ADDENDUM NUMBER THREE

To the Drawings and Project Manual Dated:

MAY 01, 2026

Entitled:

Indiana University
Launch Accelerator for Biosciences
1302 Indiana Ave.
Indianapolis, IN 46202

Prepared By:

BSA
175 S. Rangeline Rd., Suite 200
Carmel, IN 46032

_____

Addendum Dated: MAY 01, 2026

IU Project #: 20250072
BSALS Project #: 00360481

GENERAL

1. None.

CONTRACTOR QUESTIONS

1. See attached list of bidder questions with design team responses.

CHANGES TO THE PROJECT BID MANUAL

1. Revised Bid Form Attachment 1 – Bid Package Standard Bid From to include updated alternates.
2. Updated Bid Package Index:
a. BE4-10F – Signage (Interior)
b. BE4-10H – Signage (Exterior)
3. Updated Scope of Work for BE4-06A – Finished Carpentry (Furnish)

CHANGES TO THE PROJECT MANUAL

1. Section 10 2800:

a. Added coat hook information in line item 2.05.E.

2. Section 10 5129:

a. Clarified Lock style for phenolic lockers with 2.03.A.8.
b. Removed line item 2.04.G.2

3. Section 11 5300:

a. Removed Cabinet, Modular Gas from 1.1.A.1 and 2.3 because the cabinets are future.

CHANGES TO THE DRAWINGS

1. A122A - ARCHITECTURAL PLAN - LEVEL 2 - AREA A

a. Revised architectural sheets to match slat wall locations identified on Dimension plan sheets.

2. A122B - ARCHITECTURAL PLAN - LEVEL 2 - AREA B

a. Revised architectural sheets to match slat wall locations identified on Dimension plan sheets.

3. A123A - ARCHITECTURAL PLAN - LEVEL3 - AREA A

a. Revised architectural sheets to match slat wall locations identified on Dimension plan sheets.

4. **A123B - ARCHITECTURAL PLAN - LEVEL3 - AREA B**

a. Revised architectural sheets to match slat wall locations identified on Dimension plan sheets.

5. **A124A - ARCHITECTURAL PLAN - LEVEL4 - AREA A**
   a. Revised architectural sheets to match slat wall locations identified on Dimension plan sheets.
6. **A125A - ARCHITECTURAL PLAN - LEVEL5 - AREA A**
   a. Revised architectural sheets to match slat wall locations identified on Dimension plan sheets.

7. **A521– INTERIOR STOREFRONT SYSTEM DETAILS**
   a. Revised steel details for portal shrouds to match structural updates.

8. **A720 – Millwork**
   a. Revised millwork details and elevations to change WD2 to WDV1 per sheet IF000.

9. **Sheets M002, M202A, M205B, M605, M606, M802A, M808A**
   a. Revised per the attached sheets.

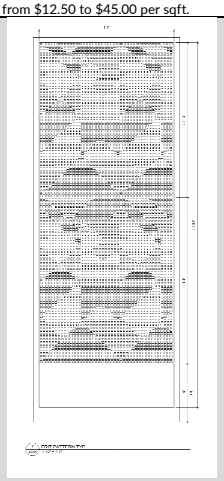
END OF ADDENDUM NUMBER THREE

Attachments:

- Sections: **10 2800, 10 5129, 11 5300**
- Drawings: **A122A, A122B, A123A, A123B, A124A, A125A, A521, A720, M002, M202A, M205B, M605, M606, M802A, M808A**

20250072 - IU LAB - BP4 Bidder RFI's

RFI #	Bid Package	Discipline	Sheet/Spec Section	Question	Answer	Response By	Addendum
23	BE4-10F	Interiors		Is the large interior IU logo sign on Sheets A422 and A451 included in the scope of the interior signage package. If so, are there better specifications/ drawings for it? Also, would there be allowance for alternate construction methods	The large Trident is not included in the interior signage package. This is included in BE4-06B Translucent Panel bid package.	FPD	ADD-03
29	BE4-13A	Lab Planning		Specification section part 1.2.A.4 says the refrigeration systems for each room should be redundant. However, on the electrical drawings they only show power for one condensing unit. Please advise if each room should be redundant or standard with one condensing unit.	SmithGroup: I believe 1.2.A.4 specification section refers to 13 2100 Controlled Environmental Rooms. The intent is to say that if back-up systems are required, they would be required for each room. Redundant refrigeration systems would be indicated in the Refrigeration System part of the specification. No redundant refrigeration systems are required, one condensing unit per Controlled Environmental Room is acceptable.	SmithGroup	ADD-02
31				Do we need to assum a mop + broom holders to be required in all janitor closets?	Yes. Mop and Broom Holders will be required in all janitor's closets	BSA	ADD-03
32				I don't see any AED's marked in the plan, but there is spec, do these need to be included?	AEDs are located on Life Safety Sheets with sheet note "L4"	BSA	ADD-03
33				Is there a difference in the two coat hooks? Or could we have intended product numbers?	Two different coat hooks are the same product, just mounted at different heights. Product has been added to 10 2800 specification to be included in ADD 03	BSA	ADD-03
34	BE4-09E			According to the Sealed Concrete & Epoxy Scope of Work, our bid should include SC2 & SC3 with the alternate add for resinous in lieu of SC2. I noticed that the concrete spec appears to include application of the Euclid Diamond hard (SC2), and I believe this bid in an earlier bid pack. Can you confirm that you are not already carrying number for SC2 in that bid package and that we do need to include a number for it? I'm coming up with approximately 23,000sf of SC2, and just wanted to make sure we bid this properly to you	Only SC1 - polished concrete was bid in an earlier package. SC2 and SC3 need to be included in the BE4-09E base bid.	FAW	ADD-03
35	BE4-13A			Delivery logistics: When our phase of work begins, will access be available for large delivery trucks, or will short trucks be required? Lab Casework	Yes, a semi will be able to be used for delivery of lab equipment.	FAW	ADD-03
36	BE4-13A			We are planning to bid Scope of Work section BE4-13A - Lab Casework & Equipment. As part of our review, we noted that Spec Section 123661 - Simulated Stone Countertops is included within this package and we will not be covering that scope. We wanted to bring this to your attention, as this scope is typically carried under a millwork package	Lab equipment bidders are to include all tops for lab equipment.	FAW	ADD-03
37				Please confirm that this project is Non-union and does not require prevailing wages.	There are no wage requirements on this project.	FAW	ADD-03
38				Who do I make the bid bond payable to?	Make bid bonds payable to: F.A. Wilhelm Construction Co., Inc. and if bidders are supplying multiple bids for multiple bid packages, a bid bond must be submitted for each individual package.	FAW	ADD-03
39	BE4-06A			Which bid package includes specification 126200 upholderested furniture?	To be included in BE4-06A Finished Carpentry (Furnish)	FAW	ADD-03
40	BE4-06A			In detail 3,5,6/A720 is says to use WD-2 on the seating. When referring back to the finish schedule IF000 tehre is no WD-2 to reference. There is a WD1 and a WDV1. What spec is to be used in the construction of this bench?	WD-2 will be corrected to WDV1 on the elevations and details. Revisions will be issued in Add 03 on 05/01/26	BSA	ADD-03
41	BE4-08B			The aluminum SF systems and glass makeups will not meet the STC ratings shown on the door schedule. What is the difference between SF3 and SF3x? SF3x is not shown on the interior glazing schedule and elevations.	The maximum STC rating does not meet the required STC but is acceptable for SF conditions. The SF types were updated in BP4: Addendum 1.	BSA	ADD-01
42	BE4-08B			Just want to confirm all interior caulking is by others including our frame perimeters.	Please refer to the detailed scope of work for joint sealants, BE4-07A.	FAW	ADD-03
43	BE4-08A			BE4-08A – HM Doors, Frames & Hardware Item #3 – States to provide permanent cores and keys for this project. However, hardware spec 087100 in the hardware sets states that the cores are provided by Oak Security. Do we need to include anyway?	Yes, the door and hardware supplier must provide permanent cores and keys from Oak Security per the specification.	FAW	ADD-03
44	BE4-08A			The storefront glazing is GL-3 9/16" laminated glass with sound control interlayer STC rating of .39. The door schedule list specific STC ratings for the storefront frames. The specified storefront frames do not have STC ratings. The specification do not show STC rated doors and frames. We can install the correct glass in the frames. This will obviously help with sound control. We cannot provide a UL listed STC rating for the entire assembly. Please advise how you would like to proceed?	Provide the GL-03 9/16" laminated glass with sound control interlayer STC rating of 39 as specified. The aluminum door and framing systems are to meet the requirements outlined in 081116 and 084313 and meeting industry standards as specified.	BSA	

45	BE4-10B			The specs list 3 different locks for the lockers. Please let us know which we should price.	Spec has been updated to the prefered lock style and will be issued as part of ADD.03 on 05/01/26	BSA	ADD-03
46	BE4-08B			On IF000 it shows DF1 manufacturer Designtex Bespoke custom graphic film type and color TBD coordinate with interior designer. I have about 3200 sqft of film. Without more information the price could range from $12.50 to $45.00 per sqft.	Detail 7/A610 is meant to illustrate the custm pattern. Detail will be updated in Addendum 03 to revise height of the detail to correspond with storefront sizes. Do not plan to exceed 4000 SF of film.	FPD	ADD-03
47	BE4-08B			 On A610 detail 7 it is showing a Frit pattern. What is this referring to? I see the pattern below for the ceiling.	7/A610 is illustrating DF-1 custom film pattern	BSA	ADD-03
48	BE4-13A		Substitution Request	Lab glassware	SmithGroup: This is not acceptable to SmithGroup.		ADD-03
49	BE4-13A		Substitution Request	Environmental Rooms	SmithGroup: This is not acceptable to SmithGroup.		ADD-03
50	BE4-08A			Can an elevation and detail for the tile clad doors be provided?	Tile clad doors are elevation on A601 and plan detail is provided on 4/A510	BSA	ADD-03
51	BE4-13A			Regarding scope coverage on the gas cylinder cabinet MQ-01D: Is it considered FUTURE (not to be included) or is it required in the base bid? -1/Q1.3 lists the Matheson 1177F as future and the illustration is dashed -The Q7 series drawings show it dashed in plan view -The Q8 drawings (2.2, 3.2, 4.3 5.3) all show drawn like all other items to supply, unlike the Future fume hoods (compare 6/Q8.2.2 to 9/Q8.2.2)	SmithGroup: MQ-01D gas cylinder cabinets are future and will not be included day one, but all infrastructure should be in place to install them in the future per GMP VE item #35.	BSA	ADD-03
52	BE4-10G			Do we need to include the roof hatch and ladder as shown on A140?	Only need to include the ladder as shown on A140 in the base bid for bid package BE4-10G Walkable Ceiling.	FAW	ADD-03
53	BE4-08B			Bid package 08B line 6 says to furnish and install exterior sealant. Are we caulking one side of the frame or no perimeter sealant?	If there is any portion of interior glass systems that have potential for exposure to exterior elements, it is this bidders responsibility to provide a dry system and leak proof sealant.	FAW	ADD-03
54	BE4-08B			Bid package08B line 9 says to clean the exterior of the glass. Do we need to clean and glass on this other than construction clean?	Only construction clean required for the glass in this package.	FAW	ADD-03
55	BE4-06A			There is also some coordination issues with Dimension Plans that start with A111A and Architectural Plans that start with A121A for the Slat Wall Alt. Its hard to qualify the exact count of wood slat wall alternates that are being requested. Please see my chart below for details.	Architectural plans have been updated to correspond with Dimension Plan Alternates - Updates will be issued in ADD.03	BSA	ADD-03
56	BE4-08A			We are reviewing the recent addendum that added an STC column to the door schedule and it is resulting in quite a few conflicts. I.E. EZ jamb frames calling for STC ratings, several openings have lite kits which will impact the overall ability to meet certain STC ratings, and the height of some of the openings requesting STC ratings will likely impact their ability actual carry a testable rating.	Laminated glazing called out in 08 8000 that is intended to be used in sound-rated door locations to carry the required STC rating listed in the door schedule & 08 1113. The laminated glazing type is also tagged in the door schedule with the appropriate door locations. These should be reviewed together for bid preparation.	BSA	ADD-03

SECTION 10 2800
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SUMMARY

A. Owner-Furnished Material: The Owner will furnish and install the following products:
   1. Soap dispensers.
   2. Toilet paper dispensers.
   3. Paper towel dispensers.
   4. Sanitary napkin dispensers
   5. Waste Receptacles

1.02 SECTION INCLUDES

A. Commercial toilet accessories.

B. Commercial shower and bath accessories.

C. Commercial shower pan

D. Residential toilet, shower, and bath accessories.

E. Under-lavatory pipe supply covers.

F. Diaper changing stations.

G. Utility room accessories.

1.03 RELATED REQUIREMENTS

A. Section 092216: Concealed supports for accessories, including in wall framing and plates and above ceiling framing

B. Section 09 3000 - Tiling: Ceramic washroom accessories.

C. Section 10 2113.13 - Metal Toilet Compartments.

1.04 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design.

B. ASTM A666/A666M - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

C. ASTM C1036 - Standard Specification for Flat Glass.

D. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror.

E. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.06 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Specify blocking in walls for installation of grab bars and accessories, including accessories to be provided and installed by IU Building Services.

C. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods. Label each accessory product data with the accessory type indicated in the drawings.

D. Sustainable Design (LEED) Submittals Requirements: See Section 013329.02 “Sustainable Design Reporting – LEED v4” for submittal requirements.

E. Shop Drawings: Manufacturer’s layout and setting drawings indicating rough openings and anchor locations.

F. Schedule: Submit a schedule listing the room name, room number and quantity of each accessory within the room.

G. Operating Instructions: Submit descriptions for loading, repairing, and locking of accessories. Submit with Operating and Maintenance Manuals.

H. Keys: Furnish keys for enclosures to Owner at completion of Work. Key all accessories alike.

1.07 QUALITY ASSURANCE

A. Single-source responsibility: Provide products from a single manufacturer, except where alternative manufacturers are listed.

B. Coordinate accessory locations with other work to prevent interference with clearances required for access by people with disabilities, and for proper installation, adjustment, operation, cleaning, and servicing of accessories.

1.08 WARRANTY

A. Special Mirror Warranty: Manufacturer's standard form in which manufacturer agrees to replace mirrors that develop visible silver spoilage defects and that fail in materials or workmanship within specified warranty period.
   1. Warranty period: Fifteen (15) years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 SUSTAINABLE DESIGN (LEED) MATERIAL REQUIREMENTS:

A. Materials shall comply with the requirements of section 013329.02 “Sustainable Design Reporting – LEED v4”

2.02 MANUFACTURERS

A. Commercial Toilet, Shower, and Bath Accessories:
   1. Kimberly-Clark Corporation; Kimberly-Clark Professional ICON Collection: www.kcprofessional.com/#sle. Preferred Vendor

B. Substitutions: Get approval for use on the following manufacturers other than the preferred vendor.
   1. American Accessories
   2. American Specialties
   3. Bobrick
   4. Bradley Corp.

C. Diaper Changing Stations:
   1. Koala Kare Products: www.koalabear.com/#sle.
   2. Substitutions: 01 6000 - Product Requirements.

D. Provide products of each category type by single manufacturer.

2.03 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.

B. Keys: Provide 6 keys for each accessory to Owner; master key lockable accessories.

C. Stainless Steel Sheet: ASTM A666/A666M, Type 304.

2.04 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

2.05 COMMERCIAL TOILET ACCESSORIES

A. Toilet Paper Dispenser: Owner Furnished, Owner Installed.

B. Paper Towel Dispenser: Owner Furnished, Owner Installed.

C. Soap Dispenser: Owner Furnished, Owner Installed.

D. Waste Receptacle: Owner Furnished, Owner Installed.

E. Coat Hook: Contractor Furnished, Contractor Installed.
   1. Commercial Heavy Duty Robe and Coat Hook
   2. Finish: Satin Stainless Steel
   3. Concealed Wall Plate
   4. BOD: Bobrick B-6727

F. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
   1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
   2. Size: As indicated on drawings.
   3. Frame: 0.05 inchangle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
   4. Backing: Full-mirror sized, minimum 0.03 inch galvanized steel sheet and nonabsorptive filler material.
   5. Mounting: Concealed.
   6. Mounting height: 40" to bottom of reflective surface, unless noted otherwise.

G. Seat Cover Dispenser: Stainless steel, surface-mounted, reloading by concealed opening at base, tumbler lock.
   1. Minimum capacity: 250 seat covers.

H. Grab Bars: Stainless steel, smooth surface.
   1. Standard Duty Grab Bars:
      a. Push/Pull Point Load: 250 pound-force, minimum.
      b. Dimensions: 1-1/2 inch outside diameter, minimum 0.05 inch wall thickness, concealed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
      c. Finish: Satin.
      d. Length and Configuration: As indicated on drawings.
         1) Typically 36" long, 42" long, and 18" long, as shown on drawings.
      e. Model: Concealed mounting flanges with snap flange cover.
      f. Concealed anchor plates:
         1) size: 1/8 inch by 6 inch by grab bar length plus 8 inches, minimum.
         2) Material: Type 304 stainless steel.

I. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, self-closing door, locking bottom panel with full-length stainless steel piano-type hinge, removable receptacle.

2.06 COMMERCIAL SHOWER AND BATH ACCESSORIES

A. Shower Curtain Rod: Stainless steel tube, 1-1/4 inch outside diameter, 0.04 inch wall thickness, satin-finished, with 3 inch outside diameter, minimum 0.04 inch thick satin-finished stainless steel flanges, for installation with exposed fasteners.
   1. Products:
      a. American Specialties, Inc; 1204-2: www.americanspecialties.com/#sle.
      b. Bobrick Washroom Accessories, Inc; B-207: www.bobrick.com/#sle.
      c. Bradley Corporation; 9531: www.bradleycorp.com/#sle.

B. Folding Shower Seat: Wall-mounted surface; welded tubular seat frame, structural support members, hinges, and mechanical fasteners of Type 304 stainless steel, L-shaped seat.
   1. Seat: Phenolic or polymeric composite one-piece seat or seat slats, of white color.
   2. Size: ADA Standards compliant.

C. Wall-Mounted Shelf : Heavy duty, seamless stainless steel, surface-mounted with drain holes, without grab bar, satin finish; with concealed mechanical fastening suitable for substrate and backplate.

D. Towel Bar: Stainless steel, 3/4 inch square tubular bar; rectangular brackets, concealed attachment, satin finish.
   1. Length: 24 inches. Unless Otherwise Noted
   2. Products:
      a. American Specialties, Inc; 7360-S: www.americanspecialties.com/#sle.
      b. Bobrick Washroom Accessories, Inc; B-6747: www.bobrick.com/#sle.
      c. Bradley Corporation; 9054: www.bradleycorp.com/#sle.

E. Grab Bar
   1. Stainless steel
   2. One-Piece L shaped corner bar as depicted on drawings.
   3. Vertical grab bar as depicted on drawings.

F. Robe Hook/Coat Hook: Heavy-duty stainless steel, double-prong, rectangular-shaped bracket and backplate for concealed attachment, satin finish.

2.07 COMMERCIAL SHOWER PAN

A. Solid Surface or Single Piece Molded Acrylic Transfer Shower Pan
   1. Solid surface or Acrylic shower receptor; non-porous, homogeneous composite construction
   2. Dimensions: Size to provide 36 inches by 36 inches (914 mm by 914 mm) clear interior dimension for ADA-compliant transfer shower; overall pan dimensions larger as required to accommodate tile surround and wall thickness.
   3. Slip resistant finish
   4. Low- threshold not exceeding 1/2" height, beveled; designed to comply with ADA Standards for Accessible Design (transfer Type Shower)
   5. Color as selected from Manufacturers standard colors;
      a. Solid Surface Color to be integral solid color, homogenous throughout material thickness; patterns, veining, speckling, or simulated stone finishes are not permitted.
   6. Install per manufacturer's instructions.
   7. Coordinate drain location with plumbing.
   8. Manufacturers
      a. Freedom Showers
      b. Duravit

c. Kohler

2.08 UNDER-LAVATORY PIPE AND SUPPLY COVERS

A. Specified in 22 4000 - Plumbing Fixtures.

2.09 DIAPER CHANGING STATIONS

A. Diaper Changing Station: Wall-mounted folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
   1. Material: Polyethylene.
   2. Mounting: Surface.
   3. Color: Gray.
   4. Minimum Rated Load: 200 pounds.
   5. Products:
      a. Bobrick Washroom Accessories, Inc; Koala Kare KB300-SS: www.bobrick.com/#sle.

2.10 UTILITY ROOM ACCESSORIES

A. Combination Utility Shelf/Mop and Broom Holder, Type TUS : 0.05 inch thick stainless steel, Type 304, with 1/2 inch returned edges, 0.06 inch steel wall brackets.
   1. Drying rod: Stainless steel, 1/4 inch diameter.
   2. Hooks: Three, 0.06 inch stainless steel rag hooks at shelf front.
   3. Mop/broom holders: Four spring-loaded rubber cam holders at shelf front.
   4. Length: 36 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. Verify that field measurements are as indicated on drawings.

D. See Section 092216 for installation of blocking, reinforcing plates, and concealed anchors in walls and ceilings.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.

B. Install plumb and level, securely and rigidly anchored to substrate.

C. Seal penetrations and sleeves through wall finish with silicone sealant.

D. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

E. Conceal anchorage wherever possible; where anchorage will be exposed in the completed Work, use anchors having theft-proof heads and finishes to match accessory.

F. Grab Bars:
   1. Use mounting techniques in accordance with the manufacturer’s instructions. Install to withstand a downward load of at least 250 lbf, when tested according to method in ASTM F 446.

a. Where grab bars are indicated, provide grab bar concealed mounting plates in wall.
   1) Mounting plates shall extend across a minimum of 2 studs.
   2) Cut slots, in stud web adjacent to stud flange, of sufficient size to fit closely to mounting plate.
   3) Crimp stud flange return back to stud flange, to match the height of the mounting plate.
   4) Weld mounting plate to each stud flange at top and bottom of plate. Avoid burn-through of stud flange.
   5) Provide mounting plates with tapped holes, or if necessary, drill and tap mounting plate to receive grab bar mounting screws.
   6) Mount grab bars to plate using largest diameter fastener recommended by grab bar manufacturer.
2. Loads superimposed shall be transmitted directly to the mounting devices without applying loads to wall finish materials.
3. Grab bars anchored to toilet partitions must be thru-bolted.

3.04 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

3.05 CLEANING AND ADJUSTING

A. Polish all smooth textured surfaces to high shine.

B. Inspect accessories for plumb-ness, levelness, tight fit to wall, and smooth operation of moving components.
   1. Plumb, level or tighten accessories where necessary.
   2. Adjust moving components and operating parts where necessary to provide correct, smooth operation.

3.06 DEMONSTRATION

A. Demonstrate operation to Owner’s representative.

END OF SECTION 10 2800

SECTION 10 5129
PHENOLIC LOCKERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Phenolic lockers.

1.02 RELATED REQUIREMENTS

A. Section 06 1053 - Miscellaneous Rough Carpentry #: Wood blocking and nailers.

1.03 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

C. ICC A117.1 - Accessible and Usable Buildings and Facilities.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's published data on locker construction, sizes and accessories.

C. Shop Drawings: Indicate locker plan layout, numbering plan, component profiles and accessories.

D. Samples: Submit two samples 6 by 6 inches in size, of each color scheduled.

E. Sustainable Design (LEED) Submittals Requirements: See Section 013329.02 “Sustainable Design Reporting – LEED v4” for submittal requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Do not deliver plastic lockers to the site until the building is enclosed and HVAC systems are in operation. Deliver lockers in manufacturer's original packaging. Store in an upright condition. Protect lockers from exposure to direct sunlight.

B. Protect locker finish and adjacent surfaces from damage.

C. Ship lockers fully assembled

D. Life and handle lockers from the base and not the sides.

1.06 WARRANTY

A. Special Manufacturer’s Warranty: 20-year against rust, delamination or breakage of phenolic parts under normal use.

PART 2 PRODUCTS

2.01 SUSTAINABLE DESIGN (LEED) MATERIAL REQUIREMENTS:

A. Materials shall comply with the requirements of section 013329.02 “Sustainable Design Reporting – LEED v4”

2.02 MANUFACTURERS

A. Phenolic Lockers:
   1. Bradley Corp.
   2. Summit Lockers, Inc[<>]: www.summitlockers.com/#sle.
   3. Columbia Lockers, a division of PSiSC; Phenolic Lockers: www.psisc.com/#sle.

4. ASI Storage Solutions[<>]: www.asi-storage.com/#sle.
5. Scranton Products
6. Hollman, Inc
7. SPECTRUM Lockers
8. Substitutions: See Section 01 6000 - Product Requirements.

2.03 LOCKER APPLICATIONS

A. Wardrobe Lockers: Phenolic lockers, free-standing with matching closed base.
   1. Accessibility: Comply with ICC A117.1 and ADA Standards.
   2. Width: as indicated on drawings.
   3. Depth: 18 inches unless otherwise noted.
   4. Height: 72 inches.
   5. Locker Configuration: Z-tier (2 lockers each with a short and long compartment).
   6. Fittings: Size and configuration as indicated on drawings.
      a. Single shoe shelf.
      b. Hooks: One double prong.
   7. Ventilation: By open space between the back of the door and locker body.
   8. Locking: Multi User Mechanical Combination Locks.

2.04 PHENOLIC LOCKERS

A. Lockers: Factory assembled, made of phenolic core panels with mortise and tenon joints and stainless steel mechanical joint fasteners; fully finished inside and out; each locker capable of standing alone.
   1. Doors: Full overlay, covering full width and height of locker body; square edges.
   2. Panel Core Exposed at Edges: Machine polished, without chips or tool marks; square edge unless otherwise indicated.
   3. Where locker ends or sides are exposed, finish the same as fronts or provide extra panels to match fronts.
   4. Provide filler strips where indicated, securely attached to lockers.
   5. Door Color: Custom finish as selected by Architect; As indicated in drawings..
   6. Body Color: Manufacturer's standard white or light color.
   7. Fasteners for Accessories and Locking Mechanisms: Tamperproof type.

B. Component Thicknesses:
   1. Doors: 1/2 inch minimum thickness.
   2. Locker Body: One of the following combinations:
      a. Tops, bottoms, and shelves 1/2" inch; sides and backs 1/2" inch; minimum.
      b. Tops, bottoms, and shelves 1/2 inch; sides 3/8 inch; backs 1/4 inch; minimum.
   3. End Panels and Filler Panels: 1/2 inch minimum thickness.
   4. Toe Kick Plates: 1/2 inch minimum thickness.

C. Phenolic Core Panels: Nonporous phenolic resin and paper core formed under high pressure, with natural colored finished edges, integral melamine surface, matte finish, and uniform surface appearance; glued laminated panels not acceptable.
   1. Surface Burning Characteristics: Flame spread index of 75 or less, and smoke developed index of 450 or less; when tested in accordance with ASTM E84.

D. Hinges: Stainless steel finish; Black Powder Coat Finish, minimum of 180 degree opening; either exposed barrel 5-knuckle hinge attached to back of door and inside of body with tamperproof screws, or concealed cabinetwork style hinge attached with tamperproof screws.

E. Coat Hooks: Stainless steel or reinforced nylon; attached with tamperproof screws.

F. Number Plates: Manufacturer's standard, minimum 4-digit, permanently attached with adhesive; may be field installed.

G. Built-In Multi-User Mechanical Combination Locks:
   1. Manufacturers:
      a. Keyless Co: www.keyless.co/#sle.
      b. Zephyr Lock, LLC: www.zephyrlock.com/#sle.
      c. Substitutions: See Section 01 6000 - Product Requirements.
   2. ~~Built-In Digital Keypad Lock: Battery free lock with multi user combination lock keypad for 4-digit code with manager bypass key.~~
      a. ~~Latch: Deadbolt.~~
      b. ~~Temporary or shared access with user-defined code.~~

H. Lock Strike: Stainless steel, or black high impact ABS plastic strike plate attached to locker body with throughbolts.

I. Locker Legs: Manufacturer's standard adjustable support and leveling leg, minimum 1 inch adjustment; with hardware for attaching toe kick plates.

2.05 LOCKER FABRICATION

A. Hardware Attachment: All hinges, handles, hasps, hooks, latch bars, and locks attached with tamper-resistant screws.

B. Provide ventilated panels where indicated.

C. Filler Panels: Fabricated in unequal leg angle shape; finished to match lockers.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that prepared bases are in correct position and configuration.

B. Verify bases and embedded anchors are properly sized.

3.02 INSTALLATION

A. Install lockers in climate controlled environment, shielded from direct sunlight.

B. Install in accordance with manufacturer's instructions.

C. Place and secure on prepared base.

D. Install lockers plumb and square.

E. Secure lockers with anchor devices to suit substrate materials. Minimum Pullout Force: 100 pounds.

F. Bolt adjoining locker units together to provide rigid installation.

G. Install end panels and filler panels

H. Accessories: Fit exposed connections of trim, fillers, and closures together to form tight, hairline joints, with concealed fasteners and splice plates furnished by locker manufacturer. Install as indicated on approved shop drawings.
   1. Coat hooks: Attach with at least two fasteners.
   2. Identification plates: Identify plastic lockers with approved identification numbers. Attach plates to each locker door.
   3. Filler panels: Attach with concealed fasteners.

I. Replace components that do not operate smoothly.

3.03 CLEANING

A. Clean locker interiors and exterior surfaces.

B. Remove packaging and construction debris and legally dispose of off-site.

END OF SECTION 10 5129

SECTION 115300 - MISCELLANEOUS LABORATORY EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. ~~Cabinet, Modular Gas.~~
2. Cabinet, Tall Corrosive Storage.
3. Cabinet, Tall Flammable Storage.
4. Coat Rack, Lab.
5. Drying Rack.
6. Drying Rack, Bench Top Mounted.
7. Gas Cylinder Restraints.
8. Gas Cylinder Corral Storage.
9. Ice Machine, Upright.
10. Point Exhaust.

B. Related Requirements:
1. Section 013573 "Delegated Design Requirements and Procedures" for definitions, submittal procedures, responsibilities, and scheduling requirements associated with delegated design assignment indicated in this Section.
2. Section 055000 "Metal Fabrications" for furnishing and installation of metal fabrications to casework and accessory equipment.
3. Section 092216 "Non-Structural Metal Framing" for furnishing and installation of non-structural metal framing to casework and accessory equipment.
4. Division 22: Furnishing and installation of plumbing utilities and final connections to accessory equipment.
5. Division 23: Furnishing and installation of exhaust ductwork and equipment, and final connection to exhaust devices.
6. Division 26: Furnishing and installation of electrical utilities and final connections to casework and accessory equipment.

1.2 REFERENCES

A. Items specified as a part of this section must conform, where applicable, to the following standards.

B. American National Standards Institute (ANSI)
1. ANSI/UL 3101-1 – Electrical Equipment for Laboratory Use; Part 1: General Requirements

C. Underwriters Laboratories, Inc. (UL)
1. 1262 – Laboratory Equipment

D. American Society for Testing Materials (ASTM)
1. ASTM A167 for Stainless Steel, Alloy 302 or 304.
2. ASTM E84 for Burning Characteristics of Building Materials.
3. ASTM MT1010 for Support Columns

E. NSF International (NSF)
1. Standard #49.

1.3 ACTION SUBMITTALS

A. Product Data: Submit manufacturer's data for each component and item of laboratory equipment specified. Include component dimensions, configurations, construction details, joint details, and attachments. Indicate location, size and service requirements for each utility connection.

B. Shop Drawings: Include the following:
1. Location of assemblies in each room and layout for roughing-in, including utility connections and related diagrams.
2. Details of fabrication and installation.
3. Dimensional locations for rough-in of mechanical and electrical services.
4. Model numbers indicated in this section to include all standard features listed in latest catalog or Website at date of submittal.

1.4 CLOSEOUT SUBMITTALS

A. Manufacturer's operating and maintenance manuals.

1.5 QUALITY ASSURANCE

A. Manufacturer shall have at least 5 years' experience in the fabrication of the specified equipment and shall have 10 installations of equal or larger size.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Schedule delivery of equipment so that spaces are sufficiently complete that material can be installed immediately following delivery.

B. Handling: Protect finished surfaces from soiling or damage during handling and installation. Keep covered with polyethylene film or other protective coating though-out the remainder of construction.

1.7 FIELD CONDITIONS

A. Do not deliver or install equipment until the following conditions have been met:
   1. Windows and doors are installed and the building is secure and weathertight.
   2. Ceiling, overhead ductwork, and lighting are installed.
   3. All painting is completed and flooring is installed.

B. Field Measurements: Take field measurements to verify or supplement dimensions indicated. Be responsible for accurate fit of the Work. Verify that all equipment in this section is coordinated to provide a complete working process and system integration.

1.8 WARRANTY

A. Manufacturer's Warranty: Furnish manufacturer's written material and labor warranty signed by an authorized representative using manufacturer's standard form agreeing to furnish materials and labor required to repair or replace work which exhibits material defects caused by manufacture or design and installation of product. "Defects" is defined to include but not limited to deterioration or failure to perform as required.

   1. Warranty Period: Manufacturer shall warrant the products to be free from material and labor defects for a period of 1 year from date of operational acceptance by the Using Agency.
   2. Date of operational acceptance shall be after factory check, test and start-up services is complete, the unit is operating in a satisfactory manner, and the equipment has been satisfactorily commissioned by the Using Agency.
   3. The Using Agency will perform routine maintenance as described in the Manufacturers Standard Operation and Maintenance manuals during the warranty period. Using Agency performance shall in no way invalidate said warranties.

B. Installer's Warranty: Furnish installer's written workmanship warranty signed by an authorized representative using installer's standard form agreeing to provide labor required to repair or replace work which exhibits workmanship defects. "Defects" is defined to include but not limited to deterioration or failure to perform as required.
   1. Warranty Period: Installer shall warrant the installation to be free from workmanship Defects for a period of 1 year from date of operational acceptance by the Using Agency.

1.9 COORDINATION AND UTILITIES VERIFICATION

A. Utilities and connections may vary between approved manufacturers. Coordinate installation of products and systems with interfacing and adjoining construction to provide a successful installation without failure.
   1. All utilities for these items are indicated in mechanical and electrical documents, the Equipment Schedule, and are referenced in Divisions 20, 21, 22, 23 and 26. Any deviations from these utilities must be documented within bid and shop drawing submittals.
   2. The Contractor is responsible for verifying field conditions, final services, connections and locations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS AND PRODUCTS

A. Acceptable Manufacturers/Fabricators and Products: Subject to compliance with requirements of Contract Documents as judged by the Architect, provide product by one of manufacturers/fabricators listed. If not listed, submit as substitution according to the Conditions of the Contract and Division 01 Section "Substitution Procedures".

B. Basis of Design (Product Standard): Contract Documents are based on products and systems specified to establish a standard of quality. Other manufacturers/fabricators offering products having equivalent characteristics may be considered, provided deviations are minor and comply with requirements of Contract Documents as judged by the Architect.
   1. Basis-of-Design: As indicated in schedule on the Drawings. If no schedule, then the first manufacturer listed in each Article shall be the basis of design.

2.2 PERFORMANCE REQUIREMENTS

A. Design Intent: Drawings and Specifications indicate design intent for products and systems and do not necessarily indicate or specify total Work required and shall not be construed as an engineered design. Furnish and install all Work required for a complete installation.

B. Coordination of Contract Documents and Work:
   1. Product Variations: In the event of minor differences between products and systems of acceptable or available manufacturer/fabricators, Contractor shall notify Architect of such differences and resolve conflicts in a timely manner. Failure of Contractor to provide notification shall be construed as acceptance of conditions indicated, and changes caused by minor differences between products and Contract Documents shall be included in the Work at no additional cost to Owner.
   2. Allowable Adjustments: Minor dimension and profile adjustments may be made in interest of fabrication or erection methods or techniques or ability to satisfy design intent, provided design intent is maintained as determined by Architect. Proposed deviations shall include a detailed analysis of impact to adjacent substrates or other building systems, including related design or construction cost impacts. If accepted by Architect, deviations causing changes in materials, constructability, substrates, or conditions shall be included in the Work at no additional cost to Owner.

