Hanover College
Veterinary Teaching Center
Hanover, IN

Bid Date: *04/11/2025 @ 2:00pm*

ADDENDUM 01

Date of Addendum: 03/21/2025
To the Drawings and Specifications for:

Hanover College
Veterinary Teaching Center
Hanover, IN

This addendum modifies the original CONTRACT DOCUMENTS dated 03/07/2025. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This addendum consists of two (2) pages plus attachments.

CHANGES TO SPECIFICATIONS:

1. Specification 000115 TABLE OF CONTENTS

    a. Remove 0089116 “Operable Wall Louvers” from the table of contents and specification from project in its entirety.
    b. Remove 089119 “Fixed Lovers” from the table of contents and specification from the project in its entirety.
    c. Remove 105613 “Metal Storage Shelving” from the table of contents and specification form the project in its entirety.

2. Specification 011000 SUMMARY:

    a. 1.4.B.2 – Add the following subparagraph 1.4.B.2 to read as follows “2. Refer to scope table that is appended to the this section for clarification of scope.”

3. Specification 123553.13 – METAL LABORATORY CASEWORK, : Replace specification 123553.13 with attached specification 123553.13 in its entirety. Specification adds requirements for stainless steel casework.

4. Specification 134900 RADIATION PROTECTION:

a. 1.2.A.1 Replace subparagraph 1.2.A.1 with the following: “Lead equivalence specified for materials used in diagnostic x-ray rooms is as measured at 100kV, final measurement shall be confirmed with owner’s third-party equipment vendor during construction.”
b. 2.2.B. Replace paragraph 2.2.B. with the following: “B. Materials, thicknesses, and configurations of radiation protection products indicated are to be finalized with owner’s third party equipment supplier during construction.”

CHANGES TO DRAWINGS:

1. Sheet G-001 SHEET INDEX
   a. Add sheet AD-101 STRUCTURAL DEMOLITION DRAWINGS

2. Sheet G-300 Series (G-300, G-301, G-302, G-303, G-304, G-305, G-306, G-307, G-308, G-309, G-310, G-311, G-312)
   a. Revise note in bottom right corner to read:
   “NOTE: ROOM DIAGRAM SHEETS ARE PROVIDED FOR TRADE COORDINATION ONLY. REFER TO TRADE DRAWINGS (SERIES A, Q, S, FP, P, H AND E) FOR SCOPE OF GENERAL CONTRACT.”

3. Sheet A-100 FLOOR PLAN – REFERENCE
   a. Add “CASEWORK CONSTRUCTION TABLE”
      i. Metal Lab Casework; Rooms: 158, 156
      ii. Stainless Steel Casework; Rooms: 132, 133, 134, 173, 173A
      iii. Plastic Laminate Casework; U.N.O. (Unless Noted Otherwise)

4. Sheet A-101 FLOOR DIMENSION PLAN – NORTH
   a. Coded Note (3): Change “SLOPE 1/8”…” to “SLOPE 1/16”…”

ATTACHMENTS:

Specification Sections: 123553 METAL LABORATORY CASEWORK
Drawings: AD-101
Pre-bid meeting minutes
Pre-bid meeting attendance

END ADDENDUM NO. 01

PRE-BID MEETING AGENDA

Project:	**Veterinary Teaching Center** **Hanover College**
Meeting Date:	10:00 a.m. (local), March 19, 2025
Location:	4025 W State Road 56 (house located on the project site) Southwest of the intersection of State Route 62 and Scenic Drive, Jefferson County, Indiana 47243
Meeting Title:	HC/VTC Pre-Bid Meeting

I. PREBID MEETING:

A. Meeting Purpose:

1. Mandatory Pre-Bid Meeting.
2. Requests for Information (RFIs) will not be responded to during the Pre-Bid Meeting.
3. Nothing said during the meeting constitutes a change in the contract documents.
4. All RFIs about the plans and specifications should be submitted to the A/E's Project Contact in writing in accordance with the Contract Documents. Bidders are encouraged to submit RFIs (seven) 7-days prior to the bid deadline.

   Mr. Matt Fisher, AIA
   SPGB Architects
   mfisher@spgbarch.com

B. All attendees to sign attendance register and provide requested contact information.

C. Pre-Bid Meeting minutes and attendance register will be emailed to those who signed the attendance register, and the plan rooms designated in the contract documents.

II. INTRODUCTIONS:

A. A/E staff:

1. Matt Fisher, AIA, Project Architect

B. Owner (Hanover College) staff:

1. Willie Liter, Director of Operations
2. John Todd, Associate Director of Facilities
3. Vince Morris, Vice President for Business Affairs
4. Mike Bruce, Consultant, Planning Committee Cochair

C. Owner stakeholders

III. SITE VISITS:

A. Do not contact the Owner or their stakeholders for any information or RFIs.

1. Owner trustees, alumni, administration, or staff
2. Ivy Tech Community College
3. Funding sources

B. Site is available after the Pre-Bid Meeting.

C. Individual site visits will be allowed after the Pre-Bid Meeting so long as bidders register with the Owner beforehand. Owner will issue email accepting the visit request.

1. Submit visit request via email 48-hours beforehand:

   Willie Liter
   Director of Operations
   liter@hanover.edu

2. Visits will be refused to accommodate local fire department's training and Owner's tree removal and salvaging activities.
3. Park on the residential driveway. Do not use Scenic Drive.
4. Do not trespass on neighboring properties, including the beanfield to the east.

IV. PROJECT OVERVIEW:

A. Construction Delivery:

1. Single-prime general contract with a single-phase of construction.
2. Owner will not occupy the Project site during construction but will continue to rely on Scenic Drive as its primary public entrance.

B. Summary of Work:

1. Site Preparation: Erosion control measures, closure of the existing driveway at SR-56 (including INDOT permit & bonding), structure demolition of a house and barn, structural backfill, site clearing, and site demolition.
2. Site Development: Grading, stormwater detention, utility extensions, sanitary lift station, exterior lighting, driveways, parking, sidewalks, electric vehicle charging stations, signage, animal kennels and corals, patio deck, dumpster pad and enclosure, lawns, trees, and landscape beds.
3. New Building: One complete and functioning building - single-story building with approximately 25,100-square-feet to house a veterinary academic and professional practice areas. Interior activities include a clinic, kennel, biology lab suite, anatomy lab suite, classrooms, faculty offices, conferencing, kitchenette, storage, utility rooms, and receiving room and truck dock.
4. Building Construction: Shallow spread footings and foundation walls, concrete masonry bearing walls, concrete floor slab and ramp, structural steel and steel bar joists, metal roof deck, gabled and low-slope roofing, gutters and downspouts, exterior insulation and finish system, windows, concrete masonry and gypsum board partitions, doors, interior glazing, casework and cabinetry, movable lab tables, chemical fume hood, walk-in cold room and freezer, lockers, monorail and crane, various specialties and fixed equipment.

5. Fire Protection: Wet fire suppression, sprinkler heads, zone control and connections for future additions.
6. Plumbing: Potable water, sanitary and storm drainage, natural gas, carbon dioxide supply system, oxygen supply system, scavenging vacuum system, sinks and fixtures, water heater and return pump, water conditioning, booster pump and connections for future additions.
7. HVAC: Custom indoor air handling units, air-cooled chillers, boilers, humidifiers, unit heaters, hydronic piping systems, duct systems, fans, pumps, expansion tanks, air terminal devices, laboratory air control valves, VAV boxes, exhaust air terminal units, and all associated controls and appurtenances.
8. Electrical: Underground electrical utility service, electrical power distribution, emergency and optional standby power distribution via natural gas generator(s), general and specialty lighting and controls, fire detection and alarm, and telecommunication system pathways.
9. Other work indicated in the Contract Documents.

