match back panel color

D. Stainless Steel Drip Trough (Basis of design: Inter Dyne Systems or equivalent)
   1. Tray material: Alloy 304 Stainless Steel
   2. Pegboard Mount (Bottom of pegboard – No exposed fasteners)
   3. Width: Match pegboard width (As shown on lab elevations)
3. Depth: 2 inches
4. Height: 1 inch
5. Drain location: Right end of drip trough with 36 inches of clear PVC tubing
6. Drip trough screen: Full depth x full width.

E. Assembly Mounting: Face fasten through back panel with stainless steel Philips head screws and stainless steel washers.

2.2 Safety Stations (Basis of design: )

A. ES-1 Surface Mounted Safety Center - Eyewash/Shower

1. Watersaver Model No.: SSBF2173
2. Drain pan, exposed shower head
3. Electric light and alarm horn unit
   https://wsflab.com/product/ssbf2173/

B. FE-01 Fire Extinguisher Cabinet (Basis of design)

1. JL Industries AMBASSADOR SERIES C1016F10 Clear Acrylic Full Panel, Semi-recessed square trim

2.3 Laboratory Service Fixtures (Basis of design: )

A. A - Compressed air outlet

1. Provide deck mounted type Watersaver Model No.: L4200-131WSA
   http://wsflab.com/product/l4200-131wsa/
2. Provide panel mounted type Watersaver Model No.: L4200-158WSA
   http://wsflab.com/product/l4200-158wsa/

B. V - Vacuum outlet

1. Provide deck mounted type Watersaver Model No.: L4200-131WSA
   http://wsflab.com/product/l4200-131wsa/
2. Provide panel mounted type Watersaver Model No.: L4200-158WSA
   http://wsflab.com/product/l4200-158wsa/

2.4 Overhead Service Carriers

A. Manufacturer: Mott Manufacturing or equivalent:

1. Avion - Suspended service panel.
2. Size: 24” x 60”.
3. Finish: Powder Coated Paint (color to match architect’s sample)
4. Service connections:
   a. Compressed Lab Air: COHAIR/MCPVAIR
   b. Lab Vacuum: COHAVAC/MCPVVAC
   c. Electrical Power: Twist Lock NEMAL5-20R
2.5 BC-48 Biosafety Cabinets (Basis of Design):

A. NUAIRE LABGARD ES ENERGY SAVER NU-540-500 - 4FT wide unit

B. Cabinet shall provide airflow & biological safety performance as specified:
   1. Provide biological containment protection for both operator and product proven by an actual test, (e.g. test conducted by NSF) and routinely validated by Manufacturer.
   2. Constructed from 16/18 gauge, Type 304 stainless steel forming a monolithic, sealed structure
   3. Easily fumigated employing an established procedure such as that recommended by NIH or NSF
   4. Supply HEPA filter 99.99% efficient @ 0.3 microns shall be of full cabinet work zone width and depth
   5. Supply HEPA filter shall be protected by a perforated metal diffuser covering the entire top of the work zone
   6. Air Velocity from the supply filter shall average 55 to 65 FPM (.28 to .32 m/s) with no single point outside the 20% of average range measured in a horizontal plane defined by 4 inches (102mm) above the bottom edge of window.
   7. Work access opening shall be 10 inches (254 mm) high standard, optionally 8 inches (203 mm). Average Inflow velocity shall nominally be 105 LFPM (.53m/s).
   8. Exhaust HEPA filter 99.99% efficient @ 0.3 microns

C. Ergonomically designed for maximum user comfort and adjustability to meet the requirements of the American Disabilities Act (ADA)
   1. Standard non-metallic armrest/airfoil incorporating large 2 inch (51mm) forearm support area 1/2 inch (12mm) recessed front grill designed for armrest comfort while maintaining containment performance.
   2. Maximum visibility into cabinet workzone shall be at least 23-3/4 inches (603mm) from front access airfoil to exterior light housing.
   3. Centrally located instrument panel within the control center that is easily serviced with quick disconnects
   4. Provide user adjustable basestand or base storage cabinet
   5. Provide smooth operating sliding window from full closure to full opening at 21 inches (533mm).
   6. Provide large worktray (20-3/4 inch (527mm) depth) removable with coved corners for easy cleaning.
   7. Cabinet shall have a 10 degree slope.