~~2.3 CABINET, SINGLE GAS CYLINDER (MQ-01D)~~

~~A. Acceptable Manufacturers:~~
   ~~1. Matheson Gas Products; Model 1177F, Gas Cabinet Series (Single Cabinet).~~
   ~~2. Praxair Distribution, Inc.~~
   ~~3. Scott Specialty Gases.~~
   ~~4. Spectra Gases Inc.~~

B. General:
   ~~1. Standard gas cabinet series with a flat top design Cabinet to house single gas cylinder with regulator assembly (hydrogen).~~

~~C. Cabinet Dimensions:~~
   ~~1. Single Cylinder: 18 inches (455 mm) wide by 19 inches (480 mm) deep by 79 inches (2000 mm) high, 300 pounds (136 kilograms).~~

~~D. Cabinet Construction:~~
   ~~1. Each gas cabinet shall be constructed of a minimum of 12 gage steel. The cabinet shall be welded and coated with a corrosion resistant epoxy paint.~~
   ~~2. Door: Full length door, fully gasketed with neoprene gasket, with automatic closer, three-point latch and a flush mounted door handle with lock.~~
   ~~3. Window: Manufactured of either 1/2 inch (12 mm) wire reinforced safety glass or 0.25 inch (6 mm) Lexan. The window shall be hinged with automatic closer, gasketed and key lock.~~
   ~~4. Adjustable cylinder brackets and straps shall be provided for each cylinder the gas cabinet can hold.~~
   ~~5. Shelves: Vertically adjustable to accommodate different sizes of standard gas cylinders.~~
   ~~6. Color selection by the Owner's Representative from one of the manufacturer's standard colors.~~

~~E. Cabinet Accessories:~~

1. Sprinkler Head: UL approved, rated at 155 degrees Fahrenheit (68 degrees Celsius), and flow capacity of 35 gallons per minute (133 liters per minute) at 40 psi (2.8 bar). Water Pipe Connection: 1/2 inch NPT (15 DN) Female.
2. Each gas cabinet shall have a rubber mat on the floor of the cabinet.
3. All wiring and tubing in the cabinets shall be standardized and color coated.
4. Provide bulkhead connectors for all lines entering or exiting the cabinet that will enable a continuous tube run without breaks.
5. Exhaust air shall enter at the bottom of the cabinet and sweep the complete interior of the cabinet to the smooth nonrestricting gas transition at the top of the cabinet. A vent connection shall be provided at the top of each cabinet for connection to the building exhaust system.
   a. Exhaust Flow Required (SCFM): 175 for single.
   b. Exhaust Stack Diameter: 4 inch (100 mm) for single.

2.4 CABINET, TALL CORROSIVE STORAGE (MQ-01B)

A. Acceptable Manufacturers:
1. Justrite Manufacturing Company, L.L.C., Model 894522
2. Eagle Manufacturing Company.
3. Securall.

B. Capacity:
1. 45 gallons (170 liters) - 43 inches (1090 mm) wide by 18 inches (455 mm) deep by 65 inches (1650 mm) high.

C. Design: Construct cabinet in accordance with OSHA Regulations and the requirements of International Fire Code, Chapter 50 Hazardous Materials. Provide cabinets Factory Mutual (FM) approved or Underwriters Laboratories (UL) listed or as constructed below.

D. Casing: Bottom, top, back, door, and sides of cabinet, minimum 18 gage (1.2 mm) sheet steel, double walled with 1-1/2 inches (36 mm) air space. Rivet or weld joints airtight. Provide with adjustable zinc plated leveling legs.

E. Door: Provide with continuous piano hinge and a 3-point latch arrangement with door sill raised at least 2 inches (50 mm) above the bottom of the cabinet to retain spilled liquid within the cabinet. Provide self-closing self-latching door(s) with fusible link(s) to hold doors wide open and melt at 74 degrees Celsius for automatic closure. Provide with keyed lock.

F. Ventilation: Provide a 2 inches (50 mm) threaded vent connection on each side of the cabinet for supply and exhaust ventilation air. Provide flame arrestors at supply and exhaust connections to cabinet.

G. Shelving: Provide with three 18 inches (450 mm) deep, full width adjustable shelves. Provide each shelf with 1/4-inch (6 mm) thick heat welded, polypropylene or ABS plastic pan, liquid tight, removable, 1 inch (25 mm) deep.

H. Liner: Provide cabinet with ChemCor thermoplastic coating on all interior surfaces as provided on the Justrite Centura line or similar.

I. Identification: Mark all corrosive storage cabinets with conspicuous red lettering on a contrasting background: HAZARDOUS—KEEP FIRE AWAY.

J. Identification: Mark all corrosive storage cabinets with conspicuous red lettering on a contrasting background: CAUTION—ACIDS.

K. Identification: Mark all corrosive storage cabinets with conspicuous red lettering on a contrasting background: CAUTION—CORROSIVES.

L. Identification: Mark all corrosive storage cabinets with conspicuous red lettering on a contrasting background: CAUTION—BASES.

M. Color: Manufacturer's standard dark blue.

N. Finish: Provide as specified for Metal Finishes in Section 123553.

2.5 CABINET, TALL FLAMMABLE STORAGE (MQ-01A)

A. Acceptable Manufacturers:
1. Justrite Manufacturing Company, L.L.C., Model 894520
2. Eagle Manufacturing Company.
3. Securall.

B. Capacity:
1. 45 gallons (170 liters) - 43 inches (1090 mm) wide by 18 inches (455 mm) deep by 65 inches (1650 mm) high.

C. Design: Construct cabinet in accordance with OSHA Regulations and the requirements of NFPA 30, National Fire Protection Association, Flammable and Combustible Liquids Code.

D. Casing: Bottom, top, back, door, and sides of cabinet shall be at least 18 gage (1.2 mm) sheet steel, double walled with 1-1/2 inch (36 mm) air space. Joints shall be welded airtight. Provide with adjustable zinc plated leveling legs.

E. Door: Provide with continuous piano hinge and a 3-point latch arrangement with door sill raised at least 2 inches (50 mm) above the bottom of the cabinet to retain spilled liquid within the cabinet. Provide self-closing self-latching door(s) with fusible link(s) to hold doors wide open and melt at 74 degrees Celsius for automatic closure. Provide with keyed lock.

F. Ventilation: Do not ventilate cabinet unless required by local authorities. Seal vent openings with plugs, supplied by the manufacturer.

G. Shelving: Provide with three 18 inch (450 mm) deep, full width adjustable shelves.

H. Grounding: Provide a grounding lug connection at lower right side of cabinet.

I. Identification: All flammable storage cabinets shall be marked with conspicuous red lettering on a contrasting background: FLAMMABLE—KEEP FIRE AWAY.

J.

K. Color: Manufacturer's standard yellow.

L. Finish: Provide as specified for Metal Finishes in Section 123553 except interior shall be triple epoxy coated.

M.

2.6 COAT RACK, LAB (MQ-XXX)

A. Available Manufacturers:
1. Global Industrial, Model T9F695715.
2. Bradley, Model 9944-000000.
3. Safco, Model 4162.

B. Size: 36 inches wide by 2-5/8 inches deep by 7-1/4 inches high nominal dimension.

C. Type: Multiple hat and coat hooks, wall mounted on mounting backplates.

D. Construction: 22 gauge stainless steel backplate with 14 gauge stainless steel double hooks.

2.7 DRYING RACK (DRXXXX)

A. Available Manufacturers:
1. Mod-Rack by Inter-Dyne; Model ”V” Victoria Series.
2. Or Equal (No Known Equal).

B. Body: One-piece, 20 gage (1.0 mm), Type 304 stainless steel with a Number 4 finish. Provide top with two 90 degree bends and sides with one 90 degree bend. Bottom shall have two 90 degree bends to provide an integral drip trough and catch drain. Provide front with a multiple of T-shaped holes to accommodate pegs.

C. Pegs: Injection molded white polypropylene, 1/2 inch (12 mm) diameter by 6 inches (150 mm) long. T-shaped protrusion on base of pegs shall allow easy removal and replacement without need for tools. Design T-shaped holes to fit protrusion on support pegs for holding single or multiple utensil drip trays, drain shelves, funnel racks, or pipette holders. Provide five 2-3/4 inch (70 mm) peg extenders for each drying rack.

D. Drip Trough: 4 inch (100 mm) wide, 20 gage (1.0 mm), Type 304 stainless steel with a 3/8 inch (9 mm) OD stainless drain tube and a stainless steel screen insert. Screen; 16 gage (1.6 mm), 14 by 14 mesh, 0.025 wire. Provide with a 3/8 inch (9 mm) ID flexible drain tube minimum of 36 inches (914 mm) long. Where edge of drying rack is more than 24 inches from edge of sink, drain and drain tube to be located on side of rack closest to sink with sufficient flexible drain tube length to reach the inside of sink.

E. Provide with hanger to allow removal and replacement of entire rack for cleaning without need for tools.

F. Finished Backs: Provide with all units not mounted on walls. Fabricate from 20 gage (1.0 mm), Type 304 stainless steel with a Number 4 finish.

2.8 DRYING RACK, BENCH TOP MOUNTED (DRXXXX)

A. Available Manufacturers:
1. Heathrow Scientific Global, Model HS23243A.
2. Or Equal (No Known Equal).

B. Description: Self-supporting, spot-welded HDPE-coated steel wire with polystyrene tray and back. Provide with removable bottom drainage pan.

C. Provide one at each accessible sink indicated in Q7 Drawing Series.

2.9 GAS CYLINDER RESTRAINTS (CRT-XX)

A. Acceptable Manufacturers:
1. Justrite Manufacturing Company, LLC; Model 35254 (one cylinder), Model 35268 (two cylinders).
2. USA Safety; Model GB160FS.
3. Troemner (supplied by Cole Parmer); Model 974037.

B. Description: Gas Cylinder restraints shall be steel construction with a nylon strap with adjustable buckle and safety chain. Provide one bracket per each gas cylinder.

C. Reference standards: Compressed Gas Institute, CGA P-1 latest edition, CGA PS-6 latest edition.

2.10 GAS CYLINDER CORRAL STORAGE (CRK-XX)

A. Acceptable Manufacturers:
1. Justrite Manufacturing Company, LLC.
2. Work Safe Technologies.
3. Specialty Gas Equipment.

B. General: Steel cylinder restraint unit, designed to restrain six gas cylinders 10 to 12 inches in diameter.

C. Description:
1. All steel construction with lab-approved exterior-grade urethane powder-coat finish.
   a. 2 inch (50 mm) by 2 inches (50 mm) thick steel tubing frames.
   b. Adjustable back frame allows side panels to be set to accommodate cylinders of various widths.
   c. Side panels anchor to concrete floor with welded "L" brackets.
   d. Seismic Tank Corral with back frame anchors to concrete floor or wall.
   e. Hardware is galvanized for corrosion resistance.
   f. Available with steel chain or stainless-steel cable restraints

D. Reference standards: Compressed Gas Institute, CGA P-1 latest edition, CGA PS-6 latest edition.

2.11 ICE MACHINE, UPRIGHT (MQ-XXX)

A. Acceptable. Manufacturers:
1. Scotsman Ice Systems; Model <**Prodigy Plus FS0522AX-1 with B530S bin**>.
2. Hoshizaki Europe B.V.; Model <**F-422MAK with B-500SF bin**>.
3. Manitowoc Ice; Model <**RFP0620 with D570 bin**>.

B. Size:
1. Machine: nominal 23 inches (584 mm) wide by 24 inches (610 mm) deep by 23 inches (584 mm) high.
2. Storage Bin: nominal 30.5 inches (775 mm) wide by 34 inches (864 mm) deep by 50 inches (1270 mm) high.

C. Description: Air cooled compressor/condenser, flake ice machine with storage bin. Storage bin to include four legs and bin top.

D. Capacity: Ice making capacity of minimum 450 pounds (200 kg) in 24 hours. 1/2 horsepower (370 watts) with a bin storage capacity of minimum 500 pounds (225 kg).

E. Finish: Provide all units in stainless steel. If Manitowoc Ice is selected, provide the Duratech metal finish for the bin.

F. Electrical: 120/60/1, 20 amp. Provide with grounded cord and plug.

2.12 POINT EXHAUST (PE-XX)

A. Available Manufacturers:
1. Nederman; Model; FX2 75 Original.
2. Movex Inc.; Model; ME-75 with metal hood MEM 250-75.
3. Airflow Systems Inc.; Model; E-Z ARM 2.5.

B. Description: 3 inches (100 mm) diameter by 60 inches (1500 mm) long self-supporting telescopic arm.

C. Construction: Aluminum tubes connected with jointed elbows. Provide internal stainless steel support spring as recommended by the manufacturer. Provide arm with polypropylene mini hood and clear combi hood with outside dimension of 15-inch by 18-inch (380 mm by 460 mm), and external collar for duct coupling. Provide connection to existing ductwork which will allow an unrestricted 360-degree movement of the arm.

D. Jointed Elbows: Provide polypropylene with glass fiber reinforcement with 90-degree radius elbows and knurled adjusting knobs supported by ball bearings. The two outermost elbow joints shall rotate and swivel through 360-degrees. Provide adjustable external locking rings at each joint.

E. Inlet Hood: Provide with 9 inch diameter metal inlet hood.

F. Inlet Hood: Provide with 13 inch diameter clear dome hood inlet hood.

G. Inlet Hood: Provide with clear, 9 inch by 14 inch rectangular inlet hood.

H. Mounting bracket: Provide a wall or ceiling mounting bracket for each point exhaust. Mount so the bottom of upper jointed elbow is at 6 foot, 6 inches above the floor, to provide full service at desktop level.

I. Air flow control: Any such device on the point exhaust arm such as a manual damper that restricts or stops allows air flow through the point exhaust arm is not acceptable. This device must be removed.

J. Finish: Epoxy powder coated white.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Acceptance of Surfaces and Conditions: Examine substrates to receive products and systems and associated work for compliance with requirements and other conditions affecting performance. Proceed only when unsatisfactory conditions have been corrected in a manner complying with Contract Documents. Starting work within a particular area will be construed as acceptance of surface conditions.

3.2 INSTALLATION, GENERAL

A. Installation Quality Standards: Perform Work according to following, unless otherwise specified:
1. Respective manufacturer/fabricator's written installation instructions.
2. Accepted submittals.
3. Contract Documents.

B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by isolating metals and other materials from direct contact with incompatible materials.

C. Coordinate delivery of all equipment with building work and scheduling for final placement.

D. Check project for conditions that affect work. Do not begin installation until unsatisfactory conditions are corrected.

3.3 PREPARATION

A. General: Comply with manufacturer's instructions, recommendations, and specifications for cleaning and surface preparation. Surfaces shall have no defects, contaminants, or errors which would result in poor or potentially defective installation or would cause latent defects in Work.

3.4 INSTALLATION

A. Miscellaneous laboratory equipment shall be installed in strict accordance with the manufacturer's recommendations, including recommended operating and servicing clearances.

B. Plumbing hookups under Division 22.

C. Mechanical hookups under Division 23.

D. Electrical hookups under Division 26.

3.5 ADJUSTING

A. Touch up damaged finishes equal to original condition as approved

B. Repair or remove and replace defective work as directed by Owner's Representative upon completion of installation.

C. Adjust moving or operating parts to function smoothly.

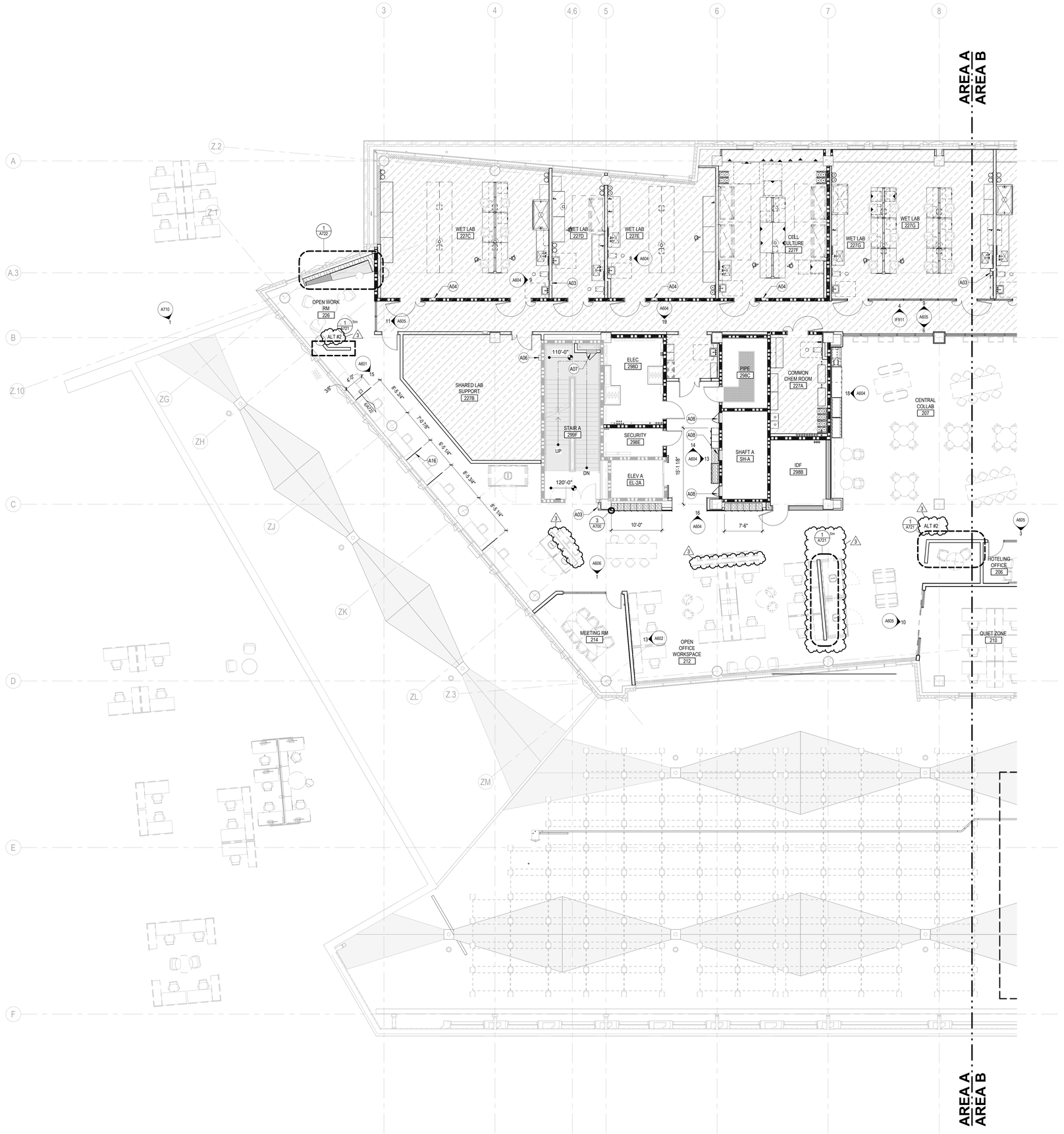
3.6 CLEANING AND PROTECTION

A. Clean shop finished equipment, touch up as required, and remove and refinish damaged or soiled areas.

B. Cover equipment for protection against soiling and deterioration during remainder of construction period.

C. Equipment shall be protected before, during and after installation. Damaged materials due to improper protection shall be cause for rejection.

END OF SECTION 115300



ARCHITECTURAL PLAN LEGEND

ARCHITECTURAL PLAN NOTES

1. DIMENSIONS ARE TO FACE OF PARTITION, UNLESS NOTED OTHERWISE.
2. FOR ASYMETRICAL PARTITIONS, INSTALL HIGHER NUMBER OF GYPSUM WALLBOARD LAYERS ON FACE WHERE PARTITION TAG IS LOCATED.
3. INTERIOR PARTITIONS TO BE TYPE **0B6S,** UNLESS NOTED OTHERWISE.
4. GYPSUM WALLBOARD COLUMN SURROUNDS TO BE PARTITION TYPE **0A3D,** UNLESS NOTED OTHERWISE.
5. WHERE GYPSUM WALLBOARD COLUMN SURROUNDS ARE ADJACENT TO CASEWORK, THE DEPTH OF THE COLUMN SURROUND SHALL EXTEND 1" BEYOND FACE OF CABINETS OR EDGE OF COUNTERTOP.
6. STANDARD WALL FURRING AT STAIRWAYS AND ELEVATORS TO BE PARTITION TYPE (____), UNLESS NOTED OTHERWISE.
7. LOCATE DOOR FRAMES 4" FROM ADJACENT PARTITION, UNLESS DIMENSIONED OTHERWISE.
8. INSTALL TWO 33 MIL STUDS TO STRUCTURE ABOVE AT DOOR, BORROWED LITE JAMBS, AND PARTITION CORNER LOCATIONS.
9. SMOKE RESISTANT AND FIRE RESISTANCE RATED ASSEMBLIES TO BE CONTINUOUS ABOVE DOOR AND WINDOW OPENINGS.
10. PROVIDE JOINT FIRESTOPPING WHERE GYPSUM WALLBOARD MEETS APPLIED FIRE PROTECTION ON COLUMNS, BEAMS, AND METAL DECK FOR FIRE RESISTANCE RATED PARTITIONS.

HATCH INDICATES LAB SPACE; REFER TO LAB FURNISHING DRAWINGS FOR ADDITIONAL INFORMATION

WALL RATING LEGEND

- 0B3S — INTERIOR PARTITION TAG - REFER TO PARTITION SCHEDULE
- UNRATED PARTITION
- SMOKE PARTITION
- SMOKE BARRIER
- 1-HOUR FIRE BARRIER
- 1-HOUR FIRE/SMOKE BARRIER
- 2-HOUR FIRE BARRIER
- 2-HOUR FIRE/SMOKE BARRIER
- 3-HOUR FIRE BARRIER

SHEET NOTE SCHEDULE

NUMBER	TEXT
A03	RECESSED FIRE EXTINGUISHER CABINET - SPEC 10 4400.
A04	FIRE-RATED RECESSED FIRE EXTINGUISHER CABINET - SPEC 10 4400.
A06	SURFACE-MOUNTED FIRE EXTINGUISHER CABINET - SPEC 10 4400.
A07	24"x24" ACCESS PANEL. SEE 08 3100.A04
A08	24"x36" RATED PANEL. SEE 08 3100.A04
A16	AWP2. REFER TO 6/A722.

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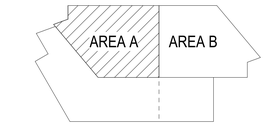
LAUNCH ACCELERATOR FOR BIOSCIENCES

INDIANAPOLIS, INDIANA

CLIENT PROJECT NO. - 20250072



KEYPLAN
PROJECT NORTH
REFER TO CIVIL DRAWINGS FOR TRUE NORTH
TRUE NORTH

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
3	05/01/2026	BP4-CD: ADDENDUM 03
2	04/20/2026	BP4-CD: ADDENDUM 01
1	03/30/2026	BP4-CD: BUILD-OUT PACKAGE

ARCHITECTURAL PLAN - LEVEL 2 - AREA A

DATE	**REF: SHEET INDEX**
BSA PROJECT NO.	**00360481**

A122A

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1 A122A ARCHITECTURAL FLOOR PLAN - LEVEL 2 - AREA A
1/8" = 1'-0"

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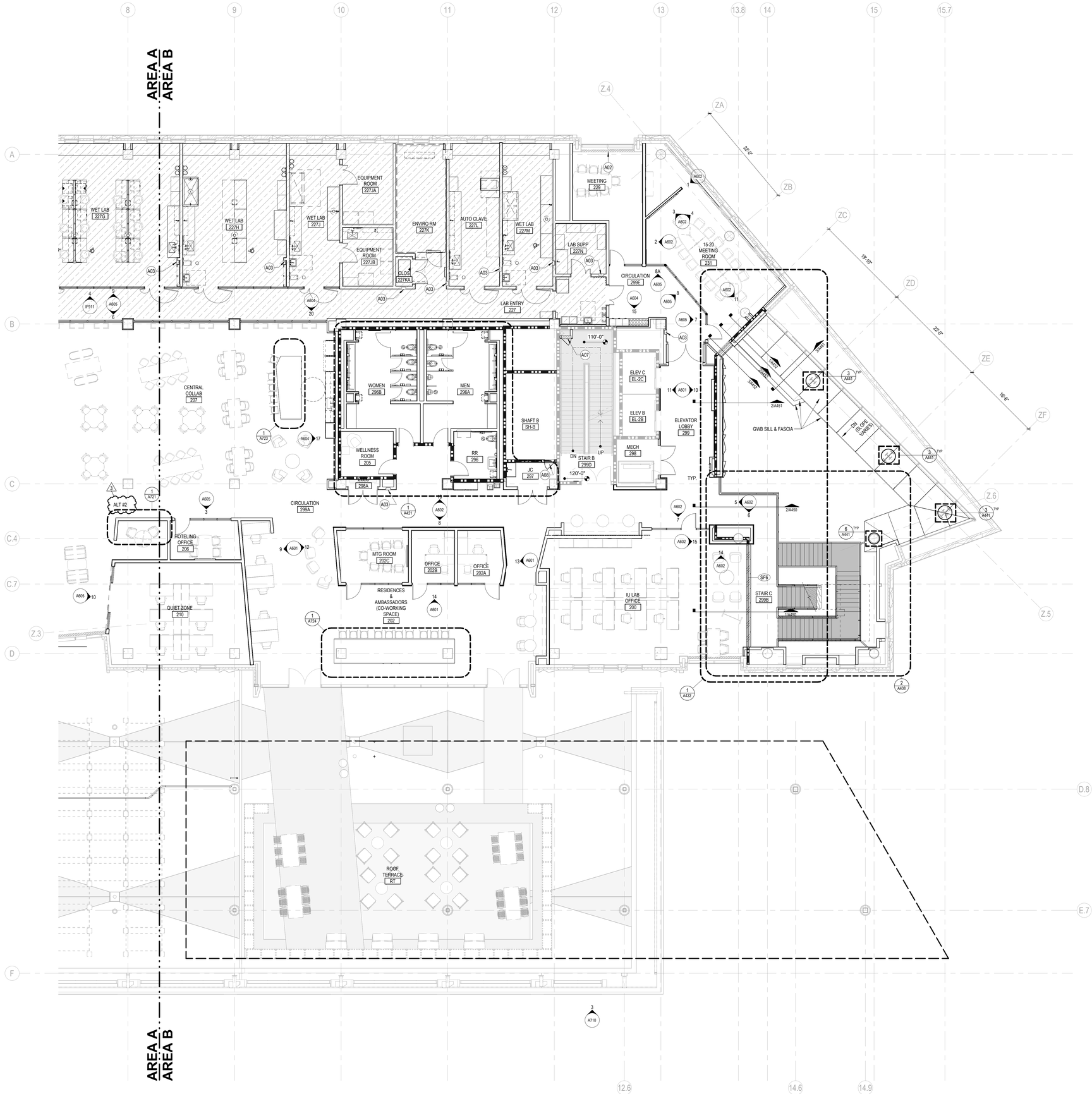

1 A122B ARCHITECTURAL FLOOR PLAN - LEVEL 2 - AREA B
1/8" = 1'-0"

ARCHITECTURAL PLAN LEGEND

ARCHITECTURAL PLAN NOTES

1. DIMENSIONS ARE TO FACE OF PARTITION, UNLESS NOTED OTHERWISE.
2. FOR ASYMETRICAL PARTITIONS, INSTALL HIGHER NUMBER OF GYPSUM WALLBOARD LAYERS ON FACE WHERE PARTITION TAG IS LOCATED.
3. INTERIOR PARTITIONS TO BE TYPE **0B6S,** UNLESS NOTED OTHERWISE.
4. GYPSUM WALLBOARD COLUMN SURROUNDS TO BE PARTITION TYPE **0A3D,** UNLESS NOTED OTHERWISE.
5. WHERE GYPSUM WALLBOARD COLUMN SURROUNDS ARE ADJACENT TO CASEWORK, THE DEPTH OF THE COLUMN SURROUND SHALL EXTEND 1" BEYOND FACE OF CABINETS OR EDGE OF COUNTERTOP.
6. STANDARD WALL FURRING AT STAIRWAYS AND ELEVATORS TO BE PARTITION TYPE (____), UNLESS NOTED OTHERWISE.
7. LOCATE DOOR FRAMES 4" FROM ADJACENT PARTITION, UNLESS DIMENSIONED OTHERWISE.
8. INSTALL TWO 33 MIL STUDS TO STRUCTURE ABOVE AT DOOR, BORROWED LITE JAMBS, AND PARTITION CORNER LOCATIONS.
9. SMOKE RESISTANT AND FIRE RESISTANCE RATED ASSEMBLIES TO BE CONTINUOUS ABOVE DOOR AND WINDOW OPENINGS.
10. PROVIDE JOINT FIRESTOPPING WHERE GYPSUM WALLBOARD MEETS APPLIED FIRE PROTECTION ON COLUMNS, BEAMS, AND METAL DECK FOR FIRE RESISTANCE RATED PARTITIONS.

HATCH INDICATES LAB SPACE; REFER TO LAB FURNISHING DRAWINGS FOR ADDITIONAL INFORMATION

WALL RATING LEGEND

- 0B3S — INTERIOR PARTITION TAG - REFER TO PARTITION SCHEDULE
- UNRATED PARTITION
- SMOKE PARTITION
- SMOKE BARRIER
- 1-HOUR FIRE BARRIER
- 1-HOUR FIRE/SMOKE BARRIER
- 2-HOUR FIRE BARRIER
- 2-HOUR FIRE/SMOKE BARRIER
- 3-HOUR FIRE BARRIER

SHEET NOTE SCHEDULE

NUMBER	TEXT
A02	PEDESTAL MOUNTED FIN TUBE ENCLOSURE, REFER TO MECHANICAL.
A03	RECESSED FIRE EXTINGUISHER CABINET - SPEC 10 4400.
A07	24"x24" ACCESS PANEL. SEE 08 3100.A04
A08	24"x36" RATED PANEL. SEE 08 3100.A04

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LAUNCH ACCELERATOR FOR BIOSCIENCES

INDIANAPOLIS, INDIANA

CLIENT PROJECT NO. - 20250072

AREA A | AREA B

KEYPLAN
PROJECT NORTH
REFER TO CIVIL DRAWINGS FOR TRUE NORTH
TRUE NORTH

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
3	05/01/2026	BP4-CD: ADDENDUM 03
2	04/27/2026	BP4-CD: ADDENDUM 02
1	03/30/2026	BP4-CD: BUILD-OUT PACKAGE

ARCHITECTURAL PLAN - LEVEL 2 - AREA B

DATE	REF: SHEET INDEX
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A122B

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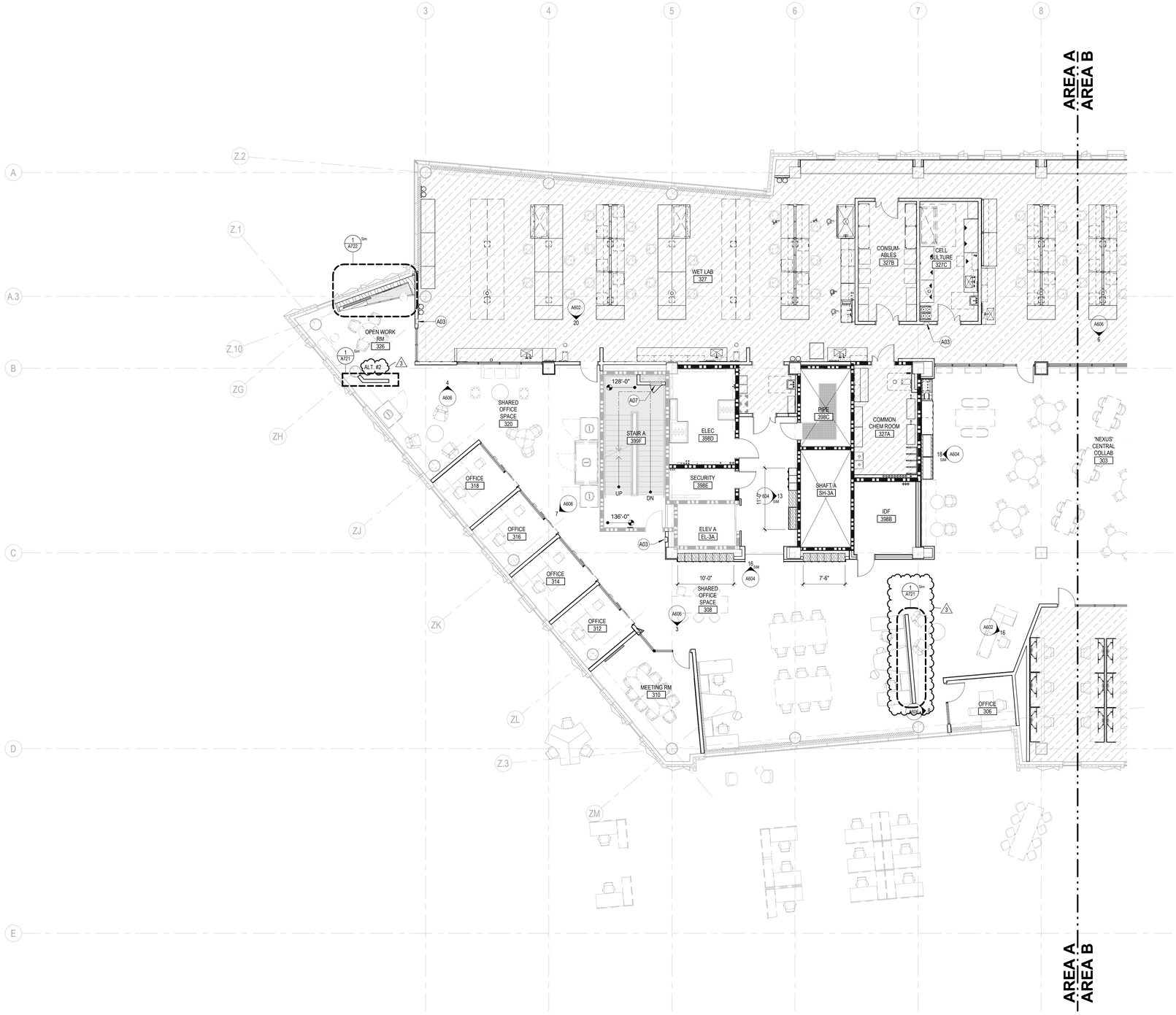

1 A123A ARCHITECTURAL FLOOR PLAN - LEVEL 3 - AREA A
1/8" = 1'-0"

ARCHITECTURAL PLAN LEGEND

ARCHITECTURAL PLAN NOTES

1. DIMENSIONS ARE TO FACE OF PARTITION, UNLESS NOTED OTHERWISE.
2. FOR ASYMETRICAL PARTITIONS, INSTALL HIGHER NUMBER OF GYPSUM WALLBOARD LAYERS ON FACE WHERE PARTITION TAG IS LOCATED.
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5. WHERE GYPSUM WALLBOARD COLUMN SURROUNDS ARE ADJACENT TO CASEWORK, THE DEPTH OF THE COLUMN SURROUND SHALL EXTEND 1" BEYOND FACE OF CABINETS OR EDGE OF COUNTERTOP.
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HATCH INDICATES LAB SPACE; REFER TO LAB FURNISHING DRAWINGS FOR ADDITIONAL INFORMATION

WALL RATING LEGEND

- 0B3S — INTERIOR PARTITION TAG - REFER TO PARTITION SCHEDULE
- UNRATED PARTITION
- SMOKE PARTITION
- SMOKE BARRIER
- 1-HOUR FIRE BARRIER
- 1-HOUR FIRE/SMOKE BARRIER
- 2-HOUR FIRE BARRIER
- 2-HOUR FIRE/SMOKE BARRIER
- 3-HOUR FIRE BARRIER

SHEET NOTE SCHEDULE

NUMBER	TEXT
A03	RECESSED FIRE EXTINGUISHER CABINET - SPEC 10 4400.
A07	24"x24" ACCESS PANEL. SEE 08 3100.A04

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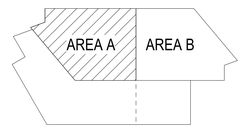

KEYPLAN
PROJECT NORTH
REFER TO CIVIL DRAWINGS FOR TRUE NORTH
TRUE NORTH

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
3	05/01/2026	BP4-CD: ADDENDUM 03
2	04/27/2026	BP4-CD: ADDENDUM 02
1	03/30/2026	BP4-CD: BUILD-OUT PACKAGE

ARCHITECTURAL PLAN - LEVEL 3 - AREA A

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A123A

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1 A124A ARCHITECTURAL FLOOR PLAN - LEVEL 4 - AREA A
1/8" = 1'-0"

ARCHITECTURAL PLAN LEGEND

ARCHITECTURAL PLAN NOTES

1. DIMENSIONS ARE TO FACE OF PARTITION, UNLESS NOTED OTHERWISE.
2. FOR ASYMETRICAL PARTITIONS, INSTALL HIGHER NUMBER OF GYPSUM WALLBOARD LAYERS ON FACE WHERE PARTITION TAG IS LOCATED.
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HATCH INDICATES LAB SPACE; REFER TO LAB FURNISHING DRAWINGS FOR ADDITIONAL INFORMATION

WALL RATING LEGEND

- 0B3S — INTERIOR PARTITION TAG - REFER TO PARTITION SCHEDULE
- UNRATED PARTITION
- SMOKE PARTITION
- SMOKE BARRIER
- 1-HOUR FIRE BARRIER
- 1-HOUR FIRE/SMOKE BARRIER
- 2-HOUR FIRE BARRIER
- 2-HOUR FIRE/SMOKE BARRIER
- 3-HOUR FIRE BARRIER

SHEET NOTE SCHEDULE

NUMBER	TEXT
A03	RECESSED FIRE EXTINGUISHER CABINET - SPEC 10 4400.
A07	24"x24" ACCESS PANEL. SEE 08 3100.A04

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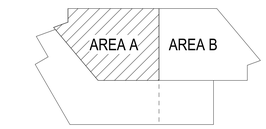

