DELAWARE STATE UNIVERSITY

OFFICE OF PLANNING & CONSTRUCTION
1200 N. DuPont Highway
Dover, Delaware 19901-2277

Addendum # 02

Date: 6/9/2017

Project: Science Center South – Animal Research Lab Renovation

Contract: PC-16-019

The work herein shall be considered part of the bid documents for the referenced project and carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Acknowledge receipt of addendum on the bid form as indicated.

Clarifications:

1. See attached revised bid form to include alternates
2. See attached revised Invitation to Bid
3. Bid form is attached to reflect the revised bid opening date. Bids are due Friday, June 23, 2017@3:00 pm
4. Transformer for Cabinet Washer is to be supplied by vendor.

Changes to Specifications:

1. Added Steel Casework specifications.
2. Added Corner Guard specifications.
3. Added Laboratory Grade Ceiling Tile w/ integral sealant specifications.

Changes to Drawings:

1. A2.1 – Updated 2/A2.1 to include location of sprinkler heads. This is meant to assist location of new sprinkler heads. Added location of corner guards.
   – Added location of corner guards and associated keynote.
   – Added scope of work notes, and notes for alternates.
2. E9.0 – Added manual dimmer controls and AC only exit light remark.

3. E9.1 – Updated 3/E9.1 to reflect all lights on manual dimmer controls and only Rooms 207C & 207D to be connected to emergency power. Added note for alternate.

General Information:

Alternate #1 – Allowance for Laboratory Safety Signage of $5,000. Architect to provide information after contract is awarded.

Alternate #2 – Corner guards and impact resistant drywall. See specifications.

Alternate #3 – Dimmable ballast and manual controls for ceiling lights in all rooms. See updated drawing E9.1.

Alternate #4 – Contractor to provide and install Lab Grade Ceiling Tiles w/ integral sealant. See specifications.

Alternate #5 – Contractor to interface the new card readers to existing campus wide access control. AdvanTech can help with this scope Contractor to own scope to coordinate with AdvanTech.

Alternate #6 – FF&E Allowance $15,000.

Alternate #7 – Contractor to relocate existing equipment.

Alternate #8: Lab Specialties Allowance $25,000.00

Questions and Answers:

11. On Drawing A2.1, Note 10 says to remove existing Epoxy Flooring and Base. Can the new Epoxy be installed over the existing?
    Answer: It is preferred to have existing Epoxy Flooring and base removed prior to installing new.
2. On Drawing A2.2 says the owners supplies equipment, sizes are needed. Will this equipment be fabricated and ready to install? Will the contactor have to relocated the equipment or will the owner deliver the equipment to Room 207?
    Answer: There will be existing equipment that requires no fabrication; just relocated to Room 207. Only new item that requires "installation" will be the cabinet washer as it sits within a wall. Existing hood will need to be disassembled and stored during construction, then reinstalled. Alternate #7 for contractor to relocate equipment.

3. On the Bid Form is state there are 3 alternates, are there any? Please advise.
   Answer: See changes above in general information.
4. The Bid Form states 3 Unit Prices, is this requires? If not, how will the bid form be filled out?
   Answer: There are no unit prices
5. Will the Sprinkler Systems have to be modified or can an allowance be issued?
   Answer: Sprinkler systems will be modified, architect will issue a drawing that shows existing sprinkler head locations. See 2/A2.1.
6. Will the owner pay for permits?
   Answer: Contractor shall pay for all permits and fees associated with this project.
7. Will the owner pay for impact fees?
   Answer: Contractor shall pay for impact fees
8. Can you please provide specs for the lab casework?
   Answer: See attached specifications.
1. On drawing 2.2 details 3, 4, 5, 6, 7, 8, 9, 10, 11 show casework details and SS shelfs. Please provide specifications for these items as not are provided in the spec.
   Answer: See attached specifications.
9. On drawing 2.2 detail 5 shows a typical ADA section of a solid surface counter, it this to be provided? If so please provide a specification section for the solid surface materials also.
   Answer: All casework to be stainless steel.
10. The area between all the rooms (corridor) is not designated as such, it the room finishes in this area to be same as the Main Lab 207?
    Answer: Finishes in the corridor should match existing.
11. In the specifications none of the ductwork for the HVAC is called out to be stainless steel, with this being a Lab with hoods was this an omission?
    Answer: Stainless steel ducts are required for fume hood exhaust, all other ducts galvanized steel per specifications.

END

INVITATION TO BID

Sealed bids for Delaware State University Contract No. **PC-16-019 – Science Center South – Animal Research Lab Renovation** will be received by the Delaware State University, in the Office of Planning & Construction Room 101 in the Facilities Management Building, 1200 N. DuPont Highway, Dover, DE 19901-2277, until **3:00 pm local time on Friday, June 23, 2017,** at which time they will be publicly opened and read aloud in the Conference Room. Bidder bears the risk of late delivery. Any bids received after the stated time will be returned unopened.

It's the intent of Delaware State University to select a qualified contractor to provide services related to the Animal Research Lab Renovation as defined in the bid documents.

A **MANDATORY** Pre-Bid Meeting will be held on **Tuesday, May 30, 2017 at 10:00 am local time** at **the Science Center South Building Lobby Area** for the purpose of establishing the listing of subcontractors and to answer questions. Representatives of each party to any Joint Venture must attend this meeting. **ATTENDANCE OF THIS MEETING IS A PREREQUISITE FOR BIDDING ON THIS CONTRACT.**

Sealed bids shall be addressed to the Delaware State University c/o the Office of Planning & Construction, Facilities Management Building, Room 101, Dover, DE 19901-2277, Attn: Zafar Chaudhry, Associate Vice President of Contract & Procurement. The outer envelope should clearly indicate: **"DSU CONTRACT NO. PC-16-019 – Science Center South – Animal Research Lab Renovation** - **SEALED BID - DO NOT OPEN."**

Contract documents may be obtained or reviewed at the office of Studio Jaed at 2500 WRANGLE HILL ROAD, STE. 110 BEAR, DE 19701 upon receipt of $500.00 per set/non-refundable, starting on the day of the mandatory pre-bid. Checks are to be made payable to "Studio Jaed". Alternatively, in consideration of our environment, and in alignment with the University's sustainability initiatives, bidders may request an electronic copy of the bidding documents by submitting a written request to constructionbid@desu.edu. Delaware State University will track all bidders and ensure plan holder receive all addenda.