C. Utility Provider Coordination:

1. The GC will extend water and sanitary utilities across SR-56 to the Project site. The GC will pay all tap fees, easement charges and other associated costs. The design has been coordinated with the City of Madison's Utility Department and Indiana Department of Transportation.
2. The gas provider will extend their gas service across SR-56 to the gas meter and will provide the meter. The design has been coordinated with CenterPoint Energy. The Owner will pay all utility provider costs.
3. The electrical power provider will extend their electrical service across SR-56 to the Project's transformer pad and will provide the transformer. The design has been coordinated with Duke Energy. The Owner will pay for all utility provider costs.
4. The Owner will coordinate extension of the public telecommunication service to the Project Site and extend cabling through the Project's conduit into the building. The Owner will pay for all utility provider costs.

D. Third-Party Improvements:

1. Owner's Preceding Work:
    a. Owner has contracted to cut trees and have them removed prior to April 1st in compliance with Indiana Bat Migration Regulations. GC shall remove stumps and roots.
    b. Owner may salvage components from the existing house.
    c. Owner is allowing the local fire department to use the existing house for search and rescue training, which will cause non-structural damage to the house but exclude any burning.
2. Early Construction Groundbreaking Ceremony: Owner will conduct a modest public groundbreaking ceremony on-site in mid-June 2025.
    a. Two-hour pause of construction activities.
    b. Guests will park outside of the construction site and be provided with hard hats.
    c. Contractor shall make safe foot traffic accommodations from Scenic Drive to the existing house site, provide appropriate safety barricades, and provide other safety measures for compliance with their internal safety programs.

3. Owner's Proceeding Work: Owner will provide the following improvements via third-party purchase orders. The improvements will be made immediately upon substantial completion of fixed construction.

    a. Telecommunications infrastructure and headend equipment.
    b. Audio-visual equipment.
    c. Movable furnishings.
    d. Movable laboratory equipment.

E. Contract Limit Lines:

1. Work within the property lines and public rights-of-way around the site – excluding Scenic Drive. Contractor shall have full use of Project site for construction operations during construction period.
2. Sanitary service will extend along the north edge of the adjacent beanfield. The field is owned by Hanover College who leases it for farming. The GC shall schedule its work so farming is only disrupted one-growing-season. There are no surcharges for lost agriculture as long as GC works according to plan.
3. Utilities will be extended under Scenic Drive. Coordinate road closure with the Owner.
4. Limit work activities between 7:00 a.m. and 5:00 p.m., Monday through Friday.

F. Completion Dates:

1. Anticipated Notice-to-Proceed (NTP): May 5, 2025
2. Completion Date: September 29, 2026

V. CONTRACT REQUIREMENTS:

A. Disadvantaged Business participation encouraged but not required.

B. Prevailing wages and union labor are not required.

C. The Owner is tax exempt.

D. Refer AIA A101-2017 Owner/Contractor Agreement, Exhibit A, for insurance and bond requirements.

VI. BID PROCESS:

A. Bid Documents are available at The Issuing Office for the Bidding Documents is: Eastern Engineering, 9901 Allisonville Road, Fishers IN 46038; 866-884-41150; FishersPlanRoomServices@easternengineering.com. Print shop shall maintain bidder's log and shall issue the addenda.

B. Printed copies of the Bidding Documents may be obtained from the Issuing Office during their normal business hours, upon non-refundable payment of $620 for each set. Online downloadable copies are available at https://distribution.easternengineering.com/View/Login.aspx upon non-refundable payment of $620. Upon request and receipt of the document deposit indicated above plus a non-refundable shipping charge, the Issuing Office will transmit the Bidding Documents via delivery service. The shipping charge amount will depend on the shipping method selected by the prospective Bidder. The date that the Bidding Documents are transmitted by the Issuing Office will be considered as the Bidder's date of receipt of the Bidding Documents.

Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Architect will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

C. Bids shall be prepared and submitted in accordance with the Instructions to Bidders:

1. Unaltered bid forms – all blanks filled out in ink.

    a. Lump Sum Base Bid
    b. 8 Bid Alternates
    c. No Unit Pricing
    d. No Allowances

2. Sums expressed in words and figures.
3. Sealed opaque envelope properly addressed.
4. Received no later than the stated Bid Deadline – all bids received afterwards will be rejected.

D. Submit Bids to the Office of Vice President for Business Affairs located in the Business Office in the Long Administration Building located at 495 College Avenue, Hanover, IN 47243. Bid deadline is 2:00 p.m. (local) on April 11, 2025. Bids will be dated and time stamped when received. Bids received after the deadline will be rejected.

E. Addendum will be issued to Bidders a minimum of 72-hours prior to the Bid deadline in accordance with the Instructions to Bidders.

F. Substitutions will be considered if submitted 7-days prior to the Bid deadline, in accordance with the Instructions to Bidders, and if approved via written addendum.

1. Substitutions must be received no later than: 2:00 p.m. on Friday, April 4, 2025.
2. Proposed substitutions must include side-by-side comparison with specs as basis of design to be considered by A/E.

G. The bids will be opened publicly at 4:00 p.m. (local) on April 11, 2025, in the President's Conference Room in the Long Administration Building at 495 College Avenue, IN 47243. Bidders are not required to attend the official Bid Opening.

1. Bids will be publicly posted within 24-hours of bid-opening.
2. Owner reserves the right to reject any and all bids and to waive informalities in bidding.
3. Once opened publicly, bids will be taken under advisement for review by the architect and Owner. The low Bidder(s) will be required to review their bids within 2-days of the bid-opening.
4. The Owner intends to award the contract to the lowest responsive and responsible Bidder in accordance with the Instructions to Bidders.

VII. TOUR OF PROJECT SITE

VIII. ADJOURN MEETING

END OF MEETING

spgb ARCHITECTS

n-in Sheet

enter

efferson County, Indiana

Date & Time: March 19, 2025 | 10:00 am

SNA	Phone #	502-710-1282
ONSTRUCTORS	E-Mail	Kevin C. Porco Construction.com
t	Phone #	269-689-9066
r Const. inc	E-Mail	Jeffg@triplestarinc.com
	Phone #	513.846.4323
	E-Mail	ian.cundiff@mvg.com
	Phone #	513-509-9472
	E-Mail	sara.stone@mvg.com
	Phone #	317-586-7355
CONSTRUCTION	E-Mail	jbooker@ferguson-construction.com
	Phone #	812-371-2089
Mech	E-Mail	cody@rudingmechanical.com
	Phone #	812 528-8323
avation	E-Mail	nad.day@lawyerexcavation.com
er	Phone #	812-371-3117
Ele	E-Mail	[illegible]

spgh ARCHITECTS

ps	Phone # 216-650-5610
ntractors, Inc	E-Mail dphelps@spc-inc.com
	Phone # 812 866 5607
racting	E-Mail Sedam.BlakeK@gmail.com
	Phone # 502-377-0467
	E-Mail dlucic@lucaspa-inc.com
	Phone # 812-592-0332
Contractor	E-Mail derikv@lawcomara.com
	Phone # 812-768-4478
nstruction	E-Mail jamesp@jlshireman.com
Air	Phone # 812-752-4007
urgglass	E-Mail Scottsburgglass@gmail.com
	Phone # 502-664-8311
nstruction	E-Mail derek@thekoltergroup.com
	Phone # 502.310-2123
& N, INC.	E-Mail PHERBITT@HAGERHILLSC.COM
III	Phone # 502-551-8530
Protection Services LLC	E-Mail jkuerzijr@yahoo.com
	Phone #
	E-Mail
	Phone #
	E-Mail

SECTION 123553.13 - METAL LABORATORY CASEWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Metal laboratory casework.
2. Auxiliary cabinets.
3. Countertops.
4. Laboratory accessories.
5. Water and laboratory gas service fittings.
6. Electrical and communication service fittings.

B. Related Requirements:

1. Section 061000 "Rough Carpentry" for wood blocking for anchoring laboratory casework.
2. Section 092216 "Non-Structural Metal Framing" for reinforcements in metal-framed partitions for anchoring laboratory casework.
3. Section 096513 "Resilient Base and Accessories" for resilient base applied to laboratory casework.
4. Section 115313 "Laboratory Fume Hoods" for fume hoods, including base cabinets and countertops under fume hoods.
5. Section 224500 "Emergency Plumbing Fixtures" for emergency showers, eyewashes, and drench hoses.
6. Division 22 and 26 sections for installing service fittings specified in this Section, including connecting service utilities.
7. Division 26 sections for electrical cover-plate identification.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, agency representative, casework installer, roofing system manufacturer’s representative, installers whose work interfaces with or affects laboratory casework, including plumbing, electrical and HVAC.
2. Review status of submittals.
3. Review mock-up requirements.
4. Review Inspection requirements.
5. Review Environmental requirements for starting and installing casework.
6. Review general, mechanical and electrical trades work that are complete prior to installation.
7. Review Protection for casework.
8. Review coordination and sequencing of trades.
9. Review acceptance of room conditions.