KEYPLAN
PROJECT NORTH
REFER TO CIVIL DRAWINGS FOR TRUE NORTH
TRUE NORTH

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
3	05/01/2026	BP4-CD: ADDENDUM 03
2	04/27/2026	BP4-CD: ADDENDUM 02
1	03/30/2026	BP4-CD: BUILD-OUT PACKAGE

ARCHITECTURAL PLAN - LEVEL 4 - AREA A

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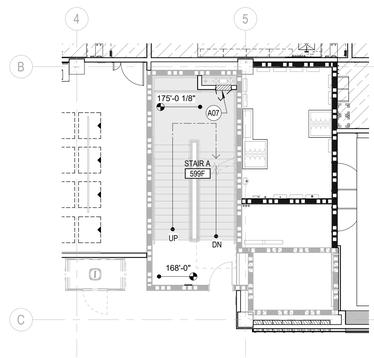
1 A125A ARCHITECTURAL FLOOR PLAN - LEVEL 5 - AREA A
1/8" = 1'-0"



2 A125A PARTIAL FLOOR PLAN - LEVEL 5 - AREA A - CUT ABOVE LANDING
1/8" = 1'-0"

ARCHITECTURAL PLAN LEGEND

ARCHITECTURAL PLAN NOTES

1. DIMENSIONS ARE TO FACE OF PARTITION, UNLESS NOTED OTHERWISE.
2. FOR ASYMETRICAL PARTITIONS, INSTALL HIGHER NUMBER OF GYPSUM WALLBOARD LAYERS ON FACE WHERE PARTITION TAG IS LOCATED.
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HATCH INDICATES LAB SPACE; REFER TO LAB FURNISHING DRAWINGS FOR ADDITIONAL INFORMATION

WALL RATING LEGEND

0B3S — INTERIOR PARTITION TAG - REFER TO PARTITION SCHEDULE

- UNRATED PARTITION
- SMOKE PARTITION
- SMOKE BARRIER
- 1-HOUR FIRE BARRIER
- 1-HOUR FIRE/SMOKE BARRIER
- 2-HOUR FIRE BARRIER
- 2-HOUR FIRE/SMOKE BARRIER
- 3-HOUR FIRE BARRIER

SHEET NOTE SCHEDULE

NUMBER	TEXT
A03	RECESSED FIRE EXTINGUISHER CABINET - SPEC 10 4400.
A07	24"x24" ACCESS PANEL. SEE 08 3100.A04
A16	

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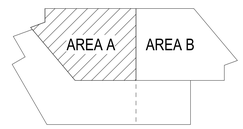

KEYPLAN
PROJECT NORTH
REFER TO CIVIL DRAWINGS FOR TRUE NORTH
TRUE NORTH

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
3	05/01/2026	BP4-CD: ADDENDUM 03
2	04/20/2026	BP4-CD: ADDENDUM 01
1	03/30/2026	BP4-CD: BUILD-OUT PACKAGE

ARCHITECTURAL PLAN - LEVEL 5 - AREA A

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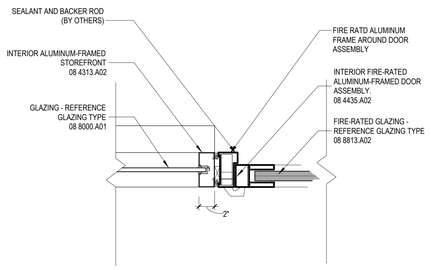
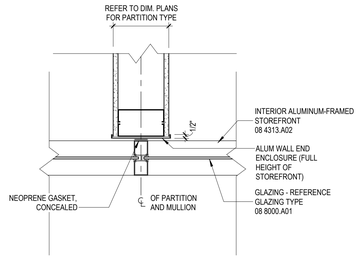
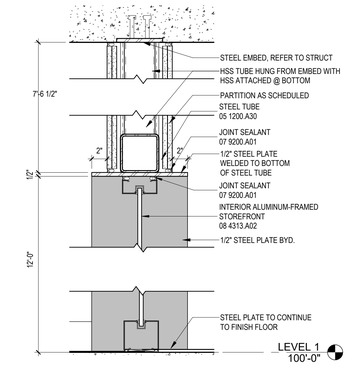


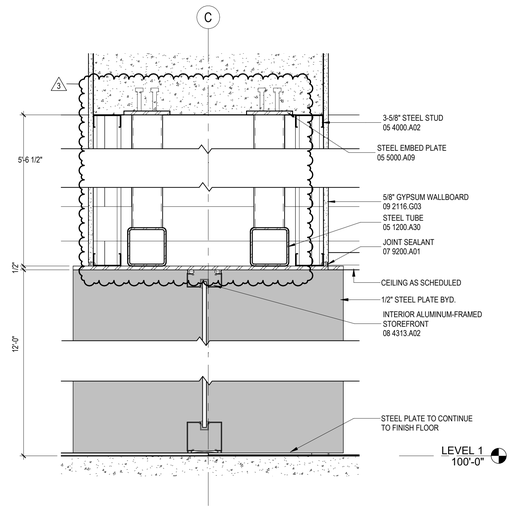
16 A521 RATED GLASS DOOR JAMB DETAIL
1 1/2" = 1'-0"



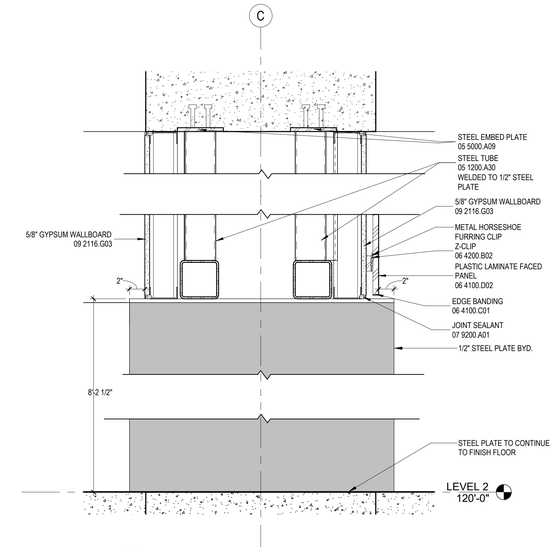
15 A521 TYP STOREFRONT PLAN DETAIL AT PARTITIONS
1 1/2" = 1'-0"



14 A521 SECTION @ NORTH PORTAL SHROUD DETAIL
1 1/2" = 1'-0"



13 A521 SECTION @ SOUTH PORTAL SHROUD DETAIL
1 1/2" = 1'-0"



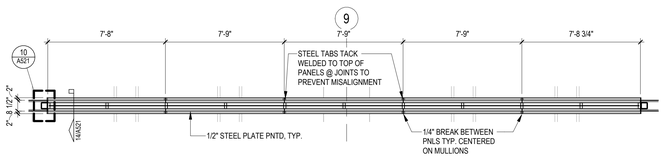
12 A521 SECTION @ CORRIDOR PORTAL SHROUD, TYP (LEVELS 2-5)
1 1/2" = 1'-0"

11 A521 LEVEL 1 CORNER PLAN DETAIL
1 1/2" = 1'-0"

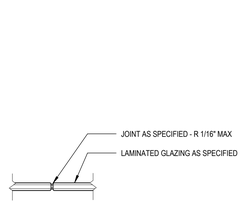
10 A521 ENLARGED RCP - NORTH STEEL PORTAL SHROUD - JAMB CONDITION
1 1/2" = 1'-0"

9 A521 ENLARGED RCP - SOUTH STEEL PORTAL SHROUD - Callout 1
1 1/2" = 1'-0"

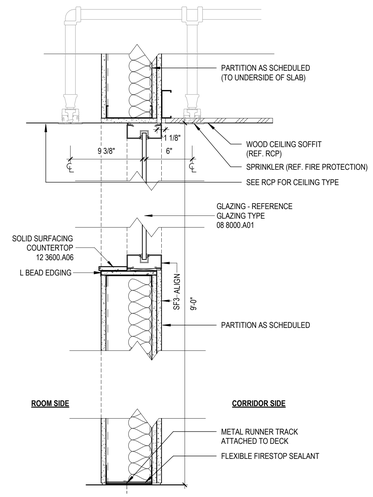
8 A521 ENLARGED RCP - CORRIDOR PORTAL SHROUD, TYP. (LEVELS 2-5)
1 1/2" = 1'-0"



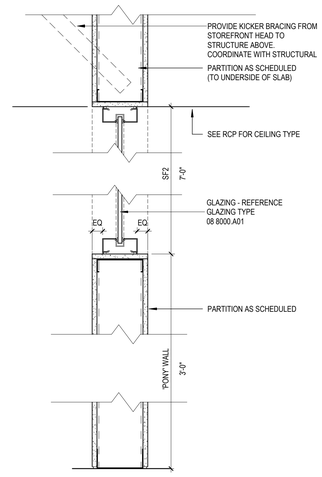
7 A521 ENLARGED RCP - NORTH STEEL PORTAL SHROUD
1/4" = 1'-0"



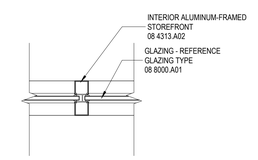
6 A521 INTERIOR GLAZING - BUTT JOINT
3" = 1'-0"



4 A521 SF3 - TYPICAL STOREFRONT SECTION DETAIL
1 1/2" = 1'-0"

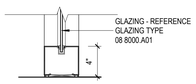


3 A521 SF2 - TYPICAL STOREFRONT SECTION DETAIL
1 1/2" = 1'-0"



2 A521 TYPICAL STOREFRONT CENTER MULLION DETAIL
1 1/2" = 1'-0"

5 A521 ENLARGED RCP - SOUTH STEEL PORTAL SHROUD
1/4" = 1'-0"



1 A521 TYPICAL STOREFRONT BASE DETAIL
1 1/2" = 1'-0"

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INDIANAPOLIS, INDIANA

CLIENT PROJECT NO. - 20250072

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
3	05/01/2026	BP4-CD: ADDENDUM 03
2	04/20/2026	BP4-CD: ADDENDUM 01
1	03/30/2026	BP4-CD: BUILD-OUT PACKAGE

INTERIOR STOREFRONT SYSTEM DETAILS

DATE	REF: SHEET INDEX
BSA PROJECT NO.	00360481

A521

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7 A610 DF-1 FRIT PATTERN TYP.
1 1/2" = 1'-0"

INTERIOR ELEVATION LEGEND

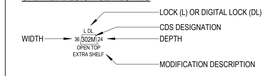
INTERIOR ELEVATION NOTES

A. REFER TO FLOOR PLANS AND THE EQUIPMENT SCHEDULE FOR EQUIPMENT. COORDINATE CONNECTIONS.
B. REFER TO MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION.
C. DIMENSIONS ARE TAKEN TO THE FACE OF FINISHED MATERIAL, UNLESS NOTED OTHERWISE
D. REFER TO ARCHITECTURAL AND/OR INTERIOR DRAWINGS FOR SOLID SURFACE SINK TYPES.

CASEWORK NOTES

A. FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION OF CABINETS.
B. CASEWORK TO BE PLASTIC LAMINATE, UNLESS NOTED OTHERWISE
C. GYPSUM WALLBOARD SOFFITS ABOVE UPPER CABINETS TO BE 1 " DEEPER AND WIDER THAN CABINETS BELOW, UNLESS NOTED OTHERWISE.
D. COORDINATE WALL DEVICE LOCATIONS TO AVOID CONFLICT WITH CASEWORK AND COUNTERTOPS.
E. COORDINATE COUNTERTOP SUPPORT BRACKET LOCATIONS WITH UNDER-COUNTER EQUIPMENT INDICATED ELSEWHERE IN DRAWINGS.
F. PROVIDE 1" MIN - 2" MAX WIDE SCRIBE FILLERS WHERE CABINETS ABUT AN ADJACENT WALL.
G. PROVIDE 4" HIGH INTEGRAL BACK SPLASH ON ALL COUNTERTOPS WITH SINKS AND INSTALL END SPLASHES WHERE COUNTERTOPS ABUT A WALL.
H. PROVIDE ADJUSTABLE SHELVES IN CABINETS AS INDICATED BY DASHED LINE.
I. SURFACE FINISHES TO MEET CASEWORK STANDARD REQUIREMENTS AS INDICATED IN SPECIFICATION.
J. DRAWER AND DOOR PULLS TO BE TYPE **A**, UNLESS NOTED OTHERWISE.

CABINET DESIGN SERIES TAG



INTERIOR ELEVATION SYMBOLS



_KEYNOTE SCHEDULE

NUMBER	TEXT
05 4000.A02	3-5/8" STEEL STUD
05 4000.U01	STEEL STUD KICKER, AS REQ'D.
09 2116.D08	CEILING HANGERS
09 2116.E01	GRID SUSPENSION MEMBER
09 5423.C00	GRAPHIC PERFORATED METAL CEILING MTCL2
09 5423.C01	TORSION SPRING CLIP
09 5423.C02	HOLD DOWN CLIP
09 5423.C03	ALUMINUM PERIMETER BOX MOLD
09 5423.C05	EDGE TRIM
09 5423.C06	BRACKET CLIP
09 5423.C07	BACKLIGHTING PANEL
09 5423.C08	METAL GROMMET, SIZE AS REQ'D.

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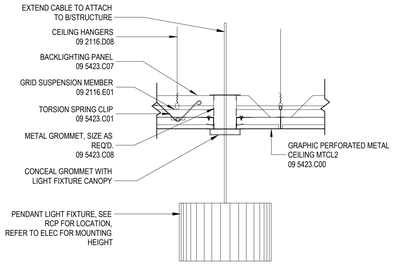
smithgroup.com

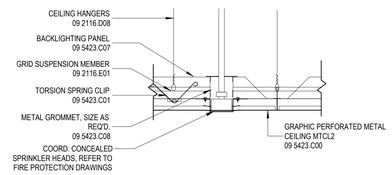
LAUNCH ACCELERATOR FOR BIOSCIENCES

INDIANAPOLIS, INDIANA

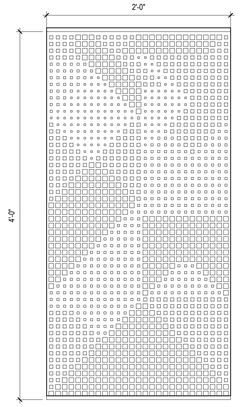
CLIENT PROJECT NO. - 20250072

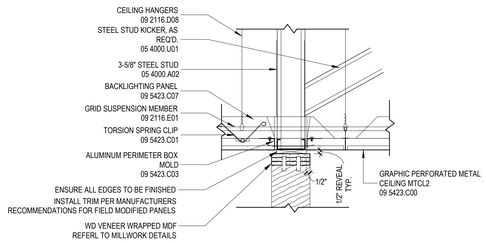


6 A610 MTCL2 SECTION AT PENDANT LIGHT FIXTURE PENETRATION
1 1/2" = 1'-0"

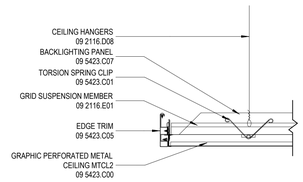


5 A610 MTCL2 SECTION AT SPRINKLER HEAD PENETRATION
1 1/2" = 1'-0"

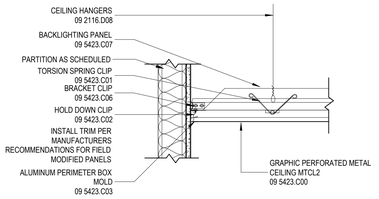




4 A610 MTCL2 SECTION AT SLAT WALL HEAD CONDITION
1 1/2" = 1'-0"



3 A610 MTCL2 SECTION AT EDGE TRIM
1 1/2" = 1'-0"



2 A610 MTCL2 SECTION AT WALL
1 1/2" = 1'-0"

1 A610 METAL CEILING PATTERN TYP.
1 1/2" = 1'-0"

ISSUED / REVISIONS SCHEDULE		
MARK	DATE	DESCRIPTION
2	05/01/2026	BP4-CD: ADDENDUM 03
1	03/30/2026	BP4-CD: BUILD-OUT PACKAGE

METAL CEILING DETAILS AND FRIT PATTERNS

DATE
BSA PROJECT NO. 00360481

REF: SHEET INDEX

A610

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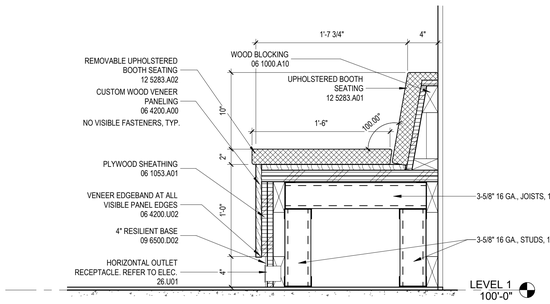
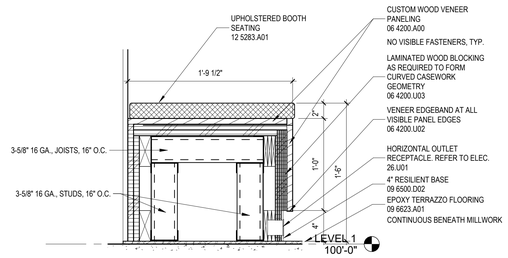
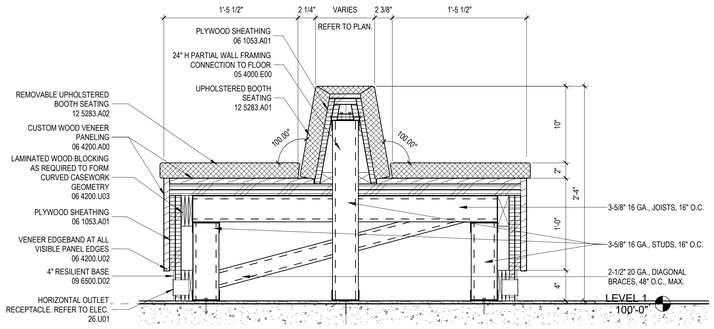


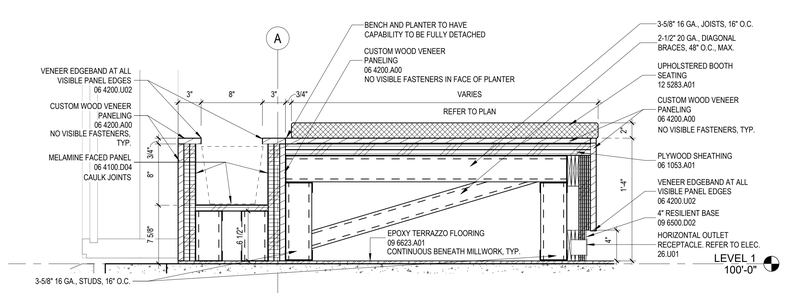
10 A720 SECTION - SEATING AT ENTRY, SINGLE SIDED
1 1/2" = 1'-0"



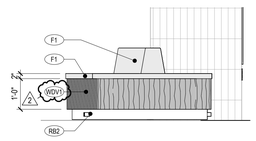
9 A720 SECTION - BENCH AT WALL
1 1/2" = 1'-0"



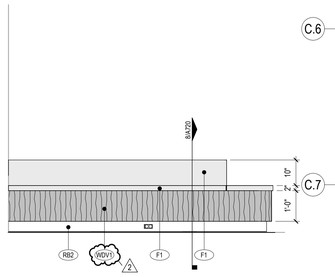
8 A720 SECTION - SEATING AT ENTRY, DOUBLE SIDED
1 1/2" = 1'-0"



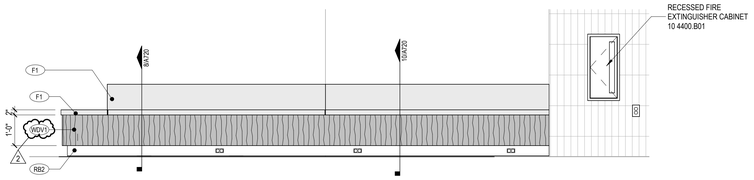
7 A720 SECTION - EXTENDED BENCH AT WINDOW
1 1/2" = 1'-0"



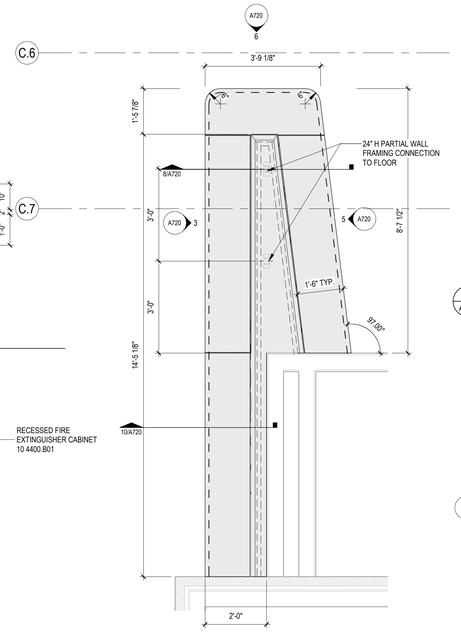
6 A720 ELEVATION - SEATING AT ENTRY, NORTH
1/2" = 1'-0"



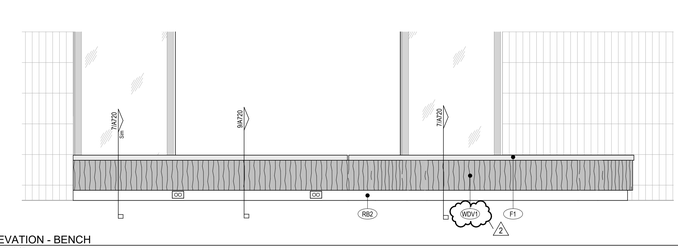
5 A720 ELEVATION - SEATING AT ENTRY, EAST
1/2" = 1'-0"



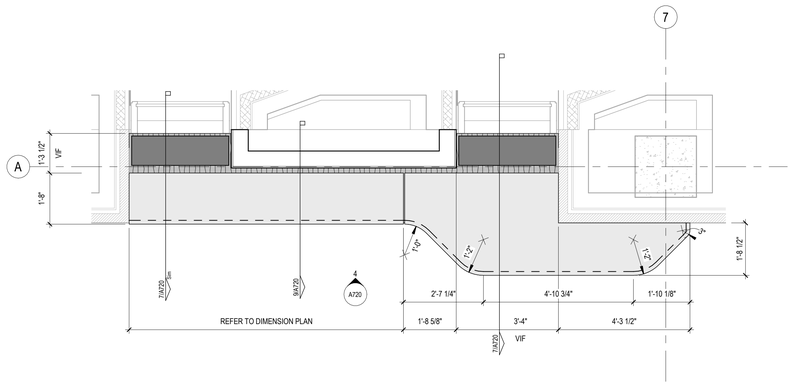
3 A720 ELEVATION - SEATING AT ENTRY, WEST
1/2" = 1'-0"



2 A720 PLAN - SEATING AT ENTRY
1/2" = 1'-0"



4 A720 ELEVATION - BENCH
1/2" = 1'-0"



1 A720 PLAN - BENCH
1/2" = 1'-0"

GENERAL NOTES

ARCHITECTURAL GENERAL NOTES

A. DETAILED SHOP DRAWINGS OF THE BUILT-IN SEATING SYSTEM/ASSEMBLY SCOPE SHALL BE SUBMITTED TO BSA REGARDLESS OF INDIVIDUAL CONTRACTORS' ASSIGNMENT OF THE WORK BY THE CONSTRUCTION MANAGER.

_KEYNOTE SCHEDULE

NUMBER	TEXT
05 4000.E00	24" H PARTIAL WALL FRAMING CONNECTION TO FLOOR
06 1000.A10	WOOD BLOCKING
06 1053.A01	PLYWOOD SHEATHING
06 4100.D04	MELAMINE FACED PANEL
06 4200.A00	CUSTOM WOOD VENEER PANELING
06 4200.U02	VENEER EDGEBAND AT ALL VISIBLE PANEL EDGES
06 4200.U03	LAMINATED WOOD BLOCKING AS REQUIRED TO FORM CURVED CASEWORK GEOMETRY
09 6500.D02	4" RESILIENT BASE
09 6623.A01	EPOXY TERRAZZO FLOORING
10 4400.B01	RECESSED FIRE EXTINGUISHER CABINET
12 5283.A01	UPHOLSTERED BOOTH SEATING
12 5283.A02	REMOVABLE UPHOLSTERED BOOTH SEATING
26.U01	HORIZONTAL OUTLET RECEPTACLE. REFER TO ELEC.

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LAUNCH ACCELERATOR FOR BIOSCIENCES

INDIANAPOLIS, INDIANA

CLIENT PROJECT NO. - 20250072

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
2	05/01/2026	BP4-CD: ADDENDUM 03
1	03/30/2026	BP4-CD: BUILD-OUT PACKAGE

MILLWORK

DATE
BSA PROJECT NO. 00360481

REF: SHEET INDEX

A720

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HVAC SYMBOLS

- SUPPLY DIFFUSER OR SUPPLY GRILLE (NO AIRFLOW IN SHADED REGION)
- RETURN DIFFUSER OR RETURN GRILLE
- EXHAUST DIFFUSER OR EXHAUST GRILLE
- MANUAL VOLUME DAMPER
- FD — FIRE DAMPER WITH ACCESS DOOR
- SD — SMOKE DAMPER WITH ACCESS DOOR
- F/SD — FIRE/SMOKE DAMPER WITH ACCESS DOOR
- MD — AUTOMATIC MOTOR OPERATED DAMPER
- BDD — BACKDRAFT DAMPER
- AD / AFMS — AIR FLOW MEASURING STATION
- DUCT TURNED UP (SOLID LINES)
- DUCT TURNED DOWN (DASHED LINES)
- PLAN VIEW / SECTION / WITH FLEX DUCT — RETURN BRANCH DUCT TO RETURN GRILLE/DIFFUSER "R#-CFM" DIFFUSER TAG DESIGNATION "R#-CFM" GRILLE TAG DESIGNATION
- PLAN VIEW / SECTION / WITH FLEX DUCT — SUPPLY BRANCH DUCT TO SUPPLY GRILLE/DIFFUSER "S#-CFM" DIFFUSER TAG DESIGNATION "S#-CFM" GRILLE TAG DESIGNATION
- PLAN VIEW / SECTION / WITH FLEX DUCT — EXHAUST BRANCH DUCT TO EXHAUST GRILLE/DIFFUSER "E#-CFM" DIFFUSER TAG DESIGNATION "E#-CFM" GRILLE TAG DESIGNATION
- SIDWALL SUPPLY, RETURN, OR EXHAUST GRILLE
- SUPPLY, RETURN, OR EXHAUST SLOT DIFFUSER
- STAINLESS WELDED DUCTWORK PER SPECIFICATION
- INSULATED METAL PANEL
- BOOT TAP OR 45 DEGREE ENTRY FITTING
- R OR D — R (RISE), D (DROP) ARROW IN DIRECTION OF AIR FLOW
- AD — ACCESS DOOR
- 90 DEGREE ELBOW WITH TURNING VANES
- STANDARD RADIUS ELBOW WITH CENTER RADIUS EQUAL TO 1-1/2 TIMES WIDTH OF DUCT.
- INTERNALLY Y LINED DUCTWORK
- 20"X12"Ø — FLAT OVAL DUCT (WIDTH X HEIGHT)
- 18"Ø — ROUND DUCT
- 20"X12" — RETANGULAR DUCT (WIDTH X HEIGHT)
- SPIN-IN FITTING WITH MANUAL VOLUME DAMPER AND FLEXIBLE DUCT CONNECTION
- CONICAL FITTING
- 12"Ø / 20"X12" — SQUARE-TO-ROUND TRANSITION
- TB-X — TYPICAL TERMINAL BOX WITH HEATING COIL, TWO WAY CONTROL VALVE, BOX DESIGNATION
- TB-X — TYPICAL TERMINAL BOX WITH HEATING COIL, THREE WAY CONTROL VALVE, BOX DESIGNATION
- TYPICAL CHILLED BEAM (24"X48")
- 90 DEGREE TEE (ROUND OR FLAT OVAL ONLY)

CONTROL SYMBOLS

- TT OR TTT — AIRFLOW MEASURING STATION
- AFS — AIR FLOW SWITCH
- AL — ALARM
- BDD — BACKDRAFT DAMPER (GRAVITY)
- D2 — 120/60/1 BY EC — CO_2 SENSOR
- CS — CURRENT SENSOR
- D — DISCONNECT SWITCH - FUSED
- D — DISCONNECT SWITCH - NON-FUSED
- DD — DUCT DETECTOR
- I/S — CURRENT TO PNEUMATIC TRANSDUCER
- E/S — DAMPER END SWITCH (BINARY)
- DD — DUCT-MOUNTED SMOKE DETECTOR
- DP — DIFFERENTIAL PRESSURE SENSOR (ANALOG)
- DPS — DIFFERENTIAL PRESSURE SWITCH SENSOR (BINARY)
- DPS (HL) — DIFFERENTIAL PRESSURE SWITCH (HIGH LIMIT) (BINARY)
- DPS (LL) — (LOW LIMIT) (BINARY)
- EP — ELECTRO-PNEUMATIC SWITCH
- EPT — ELECTRO-PNEUMATIC TRANSDUCER
- EAD — EXHAUST AIR DAMPER
- F&B — FACE & BY-PASS DAMPER
- FID — FAN ISOLATION DAMPER
- FC — FLOW CONTROLLER
- FS — FLOW SENSOR
- H/O/A — HAND-OFF-AUTO SWITCH
- H/TQ — HUMIDITY CONTROLLER (PNEUMATIC)
- H/TE — HUMIDITY HIGH LIMIT (ELECTRIC)
- H — HUMIDITY SENSOR (ELECTRONIC)
- H/TT — HUMIDITY TRANSMITTER (PNEUMATIC)
- LS — LEVEL SENSOR
- T/LL — LOW LIMIT SAFETY THERMOSTAT
- MS — 120/60/1 BY EC — MAGNETIC INDUCTIVE FLOW METER SENSOR
- S — MANUAL SWITCH (ELECTRIC)
- MDM — MODEM
- MCC — MOTOR CONTROL CENTER
- STR — MOTOR STARTER
- OCC — OCCUPANCY SENSOR
- OWS — OPERATOR'S WORK STATION
- OAD — OUTDOOR AIR DAMPER
- VPS — OUTDOOR AIR VOLUME PROBE, TRANSDUCER AND MONITOR
- PR — PNEUMATIC RELAY
- PE — PRESSURE-ELECTRIC SWITCH
- PC — PRESSURE CONTROLLER (PNEUMATIC)
- P — PRESSURE SENSOR (ELECTRONIC)
- PT — PRESSURE TRANSMITTER (PNEUMATIC)
- RM — ROOM MONITOR
- RAD — RETURN AIR DAMPER
- SD — SMOKE DAMPER
- S/S — START/STOP SWITCH
- CM — 120/60/1 BY EC — STEAM FLOW MEASUREMENT ORIFICE PLATE & MASS FLOW COMPUTER
- SAD — SUPPLY AIR DAMPER
- TC — OVERRIDE TIMER
- TC — TEMPERATURE CONTROLLER (PNEUMATIC)
- T — TEMPERATURE SENSOR (ELECTRONIC)
- TT — TEMPERATURE TRANSMITTER (PNEUMATIC)
- M — TERMINAL BOX ACTUATOR
- TM — TURBINE METER
- VFC — VARIABLE FREQUENCY CONTROLLER FOR MOTOR
- UPS — UNINTERRUPTED POWER (SUPPLY)
- VP — VELOCITY PRESSURE SENSOR (ELECTRONIC)
- VS — VIBRATION SWITCH
- VD — VOLUME DAMPER (MANUAL)
- VXT — VORTEX SHEDDING AIR FLOW TRANSMITTER
- VSM — 120/60/1 BY EC — VORTEX SHEDDING FLOW METER
- 20 — 20 PSIG MAIN CONTROL AIR
- PRESSURE GAUGE
- HC — HOLDING COIL
- H — HUMIDISTAT (SPACE)
- S — SWITCH (PHEUMATIC)
- T — THERMOSTAT OR TEMPERATURE SENSOR (SPACE)
- T/N — THERMOSTAT (SPACE) NIGHT CYCLE
- 0-30 PSIG AIR GAUGE
- LAN — LOCAL AREA NETWORK
- TCC — TEMPERATURE CONTROL CONTRACTOR
- ECC — ENVIRONMENTAL CONTROL CONTRACTOR
- (NOTE: TCC & ECC ARE USED INTERCHANGEABLY)
- EC — ELECTRICAL CONTRACTOR
- P — OR — PNEUMATIC
- E — OR — ELECTRICAL WIRING
- AI-X — ANALOG INPUT (DDC CONTROLLER)
- AO-X — ANALOG OUTPUT (DDC CONTROLLER)
- BI-X — BINARY INPUT (DDC CONTROLLER)
- BO-X — BINARY OUTPUT (DDC CONTROLLER)

VALVE AND FITTING SYMBOLS

PLAN VIEW / DETAIL VIEW

- PIPING FLEXIBLE CONNECTION
- PIPE TURNED UP (UNLESS NOTED OTHERWISE)
- PIPE TURNED DOWN
- PIPE OUT TOP
- PIPE OUT BOTTOM
- THREADED NIPPLE W/CAP
- PIPE WITH BLIND FLANGE
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- ISOLATION VALVE
- CHECK VALVE
- UNION
- GATE VALVE
- BALL VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- TEMPERATURE CONTROL - 2-WAY MODULATING VALVE
- TEMPERATURE CONTROL - 2-WAY, 2-POSITION ISOLATION VALVE
- NC / NO — TEMPERATURE CONTROL - 3-WAY MODULATING VALVE
- NC / NO — TEMPERATURE CONTROL - 3-WAY, 2-POSITION ISOLATION VALVE
- CALIBRATED BALANCE VALVE
- SAFETY RELIEF VALVE
- STRAINER
- FLOW METER
- FLOOR DRAIN BY PC
- A — AUTOMATIC FLOW CONTROL VALVE
- FLOW MEASURING DEVICE
- MANUAL AIR RELIEF VENT
- AUTOMATIC AIR RELIEF VENT
- LUBRICATED PLUG VALVE
- PRESSURE REDUCING VALVE(STEAM, GAS, COMPRESSED AIR)
- ANGLE VALVE
- REFRIGERANT HOT GAS BY-PASS VALVE
- SHUT-OFF COCK (HYDRONICS)
- SOLENOID VALVE
- REFRIGERANT EXPANSION VALVE
- WATER PRESSURE REDUCING/REGULATING VALVE
- STEAM TRAP
- DIELECTRIC FITTING BETWEEN STEEL AND COPPER
- STRAINER (STEAM)
- PRESSURE AND TEMPERATURE PLUG
- REFRIGERANT SIGHT GLASS
- THERMOMETER
- P,S,V,T — (P=PRESS V=VAC T=TEMP) GAUGE
- SENSOR (T-TEMP H-HUMIDITY)
- FS — FLOW SWITCH
- CO — CLEAN OUT
- INDICATED EXPANSION LOOP (COLD SPRUNG)
- ANCHOR
- GUIDE
- REFRIGERANT SHUT-OFF VALVE
- EXPANSION JOINT
- DIFFERENTIAL SWITCH
- REDUCED PRESSURE BACKFLOW PREVENTER
- DOUBLE CHECK VALVE ASSEMBLY
- FIRE DEPARTMENT CONNECTION
- FIRE PROTECTION INDICATING CONTROL VALVE
- FLOW SWITCH AND TEST&DRAIN ASSEMBLY

FLOOR PLAN SYMBOLS

- A101-A / SIM — SECTION WITH TOP NUMBER INDICATING SECTION DESIGNATION AND BOTTOM NUMBER INDICATING DRAWING THAT SECTION IS CUT ON OR DRAWING THAT SECTION IS DRAWN ON
- 1 / A101 / SIM — DETAIL WITH TOP NUMBER INDICATING DETAIL DESIGNATION AND BOTTOM NUMBER INDICATING DRAWING THAT DETAIL IS REFERENCED ON OR DRAWING THAT DETAIL IS DRAWN ON
- A. GENERAL NOTE
- 1. PLAN NOTE LIST
- 1 — PLAN NOTE
- T — THERMOSTAT
- H — HUMIDISTAT
- PM — PRESSURE MONITOR (FLOOR PLAN)
- D2 — C02 MONITOR (FLOOR PLAN)
- 123 — HYDRAULIC REFERENCE POINT
- TS — TAMPER SWITCH
- FS — FLOW SWITCH
- CONNECTION OF NEW WORK TO EXISTING