Summary of Events and Dates:

Mandatory Pre-bid at Science Center Lobby	**5/30/2017**	**Tuesday, May 30, 2017@10:00 am**
Deadline for Questions	**6/7/2017**	**Wednesday, June 07, 2017 (4:00 pm)**
Deadline for Final Addendum	**6/12/2017**	**Monday, June 12, 2017 (4:00 pm)**
Posting Answers to Contractors Questions	**6/12/2017**	**Monday, June 12, 2017 (4:00 pm)**
Bid Opening	**6/23/2017**	**Friday, June 23, 2017@3:00 pm**
Contractor Selection Date	**6/21/2017**	**Wednesday, June 21, 2017**
Anticipated Start of Construction	**7/1/2017**	**Saturday, July 01, 2017**
Last Day for Contract Award	**7/15/2017**	**Saturday, July 15, 2017**
Substantial Completion	**10/16/2017**	**Monday, October 16, 2017**

Bidders will not be subject to discrimination on the basis of race, creed, color, sex, sexual orientation, gender identity or national origin in consideration of this award, and Minority Business Enterprises, Disadvantaged Business Enterprises, Women-Owned Business Enterprises and Veteran-Owned Business Enterprises will be afforded full opportunity to submit bids on this contract. Each bid must be accompanied by a bid security equivalent to ten percent of the bid amount and all additive alternates. The successful bidder must post a performance bond and payment bond in a sum equal to 100 percent of the contract price upon execution of the contract. Delaware State University reserves the right to reject any or all bids and to waive any informalities therein. Delaware State University may extend the time and place for the opening of the bids from that described in the advertisement, with not less than two calendar days' notice by certified delivery, facsimile machine or other electronic means to those bidders receiving plans.

DRUG TESTING REQUIREMENTS FOR LARGE PUBLIC WORKS

Pursuant to 29 Del.C. §6908(a)(6), effective as of January 1, 2016, OMB has established regulations that require Contractors and Subcontractors to implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds. The regulations establish the mechanism, standards and requirements of a Mandatory Drug Testing Program that will be incorporated by reference into all Large Public Works Contracts awarded pursuant to 29 Del.C. §6962. Final publication of the identified regulations can be found at the following: 4104 Regulations for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects

END OF ADVERTISEMENT FOR BIDS

BID FORM

Project: **PC-16-019– Science Center South – Animal Research Lab Renovation**

Location: Delaware State University
Science Center South - Main Campus
1200 North DuPont Hwy
Dover, Delaware

For Bids Due: **Friday, June 23, 2017@3:00 pm**

To: Delaware State University
Facilities Building,
Office 101
1200 N. DuPont Highway
Dover, DE 19901-2277
Attn: Zafar Chaudhrey
Associate Vice President

Name of Bidder: _____

Delaware Business License No.:_____ **Taxpayer ID No.:** _____
(A copy of Bidder's Delaware Business License must be attached to this form.)

(Other License Nos.): _____

Phone No.: ( ) _____ - _____ **Fax No.: ( ) _____ - _____**

The undersigned, representing that he has read and understands the Bidding Documents and that this bid is made in accordance therewith, that he has visited the site and has familiarized himself with the local conditions under which the Work is to be performed, and that his bid is based upon the materials, systems and equipment described in the Bidding Documents without exception, hereby proposes and agrees to provide all labor, materials, plant, equipment, supplies, transport and other facilities required to execute the work described by the aforesaid documents for the lump sum itemized below:

$_____(Written Out).

($_____) (Figures).

[This price includes all allowances as documented within the project manual.]

A. ALTERNATES (Note: *project is subject to prevailing wages*)

1. Alternates: Alternate prices conform to applicable project specification section. Refer to the drawing specifications for a complete description of the following Alternates. An "ADD" or "DEDUCT" amount is indicated by the crossing out the part that does not apply.

a. **Alternate #1:** Lab safety signage Allowance Net - ADD / DEDUCT
- _____$5.000.00_____ (Figures).
- _____ (Written Out).

b. **Alternate #2:** Corner Guards and Impact resistant Drywall Net - ADD / DEDUCT
- _____ (Figures).
- _____ (Written Out).

c. **Alternate #3:** Dimmable ballast and manual controls Net - ADD / DEDUCT
- _____ (Figures).
- _____ (Written Out).

d. **Alternate #4:** Provide and install Lab Grade Ceiling Tiles, Contractor to apply tile sealant Net - ADD / DEDUCT
- _____ (Figures).
- _____ (Written Out).

e. **Alternate #5:** Access Control interface Net - ADD / DEDUCT
- _____ (Figures).
- _____ (Written Out).

f. **Alternate #6:** FF&E Allowance Net - ADD / DEDUCT
- _____$15,000.00_____ (Figures).
- _____ (Written Out).

g. **Alternate #7:** Contractor to relocate existing furniture Net - ADD / DEDUCT
- _____ (Figures).
- _____ (Written Out).

h. **Alternate #8:** lab Specialties Allowance Net - ADD / DEDUCT
- _____$25,000.00_____ (Figures).
- _____ (Written Out).

B. UNIT PRICES

1. Unit prices conform to applicable project specification section. Refer to the specifications for a complete description of the following Unit Prices:

		ADD	**DEDUCT**
UNIT PRICE No. 1:	(BRIEF DESCRIPTION)	$ N/A	$ N/A
UNIT PRICE No. 2:	(BRIEF DESCRIPTION)	$ N/A	$ N/A
UNIT PRICE No. 3:	(BRIEF DESCRIPTION)	$ N/A	$ N/A

C. WORK SCHEDULE

1. We understand that this contract is governed by liquidated damages and that submission of this bid is acceptance of the proposed contract completion date. Our proposed detailed project schedule shows more fully the sequence of activities necessary to meet the specified schedule. The project schedule is a required attachment of a complete bid and failure to submit a viable schedule will be a justifiable reason to deem the bid as incomplete.

2. I/We can begin work _____ calendar days after notification of award and will require _____ calendar days thereafter to complete the work. Work on the project will begin _____ calendar days after Letter of Intent.