10. Review keying requirements.

1.3 COORDINATION

A. Coordinate layout and installation of framing and reinforcements for support of laboratory casework.

B. Coordinate installation of laboratory casework with installation of laboratory equipment.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For laboratory casework.

1. Include plans, elevations, sections, and attachments to other work including blocking and reinforcements required for installation.
2. Indicate types and sizes of casework.
3. Indicate manufacturer's catalog numbers for casework.
4. Include countertop joints and splash configuration.
5. Show fabrication details, including types and locations of hardware.
6. Indicate locations and types of sinks and service fittings. Cross reference product data.
7. Include details of utility spaces showing supports for conduits and piping.
8. Include details of exposed conduits, if required, for service fittings.
9. Indicate locations of and clearances from adjacent walls, doors, windows, other building components, and laboratory equipment.
10. Include coordinated dimensions for laboratory equipment specified in other Sections.

C. Keying Schedule: Include schematic keying diagram, and index each key set to unique designations that are coordinated with the Contract Documents.

D. Samples for Initial Selection: For casework finishes and materials requiring color selection.

E. Samples for Verification: For each type of casework, exposed-hardware, and countertop-material finish, in manufacturer's standard sizes.

1. Base Cabinet: One full-size, 16-inch- wide, finished base cabinet complete with hardware, doors, adjustable shelving, and drawers but without countertop.
2. One Sample each of hinged and sliding glass wall cabinet doors.
3. One Sample each of lipped shelves.
4. Samples for each type of countertop material at 6-inches square.
5. One of each service fitting specified, complete with accessories and specified finish.
6. One of each type of sink and accessory item specified.
7. One of each type of hardware item specified.
8. One Sample of each of the utility-space framing.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer.

B. Product Test Reports:

1. Casework: Based on evaluation of comprehensive tests performed by a qualified independent testing agency, indicating compliance of laboratory casework with requirements of specified product standard and system structural performance specified in "Performance Requirements" Article.
2. Countertop Surface Material: Based on evaluation of comprehensive tests performed by a qualified independent testing agency, indicating compliance of laboratory countertop surface material with requirements specified for chemical and physical resistance.
3. Detrimental Chemical List: Include list of chemicals detrimental to cabinet finish and epoxy resin.
4. Manufacturer’s warranties show compliance with specification requirements.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish complete touchup kit for each type and color of casework finish provided. Include fillers, primers, paints, and other materials necessary to perform permanent repairs to damaged laboratory casework finish.

B. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Cabinet Mounting Clips and Related Hardware: Quantity equal to 5 percent of amount installed, but no fewer than 20 of each type.

1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that produces casework of types indicated for this Project that has been tested for compliance with SEFA 8 M, SEFA 7, and SEFA 3.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Protect finished surfaces during handling and installation with protective covering of polyethylene film or other suitable material.

1.9 FIELD CONDITIONS

A. Environmental Limitations: Do not deliver or install laboratory casework until building is enclosed, utility roughing-in and wet-work are complete, and HVAC system is operating and maintaining temperature and relative humidity at levels planned for building occupants during the remainder of the construction period.

B. Established Dimensions: Where laboratory casework is indicated to fit to other construction, establish dimensions for areas where casework is to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

C. Locate concealed framing, blocking, and reinforcements that support casework by field measurements before enclosing them, and indicate measurements on Shop Drawings.

1.10 WARRANTY

A. Special Warranty: Manufacturer' agrees to repair or replace components of the laboratory casework, fittings and accessories that fail in materials or workmanship within specified warranty period.

1. Special Warranty includes the following defect but are not limited to: ruptured, cracked or stained coatings; discoloration or lack of finish integrity; cracking or peeling of finish; slippage, shift, or failure of attachment to wall, floor or ceiling; weld or structural failure; warping or unloaded deflections of components; failure of hardware.
2. Warranty Period: 1 year from date of substantial completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain laboratory casework from single source from single manufacturer unless otherwise indicated.

1. Obtain countertops, sinks, accessories, and fittings from casework manufacturer.

2.2 CASEWORK, GENERAL

A. Casework Product Standard: Comply with SEFA 8 M, "Laboratory Grade Metal Casework."

B. Flammable Liquid Storage: Where cabinets are indicated for solvent or flammable liquid storage, provide units that are listed and labeled as complying with requirements in NFPA 30 by FM Approvals.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

2.3 METAL LABORATORY CASEWORK

A. Steel Sheet: Unless otherwise indicated, Cold-rolled, commercial steel (CS) sheet, complying with ASTM A1008/A1008M; matte finish; suitable for exposed applications and ASTM A240 type 304 or 316 alloy.

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. ICI scientific (basis of design)
2. Kewaunee Scientific Corporation
3. Mott Manufacturing Ltd

4. Air Master Systems

C. Nominal Metal Thickness:

1. Sides, Ends, Fixed Backs, Bottoms, Tops, Soffits, and Items Not Otherwise Indicated: 0.048 inch. Except for flammable liquid storage cabinets, bottoms may be 0.036 inch if reinforced.
2. Back Panels, Doors, Drawer Fronts and Bodies, and Shelves: 0.036 inch except 0.048 inch for back panels and doors of flammable liquid storage cabinets and for unreinforced shelves more than 36 inches long.
3. Intermediate Horizontal Rails, Table Aprons and Cross Rails, Center Posts, and Top Gussets: 0.060 inch.
4. Drawer Runners, Sink Supports, and Hinge Reinforcements: 0.075 inch.
5. Leveling and Corner Gussets: 0.105 inch.

2.4 METAL STAINLESS STEEL LABORATORY CASEWORK

A. Stainless Steel Sheet: Stainless steel T304 #4 finish one side, ASTM A666.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

a. ICI scientific
b. Kewaunee Scientific Corporation
c. Mott Manufacturing Ltd
d. Air Master Systems

B. Nominal Metal Thickness:

1. Sides, Ends, Fixed Backs, Bottoms, Tops, Soffits, and Items Not Otherwise Indicated: 18 gages excepted as listed below:

a. 11 gage table legs stretcher and leg rail support brackets
b. 11 gage top and bottom corner gussets
c. 16 gage table cross rails, apron rails, and end rails.
d. 20 gage inner door panels, filler stiles, fixed back panels, drawer bodies.
e. 20 gage removable back panels.

2.5 AUXILIARY CABINETS

A. Acid Storage-Cabinet Lining: 1/4-inch- thick, polyethylene, polypropylene, epoxy, or phenolic-composite lining material.

B. Tempered Glass for Glazed Doors: Clear tempered glass complying with ASTM C1048, Kind FT, Condition A, Type I, Class 1, Quality-Q3; not less than 5.0 mm thick.

C. Add "plastic" drop tags at sink bases.

2.6 CABINET HARDWARE

A. General: Provide laboratory casework manufacturer's standard, commercial-quality, heavy-duty hardware complying with requirements indicated for each type.

B. Hinges: Stainless steel, five-knuckle hinges complying with BHMA A156.9, Grade 1, with antifriction bearings and rounded tips. Provide two for doors 48 inches high or less and three for doors more than 48 inches high.

C. Hinged-Door and Drawer Pulls: Solid-aluminum, stainless steel, or chrome-plated-brass, back-mounted pulls. Provide two pulls for drawers more than 24 inches wide.