MECHANICAL AND PLUMBING ABBREVIATIONS

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS USED ON PROJECT

A/E	ARCHITECT AND ENGINEER
AD	ACCESS DOOR
ADJ	ADJUSTABLE OR ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
AP	ACCESS PANEL
APPROX	APPROXIMATE
ARCH	ARCHITECT
ASHRAE	AMERICAN SOCIETY HEATING, REFRIGERATION, AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS
ASSY	ASSEMBLY
ATM	ATMOSPHERE
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
BFP/RPZ	BACKFLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BOT	BOTTOM
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CAP	CAPACITY
CENTRIF	CENTRIFUGAL
CFCI	CONTRACTOR FURNISHED/CONTRACTOR INSTALLED
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFOI	CONTRACTOR FURNISHED/OWNER INSTALLED
CI	CAST IRON
CLG	CEILING
CO	CLEANOUT
COL	COLUMN
COMP	COMPRESSOR
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CSP	CEILING SERVICE PANEL
DEG	DEGREE
DEPT	DEPARTMENT
DIA	DIAMETER
DISC	DISCONNECT
DISCH	DISCHARGE
DN	DOWN
DOE	DEPARTMENT OF ENERGY
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
ECC	ENVIRONMENTAL CONTROL CONTRACTOR
EER	ENERGY EFFICIENCY RATING
EJ	EXPANSION JOINT
ELEC	ELECTRIC(AL)
ELEV	ELEVATION
EMER	EMERGENCY
ENCL	ENCLOSURE
ENTR	ENTERING
EQUIP	EQUIPMENT
EPA	ENVIRONMENTAL PROTECTION AGENCY
ET	EXPANSION TANK
EWT	ENTERING WATER TEMPERATURE
EX OR EXIST	EXISTING
EXT	EXTERIOR
F	DEGREES FAHRENHEIT
FC	FLEXIBLE CONNECTION
FH	FUME HOOD
FIN	FINISH
FM	FACTORY MUTUAL
FLA	FULL LOAD AMPS
FLR	FLOOR
FPC	FIRE PROTECTION CONTRACTOR
FPC	FIRE PROTECTION CONTRACTOR
FT	FEET
FTG	FOOTING
G	GAS, NATURAL
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GH	GRAVITY HOOD
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GV	GAS, NATURAL VENT
GW	GLASSWARE WASHER
H	HEIGHT
HD	HEAD
HGT	HEIGHT
HOA	HAND-OFF-AUTOMATIC
HORZ	HORIZONTAL
HOSP	HOSPITAL
HP	HORSEPOWER
HR	HOUR
HZ	HERTZ
ID	INSIDE DIAMETER (DIMENSION)
IN	INCHES
IN WC	INCHES WATER COLUMN
INCL	INCLUDE
INSUL	INSULATED
INT	INTERIOR
INV	INVERT
I.P.S.	INTERNATIONAL PIPE SIZING
IW	INDIRECT WASTE
JT	JOINT
KAIC	SHORT CIRCUIT RATING
KEC	KITCHEN EQUIPMENT CONTRACTOR
KW	KILOWATT
KWHR	KILOWATT-HOUR
L	LENGTH
LBS or #	POUNDS
LBS/HR	POUNDS PER HOUR
LF	LINEAR FOOT (FEET)
LFT	LEAVING FLUID TEMPERATURE
LOC	LOCATION
LVG	LEAVING
LWT	LEAVING WATER TEMPERATURE
M	METER
MAX	MAXIMUM
MBH	1000 BTU/HR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTD	MOUNTED
N	NORTH
NA	NOT APPLICABLE
NC	NORMALLY CLOSED OR NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN OR NUMBER
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER (DIMENSION)
OFCI	OWNER FURNISHED/CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED/OWNER INSTALLED
OPER	OPERATOR
OPNG	OPENING
ORIG	ORIGINAL
P	PUMP, PNEUMATIC OR PRESSURE
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PDI	PLUMBING AND DRAINAGE INSTITUTE
PG	PRESSURE GAUGE
POC	POINT OF CONNECTION
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PREFAB	PREFABRICATED
PRES	PRESSURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
REC	RECEIVER
RECIRC	RECIRCULATING
REF	REFRIGERATOR OR REFERENCE
RLA	RUNNING LOAD AMPS
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR OR SOUND ATTENUATOR
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SEC	SECTION
SENS	SENSIBLE
SHT	SHEET
SPEC	SPECIFICATIONS
SQ	SQUARE
SQFT or SF	SQUARE FOOT (FEET)
SRV	SAFETY RELIEF VALVE
SS	STAINLESS STEEL
STD	STANDARD
STR	STARTER OR STRUCTURE
STRUC	STRUCTURAL
SYS	SYSTEM
T	THERMOSTAT
TCC	TEMPERATURE CONTROL CONTRACTOR
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TLL	TEMPERATURE LOW LIMIT
TMBH	TOTAL MBH
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UL	UNDERWRITERS LISTED
UNO	UNLESS NOTED OTHERWISE
UVL	ULTRA VIOLET LIGHT
VB	VACUUM BREAKER
VEL	VELOCITY
VFC	VARIABLE FREQUENCY CONTROLLER
VSC	VARIABLE SPEED CONTROLLER
VTR	VENT THROUGH ROOF
W	WATTS OR WIDTH
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN
WFMD	WATER FLOW MEASURING DEVICE
WG	WATER GAUGE
WGT	WEIGHT
WM	WATER METER
WP	WEATHERPROOF
WPD	WATER PRESSURE DROP
WTR	WATER

MECHANICAL ABBREVIATIONS

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS USED ON PROJECT

AC or ACU	AIR CONDITIONING UNIT OR AIR COMPRESSOR
ACCU	AIR COOLED CONDENSING UNIT
AFCV	AIR FLOW CONTROL VALVE
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
AR	AIR RECEIVER
AS	AIR SEPARATOR
AVMS	AIR VOLUME MEASURING STATION
B	BOILER
BCU	BLOWER COIL UNIT
BDD	BACKDRAFT DAMPER
BI	BACKWARD INCLINE
BOD	BOTTOM OF DUCT
CAV	CONSTANT AIR VOLUME
CC	COOLING COIL
CCP	COOLING COIL PUMP
CD	CONDENSATE DRAIN
CH	CHILLER
CHW	CHILLED WATER
CHWP	CHILLED WATER PUMP
CP	CONDENSATE PUMP
CPD	CONDENSATE PUMP DISCHARGE
CUH	CABINET UNIT HEATER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
D	DIFFUSER OR DAMPER
DE	DEAERATOR
DB	DECIBELS OR DRY BULB
DC	DUCT COIL
DD	DUAL DUCT
DDC	DIRECT DIGITAL CONTROL
DEFL	DEFLECTION
DUC	DOOR UNDER CUT
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EBH	ELECTRIC BASEBOARD HEATER
ECG	EGG CRATE GRILLE
ED	EXHAUST DIFFUSER
EDC	ELECTRIC DUCT COIL
EF	EXHAUST AIR FAN
EFT	ENTERING FLUID TEMPERATURE
EG	EXHAUST GRILLE OR ETHYLENE GLYCOL
EMG	EXTRUDED METAL GRILLE
ERP	ELECTRIC RADIANT PANEL
ESP	EXTERNAL STATIC PRESSURE
EUH	ELECTRIC UNIT HEATER
EXH	EXHAUST
F&B	FACE & BYPASS
F&T	FLOAT AND THERMOSTATIC TRAP
FSD	FIRE AND SMOKE DAMPER
FCU	FAN COIL UNIT
FD	FIRE DAMPER
H	HUMIDIFIER OR HUMIDITY
HC	HEATING COIL
HCP	HEATING COIL PUMP (HOT WATER)
HE	HEAT EXCHANGER
HPR	HIGH PRESSURE CONDENSATE RETURN
HPS	HIGH PRESSURE STEAM
HRC	HEAT RECOVERY COIL
HTR	HEATER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HOT WATER
HWP	HEATING HOT WATER PUMP
HWR	HEATING HOT WATER RETURN
HWS	HEATING HOT WATER SUPPLY
HX	HEAT EXCHANGER
IFB	INTEGRAL FACE AND BYPASS
LAN	LOCAL AREA NETWORK
LAT	LEAVING AIR TEMPERATURE
LBD	LINEAR BAR DIFFUSER
LD	LINEAR DIFFUSER
LFD	LAMINAR FLOW DIFFUSER
LFT	LEAVING FLUID TEMPERATURE
LPR	LOW PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
MAT	MIXED AIR TEMPERATURE
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MPCR	MEDIUM PRESSURE CONDENSATE RETURN
MPS	MEDIUM PRESSURE STEAM
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
PE	PNEUMATIC ELECTRIC
PF	PREFILTERS
PG	PROPYLENE GLYCOL
PHC	PREHEAT COIL
PRD	PRESSURE RELIEF DOOR
PUH	PROPELLER UNIT HEATER
RA	RETURN AIR OR RELIEF AIR
RAD	RADIATION OR RADIATED
RAT	RETURN AIR TEMPERATURE
R/H	REHEAT
RF	RETURN AIR FAN
RG	RETURN GRILLE
RH	RELIEF HOOD OR RELATIVE HUMIDITY
RHC	REHEAT COIL
RP	RADIANT PANELS
RPG	RETURN PERFORATED GRILLE
RV	ROOF VENTILATOR
SA	SUPPLY AIR OR SOUND ATTENUATOR
SB	STEAM BOILER
SC	STEAM COIL
SCC	STEAM CONDENSATE COOLER
SCCH	SUBCOOLED CHILLER
SD	SUPPLY DIFFUSER OR SMOKE DAMPER
SF	SUPPLY AIR FAN
SG	SUPPLY GRILLE
SMBH	SENSIBLE MBH
SMC	SHEET METAL CONTRACTOR
SP	STATIC PRESSURE
ST	STEAM TRAP
SV	STEAM VENT
T	THERMOSTAT
TB	TERMINAL BOX
TDV	TRIPLE DUTY VALVE
TLL	TEMPERATURE LOW LIMIT
TSP	TOTAL STATIC PRESSURE
UH	UNIT HEATER
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER (MANUAL)
WB	WET BULB

MECHANICAL CODE AND STANDARD INFORMATION

MECHANICAL CODE: 2014 INDIANA MECHANICAL CODE (2012 INTERNATIONAL MECHANICAL CODE WITH 675 IAC 18-1.6 IMPLEMENTING AMENDMENTS).

FUEL GAS CODE: 2014 INDIANA FUEL GAS CODE (2012 INTERNATIONAL FUEL GAS CODE WITH 675 IAC 25-3 IMPLEMENTING AMENDMENTS).

ENERGY CODE: 2010 INDIANA ENERGY CONSERVATION CODE (ASHRAE 90.1-2007 WITH 675 IAC 19-4 IMPLEMENTING AMENDMENTS).

MECHANICAL SYSTEM DESIGN CRITERIA: CLIMATE ZONE 5A.

ECONOMIZER DESCRIPTION: SEE TEMPERATURE CONTROL SHEETS.

EQUIPMENT AND SYSTEM CONTROL DESCRIPTION: SEE TEMPERATURE CONTROL SHEETS.

FAN MOTOR HORSEPOWER (hp) AND CONTROLS: SEE EQUIPMENT SCHEDULE SHEETS FOR MOTOR HORSEPOWER SIZES. SEE TEMPERATURE CONTROL SHEETS FOR MOTOR CONTROL.

DUCT SEALING AND DUCT AND PIPE INSULATION INFORMATION: SEE HVAC SPECIFICATIONS 230700 AND 233113.

SEE ARCHITECTURAL DRAWINGS FOR THE REQUIRED INFORMATION REGARDING: INSULATION MATERIALS AND THEIR R-VALUES, FENESTRATION U FACTORS AND SHGC, AREA-WEIGHTED U FACTORS AND SHGC CALCULATIONS, AIR SEALING DETAILS, AND BUILDING THERMAL ENVELOPE DETAILS.

NFPA 99-2012: COMPLIES WITH CHAPTER 9.

HVAC GENERAL NOTES RELATED TO STRUCTURAL ITEMS

PENETRATION/ EMBEDMENTS RESTRICTION NOTES:

1. NO OPENINGS SHALL BE CUT IN STRUCTURAL BEAMS OR COLUMNS, UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS.
2. PENETRATIONS UP TO 12 INCHES IN CONCRETE WALLS MAY BE FIELD CUT BY THE CONTRACTOR.
3. PENETRATIONS LARGER THAN 12 INCHES IN CONCRETE WALLS SHALL BE SLEEVED AND CAST WITH ADDITIONAL REINFORCING AS SHOWN ON THE STRUCTURAL TYPICAL DETAILS.
4. PENETRATIONS UP TO 16 INCHES IN CMU WALLS MAY BE FIELD CUT BY THE CONTRACTOR.
5. PENETRATIONS LARGER THAN 16 INCHES IN LOAD BEARING CMU WALLS SHALL HAVE LINTEL AND JAMB REINFORCING AS SHOWN ON THE STRUCTURAL TYPICAL DETAILS.
6. PENETRATIONS UP TO 12 INCHES IN CONCRETE SLAB ON METAL DECK MAY BE FIELD CUT BY THE CONTRACTOR.
7. PENETRATIONS LARGER THAN 12 INCHES IN CONCRETE SLAB ON METAL DECK SHALL BE CONSTRUCTED AS SHOWN ON THE STRUCTURAL TYPICAL DETAILS.
8. ADJACENT PENETRATIONS CLOSER THAN 18" SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.
9. NO CONDUITS SHALL BE EMBEDDED IN SLABS ON METAL DECK.
10. CM SHALL PROVIDE COORDINATED SUBMITTAL SHOWING ALL PENETRATIONS (SLEEVED AND FIELD CUT) FOR REVIEW PRIOR TO INSTALLATION AND POURING OF EACH WALL OR SLAB, OR MAKING FIELD CUT.
11. DO NOT OVERCUT CONCRETE.

ATTACHMENT RESTRICTIONS:

1. ANY ATTACHMENT GREATER THAN 1,000 LBS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED FOR REVIEW TO THE STRUCTURAL ENGINEER.
2. ATTACHMENTS SHALL NOT BE MADE TO THE UNDERSIDE OF METAL ROOF DECK WITHOUT CONCRETE TOPPING.

MECHANICAL PIPING SYMBOLS

- HWS — HEATING WATER SUPPLY
- HWR — HEATING WATER RETURN
- CWV — CONDENSER WATER VENT
- RV — REFRIGERANT VENT
- CHWS — CHILLED WATER SUPPLY
- CHWR — CHILLED WATER RETURN
- CBS — CHILLED BEAM CHILLED WATER SUPPLY
- CBR — CHILLED BEAM CHILLED WATER RETURN
- CWS — CONDENSER WATER SUPPLY
- CWR — CONDENSER WATER RETURN
- LPS — LOW PRESSURE STEAM
- LPR — LOW PRESSURE CONDENSATE RETURN
- BAS — BUILDING AUTOMATION SYSTEM CONDUIT
- VM — VAPOR MITIGATION PIPING
- HPS — HIGH PRESSURE STEAM
- HPR — HIGH PRESSURE CONDENSATE RETURN
- TC — TRAPPED CONDENSATE IN TUNNEL (SYSTEM PRESSURE)
- SV — STEAM VENT
- CPD — CONDENSATE PUMP DISCHARGE
- GS — GLYCOL SUPPLY
- GR — GLYCOL RETURN
- CD — CONDENSATE & EQUIPMENT DRAIN
- BFW — BOILER FEED WATER
- BWCF — BOILER WATER CHEMICAL FEED
- CWCF — CONDENSER WATER CHEMICAL FEED
- ECWS — EQUIPMENT COOLING WATER SUPPLY
- ECWR — EQUIPMENT COOLING WATER RETURN
- HRS — HEAT RECOVERY SUPPLY
- HRR — HEAT RECOVERY RETURN
- RHG — REFRIGERANT HOT GAS
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- DIRECTION OF PIPE SLOPE (DOWN)

LINE SYMBOLS

- LIGHT/SCREENED SOLID OR DASHED LINES INDICATE EXISTING TO REMAIN
- HEAVY DASHED LINES INDICATE EXISTING TO BE REMOVED
- HEAVY CONTINUOUS LINES INDICATE NEW WORK

MECHANICAL DEMOLITION GENERAL NOTES

A. EXISTING SYSTEMS SHOWN ARE BASED ON EXISTING DRAWINGS AND FIELD VERIFIED TO THE EXTENT POSSIBLE. CONTRACTOR SHALL VERIFY THAT SERVICES INDICATED FOR REMOVAL DO NOT SERVE SPACES OUTSIDE THE PROJECT AREA. CONTRACTOR SHALL FIELD VERIFY THAT EXISTING SYSTEMS SHOWN ARE REPRESENTATIVE OF THE INSTALLED SYSTEMS AND REPORT MAJOR DISCREPANCIES TO ENGINEER OF RECORD.

B. INACTIVE, ABANDONED SYSTEMS NOT SHOWN ARE TO BE REPORTED TO THE ENGINEER OF RECORD.

C. CONTRACTOR IS TO COORDINATE ALL SERVICE INTERRUPTIONS WITH OWNER REPRESENTATIVES, MAINTENANCE STAFF, AND END-USERS. CONTRACTOR SHALL PROVIDE SUFFICIENT ADVANCE NOTICE TO ALL AFFECTED PARTIES OF IMPENDING OUTAGE.

D. SYSTEMS INDICATED BY DASHED LINE ARE TO BE REMOVED IN THEIR ENTIRETY UNLESS OTHERWISE DESCRIBED BY PLAN NOTE(S). THIS INCLUDES THE REMOVAL OF EXISTING HANGERS, INSULATION, ASSOCIATED CONTROLS AND ACCESSORIES. ALL DUCTWORK AND PIPING TERMINATIONS NOT SHOWN AS BEING REUSED SHALL BE CAPPED. CONTRACTOR SHALL PATCH INSULATION DAMAGED DURING DEMOLITION AND WHERE PIPING IS SHOWN TO BE CAPPED.

E. WHEN EQUIPMENT REQUIRING ELECTRICAL POWER IS REMOVED, CONTRACTOR SHALL ALSO DEMOLISH EXISTING POWER WIRING AND CONDUIT. A LICENSED ELECTRICIAN SHALL BE RESPONSIBLE FOR REMOVING ALL POWER WIRING AND CONDUIT.

F. WHERE REMAINING MECHANICAL, ELECTRICAL, PLUMBING, OR FIRE PROTECTION WORK PENETRATES EXISTING WALLS OR FLOORS, THE OPENING CREATED MUST BE REPAIRED TO MATCH THE EXISTING CONSTRUCTION AND FIRE RATING BY THE GENERAL CONSTRUCTION TRADE SKILLED IN THE WORK TO BE PERFORMED.

G. IF THE WORK OF OTHER TRADES IS CURRENTLY SUPPORTED BY WORK TO BE DEMOLISHED, CONTRACTOR SHALL FURNISH AND INSTALL NEW SUPPORTS.

H. UNUSED HANGERS FOUND WITHIN THE PROJECT SCOPE AREA SHALL BE REMOVED.

I. WHERE REQUIRED, PERFORM PRE-DEMOLITION SYSTEM TESTING (AIRFLOW, TEMPERATURE, ETC.) PRIOR TO BEGINNING ANY DEMOLITION.

J. FOR PHASED SCOPE OF WORK, REFER TO ARCHITECTURAL PHASING PLANS AND OTHER PROJECT MANUAL REQUIREMENTS. CONTRACTOR IS TO VERIFY THE SPACES TO REMAIN ACTIVE UNDER THERMAL CONTROL AND EXHAUST SYSTEMS TO REMAIN ACTIVE TO SUPPORT THE PHASING. PROVIDE TEMPORARY SYSTEM MODIFICATIOS (BLANKOFFS, CAPS, TEMPORARY DUCT CONNECTIONS, TEMPORARY PIPE CONNECTIONS, ETC) AS REQUIRED TO SUPPORT THE PHASING.

MECHANICAL GENERAL NOTES

A. NEW WORK SHOWN ON DRAWINGS IS CONCEPTUAL IN NATURE. CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL TRADES. CONTRACTOR SHALL PERFORM FINAL COORDINATION OF ALL TRADES AFTER CEILING REMOVAL ALLOWS FURTHER SITE INVESTIGATION ON EXISTING BUILDINGS.

B. UNLESS NOTED OTHERWISE ON THE DRAWINGS, REFER TO SCHEDULES FOR DIFFUSER, GRILLE, TERMINAL BOX, AND OTHER TERMINAL EQUIPMENT RUNOUT SIZES.

C. WHERE EQUIPMENT REQUIRING ACCESS MUST BE INSTALLED ABOVE GYPSUM CEILING, CONTRACTOR SHALL COORDINATE ADEQUATE ACCESS WITH ALL TRADES AND PROVIDE THE REQUIRED ACCESS PANELS.

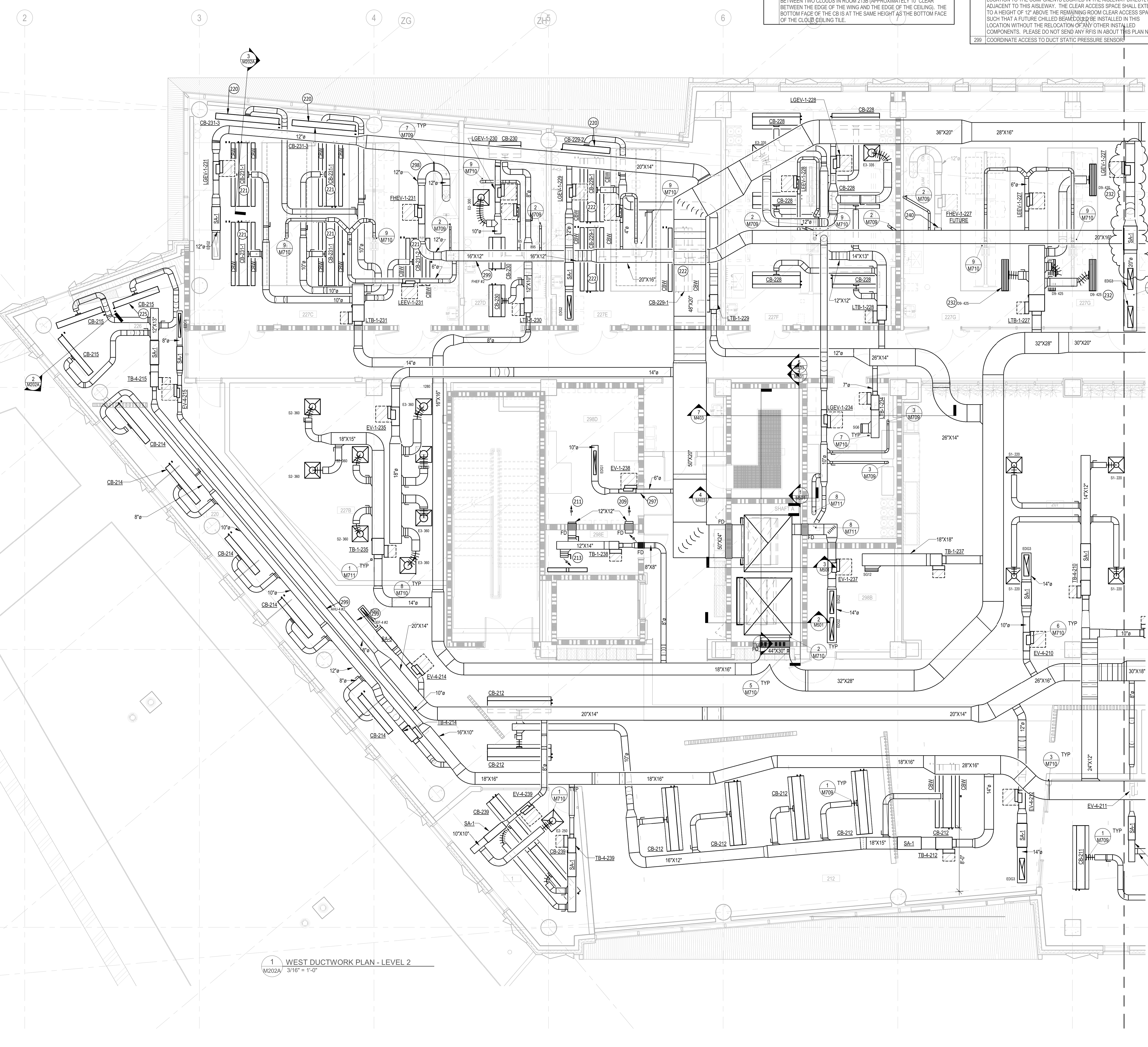
D. AIRFLOW OFFSETS NOTED ARE INTENDED TO PROVIDE INITIAL VALUES FOR THE TEST AND BALANCE CONTRACTOR. FINAL AIRFLOW OFFSETS ARE TO BE DETERMINED DURING FUNCTIONAL TESTING AND FINAL VOLUMETRIC FLOW RATES SHALL BE DOCUMENTED ON AS-BUILT DRAWINGS.

E. COORDINATE WITH ALL TRADES TO PROVIDE THE REQUIRED EQUIPMENT ACCESS. REFER TO SPECIFICATION "COMMON WORK RESULTS FOR HVAC" FOR ADDITIONAL INFORMATION.

F. FOR PHASED SCOPE OF WORK, REFER TO ARCHITECTURAL PHASING P

X00	PLAN NOTES
209	MOUNT TOP OF TRANSFER DUCT NO MORE THAN 12" BELOW THE BOTTOM OF THE STRUCTURAL SLAB ABOVE. TERMINATE DUCT ON INTERIOR SURFACE OF WALL. NO GRILLES ON ENDS OF DUCT, FIRE DAMPER LINKS ARE VISIBLE FROM INSIDE THE ELECTRICAL ROOM.
211	MOUNT TOP OF SUPPLY DUCT NO LOWER THAN 9'-6" AFF. TERMINATE DUCT ON INTERIOR SURFACE OF WALL. NO GRILLE ON END OF DUCT, FIRE DAMPER LINKS ARE VISIBLE FROM INSIDE THE ELECTRICAL ROOM.
213	BALANCE TO ACHIEVE 50 CFM AT MAX AIRFLOW.
220	THIS CHILLED BEAM IS FURNISHED WITH A ONE-WAY (VERTICAL) DISCHARGE DIFFUSER. SEE SCHEDULES AND DETAILS.
221	THIS CHILLED BEAM IS POSITIONED SUCH THAT THE CB BETWEEN THE TWO CLOUDS IS CENTERED BETWEEN THE TWO CLOUDS AND THE CB WHICH ARE ADJACENT TO ONLY ONE CLOUD ARE SPACED THAT SAME DISTANCE FROM THE EDGE OF THE CLOUD AS THE CB CENTERED BETWEEN TWO CLOUDS. THE BOTTOM FACE OF THE CB IS AT THE SAME HEIGHT AS THE BOTTOM FACE OF THE CLOUD CEILING TILE.
222	THIS CHILLED BEAM IS POSITIONED SUCH THAT THE CB IS SPACED THAT SAME DISTANCE FROM THE EDGE OF THE CLOUD AS THE CB CENTERED BETWEEN TWO CLOUDS IN ROOM 213B (APPROXIMATELY 10" CLEAR BETWEEN THE EDGE OF THE WING AND THE EDGE OF THE CEILING). THE BOTTOM FACE OF THE CB IS AT THE SAME HEIGHT AS THE BOTTOM FACE OF THE CLOUD CEILING TILE.

X00	PLAN NOTES
225	THIS PARTICULAR CHILLED BEAM IS FURNISHED WITH A ONE-WAY (ALL AIR HORIZONTAL) DISCHARGE DIFFUSER SUCH THAT ALL THE AIR DISCHARGED IS DIRECTED AWAY FROM THE BUILDING'S EXTERIOR WALL HORIZONTALLY OVER TOP OF THE BUILT IN WOOD NOOK. THE OTHER CHILLED BEAMS WITH THIS SAME TAG WHICH ARE NOT LOCATED OVER TOP THE WOOD NOOK HAVE THE STANDARD TWO WAY HORIZONTAL DIFFUSERS.
232	ADJUST TWO SLOTS OF THIS DIFFUSER TO DISCHARGE HORIZONTALLY IN ONE DIRECTION AND TWO SLOTS TO DISCHARGE HORIZONTALLY IN THE OPPOSITE DIRECTION.
240	PROVIDE A WYE OR TAP AS INDICATED WITH A SEALED CAP THE SIZE OF THE FUTURE FHEV. COORDINATE WITH ALL TRADES SUCH THE THE FUTURE DUCT ROUTING ILLUSTRATED AND FUTURE FHEV IN AN ACCESSIBLE LOCATION MAY BE INSTALLED WITHOUT HAVING TO RELOCATE ANY OTHER TRADE'S EQUIPMENT NOR HANGERS.
297	ROUTE DUCTWORK TO ENTER ROOM OVER THE DOORWAY SO AS TO NOT BE ABOVE ANY WALLS THAT COULD BE USED FOR PANELBOARDS.
298	COORDINATE WITH ALL TRADES TO PROVIDE CLEAR ACCESS FOR A FUTURE CB AND FUTURE CBW WHICH ARE IDENTICAL IN SIZE AND LOCATION TO THE COMPONENTS LOCATED IN THE AISLEWAY DIRECTLY ADJACENT TO THIS AISLEWAY. THE CLEAR ACCESS SPACE SHALL EXTEND TO A HEIGHT OF 12" ABOVE THE REMAINING ROOM CLEAR ACCESS SPACE SUCH THAT A FUTURE CHILLED BEAM COULD BE INSTALLED IN THIS LOCATION WITHOUT THE RELOCATION OF ANY OTHER INSTALLED COMPONENTS. PLEASE DO NOT SEND ANY RFIS IN ABOUT THIS PLAN NOTE.
299	COORDINATE ACCESS TO DUCT STATIC PRESSURE SENSOR.



1 WEST DUCTWORK PLAN - LEVEL 2
M202A 3/16" = 1'-0"

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CONTRACT REQUIREMENTS

A. ALL CONTRACTORS AND ALL TRADES INCLUDING, BUT NOT LIMITED TO, HEATING, VENTILATION/SHEETMETAL, ELECTRICAL POWER, ELECTRICAL LIGHTING, ELECTRICAL FIRE ALARM, TELECOMMUNICATIONS, TELECOM, AV, SECURITY, BAS TEMPERATURE CONTROL, PLUMBING, FIRE PROTECTION, LAB FURNISHINGS, AND ARCHITECTURAL GENERAL TRADES SHALL COORDINATE AND PROVIDE THE CLEAR ACCESS SPACE BENEATH INSTALLATIONS REQUIRED BY THESE NOTES.

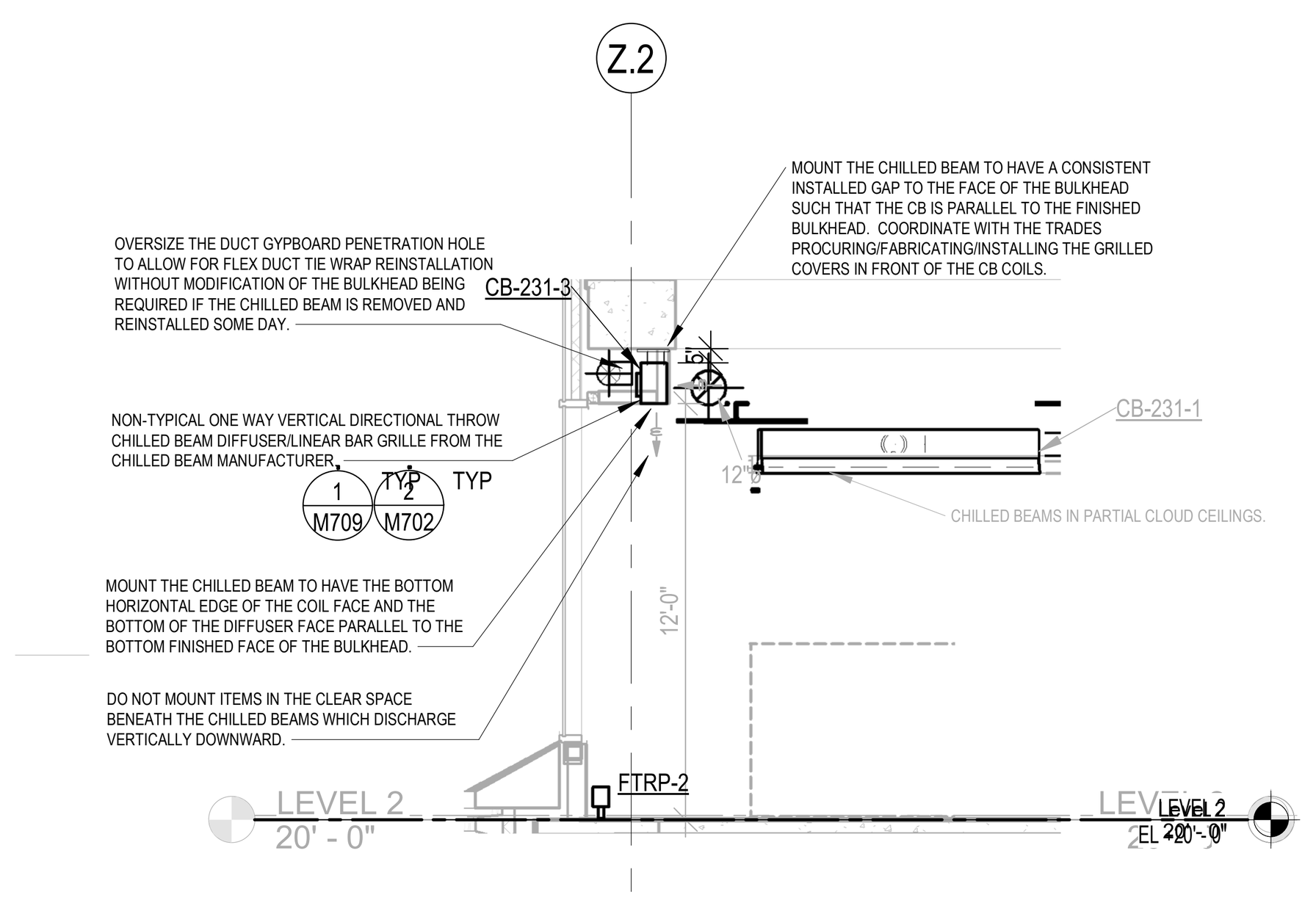
B. THE CLEAR ACCESS SPACE PROVIDED SHALL BE FREE AND CLEAR OF ANY AND ALL PERMANENT INSTALLATIONS INCLUDING, BUT NOT LIMITED TO: DUCTWORK, DUCT HANGERS, HANGER SUPPORTS, HANGER RODS AND HANGER UNISTRUT; PIPING, PIPE HANGERS, HANGER SUPPORTS, HANGER RODS AND HANGER UNISTRUT; DUCT OR PIPING INSULATION; CONDUIT AND RACEWAY INCLUDING HANGER RODS AND HANGER UNISTRUT; FIRE PROTECTION BRANCH PIPING, FIRE PROTECTION MAIN PIPING, FIRE PROTECTION SPRINKLER HEADS, COMPONENTS, EQUIPMENT, AND MATERIALS; OTHER SYSTEMS HANGERS AND SUPPORTS; LIGHTING AND LIGHTING SUPPORTS; CABLE TRAY AND CABLE TRAY SUPPORTS, CABLES/CABLING, CABLE SUPPORTS, EXIT SIGNAGE, FIRE ALARM HORNS OR STROBES, AND MISCELLANEOUS LOW VOLTAGE SYSTEM ACCESSORIES. THIS REQUIREMENT APPLIES TO THE LOWEST ELEVATION (THE BOTTOM) OF ANY SUCH COMPONENT OR MATERIAL LOCATED ABOVE THE CLEAR ACCESS SPACE INDICATED.

C. THE CLEAR ACCESS SPACE TO BE PROVIDED SHALL EXTEND FROM THE FINISHED FLOOR TO A HEIGHT WHICH IS A MINIMUM OF **10'-0"** A.F.F. (ABOVE THE FINISHED FLOOR) IN ALL SPACES **WHICH DO NOT HAVE ANY CEILINGS NOR ANY PARTIAL CEILINGS** WITHIN THAT SPACE UNLESS IT IS KEYNOTED AS REQUIRING A TALLER CLEAR ACCESS SPACE. INCLUDE ADDITIONAL ACCESS SPACE HEIGHT AS REQUIRED TO MEET THE EQUIPMENT MANUFACTURER'S WRITTEN INSTALLATION AND MAINTENANCE INSTRUCTIONS.