D. Positive pressure plenums surrounded by a vacuum relative to the room

E. Electrical power shall be supplied with a 12-foot (2.5m), 3-wire cord with molded plug. Electrical supply should be 115 VAC, 60 Hz protected with thermal circuit breaker from distribution panel.

F. DC ECM Motor with an optimally determined forward-curved fan for each model size/width to maximize both energy efficiency and filter loading capacity.

G. Provide two internal electrical circuits; one for blower/lights and one for the duplex outlets. Each circuit shall be protected with a fuse located in the Control Center on the electronic module.

H. Listed by Underwriters Laboratories to meet the requirements of U.S. for electrical/mechanical integrity.

I. Provide control system consisting of electronic modules that will perform the following functions:
1. Easy user interface via LED’s and function keys
2. Control blower via solid state switch
3. Control lights via solid state switch
4. Control outlets via solid state switch
5. Disable audible alarm switch with ring back function
6. Control blower DC ECM motor with solid-state DC Motor Controller that provides automatic compensation (constant volume control) for both filter loading and line voltage variances.
7. Monitor and display airflow system performance via monitor

J. Provide control system that provides the following optional functional features (included with cabinet, but must be configured during certification):
   1. Security password protection of cabinet use
   2. Night setback mode. Upon sliding window closure, blower will continue to operate at a lower rate to save energy and maintain interior clean air conditions ready for use upon sliding window opening.
   3. Cabinet usage sync functions with blower, fluorescent light, outlets and accessory outlet
   4. Cabinet usage auto duration timers, Night mode, fluorescent light, UV light and outlets

K. Balancing of cabinet workzone downflow (recycling flow) to exhaust flow shall be accomplished with an internal exhaust flow damper, externally adjustable with screwdriver

L. Sound level shall be no more than 63 dbA measured 15 inches (381mm) above the work tray and 12 inches (305mm) in front of viewing window.

M. Fluorescent lighting shall be externally mounted and provide 90 (968) to 120 (1291) foot-candles (LUX) on work surface. The ballast is to be electronic containing thermal protection with automatic reset

N. Cabinet shall come standard with two outlets with drip proof covers on back wall; one gas valve/service coupling on right side wall; one service coupling on right side wall; two service couplings on left side wall.

O. Cabinet shall be free-standing console model with Base Support Stand

P. Cabinet work zone shall be all welded 16/18 gauge stainless steel (silicone free) and reinforced with stainless steel U channels to minimize vibration.

Q. A 3/8 inch (10 mm) inch ball valve shall be provided in the drain trough beneath the work tray

R. Permanent positive pressure plenum with quick release supply filter removal

S. Motor/blower shall be positioned so as to create an even filter loading, thereby prolonging the life of HEPA filters, automatically handling a 250% minimum increase in filter loading without reducing total air delivery by more than 10%.

T. Provide unit with front filter removal without disassembly of the control panel and sliding window tracks/hardware

U. Provide the following optional equipment shall be available to support installation and user requirements:
   1. 8 inch (203mm) Access Opening @ 105fpm (.53 m/s) Inflow
   2. Ultraviolet Light
   3. LED Lighting
   4. Service Valves for Air, Vacuum
   5. Duplex Outlet
6. IV Bar with 6 Stainless Steel Hooks
7. Exhaust Transition Canopy
8. Adjustable base Support Stand
9. Side Panels
10. HEPA Filters 99.999% @ 0.3 Micron

PART 3 – EXECUTION

3.1 Miscellaneous Laboratory Items Installation:
   A. Comply with manufacturer's instructions and recommendations.
   B. Install plumb and level.
   C. Anchor to building structure, partition framing, or lab bench framing.
   D. Locate fasteners uniformly and symmetrically.
   E. Space fasteners as shown or, if not shown, less than 16 inches oncenter.