3. Alternative Work Hours

   Work during "regular hours" at this site is being performed on a single shift, eight hours per day, 7:30 AM to 4:30 PM, and five days per week, Monday through Friday. To meet the schedule established on the basis of Item 1 above, our proposed work hours will be ____ hours per day, _____ AM to _____ PM, and _____ days per week, _____ through _____ the cost of which is reflected in our lump sum price. Our lump sum price also includes any mandatory off-hours work required per special conditions.

D. SITE SUPERINTENDANT

We propose to use _____ as our site superintendent. A resume of his/her qualifications is attached.

We understand that DSU reserves the right to interview him/her prior to contract award/prior to start of work and to reject him/her if not considered acceptable. If rejected, we will propose alternate personnel for the position who will be subject to the same review and acceptance procedure, at no increase in our lump sum proposal.

We also understand DSU reserves the right to reject our bid if we are unable to provide a site supervisor acceptable to DSU within thirty (30) calendar days after submission of this bid.

E. REMARKS

1. I/We acknowledge Addendums numbered _____ and the price(s) submitted include any cost/schedule impact they may have.

2. This bid shall remain valid and cannot be withdrawn for thirty (30) days from the date of opening of bids (60 days for School Districts and Department of Education), and the undersigned shall abide by the Bid Security forfeiture provisions. Bid Security is attached to this Bid.

3. The Owner shall have the right to reject any or all bids, and to waive any informality or irregularity in any bid received.

4. This bid is based upon work being accomplished by the Sub-Contractors named on the list attached to this bid.

5. Should I/We be awarded this contract, I/We pledge to achieve substantial completion of all the work within _____calendar days of the Notice to Proceed.

6. Our Bid Price(s) are firm based on contract award within thirty (30) calendar days of the date of submittal of this bid.

7. I/We understand that we will not be compensated at a later date for claimed additional costs based on any information received during the bid period, but which is not identified in our proposal and subsequently accepted in writing by DSU.

The undersigned represents and warrants that he has complied and shall comply with all requirements of local, state, and national laws; that no legal requirement has been or shall be violated in making or accepting this bid, in awarding the contract to him or in the prosecution of the work required; that the bid is legal and firm; that he has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken action in restraint of free competitive bidding.

Upon receipt of written notice of the acceptance of this Bid, the Bidder shall, within twenty (20) calendar days, execute the agreement in the required form and deliver the Contract Bonds, and Insurance Certificates, required by the Contract Documents.

I am / We are an Individual / a Partnership / a Corporation

By _____ Trading as _____
(Individual's / General Partner's / Corporate Name)

_____
(State of Corporation)

Business Address:_____
_____
_____
_____

Witness: _____ **By:** _____
(Authorized Signature)

(SEAL)

_____
(Title)

Date: _____

ATTACHMENTS

Sub-Contractor List
Non-Collusion Statement
Bid Security
Construction Schedule
Resume of Site Superintendent
(Others as Required by Project Manuals)

END OF SECTION 00 41 13

STATE OF DELAWARE
OFFICE OF MANAGEMENT AND BUDGET

BID BOND

TO ACCOMPANY PROPOSAL
(Not necessary if security is used)

KNOW ALL MEN BY THESE PRESENTS That: _____ _____ of _____ in the County of _____ and State of _____ as **Principal**, and _____ _____ of _____ in the County of _____ and State of _____ as **Surety**, legally authorized to do business in the State of Delaware ("**State**"), are held and firmly unto the **State** in the sum of _____ Dollars ($_____), or _____ percent not to exceed _____ _____ Dollars ($_____) of amount of bid on Contract No. _____, to be paid to the **State** for the use and benefit of _____ (***insert State agency name***) for which payment well and truly to be made, we do bind ourselves, our and each of our heirs, executors, administrators, and successors, jointly and severally for and in the whole firmly by these presents.

NOW THE CONDITION OF THIS OBLIGATION IS SUCH That if the above bonded **Principal** who has submitted to the _____ (***insert State agency name***) a certain proposal to enter into this contract for the furnishing of certain material and/or services within the **State**, shall be awarded this Contract, and if said **Principal** shall well and truly enter into and execute this Contract as may be required by the terms of this Contract and approved by the _____ (***insert State agency name***) this Contract to be entered into within twenty days after the date of official notice of the award thereof in accordance with the terms of said proposal, then this obligation shall be void or else to be and remain in full force and virtue.

Sealed with _____ seal and dated this _____day of _____ in the year of our Lord two thousand and _____ (20___).

SEALED, AND DELIVERED IN THE
Presence of

_____
Name of Bidder (Organization)

Corporate Seal

By: _____
Authorized Signature

Attest _____

_____
Title

_____
Name of Surety

Witness:_____ By: _____

_____
Title

SUBCONTRACTOR LIST

In accordance with Title 29, Chapter 6962 (d)(10)b Delaware Code, the following sub-contractor listing must accompany the bid submittal. The name and address of the sub-contractor **must be listed for each category** where the bidder intends to use a sub-contractor to perform that category of work. In order to provide full disclosure and acceptance of the bid by the *Owner*, **it is required that bidders list themselves as being the sub-contractor for all categories where he/she is qualified and intends to perform such work.**

Subcontractor Category	Subcontractor	Address (City & State)	Subcontractors tax payer ID # or Delaware Business license #
1. Demolition			
2. Plumbing			
3. Mechanical			
4. Electrical			
5. Controls			
6. General Trades			
7. Sheet Metal			
8.			
9.			

NON-COLLUSION STATEMENT

This is to certify that the undersigned bidder has neither directly nor indirectly, entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this proposal submitted this date *(to the Office of Management and Budget, Division of Facilities Management)*.

All the terms and conditions of *(Project or Contract Number)* have been thoroughly examined and are understood.

NAME OF BIDDER: _____

AUTHORIZED REPRESENTATIVE (TYPED): _____

AUTHORIZED REPRESENTATIVE (SIGNATURE): _____

TITLE: _____

ADDRESS OF BIDDER: _____

_____

_____

E-MAIL: _____

PHONE NUMBER: _____

Sworn to and Subscribed before me this _____ day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

THIS PAGE MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

AFFIDAVIT OF EMPLOYEE DRUG TESTING PROGRAM

OMB Regulation 4104 for the Drug Testing of Contractor and Subcontractor Employees Working on Large Public Works Projects requires that Contractors and Subcontractors implement a program of mandatory drug testing for Employees who work on Large Public Works Contracts funded all or in part with public funds.