1. Design: As selected from manufacturer's full range.
2. Overall Size: As selected from manufacturer's full range.

D. Door Catches: Nylon-roller spring catches. Provide two catches on doors more than 48 inches high.

E. Drawer Slides: ANSI/BHMA A156.9.

1. Manufacturer's standard.
2. Standard Duty (Grade 1): Side mount.
3. Heavy Duty (Grade 1HD-100): Side mount.

    a. Type: Full extension.
    b. Material: Epoxy-coated polymer slides.
    c. Motion Feature: Soft close dampener.

4. General-purpose drawers; provide 100 lb load capacity.
5. File drawers; provide 150 lb load capacity.

F. Label Holders: Stainless steel, aluminum, or chrome plated; sized to receive standard label cards approximately 1 by 2 inches, attached with screws or rivets. Provide where indicated.

G. Locks: Cam or half-mortise type, brass with chrome-plated finish; complying with BHMA A156.11, Type E07281, Type E07261, Type E07111, or Type E07021.

1. Tumbler: Disc.
2. Lock Locations: Provide where indicated.
3. Keying: Key each lock separately.

    a. Master key for up to 500 key changes.

4. Key Quantity: Minimum of two keys per lock.
5. Master Key System: Key locks to be operable by master key.

    a. Master Keys: Provide two.

H. Sliding-Door Hardware Sets: Laboratory casework manufacturer's standard, to suit type and size of sliding-door units.

I. Adjustable Wall Shelf Supports: Surface-type steel and steel shelf brackets, with epoxy powder-

coated finish, complying with BHMA A156.9, Types B04102 and B04112. Select components and anchorage devices to support uniform live load of 100 pounds per linear foot of shelf.

1. Support shelves from vertical supports. Vertical positioning of shelves can be varied in 1-inch increments through full height of supports. Provide double slotted supports.
2. Color and finish to match cabinets.

2.7 COUNTERTOPS

A. General: Provide laboratory tabletops and countertops with integral shelf and sink as indicated on Drawings.

B. Phenolic Composite: Solid, high-pressure decorative laminate, complying with ISO 4586-4, Grade CGS.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. Arborite, Division of Wilsonart Canada ULC
    b. Formica Corporation
    c. Nevamar Company, LLC
    d. Trespa North America

2. Chemical Resistance: Minimum acceptable chemical-resistance performance is to result in no more than four Level 3 conditions when tested with indicated reagents in accordance with SEFA 3.
3. Color: Black.

C. Stainless Steel Sheet: ASTM A 666, Type 304.

2.8 METAL CABINET FABRICATION

A. General: Assemble and finish units at point of manufacture. Use precision dies for interchangeability of like-size drawers, doors, and similar parts. Perform assembly on precision jigs to provide units that are square. Reinforce units with angles, gussets, and channels. Except where otherwise specified, integrally frame and weld cabinet bodies to form dirt- and vermin-resistant enclosures. Where applicable, reinforce base cabinets for sink support. Maintain uniform clearance around door and drawer fronts of 1/16 to 3/32 inch.

B. Flush Doors: Outer and inner pans that nest into box formation, with full-height channel reinforcements at center of door. Fill doors with noncombustible, sound-deadening material.

C. Stainless Steel Doors: Outer and inner pans that nest into box formation, with horizontal channel reinforcement within the door. Doors with sound-deadening material.

D. Glazed Doors: Hollow-metal stiles and rails of similar construction as flush doors, with glass held in resilient channels or gasket material.

E. Hinged Doors: Mortise for hinges and reinforce with angles welded inside inner pans at hinge edge.

F. Drawers: Fronts made from outer and inner pans that nest into box formation, without raw metal edges at top. Sides, back, and bottom fabricated in one piece with rolled or formed top of sides for stiffening and comfortable grasp for drawer removal.

G. Stainless steel Drawers: Fronts made from outer and inner pans that nest into box formation, with no raw metal edges at top. Sides, back, and bottom fabricated in one piece with rolled or formed top of sides for stiffening and comfortable grasp for drawer removal. Fasten drawer front to sides and bottom to form a single, integral unit. Provide drawers with ball-bearing slides and positive stops to prevent metal-to-metal contact or accidental removal.

H. Adjustable Shelves: Unless noted otherwise on drawings, provide shelves with front, back, and ends formed down, with edges returned horizontally at front and back to form reinforcing channels. Shelves to have a one-inch upturn lip at locations noted on the drawings.

I. Toe Space: Fully enclosed, 4 inches high by 3 inches deep, with no open gaps or pockets.

J. Tables: Welded tubing legs, not less than 2 inches square with channel stretchers as needed to comply with product standard. Weld or bolt stretchers to legs and cross-stretchers, and bolt legs to table aprons. Provide a leveling device welded to bottom of each leg.

1. Leg Shoes: Satin-finished, stainless steel, open-bottom, slip-on type.

K. Utilities: Provide space, cutouts, and holes for pipes, conduits, and fittings in cabinet bodies to accommodate utility services and their support-strut assemblies.

1. Provide base cabinets with removable backs for access to utility space.

L. Utility-Space Framing: Steel framing units consisting of two steel slotted channels complying with MFMA-4, not less than 1-5/8 inches square by 0.105-inch nominal thickness, that are connected at top and bottom by U-shaped brackets made from 1-1/4-by-1/4-inch steel flat bars. Framing units may be made by welding channel material into rectangular frames instead of using U-shaped brackets.

M. Filler and Closure Panels: Provide where indicated and as needed to close spaces between casework and walls, ceilings, and equipment. Fabricate from same material and with same finish as casework and with hemmed or flanged edges unless otherwise indicated.

1. Provide knee-space panels (modesty panels) at spaces between base cabinets, where indicated and as required to conceal utilities and framing. Fabricate from back-to-back panels or of hollow construction to eliminate exposed hemmed or flanged edges.
2. Provide utility-space closure panels at spaces between base cabinets where utility space would otherwise be exposed, including spaces below countertops.
3. Provide closure panels at ends of utility spaces where utility space would otherwise be exposed.
4. Provide 3-sided fillers at wall cabinets.
5. Provide 2-sided fillers at tall base cabinets.
6. Provide 1-sided fillers at base cabinets.

2.9 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 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 is to be no more than for Level 3 conditions.
2. Colors for Metal Laboratory Casework Finish: As selected by Architect from manufacturer's full range.
3. Stainless Steel Casework Finish: As indicated in above.

2.10 COUNTERTOP FABRICATION

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.

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.

C. Phenolic Composite:

1. Countertops: Fabricate with cutouts for sinks, holes for service fittings and accessories, and butt joints assembled with epoxy adhesive and concealed metal splines.

a. Flat Configuration: 1 inch thick with continuous drip groove on underside 1/2 inch from overhang edge and integral coved backsplash.

1) Edges and Corners: Beveled.
2) Backsplash: Provide 4-inch high by 1-inch thick applied (butt-joint) backsplashes wherever countertops abut walls or other permanent construction.
3) Provide seams as indicated. Do not provide longitudinal seams.

b. Marine-Edge Configuration: 1/2-inch minimum thickness, with raised edge and integral coved backsplash.

1) Edges and Corners: Beveled.

2. Tabletops:

    a. Flat Configuration: 1 inch thick with continuous drip groove on underside at perimeter.

        1) Edges and Corners: Beveled.

3. Shelves: Flat, 3/4 inch thick.

    a. Edges and Corners: Beveled.

D. Stainless Steel: Stainless steel tops and work surfaces shall be Type 304 with #4 finish per ASTM A666, unless otherwise specified. All exposed surfaces shall be 16 GA stainless steel reinforced on the underside with 18 GA galvanized steel hat channels, soldered in place and spaced to prevent twisting, oil-canning or buckling, and to provide a mounting surface where the top interfaces with cabinets or table frames beneath.

    a. Extend top down 1 inch at edges with a 1/2-inch return flange under frame. Apply heavy coating of heat-resistant, sound-deadening mastic to undersurface.
    b. Form backsplash coved to and integral with top surface.
    c. Provide raised (marine) edge around perimeter of countertops containing sinks where indicated.
    d. Pitch countertops that contain sinks two ways to sink, where indicated, without channeling or grooving.
    e. Factory punch holes for service fittings.
    f. Reinforce underside of countertop with channels, or use thicker metal sheet where necessary to ensure rigidity without deflection.
    g. Weld shop-made joints.
    h. Where field-made joints are required, provide hairline butt joints mechanically bolted through continuous channels welded to underside at edges of joined ends. Keep field jointing to a minimum.
    i. Where stainless steel sinks and cup sinks occur in stainless steel countertops, factory weld into one integral unit.