END OF SECTION 115390
PART 2 - PRODUCTS

2.1 MANUFACTURER
A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Mott Manufacturing: Scientifix, LLC, 520 Fellowship Road, Suite E-508 Mt. Laurel, NJ 08054-3407 ph. 856.780.5871
   2. Bedcolab, Ltd.: 1460 Sandys Lane, North Wales, PA, 19454 ph 215-896-6448
   4. VWR International, LLC: 2039 Center Square Rd. Bridgeport, NJ 08014 ph (800) 932-5000
   5. Or approved equivalent.

2.2 SEFA 8 TEST REQUIREMENTS
A. Cabinet Load: 2,000 pounds uniformly on top of each cabinet.
B. Cabinet Concentrated Load: 200 pounds centered on top of each cabinet.
C. Door Hinges: 200 pounds on door while door is cycled through full hinge arc.
D. Door Impact: 240 inch-pound impact force on door.
E. Door Cycles: 90 degree arc for 100,000 cycles.
F. Drawer Load: 150 pounds hung on front of open drawer.
G. Drawer Cycles: 100 pounds static uniform over drawer bottom, 50,000 full extension cycles.
H. Drawer Impact: 10 pounds dropped into open drawer.
I. Door and Drawer Pulls: 50 pounds.

2.3 LABORATORY FURNITURE / CASEWORK
A. Fixed Bench
   1. Casework: Floor supported steel cabinet with flush, full overlay doors and drawers.
   2. Casework: Wall mounted steel cabinet with flush, full overlay doors.
   3. Adjustable Wall Shelving:
      a. Description: Steel shelf with rear lip.
      b. Length: Full width of bench from upright to upright.
      c. Quantity: As shown or, if not shown, two tiers [two shelves high].
      d. Retaining Rods: 10 mm stainless steel
      e. Wall Mounted Shelf Channels: Custom heights shown
   4. Caps, Fillers, Trims: Matching steel to close all open ends and to provide a fully finished and fully trimmed assembly.

B. Movable Work Bench
   1. Table frames for mobile work bench/BOD:
      TA-01 Mott Manufacturing custom mobile steel frame tables - TAC2160 Opt-49-H 34" high x 24" wide x 5'-0" long with nylon lockable casters and epoxy top
   2. a. Painted metal work bench with welded metal frames
      b. Leg and cross rails
      c. Epoxy top - color to be chosen from mfr standard
   3. Utilities and Services: Provide pig tail power cords, powered flip-up grommets and
connections to cabinet service panel. Comply with:

a. Division 22 Plumbing  
b. Division 26 Electrical  
c. Division 27 Communications

2.4 CASEWORK MATERIALS

A. Sheet Steel: Mild steel, cold rolled furniture grade to requirements of ASTM A1008/A1008M, Grade C or higher, with smooth surfaces to furniture quality.

B. Galvanized Sheet Steel: Commercial quality galvanized sheet steel to ASTM 653, Designation Z275.

C. Sealant: One component, RTV silicone sealant. Color to suit application.

2.5 CASEWORK CONSTRUCTION

A. Materials and Thickness: Use the following minimum steel thicknesses for furniture manufacturing:

1. Base cabinets:
   a. 11 Gage leveling bolt gusset plates.
   b. 14 Gage drawer slides and side suspension channels.
   c. 16 Gage for tubular rails, legs for tables, gusset plates, cabinet top and intermediate horizontal rails.
   d. 18 Gage for door and drawer fronts, cabinet floor, cabinet sides, vertical front members, cabinet toe kick, service cover panels, table and kneehole frames, front rails, gable legs and dust caps, false panels, furring and filler panels.
   e. 20 Gage for drawer backs, door backs, vertical closure channel, removable back panels, shelves, drawer bodies, drawer dividers, bin bodies, and pull-out shelves.
   f. Additional 14 Gage reinforcement at hinge locations