For more information, please refer to the following link for the full regulation: http://regulations.delaware.gov/register/september2015/final/19%20DE%20Reg%20207%2009-01-15.pdf

All the terms and conditions of *OMB Regulation 4104* have been thoroughly examined and are understood. We hereby certify that we have in place or will implement during the entire term of the contract a Mandatory Drug Testing Program for our employees on the jobsite that complies with this regulation:

Contractor/Subcontractor Name: _____

Contractor/Subcontractor Address: _____

_____

_____

Authorized Representative (typed or printed): _____

Authorized Representative (signature): _____

Title: _____

Sworn to and Subscribed before me this _____day of _____ 20____.

My Commission expires _____. NOTARY PUBLIC _____.

AN AFFIDAVIT SHALL BE PROVIDED BY THE BIDDER AND ALL SUBCONTRACTORS IDENTIFIED IN ATTACHED SUBCONTRACTOR LIST. STATEMENT(S) MUST BE SIGNED AND NOTARIZED FOR YOUR BID TO BE CONSIDERED.

SECTION 09 51 00
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

C. Support hangers, channels, and wires.

1.02 RELATED REQUIREMENTS

A. Section 21 13 00 - Fire Suppression Sprinklers: Sprinkler heads in ceiling system.

B. Section 23 37 00 - Air Outlets and Inlets: Air diffusion devices in ceiling.

C. Section 26 51 00 - Interior Lighting: Light fixtures in ceiling system.

1.03 REFERENCE STANDARDS

A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

C. ASTM E1264 - Standard Classification for Acoustical Ceiling Products.

1.04 SUBMITTALS

A. See Section 01 30 00 - General Conditions, for submittal procedures.

B. Shop Drawings: Indicate grid layout and related dimensioning, junctions with other ceiling finishes, and mechanical and electrical items installed in the ceiling.

C. Product Data: Provide data on suspension system components and acoustical units.

D. Samples: Submit two samples 4x4 inch in size illustrating material and finish of acoustical units.

E. Samples: Submit two samples each, 6 inches long, of suspension system main runner, cross runner, and perimeter molding.

F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

1.05 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum ten years documented experience.

1.06 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

1.07 PROJECT CONDITIONS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Install acoustical units after interior wet work is dry.

1.08 EXTRA MATERIALS

A. See Section 01 60 00 - Product Requirements, for additional provisions.

B. Provide (1) carton of extrat ceilign tiles of each type used for Owner's use in maintenance of project.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

A. Manufacturers:
   1. Armstrong World Industries, Inc: www.armstrong.com.
   2. Substitutions: See Section 01 60 00 - Product Requirements.

B. Acoustical Units - General: ASTM E1264, Class A.

C. Acoustical Tile Type A: Painted mineral fiber, ASTM E 1264 Type III, with to the following characteristics:
   1. Size: 24 x 48 inches.
   2. Thickness: 3/4 inches.
   3. Edge: Square.
   4. Surface Color: White.
   5. Surface Pattern: Fine fissured.
   6. Product: School. Zone Fine Fissured #1714 by Armstrong.

D. Acoustical Tile Type B: Painted mineral fiber, ASTM E 1264 Type III, with to the following characteristics:
   1. Size: 24 x 48 inches.
   2. Thickness: 3/4 inches.
   3. Edge: Square.
   4. Surface Color: White.
   5. Surface Pattern: Fine fissured.
   6. Product: CLEAN ROOM FL, 1716 by Armstrong.

2.02 SUSPENSION SYSTEM(S) UNLESS NOTED OTHERWISE ABOVE.

A. Manufacturers:
   1. Same as for acoustical units.
   2. Armstrong World Industries, Inc:www.armstrong.com.
   3. Substitutions: See Section 01 60 00 - Product Requirements.

B. Suspension Systems - General: ASTM C 635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

C. Exposed Tee Steel Suspension System: Formed galvanized steel, commercial quality cold rolled; heavy-duty.
   1. Profile: Tee; for square edge panels 15/16 inch wide face.
   2. Construction: Double web.
   3. Finish: White painted.
   4. Product: Prelude XL, 15/16" by Armstrong.

D. Exposed Tee Steel Suspension System: Formed galvanized steel, commercial quality cold rolled; heavy-duty.
   1. Profile: Tee; for square edge panels 15/16 inch wide face.
   2. Construction: Double web.
   3. Finish: White painted.
   4. Product: 15/16" Co-Extruded CLEAN ROOM by Armstrong.

2.03 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.

B. Perimeter Moldings: Same material and finish as grid.

C. Acoustical Sealant For Perimeter Moldings: Specified in Section [].

D. Gasket For Perimeter Moldings: Closed cell rubber sponge tape.

E. Touch-up Paint: Type and color to match acoustical and grid units.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C 636, ASTM E 580, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:240.

C. Lay out system to a balanced grid design with edge units no less than 50 percent of acoustical unit size.

D. Locate system on room axis according to reflected plan.

E. Install after major above-ceiling work is complete. Coordinate the location of hangers with other work.

F. Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

G. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

H. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

I. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

J. Do not eccentrically load system or induce rotation of runners.

K. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Install in bed of acoustical sealant or in bed of acoustical sealant.
   2. Use longest practical lengths.
   3. Miter or Overlap and rivet corners.

L. Form expansion joints as detailed. Form to accommodate plus or minus 1 inch movement. Maintain visual closure.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install units after above-ceiling work is complete.

E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

F. Cutting Acoustical Units:
   1. Cut to fit irregular grid and perimeter edge trim.
   2. Make field cut edges of same profile as factory edges.

3. Double cut and field paint exposed reveal edges.

G. Where round obstructions and bullnose corners occur, provide preformed closures to match perimeter molding.

H. Lay acoustical insulation for a distance of 48 inches either side of acoustical partitions as indicated.

I. Install hold-down clips on panels within 20 ft of an exterior door.

3.04 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION

SECTION 10 26 01
WALL AND CORNER GUARDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Corner guards.