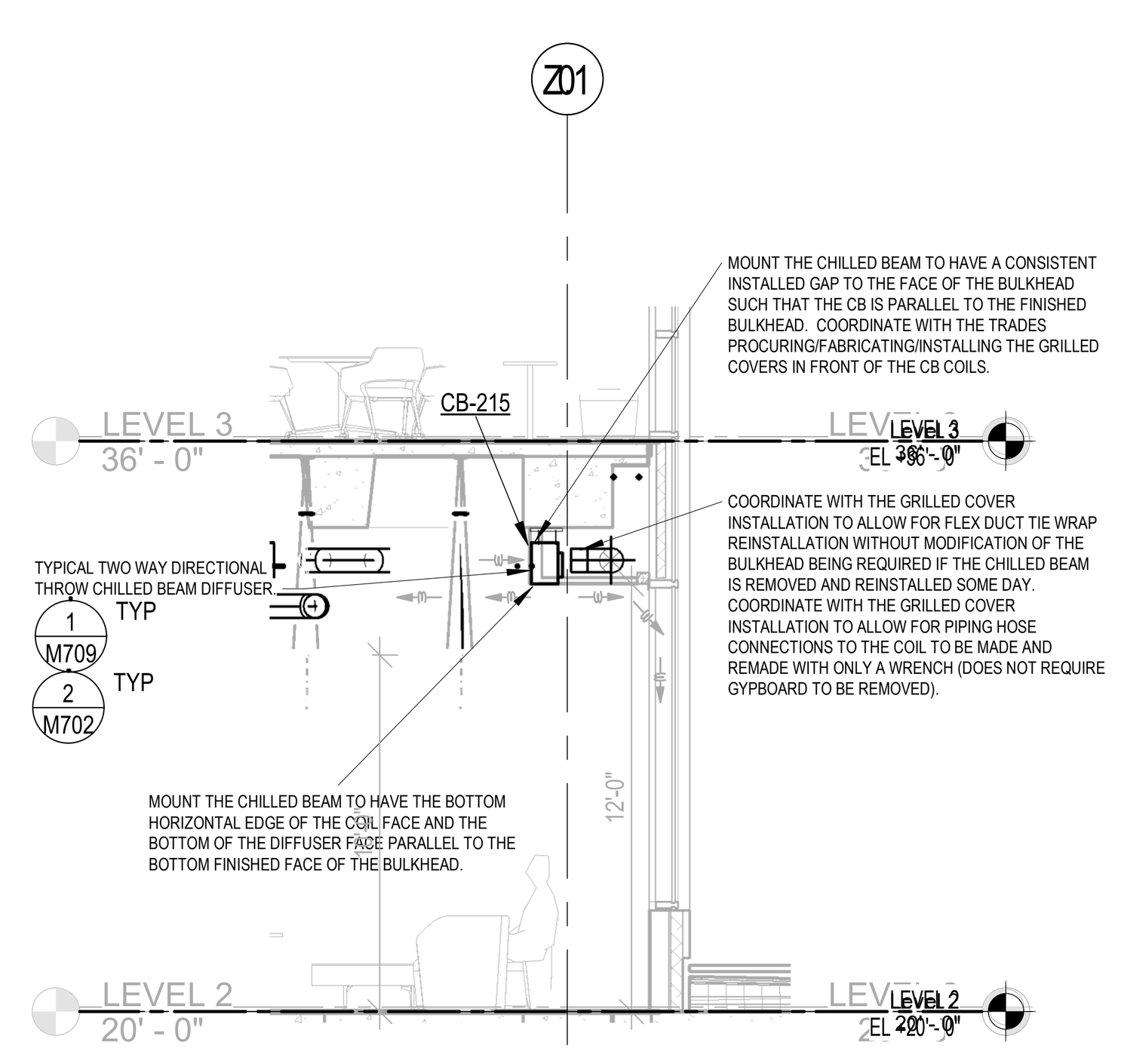
D. THE CLEAR ACCESS SPACE TO BE PROVIDED SHALL EXTEND FROM THE FINISHED FLOOR TO A HEIGHT WHICH IS A MINIMUM OF **1" ABOVE THE HEIGHT OF THE LOWEST HORIZONTAL SURFACE OF THAT SPACE'S PARTIAL CEILING** ("CLOUD" CEILING, "SPECIAL" CEILING, OTHER HORIZONTAL SURFACES ILLUSTRATED ON THE ARCHITECTURAL REFLECTED CEILING PLANS) IN ALL SPACES WHICH HAVE PARTIAL CEILINGS. NOTE THAT THE "MINIMUM 1" ABOVE HEIGHT REQUIREMENT" NOTED IN THE PRIOR SENTENCE DOES NOT APPLY TO CHILLED BEAM MANUFACTURER'S INTEGRAL DIFFUSER MOUNTING HEIGHT: INSTALL THE BOTTOM HORIZONTAL FINISHED FACE OF THE CHILLED BEAM DIFFUSER AT EXACTLY THE SAME HEIGHT AS THE BOTTOM HORIZONTAL FINISHED FACE OF THE PARTIAL CEILING. INCLUDE ADDITIONAL ACCESS SPACE HEIGHT AS REQUIRED TO MEET THE EQUIPMENT MANUFACTURER'S WRITTEN INSTALLATION AND MAINTENANCE INSTRUCTIONS.

E. IN SPACES WHICH CONTAIN **MORE THAN ONE PARTIAL CEILING** SURFACE, THE CLEAR ACCESS SPACE TO BE PROVIDED SHALL EXTEND FROM THE FINISHED FLOOR TO A HEIGHT WHICH IS A MINIMUM OF **1" ABOVE THE HEIGHT OF THE LOWEST HORIZONTAL SURFACE PARTIAL CEILING** ("CLOUD" CEILING, "SPECIAL" CEILING, EXPOSED BULKHEAD CEILING, OTHER HORIZONTAL SURFACES ILLUSTRATED ON THE ARCHITECTURAL REFLECTED CEILING PLANS) **OF THE LOWEST HEIGHT PARTIAL CEILING** IN ALL SPACES WHICH HAVE MULTIPLE PARTIAL CEILINGS. INCLUDE ADDITIONAL ACCESS SPACE HEIGHT AS REQUIRED TO MEET THE EQUIPMENT MANUFACTURER'S WRITTEN INSTALLATION AND MAINTENANCE INSTRUCTIONS.

F. CLOSE COORDINATION AMONGST THE INSTALLING TRADES IS RECOMMENDED IN ORDER TO PROVIDE THE CONTRACTUALLY REQUIRED CLEAR ACCESS SPACE. THE REMOVAL AND REINSTALLATION OF IMPROPERLY INSTALLED COMPONENTS AS NEEDED TO PROVIDE THE CLEAR ACCESS SPACE SHALL OCCUR SOLELY AT THE EXPENSE OF THE CONTRACTOR WHICH INSTALLED THE IMPROPER COMPONENTS AND SHALL BE COMPLETED PRIOR TO THE ISSUANCE OF PARTIAL SUBSTANTIAL COMPLETION OR ANY OTHER SUBSTANTIAL COMPLETION CERTIFICATE IS ISSUED. IMPROPERLY INSTALLED COMPONENTS SHALL INCLUDE THOSE COMPONENTS WHICH ARE BELOW THE REQUIRED CLEAR ACCESS HEIGHT AND ALSO INCLUDE ANY AND ALL COMPONENTS LOCATED ABOVE THE CLEAR ACCESS SPACE IN THE ADJOINING AREA WHICH MUST BE RELOCATED IN ORDER TO MEET BOTH THE FUNCTIONAL NEEDS OF THE COMPONENTS AND THE CLEAR ACCESS SPACE REQUIREMENT.



SECTION AT PERIMETER OF LAB OF CHILLED BEAM MOUNTED NEXT TO BULKHEAD
3 M202A 3/16" = 1'-0"



SECTION AT PERIMETER BULKHEAD WITH CHILLED BEAMS MOUNTED ADJOINING THE BULKHEAD
2 3/16" = 1'-0"

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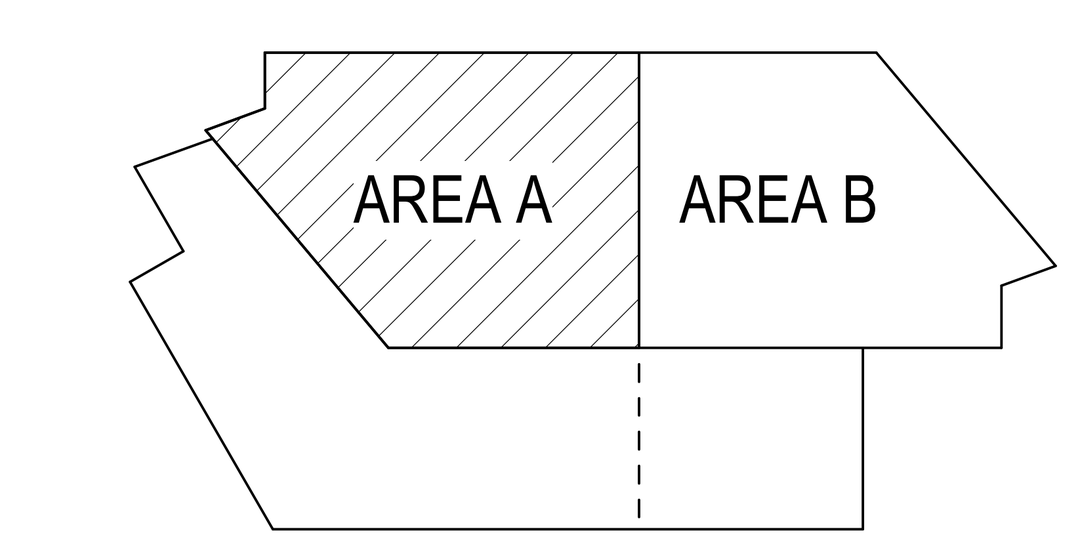
LAUNCH ACCELERATOR FOR BIOSCIENCES

INDIANAPOLIS, INDIANA

CLIENT PROJECT NO. - 20250072

CUMULATIVE DOCUMENTS

BP4-CD: BUILD-OUT PACKAGE



KEYPLAN
PROJECT NORTH
REFER TO CIVIL DRAWINGS FOR TRUE NORTH

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
7	5/1/2026	BP4-CD: Addendum 03
6	4/27/2026	BP4-CD: Addendum 02
5	4/20/2026	BP4-CD: Addendum 01
3	3/30/2026	BP4-CD: BUILD-OUT PACKAGE

PETER HOGAN LANGOWSKI REGISTERED No. PE19500446 STATE OF INDIANA PROFESSIONAL ENGINEER

DUCTWORK PLAN - LEVEL 2 - AREA A

DATE — REF: SHEET INDEX
BSA PROJECT NO. — 00360481

M202A

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X00	PLAN NOTES
240	PROVIDE A WYE OR TAP AS INDICATED WITH A SEALED CAP THE SIZE OF THE FUTURE FHEV. COORDINATE WITH ALL TRADES SUCH THE THE FUTURE DUCT ROUTING ILLUSTRATED AND FUTURE FHEV IN AN ACCESSIBLE LOCATION MAY BE INSTALLED WITHOUT HAVING TO RELOCATE ANY OTHER TRADE'S EQUIPMENT NOR HANGERS.
241	PROVIDE 4" WELDED STAINLESS EXHAUST DUCT DOWN FLUSH WITH WALL BEHIND THE GLASSWARE WASHER. TERMINATE DUCT OPEN-ENDED 4" FROM THE WASHER DISCHARGE (SEE FINAL PROCESSED WASHER SUBMITTAL). INSTALL AN ELBOW ON THE WASHER DISCHARGE AND ORIENT THE ELBOW SUCH THAT IT BLOWS INTO THE OPEN-ENDED DUCT. COORDINATE WITH ALL TRADES TO ROUTE DUCT DROP WITHIN THE WALL. BALANCE TO 50 CFM.
252	ADJUST TWO SLOTS OF THIS DIFFUSER TO DISCHARGE HORIZONTALLY IN ONE DIRECTION AND TWO SLOTS TO DISCHARGE HORIZONTALLY IN THE OPPOSITE DIRECTION.
253	ADJUST THREE SLOTS OF THIS DIFFUSER TO DISCHARGE HORIZONTALLY IN ONE DIRECTION AWAY FROM THE OVERHEAD SERVICE COLUMN AND ONE SLOT OF THIS DIFFUSER TO DISCHARGE HORIZONTALLY IN THE OPPOSITE DIRECTION (TOWARDS THE OVERHEAD SERVICE COLUMN).

X00	PLAN NOTES
254	ADJUST THREE SLOTS OF THIS DIFFUSER TO DISCHARGE HORIZONTALLY IN ONE DIRECTION AWAY FROM THE DIFFUSER ON THE OTHER SIDE OF THE ISLAND AND ONE SLOT OF THIS DIFFUSER TO DISCHARGE HORIZONTALLY IN THE OPPOSITE DIRECTION (TOWARDS THE CENTER OF THE CLOUD CEILING).
255	ADJUST THREE SLOTS OF THIS DIFFUSER TO DISCHARGE HORIZONTALLY IN ONE DIRECTION AWAY FROM THE BACK OF THE FUME HOOD AND ONE SLOT OF THIS DIFFUSER TO DISCHARGE HORIZONTALLY IN THE OPPOSITE DIRECTION (TOWARDS THE BACK OF THE FUME HOOD).
256	COORDINATE CLOSELY WITH THE TRADES PROVIDING THE PERMANENT WINCH SYSTEM / LOWERING TOOL / ELECTRICAL DISCONNECT WHICH IS LOCATED ON THE THIRD FLOOR SHEET A1236. PROVIDE CONTROLLER CABLING / WIRING FOR THE DSF WHICH IS COMPATIBLE WITH THE WINCH LOWERING SYSTEM SUCH THAT THE CONTROLLER CABLE IS ABLE TO BE EXTENDED AND AUTOMATICALLY RETRACTED WHEN THE DSF IS WINCHED DOWN TO IT'S LOWEST FINAL POSITION.
299	COORDINATE ACCESS TO DUCT STATIC PRESSURE SENSOR.

BSA LifeStructures
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LAUNCH ACCELERATOR FOR BIOSCIENCES

INDIANAPOLIS, INDIANA

CLIENT PROJECT NO. - 20250072

CUMULATIVE DOCUMENTS

BP4-CD: BUILD-OUT PACKAGE

CONTRACT REQUIREMENTS

A. ALL CONTRACTORS AND ALL TRADES INCLUDING, BUT NOT LIMITED TO, HEATING, VENTILATION/SHEETMETAL, ELECTRICAL POWER, ELECTRICAL LIGHTING, ELECTRICAL FIRE ALARM, TELECOMMUNICATIONS, TELECOM, AV, SECURITY, BAS TEMPERATURE CONTROL, PLUMBING, FIRE PROTECTION, LAB FURNISHINGS, AND ARCHITECTURAL GENERAL TRADES SHALL COORDINATE AND PROVIDE THE CLEAR ACCESS SPACE BENEATH INSTALLATIONS REQUIRED BY THESE NOTES.

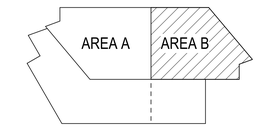
B. THE CLEAR ACCESS SPACE PROVIDED SHALL BE FREE AND CLEAR OF ANY AND ALL PERMANENT INSTALLATIONS INCLUDING, BUT NOT LIMITED TO: DUCTWORK, DUCT HANGERS, HANGER SUPPORTS, HANGER RODS AND HANGER UNISTRUT; PIPING, PIPE HANGERS, HANGER SUPPORTS, HANGER RODS AND HANGER UNISTRUT; DUCT OR PIPING INSULATION; CONDUIT AND RACEWAY INCLUDING HANGER RODS AND HANGER UNISTRUT; FIRE PROTECTION BRANCH PIPING, FIRE PROTECTION MAIN PIPING, FIRE PROTECTION SPRINKLER HEADS, COMPONENTS, EQUIPMENT, AND MATERIALS; OTHER SYSTEMS HANGERS AND SUPPORTS; LIGHTING AND LIGHTING SUPPORTS; CABLE TRAY AND CABLE TRAY SUPPORTS, CABLES/CABLING, CABLE SUPPORTS, EXIT SIGNAGE, FIRE ALARM HORNS OR STROBES, AND MISCELLANEOUS LOW VOLTAGE SYSTEM ACCESSORIES. THIS REQUIREMENT APPLIES TO THE LOWEST ELEVATION (THE BOTTOM) OF ANY SUCH COMPONENT OR MATERIAL LOCATED ABOVE THE CLEAR ACCESS SPACE INDICATED.

C. THE CLEAR ACCESS SPACE TO BE PROVIDED SHALL EXTEND FROM THE FINISHED FLOOR TO A HEIGHT WHICH IS A MINIMUM OF **10'-0"** A.F.F. (ABOVE THE FINISHED FLOOR) IN ALL SPACES **WHICH DO NOT HAVE ANY CEILINGS NOR ANY PARTIAL CEILINGS** WITHIN THAT SPACE UNLESS IT IS KEYNOTED AS REQUIRING A TALLER CLEAR ACCESS SPACE. INCLUDE ADDITIONAL ACCESS SPACE HEIGHT AS REQUIRED TO MEET THE EQUIPMENT MANUFACTURER'S WRITTEN INSTALLATION AND MAINTENANCE INSTRUCTIONS.

D. THE CLEAR ACCESS SPACE TO BE PROVIDED SHALL EXTEND FROM THE FINISHED FLOOR TO A HEIGHT WHICH IS A MINIMUM OF **1" ABOVE THE HEIGHT OF THE LOWEST HORIZONTAL SURFACE OF THAT SPACE'S PARTIAL CEILING** ("CLOUD" CEILING, "SPECIAL" CEILING, OTHER HORIZONTAL SURFACES ILLUSTRATED ON THE ARCHITECTURAL REFLECTED CEILING PLANS) IN ALL SPACES WHICH HAVE PARTIAL CEILINGS. NOTE THAT THE "MINIMUM 1" ABOVE HEIGHT REQUIREMENT" NOTED IN THE PRIOR SENTENCE DOES NOT APPLY TO CHILLED BEAM MANUFACTURER'S INTEGRAL DIFFUSER MOUNTING HEIGHT: INSTALL THE BOTTOM HORIZONTAL FINISHED FACE OF THE CHILLED BEAM DIFFUSER AT EXACTLY THE SAME HEIGHT AS THE BOTTOM HORIZONTAL FINISHED FACE OF THE PARTIAL CEILING. INCLUDE ADDITIONAL ACCESS SPACE HEIGHT AS REQUIRED TO MEET THE EQUIPMENT MANUFACTURER'S WRITTEN INSTALLATION AND MAINTENANCE INSTRUCTIONS.

E. IN SPACES WHICH CONTAIN **MORE THAN ONE PARTIAL CEILING** SURFACE, THE CLEAR ACCESS SPACE TO BE PROVIDED SHALL EXTEND FROM THE FINISHED FLOOR TO A HEIGHT WHICH IS A MINIMUM OF 1" **ABOVE THE HEIGHT OF THE LOWEST HORIZONTAL SURFACE PARTIAL CEILING** ("CLOUD" CEILING, "SPECIAL" CEILING, EXPOSED BULKHEAD CEILING, OTHER HORIZONTAL SURFACES ILLUSTRATED ON THE ARCHITECTURAL REFLECTED CEILING PLANS) **OF THE LOWEST HEIGHT PARTIAL CEILING** IN ALL SPACES WHICH HAVE MULITPLE PARTIAL CEILINGS. INCLUDE ADDITIONAL ACCESS SPACE HEIGHT AS REQUIRED TO MEET THE EQUIPMENT MANUFACTURER'S WRITTEN INSTALLATION AND MAINTENANCE INSTRUCTIONS.

F. CLOSE COORDINATION AMONGST THE INSTALLING TRADES IS RECOMMENDED IN ORDER TO PROVIDE THE CONTRACTUALLY REQUIRED CLEAR ACCESS SPACE. THE REMOVAL AND REINSTALLATION OF IMPROPERLY INSTALLED COMPONENTS AS NEEDED TO PROVIDE THE CLEAR ACCESS SPACE SHALL OCCUR SOLELY AT THE EXPENSE OF THE CONTRACTOR WHICH INSTALLED THE IMPROPER COMPONENTS AND SHALL BE COMPLETED PRIOR TO THE ISSUANCE OF PARTIAL SUBSTANTIAL COMPLETION OR ANY OTHER SUBSTANTIAL COMPLETION CERTIFICATE IS ISSUED. IMPROPERLY INSTALLED COMPONENTS SHALL INCLUDE THOSE COMPONENTS WHICH ARE BELOW THE REQUIRED CLEAR ACCESS HEIGHT AND ALSO INCLUDE ANY AND ALL COMPONENTS LOCATED ABOVE THE CLEAR ACCESS SPACE IN THE ADJOINING AREA WHICH MUST BE RELOCATED IN ORDER TO MEET BOTH THE FUNCTIONAL NEEDS OF THE COMPONENTS AND THE CLEAR ACCESS SPACE REQUIREMENT.



KEYPLAN

PROJECT NORTH
REFER TO CIVIL DRAWINGS FOR TRUE NORTH

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
7	5/1/2026	BP4-CD: Addendum 03
6	4/27/2026	BP4-CD: Addendum 02
5	4/20/2026	BP4-CD: Addendum 01
3	3/30/2026	BP4-CD: BUILD-OUT PACKAGE

PETER KOJAN LANGANKI
REGISTERED
No. PE19500446
STATE OF INDIANA
PROFESSIONAL ENGINEER

DUCTWORK PLAN - LEVEL 5 - AREA B

DATE
BSA PROJECT NO. 00360481

REF: SHEET INDEX

M205B

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1 EAST DUCTWORK PLAN - LEVEL 5
M205B 3/16" = 1'-0"

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ALL TB ARE FURNISHED IN THE 233600 SPECIFICATION AND ARE FURNISHED BY THE SHEETMETAL TRADES.

AHU-1/2/3 TERMINAL BOX SCHEDULE

TAG	CFM COOLING MAX	CFM MIN	CFM HEATING MAX	UNIT INLET SIZE (IN)	HOT WATER HEATING COIL GPM	NOTES
TB-1-118	100	100	100	4"	0.6	
TB-1-119	75	75	75	4"	0.6	
TB-1-123	260	200	200	6"	0.6	
TB-1-136	580	200	200	9"	0.6	
TB-1-145	250	250	250	5"	0.6	
TB-1-152	480	60	60	8"	0.6	
TB-1-235	1,440	150	150	12"	0.6	
TB-1-402	550	200	450	8"	1.1	
TB-1-406	640	125	290	9"	0.7	
TB-1-407	550	200	450	8"	1.1	
TB-1-408	610	100	230	9"	0.6	
TB-1-409	550	200	415	8"	1.0	
TB-1-506	660	300	300	9"	0.8	

ALL LTB ARE FURNISHED IN THE 233600 SPECIFICATION AND ARE FURNISHED BY THE SHEETMETAL TRADES.

AHU-1/2/3 LAB TERMINAL BOX SCHEDULE

TAG	CFM COOLING MAX	CFM HEATING MAX	UNIT INLET SIZE (IN)	HOT WATER HEATING COIL GPM	NOTES
LTB-1-106	2,085	2,085	14"	5.3	
LTB-1-107	1,125	585	12"	1.5	
LTB-1-108	1,965	1,220	14"	3.1	
LTB-1-109	1,420	835	12"	2.1	
LTB-1-110	1,785	1,110	14"	2.8	
LTB-1-111	965	610	12"	1.5	
LTB-1-112	1,495	1,495	12"	3.8	
LTB-1-121	700	700	9"	1.8	
LTB-1-122	75	75	4"	0.6	
LTB-1-124	75	75	4"	0.6	
LTB-1-130	750	400	9"	1.0	
LTB-1-131	750	400	9"	1.0	
LTB-1-143	710	710	9"	1.8	
LTB-1-144	480	300	8"	0.8	
LTB-1-146	700	700	9"	1.8	
LTB-1-147	155	45	5"	0.6	
LTB-1-148	470	80	8"	0.6	
LTB-1-150	1,375	1,375	12"	3.5	
LTB-1-219	135	90	6"	0.6	
LTB-1-220	750	750	9"	1.9	
LTB-1-221	900	250	10"	0.6	
LTB-1-223	350	105	7"	0.6	
LTB-1-224	300	140	6"	0.6	
LTB-1-225	300	120	6"	0.6	
LTB-1-226	1,255	430	14"	1.1	
LTB-1-227	1,690	850	14"	2.2	
LTB-1-228	660	420	8"	1.1	
LTB-1-229	550	395	8"	1.0	
LTB-1-230	300	155	6"	0.6	
LTB-1-231	980	660	12"	1.7	
LTB-1-232	425	425	7"	1.1	
LTB-1-234	350	350	7"	0.9	
LTB-1-324	650	90	9"	0.6	
LTB-1-325	1,220	745	12"	1.9	
LTB-1-326	440	180	7"	0.6	
LTB-1-327	260	180	6"	0.6	
LTB-1-328	1,660	875	14"	2.2	
LTB-1-329	1,525	610	14"	1.5	
LTB-1-330	320	130	7"	0.6	
LTB-1-331	220	60	5"	0.6	
LTB-1-332	750	750	9"	1.9	
LTB-1-333	1,020	945	12"	2.4	
LTB-1-335	350	350	7"	0.9	
LTB-1-337	1,210	525	12"	1.3	
LTB-1-338	1,210	885	12"	2.2	
LTB-1-405	1,220	725	12"	1.8	
LTB-1-419	580	90	9"	0.6	
LTB-1-420	1,405	1,405	12"	3.5	
LTB-1-421	440	180	7"	0.6	
LTB-1-422	300	180	6"	0.6	
LTB-1-423	2,105	2,105	16"	5.3	
LTB-1-424	2,130	1,665	16"	4.2	
LTB-1-425	320	120	7"	0.6	
LTB-1-426	215	180	5"	0.6	
LTB-1-427	2,145	2,145	16"	5.4	
LTB-1-428	2,275	1,665	16"	4.2	
LTB-1-429	350	350	7"	0.9	
LTB-1-430	1,220	725	12"	1.8	
LTB-1-431	390	245	7"	0.6	
LTB-1-434	1,405	1,405	12"	3.5	
LTB-1-435	1,480	1,480	12"	3.7	
LTB-1-436	1,395	1,395	12"	3.5	
LTB-1-437	2,285	2,285	16"	5.8	
LTB-1-502	1,625	1,000	14"	2.5	
LTB-1-507	200	115	5"	0.6	
LTB-1-508	220	120	5"	0.6	
LTB-1-509	1,765	1,000	14"	2.5	
LTB-1-521	2,300	685	16"	1.7	
LTB-1-522	585	90	9"	0.6	
LTB-1-523	1,240	745	12"	1.9	
LTB-1-524	440	180	7"	0.6	
LTB-1-526	2,305	615	16"	1.4	
LTB-1-528	320	180	7"	0.6	
LTB-1-529	225	180	5"	0.6	
LTB-1-530	750	750	9"	1.9	
LTB-1-531	1,020	1,020	12"	2.6	
LTB-1-532	770	490	10"	1.2	
LTB-1-533	350	350	7"	1.1	
LTB-1-534	2,260	725	16"	1.8	
LTB-1-535	410	255	7"	0.6	
LTB-1-536	1,740	1,075	14"	3.5	
LTB-1-537	1,045	435	12"	1.1	
LTB-1-538	1,180	505	12"	1.3	
LTB-1-540	2,120	725	16"	1.8	

ALL TB ARE FURNISHED IN THE 233600 SPECIFICATION AND ARE FURNISHED BY THE SHEETMETAL TRADES.

AHU-4/5 TERMINAL BOX SCHEDULE

TAG	CFM COOLING MAX	CFM MIN	CFM HEATING MAX	UNIT INLET SIZE (IN)	HOT WATER HEATING COIL GPM	NOTES
TB-4-101	400	305	305	7"	0.8	
TB-4-102	1,200	600	1,200	12"	3.6	
TB-4-103	880	240	240	10"	0.6	
TB-4-104	1,760	350	1,295	14"	3.5	
TB-4-105	620	300	300	9"	0.9	
TB-4-113	1,305	455	455	12"	1.2	
TB-4-114	1,530	400	780	14"	2.0	
TB-4-115	440	120	440	7"	1.5	
TB-4-116	400	120	120	7"	0.6	
TB-4-117	75	35	35	4"	0.6	
TB-4-125	200	30	30	5"	0.6	
TB-4-127	500	150	150	8"	0.6	
TB-4-132	570	205	205	9"	0.6	
TB-4-133	380	160	160	7"	0.6	
TB-4-134	50	50	50	4"	0.6	
TB-4-135	975	975	975	12"	2.6	
TB-4-137	100	30	30	4"	0.6	
TB-4-138	405	100	100	7"	0.6	
TB-4-139	405	100	100	7"	0.6	
TB-4-140	600	160	600	9"	2.0	
TB-4-149	200	100	100	5"	0.6	
TB-4-153	2,000	0	2,000	14"	5.2	
TB-4-199	600	400	600	9"	2.0	
TB-4-201	400	130	130	7"	0.6	
TB-4-203	710	200	565	9"	1.5	
TB-4-204	300	300	300	6"	0.8	
TB-4-205	1,050	350	1,050	12"	2.5	
TB-4-206	140	40	40	4"	0.6	
TB-4-208	210	10	10	5"	0.6	
TB-4-209	880	175	175	10"	0.6	
TB-4-210	880	175	175	10"	0.6	
TB-4-211	300	240	240	6"	0.6	
TB-4-212	1,050	315	1,050	12"	2.7	
TB-4-214	500	175	440	8"	1.5	
TB-4-215	300	220	220	6"	0.7	
TB-4-216	155	60	60	5"	0.6	
TB-4-217	370	130	120	7"	0.6	
TB-4-218	220	215	215	5"	0.7	
TB-4-236	100	30	30	4"	0.6	
TB-4-238	125	10	10	4"	0.6	
TB-4-239	300	230	230	6"	0.7	
TB-4-240	2,000	0	2,000	14"	5.2	
TB-4-301	400	90	90	7"	0.6	
TB-4-303	400	100	255	7"	0.8	
TB-4-304	600	100	215	9"	0.7	
TB-4-305	550	100	285	8"	0.9	
TB-4-306	550	100	285	8"	0.9	
TB-4-307	300	300	300	6"	0.8	
TB-4-308	780	115	115	10"	0.6	
TB-4-309	780	115	115	10"	0.6	
TB-4-312	900	225	835	10"	2.8	
TB-4-313	220	135	135	5"	0.6	
TB-4-314	300	250	250	6"	0.7	
TB-4-315	110	75	75	4"	0.6	
TB-4-316	110	75	75	4"	0.6	
TB-4-317	110	75	75	4"	0.6	
TB-4-318	110	80	80	4"	0.6	
TB-4-319	340	150	305	7"	1.0	
TB-4-320	300	100	300	6"	0.9	
TB-4-321	400	220	220	7"	0.7	
TB-4-322	150	50	150	4"	0.6	
TB-4-338	100	30	30	4"	0.6	
TB-4-401	300	110	110	6"	0.6	
TB-4-403	300	100	175	6"	0.6	
TB-4-404	300	300	300	6"	0.8	
TB-4-410	900	150	885	10"	2.3	
TB-4-413	450	100	425	7"	1.4	
TB-4-414	600	125	400	9"	1.4	
TB-4-415	300	100	250	6"	0.8	
TB-4-416	400	220	220	7"	0.7	
TB-4-417	150	150	150	4"	0.6	
TB-4-434	100	30	30	4"	0.6	
TB-4-437	200	145	145	5"	0.6	
TB-4-439	100	25	25	6"	0.6	
TB-4-501	400	80	80	7"	0.6	
TB-4-503	400	150	270	7"	0.7	
TB-4-504	300	300	300	6"	0.8	
TB-4-505	100	30	30	4"	0.6	
TB-4-510	1,480	300	1,060	12"	3.5	
TB-4-514	570	125	450	9"	1.5	
TB-4-515	300	100	270	6"	0.9	
TB-4-516	175	55	55	5"	0.6	
TB-4-517	150	50	150	4"	0.6	
TB-4-518	100	50	100	4"	0.6	
TB-4-519	100	50	100	4"	0.6	
TB-4-520	220	50	160	5"	0.6	
TB-4-539	220	50	155	5"	0.6	
TB-4-541	100	25	25	6"	0.7	
TB-4-602	3,200	3,200	3,200	16"	10	

1 provide a 24"x16" inlet TB here.

ALL TB ARE FURNISHED IN THE 233600 SPECIFICATION AND ARE FURNISHED BY THE SHEETMETAL TRADES.

TERMINAL BOX COOLING ONLY SCHEDULE

TAG	CFM MAX	CFM MIN	UNIT INLET SIZE (IN)	NOTES
TB-1-141	600	150	8"	
TB-1-142	1,360	120	12"	
TB-1-237	1,360	120	12"	
TB-1-238	300	150	6"	
TB-1-311	300	150	6"	
TB-1-336	1,360	120	12"	
TB-1-412	300	150	6"	
TB-1-433	1,360	0	12"	
TB-1-512	300	150	6"	
TB-1-513	1,360	0	12"	
TB-4-601	430	0	8"	
TB-7-101	300	50	8"	
TB-7-102	2,800	200	16"	
TB-7-103	600	50	10"	
TB-7-104	150	10	6"	

AIR TERMINAL UNIT LEGEND: TB-**A-FXX**
TB: TERMINAL BOX. A SINGLE DUCT VARIABLE AIR VOLUME UNIT WHICH DOES NOT CONTAIN A HEATING COIL.

WHERE "**A**" IS THE AHU NUMBER (A=1 FOR AHU-1/2/3 AND A=4 FOR AHU-4/5) WHICH SERVES THE TERMINAL BOX.

WHERE "**F**" IS THE LEVEL/FLOOR (1,2,3,4,5) WHICH THE TERMINAL BOX IS LOCATED

WHERE "**XX**" ARE SEQUENTIAL IDENTIFYING NUMBERS FOR THE INDIVIDUAL TERMINAL BOXES (01-99). THESE ARE NOT THE ROOM NUMBERS. SEQUENTIAL NUMBERS DO NOT START OVER FOR TBS WITHOUT HEATING COILS (CONTINUE WITH SINGLE TB NUMBERING LIST)

EXAMPLE: THE THIRD TERMINAL BOX SERVING A PORTION OF A SPACE ON THE SECOND FLOOR WHICH IS FED BY AHU-1 WOULD BE: TB-1-203.

AIR TERMINAL UNIT LEGEND: TB-**A-FXX**
TB: TERMINAL BOX. A SINGLE DUCT VARIABLE AIR VOLUME UNIT WITH A HYDRONIC HEATING COIL.

WHERE "**A**" IS THE AHU NUMBER (A=1 FOR AHU-1/2/3 AND A=4 FOR AHU-4/5) WHICH SERVES THE TERMINAL BOX.

WHERE "**F**" IS THE LEVEL/FLOOR (1,2,3,4,5) WHICH THE TERMINAL BOX IS LOCATED

WHERE "**XX**" ARE SEQUENTIAL IDENTIFYING NUMBERS FOR THE INDIVIDUAL TERMINAL BOXES (01-99). THESE ARE NOT THE ROOM NUMBERS.

EXAMPLE: THE FOURTEENTH TERMINAL BOX SERVING A PORTION OF A SPACE ON THE FOURTH FLOOR WHICH IS FED BY AHU-4 WOULD BE: TB-4-414.

SCHEDULE GENERAL NOTES (APPLY TO ALL ENTRIES IN TB SCHEDULES AND LTB SCHEDULES):

A. DUCT RUNOUT SIZE TO TERMINAL BOX SHALL BE 2" LARGER THAN SCHEDULED INLET SIZE UNLESS NOTED OTHERWISE ON PLANS TO BE LARGER. PROVIDE TRANSITION TO INLET SIZE PER DETAIL.
B. DISCHARGE DUCT SIZE SHALL BE EQUAL TO TERMINAL BOX OUTLET SIZE UNLESS NOTED OTHERWISE ON PLANS. PROVIDE DUCT TRANSITIONS AS NECESSARY.
C. MAXIMUM AIRSIDE PRESSURE DROP SHALL BE 0.50 IN. W.G. AT HIGHEST SCHEDULED AIRFLOW, INCLUDING TERMINAL BOX AND HEATING COIL, UNLESS NOTED OTHERWISE. INCREASE SIZE OF TERMINAL BOX CASING AND COIL IF AIRSIDE PRESSURE DROP IS ABOVE THE MAXIMUM.
D. MAXIMUM WATERSIDE PRESSURE DROP SHALL BE 7 FT., UNLESS NOTED OTHERWISE.
E. SIZE HEATING COIL BASED ON HEATING MAXIMUM AIRFLOW UNLESS NOTED OTHERWISE. SUBMIT HEATING PERFORMANCE (LWT, LAT, BTU/HR., AND WATERSIDE PRESSURE DROP) AT MAXIMUM HEATING AIRFLOW AND COIL GPM SCHEDULED.
   1. PROVIDE MINIMUM TWO ROW COILS FOR ALL TERMINAL UNITS (PROVIDE ADDITIONAL COIL ROWS FOR TERMINAL UNITS WHICH REQUIRE ADDITIONAL HEATING CAPACITY TO MEET THE SCHEDULED PERFORMANCE WHERE A SPECIFIC MINIMUM BTU/H PERFORMANCE IS SCHEDULED FOR A SPECIFIC COIL).
   2. FOR ALL COILS, PROVIDE A LEAVING AIR TEMPERATURE OF AT LEAST 75.0 DEGF AT THE HEATING MAXIMUM AIRFLOW, WITH 130 DEGF EWT AND 54 DEGF EAT.
F. PIPE RUNOUT SIZE TO TERMINAL BOX COIL SHALL BE 3/4" FOR COILS WITH 0.0 - 3.2 GPM AND 1" FOR COILS WITH 3.3 - 7.0 GPM UNLESS NOTED OTHERWISE ON PLANS.
G. PROVIDE FACTORY CALIBRATION OF CONTROLLER MINIMUM AND MAXIMUM SETTINGS. SEE CONTROL SCHEMATICS AND SPECIFICATIONS.
H. PROVIDE THERMAL PERFORMANCE (LWT, LAT, BTU/H) SUBMITTAL INFORMATION FOR EACH HEATING COIL.
   1. AT THE MINIMUM AIRFLOW, WITH 130 DEGF EWT AND 54 DEGF EAT.
   2. AT THE HEATING MAXIMUM AIRFLOW, WITH 130 DEGF EWT AND 54 DEGF EAT.