2. Wall Cabinets:
   a. 14 Gage corner reinforcement (All four corners) All corners weld and ground smooth.
   b. 18 Gage bottom panel (Inside cabinet)
   c. 20 Gage shelf adjustable on ½” increments. Shelves over 36 inches long have hat channel reinforcement
   d. 22 Gage bottom soffit panel (Outside cabinet)
   e. 18 Gage back panels, end panels and top panels.
   f. Additional 14 Gage reinforcement at hinge locations

3. Movable Work Bench:
   a. 2 inch x 2 inch 16 Gage legs, leg rails and leg cross rail
   b. 1 ½ inch x 4 ½ inch 16 Gage end reinforcing rail and cross reinforcing rails
   c. 1 ½ inch x 4 ½ inch 16 Gage end rail, cross rail, front and back aprons
   d. Fully welded construction with all welds ground smooth

B. Cabinet Frame:

1. Provide one-piece die-formed cabinet bottom construction with return side flanges turned down. Spot weld flanges to cabinet sides. Provide sink cabinets with galvanized bottom painted to match cabinet.

2. Cabinet bottoms shall be turned down at front to form 1-1/4” “U” channel to accept toe kick and turn down 5-1/4” at back with 5/8” return to form the back lower member of cabinet base. Provide punched 3/4” dia. corner holes for access to levelers and to accept PVC press plugs. It shall be possible to access levelers from above cabinet without removing drawers or drawer supports.
3. Provide additional vertical 3" “HAT" shaped channels, spot-welded to or formed with the rear vertical corner. Channel shall be provided with pre-punched holes to receive shelf clips, and slotted holes to receive drawer suspension tracks. Cabinets 30” wide and larger shall be provided with intermediate 4-5/8" “HAT" channels to brace cabinet and accept shelf clips and drawer tracks.

4. Where applicable, the front corner posts shall be pre-punched and slotted to accept drawer suspension systems and suspension pull-out shelves. Front vertical posts shall form inboard flush front construction for doors and drawers acting as the cabinet main member side gable tying the cabinet bottom and horizontal member together to form a rigid case. Front post rear closure channels shall be "J" shaped 11/32" x 1-5/16” x 1-15/16”. Provide channel with pre-punched holes to receive shelf clips.

5. Top horizontal front framing member shall form a “J" shaped section 3" wide, 3/8” return by 1” deep with 5/8” return.

6. Intermediate horizontal framing members shall form a “U" 1-1/4” high with a 1” return on top and 5/8” return on bottom.

7. Top rear horizontal framing member shall be 2” x 1-1/4” angle section welded to back corner lapped post and side gables with welded corner gusset plates acting as cabinet bracing and counter top material fixing member.

8. Enclose cabinetry toe space shall be 3” deep x 4” high and shall act as a total enclosure to bottom of cabinet. Toe space section shall key up into “U" shaped front floor member and act as reinforcement. Toe space, front floor of cabinet and corner post sections shall be spot welded together forming one structural member.

9. The toe space members, side gable returns, and back lower member shall form all welded structural corner to accept leveler gussets and 3/8” levellingbolts.

10. Cabinet construction shall be electro spot-welded to form a strong well-fitted, one-piece unit.

11. Exposed horizontal structural cabinet members between doors and drawers shall be unacceptable.

C. Hardware:

   a. Door pull orientation: Vertical
   b. Drawer Pull Orientation: Horizontal

2. Drawer glides: Provide drawer operation on full extension drawer slides, load capacity 100 pounds.

3. Door Hinges: Provide five knuckle stainless steel door hinges screwed into door and fastened to cabinet side stile with two counter sunk #8-32 stainless steel machine screws & captive serrated tooth washer nuts. Standard hinge finish shall be stainless steel.


5. Label Holders: Stainless steel label holders, one per drawer and one per door.

6. Locks:
   a. Removable core, 5 disc tumbler with 229 key changes on a single cut key complete with master key.
   b. Keying: Custom keyed and master key as directed by Owner.
   c. Lock Quantity: As shown or, if not shown, 50 percent of all casework doors and drawers.
   d. Locked Pair Doors - Active Leaf: Lock active leaf.
   e. Locked Pair Doors - Inactive leaf: Manual catch inside cabinet or astragal by active leaf.