1.02 SUBMITTALS

A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.

B. Product Data: Indicate physical dimensions, features, anchorage details, and rough-in measurements.

C. Samples: Submit two sections of corner guard, 24 inch long, illustrating component design, configuration, color and finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wall and Corner Guards:
1. Babcock-Davis: www.babcockdavis.com/sle.
2. Inpro: www.inprocorp.com.
3. Nystrom, Inc: www.nystrom.com/sle.

2.02 COMPONENTS

A. Corner Guards - Surface Mounted:
1. Material: Type 304 stainless steel, No. 4 finish, 14 gage.
2. Performance: Resist lateral impact force of 100 lbs at any point without damage or permanent set.
3. Width of Wings: 3 inches.
4. Corner: Square.
5. Color: As selected from manufacturer's standard colors.
6. Length: One piece.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to wall framing members only.

B. Position corner guard 4 inches above finished floor to 48 inches high.

3.02 TOLERANCES

A. Maximum Variation From Required Height: 1/4 inch.

B. Maximum Variation From Level or Plane For Visible Length: 1/4 inch.

END OF SECTION

SECTION 12 35 53
STEEL LABORATORY CASEWORK AND RELATED PRODUCTS

PART 1 — DESCRIPTION OF WORK

1.01 SUMMARY AND SCOPE

A. Section Includes:
   1. Furnish all cabinets and casework, including tops, ledges, supporting structures, and miscellaneous items of equipment as listed in these specifications, equipment schedules, and drawings. Include delivery to the building, set in place, level, and scribe to walls and floors as required. Furnish and install all filler panels, knee space panels and scribes as shown on drawings.
   2. Furnish and deliver all utility service outlet accessory fittings, electrical receptacles and switches as listed in these specifications, equipment schedules, and drawings, as mounted on the laboratory furniture. All plumbing and electrical fittings, not preinstalled in equipment, shall be packaged separately and properly marked for delivery to the appropriate contractor.
   3. Furnish and deliver, for installation by the mechanical contractor, all laboratory sinks, cup sinks or drains, drain troughs, overflows and sink outlets with integral tailpieces, which occur above the floor, and where these items are part of the equipment or listed in these specifications, equipment schedules, and drawings. All tailpieces shall be furnished less the couplings required to connect them to the drain piping system.
   4. Furnish service strip supports where specified, and set in place, service tunnels, service turrets, supporting structures and reagent racks of the type shown on the drawings.
   5. Remove of all debris, dirt and rubbish accumulated as a result of the installation of the laboratory furniture to an onsite container provided by others, leaving the premises broom clean and orderly.

B. Related Publications:
   1. SEFA 3 - Scientific Equipment and Furniture Association
   2. SEFA 8 - Scientific Equipment and Furniture Association
   3. NFPA 30 - National Fire Protection Association
   4. NFPA-45 - National Fire Protection Association
   5. UL - Underwriters Laboratories
   6. ASTM D522 - Bending Test

1.02 BASIS OF WORK

A. The construction standards of this product line shall provide the basis for quality and functional installation.

B. Supply all equipment in accordance with this specification. The offering of a product differing in materials and construction from this specification requires written approval from the owner/architect. This approval must be obtained seven (7) days before the quotation deadline. Procedures for obtaining approval for an alternate manufacturer are defined in section 1.03.B in this specification.

C. General Contractors should secure a list of approved laboratory furniture manufacturers from the architect as a protection against non-conformance to these specifications.

D. Participants in the quotation process have the option of clarifying deviations to the specified design, construction, or materials. Without such clarifications, sealed quotations to the owner or owner representative will be construed as being in total conformance to the requirements of the specification.

E. The owner/owner’s representative reserves the right to reject qualified or alternate proposals and to award based on product value where such action assures the owner greater integrity of product.

1.03 QUALITY ASSURANCE

A. The steel laboratory furniture contractor shall also provide worktops and fume hoods all manufactured or shipped from the same geographic location to assure proper staging, shipment and single source responsibility.

B. General Performance: Provide certification that furniture shall meet the performance requirements described in SEFA 8.

C. Finish Performance: Provide independent test lab certification that furniture shall meet the performance requirements described in section 2.05 of these specifications.

1.04 SUBMITTALS

A. Manufacturer's Data: Submit manufacturer's data and installation instructions for each type of casework.

B. Shop Drawings:
   1. Submit shop drawings for furniture assemblies showing plans, elevations, ends, cross-sections, service run spaces, location and type of service fittings.
      a. Coordinate shop drawings with other work involved
      b. Provide roughing-in drawings for mechanical and electrical services when required

PART 2 — PRODUCTS

2.01 MANUFACTURERS

A. The basis of this specification is steel casework manufactured according to the standards used by Kewaunee Scientific Corporation, 2700 Front Street, Statesville, North Carolina. The specified design is Research Collection. All laboratory equipment covered by the specification shall be the product of one manufacturer and be fabricated at one geographic location to assure shipping continuity and single-source responsibility.

B. The selected manufacturer shall warrant that all products be free of defects in material and workmanship for a period of one year. The period shall start at the date of acceptance or occupation, whichever comes first. Purchaser shall notify the manufacturer’s representative immediately of any defective product. The manufacturer shall have a reasonable opportunity to inspect the goods. The purchaser shall return no product until receipt by purchaser of written shipping instructions from the manufacturer.

2.02 CABINET MATERIAL:

A. Stainless Steel:
   1. Cabinet bodies, drawer bodies, shelves, drawer heads and door assemblies shall be fabricated from stainless steel.

2.03 DRAWER AND DOOR STYLE:

A. Overlay – Square Edge
   1. Drawer and door, when closed, shall rest against face of cabinet shell, creating a 3/4" overlay front with 1/8" reveal. The outer drawer and door head shall have a channel formation on all four sides to eliminate sharp raw edges of steel. The top front corners of the door shall be welded and ground smooth. Cabinet shall be available with 5-knuckle, semi-concealed or concealed hinges and optional pulls.

2.04 MATERIALS

A. General Requirements:
   1. It is the intent of this specification to provide a high quality steel cabinet specifically designed for the laboratory environment.

B. Steel:
   1. Stainless Steel:

a. Stainless Steel shall be Type 304; 12, 14, 16, 18 and 20 gauge U.S. Standard. Stainless steel shall be supplied with a #4 finish free of burrs, weld marks, or other imperfections.