        1) Soldering of the sinks, curbs or splash rails to the top shall not be permitted.

    j. After fabricating and welding, grind surfaces smooth and polish to produce uniform, directionally textured finish with no cross scratches or evidence of welds. Passivate and rinse surfaces; remove embedded foreign matter and leave surfaces clean.
    k. Underside of tops and sinks shall be spray coated with a water-soluble sound dampening material unless otherwise specified.

2. Shelves: Made from stainless steel sheet, not less than 0.050-inch nominal thickness, with No. 4 satin finish. Weld shop-made joints. Fold up front edge 3/4 inch; fold up back edge 3 inches.

    a. Provide integral stiffening brackets, formed by folding up ends 3/4 inch and welding to upturned front and back edges.
    b. After fabricating, grind welds smooth and polish to produce uniform, directionally textured finish with no cross scratches or evidence of welds. Passivate and rinse

surfaces; remove embedded foreign matter and leave surfaces clean.

3. Sinks: Made from stainless steel sheet, not less than 0.050-inch nominal thickness. Fabricate with corners rounded and coved to at least 5/8-inch radius. Slope sink bottoms to outlet. Provide continuous butt-welded joints.

   a. Provide double-wall construction for sink partitions with top edge rounded to at least 1/2-inch diameter.
   b. After fabricating and welding, grind surfaces smooth and polish to produce uniform finish with no cross scratches or evidence of welds. Passivate and rinse surfaces; remove embedded foreign matter and leave surfaces clean.
   c. Factory punch holes for fittings.
   d. Provide with stainless steel strainers and tailpieces.
   e. Provide with integral rims except where located in stainless steel countertops.
   f. Apply 1/8-inch- thick coating of heat-resistant, sound-deadening mastic to under sink surfaces.
   g. Sink Supports: Sink supports shall be the hanger type, suspended from top front and top rear horizontal rails of sink cabinet by four (4) 1/4" dia. rods, threaded at bottom end and offset at top to hang from two full length reinforcements welded to the front and rear top rails. Two 3/4" x 1-1/2" gauge channels shall be hung on the threaded rods to provide an adjustable sink cradle for supporting sinks. When sink capacity exceeds 3,750 cu. in., the sink supports shall be suspended from full length reinforcements welded to the two end rails. Two 1" x 2" x 10 gauge full length channels shall be hung from the four 1/4 " dia. rods to provide an alternate sink cradle

E. Cup Sinks: Provide in material indicated, as indicated on Drawings.

   1. Polypropylene Cup Sinks: Provide with polypropylene strainers and integral tailpieces.

F. Troughs: Provide in material indicated and pitch to drains not less than 1/8 inch/foot. Except where troughs empty into sinks, provide NPS 1-1/2 outlets with strainers and tailpieces.

   1. Stainless Steel Troughs: Made from stainless steel sheet, not less than 0.050-inch nominal thickness. Fabricate with corners rounded and coved to at least 5/8-inch radius. Provide continuous butt-welded joints. After fabricating and welding, grind surfaces smooth and polish to produce uniform finish with no cross scratches or evidence of welds. Passivate and rinse surfaces; remove embedded foreign matter and leave surfaces clean. Provide stainless steel strainers and tailpieces.

2.11 LABORATORY ACCESSORIES

A. Reagent Shelves: Provide as indicated, fabricated from same material as adjacent countertop unless otherwise indicated.

B. Burette Rods: Aluminum or stainless steel rods, 1/2 inch in diameter and 18 inches long, threaded on one end to fit tapered plug adapter for flush socket receptacle. Provide with tapered plug adapter and receptacle.

C. Upright Rod Assembly and Metal Crossbar: Aluminum or stainless steel. Two vertical rods and

one horizontal crossbar, 3/4 inch in diameter and 36 inches long unless otherwise indicated; two flush socket receptacles and two crossbar clamps. Ends of vertical rods are tapered to fit receptacles; other rod ends are rounded.

D. Greenlaw Arm Assembly: Aluminum or stainless steel vertical rod, tapered on one end to fit flush socket receptacle. Adjustable crossbar of hardwood with black, acid-resistant finish, secured to upright with adjustable clamp. Provide with receptacle.

E. Lattice Assembly: Aluminum or stainless steel, vertical and horizontal rod lattice assembly with 3/4-inch- diameter rods at approximately 12 inches o.c. with two flush socket receptacles for mounting.

1. Size: 36 inches wide by 36 inches high.

F. Plastic or Resin Pegboards: Polypropylene, epoxy, or phenolic-composite pegboards with removable polypropylene pegs and stainless steel drip troughs with drain outlet.

2.12 CORROSIVE SAFETY CABINETS

A. Corrosive Safety Cabinets shall be constructed similar to base cabinet with a molded polyethylene interior liner.

1. Case: shall be a double-walled 18 gauge steel, provided internal backing surface for corrosion resistant inner liner. There shall be a perforated at rear for use of venting apparatus; no penetration of liner at vent opening.
2. Liner: One-piece welded polypropylene, secured to case with nylon screws. The lining on the back of the 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. Molded liner shall incorporate a 1 inch hip lip along bottom edge to contain spills.
3. Doors: Polypropylene lined with an entirely plastic door catch.
4. Shelf: Acid storage cabinet shall contain one full-width manufacturer’s standard shelf with 1 inch lip. Shelf support shall be integrally molded into cabinet liner.
5. Labels: Provide the door with a decal signifying “ACID” storage. On acid cabinets with two doors, provide one decal signifying “ACID” on each door.
6. Exhaust: Provide one threaded connection fusion welded to rear of the cabinet. Thread shall be 2 inches NPT for connection to exhaust. Provide threaded caps.

2.13 FLAMMABLE SAFETY CABINETS

A. Flammable Safety Cabinets shall meet OSHA 29 CFR 1910.106, considered as organized storage centers for flammable and combustible liquids. Cabinets shall comply with NFPA flammable and combustible liquids Code #30 and #45, 1996. Provide grounding screw log in accordance with codes. Cabinet shall be listed and labelled to the UL1275 standard, “Standards for Flammable Liquid Storage Cabinets”.

1. Case: Double-walled 18 gauge steel with min. 1 ½ inch air space between panels on top, bottom, sides, back and door.

a. Air spaces shall be filled with minimum manufacturer's required blanket of high-

temp fiberglass to meet NFPA and UL.
b. Bottom floor plan shall provide a 2-inch deep liquid tight pan to contain liquid spills and prevent leaks.
c. Provisions for attaching grounding wire at base of cabinet on the outside rear panel.

2. Doors:

a. Provide a three-point locking mechanism.
b. Door synchronizer shall be incorporated on double door units.
c. Provide with full-length stainless-steel piano hinge.

3. Shelves: Provide adjustable galvanized sheet steel shelves with four edges turned down 1 inch and additionally returned under 5/8 inch on all edges. Provide ½ inch incremental shelf adjustment.
4. Mobile: Where indicated on the drawings. Four casters (2-locking), swivel-type. Vent holes factory plugged. Cabinets shall be ADA compliant for height, width and load capacity.
5. Labels: “FLAMMABLE-KEEP FIRE AWAY” shall be silk-screened onto door, appearing as red lettering on a bright yellow background.
6. Exhaust: Provide 2-inch vents, complete with fire baffle covers on each vent with 2-inch diameter fine metal filter

2.14 SANITIZING CABINET

A. Metal heavy gauge CRC steel treated sanitizing cabinet with white enamel finish.

1. Manufacturer: Basis of design Fisher Scientific; Eisco Goggle Sanitizing Cabinet or by one of the following:

a. Carolina Biological
b. Flinn Scientific

2. Operation:

a. Unit has doors with 15-minute timer with UV bulb.
b. UV light only operates when the doors are closed.
c. Piano style hinges with light leak avoidance.
d. Sterilization process is indictor light
e. Sanitizes 36 goggles at a time.
f. Power: 110 volt.