D. Base Cabinet Components:

1. Provide removable back panels for cupboard base cabinets. Provide partial back panels 9” in height to accommodate plumbing at sink units. When requested, provide back panels and security panels on cabinets requiring locks.
2. Shelving edges; turned down on all four sides 1", and returned under on front and back 1". Shelves 36" and longer shall be provided with “HAT” channel reinforcement at front edge.
   a. Shelf Material: Match cabinet box.
   b. Depth: Full depth.
   d. Height Adjustable Shelves: Required. Adjustable at 1 inch centers.
   e. Interior Shelf Clips: Plastic, twin pin, seismic rated.

3. Doors:
   a. Hinged metal doors are 3/4" thick double pan construction with hat channel reinforcements. The space between the inner and outer door front is filled with a sound deadening core.
   b. Doors are mounted on high performance 2-1/2" five knuckle 14 gauge hinges, attached with four screws, and are held firmly closed with adjustable nylon roller friction catches.
   c. Framed glass doors are supplied with 1/8" (3mm) clear float glass.
   d. Reinforce hinged side of door adequately with hinge machine screws to prevent sagging. Secure recessed hinges to cabinet posts with machine screws and concealed self-locking nuts. Provide nylon roller friction catches, mounted on horizontal top or intermediate members pull side of doors. Provide each hinged door with two rubber bumpers.
   a. Removable cabinet back access panels: Required for floor mounted door and drawer units.
   b. Doors, drawers, tracks and back panels shall be replaceable in the field without requiring special tools.
   c. All standard double door cabinets shall be designed without center stiles to maximize access to the cabinet.

2. Drawers:
   a. Full access drawer bodies are formed with a one piece, fully coved bottom for effective cleaning, and a reinforcing bend on all top edges. Drawer fronts are 3/4" thick double pan construction. The space between the inner and outer drawer front is filled with a sound deadening core.
   b. Drawers have integral stops to prevent accidental withdrawal, and are self-closing for the last 6". Drawers are suspended on 1" diameter nylon rollers with steel ball bearings in a radiused galvanized steel track. File drawers are equipped with full extension ball bearing runners and hanging file supports.
   c. Provide drawer operation on full extension drawer slides, load capacity 100 pounds.
   d. Drawer body shall consist of one piece construction including the bottom, two sides, back and inner front flanged end which shall be welded to the interior drawer front head. Drawer bodies shall have a reinforcing bend on top edges.
   e. Removable cabinet back access panels: Required for floor mounted door and drawer units.
   f. Provide built-in stops to prevent inadvertent removal of drawers, with allowance for drawer to be removed by lifting front of drawers and pulling out.
   g. Provide drawer pulls in central location of drawer face. Two handles shall be provided on units 30" and larger.

3. Service Cover Panels:
   a. 18 GA. Metal service cover panels shall be provided, where called for, between base cabinets to enclose the pipe space. Service cover panels shall be designed in two sections. The lower section shall be fixed in place to mount cove base moulding. The upper section shall be fitted between the base cabinets and shall be removable.
4. Filler Panels:
   a. Fabricate front filler panels complete with flanges on both sides and a 3” x 4” toe space along the working face.
   b. Scribe filler panels shall be flanged on one side and flat on the other, to be cut on jobsite to suit wall conditions, and shall fit into double angles secured to the wall. No visible mounting screws permitted.
   c. Corner filler panels shall be a two-piece construction, one fixed panel and the other a variable panel to facilitate room dimensions. Each shall have flanges and an integral 3” x 4” toe space filler to interlock with its counterpart.
   d. End closing filler panels shall be flanged on one side 1” and secured to back of cabinet. The edge extending to wall shall be flat and fit into a double angle secured to wall. No visible mounting screws permitted.