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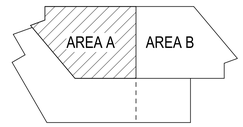
LAUNCH ACCELERATOR FOR BIOSCIENCES

INDIANAPOLIS, INDIANA

CLIENT PROJECT NO. - 20250072

CUMULATIVE DOCUMENTS

BP4-CD: BUILD-OUT PACKAGE



KEYPLAN
PROJECT NORTH
REFER TO CIVIL DRAWINGS FOR TRUE NORTH

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
7	5/1/2026	BP4-CD: Addendum 03
5	4/20/2026	BP4-CD: Addendum 01
3	3/30/2026	BP4-CD: BUILD-OUT PACKAGE



TERMINAL UNIT SCHEDULES (SUPPLY)

DATE	REF: SHEET INDEX
BSA PROJECT NO.	00360481

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ALL EV ARE AIRFLOW CONTROL VALVES FURNISHED IN THE 233600 SPECIFICATION AND ARE FURNISHED BY THE SHEETMETAL TRADES.

EXHAUST VALVE SCHEDULE

TAG	CFM MAX	CFM MIN	UNIT INLET SIZE (IN)	NOTES
EV-1-118	150	150	6	
EV-1-119	125	125	6	
EV-1-123	160	100	6	
EV-1-136	580	200	8	
EV-1-141	500	50	8	
EV-1-142	1285	45	12	
EV-1-145	50	50	6	
EV-1-152	480	60	8	
EV-1-235	1440	150	12	
EV-1-237	1285	45	12	
EV-1-238	200	50	6	
EV-1-311	200	50	6	
EV-1-336	1285	120	12	
EV-1-402	400	50	8	
EV-1-406	635	125	8	
EV-1-407	400	50	8	
EV-1-408	610	100	8	
EV-1-409	400	50	8	
EV-1-412	200	50	6	
EV-1-433	1285	45	12	
EV-1-506	460	50	8	
EV-1-512	200	50	6	
EV-1-513	1285	45	12	
EV-4-102	800	200	10	
EV-4-103	680	40	8	
EV-4-104	1560	150	14	
EV-4-113	1055	205	10	
EV-4-114	1280	150	12	
EV-4-115	300	20	6	
EV-4-116	300	20	6	
EV-4-117	75	30	4	
EV-4-125	200	30	6	
EV-4-127	300	20	6	
EV-4-132	470	105	8	
EV-4-133	330	110	6	
EV-4-134	50	50	4	
EV-4-135	1150	1150	12	
EV-4-137	100	30	4	
EV-4-138	305	20	6	
EV-4-139	305	20	6	
EV-4-140	250	20	6	
EV-4-149	150	50	6	
EV-4-199	300	100	6	
EV-4-203	610	100	8	
EV-4-204	525	525	8	
EV-4-205	850	150	10	
EV-4-206	140	40	4	
EV-4-208	210	30	6	
EV-4-209	780	75	10	
EV-4-210	780	75	10	
EV-4-211	200	140	6	
EV-4-212	900	165	10	
EV-4-214	400	75	8	
EV-4-215	200	120	6	
EV-4-217	270	30	6	
EV-4-218	170	165	6	
EV-4-236	100	30	4	
EV-4-238	125	10	4	
EV-4-239	250	180	6	
EV-4-303	350	50	6	
EV-4-304	550	50	8	
EV-4-305	550	100	8	
EV-4-306	550	100	8	
EV-4-307	525	525	8	
EV-4-308	775	115	10	
EV-4-309	775	115	10	
EV-4-312	775	100	10	
EV-4-313	170	85	6	
EV-4-314	250	200	6	
EV-4-315	110	75	4	
EV-4-316	110	75	4	
EV-4-317	110	75	4	
EV-4-318	110	80	4	
EV-4-319	240	50	6	
EV-4-320	250	50	6	
EV-4-321	325	145	6	
EV-4-322	150	50	4	
EV-4-337	100	30	4	
EV-4-403	250	50	8	
EV-4-404	525	525	8	
EV-4-410	850	150	10	
EV-4-413	400	100	8	
EV-4-414	550	125	8	
EV-4-415	300	100	6	
EV-4-416	325	145	8	
EV-4-417	100	100	4	
EV-4-434	100	30	4	
EV-4-438	200	145	6	
EV-4-439	100	25	4	
EV-4-503	350	150	6	
EV-4-504	525	525	8	
EV-4-505	100	30	4	
EV-4-510	1380	200	12	
EV-4-514	570	125	8	
EV-4-515	250	50	6	
EV-4-516	175	55	6	
EV-4-517	125	25	4	
EV-4-518	75	25	4	
EV-4-519	75	25	4	
EV-4-520	150	35	4	
EV-4-539	170	25	4	
EV-4-541	100	25	4	

EXHAUST VALVE LEGEND: EV-**A-FXX**
EV: A BLADE DAMPER STYLE VARIABLE AIR VOLUME UNIT.

WHERE "**A**" IS THE GEF NUMBER (1 FOR GEF-1/2/3 AND 4 FOR GEF-4/5) WHICH SERVES THE EV.

WHERE "**F**" IS THE LEVEL/FLOOR (1,2,3,4,5) WHICH THE EV IS LOCATED

WHERE "**XX**" ARE SEQUENTIAL IDENTIFYING NUMBERS FOR THE INDIVIDUAL TERMINAL BOXES (01-99). THESE ARE NOT THE ROOM NUMBERS.

EXAMPLE: THE THIRD EV SERVING A PORTION OF A SPACE ON THE THIRD FLOOR WHICH IS FED BY GEF-1 WOULD BE: EV-1-303. THE "XX" PART OF THE NAME WOULD MATCH THE "XX" PART OF THE EV WHICH SERVES THE SAME SPACE.

SCHEDULE GENERAL NOTES (APPLY TO ALL ENTRIES IN EV SCHEDULES):
A. DUCT RUNOUT SIZE TO THE EXHAUST VALVE INLET SHALL BE 2" LARGER THAN THE ACTUAL FURNISHED EXHAUST VALVE INLET SIZE UNLESS NOTED OTHERWISE ON PLANS TO BE LARGER. PROVIDE TRANSITION TO INLET SIZE PER DETAIL.
B. DISCHARGE DUCT SIZE SHALL BE EQUAL TO EXHAUST VALVE OUTLET SIZE UNLESS NOTED OTHERWISE ON PLANS. PROVIDE DUCT TRANSITIONS AS NECESSARY TO FURTHER DOWNSTREAM DUCT SIZES NOTED ON THE PLANS TO BE LARGER.
C. MAXIMUM AIRSIDE PRESSURE DROP SHALL BE 0.20 IN. W.G. AT HIGHEST SCHEDULED AIRFLOW,
D. PROVIDE FACTORY CALIBRATION OF CONTROLLER MINIMUM AND MAXIMUM SETTINGS. SEE CONTROL SCHEMATICS AND SPECIFICATIONS.

ALL LGEV ARE AIRFLOW CONTROL VALVES FURNISHED IN THE 233600 SPECIFICATION AND ARE FURNISHED BY THE SHEETMETAL TRADES.

LAB GENERAL EXHAUST VALVE SCHEDULE

TAG	CFM MAX	UNIT INLET SIZE (IN)	NOTES
LGEV-1-106	665	8	
LGEV-1-107	1210	12	
LGEV-1-108	2050	14	
LGEV-1-109	1230	12	
LGEV-1-110	1665	14	
LGEV-1-111	1015	10	
LGEV-1-112	525	8	
LGEV-1-121	250	8	
LGEV-1-122	125	6	
LGEV-1-124	125	6	
LGEV-1-130	750	9	
LGEV-1-131	750	9	
LGEV-1-143	480	8	
LGEV-1-144	480	8	
LGEV-1-146	200	6	
LGEV-1-147	105	8	
LGEV-1-148	420	8	
LGEV-1-150	1245	12	
LGEV-1-219	135	8	
LGEV-1-220	565	8	
LGEV-1-221	900	10	
LGEV-1-223	350	8	
LGEV-1-224	300	8	
LGEV-1-225	310	8	
LGEV-1-226	1065	10	
LGEV-1-227	1690	14	
LGEV-1-228	470	8	
LGEV-1-229	560	8	
LGEV-1-230	310	8	
LGEV-1-231	750	9	
LGEV-1-234	350	8	
LGEV-1-324	650	8	
LGEV-1-325	1095	10	
LGEV-1-326	440	8	
LGEV-1-327	260	8	
LGEV-1-328	1405	12	
LGEV-1-329	1535	12	
LGEV-1-330	270	8	
LGEV-1-331	220	8	
LGEV-1-332	760	10	
LGEV-1-333	1030	10	
LGEV-1-335	350	8	
LGEV-1-337	1010	10	
LGEV-1-338	1145	12	
LGEV-1-405	1220	12	
LGEV-1-419	580	8	
LGEV-1-420	660	10	
LGEV-1-421	440	8	
LGEV-1-422	300	7	
LGEV-1-423	660	10	
LGEV-1-424	1865	14	
LGEV-1-425	270	6	
LGEV-1-426	215	6	
LGEV-1-427	1250	12	
LGEV-1-428	2010	14	
LGEV-1-429	350	8	
LGEV-1-430	1070	12	
LGEV-1-431	390	8	
LGEV-1-434	690	10	
LGEV-1-435	605	10	
LGEV-1-436	1155	12	
LGEV-1-437	1445	12	
LGEV-1-502	750	12	
LGEV-1-507	200	6	
LGEV-1-508	220	6	
LGEV-1-509	1690	12	
LGEV-1-521	2385	14	
LGEV-1-522	585	8	
LGEV-1-523	1315	10	
LGEV-1-524	440	8	
LGEV-1-526	2365	14	
LGEV-1-528	270	6	
LGEV-1-529	225	6	
LGEV-1-530	760	8	
LGEV-1-531	1030	10	
LGEV-1-532	770	9	
LGEV-1-533	350	8	
LGEV-1-534	2110	14	
LGEV-1-535	270	6	
LGEV-1-536	1665	12	
LGEV-1-537	1045	10	
LGEV-1-538	980	10	
LGEV-1-540	1970	14	

LAB EXHAUST VALVE LEGEND: LGEV-**A-FXX** AND LEEV-**A-FXX**
EV: A BLADE DAMPER STYLE VARIABLE AIR VOLUME UNIT.

WHERE "**A**" IS THE GEF NUMBER (1 FOR GEF-1/2/3) WHICH SERVES THE EV.

WHERE "**F**" IS THE LEVEL/FLOOR (1,2,3,4,5) WHICH THE EV IS LOCATED

WHERE "**XX**" ARE SEQUENTIAL IDENTIFYING NUMBERS FOR THE INDIVIDUAL LAB TERMINAL BOXES (01-99) WHICH THESE LGEV AND LEEV ARE ASSOCIATED WITH. THESE ARE NOT THE ROOM NUMBERS.

EXAMPLE: THE LGEV SERVING A LAB ZONE ON THE THIRD FLOOR WHICH IS FED BY LTB-1-309 WOULD BE: LGEV-1-309. THE "XX" PART OF THE EV NAME WOULD MATCH THE "XX" PART OF THE LTB WHICH SERVES THE SAME SPACE.

SCHEDULE GENERAL NOTES (APPLY TO ALL LGEV ENTRIES IN LGEV SCHEDULES):
A. DUCT RUNOUT SIZE TO THE EXHAUST VALVE INLET SHALL BE 2" LARGER THAN THE ACTUAL FURNISHED EXHAUST VALVE INLET SIZE UNLESS NOTED OTHERWISE ON PLANS TO BE LARGER. PROVIDE TRANSITION TO INLET SIZE PER DETAIL.
B. DISCHARGE DUCT SIZE SHALL BE EQUAL TO EXHAUST VALVE OUTLET SIZE UNLESS NOTED OTHERWISE ON PLANS. PROVIDE DUCT TRANSITIONS AS NECESSARY TO FURTHER DOWNSTREAM DUCT SIZES NOTED ON THE PLANS TO BE LARGER.
C. MAXIMUM AIRSIDE PRESSURE DROP SHALL BE 0.20 IN. W.G. AT HIGHEST SCHEDULED AIRFLOW,
D. PROVIDE FACTORY CALIBRATION OF CONTROLLER MINIMUM AND MAXIMUM SETTINGS. SEE CONTROL SCHEMATICS AND SPECIFICATIONS.

ALL LEEV ARE AIRFLOW CONTROL VALVES FURNISHED IN THE 233600 SPECIFICATION AND ARE FURNISHED BY THE SHEETMETAL TRADES.

LAB EQUIPMENT EXHAUST VALVE SCHEDULE

TAG	UNIT INLET SIZE (IN)	NOTES
LEEV-1-107	4	
LEEV-1-108	4	
LEEV-1-109	4	
LEEV-1-110	6	
LEEV-1-112	4	
LEEV-1-220	4	
LEEV-1-225	4	
LEEV-1-226	4	
LEEV-1-227	6	
LEEV-1-228	4	
LEEV-1-229	4	
LEEV-1-230	4	
LEEV-1-231	6	
LEEV-1-328	6	
LEEV-1-329	4	
LEEV-1-330	4	
LEEV-1-332	4	
LEEV-1-333	4	
LEEV-1-338	4	
LEEV-1-424	6	
LEEV-1-428	4	
LEEV-1-501	4	relabeled LEEV-1-537
LEEV-1-502	10	
LEEV-1-509	10	
LEEV-1-521	4	
LEEV-1-526	4	
LEEV-1-528	4	
LEEV-1-530	4	
LEEV-1-531	4	
LEEV-1-536	10	

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LAUNCH ACCELERATOR FOR BIOSCIENCES

INDIANAPOLIS, INDIANA

CLIENT PROJECT NO. - 20250072

CUMULATIVE DOCUMENTS

BP4-CD: BUILD-OUT PACKAGE



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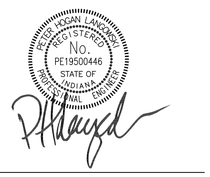
MARK	DATE	DESCRIPTION
7	5/1/2026	BP4-CD: Addendum 03
5	4/20/2026	BP4-CD: Addendum 01
3	3/30/2026	BP4-CD: BUILD-OUT PACKAGE



TERMINAL UNIT SCHEDULES (EXHAUST)

DATE: REF: SHEET INDEX
BSA PROJECT NO.: 00360481

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SEQUENCE OF OPERATION:

1. ALL SETPOINTS TO BE ADJUSTABLE. SETPOINTS TO BE EXPOSED ON GRAPHIC DISPLAY OR HIDDEN BASED ON OWNER REQUEST. THE COOLING WATER SYSTEMS (CHW, CB, CW) SHALL OPERATE 8,760 HOURS PER YEAR WITHIN THE LIMITATIONS STATED HEREIN.

1. CENTRIFUGAL CHILLERS:
ENABLE: THE CENTRIFUGAL CHILLERS SHALL BE ENABLED TO BE OPERATIONAL WHENEVER THE OUTDOOR AIR TEMPERATURE IS GREATER THAN **50°F (ADJ).**
DISABLE: THE CHILLED WATER SYSTEM SHALL SHUT DOWN WHENEVER THE OUTDOOR AIR TEMPERATURE FALLS BELOW **48°F (ADJ).** THE CHILLED WATER SYSTEM SHALL BE SHUT DOWN WHENEVER THE OAT IS BELOW **58°F (ADJ)** AND THE CALCULATED PLANT TONNAGE FALLS BELOW **40 TONS (ADJ)** FOR A PERIOD OF **20 MINUTES (ADJ).**

A. CHILLERS ARE MANUALLY INDEXED FOR AUTOMATIC OPERATION THROUGH INTEGRAL ON-OFF SWITCHES.
B. CHILLERS SHALL ALTERNATE IN THE LEAD POSITION EVERY **750 HOURS (ADJ)**. FAILURE OF A CHILLER TO START WHEN COMMANDED BY THE BAS SHALL START THE NEXT CHILLER IN THE SERIES.
C. THE *CHILLED WATER SYSTEM SUPPLY TEMPERATURE SETPOINT* SHALL BE **42.0°F (ADJ).**
D. CALCULATE SYSTEM TONNAGE *REQUIRED* BY THE LOADS WITH THE *CHILLED WATER SYSTEM SUPPLY TEMPERATURE SETPOINT*.
SYSTEM RETURN TEMPERATURE (ACTUAL), AND SYSTEM CHILLED WATER FLOW AS INPUTS. CALCULATE PLANT TONNAGE WITH THE PLANT SUPPLY TEMPERATURE (ACTUAL), PLANT RETURN TEMPERATURE (ACTUAL), AND SYSTEM CHILLED WATER FLOW AS INPUTS. TONNAGES TO BE CALCULATED IN REAL TIME AND DISPLAYED ON GRAPHICS.
E. WHEN THE CALCULATED PLANT TONNAGE EQUALS OR EXCEEDS THE CHILLER START TONNAGE (**450 TONS (ADJ)**), THE LAG CHILLER SHALL BE INITIATED.
  i. THE CHILLED WATER SETPOINT OF THE LEAD CHILLER IS RAISED **2°F (ADJ)** TO ALLOW THE LAG CHILLER TO COME ONLINE.
  ii. THE LAG CHILLER'S CHILLED WATER AND CONDENSER WATER ISOLATION VALVES SHALL OPEN. THE CHILLED WATER ISOLATION VALVE SHALL OPEN AT A RATE SLOW ENOUGH SUCH THAT NO SHUTDOWN OF ANY OPERATING CHILLER OCCURS DUE TO LOW FLOW (ECC SHALL COORDINATE WITH CHILLER MANUFACTURER AND TEST AND BALANCE CONTRACTOR TO DETERMINE THIS VALUE).
  iii. WHEN FLOW THROUGH THE LAG CHILLER IS PROVED VIA THE CHILLER'S INTERNAL SAFETIES, THE CHILLER SHALL BE ENERGIZED TO PRODUCE CHILLED WATER AT THE *CHILLED WATER SYSTEM SUPPLY TEMPERATURE SETPOINT*.
  iv. THE LEAD CHILLER'S CHILLED WATER SETPOINT SHALL RETURN TO THE *CHILLED WATER SYSTEM SUPPLY TEMPERATURE SETPOINT* AFTER THE LAG CHILLER HAS BEEN OPERATIONAL FOR **5 MINUTES (ADJ).**
  v. THE ADDITION OF A THIRD CHILLER SHALL BE IN THE SAME MANNER AS DESCRIBED ABOVE.
F. WHEN TWO CHILLERS ARE OPERATING AND THE CALCULATED PLANT TONNAGE IS LESS THAN THE SINGLE CHILLER STOP TONNAGE (**425 TONS (ADJ)**) FOR **15 MINUTES (ADJ.),** THE LAG CHILLER SHALL SHUT DOWN ACCORDING TO THE CHILLER MANUFACTURER'S REQUIREMENTS AND BOTH OF IT'S ISOLATION VALVES SHALL CLOSE.
G. WHEN THREE CHILLERS ARE OPERATING AND THE CALCULATED PLANT TONNAGE IS LESS THAN THE TWO CHILLER NOMINAL TONNAGE (**900 TONS (ADJ)** FOR **15 MINUTES (ADJ).** THE THIRD CHILLER SHALL SHUT DOWN ACCORDING TO THE CHILLER MANUFACTURER'S REQUIREMENTS AND BOTH OF IT'S ISOLATION VALVES SHALL CLOSE.
H. WHEN THE CHILLER IS FIRST ENABLED FOLLOWING WINTER HEAT EXCHANGER HE-2 OPERATION IF THE CONDENSER TANK TEMPERATURE IS NOT AT LEAST **57°F (ADJ)** AT THE TIME OF CHILLER ENABLING:
  i. THE TOWER BYPASS VALVE SHALL BE FULLY OPEN AND ALL THREE COOLING TOWER CWR ISOLATION VALVES SHALL BE FULLY CLOSED (SO NO WATER GOES OVER THE TOWER) FOR AN INITIAL PERIOD OF UP TO **FIFTEEN MINUTES (ADJ)** WITH CW CIRCULATING THROUGH THE OPERATING (LOADED) LEAD CHILLER. DISABLE THE TOWER BYPASS INITIAL STARTUP SEQUENCE IF THE CONDENSER WATER SUPPLY TEMPERATURE (DISCHARGE SIDE OF THE PUMPS, PRIOR TO ENTERING THE LEAD CHILLER'S CONDENSER BARREL) REACHS **80°F (ADJ)** DURING THE INITIAL STARTUP.
  ii. IF AT THE END OF THIS INITIAL TIME THE CONDENSER WATER SUPPLY TEMPERATURE (DISCHARGE SIDE OF THE PUMPS, PRIOR TO ENTERING THE LEAD CHILLER'S CONDENSER BARREL) IS NOT AT LEAST **11°F (ADJ)** MORE THAN THE CHILLED WATER SYSTEM SUPPLY TEMPERATURE THEN SHUT THE LEAD CHILLER DOWN. ENABLE THE LAG CHILLER AND REPEAT THE ABOVE START SEQUENCE WITH THE LAG CHILLER (NOW THAT THE TANK TEMPERATURE ROSE UP SOME AFTER THE FIRST ATTEMPT WITH THE LEAD CHILLER).

2. COOLING TOWERS:
ENABLE: THE COOLING TOWERS SHALL BE ENABLED TO BE OPERATIONAL WHENEVER THE OUTDOOR AIR TEMPERATURE IS GREATER THAN **35°F (ADJ)** FOR HEAT EXCHANGER OPERATION.
DISABLE: THE CONDENSER WATER SYSTEM SHALL SHUT DOWN WHENEVER THE OUTDOOR AIR TEMPERATURE FALLS BELOW **34°F (ADJ).** THE CONDENSER WATER SYSTEM HEAT EXCHANGER OPERATION SHALL BE SHUT DOWN WHENEVER THE OAT IS BELOW **58° F (ADJ)** AND THE *WWHP EVAPORATOR DISCHARGE TEMPERATURE* IS ABLE TO MEET THE *WWHP EVAPORATOR WATER TEMPERATURE SETPOINT* FOR A PERIOD OF **20 MINUTES** (ADJ).

A. WHENEVER A LEAD CHILLER OPERATES, THE LEAD COOLING TOWER SHALL OPERATE (WITH THE LAG SECOND TOWER CONTROLLED ON/OFF AS NOTED BELOW). WHEN TWO CHILLERS OPERATE, A MINIMUM OF TWO TOWERS SHALL OPERATE (WITH THE LAG THIRD TOWER CONTROLLED ON/OFF AS NOTED BELOW). WHEN THREE CHILLERS OPERATE, ALL THREE TOWERS SHALL OPERATE. THE TOWER FAN SHALL BE ENABLED TO OPERATE **TWO MINUTES (ADJ.)** AFTER FLOW HAS BEEN PROVED AND IS FULLY ESTABLISHED TO THAT TOWER. THE BAS SHALL DISPLAY RUNHOURS OF EACH TOWER CELL FAN AND DESIGNATE THE FAN WITH THE LEAST HOURS AS THE LEAD FAN FOR STARTUP.

B. THE FAN SPEED IS VARIED TO MEET THE *CONDENSER WATER TEMPERATURE SETPOINT*. WITH A SINGLE LEAD TOWER FLOWING WATER AND ITS FAN REACHES **40% SPEED (ADJ)** FOR A PERIOD OF **10 MINUTES (ADJ)** THE SECOND LAG TOWER SHALL BE ENABLED TO OPERATE IN PARALLEL WITH THE FIRST WITH WATER PASSING OVER BOTH TOWERS. CONTINUE TO VARY THE SPEED OF JUST THE SINGLE LEAD TOWER FAN. WHEN THE SINGLE LEAD TOWER FAN SPEED REACHES **50% SPEED (ADJ)** FOR A PERIOD OF **15 MINUTES (ADJ.)** START THE SECOND LAG TOWER FAN.
C. WITH TWO TOWERS FLOWING WATER AND TWO FANS OPERATING WITH BOTH FANS REDUCED TO THE MINIMUM **18 HZ SPEED (ADJ)** FOR A PERIOD OF **2 MINUTES (ADJ)** AND CONDENSER WATER TEMPERATURE FALLS BELOW THE *CONDENSER WATER TEMPERATURE SETPOINT* BY **1°F (ADJ)** FOR A PERIOD OF **2 MINUTES (ADJ.)**, THE TOWER FAN WITH THE MOST OPERATING HOURS SHALL BE DISABLED WHILE THE OTHER TOWER FAN CONTINUES TO OPERATE WITH WATER PASSING OVER BOTH TOWERS. THE LAG TOWER FAN SHALL BE DISABLED WHILE THE LEAD TOWER FAN CONTINUES TO OPERATE WITH WATER PASSING OVER BOTH TOWERS.
D. WITH TWO TOWERS FLOWING WATER AND ONE FAN OPERATING WITH THE FAN REDUCED TO THE MINIMUM **18 HZ SPEED (ADJ)** FOR A PERIOD OF **2 MINUTES (ADJ)** AND CONDENSER WATER TEMPERATURE FALLS BELOW THE *CONDENSER WATER TEMPERATURE SETPOINT* BY **1°F (ADJ)** FOR A PERIOD OF **2 MINUTES (ADJ)** THE LAG TOWER SHALL BE DISABLED WHILE THE LEAD TOWER AND FAN CONTINUES TO OPERATE WITH WATER PASSING OVER ONE TOWER.
E. PROVIDE A MINIMUM FAN OFF TIME OF **5 MINUTES (ADJ)** BEFORE THAT FAN IS ENABLED TO START AGAIN. TAKE FANS OUT OF SERVICE WHICH EXCEED **SIX (ADJ) STARTES PER HOUR** AND SIGNAL AN ALARM.
E.1 WHEN TWO CHILLERS ARE OPERATING, CONTROL THE TWO TOWERS TOGETHER SIMILAR TO THE "SINGLE LEAD" TOWER TEXT ABOVE AND TURN ON/OFF THE THIRD TOWER SIMILAR TO THE "SECOND LAG" TOWER TEXT ABOVE.

F. MAINTAIN *CONDENSER WATER TEMPERATURE SETPOINT* BY MODULATING THE TOWER FAN SPEED FROM **18 TO 60 HZ (ADJ)**. PROGRAM OUT FREQUENCIES AS APPROPRIATE FOR VIBRATION FREE FAN OPERATION. WHEN MULTIPLE TOWER FANS ARE OPERATIONAL, TOWER FANS SPEED SHALL MODULATE TOGETHER.

G. COOLING TOWERS SHALL ALTERNATE IN THE LEAD POSITION EVERY **750 HOURS (ADJ)**. FAILURE OF A COOLING TOWER FAN SHALL AUTOMATICALLY START THE NEXT TOWER IN THE SEQUENCE AND GENERATE AN ALARM AT THE BAS.

1 H. WHENEVER A COOLING TOWER IS CALLED TO OPERATE, ITS SUPPLY AND RETURN ISOLATION VALVES SHALL OPEN. PRIOR TO STARTING THE PUMP, THE *TANK FILL SETPOINT LEVEL* SHALL BE SET TO BE THE APPROPRIATE QUANTITY OF TOWERS (e.g. the number of towers which will be operating after this tower which is being called to operate is actually flowing water. so we make sure there is enough water in the tank to allow some of the tank water to fill the hot deck basin and piping from the tower which is about to start to operate - and not cause a low tank alarm after the tank level drops). TOWER PUMP SHALL BE ENABLED TO ROTATE AFTER A PERIOD OF **ONE MINUTE (ADJ)** PASSES AFTER THE TOWER IS CALLED TO OPERATE (TO ALLOW FOR FULL OPENING OF THE TWO MAIN TOWER VALVES) AND THEN ONLY IF THE MAKEUP WATER FILL VALVE POSITION HAS BEEN LESS THAN **25% OPEN (ADJ)** FOR THE PERIOD OF THE LAST **THIRTY SECONDS (ADJ)** PRIOR TO PUMP ROTATION BEGINNING (so there is enough water in the tank to not trip a low level alarm).
I. WHENEVER A TOWER IS REMOVED FROM THE SEQUENCE, ITS SUPPLY AND RETURN VALVES CLOSE. ALL SUMP WATER SHALL DRAIN DOWN TO THE BOTTOM OF THE TOWER VALVE SHALL BE DELAYED FROM BEGINNING TO CLOSE FOR A PERIOD OF **2 MINUTES (ADJ)** AFTER THE RETURN (WARM WATER TO UPPER BASIN) VALVE CLOSES TO ALLOW FOR FULL DRAINAGE OF THE TOWER BACK TO THE TANK. THE CR BLEED ISOLATION VALVE SHALL REMAIN OPEN WHILE THE TOWER IS OFF FOR A PERIOD OF**10 MINUTES (ADJ.)** TO ALLOW FOR FULL DRAINAGE OF THE PIPE TO THE HOT WATER BASIN, AFTER WHICH IT SHALL CLOSE. THE CS BLEED ISOLATION VALVE SHALL REMAIN OPEN WHILE THE TOWER IS OFF FOR A PERIOD OF **8 MINUTES (ADJ)** TO ALLOW FOR FULL DRAINAGE OF THE PIPE TO THE COLD WATER BASIN, AFTER WHICH IT SHALL CLOSE.

2 J. ANYTIME THE CONDENSER WATER SYSTEM IS ENABLED AND THE LEVEL CONTROLLER CALLS FOR MAKEUP WATER, THE CONDENSER WATER MAKEUP VALVE SHALL OPEN.
K. PROVIDE TANK LEVEL SETTINGS (AS MEASURED FROM THE BOTTOM OF THE TANK): *TANK LOW LEVEL CRITICAL LEVEL* **29" (ADJ)**; *TANK LOW LEVEL* **33" (ADJ)**; *TANK FILL SETPOINT LEVEL (three towers operating)* **52" (ADJ)**; *TANK FILL SETPOINT LEVEL (two towers operating)* **68" (ADJ)**; *TANK FILL SETPOINT LEVEL (one tower operating)* **84" (ADJ)**; *TANK HIGH LEVEL* **162" (ADJ)**; *TANK HIGH LEVEL CRITICAL LEVEL* **165" (ADJ)**. PROVIDE ALARMS AT EACH LEVEL OTHER THAN *TANK FILL SETPOINT LEVELS*.

L. ANYTIME ALL THE CONDENSER WATER PUMPS ARE DISABLED, THE COOLING TOWER SHALL BE ISOLATED (FULL) FROM THE BOTH CONDENSER SUPPLY (COLD WATER BASIN, BOTTOM OF TOWER) ISOLATION VALVES AND BOTH CONDENSER RETURN (WARM WATER TO UPPER BASIN) ISOLATION VALVES.
M. PROVIDE HARDWARE AND SEQUENCE SUCH THAT: THE FAN MOTOR ANTI-CONDENSATION HEATER IS POWERED OFF WHENEVER THE FAN IS OPERATING; THE MOTOR ANTI-CONDENSATION HEATER IS POWERED ON WHENEVER THE FAN IS OFF.

3. CONDENSER WATER TEMPERATURE CONTROL:
A. *CONDENSER WATER TEMPERATURE SETPOINT* (WHEN CENTRIFUGAL CHILLERS ARE OPERATING) SHALL VARY PER THE MEASURED OUTDOOR AIR WET BULB TEMPERATURE (UTILIZE GLOBAL OUTDOOR AIR TEMP AND GLOBAL OUTDOOR AIR HUMIDITY TO CALCULATE WET BULB. PROVIDE LOCAL BUILDING BACKUP OF EACH ALSO). LOGIC SHALL RESET THE *CONDENSER WATER TEMPERATURE SETPOINT* COOLER AS THE AMBIENT CONDITIONS MERIT TO ALLOW FOR COOLER CONDENSER WATER AND MORE EFFICIENT CHILLER OPERATION WITHOUT UTILIZING EXCESSIVE TOWER FAN ENERGY. *CONDENSER WATER TEMPERATURE SETPOINT* SHALL BE DISPLAYED AND TRENDED ON THE GRAPHICS. UTILIZE THE FIVE MINUTE RUNNING AVERAGE OAT WB CONDITION BASED ON AT LEAST 50 DATA POINTS. MAKE THE SETPOINT CHANGES OVER A **20 MINUTES (ADJ)** PERIOD WITH A VERY SLOWLY TUNED SETPOINT CHANGE LOOP. LIMIT SETPOINT CHANGES TO BE REVISED TO NO MORE THAN A **1.0°F (ADJ)** PER HOUR.
  - WHEN AVERAGE OAT WET BULB IS LESS THAN **63°FWB (ADJ)** THE *CONDENSER WATER TEMPERATURE SETPOINT* SHALL BE **68°F (ADJ).**
  - WHEN AVERAGE OAT WET BULB IS BETWEEN **63°FWB (ADJ)** AND **80°FWB (ADJ)** THE *CONDENSER WATER TEMPERATURE SETPOINT* SHALL BE EQUAL TO THE AVERAGE OAT WET BULB **PLUS 5°F (ADJ.).**
  - WHEN AVERAGE OAT WET BULB IS GREATER THAN **80°FWB (ADJ)** THE *CONDENSER WATER TEMPERATURE SETPOINT* SHALL BE **85°F (ADJ).**
B. MAINTAIN CONDENSER WATER SUPPLY TEMPERATURE BY MODULATING THE TOWER FAN SPEED FROM **18 TO 60 HZ (ADJ)**; PROGRAM OUT FREQUENCIES AS APPROPRIATE FOR VIBRATION FREE FAN OPERATION. IF THE FAN IS AT MINIMUM SPEED AND CONDENSER WATER TEMPERATURE FALLS BELOW SETPOINT BY **2.0°F (ADJ)** FOR A PERIOD OF **FIVE MINUTES (ADJ).** SHUT THE TOWER FAN OFF. MAINTAIN FAN OFF FOR A MINIMUM OF **FIVE MINUTES (ADJ)** FOR EVERY FAN ON/OFF CYCLE. IF CONDENSER WATER TEMPERATURE CONTINUES TO FALL WITH THE FAN OFF MODULATE THE TOWER BYPASS VALVE TO MAINTAIN **SETPOINT MINUS 3.0°F (ADJ).** SIGNAL AN ALARM IF THE CONDENSER WATER TEMPERATURE DROPS BELOW **40°F (ADJ)** FOR A PERIOD OF **1 MINUTE (ADJ).**

4. CHILLED WATER PUMPS:
A. WHENEVER A CHILLER IS ENABLED A CHILLED WATER PUMP SHALL START IN SEQUENCE. THE BAS GRAPHICS SHALL DISPLAY RUNHOURS OF EACH PUMP AND DESIGNATE THE PUMP WITH THE LEAST HOURS AS THE LEAD PUMP AT EACH PUMP STARTUP.
B. CHILLED WATER PUMPS SHALL OPERATE IN A LEAD-LAG-LAG ARRANGEMENT.
C. CHILLED WATER PUMPS SHALL ROTATE AS THE LEAD PUMP EVERY **750 HOURS (ADJ).** FAILURE OF THE LEAD PUMP SHALL AUTOMATICALLY START THE NEXT PUMP IN THE OPERATING SEQUENCE.
D. THE LAG PUMP SHALL START WHEN THE SYSTEM FLOW IS ABOVE **900 GPM (ADJ)** FOR **15 MINUTES**. THE PUMP SHALL STOP IF THE FLOW FALLS BELOW **800 GPM (ADJ)** FOR **15 MINUTES (ADJ).**
E. THE THIRD PUMP SHALL START WHEN THE SYSTEM FLOW IS ABOVE **1800 GPM (ADJ)** FOR **15 MINUTES**. THE PUMP SHALL STOP IF THE FLOW FALLS BELOW **1600 GPM (ADJ)** FOR **15 MINUTES.**
F. WHEN MULTIPLE PUMPS ARE OPERATING, PUMPS SHALL RUN AT THE SAME SPEED AND MODULATE FROM **18 TO 60 HZ (ADJ)**
G. THE TWO SYSTEM DIFFERENTIAL PRESSURE SENSORS SHALL BE COMPARED AND THE SENSOR THAT IS THE MOST NEEDY (THE SENSOR WHICH IS BELOW IT'S *INDIVIDUAL SENSOR SETPOINT*) SHALL BE USED AS THE *NORMAL PRESSURE CONTROL INPUT* (THE OTHER LESS NEEDY SENSORS WILL BE AT OR ABOVE IT'S *INDIVIDUAL SENSOR SETPOINT* IN THIS CONDITION). THE *INDIVIDUAL SENSOR SETPOINT* OF THE FLOOR LEVEL SENSORS SHALL BE THE DIFFERENTIAL PRESSURE REQUIRED TO MAINTAIN THE SCHEDULED GPM AT THE FLOOR'S COILS (AS MEASURED BY THE TAB AGENT) WITH ALL THE COIL CONTROL VALVES 90% OPEN IN THAT FLOOR'S SEGMENT OF THE BUILDING PIPING. THE *INDIVIDUAL SENSOR SETPOINTS* SHALL EACH HAVE THEIR OWN SEPARATE PROGRAMMED ENTRIES. THE *INDIVIDUAL SENSOR SETPOINTS* SHALL BE NO HIGHER THAN **12 PSID (ADJ).**
H. WHEN ONE PUMP HAS OPERATED AT FULL SPEED (**60 HZ (ADJ)**) FOR AT LEAST **10 MINUTES (ADJ.)** AND THE SYSTEM PRESSURE IS MORE THAN **2.0 PSID (ADJ.) LOWER** THAN THE *DIFFERENTIAL PRESSURE SETPOINT* FOR AT LEAST **10 MINUTES (ADJ.)** A SECOND PUMP SHALL BE ENABLED TO OPERATE IN PARALLEL WITH THE FIRST PUMP. WHEN MULTIPLE PUMPS ARE OPERATING, PUMPS SHALL RUN AT THE SAME SPEED AND MODULATE FROM **18 TO 60 HZ (ADJ.)** TO MAINTAIN THE REQUIRED *DIFFERENTIAL PRESSURE SETPOINT*.
I. WHEN TWO PUMPS ARE OPERATING BELOW MAX CUT-OUT SPEED (**40 HZ (ADJ)**) FOR AT LEAST **10 MINUTE (ADJ)** AND THE SYSTEM PRESSURE IS MORE THAN **2.0 PSID (ADJ) HIGHER** THAN THE *DIFFERENTIAL PRESSURE SETPOINT* FOR AT LEAST **5 MINUTES (ADJ.),** A SECOND PUMP SHALL BE DISABLED. DISABLE THE PUMP WITH THE MOST OPERATING HOURS.