3. Labels: “Goggle Storage Center” shall be silk-screened onto door.

2.15 WATER AND LABORATORY GAS SERVICE FITTINGS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Broen A/S
2. Chicago Faucets; Geberit Group
3. WaterSaver Faucet Co

B. Service Fittings: Provide units that comply with SEFA 7, "Recommended Practices for Fixtures." Provide fittings complete with washers, locknuts, nipples, and other installation accessories. Include wall and deck flanges, escutcheons, handle extension rods, and similar items.

1. Provide units that comply with "Vandal-Resistant Fittings" recommendations in SEFA 7.

C. Materials: Fabricated from cast or forged red brass unless otherwise indicated.

1. Reagent-Grade Water Service Fittings: Polypropylene, PVC, or PVDF for parts in contact with water.

D. Finish: Chromium plated or with clear epoxy coating complying with requirements in SEFA 7 for corrosion-resistant finishes at locations indicated on the drawings.

1. Provide chemical-resistant powder coating in laboratory casework manufacturer's standard metallic brown, aluminum, white, or other color as approved by Architect.

E. Water Valves and Faucets: Provide units complying with ASME A112.18.1, with renewable seats, designed for working pressure up to 80 psig.

1. Vacuum Breakers: Provide ASSE 1035 vacuum breakers on water fittings with serrated outlets.
2. Aerators: Provide aerators on water fittings where indicated on drawings.
3. Self-Closing Valves: Provide self-closing valves where indicated.

F. Ball Valves: Chrome-plated ball and PTFE seals. Handle requires no more than 5 lbf to operate. Provide units designed for working pressure up to 75 psig, with serrated outlets.

1. Locking Safety Handles: Where ball valves are indicated for fuel-gas use, provide handles that must be pushed in before being turned on.

G. Ground-Key Cocks: Tapered core and handle of one-piece forged brass, ground and lapped, and held in place under constant spring pressure. Provide units designed for working pressure up to 40 psig, with serrated outlets.

H. Steam Valves: Stainless steel seat and PTFE seat disc. Provide units designed for steam working pressure up to 20 psig, with serrated outlets.

I. Needle Valves: Provide units with renewable, self-centering, floating cones and renewable seats of stainless steel or Monel metal, with removable serrated outlets.

1. Provide units designed for working pressure up to as indicated on Drawings.

J. Hand of Fittings: Furnish right-hand fittings unless fitting designation is followed by "L."

K. Remote-Control Valves: Provide needle valves, straight-through or angle type as indicated for fume hoods and where indicated.

L. Handles: Provide wrist handles, forged brass for valves unless otherwise indicated.

1. Provide lever-type handles for ball valves unless otherwise indicated. Lever handle aligns with outlet when valve is closed and is perpendicular to outlet when valve is fully open.
2. Provide heat-resistant plastic handles for steam valves.
3. Provide knurled, molded-plastic handles for needle valves.

M. Service-Outlet Identification: Provide color-coded plastic discs with embossed identification, secured to each service-fitting handle to be tamper resistant. Comply with SEFA 7 for colors and embossed identification.

2.16 ELECTRICAL AND COMMUNICATION SERVICE FITTINGS

A. Service Fittings, General: Provide units complete with metal housings, receptacles, switches, pilot lights, cover plates, accessories, and gaskets required for mounting on laboratory casework. Receptacles, terminals, switches, pilot lights, device plates, cover plate identification and accessories are specified in Division 26.

B. Receptacles:

1. Duplex Convenience Receptacles: 125 V, 20 A; NEMA WD 6, Configuration 5-20R.

a. Standards: Comply with NEMA WD 1, UL 498, and FS W-C-596.

2. Hospital-Grade, Duplex Convenience Receptacles: 125 V, 20 A; NEMA WD 6, Configuration 5-20R.

a. Standards: Comply with NEMA WD 1, UL 498 Supplement sd, and FS W-C-596.

3. Hospital-Grade, USB Charger Receptacles: 12 V dc, 2.0 A, USB Type A.

a. Standards: Comply with NEMA WD 1, UL 498 Supplement sd, UL 1310, and FS W-C-596.
b. Marking: Labeled and complying with NFPA 70, "Health Care Facilities" Article, "Pediatric Locations" Section.

4. Duplex GFCI Convenience Receptacles: 125 V, 20 A; NEMA WD 6, Configuration 5-20R; feed through type with integral LED indicator light.

a. Standards: Comply with NEMA WD 1, UL 498, UL 943 Class A, and FS W-C-596.

5. Isolated-Ground, Hospital-Grade, Duplex SPD Convenience Receptacles: 125 V, 20 A; NEMA WD 6, Configuration 5-20R; with integral SPD in line to ground, line to neutral, and neutral to ground.

a. Standards: Comply with NEMA WD 1, UL 498 Supplement sd, UL 1449, and FS W-C-596.

6. Color of Receptacles: As selected by Architect unless otherwise indicated or required by NFPA 70.

C. Switches:

1. Single-Pole Switches: 120/277 V, 20 A.

a. Standards: Comply with NEMA WD 1, UL 20, and FS W-S-896.

2. Two-Pole Switches: 120/277 V, 20 A.

a. Comply with NEMA WD 1, UL 20, and FS W-S-896.

3. Pilot-Light Switches, Single Pole: 120/277 V, 20 A, with LED-lighted handle, illuminated when switch is off.

a. Standards: Comply with NEMA WD 1, UL 20, and FS W-S-896.

4. Key-Operated Switches: 120/277 V, 20 A; single pole, with factory-supplied key in lieu of switch handle.

a. Standards: Comply with NEMA WD 1, UL 20, and FS W-S-896.

5. Color of Switches: As selected by Architect unless otherwise indicated or required by NFPA 70.

D. Data Communication Outlets: Two RJ-45 jacks for terminating 100-ohm, balanced, four-pair twisted-pair cabling complying with TIA-568-C.1; complying with Category 6. Comply with UL 1863.

E. Cover Plates: Provide satin-finish, Type 304, stainless steel cover plates with formed, beveled edges.

F. Cover-Plate Identification: Use 1/4-inch- high letters unless otherwise indicated. For stainless steel or chrome-plated metal, stamp or etch plate and fill in letters with black enamel.

1. Provide at every cover plate.
2. Provide the following information:

a. Voltage and phase for receptacles other than standard 125-V duplex, grounding type.
b. Indicate equipment being controlled by switches and thermal-overload switches.
c. Indicate equipment being controlled for pilot lights when located remotely from associated equipment or switch, where function is not obvious.
d. Number of the breaker in panelboard that controls device.

G. Pedestal-Type Fittings: Cast-aluminum housings with sloped single face or two faces, as indicated, with neoprene gasket under base and with concealed mounting holes in base for attaching to laboratory casework. Provide holes tapped for conduits.

H. Line-Type Fittings: Provide with cast-metal boxes with threaded holes for mounting on rigid steel conduit. Provide cover plates same size as boxes.

I. Recessed-Type Fittings: Provide with galvanized-steel boxes.

J. Finishes for Service-Fitting Components: Provide housings or boxes for pedestal- and line-type fittings with manufacturer's standard baked-on, chemical-resistant enamel in color as selected by Architect from manufacturer's full range.

K. Under cabinet Task-Light Fixtures: LED fixture with switch and heavy-duty cord and plug.

1. Finish: Baked enamel.
2. Diffusers: Virgin acrylic with high resistance to yellowing and other changes due to aging, heat, and UV radiation.
3. Provide lamp

a. 320 Lumens
b. CRI: 90
c. Color Temperature: 2700

2.17 SEALANT

A. Provide manufacturer’s recommended epoxy adhesive around sinks, at back-splash to wall and other permanent construction and at locations indicated on the drawings.

2.18 CYLINDER BRACKET

A. Provide four-cylinder wall mounted gas cylinder bracket that is OSHA and NFPA compliant.

1. Cylinder Capacity: 2-4 cylinders.
2. Diameter supported: 4 inches to 12 inches.
3. Cylinder Construction: Power coated paint 11 gauge hot rolled steel with 1.5” polypropylene strap minimum of 5’-4” long with steel cinch buckle. Edge protection with steel reinforced vinyl edge guards.