1.9 STORAGE CABINETS

a. Safety Storage Cabinets;
   1. Construct storage cabinets of double wall, welded sheet steel construction with double panel door; overall thickness, 2”. Provide cabinets with four adjustable leveling devices to compensate for approximately 1” base building floor differential. Raised door sill 2” above bottom of the cabinet to form a liquid-tight well. Overlap cabinet frame with hinged doors having continuous piano type hinges, self-closing doors with three-point locking mechanism ship lapped at opening stile. Shiplap shall be provided with braided fiberglass gasket.
   2. Walls, back, side and top of cabinet shall be insulated with two-inch thick mineral fiber insulation.
   3. Provide adjustable galvanized sheet steel shelves with four edges turned down 1” and additionally returned under 5/8” on all edges. Provide 1/2” incremental shelf adjustment.
   4. Provide 2” vents, complete with fire baffle covers on each vent, with 2” dia. fine metal filter.
   5. Provide overlaid red warning letters 2” high on doors as follows: "FLAMMABLE -- KEEP FIRE AWAY”.
   6. Provide grounding screw lug in accordance with Codes.
   7. Construct safety storage cabinets sized for freestanding configurations as required by Drawings and Schedules.
   8. Fire rated cabinet vented in a concealed manner via adjacent wall construction directly to the HVAC exhaust ductwork above. Coordinate with Mechanical.
   9. Standards: Comply with:
      b. OSHA 1910.106 Flammable and Combustible Liquids, part d 3 ii a[metal].
      c. UL 1275 Flammable Liquid Storage Cabinets.
      d. Factory Mutual Test Procedure 6050 “Storage Cabinets”.

b. Acid Storage Cabinets (moulded liner)
   1. Construct in similar manner to standard steel base cabinets with the addition of a molded polyethylene interior liner.
   2. The lining on the back of doors shall be fitted so that it overlays the flange on the front of the molded cabinet liner to protect all metal areas of the cabinet from corrosive vapors.
   3. Acid storage cabinets shall contain one full-width phenolic shelf. It shall be possible to locate shelf in four positions on 3” increments. Shelf supports shall be integrally molded into cabinet liner.
   4. Provide the door with a decal signifying “ACID” storage. On acid cabinets with two doors, provide one decal signifying “ACID” storage on each door.
   5. Molded liner shall incorporate a 1” high lip along bottom edge to contain spills.
   6. Provide one threaded connection fusion welded to the rear of the cabinet. Thread shall be 2” NPT for connection to exhaust source.
7. Provide an entirely plastic door catch.

c. Vacuum storage cabinets
   a. Description: Acoustically insulated cabinet without bottom and with adjustable height toe kick integral to hinged door for rolling cart.
   b. Acoustical Liner: Required five sides: back, left side, right side, top, interior of door. Acoustical Liner Material: 1 inch thick, “SonexOne”, Sonex division of Pinta, Inc., www.sonexonline.com or equivalent; Class 1 fire rated melamine foam with factory white Hypalon coating, NRC = 0.70.
   c. Back Panel: Removable from cabinet interior.
   d. Exhaust Fan: Required 235 cfm
   e. Exhaust Fan Location: Outside back of cabinet, but not on removable backpanel.
   g. Pump Power Outlet: 120 VAC, 20 Amps, specification grade, duplex; mounted at rear of cabinet, but not on removable back panel.
   h. Factory Wiring: Factory wire pump power outlet and fan to pump power outlet control switch.
   i. Field Connection Provision for Pump/Fan Switch: Provide 20 feet long stranded copper conductors in flexible metal conduit for field connection at top of hood.
   j. Rolling Cart: Required, coordinated with cabinet dimensions, 300 pound capacity, spill retaining lipped pump tray; non marking, silent tire casters with two swivel/locking casters at front.
   k. Quantities: As shown on drawings.

d. General Storage Cabinets
   1. Construct in similar manner to standard steel base cabinets.
   2. Provide the door with a decal signifying “NOT FOR FLAMMABLE OR ACID STORAGE”.

1.10 COUNTERTOP SHELF AND SINK MATERIALS

   1. Manufacturers: Subject to compliance with requirements, provide products by the following:
      a. Durcon Incorporated.
      b. Duratop Epoxy
      c. Chemtops
      d. Or equivalent.