5. CHILLED WATER SYSTEM BYPASS VALVE:
A. THE CHILLED WATER BYPASS VALVE SHALL MODULATE OPEN TO MAINTAIN THE SYSTEM FLOW RATE ABOVE THE REQUIRED MINIMUM FLOW RATE **(400 GPM PER CHILLER) (ADJ)** BASED ON THE QUANTITY OF OPERATING CHILLER(S). CONFIRM MINIMUM FLOW RATES IN WRITING WITH THE CHILLER MANUFACTURER.

6. CONDENSER WATER PUMPS:
A. WHENEVER A TOWER STARTS A CONDENSER WATER PUMP SHALL START. FAILURE OF LEAD PUMP SHALL START THE NEXT PUMP IN THE SEQUENCE. THE BAS SHALL DISPLAY RUNHOURS OF EACH PUMP AND DESIGNATE THE PUMP WITH THE LEAST HOURS AS THE LEAD PUMP AT EACH PUMP STARTUP.
B. WHENEVER THE *TANK LOW LEVEL CRITICAL LEVEL* IS REACHED, ALL CONDENSER PUMPS SHALL BE DISABLED AND AN ALARM GIVEN.
C. CWP SHALL MODULATE IN SPEED TO MAINTAIN A MINIMUM DIFFERENTIAL PRESSURE (ATMOSPHERIC REFERENCE) IN THE CWR HEADER FEEDING THE TOWER WARM WATER BASINS AT THE *DIFFERENTIAL SENSOR SETPOINT*.
D. WHEN MULTIPLE PUMPS ARE OPERATING, PUMPS SHALL RUN AT THE SAME SPEED AND MODULATE FROM **18 TO 60 HZ (ADJ)**
E. THE *DIFFERENTIAL SENSOR SETPOINT* SHALL BE THE DIFFERENTIAL PRESSURE REQUIRED TO MAINTAIN THE SCHEDULED GPM AT THE TOWER HOT WATER BASIN (AS MEASURED BY THE TAB AGENT). THERE SHALL BE THREE SEPARATE *INDIVIDUAL SENSOR SETPOINTS* EACH WITH THEIR OWN SEPARATE PROGRAMMED ENTRIES FOR THE CASES OF ONE, TWO, AND THREE TOWERS OPERATING. THE *INDIVIDUAL SENSOR SETPOINTS* SHALL BE NO HIGHER THAN **5.0 PSID (ADJ).**

SEQUENCE OF OPERATION (CONTINUED):

7. CHILLED BEAM PUMPS:
A. A CHILLED BEAM PUMP SHALL OPERATE 8,760 HOURS PER YEAR. GENERALLY, ONLY A SINGLE CHILLED BEAM PUMP IS OPERATING. CHILLED BEAM PUMPS SHALL OPERATE IN A LEAD-LAG ARRANGEMENT. FAILURE OF LEAD PUMP SHALL START THE NEXT PUMP IN THE SEQUENCE. THE BAS SHALL DISPLAY RUNHOURS OF EACH PUMP AND DESIGNATE THE PUMP WITH THE LEAST HOURS AS THE LEAD PUMP AT EACH PUMP STARTUP. CHILLED BEAM PUMPS SHALL ROTATE AS THE LEAD PUMP EVERY **750 HOURS (ADJ).**
B. THE *DIFFERENTIAL PRESSURE SETPOINT* SHALL BE DETERMINED AS FOLLOWS (FINAL *INDIVIDUAL SENSOR SETPOINTS* DETERMINED BY TAB) 90% THROUGH THE CB WATER PIPING SYSTEM. THE THREE SYSTEM DIFFERENTIAL PRESSURE SENSORS SHALL BE COMPARED AND THE SENSOR THAT IS THE MOST NEEDY (THE SENSOR WHICH IS BELOW IT'S *INDIVIDUAL SENSOR SETPOINT*) SHALL BE USED AS THE *NORMAL PRESSURE CONTROL INPUT* (THE OTHER LESS NEEDY SENSORS WILL BE AT OR ABOVE IT'S *INDIVIDUAL SENSOR SETPOINT* IN THIS CONDITION). THE *INDIVIDUAL SENSOR SETPOINT* OF THE FLOOR LEVEL SENSORS SHALL BE THE DIFFERENTIAL PRESSURE REQUIRED TO MAINTAIN THE SCHEDULED GPM AT THE FLOOR'S COILS (AS MEASURED BY THE TAB AGENT) WITH ALL THE COIL CONTROL VALVES 90% OPEN IN THAT FLOOR'S SEGMENT OF THE BUILDING PIPING. THE *INDIVIDUAL SENSOR SETPOINTS* SHALL EACH HAVE THEIR OWN SEPARATE PROGRAMMED ENTRIES FOR THE TAB AGENT) WITH ALL THE COIL CONTROL VALVES 90% OPEN IN THAT FLOOR'S SEGMENT OF THE BUILDING PIPING. THE *INDIVIDUAL SENSOR SETPOINTS* SHALL BE NO HIGHER THAN **12 PSID (ADJ).**
C. WHEN ONE PUMP HAS OPERATED AT FULL SPEED (**60 HZ (ADJ)**) FOR AT LEAST **10 MINUTES (ADJ.)** AND THE SYSTEM PRESSURE IS MORE THAN **2.0 PSID (ADJ.) LOWER** THAN THE *DIFFERENTIAL PRESSURE SETPOINT* FOR AT LEAST **10 MINUTES (ADJ.)** A SECOND PUMP SHALL BE ENABLED TO OPERATE IN PARALLEL WITH THE FIRST PUMP. WHEN MULTIPLE PUMPS ARE OPERATING, PUMPS SHALL RUN AT THE SAME SPEED AND MODULATE FROM **18 TO 60 HZ (ADJ.)** TO MAINTAIN THE REQUIRED *DIFFERENTIAL PRESSURE SETPOINT*.
D. WHEN TWO PUMPS ARE OPERATING BELOW MAX CUT-OUT SPEED (**40 HZ (ADJ)**) FOR AT LEAST **10 MINUTE (ADJ)** AND THE SYSTEM PRESSURE IS MORE THAN **2.0 PSID (ADJ) HIGHER** THAN THE *DIFFERENTIAL PRESSURE SETPOINT* FOR AT LEAST **5 MINUTES (ADJ.),** A SECOND PUMP SHALL BE DISABLED. DISABLE THE PUMP WITH THE MOST OPERATING HOURS.

CHILLED BEAM SYSTEM BYPASS VALVE:
A. THE CB WATER BYPASS VALVE SHALL MODULATE OPEN TO MAINTAIN THE CB SYSTEM FLOW RATE ABOVE THE REQUIRED MINIMUM FLOW RATE BASED ON THE WWHP AS DETERMINED FROM TEMPERATURES READINGS. IF THE WWHP CBR ENTERING WATER TEMPERATURE IS MORE THAN **1.0 °F (ADJ.)** LOWER THAN THE SYSTEM RETURN TEMPERATURE READING (INDICATING SHORT CIRCUITING DUE TO LOW SYSTEM FLOW OR THE SYSTEM LOAD BEING BELOW THE WWHP MINIMUM OPERATING LOAD) OPEN THE CB SYSTEM BYPASS VALVE AN ADDITIONAL **20% (ADJ.)** (ADDITIONAL IF IT IS ALREADY OPEN, OR OPEN IF IT WAS AT 0% OPEN). TUNE THIS SEQUENCE WITH THE WWHP MANUFACTURER STARTUP PERSONNEL.

B. SYSTEM BYPASS VALVE SHALL ALSO MODULATE OPEN TO MAINTAIN SYSTEM DIFFERENTIAL PRESSURE OF **2 PSID (ADJ)** ABOVE EFFECTIVE SYSTEM DIFFERENTIAL SET POINT WHEN A SINGLE OPERABLE PUMP IS AT MINIMUM SPEED. PUMP MINIMUM SPEED SHALL BE **18 HZ (ADJ)** UNLESS NOTED OTHERWISE.

8. CB SYSTEM TEMPERATURE CONTROL:
THE *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT* SHALL BE **58.0°F (ADJUSTABLE).** THE FOLLOWING EQUIPMENT AND OPERATING CONDITIONS ARE EACH RELATED TO THIS *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT*.

A. WHEN THE BUILDING IS ON EMERGENCY POWER:
  i. ACC IS TURNED ON. A GWP IS MODULATED IN SPEED TO PROVIDE THE ACC MAX FLOW RATE **(165 GPM)** AND CBP-4 IS MODULATED TO MAINTAIN THE CB SYSTEM SUPPLY TEMPERATURE TO BE THE *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT*.
  ii. WWHP IS OFF. CENTRIFUGAL CHILLERS ARE OFF. HE-2/CBP-5 IS OFF.

B. WHEN THE BUILDING IS NOT ON EMERGENCY POWER AND THE CENTRIFUGAL CHILLERS ARE OFF:
  i. WWHP CONTROLS NORMALLY (SUCH THAT IT IS PREFERENTIALLY LOADED).
  ii. HE-2/CBP-5 IS TURNED ON IF THE OAT ENABLES IT (SEE BELOW) AND THE CB SYSTEM SUPPLY TEMPERATURE IS HIGHER THAN THE *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT* **PLUS 1.0°F (ADJUSTABLE)** FOR AT LEAST **10 MINUTES (ADJ)** AND CBP-5 PUMP CONTROLS TO MAKE THE CB SYSTEM SUPPLY TEMPERATURE EQUAL TO THE *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT* **PLUS 0.5°F (ADJUSTABLE).** HE-2/CBP-5 IS TURNED OFF WHEN THE CBP-5 PUMPS SPEED IS LESS THAN **25 HZ (ADJ).**
  iii. ACC IS TURNED ON IF THE CB SYSTEM SUPPLY TEMPERATURE IS HIGHER THAN THE *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT* **PLUS 1.5°F (ADJUSTABLE)** FOR AT LEAST **10 MINUTES (ADJ)** AND CBP-4 PUMP CONTROLS TO MAKE THE CB SYSTEM SUPPLY TEMPERATURE EQUAL TO THE *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT* **PLUS 1.0°F (ADJUSTABLE).** ACC IS TURNED OFF WHEN THE ACC GLYCOL MEASURED TONNAGE IS LESS THAN **20 TONS (ADJ).**

C. WHEN THE BUILDING IS NOT ON EMERGENCY POWER AND THE CENTRIFUGAL CHILLERS ARE ON:
  i. WWHP CONTROLS NORMALLY (SUCH THAT IT IS PREFERENTIALLY LOADED). ACC IS OFF. HE-2/CBP-5 IS OFF.
  ii. CB SYSTEM TEMP CONTROL VALVE IS MODULATED TO MAKE THE CB SYSTEM SUPPLY TEMPERATURE EQUAL TO THE *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT* **PLUS 0.5°F (ADJUSTABLE).**

9. SIDESTREAM CONDENSER WATER FILTER:
A. THE CONDENSER WATER FILTER AND ASSOCIATED PUMP SHALL RUN CONTINUOUSLY ANYTIME A TOWER IS OPERATING AND BE DISABLED ANYTIME ALL TOWERS ARE OFF (NOT FLOWING WATER). PROVIDE A **ONE MINUTE (ADJUSTABLE)** DELAY AFTER TOWER PUMP STARTS PRIOR TO ENABLING THE CWF TO ALLOW THE PENTHOUSE PIPING TO FILL WITH WATER AND FLOOD THE SUCTION OF THE CWF PUMP.

10. WATER TO WATER HEAT PUMP (WWHP):
ENABLE: THE WWHP SHALL BE ENABLED TO BE OPERATIONAL 8,760 HOURS PER YEAR.
CALCULATE WWHP TONNAGE AS THE WWHP EVAPORATOR LEAVING TEMPERATURE (ACTUAL), WWHP EVAPORATOR ENTERING TEMPERATURE (ACTUAL), AND THE WWHP EVAPORATOR WATER FLOW AS INPUTS. TONNAGES TO BE CALCULATED IN REAL TIME AND DISPLAYED ON GRAPHICS.

A. THE WWHP SHALL BE STARTED VIA SIGNAL FROM THE BAS AND CONTROLLED VIA ITS INTEGRAL PACKAGED CONTROLS TO MAINTAIN A WWHP LEAVING CHILLED WATER (EVAPORATOR) TEMPERATURE OF THE *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT* **MINUS 1.0°F (ADJUSTABLE).** WWHP PACKAGED CONTROLS SHALL LIMIT THE WWHP LEAVING HEATING WATER TEMPERATURE TO A MAXIMUM OF **135°F (CONFIRM WITH MANUFACTURER'S MAXIMUM).**
i. THE WWHP RESPECTIVE CONDENSER PUMP HWP-4 AND EVAPORATOR PUMP CBP-3 SHALL START VIA SIGNAL FROM THE WWHP CONTROL PANEL WHENEVER THE WWHP IS ACTIVE.
ii. THE WWHP HW ISOLATION VALVE SHALL BE OPENED **THIRTY SECONDS (ADJ.)** PRIOR TO STARTING THE WWHP. THE WWHP HEATING WATER ISOLATION VALVE SHALL CLOSE IMMEDIATELY UPON THE WWHP BEING DISABLED AND HWP-4 PUMP IS STOPPED.

11. WWHP HYDRONIC PUMPS (CBP-3 AND HWP-4):
A. CBP SHALL MODULATE IN SPEED TO MAINTAIN:
  i. A MINIMUM DIFFERENTIAL PRESSURE ACROSS THE EVAPORATOR OF **10.0 PSID (ADJUSTABLE) PLUS *OFFSET*** AT ALL TIMES THE WWHP IS OPERATING.
  ii. THE *OFFSET* SHALL BE DETERMINED BASED ON HOW FAR THE CB SYSTEM SUPPLY TEMPERATURE IS FROM THE *BASIC CB SYSTEM SUPPLY WATER TEMPERATURE SETPOINT*.
    - *OFFSET

FUME HOOD EXHAUST VALVE SCHEDULE

TAG	UNIT INLET SIZE (IN)	NOTES
FHEV-1-106-1	10	
FHEV-1-106-2	10	
FHEV-1-106-3	10	
FHEV-1-109	10	
FHEV-1-112-1	10	
FHEV-1-112-2 FUTURE	10	
FHEV-1-121	10	
FHEV-1-143-FUTURE	10	
FHEV-1-146 FUTURE	10	
FHEV-1-150-1	10	
FHEV-1-150-2 FUTURE	10	
FHEV-1-220 FUTURE	10	
FHEV-1-226	10	
FHEV-1-227 FUTURE	10	
FHEV-1-231	10	
FHEV-1-325	10	
FHEV-1-328	10	
FHEV-1-332 FUTURE	10	
FHEV-1-333 FUTURE	10	
FHEV-1-337	10	
FHEV-1-338 FUTURE	10	
FHEV-1-420-1	10	
FHEV-1-420-2 FUTURE	10	
FHEV-1-423-1	10	
FHEV-1-423-2 FUTURE	10	
FHEV-1-423-3	10	
FHEV-1-424-1	10	
FHEV-1-424-2 FUTURE	10	
FHEV-1-427-1	10	
FHEV-1-427-2 FUTURE	10	
FHEV-1-427-3 FUTURE	10	
FHEV-1-428-1	10	
FHEV-1-428-2 FUTURE	10	
FHEV-1-434-1	10	
FHEV-1-434-2 FUTURE	10	
FHEV-1-435-1	10	
FHEV-1-435-2 FUTURE	10	
FHEV-1-436-1 FUTURE	10	
FHEV-1-436-2	10	
FHEV-1-437-1 FUTURE	10	
FHEV-1-437-2	10	
FHEV-1-437-3 FUTURE	10	
FHEV-1-523 FUTURE	10	
FHEV-1-530 FUTURE	10	
FHEV-1-531 FUTURE	10	
FHEV-1-537	10	
FHEV-1-538	10	
Grand total: 47		

ALL FHEV ARE ARE FURNISHED BY THE CONTROL SUPPLIER. FHEV ARE INSTALLED BY THE SHEETMETAL TRADES. FHEV ARE SIEMENS MODEL AVD WITH OPTIONS FOR: PVDF COATING OPTION, FLANGED END CONNECTIONS, STAINLESS STEEL PRESSURE TAPS, SPRING RETURN OPEN UPON LOSS OF POWER ACTUATOR WITH TWO SECOND FULL STROKE SPEED.

ALL FHEV WHOSE TAG ENDS WITH THE WORD "FUTURE" ARE NOT FURNISHED BY THE CONTROL SUPPLIER, NOR INSTALLED BY THE SHEETMETAL TRADES, NOR FURNISHED BY ANYONE ELSE AT THIS TIME (HENCE THE NAME "FUTURE"). PROVIDE IN THE BAS DESIGN FOR THE LANDING OF THESE FUTURE FHEV AND FUTURE FUME HOOD POINTS ON THE FURNISHED BAS EQUIPMENT AND THE CONTROLLING THESE FUTURE FHEV IN THE FURNISHED BAS PROGRAMMING.

LAB CONTROL SCHEDULE NOTES:

1. DUCT MOUNTED HEATING COILS IN LABS ARE NOT SCHEDULED ON THIS SHEET, SO THEY ARE NOT TO BE FURNISHED BY THE LABORATORY CONTROLS SUPPLIER, NOR ARE THEY FURNISHED BY THE ECC. SEE OTHER M SHEETS FOR WHO IS TO FURNISH THESE DUCT MOUNTED HEATING COILS.

2. THE TOTAL OF THE OCCUPIED LAB GENERAL EXHAUST AIR VALVE MINIMUM AND THE TRANSFER AIR EQUALS AT LEAST 6 ACH. THE TOTAL OF THE UNOCCUPIED LAB GENERAL EXHAUST AIR MINIMUM AND THE TRANSFER AIR EQUALS AT LEAST 4.0 ACH.

3. THE FINAL LGEV EXHAUST MINIMUM AIRFLOWS (OCCUPIED STATE AND UNOCCUPIED STATE) IS DETERMINED AFTER THE FINAL EH&S APPROVED FHEV SETTINGS ARE FINALIZED AND PUBLISHED. THE INITIAL LGEV SETTINGS SHOULD BE PROGRAMMED BASED ON THE INITIAL FHEV SETTINGS SCHEDULED AS SUCH:
   * ADD THE FINAL AIRFLOW SETTINGS OF ALL FUME HOODS WITHIN THE PARTICULAR LAB CONTROLS SYSTEM TOGETHER TO GET "SUM A".
   * ADD THE SCHEDULED LAB OCCUPIED MODE OFFSET TO THE QUANTITY "SUM A" TO YIELD "SUM B" FOR EACH SPACE. NOTE THAT ADDING AN "-100" OFFSET TO "SUM A" WILL RESULT IN "SUM B" BEING 100 CFM LESS THAN "SUM A".

4. INCLUDES THE SUM OF BOTH DAY ONE INSTALLED CHEMICAL FUME HOODS AND "FUTURE" INSTALLED CHEMICAL FUME HOODS. THE SUM IS THE TOTAL QUANTITY OF FHEV TO DESIGN THE LAB ROOM CONTROLLER TO CONTROL.

THIS TEMPERATURE CONTROL DRAWING IS FOR REFERENCE ONLY AND IS NOT TO BE USED AS A BASIS FOR BIDDING.

REFER TO THE CONTROLS SUPPLIER, SIEMENS BUILDING TECHNOLOGIES, INSTALLATION DRAWINGS, TO BE INCLUDED BY ADDENDUM, FOR THE BIDDING SCOPE OF THE CONTROL INSTALLATION CONTRACT.

LAB CONTROLS ROOM SCHEDULE (1)

LAB CONTROLS ZONE NUMBER	ROOM NUMBER	MINIMUM TOTAL LAB CONTROL SYSTEM SUPPLY AIRFLOW (CFM), OCCUPIED MODE (2)(3)	MINIMUM TOTAL LAB CONTROL SYSTEM SUPPLY AIRFLOW (CFM), UNOCCUPIED MODE (2)(3)	DESIGN QUANTITY CHEMICAL FUME HOODS PER LAB CONTROLS ZONE (4)	QUANTITY OF EQUIPMENT EXHAUST AIR VALVES PER LAB CONTROLS SYSTEM	TOTAL SUPPLY MINUS TOTAL EXHAUST LAB OCCUPIED MODE AND UNOCCUPIED MODE OFFSET (CFM)	COOLING ONLY CHILLED BEAMS VALVE	FINNED TUBE RADIATION VALVE	NOTES
106	103	720	525	THREE	NONE	- 75	NO	NO	
107	107	585	290	NONE	ONE	- 150	NO	NO	
108	107	1,220	765	NONE	ONE	- 150	NO	NO	
109	106	760	550	ONE	ONE	- 75	NO	NO	
110	106	1,035	760	NONE	ONE	- 75	NO	NO	
111	108A	560	410	NONE	NONE	- 50	NO	NO	
112	108A	430	310	TWO	ONE	- 50	NO	NO	
121	127	200	140	ONE	NONE	- 50	NO	NO	
122	113	75	20	NONE	NONE	- 50	NO	NO	
124	111	75	20	NONE	NONE	- 50	NO	NO	
130	118	400	400	NONE	NONE	NEUTRAL	YES	NO	
131	118	400	400	NONE	NONE	NEUTRAL	YES	NO	
143	108B	230	160	ONE	NONE	- 50	NO	NO	
144	108BA	300	300	NONE	NONE	NEUTRAL	NO	NO	
146	118A	95	80	ONE	NONE	- 50	NO	NO	
147	118B	120	120	NONE	NONE	PLUS 50	NO	NO	
148	118C	130	130	NONE	NONE	PLUS 50	NO	NO	
150	103	1,050	770	TWO	NONE	- 75	NO	NO	
219	227N	90	65	NONE	NONE	NEUTRAL	NO	NO	
220	227M	170	110	ONE	ONE	- 75	NO	NO	
221	227L	250	185	NONE	NONE	NEUTRAL	NO	NO	
223	227JB	105	80	NONE	NONE	NEUTRAL	NO	NO	
224	227JA	140	105	NONE	NONE	NEUTRAL	YES	NO	
225	227J	170	110	NONE	ONE	- 75	YES	NO	
226	227H	430	305	ONE	ONE	- 75	NO	NO	
227	227G	665	475	ONE	ONE	- 100	NO	NO	
228	227F	430	305	NONE	ONE	- 75	YES	NO	
229	227E	395	240	NONE	ONE	- 75	YES	YES	
230	227D	155	85	NONE	ONE	- 75	YES	YES	
231	227C	660	450	ONE	ONE	- 100	YES	YES	
232	227	425	425	NONE	NONE	PLUS 425	NO	NO	NO LGEV IN THIS ZONE
234	227A	350	350	NONE	NONE	NEUTRAL	NO	NO	
324	327F	90	65	NONE	NONE	NEUTRAL	NO	NO	
325	327	485	345	ONE	NONE	- 75	NO	NO	
326	327E	180	135	NONE	NONE	NEUTRAL	YES	NO	
327	327D	180	135	NONE	NONE	NEUTRAL	NO	NO	
328	327	655	475	ONE	ONE	- 75	NO	NO	
329	327	610	440	NONE	ONE	- 75	NO	NO	
330	327C	130	85	NONE	ONE	PLUS 50	YES	NO	
331	327B	60	60	NONE	NONE	NEUTRAL	NO	NO	
332	327	750	525	ONE	ONE	- 75	YES	YES	
333	327	945	620	ONE	ONE	- 75	YES	YES	
335	327A	350	350	NONE	NONE	NEUTRAL	NO	NO	
337	327	525	395	ONE	NONE	NEUTRAL	NO	NO	
338	327	515	390	ONE	ONE	NEUTRAL	NO	NO	
405	407	725	545	NONE	NONE	NEUTRAL	NO	NO	
419	427H	90	65	NONE	NONE	NEUTRAL	NO	NO	
420	427	345	240	TWO	NONE	- 75	NO	NO	
421	427G	180	135	NONE	NONE	NEUTRAL	YES	NO	
422	427F	180	135	NONE	NONE	NEUTRAL	NO	NO	
423	427	340	235	THREE	NONE	- 75	NO	NO	
424	427	1,005	755	TWO	ONE	NEUTRAL	NO	NO	
425	427E	130	85	NONE	NONE	PLUS 50	YES	NO	
426	427D	180	135	NONE	NONE	NEUTRAL	NO	NO	
427	427	450	320	THREE	NONE	- 75	NO	NO	
428	427	790	480	TWO	ONE	NEUTRAL	NO	YES	
429	427C	350	350	NONE	NONE	NEUTRAL	NO	YES	
430	407	725	695	NONE	NONE	PLUS 150	NO	NO	
431	427B	245	185	NONE	NONE	NEUTRAL	NO	NO	
434	427	215	145	TWO	NONE	- 75	NO	YES	
435	427	280	210	TWO	NONE	NEUTRAL	NO	YES	
436	427	400	270	TWO	NONE	- 125	NO	NO	
437	427	765	575	THREE	ONE	NEUTRAL	NO	NO	
502	504	1,000	1,000	NONE	NONE	NEUTRAL	NO	NO	
507	504A	115	85	NONE	NONE	NEUTRAL	YES	NO	
508	504B	120	90	NONE	NONE	NEUTRAL	YES	NO	
509	504	1,000	1,000	NONE	ONE	NEUTRAL	NO	NO	
521	527	585	400	NONE	ONE	- 150	NO	NO	
522	527J	90	65	NONE	NONE	NEUTRAL	NO	NO	
523	527	480	345	ONE	NONE	- 75	NO	NO	
524	527H	180	135	NONE	NONE	NEUTRAL	YES	NO	
526	527	615	430	NONE	ONE	- 125	NO	NO	
528	527F	180	180	NONE	ONE	PLUS 50	YES	NO	
529	527E	180	135	NONE	NONE	NEUTRAL	NO	NO	
530	527	780	570	ONE	ONE	- 75	YES	YES	
531	527	1,070	595	ONE	ONE	- 75	YES	YES	
532	527D	490	365	NONE	NONE	NEUTRAL	YES	NO	
533	527C	350	350	NONE	NONE	NEUTRAL	NO	NO	
534	509	725	695	NONE	NONE	PLUS 150	NO	NO	
535	527B	255	190	NONE	NONE	NEUTRAL	NO	NO	
536	504	1,075	1075	NONE	ONE	- 75	NO	NO	
537	527	435	325	ONE	NONE	NEUTRAL	NO	NO	
538	527	505	380	ONE	NONE	NEUTRAL	NO	NO	
540	509	725	695	NONE	NONE	PLUS 150	NO	NO	

(7)

BSA LifeStructures
175 S. Rangeline Rd, Suite 200
Carmel, IN 46032
ph 317.819.7878 fx 317.819.7288

SMITHGROUP

500 GRISWOLD
SUITE 1700
DETROIT, MI 48226
313.983.3600
smithgroup.com

LAUNCH ACCELERATOR FOR BIOSCIENCES

INDIANAPOLIS, INDIANA

CLIENT PROJECT NO. - 20250072

CUMULATIVE DOCUMENTS

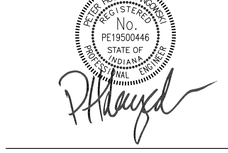
BP4-CD: BUILD-OUT PACKAGE



KEYPLAN
PROJECT NORTH
REFER TO CIVIL DRAWINGS FOR TRUE NORTH

ISSUED / REVISIONS SCHEDULE

MARK	DATE	DESCRIPTION
7	5/1/2026	BP4-CD: Addendum 03
6	4/27/2026	BP4-CD: Addendum 02
5	4/20/2026	BP4-CD: Addendum 01
3	3/30/2026	BP4-CD: BUILD-OUT PACKAGE



LAB CONTROL SCHEDULES AND DIAGRAMS

DATE **REF: SHEET INDEX**

BSA PROJECT NO. **00360481**

M808A

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F.A.WILHELM
CONSTRUCTION



Indiana University

PROJECT BID MANUAL

IU Launch Accelerator for Biosciences

Indianapolis, IN

FAWILHELM.COM

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Indiana University

1. INSTRUCTIONS TO BIDDERS

IU Launch Accelerator for Biosciences

Indianapolis, IN

Project Team

Project:	**IU Launch Accelerator for Biosciences** **Project #20250072** **Indianapolis, IN**
Owner:	The Trustees of Indiana University 2901 East Discovery Parkway Bloomington, IN 47408
Construction Manager:	F.A. Wilhelm Construction Co., Inc. 3914 Prospect Street, Indianapolis Indiana
Architect: (BSA) (Smithgroup)	BSA Lifestructures + Smithgroup 175 S. Rangeline Rd, Suite 200, Carmel, IN 46032 500 Griswold, Suite 1700, Detroit, MI 48226
Structural Engineer:	JPS Consulting Engineers 9365 Counselor's Row, Suite 116, Indianapolis, IN 46240
Mechanical/Electrical Engineer:	BSA Lifestructures 175 S. Rangeline Rd, Suite 200, Carmel, IN 46032
Site/Civil Engineer:	JPS Consulting Engineers 9365 Counselor's Row, Suite 116, Indianapolis, IN 46240
Landscape Architecture:	Terra Engineering 225 W. Ohio St., Chicago, IL 60654

NOTICE TO BIDDERS

Project: IU Launch Accelerator for Biosciences #20250072

F.A. Wilhelm Construction Company and the Trustees of Indiana University will receive bids for the IU Launch Accelerator for Biosciences project as indicated in the Construction Managers Bidding Manual. Bid Event #04 will include the following list of bid packages. The anticipated construction start date is December 2025 and substantial completion by May 2027, with final completion by September 2027.

All interested bidders can contact Shari Bernhardt at ShariBernhardt@fawilhelm.com to receive ITB through Building Connected or go to www.fawilhelm.com/bid-board/.

See critical dates & times listed below (all local time):
Documents Available: April 6th, 2026
Pre-Bid Meeting: April 13th, 2026, at 2:00 PM EST
Bids Due: May 5th, 2026 @ 2:00 PM EST
Public Bid Opening: May 5th, 2026 @ 2:00 PM EST

BID PACKAGES (BID EVENT #04)

- BE4-01A – General Trades
- BE4-05A – Decorative Railings
- BE4-06A – Finished Carpentry (Furnish)
- BE4-06B – Translucent Panel
- BE4-07A – Joint Sealants
- BE4-08A – Hollow Metal Doors, Frames, & Hardware (Furnish)
- BE4-08B – Interior Glass & Glazing
- BE4-08C – Fire Curtains
- BE4-09A – Terrazzo
- BE4-09B – Tile
- BE4-09C – Soft Floring
- BE4-09D – Painting & Wallcoverings
- BE4-09E – Sealed Concrete & Epoxy Flooring
- BE4-10A – Toilet Partitions & Bathroom Accessories (Furnish)
- BE4-10B – Lockers (Furnish)
- BE4-10C – Wall Protection (Furnish)
- BE4-10D – Visual Display Units (Furnish)
- BE4-10E – Operable Partitions (Furnish)
- BE4-10F – Signage (Interior ~~& Exterior)~~
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- BE4-32B – Bike Racks (Furnish)
- BE4-32C – Bus Shelter
- BE4-32D – Site Railings

INSTRUCTIONS TO BIDDERS

1. General
    a. F.A. Wilhelm Construction will receive sealed bids for the Bid Packages included herein on Tuesday, January 20th until 2:00 PM EST. Bids will be received through IU's Plan Room **(**www.iuplanroom.com**)**.
    b. LATE BIDS WILL NOT BE ACCEPTED.
    c. The Bidding Documents consist of the following:
        - Construction Documents
        - Exhibits
        - Forms
        - Addenda, Bulletins, and additional supplemental information
    d. The Bidding Schedule is as follows:

Bid Documents Available	April 6th, 2026
Pre-Bid Meeting	April 13th, 2026 @ 2:00 PM EST
Pre-Bid RFIs and Substitution Requests Due	April 22nd, 2026
Bids Due	May 5th, 2026 @ 2:00 PM EST

        1. Bids will be received electronically through IU's Plan Room **(**www.iuplanroom.com**)**.
        2. Bids can be turned in prior to 2:00 PM EST on May 5th, 2026.
        3. Bids Received via IU's Plan Room will be virtually opened and read out loud promptly following the bid deadline.

2. Bids
    a. Bids shall be submitted on the enclosed Bid Form produced by F.A. Wilhelm Construction and will be subject to all requirements of the Bid Documents.
    b. By Submitting a Bid, the Bidder Represents that:
        - They have visited the site and/or become familiarized with local conditions under which the work shall be performed.
        - The Contract Documents have been reviewed and may not necessarily indicate all the work required for the performance or completion of the work. Contractor shall furnish and install items required for proper completion of the work without adjustments to price. Work shall be structurally sound, of quality construction and Contractor shall be responsible for the inclusion of adequate labor and materials to cover the proper and timely installation of the scope of work described or implied.
    c. Bidders shall identify personnel, equipment and subcontractors as requested in Bid Form Attachment 3 – Supplemental Information.
    d. Bid price shall be firm and not subject to escalation.
    e. Bid price shall be valid for sixty (60) days and alternates may be held for a period not to exceed ninety (90) days before award and incorporation into the contract by proper Change Directive.

3. Mandatory Electronic Bid Submission
    a. Only Bids submitted electronically through the IU Plan Room website by 2:00 PM on bid day will be valid – www.iuplanroom.com.
    b. All electronic bid submissions are required to contain all applicable bid forms and documents required by this Bid Manual.
    c. Bidders must be registered on the IU plan room, and signed into the plan room, in order to submit a bid.
        - Go to www.iuplanroom.com and click on the *Sign In/Register* tab. If you are not already registered on IU Plan Room, you must create a User ID and Password and be signed in to submit your bid.
        - Click on the project listing.
        - Click on *Submit Bid* next to the job name on the information tab. Attach bid form and required supplemental bid documents per this Bidding Manual and project specifications.
        - Click on *Submit Bid* at the bottom of the screen.
        - You will receive a confirmation screen, stating that, "Your Bid Submission has been saved successfully," as well as an email confirmation, indicating your submission was received.

          For assistance with uploading, please contact Eastern Engineering:
            - FishersPlanRoom@easternengineering.com Phone: 317-598-0661, Ext. 313

    d. Save your completed Bid Form and additional required bid forms in PDF format. All Bid documents may be scanned into one pdf. Title your bid as follows:

       "[your company name] – Bid for IU Project_20250072 – IU Launch Accelerator for Biosciences - [Bid Package Number]"

    e. Bids Received electronically through the IU Plan Room will be virtually opened and read out loud at 2:00 PM EST on May 5th, 2026. To attend the virtual Bid Opening, click the Zoom link: https://iu.zoom.us/j/82623978895

       Meeting ID: 826 2397 8895

       Join By Telephone: 312-626-6799

    f. To view bid results after the bid opening, click on VPCPF Construction Procurement Bid Tabs & Awards on the home page of the plan room website.

    g. To be considered a responsive bid, each electronic submittal shall contain the following items:
        - Bid Form Attachment 1 – Bid Package Standard Bid Form
        - Bid Form Attachment 2 – Combined Bid Form (if applicable)

- Bid Form Attachment 3 – Supplemental Information
- Bid Form Attachment 4 – Form 96
- Bid Form Attachment 5 – Subcontractor Qualification Form
- Bid Form Attachment 6 – Contractor Asbestos Certification
- Bid Bond or certified check in the amount of five percent (5%) made payable to F.A. Wilhelm Construction Co., Inc on bids over $150,000
    1. Bids bonds must be compatible to AIA A201-2017.

h. **Late bids will not be accepted.** All bids are sealed until the public virtual bid is opened.

i. Bid Submission requirements vary depending on contract values.
    - All other bidding requirements as specified in these Instructions to Bidders still apply including but not limited to: State Form 96, Bid Form, Bid Form Attachments, etc.
    - Exceptions:
        1. Bid amount less than $150,000
            a. Indiana State Form 96 is still required to be filled out.
        2. Bid amount more than $150,000
            a. Shall submit a written drug plan.