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 including but not limited to the following

1. Do not install laboratory casework until all overhead work is complete including lighting, HVAC, and ceiling finish.
2. Do not install laboratory casework until finish flooring is complete (at locations without integral base) and wall finishes applied.
3. Do not install laboratory casework until major overhead work is complete (including mechanical rough-in, ceiling suspension systems & lighting.
4. Do not install laboratory casework until dusty operations are completed room has been cleaned and concealed utility spaces can be protected.

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

3.2 INSTALLATION OF CABINETS

A. Comply with installation requirements in SEFA 2. Install level, plumb, and true in line; 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 Casework from a True Plane: 1/8 inch in 10 feet.
4. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
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. Space no more than 36-inches off center.

1. Provide supplemental framing at peninsula benches where no base cabinets are located at intersections with wall and bench.

C. Base Cabinets: Fasten cabinets to utility-space framing, partition framing, wood 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.

F. Adjust operating 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. Abut top and edge surfaces true in plane with flush hairline joints and with internal supports placed to prevent deflection. Locate joints 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. Plastic-Laminate Countertops: Secure field-made joints using concealed clamping devices located within 6 inches of front and back edges and at intervals not exceeding 24 inches. Tighten in accordance with 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 holes and cutouts required 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. Dress joints smooth, remove surface scratches, and clean entire surface.

3.4 INSTALLATION OF SINKS

A. Comply with installation requirements in SEFA 2.

1. Flood test sinks for 24 hours, with water filled to top of countertops.

B. Drop-in Installation of Epoxy Sinks: Rout groove in countertop to receive sink rim if not shop prepared. Set sink in adhesive and fill remainder of groove with sealant or adhesive. Use procedures and products recommended by sink and countertop manufacturers. Remove excess adhesive and sealant while still wet and finish joint for neat appearance.

C. Underside Installation of Epoxy Sinks: Use laboratory casework manufacturer's recommended adjustable support system for table- and cabinet-type installations. Set top edge of sink unit in sink and countertop manufacturers' recommended chemical-resistant sealing compound or adhesive, and firmly secure to produce a tight and fully leakproof joint. Adjust sink and securely support to prevent movement. Remove excess sealant or adhesive while still wet and finish joint for neat appearance.

D. Installation of Epoxy and Polypropylene Cup Sinks:

1. Drop-in Installation: Rout groove in countertop to receive sink rim if not shop prepared. Set sink in adhesive and fill remainder of groove with sealant or adhesive. Use procedures and products recommended by sink and countertop manufacturers. Remove excess adhesive and sealant while still wet and finish joint for neat appearance.

3.5 INSTALLATION OF LABORATORY ACCESSORIES

A. Install accessories in accordance with Shop Drawings, installation requirements in SEFA 2, and

manufacturer's written instructions.

B. Securely fasten adjustable shelving supports, stainless steel shelves, and pegboards to partition framing, wood blocking, or reinforcements in partitions. Fasten shelving system to support uniform live load of 100 pounds per linear foot of shelf, with shelves at 12-inches on center full height of pilasters.

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. Install standards (pilasters) as 24-inches, 30-inches, or 36-inches on center so modular metal shelves can be added in the future.

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

3.6 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 in accordance with Shop Drawings, installation requirements in SEFA 2, 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.

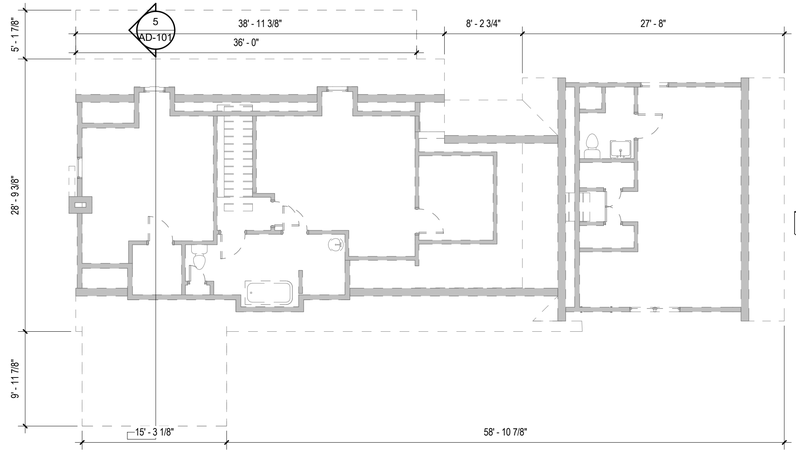
3.7 CLEANING AND PROTECTING

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 and concealed space from dust 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.

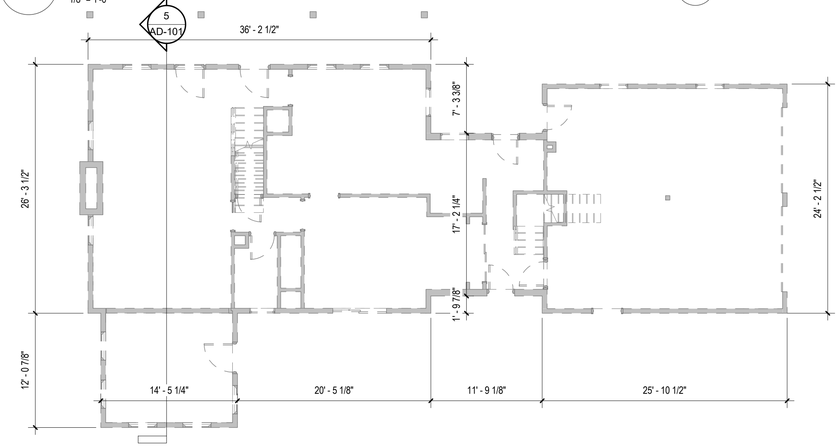
END OF SECTION 123553.13

1/16" = 1'-0" | 1/8" = 1'-0" | 3/16" = 1'-0" | 1/4" = 1'-0" | 3/8" = 1'-0" | 1/2" = 1'-0" | 3/4" = 1'-0" | 1" = 1'-0" | 1 1/2" = 1'-0" | 3" = 1'-0" | 6" = 1'-0"



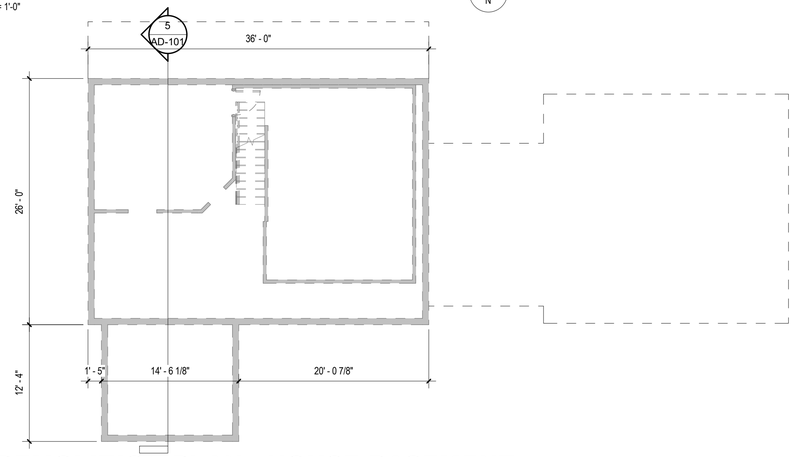
1 DEMOLITION PLAN - SECOND FLOOR/ROOF

1/8" = 1'-0"