   2. Physical Properties:
      a. Flexural Strength: Not less than 10,000 psi.
      b. Modulus of Elasticity: Not less than 2,000,000 psi.
      c. Hardness (Rockwell M): Not less than 100.
      d. Water Absorption (24 Hours): Not more than 0.02 percent.
      e. Heat Distortion Point: Not less than 260 deg F.

   3. Chemical Resistance: Epoxy-resin material has the following ratings when tested with indicated reagents according to NEMA LD 3, Test Procedure 3.4.5:
      a. No Effect: Acetic acid (98 percent), acetone, ammonium hydroxide (28 percent), benzene, carbon tetrachloride, dimethyl formamide, ethyl acetate, ethyl alcohol, ethyl ether, methyl alcohol, nitric acid (70 percent), phenol, sulfuric acid (60 percent), and toluene.
      b. Slight Effect: Chromic acid (60 percent) and sodium hydroxide (50 percent).

   4. Color: As selected by Architect from epoxy manufacturer's full range.
1.11 COUNTERTOPS, SHELVES AND SINKS

a. Countertops, General: Provide units with smooth surfaces in uniform plane, free of defects. Make exposed edges and corners straight and uniformly beveled. Provide front and end overhang of 1 inch, with continuous drip groove on underside 1/2 inch from edge.

b. Sinks, General: Provide sizes indicated or laboratory casework manufacturer's closest standard size of equal or greater volume, as approved by Architect.
   1. Outlets: Provide with strainers and tailpieces, NPS 1-1/2, unless otherwise indicated.
   2. Overflows: Where indicated, provide overflow of standard beehive or open-top design with separate strainer. Height 2 inches less than sink depth. Provide in same material as strainer.

c. Epoxy Countertops and Sinks:
   1. Countertop Fabrication: Fabricate with factory cutouts for sinks, holes for service fittings and accessories, and butt joints assembled with epoxy adhesive and concealed metal splines.
      a. Countertop Configuration: Flat, 1 inch thick, with beveled or rounded edge and corners, and with drip groove and integral coved or applied backsplash.
      b. Countertop Construction: Uniform throughout full thickness.
   2. Sink Fabrication: Molded in one piece with smooth surfaces, coved corners, and bottom sloped to outlet; 1/2-inch minimum thickness.
      a. Provide with polypropylene strainers and tailpieces.
      b. Provide integral sinks in epoxy countertops, bonded to countertops with invisible joint line.
      c. Provide manufacturer's recommended adjustable support system for table- and cabinet-type installations.
   4. Color: As selected by Architect from epoxy manufacturer's full range.

1.12 METAL CABINET FINISH

a. General: Prepare, treat, and finish welded assemblies after assembling. Prepare, treat, and finish components that are to be assembled with mechanical fasteners before assembling. Prepare, treat, and finish concealed surfaces same as exposed surfaces.

b. Preparation: After assembly, clean surfaces of mill scale, rust, oil, and other contaminants. After cleaning, apply a conversion coating suited to the organic coating to be applied over it.

c. Chemical-Resistant Finish: Immediately after cleaning and pretreating, apply laboratory casework manufacturer's standard two-coat, chemical-resistant, baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils.
   1. Chemical and Physical Resistance of Finish System: Finish complies with acceptance levels of cabinet surface finish tests in SEFA 8 M. Acceptance level for chemical spot test shall be no more than four Level 3 conditions.

d. Color for Metal Laboratory Casework: Custom Pearl White to match Architect's sample.

e. Color for Metal Laboratory Casework Doors and drawers: Custom Khaki to match Architects sample
PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas, with Installer present, for compliance with requirements for installation tolerances, location of reinforcements, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF CABINETS

A. Comply with installation requirements in SEFA 2.3. Install level, plumb, and true; shim as required, using concealed shims. Where laboratory casework abuts other finished work, apply filler strips and scribe for accurate fit, with fasteners concealed where practical. Do not exceed the following tolerances:

1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet.
2. Variation of Bottoms of Upper Cabinets from Level: 1/8 inch in 10 feet.
3. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
5. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.