C. Composition Core Plywood
1. Composition core plywood shall be 3-ply and shall be compliant with ANSI A208.1-199, and/or ANSI A208.2-1994

D. Hardware and Trim:
1. Drawer and Door Pulls:
a. Drawer and door pulls shall be mounted on 4" centers, offering a comfortable hand grip, and be securely fastened to doors and drawers.
b. They shall be manufactured from:
1) Pull Style 4 – 3/8" diameter stainless steel rod with brushed satin finish.
2. Hinges:
a. Overlay Hinges:
b. Overlay style cabinets shall use:
1) Overlay 5-Knuckle Hinges:
(a) 5-Knuckle hinges made of Type 304 stainless steel .089 thick, 2-1/2" high, with brushed satin finish, and shall be the institutional type with a five-knuckle bullet-type barrel. Hinges shall be attached to both door and case with two screws through each leaf. Welding of hinges to door or case will not be accepted. Doors under 36" in height shall be hung on one pair of hinges, and doors over 36" in height shall be hung on three hinges.
3. Drawer Slide:
a. Heavy duty, full extension, soft-close, self-closing, zinc plated, ball bearing slides, rated for 100 pound loads
4. Locks:
a. Disk Tumbler:
1) Locks when shown or called for shall be a 5-disc tumbler with heavy duty interchangeable cylinder. Exposed lock noses shall be dull nickel (satin) plated and stamped with identifying numbers. Locks shall have capacity for 2000 primary key changes and Master Keyed one level with the potential of 5 different, non-interchangeable Master Key groups.
5. Catches – For steel casework with 5-knuckle hinges:
a. Positive Catch:
1) A two-piece heavy-duty cam action positive catch Main body of the catch shall be confined within an integral cabinet top or divider rail, while latching post shall be mounted on the hinge side of door. Polyethylene roller type catches are not acceptable.
6. Elbow Catches:
a. Elbow catches and strike plates shall be used on left hand doors of double door cases where locks are used, and are to be burnished cast aluminum, with bright brass finish.
7. Shelf Adjustment Clips:
a. Shelf adjustment clips shall be die formed, nickel-plated steel.
8. Leg Shoes:
a. Leg shoes shall be a pliable, black vinyl material and shall be provided on all table legs, unless otherwise specified, to conceal leveling device. Use of a leg shoe, which does not conceal leveling device, will not be acceptable.
9. Base Molding:
a. Base molding shall be provided by others.
10. Label Holders:

a. Label holders, where shown or called for, shall be self adhesive type aluminum with satin finish and designed for 2-1/2" x 1-1/8" cards, unless otherwise specified.

11. Number Plates:
    a. Number plates, where shown or called for, shall be self-adhesive type aluminum with indented black lettering.
12. Sink Supports:
    a. Sink supports shall be the hanger type, suspended from end panels of sink cabinet by four 1/4" dia. rods, threaded at bottom end and offset at top to hang from two full-depth reinforcements, welded to the top of end panels. Two 3/4" x 1-1/2" x 12 gauge channels shall be hung on the threaded rods to provide an adjustable sink cradle for supporting sinks.
13. Support Struts:
    a. Support struts shall consist of two 16 gauge channel uprights fastened top and bottom by two adjustable 12 gauge "U" shaped spreaders, each, 1-1/2" x length required, formed from galvanized steel. Struts shall be furnished to support drain troughs, and to support worktop at plumbing space under fume hood superstructures or other heavy loads. Support struts can be furnished with hangers at extra cost when specified, to support mechanical service piping and drain lines.

2.05 CONSTRUCTION

A. Steel Cabinet Construction:
   1. General:
      a. The steel furniture shall be of modern design and shall be constructed in accordance with the best practices of the Scientific Laboratory Equipment Industry. First class quality casework shall be insured by the use of proper machinery, tools, dies, fixtures and skilled workmanship to meet the intended quality and quantity for the project.
      b. All cabinet bodies shall be flush front construction with intersection of vertical and horizontal case members, such as end panels, top rails, bottoms and vertical posts in same plane without overlap. Exterior corners shall be spot welded with heavy back up reinforcements.
      c. Each cabinet shall be complete so that units can be relocated at any subsequent time without requiring field application of finished ends or other such parts.
      d. Case openings of Inset style cabinets shall be rabbeted on all four sides for both hinged and sliding doors to provide a dust resistant case.
      e. All cabinets shall have a cleanable smooth interior. Bottoms shall be formed down on sides and back to create easily cleanable corners with no burrs or sharp edges.
      f. Cabinets shall be designed using a standardized grid pattern to allow reconfiguration of doors and drawers.
   2. Steel Gauges:
   3. Gauges of steel used in construction of cases shall be 18 gauge, except as follows:
      a. Leveling bolt reinforcements 12 gauge.
      b. Top and intermediate front horizontal rails, apron rails, hinge reinforcements, and reinforcement gussets, 16 gauge.
      c. Drawer assemblies, door assemblies, bottom, bottom back rail, toe space rail, and adjustable shelves, 20 gauge.

B. Base Cabinets:
   1. End uprights shall be formed into not less than an L formation at top, bottom, back and a 3/4" wide front C formation. A pilaster shall be added to the inside front of the upright for cabinet and hinge reinforcement and shall be perforated for the support of drawer channels, intermediate rails, hinge screws, and shelf adjustment holes.