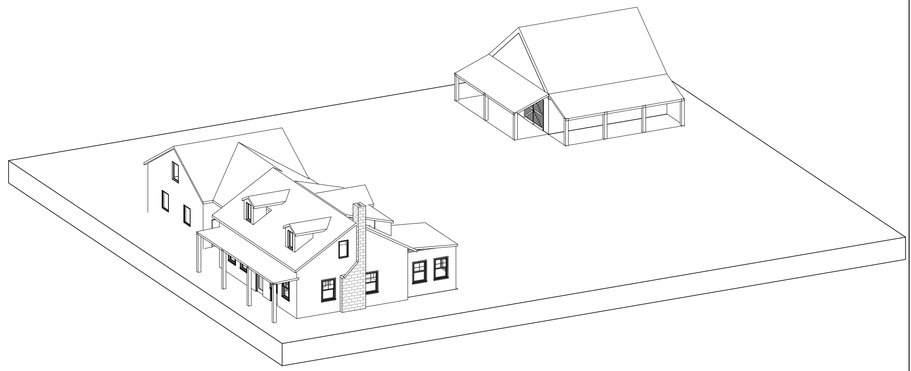
2 DEMOLITION PLAN - FIRST FLOOR

1/8" = 1'-0"

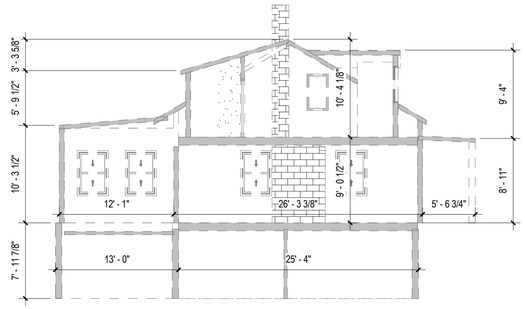


3 DEMOLITION PLAN - HOUSE BASEMENT

1/8" = 1'-0"

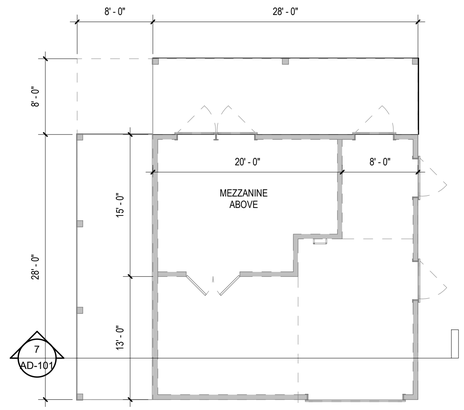


4 VIEW FROM NORTHWEST - EXIST BLDGS



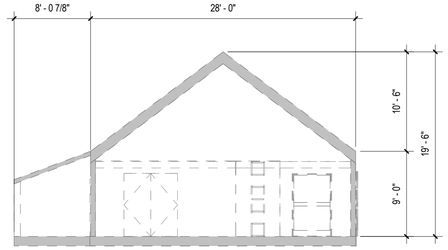
5 DEMOLITION CROSS SECTION

1/8" = 1'-0"



6 DEMOLITION PLAN - BARN

1/8" = 1'-0"



7 DEMOLITION BARN CROSS SECTION

1/8" = 1'-0"

DEMOLITION GENERAL NOTES

A. THE GENERAL CONTRACTOR SHALL COMPLETE ALL SELECTIVE DEMOLITION WORK REQUIRED IN ROOMS TO BE COMPLETELY REMODELED, EXCEPT THAT WHICH IS NOTED OTHERWISE. WORK INCLUDES, BUT IS NOT LIMITED TO (COORDINATE LIMITS WITH FLOOR PLANS):
   1. PARTITIONS INDICATED WITH DASHED LINES.
   2. DOORS, FRAMES, & HARDWARE INDICATED AS DASHED LINES.
   3. EXISTING FLOORING FINISH & ADHESIVES.
   4. EXISTING CEILING FINISH & ANCHORAGE DEVICES.
   5. EXISTING WALL BASE.
   6. EXISTING PLUMBING SYSTEMS BACK TO POINT CONCEALED BY NEW CONSTRUCTION OR AS REQUIRED FOR NEW EXTENT OF CONSTRUCTION FOR ALL CONTRACTORS INCLUDING, BUT NOT LIMITED TO, VALVES, HANGERS, INSULATION, & FLOOR DRAINS.
   7. EXISTING HVAC SYSTEMS BACK TO POINT CONCEALED BY NEW CONSTRUCTION OR AS REQUIRED FOR NEW CONSTRUCTION BY ALL CONTRACTORS INCLUDING, BUT NOT LIMITED TO:
      a. ALL DUCTS, DIFFUSERS, DAMPERS, GRILLES, THERMOSTATS, INSULATION, & HANGERS.
      b. ALL HOT WATER STEAM & CONDENSATE PIPING, INSULATION, VALVES, & HANGERS.
   8. EXISTING ELECTRICAL SYSTEMS BACK TO A POINT CONCEALED BY NEW CONSTRUCTION OR AS REQUIRED FOR NEW CONSTRUCTION BY ALL CONTRACTORS INCLUDING, BUT NOT LIMITED TO :
      a. ALL LIGHTS, SWITCHES, RECEPTACLES, PANELBOARD, SPEAKERS, TELEPHONE DEVICES, & CLOCKS.
      b. ABANDONED CONDUIT, WIRE, JUNCTION BOXES, & HANGERS.

B. DEMOLISH ALL FEC CABINETS, BENCHES, TACK BOARDS, DISPLAY CASES, ETC.

C. THE CONTRACTOR SHALL SCHEDULE ALL INTERRUPTIONS OF UTILITIES WITH THE OWNER.

D. MAINTAIN & PROTECT EXISTING SITE APPURTENANCES AS INDICATED ON CIVIL AND LANDSCAPE DEMOLITION DRAWINGS.

E. CONTRACTOR FOR THE PORTION OF THE WORK INDICATED ON PLAN, IS TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES BETWEEN ACTUAL CONDITIONS & THOSE INDICATED ON DRAWINGS SHOULD BE REPORTED TO THE ARCHITECT IMMEDIATELY.

F. PROVIDE ALL SELECTIVE BUILDING DEMOLITION WORK REQUIRED TO COMPLETE ALL NEW WORK & REMODELING WORK WHETHER SPECIFICALLY NOTED OR NOT.

G. THE OWNER RETAINS THE RIGHT TO SALVAGE EXISTING BUILDING ITEMS.

H. IMMEDIATELY PRIOR TO THE START OF DEMOLITION, THE OWNER WILL VACATE & REMOVE ALL LOOSE FURNISHINGS. THESE ITEMS INCLUDE, BUT ARE NOT LIMITED TO TABLES, DESKS, & CHAIRS, KEY LOCKS, MISC. HARDWARE. CONTRACTOR TO COORDINATE REMODELING SCHEDULE WITH THE OWNER & NOTIFY THEM OF START DATE TWO WEEKS & AT 72 HOURS IN ADVANCE.

I. COORDINATE LIMITS OF SELECTIVE DEMOLITION OF MECHANICAL/ELECTRICAL SYSTEMS WITH THE PLUMBING, HVAC, & ELECTRICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS. PLUMBING, HVAC, & ELECTRICAL CONTRACTORS ARE RESPONSIBLE FOR:
   1. IDENTIFYING TERMINATION POINTS OF DEMOLITION
   2. TEMPORARY SHUT DOWN & CAPPING EXISTING ACTIVE PIPE, DUCTS, OR ELECTRICAL CIRCUITS.
   3. RECONFIGURATION OF EXISTING SYSTEMS.
   4. DISCONNECTING ABANDONED ELECTRICAL CIRCUITS.
   5. HOLES IN EXISTING CONSTRUCTION REQUIRED FOR NEW CONSTRUCTIONS, U.O.N.

J. ALL DIMENSIONS ARE APPROXIMATE AND FOR REFERENCE ONLY. FIELD VERIFY ALL DIMENSIONS OF EXISTING CONSTRUCTION.

NOT FOR CONSTRUCTION

SPGB Architects
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PHONE: (614) 771-3963

DESIGNED BY:	JB
DRAWN BY:	MT/TD
CHECKED BY:	MF

DATE:

REVISIONS:

VET TEACHING CENTER
4025 EAST LAGRANGE ROAD, JEFFERSON COUNTY, INDIANA
HANOVER COLLEGE

STRUCTURAL DEMOLITION DRAWINGS

SCALE: As indicated

AD-101

JOB NO.:	23009
DATE:	03.07.2025