B. Utility-Space Framing: Secure to floor with two fasteners at each frame. Fasten to partition framing, wood blocking, or metal reinforcements in partitions and to base cabinets.

C. Base Cabinets: Fasten cabinets to utility-space framing, partition framing, blocking, or reinforcements in partitions, with fasteners spaced not more than 16 inches o.c. Bolt adjacent cabinets together with joints flush, tight, and uniform.

1. Where base cabinets are installed away from walls, fasten to floor at toe space at not more than 24 inches o.c. and at sides of cabinets with not less than two fasteners per side.

D. Wall Cabinets: Fasten to hanging strips, masonry, partition framing, blocking, or reinforcements in partitions. Fasten each cabinet through back, near top, at not less than 16 inches o.c.

E. Install hardware uniformly and precisely. Set hinges snug and flat in mortises.

F. Adjust laboratory casework and hardware so doors and drawers align and operate smoothly without warp or bind and contact points meet accurately. Lubricate operating hardware as recommended by manufacturer.

3.3 INSTALLATION OF COUNTERTOPS

A. Comply with installation requirements in SEFA 2.3. Abut top and edge surfaces in one true plane with flush hairline joints and with internal supports placed to prevent deflection. Locate joints only where indicated on Shop Drawings.

B. Field Jointing: Where possible, make in same manner as shop-made joints, using dowels, splines, fasteners, adhesives, and sealants recommended by manufacturer. Shop prepare edges for field-made joints.

1. Use concealed clamping devices for field-made joints in plastic-laminate countertops. Locate clamping devices within 6 inches of front and back edges and at intervals not exceeding 24 inches. Tighten according to manufacturer's written instructions to exert a uniform heavy pressure at joints.
C. Fastening:
   1. Secure countertops, except for epoxy countertops, to cabinets with Z-type fasteners or equivalent, using two or more fasteners at each cabinet front, end, and back.
   2. Secure epoxy countertops to cabinets with epoxy cement, applied at each corner and along perimeter edges at not more than 48 inches o.c.
   3. Where necessary to penetrate countertops with fasteners, countersink heads approximately 1/8 inch, and plug hole flush with material equal to countertop in chemical resistance, hardness, and appearance.

D. Provide required holes and cutouts for service fittings.

E. Seal unfinished edges and cutouts in plastic-laminate countertops with heavy coat of polyurethane varnish.

F. Provide scribe moldings for closures at junctures of countertop, curb, and splash with walls as recommended by manufacturer for materials involved. Match materials and finish to adjacent laboratory casework. Use chemical-resistant, permanently elastic sealing compound where recommended by manufacturer.

G. Carefully dress joints smooth, remove surface scratches, and clean entire surface.

3.4 INSTALLATION OF LABORATORY ACCESSORIES

A. Install accessories according to Shop Drawings, installation requirements in SEFA 2.3, and manufacturer's written instructions.

B. Securely fasten adjustable shelving supports, stainless-steel shelves, and pegboards to partition framing, blocking, or reinforcements in partitions.

C. Install shelf standards plumb and at heights to align shelf brackets for level shelves. Install shelving level and straight, closely fitted to other work where indicated.

D. Securely fasten pegboards to partition framing, blocking, or reinforcements in partitions.

3.5 INSTALLATION OF SERVICE FITTINGS

A. Comply with requirements in other Sections for installing water and laboratory gas service fittings and electrical devices.

B. Install fittings according to Shop Drawings, installation requirements in SEFA 2.3, and manufacturer's written instructions. Set bases and flanges of sink- and countertop-mounted fittings in sealant recommended by manufacturer of sink or countertop material. Securely anchor fittings to laboratory casework unless otherwise indicated.

3.6 CLEANING AND PROTECTING

A. Clean finished surfaces, touch up as required, and remove or refinish damaged or soiled areas to match original factory finish, as approved by Architect.

B. Protect countertop surfaces during construction with 6-mil plastic or other suitable water-resistant covering. Tape to underside of countertop at a minimum of 48 inches o.c.

END OF SECTION 123555