2. A 7/8" high top horizontal rail shall interlock with the flange at top of end panels for strength, but shall be flush at face of unit. Top rails not flush with face of end uprights are not acceptable.
3. Intermediate rails shall be provided between doors and drawers, but shall not be provided between drawers unless made necessary by locks in drawers. Intermediate rails shall be recessed behind doors and drawer fronts, and designed so that security panels may be added as required.
4. Intermediate vertical uprights shall be furnished to enclose cupboards when used in a unit in combination with a half width bank of drawers.
5. Cabinet bottom shall be formed of one piece of steel, except in corner units, and shall be formed down on sides and back to create a square edge transition welded to cabinet end panels. Front edge shall include a C formation to form a 7/8" high bottom front rail and shall be flush with face of end uprights. Cabinet bottom front rails not flush with face of end uprights are not acceptable.
6. Toe space rail shall extend up and forward to engage bottom panel to form a smooth surfaced fully enclosed toe space, 3" deep x 4" high.
7. Back construction shall be one piece with integral channel formed for maximum strength and welded to back of top and bottom flanges of end uprights.
8. Each bottom corner of base cabinets shall have a 3/8"-16 leveling bolt, 2-1/2" long capable of supporting 500 lbs. Access to the leveling bolts shall be through plug buttons in the cabinet bottom. Access to leveling bolts through toe space or leveling bolts requiring special tools to adjust are not acceptable.
9. Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear and formed down 3/4" at each end. Shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf. Shelves shall be adjustable on not more than 1" increments. Each adjustable shelf shall include a lip that extends 1/2" above the front edge.
10. Steel Door assembly (two-piece) for solid panel swinging doors shall consist of an inner and outer door pan. Outer door pan shall be formed at all four sides. The corners on the pull side of the outer door pan shall be welded and ground smooth to prevent exposure of sharp edges of steel at these critical points. Inner door pan shall be flanged at all four sides with hinge reinforcements welded in place. The door assembly shall be 3/4" thick and contains sound deadening material. Door assemblies shall be painted prior to assembly, and shall be punched for attaching pulls. Inner pan formation of door shall be indented for in-field installation of locks when required.
11. Doors shall be readily removable and hinges easily replaceable. Hinges shall be applied to the cabinet and door with screws. Welding of hinges to either cabinet or door will not be acceptable.
12. Drawer Assemblies:
    a. Drawer bodies shall be made in one-piece construction including the bottom, two sides, back and front. They shall be fully coved at interior bottom on all four sides for easy cleaning. The top front of the inner drawer body shall be offset to interlock with the channel formation in drawer head providing a 3/4" thick drawer head.
13. Knee space panels, where shown or specified, shall be 20 gauge, finished same as casework cabinets, and easily removable for access to mechanical service areas.

C. Upper Cabinet Construction:
1. Upper cabinets shall have a completely finished interior same as exterior and shall be designed so that no mounting hardware is visible when installed.
2. End uprights shall be formed at front, bottom and back to provide maximum strength and rigidity. Front edge of end upright shall be 3/4” wide. A pilaster shall be added to the inside front of the upright for cabinet and hinge reinforcement and shall be perforated for hinge screws, and shelf adjustment holes.

3. Cabinet tops shall be formed with a 7/8" high C formation at the front edge and turned down at the back to engage a wall hanging rail.
4. Cabinet flush bottoms shall be formed with a 7/8" high C formation at the front edge.
5. Cabinet false bottoms shall be formed down on all four edges and shall be removable.
6. Cabinet backs shall be welded to the top, bottom and ends. Backs shall be perforated for shelf adjustment holes. Holes shall be enclosed by end uprights.
7. Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear, formed down 3/4" at each end. Shelves over 42" long shall be further reinforced with a channel formation welded to underside of shelf. Shelves shall be adjustable on not more than 1" increments. Each adjustable shelf shall include a lip that extends 1/2" above the front edge.
8. Solid panel doors shall consist of an inner and outer door pan. Outer door pan shall be formed into a channel or flanged shape at all four sides. The corners on the pull side of the outer door pan shall be welded and ground smooth to prevent exposure of sharp edges of steel at these critical points. Inner door pan shall be flanged at all four sides with hinge reinforcements welded in place. The door assembly shall be 3/4" thick and contains sound deadening material.
9. Swinging doors under 36" high shall be hung on one pair of hinges, doors over 36" high shall be hung on three hinges.

D. Steel Full Height Cabinet Construction:
1. Full height storage cabinets shall have a completely finished interior same as exterior.
2. End uprights shall be formed at front, bottom and back to provide maximum strength and rigidity. Front fascia of upright shall be 1-1/4" wide with inside edge formed in a channel 1/2" x 3/8". A full height box reinforcement shall be fitted to the channel, formed to provide a recessed strike for door and to reinforce the cabinet. The backside of the reinforcement shall be perforated with shelf adjustment holes spaced at not more than 1" centers. Back of upright shall be formed in a 2-1/2" formation. 16 gauge hinge reinforcement shall be welded to inner side of front uprights.
3. Cabinet tops shall be formed into a channel shape at front with flange at rear and sides for electro-welding cabinet top to cabinet back and ends. Front fascia channel shall be strengthened with electro-weld reinforcements.
4. Cabinet bottoms for storage cabinets shall be formed down on sides and back to create a square edge transition welded to cabinet end panels, and front edge shall be offset to create a seamless door recess rabbet for dust stop. Cabinet bottoms shall be formed to provide a flush 1" face rail with a return flange to give a 9/16" deep x 5" high toe space. All cabinets shall have a cleanable smooth interior.
5. Toe space rails shall interlock in back of bottom rail and with end panel to provide a welding plate, and shall extend to the floor with a flange turned back and up for support.
6. Cabinet backs shall be welded to the top, bottom and ends. Backs shall be perforated for shelf adjustment holes on not more than 1" centers. Holes shall be enclosed by a formation in cabinet back and enclosed by end uprights.
7. Adjustable shelves shall be formed down 3/4", returned back 7/8" and up 1/4" into a channel formation front and rear; formed down 3/4" at each end. Shelves over 42" long shall be further reinforced with a channel formation electro-welded to underside of shelf. Shelves shall be adjustable on not more than 1" increments. Each adjustable shelf shall include a lip that extends 1/2" above the front edge.
8. Solid panel doors shall consist of inner and outer pan formations mechanically assembled after painting. All full height solid panel doors shall be further reinforced by a full-height channel formation welded to inner pan. Doors shall be 3/4" thick and contain sound deadening material.
9. Swinging doors under 36" high shall be hung on one pair of hinges, doors over 36" high shall be hung on three hinges.

E. Apron and Leg Assembly Construction:
   1. In general, freestanding tables and/or apron and leg assemblies consist of welded leg assemblies connected to aprons by mechanical fasteners.
   2. Table apron rails shall be formed of 16-gauge steel. The rails shall be 4" high, formed top and bottom into a channel formation. Where drawers occur, the apron rails shall provide the required opening.
   3. Table legs shall be 2" square welded tubing. Securely welded to bottom end shall be a 14-gauge die formed gusset with four flanges. A threaded clinch nut shall accommodate a 3/8" 16 x 2-1/2" long leveling bolt. Leg shoes shall be provided on all table legs, unless otherwise specified, to conceal leveling bolts. Use of leg shoe which does not conceal leveling device will not be acceptable.
   4. Stretchers shall be constructed of 18-gauge steel and furnished where indicated on drawings. They shall be formed into a 2-7/64" x 1-1/2" channel formation, and secured to table legs by a die-formed clip of 16-gauge steel. Clips shall be welded at ends of channel.

2.06 PERFORMANCE REQUIREMENTS

A. Steel Casework Construction Performance:
   1. Base cabinets shall be constructed to support at least a uniformly distributed load 200 pounds per square foot of cabinet top area, including working surface without objectionable distortion of interference with door and drawer operation.
   2. Base cabinet leveling bolts shall support 500 pounds per corner, at 1-1/2" projection of the leveling bolt below the cabinet bottom.
   3. Each adjustable and fixed shelf 4 feet or shorter in length shall support an evenly distributed load of 40 pounds per square foot up to a maximum of 200 pounds, with nominal temporary deflection, but without permanent set.
   4. Full extension soft-close, self-closing ball bearing zinc plated drawer slide shall be rated for 100 pound loads.
   5. Swinging doors on floor-mounted inset style casework shall support 200 pounds suspended at a point 12" from hinged side, with door swung through an arc of 160 degrees. Weight load test shall allow only a temporary deflection, without permanent distortion or twist. Door shall operate freely after test and assume a flat plane in a closed position.

2.07 WORKSURFACES

A. Materials:
   1. Stainless Steel

2.08 SINKS CUPSINKS, AND DRAINS

A. Sinks:
   1. Stainless Steel Sinks

2.09 FITTINGS

A. Materials:
   1. Chrome-plated red brass or bronze

B. Construction:
   1. Water Fittings
   2. Distilled Water Fittings
   3. Gooseneck Type Outlets
   4. Sink Outlets
   5. Crumb Cup Strainers
   6. Vacuum Breakers
   7. Aerator Outlets
   8. Waste Lines

9. Traps

PART 3 — EXECUTION

3.01 SITE EXAMINATION

A. The owner and/or his representative shall assure all building conditions conducive to the installation of a finished goods product; all critical dimensions and conditions previously checked have been adhered to by other contractors (general, mechanical, electrical, etc.) to assure a quality installation.

3.02 INSTALLATION

A. Preparation:
   1. Prior to beginning installation of casework, check and verify that no irregularities exist that would affect quality of execution of work specified.

B. Coordination:
   1. Coordinate the work of the Section with the schedule and other requirements of other work being prepared in the area at the same time both with regard to mechanical and electrical connections to and in the fume hoods and the general construction work.

C. Performance:
   1. Casework:
      a. Set casework components plumb, square, and straight with no distortion and securely anchor to building structure. Shim as required using concealed shims.
      b. Bolt continuous cabinets together with joints flush, tight and uniform, and with alignment of adjacent units within 1/16" tolerance.
      c. Secure wall cabinets to solid supporting material, not to plaster, lath or gypsum board.
      d. Abut top edge surfaces in one true plane. Provide flush joints not to exceed 1/8".
   2. Worksurfaces:
      a. Where required due to field conditions, scribe to abutting surfaces.
      b. Only factory prepared field joints, located per approved shop drawings, shall be permitted. Secure the joints in the field, where practical, in the same manner as in the factory.
      c. Secure worksurfaces to casework and equipment components with materials and procedures recommended by the manufacturer.

D. Adjust and Clean:
   1. Repair or remove and replace defective work, as directed by owner and/or his representative upon completion of installation.
   2. Adjust doors, drawers and other moving or operating parts to function smoothly.
   3. Clean shop finished casework; touch up as required.
   4. Clean worksurfaces and leave them free of all grease and streaks.
   5. Casework to be left broom clean and orderly.

E. Protection:
   1. Provide reasonable protective measures to prevent casework and equipment from being exposed to other construction activity.
   2. Advise owner and/or his representative of procedures and precautions for protection of material, installed laboratory casework and fixtures from damage by work of other trades.

END OF SECTION

701 N. Lilac Drive
P.O. Box 1452
Minneapolis, MN
55440-1452

T: 763.540.1200
F: 763.540.1437

PRODUCT SUBSTITUTION REQUEST:

To: Studio JAED
Zafar Chaudhry, Delaware State University
Project: Science Center-Animal Lab Renovation
Item: Requesting approval of or equal to product substitution
Description: Seamless Resinous/Epoxy Flooring

Division: 9 Finishes
Section: 09 6700 Fluid-Applied Flooring
Paragraph/Article: 2.01.A.1 Palma, Inc.; PaliKrom

TENNANT COMPANY- ARCHITECTURAL COATINGS REQUEST THE FOLLOWING PRODUCT SUBSTITUTION:

Tennant Company Equivalent System:

Eco-DQS

1st Broadcast Coat:	Eco-MPE with colored quartz broadcast
2nd Broadcast Coat:	Eco-MPE with colored quartz broadcast
Grout/Seal Coat:	Eco-URE
Topcoat:	Eco-URE
Opt. Topcoat:	Eco-HTS 100

Attached data includes product description, specifications, performance and test data adequate for evaluation of the request.

The undersigned certifies that the following paragraphs, unless modified by attachment are correct:

I. The proposed substitution does not affect dimensions shown on drawings.
II. The proposed substitution will have no adverse effect on the trades, the construction schedule, or specified warranty requirements.
III. Local support and availability will be available for proposed substitution.

The undersigned further states that the function and quality of the product substitution is equivalent or superior to the specified item.

Submitted By:
Signature: Terrence Scholz
Name: Terrence Scholz
Firm: Tennant Company-Architectural Coatings
Address: 2454 Louisiana Ave. N., Golden Valley, MN 55427
Date:
Telephone: 763-513-2182
Attachments: Product Bulletins

- [X] Approved
- [ ] Not Approved
- [ ] Approved As Noted
- [ ] More Information Requested

By: Gabe Cheung Date: 6/2/17
Remarks: _____