4. Prequalification of Bidders

    a. All bidders will be required to complete the FA Wilhelm Subcontractor Qualification Form with their submission of a bid proposal.

    b. F.A. Wilhelm Construction reserves the right to receive and review financial statements during the bidding process and throughout the duration of the project.

5. Access to Bidding Documents

    a. Access to bidding documents will be provided by FA Wilhelm through the Building Connected website and invited Bidders will be able to access, view, download, and print documents.

    b. Documents can also be accessed via the IU Plan Room at www.iuplanroom.com.

    c. Bidders must contact FA Wilhelm Construction in order to access the bidding documents through the Building Connected project site and receive bidder communication.

    d. Contact Shari Bernhardt at ShariBernhardt@fawilhelm.com with inquiries regarding use of the Building Connected Project Site.

6. Pre-Bid Meeting

    a. A Virtual Pre-Bid meeting will be held on Monday, April 13th, 2026. The pre-bid meeting will be held at 2:00 PM. Link to Zoom Meeting https://iu.zoom.us/j/81575378835

        - Meeting ID: 815 7537 8835

b. Prebid is not mandatory but strongly encouraged. Bidders will be responsible for information provided during the Pre-Bid Meeting and items observable during the project site walk-through regardless of attendance.

7. Bidding Requests for Information (RFI) and Addendum

   a. Bidders shall promptly notify F.A. Wilhelm Construction in writing of any conflicts, discrepancies, or errors in the bidding documents. All Pre-Bid RFI's need to be in a formal written format and can be submitted directly through email to ShariBernhardt@FAWilhelm.com or the Building Connected messages tab.

   b. All requests for Information and substitution requests must be submitted in writing no later than April 22nd, 2026.

   c. Bidders will be notified of responses to Requests for Information and Substitutions collectively via Addendum through the Building Connected website and IU's Plan Room.

8. Sales Tax

   a. Bidders shall exclude Indiana Gross Retail Sales Tax and Federal Excise Tax on all materials, products or equipment incorporated into the project.

   b. All other applicable Indiana Gross Retail and Indiana Use Taxes for consumables, materials, supplies and rental equipment shall be included in the bid.

9. Schedule

   a. Time is of the essence in the execution of the work of this project. Therefore, sufficient labor and materials must be provided at all times to meet the project schedule. Subcontractor shall take whatever steps necessary, including additional manpower, equipment, overtime, shifts, etc. at its sole cost and expense to perform its work in a timeframe and sequence to meet the Project Schedule which is included in this Bid Manual.

10. Post-Bid Information

    a. Post-Bid scope review meetings will be held with bidders to identify the lowest responsible and responsive bidder by F.A. Wilhelm Construction and the Owner.

    b. Bidders should be prepared to discuss key personnel (both the office and on the jobsite), equipment, materials and schedule for the Project.

11. Equal Employment Opportunity

    a. Bidders shall comply with F.A. Wilhelm Construction's EEO Statement.

12. Diversity Business Participation Goals

    a. Indiana University has the following goals for inclusion of diverse business and suppliers:

       Minority Owned Business Goal – 7% participation

Women Owned Business Goal – 5% participation

Veteran Owned Business Goal – 3% participation

b. Diverse contractors must be certified with the State of Indiana and must be listed on the IDOA Directory:

https://www.in.gov/idoa/mwbe/minority-and-womens-business-enterprises/participation-goals/

13. LEED Participation Goals

a. Gold Standard



Indiana University

2. BID FORMS

IU Launch Accelerator for Biosciences

Indianapolis, IN

BID FORM ATTACHMENT 1 – BID PACKAGE STANDARD BID FORM

1.1 PROJECT: 20250072 IU Launch Accelerator for Biosciences

1.2 FROM:

Company: _____

Address: _____

Contact: _____

Phone: _____

Email: _____

Date: _____

State License Number (if applicable): _____

1.3 Submitted through IU PLAN ROOM.

"[your company name] – Bid for IU Project_20250072 – IU Launch Accelerator for Biosciences - [Bid Package Number and Name]"

1.4 BASE BID

Total Bid price for all work, complete, in accordance with the Bidding Documents:

Bid Package Name and Number:

_____

Bid Amount (in words):

_____

Dollars: $ _____

1.5 ALTERNATES (CIRCLE ADD OR DEDUCT WHEN APPLICABLE)

1.	Alternate #1: Resinous Epoxy Flooring System	ADD/DEDUCT: $_____
2.	Alternate #2: Wood Slat Walls	ADD/DEDUCT: $_____
3.	Alternate #3: Payment and Performance Bond	ADD/DEDUCT: $_____
4.	Alternate #4: Installation of Toilet Accessories & Partitions	ADD/DEDUCT: $_____
5.	Alternate #5: Vinyl Sheet Flooring in Labs	ADD/DEDUCT: $_____
6.	Alternate #6: Resin Panel Fabrication	ADD/DEDUCT: $_____
7.	Alternate #7: Installation of Lockers	ADD/DEDUCT: $_____
8.	Alternate #8: Installation of Wall Protection	ADD/DEDUCT: $_____
9.	Alternate #9: Installation of Bike Racks	ADD/DEDUCT: $_____
10.	Alternate #10: Installation of Hollow Metal Doors, Frames, & Hardware	ADD/DEDUCT: $_____
11.	Alternate #11: Installation of Millwork/Finished Carpentry	ADD/DEDUCT: $_____

12. Alternate #12: Installation of Operable Partitions ADD/DEDUCT: $_____

1.6 DIVERSITY PARTICIPATION

Value of diversity participation included in your base bid, in accordance with the Bidding Documents. Companies must be **certified** with State of Indiana to qualify, please visit: https://www.in.gov/idoa/mwbe/minority-and-womens-business-enterprises/participation-goals/

MBE $_____ _____%

WBE $_____ _____%

VBE $_____ _____%

1.7 ACKNOWLEDGEMENTS

A. Documents and correspondence shall be submitted as indicated within the Bid Documents.

B. Construction Manager Reserves the Right to reject any and all Bids at their sole discretion.

C. Proposals to remain valid for 90 days from receipt of bid.

D. Bidder has included all resources required to comply with the Project Schedule.

E. RECEIPT OF ADDENDA

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

Addendum No. _____ Dated _____

F. Information to be provided with Bid Proposal:

- Bid Form Attachment 2 – Combined Bid Form (if applicable)
- Bid Form Attachment 3 – Supplemental Information
- Bid Form Attachment 4 – Subcontractor Qualification Form
- Bid Form Attachment 5 – Form 96
- Bid Form Attachment 6 – Contractor Asbestos Certification

G. **The undersigned, do hereby declare that I/we have carefully examined the Site of the proposed Work, have thoroughly examined the Bid Documents, and do hereby agree to furnish and/or install, as specified in the bid package, all materials, transportation, equipment, labor, supervision, tools and all other items necessary to do all Work in strict accordance with the Bid Documents.**

Signed By: _____

(Member of Firm Authorized to Sign Bid)

Title: _____Date: _____

BID FORM ATTACHMENT 2 – COMBINED BID FORM

PROJECT: #20250072 IU Launch Accelerator for Biosciences

BIDDER: _____ DATE: _____

All Bidders have the option of offering a combined bid for multiple bid packages. Bid Package Standard Bid Forms must be submitted for all bid packages included in the Combined Bid in addition to the Combined Bid Form.

Total Combined Bid price for all work, complete, in accordance with the Bidding Documents:

Bid Package Name and Number: _____

Bid Package Name and Number: _____

Bid Package Name and Number: _____

Bid Package Name and Number: _____

Bid Package Name and Number: _____

Bid Package Name and Number: _____

Combined Bid Amount: Dollars $ _____

A. **The undersigned, do hereby declare that I/we have carefully examined the Site of the proposed Work, have thoroughly examined the Bid Documents, and do hereby agree to furnish and/or install, as specified in the bid package, all materials, transportation, equipment, labor, supervision, tools and all other items necessary to do all Work in strict accordance with the Bid Documents.**

Signed By: _____

(Member of Firm Authorized to Sign Bid)

Title: _____Date: _____

BID FORM ATTACHMENT 3 – SUPPLEMENTAL BID INFORMATION

PROJECT: #20250072 IU Launch Accelerator for Biosciences

BIDDER: _____ DATE: _____

BID PACKAGE: _____

Bidder shall include the requested supplemental bid information for all Bid Packages.

A. PROPOSED STAFF

Name and Title	% On-Site

B. MAJOR EQUIPMENT *(individual pieces of equipment over $10,000.00)*

Equipment and Manufacturer	Quantity	Lead Time

C. TIERED AND/OR DIVERSE SUBCONTRACTS AND SUPPLIERS

Scope of Work	Supplier/Sub	Value	XBE (Y/N)	XBE Type

BID FORM ATTACHMENT 3 – SUPPLEMENTAL BID INFORMATION

Signed By: _____
(Member of Firm Authorized to Sign Bid)

Title: _____ Date: _____

BID FORM ATTACHMENT 4 – SUBCONTRACTOR QUALIFICATION FORM

(Also available as a separate attachment in Building Connected)

F.A.WILHELM CONSTRUCTION

#20250072 IU Launch Accelerator for Biosciences
Subcontractor/Supplier Qualification Form

General Business Information						Part 1
Legal Business Name:					Date:	
Street Address:			*Mailing Address:*			
City:	State:	Zip:	*City:*		*State:*	*Zip:*
Former Business Name (if applicable):						
Street Address:			*Mailing Address:*			
City:	State:	Zip:	*City:*		*State:*	*Zip:*
Telephone:		Fax:		Website Address:		
Contractor's License #:		State:		Expiration:		
State Sales Tax Registration #:		State Unemployment #:		Federal ID #:		

Primary Contact Info	
Contact Name:	Title:
Telephone:	Location:
Email:	

Secondary Contact Info *(If applicable)*	
Contact Name:	Title
Telephone:	Location:
Email:	

Contractor Type	☐General Contractor ☐Sub-Contractor ☐Supplier ☐Other	
Business Type	☐Corporation ☐ Sole Proprietorship ☐Partnership ☐LLC/LLP ☐Other	
Union Affiliation	☐Yes ☐ No *(*) If yes, please list all unions that your company is signatory with*	Signatory Unions: 1.)_____ 4.)_____ 2.)_____ 5.)_____ 3.) 6.)

Type of Work			Construction Divisions & CSI Codes-*all that apply*
☐Commercial	☐Healthcare	☐Education	1._____ 2._____ 3._____ 4._____ 5._____
☐Industrial	☐Hospitality	☐Other *(Specify)* _____	

Contract Size	Area of Operation
-Maximum contract amount your company can effectively manage? ($)\_\_\_\_\_ -What is the largest dollar volume on a single contract that you have performed over the past 3 years? ($) _____ -Largest Project completed in the past 3 years? ($)\_\_\_\_\_ -What percentage of work does your company sub-contract on a typical job? ($)_____	☐Metro Indianapolis ☐Indiana ☐Central Indiana ☐NE Indiana ☐NW Indiana ☐SE Indiana ☐Illinois ☐Kentucky ☐Michigan ☐Ohio ☐Nationwide ☐International

F.A.WILHELM CONSTRUCTION

Company Certifications *(*)*	
☐MBE ☐WBE ☐DBE ☐VOSB ☐SBE ☐JSEB ☐Other_____ Certified by: ☐Federal ☐State ☐City ☐DOT ☐Other Expiration:_____/_____/_____	List any other certifications: _____ _____

(*) If requested, please provide a copy of current certification with Pre-Qualification form

Licenses/Product Certifications (*)	
State License Numbers	City License Number
Indiana Department of Administration (IDOA) License Number_____ Expiration Date_____ Indiana Department of Administration (INDOT) License Number_____ Expiration Date_____ ***(*) Please attach current IDOA and/or INDOT Certification***	City of _____ License Type: _____ License Number_____ Expiration Date_____ City of _____ License Type: _____ License Number_____ Expiration Date_____ ***(*) Please attach current City Certification and/or license***

(*) If requested, please provide any documentation which substantiates licenses.

Trade Specific License	
Trade_____	Trade_____
License Number _____	License Number _____

(*) If requested, please provide any documentation which substantiates trade licenses.

Legal Questionnaire *(*) if the answer to any of these questions is 'yes'-please include details in the spaces provided*	**Part 2**
Please list any litigation, pending or resolved, that has been brought against your company within the past 5 years. Please describe the circumstances of the litigation and provide the names of the parties to the litigation:	
Has your organization ever failed to complete work awarded to it? If yes, explain the circumstances for failing to complete the work.	☐ Yes ☐ No
Comments:	
Are there any judgments, claims, arbitration, proceedings, or suits pending or outstanding against your organization or its officers?	☐ Yes ☐ No
Comments:	
Has your organization filed any law suits or requested arbitration with regard to construction contracts within the past 5 years? Please describe the circumstances of the law suits or arbitrations and provide the names of the parties involved:	☐ Yes ☐ No
Comments:	
Within the past 5 years, has any officer or principle of your organization ever been an officer or principle of another organization when it failed to complete a construction contract? If yes, explain the circumstances for failing to complete the work.	☐ Yes ☐ No
Comments:	

F.A.WILHELM CONSTRUCTION

Architect or Engineer/ Contractor/Supplier Trade References	Part 3

Architect/Engineer Name 1: _____ Company Contact: _____
Address: _____ Phone Number: _____
Comments: _____

Architect/Engineer Name 2: _____ Company Contact: _____
Address: _____ Phone Number: _____
Comments: _____

Contractor Name 1: _____ Company Contact: _____
Address: _____ Phone Number: _____
Comments: _____

Contractor Name 2: _____ Company Contact: _____
Address: _____ Phone Number: _____
Comments: _____

Supplier Name 1: _____ Company Contact: _____
Address: _____ Phone Number: _____
Comments: _____

Supplier Name 2: _____ Company Contact: _____
Address: _____ Phone Number: _____
Comments: _____

Trade/Professional Associations: ***list any associations your company participates in***

Name	*Member Since*	*Awards/Recognition*	*Comments*

Safety Questionnaire (*)	Part 4

OSHA Year	EMR Rate	Total Recordable Injury Rate (*TRIR)	Lost Time Case Rate (*)	OSHA or IOSHA Citations (#)
2024				
2023				
2022				
2021				

OSHA Year	Work Related Fatalities (Column G)	Number of Lost Restricted Workdays (Column H+I)	Number of Medical Treatment Cases (Column J)
2024			
2023			
2022			
2021			
Totals			

F.A.WILHELM CONSTRUCTION

Do you have an OSHA compliant safety program in place? ☐ Yes ☐ No

Do you have a designated safety officer at your company? ☐ Yes ☐ No

Does this person conduct safety inspections on all job site(s)? ☐ Yes ☐ No

Have you implemented a hazardous communication plan(s)? ☐ Yes ☐ No

Have you implemented a drug testing program? ☐ Yes ☐ No

Do you have a light-duty program? ☐ Yes ☐ No

Do you review the safety procedures, and history of any sub-contractor you work with? ☐ Yes ☐ No

Do you provide safety training to all employees? ☐ Yes ☐ No

Would you allow an audit of your company manuals relating to safety policy/procedure? ☐ Yes ☐ No

Please describe the safety training provided to the employees and whether it is provided in-house or through a third party:

_____

_____

List OSHA or IOSHA citations received in the last 5 years that required fines to be paid. Provide the year, the citation and the amount of the fine:

_____

_____

(*)If requested, please provide along with this Pre-Qualification form any documentation that substantiates the requested information in the safety questionnaire above. Including but not limited to; OSHA logs, citation records, Worker's Compensation EMR verification, Safety Programs, Fall Prevention / Protection program, Hoisting & Rigging programs and current PICS certification.
(*) To calculate TRIR rate combine columns G, H, J and J from OSHA form 300 x (200,000)/Employee Hours Worked.
(*) To calculate Lost Time Case Rate use column H from OSHA form 300 x (200,000)/Employee Hours Worked.

Insurance Information (*)		**Part 5**
Insurance Agency:	Phone: ( )	
Insurance Contact Name:	Fax: ( )	
Street Address:		
City:	State:	Zip:

Insurance Plan		**Insurance Carrier**	**Max Obtainable Coverage ($)**	**Plan Deductible**	**Expiration**
Worker's Compensation	☐ Yes ☐ No		($)		
General Liability	☐ Yes ☐ No		($)		
Excess Liability	☐ Yes ☐ No		($)		
Auto Liability	☐ Yes ☐ No		($)		
Professional Liability	☐ Yes ☐ No		($)		
Other	☐ Yes ☐ No		($)		

(*)If requested, please include a copy of your current insurance certifications

F.A.WILHELM
CONSTRUCTION

Banking/Financial (*)			Part 6
Bank Name:		Contact Name:	
Phone: ( )		Line of Credit Amount: ($)	
Amount Available: ($)		Secured: ☐ Yes ☐ No	
Description of Collateral:		Personal ☐ Yes ☐No	
What is your current backlog of work?		D-U-N-S #:	
Please provide annual revenue for the past 3 years			
Year	**2024**	**2023**	**2022**
Revenue	($)	($)	($)

-On a separate sheet, list any major construction projects your organization has in progress, giving the name of project, contract amount, and scheduled completion date.

-On a separate sheet, list the major projects your organization has completed in the past 5 years.

(*)If requested, please provide along with this Pre-Qualification form the last 3 year end audited financial statements (with footnotes), along with the most recent interim financial statement including balance sheets and audited income statements.

Bonding/Surety Information (*)		Part 7
Agent's Name:	Bonding/Surety Company:	
Phone: ( )	Bonding Capacity: Total: ($)	Per Job: ($)
Personal Guarantee: ☐ Yes ☐ No	Dollar value of bonded work on hand: ($)	

(*)If requested, please provide along with this Prequalification form a bondability letter from your surety indicating per job and aggregate bonding capacity and also current available capacity.

F.A.WILHELM CONSTRUCTION

Experience	Part 8

How many years has your company been in business? _____

Has your company worked for F.A. Wilhelm Construction Co., Inc. in the last 5 years?_____ ☐ Yes ☐ No
(If yes, please indicate below.)

Project A _____ F.A. Wilhelm Construction Co., Inc. Contact _____

Project B _____ F.A. Wilhelm Construction Co., Inc. Contact _____

Project C _____ F.A. Wilhelm Construction Co., Inc. Contact _____

Please select the average contract size your office most typically performs for the trade package you intend to bid:

_____ $1 - $100,000

_____ $100,000 - $500,000

_____ $500,000 – 1,000,0000

_____ $1,000,000 – 5,000,000

_____ $5,000,000 <

- Please describe the training and/or apprentice program that your employees receive to become a competent/skilled craft persons in the trades that you perform. Include the types of classes and training provided and the number of years of the program. If the training is provided by a third party organization, please provide the name of such organization.

  _____

  _____

  _____

- If during the course of the project, you were to fall behind schedule requiring adding competent/trained personnel to recover, what is your source for obtaining these workers and how quickly can they be obtained?

  _____

  _____

  _____

F.A.WILHELM CONSTRUCTION

Project Details	Part 8A
Please provide at least five projects of relevant experience for <u>each</u> trade package that your company intends to bid. One project may represent experience in multiple trades. Projects should have been completed within the past 5 years.	
Project Name:	
City, State:	
Scopes of Work:	
Year Completed:	
Owner:	
General Contractor/CM:	
Project Name:	
City, State:	
Scopes of Work:	
Year Completed:	
Owner:	
General Contractor/CM:	
Project Name:	
City, State:	
Scopes of Work:	
Year Completed:	
Owner:	
General Contractor/CM:	
Project Name:	
City, State:	
Scopes of Work:	
Year Completed:	
Owner:	
General Contractor/CM:	
Project Name:	
City, State:	
Scopes of Work:	
Year Completed:	
Owner:	
General Contractor/CM:	
Project Name:	
City, State:	
Scopes of Work:	
Year Completed:	
Owner:	
General Contractor/CM:	

Authorization
I hereby acknowledge that all of the information provided in this document is true and is not purposefully misleading. Signature:_____ Title:_____ Dates:_____ Company:_____

(*) By authorizing this prequalification form the subcontractor named herein, is agreeing to supply any documentation noted in this prequalification form, <u>at the request</u> of the designated party at F.A. Wilhelm Construction Co., Inc. for the purposes of selecting a subcontractor for this project.

BID FORM ATTACHMENT 5 – FORM 96

(Also available as a separate attachment in Building Connected)

CONTRACTOR'S BID FOR PUBLIC WORK - FORM 96

State Form 52414 (R2 / 2-13) / Form 96 (Revised 2013)
Prescribed by State Board of Accounts

PART I
(To be completed for all bids. Please type or print)

Date *(month, day, year):*_____

1. Governmental Unit (Owner):_____
2. County :_____
3. Bidder (Firm):_____

   Address:_____

   City/State/ZIPcode:_____
4. Telephone Number:_____
5. Agent of Bidder *(if applicable):*_____

Pursuant to notices given, the undersigned offers to furnish labor and/or material necessary to complete the public works project of _____

(Governmental Unit) in accordance with plans and specifications prepared by _____

_____ and dated _____ for the sum of

_____ $_____

The undersigned further agrees to furnish a bond or certified check with this bid for an amount specified in the notice of the letting. If alternative bids apply, the undersigned submits a proposal for each in accordance with the notice. Any addendums attached will be specifically referenced at the applicable page.

If additional units of material included in the contract are needed, the cost of units must be the same as that shown in the original contract if accepted by the governmental unit. If the bid is to be awarded on a unit basis, the itemization of the units shall be shown on a separate attachment.

The contractor and his subcontractors, if any, shall not discriminate against or intimidate any employee, or applicant for employment, to be employed in the performance of this contract, with respect to any matter directly or indirectly related to employment because of race, religion, color, sex, national origin or ancestry. Breach of this covenant may be regarded as a material breach of the contract.

CERTIFICATION OF USE OF UNITED STATES STEEL PRODUCTS
(If applicable)

I, the undersigned bidder or agent as a contractor on a public works project, understand my statutory obligation to use steel products made in the United States (I.C. 5-16-8-2). I hereby certify that I and all subcontractors employed by me for this project will use U.S. steel products on this project if awarded. I understand that violations hereunder may result in forfeiture of contractual payments.

ACCEPTANCE

The above bid is accepted this _____ day of _____, _____, subject to the following conditions: _____

_____

Contracting Authority Members:

_____ _____

_____ _____

_____ _____

PART II

(For projects of $150,000 or more – IC 36-1-12-4)

Governmental Unit: _____

Bidder (Firm) _____

Date *(month, day, year):* _____

These statements to be submitted under oath by each bidder with and as a part of his bid. Attach additional pages for each section as needed.

SECTION I EXPERIENCE QUESTIONNAIRE

1. What public works projects has your organization completed for the period of one (1) year prior to the date of the current bid?

Contract Amount	Class of Work	Completion Date	Name and Address of Owner

2. What public works projects are now in process of construction by your organization?

Contract Amount	Class of Work	Expected Completion Date	Name and Address of Owner

3. Have you ever failed to complete any work awarded to you? _____ If so, where and why?

4. List references from private firms for which you have performed work.

SECTION II PLAN AND EQUIPMENT QUESTIONNAIRE

1. Explain your plan or layout for performing proposed work. *(Examples could include a narrative of when you could begin work, complete the project, number of workers, etc. and any other information which you believe would enable the governmental unit to consider your bid.)*

2. Please list the names and addresses of all subcontractors *(i.e. persons or firms outside your own firm who have performed part of the work)* that you have used on public works projects during the past five (5) years along with a brief description of the work done by each subcontractor.

3. If you intend to sublet any portion of the work, state the name and address of each subcontractor, equipment to be used by the subcontractor, and whether you will require a bond. However, if you are unable to currently provide a listing, please understand a listing must be provided prior to contract approval. Until the completion of the proposed project, you are under a continuing obligation to immediately notify the governmental unit in the event that you subsequently determine that you will use a subcontractor on the proposed project.

4. What equipment do you have available to use for the proposed project? Any equipment to be used by subcontractors may also be required to be listed by the governmental unit.

5. Have you entered into contracts or received offers for all materials which substantiate the prices used in preparing your proposal? If not, please explain the rationale used which would corroborate the prices listed.

SECTION III CONTRACTOR'S FINANCIAL STATEMENT

Attachment of bidder's financial statement is mandatory. Any bid submitted without said financial statement as required by statute shall thereby be rendered invalid. The financial statement provided hereunder to the governing body awarding the contract must be specific enough in detail so that said governing body can make a proper determination of the bidder's capability for completing the project if awarded.

SECTION IV CONTRACTOR'S NON – COLLUSION AFFIDAVIT

The undersigned bidder or agent, being duly sworn on oath, says that he has not, nor has any other member, representative, or agent of the firm, company, corporation or partnership represented by him, entered into any combination, collusion or agreement with any person relative to the price to be bid by anyone at such letting nor to prevent any person from bidding nor to include anyone to refrain from bidding, and that this bid is made without reference to any other bid and without any agreement, understanding or combination with any other person in reference to such bidding.

He further says that no person or persons, firms, or corporation has, have or will receive directly or indirectly, any rebate, fee, gift, commission or thing of value on account of such sale.

SECTION V OATH AND AFFIRMATION

I HEREBY AFFIRM UNDER THE PENALTIES FOR PERJURY THAT THE FACTS AND INFORMATION CONTAINED IN THE FOREGOING BID FOR PUBLIC WORKS ARE TRUE AND CORRECT.

Dated at _____ this _____ day of _____, _____

_____
(Name of Organization)

By_____

_____
(Title of Person Signing)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTY OF_____)

Before me, a Notary Public, personally appeared the above-named _____ and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to before me this _____ day of _____, _____.

_____
Notary Public

My Commission Expires:_____

County of Residence:_____

BID OF

_____
(Contractor)

_____
(Address)

_____

FOR

PUBLIC WORKS PROJECTS

OF

_____

_____

_____

Filed _____, _____

Action taken _____

_____

BID FORM ATTACHMENT 6 – CONTRACTOR ASBESTOS CERTIFICATION

(Also available as a separate attachment in Building Connected)

CONTRACTOR ASBESTOS CERTIFICATION

TO: INDIANA UNIVERSITY

The Contractor certifies that:

No asbestos containing material was selected as a building material for this project. For all materials used on the project which were marked on the material or on the packaging the following or similar wording "May contain mineral fibers" the contractor will have on file, with copies provided to the owner, either of the following – (1) The manufacturer's certification that the material does not contain asbestos or (2) Laboratory results from an EPA accredited laboratory indicating the material does not contain asbestos in accordance with EPA and OSHA requirements.

IU Project Name and Number: _____

Contractor Firm: _____

Contractor Name: _____

Contractor Signature: _____ Date _____

Asbestos Protocol for Contractors
Communication of Hazards

Asbestos-containing materials (ACM) exist in many buildings constructed prior to January 1, 1981. Pursuant to the OSHA Construction Industry Asbestos Standard 29 CFR 1926.1101, "Communication of Hazards," a building owner is required to inform contractors doing demolition or renovation of the presence, location and quantity of ACM found at the work sites in its buildings. The IU Environmental Health and Safety Department (EHS) performs the asbestos inspection of buildings on the IU campuses and, if necessary, will conduct or oversee the safe removal of all known and accessible ACM prior to renovation or demolition work.

EHS generates a post-inspection Asbestos Notice of each work site, which identifies building materials that are visible or otherwise known to be present at the site at the time of inspection as being "Non-ACM" or "ACM."

The inspection, and therefore the information contained in the notice, is limited to what is visible to the inspector at the time of the inspection. This means that during the course of construction work, it is possible to encounter ACM that was not identified on the notice because of the physical limitations on the Asbestos Inspector's ability to see and identify ACM at the time of the inspection. Contractors are expected to have knowledge of the types and likely locations of ACM generally found in building materials and to be able to make visual identification of ACM and must provide documentation that each employee has attended Asbestos Awareness Training within the last calendar year.

Under no circumstances are contractors permitted to disturb ACM. Contractors are required to stop work immediately upon discovering suspected ACM and to make a report to the owner's Project Manager. The Project Manager may direct the contractor to the EHS office if a disturbance has occurred and/or to coordinate additional surveying.

<u>For the Contractor</u>

I understand and agree that the employees and agents of my company and/or the employees and agents of my company's subcontractor(s) are prohibited from disturbing ACM.

I understand and agree that, upon the discovery of ACM or suspected ACM at the worksite, work shall be stopped immediately and a report of the discovery made to the owner's Project Manager. I agree that my employees, agents and/or the employees and agents of my subcontractor(s) will comply with the directions of the Owner's Project Manager with regard to responding to the discovery or disturbance of ACT.

I understand and agree that failure on the part of my employees and agents and/or the employees and agents of my subcontractor(s) to comply with the above requirements may result in fines being imposed against my company or the owner, or both, by the Indiana Department of Environmental Management (IDEM), or by other federal, state, county or municipal authorities. I agree I will reimburse the owner for any costs incurred by the owner based on violations of this protocol by my employees or agents and/or the employees or agents of my subcontractor(s), including but not limited to fines, penalties, attorneys fees and/or court costs.

I have read and understand these requirements:

Contractor Signature	Date	IU Project Number
Printed Name		IU Project Title



Indiana University

3. BID PACKAGE INFORMATION

IU Launch Accelerator for Biosciences

Indianapolis, IN

BID PACKAGE INDEX

BID PACKAGES (BID EVENT #04)

- BE4-01A – General Trades
- BE4-05A – Decorative Railings
- BE4-06A – Finished Carpentry (Furnish)
- BE4-06B – Translucent Panel
- BE4-07A – Joint Sealants
- BE4-08A – Hollow Metal Doors, Frames, & Hardware (Furnish)
- BE4-08B – Interior Glass & Glazing
- BE4-08C – Fire Curtains
- BE4-09A – Terrazzo
- BE4-09B – Tile
- BE4-09C – Soft Floring
- BE4-09D – Painting & Wallcoverings
- BE4-09E – Sealed Concrete & Epoxy Flooring
- BE4-10A – Toilet Partitions & Bathroom Accessories (Furnish)
- BE4-10B – Lockers (Furnish)
- BE4-10C – Wall Protection (Furnish)
- BE4-10D – Visual Display Units (Furnish)
- BE4-10E – Operable Partitions (Furnish)
- BE4-10F – Signage (Interior)
- BE4-10G – Walkable Ceiling
- BE4-10H – Signage (Exterior)
- BE4-12A – Window Treatments
- BE4-13A – Lab Casework & Equipment
- BE4-32A – Flagpoles
- BE4-32B – Bike Racks (Furnish)
- BE4-32C – Bus Shelter
- BE4-32D – Site Railings

GENERAL SCOPE OF WORK

Project Summary

The project consists of the new launch accelerator for biosciences building at the IU Indianapolis campus. It will be a five-story building with a mechanical penthouse. The overall building area is approximately 150,000 SF. Anticipated construction start date is December 2025 and substantial completion May 2027, with final completion by September 2027.

General Scope of Work for All Bid Packages

1. All specified mock-ups and samples.

2. The term "*provide*" shall mean to furnish, deliver and install complete.

3. Contract documents may not necessarily indicate all the work required for the performance or completion of work. Subcontractor shall furnish and install items required for proper completion of work without adjustments to price. Work shall be structurally sound, of quality construction and Subcontractor shall be responsible for the inclusion of adequate labor and materials to cover the proper and timely installation of the items described or implied.

4. This summary should in no way be construed as being all-inclusive. It is issued as a guide to aid in the assignment of work. If conflicts regarding assignment of work exist between the drawings, the specifications, notes or these descriptions, the Bid Category Descriptions shall take precedence.

5. Subcontractor shall be responsible for any trade permits and inspection fees for the assigned Scope of Work. Permits, Fees & Inspections:
    a. The CM will purchase the General Building Permit. All other permits, utility tap fees and inspection fees must be included in the work scope of the subcontractor requiring them.
    b. Each subcontractor shall call for, obtain and pay for all inspections as required to facilitate their work and to maintain schedule even if the general building permit was secured by the CM. Each subcontractor shall keep copies of permits, inspections and signatures in the CM's office. Any associated fee for a failed inspection under the General Building permit purchased by the CM (i.e., structural inspections) will result in a back charge to the associated subcontractor for additional inspection needs.
    c. Permits for work requiring a shutdown of existing streets and /or sidewalks or impeding public access in any way shall be secured and paid for by subcontractor requiring it and scheduled with the CM in advance.
    d. Each subcontractor shall coordinate with the CM for scheduling of material testing and inspection services. Any re-testing and/or re-inspection of unacceptable materials or installations shall be paid for by the subcontractor requiring the additional test/inspection.

6. This project is participating in LEED goals and going after the Gold level and will require Contractor's participation.

7. BIM will be utilized on this project for MEP contractors at a minimum and will require participation and coordination.
8. Safety: Reference the F.A. Wilhelm Construction Site Specific Safety Plan (SSSP) prepared for this project. Highlighted safety provisions on this project shall include:
    a. Subcontractor to demonstrate participation in a safety program that includes an acceptable employee substance abuse program. MICCS is an example of an acceptable safety program that includes a substance abuse policy. Job hazard analysis forms are to be completed daily for each work activity and are to be reviewed and initialized by each crew member working on that activity daily.
    b. Acknowledgment and representation that if, at any time, the safety of any existing or new construction, utilities, etc., appears to be endangered, Subcontractor shall, at its own expense, take all proper means, including any additional bracing and/or shoring necessary to safeguard and prevent any such movement or settlement, and to support such structures as identified on the documents. Assure Fall Protection at heights of 6 feet or greater, pursuant to the OSHA standards and Wilhelm policies, whichever is more stringent. This includes all steel erection activities.
    c. Acknowledgment and representation that the use of radios, including headsets, is not permitted (this does not apply to two-way radios for remote communication) Eye protection must be worn by all personnel on the jobsite.
    d. All jobsite personnel shall wear reflective safety shirts or vests at all times.
    e. All jobsite personnel shall wear hard hats, work boots/shoes, long pants and shirts with a minimum 4” sleeve as defined by OSHA.
    f. Attendance by all subcontractor personnel to Wilhelm’s and Owner’s preconstruction safety orientation program prior to beginning work.
    g. All electrical cords are to be rolled up daily and stored by each Subcontractor. Any cords not rolled up or suspended from the structure at the end of the day will be removed and rolled up by the CM at the subcontractor’s expense. Electrical cords in use in walkways or pathways shall be suspended as to not create a tripping hazard and so that these areas can be broom swept daily.
    h. Use of platform ladders is required in lieu of standard ladders.
    i. Roof edge barricades as required to perform your work
    j. Controlled access zones as required to perform your work.
    k. Confined Space: Each subcontractor requiring access to confined spaces must present their specific confined space safety plan to the CM prior to beginning confined space work.
    l. A daily jobsite safety meeting prior to starting work for all workers on the project will be utilized by each subcontractor, attendance by all on-site personnel is mandatory. Project site wide safety meeting will be coordinated as necessary by CM and attendance is also mandatory.
    m. Asbestos – Removal/abatement of asbestos-containing material should not be included in the base bid for any bid category. If during demolition work any material is encountered that is known to contain or suspected of containing asbestos, immediately stop work associated with the questionable material and notify the CM.
    n. Construction Fumes, Odors, Dust and Related Hazards – All subcontractors shall take extreme care to prevent the infiltration of toxic, hazardous, carcinogenic, and objectionable fumes and odors into adjacent occupied buildings and existing air intakes. Review with CM all sealers, curing agents, and concrete dust producing activities and

other products that will possibly affect air quality. All MSDS pertaining to materials/chemicals used on the site must be submitted to the CM before bringing the materials/chemicals on site. Smoke Eaters must be used in conjunction with any welding activities.

o. Hazardous Material – Transportation, handling, storage, and legal disposal of hazardous and potentially hazardous materials shall be pursuant to all applicable Federal, State, and local requirements. The Construction Manager must immediately be notified of any spill or other mishap involving hazardous materials.
p. For any utility locates. In addition to 811, Indiana University must also be contacted to provide locations of its (private) utilities. Coordinate with the Construction Manager.
q. Reference F.A. Wilhelm's Excavation Policy.

9. Conduct and Coordination:
    a. Smoking and the use of any tobacco products, including e-cigarettes and vaping, inside buildings, on the property of the owner or on the construction site is prohibited. These rules apply to adjacent properties including the local residential neighborhood and office complexes. Failure to abide by this policy will result in removal from the project.
    b. Each Subcontractor shall comply with Indiana University Tobacco-Free Campus Policy, Anti-Harassment Policy, Sexual Harassment Policy and Weapons Policy.
    c. Each subcontractor shall cooperate and coordinate with all other Bid Category Subcontractors for expedient completion of the work of this project. If work is not properly coordinated, the CM will require the subcontractor to remove and relocate work with no additional compensation.
    d. Initial benchmarks, horizontal and vertical, will be provided by the CM. Each subcontractor shall be responsible for all field measuring, engineering, detailed layout, grade and stakes from benchmark and control points required for proper location and coordination of the work.
    e. Company signs are prohibited, except as specifically assigned by Contract Documents or approved by the CM. Safety signage is mandatory.
    f. The Subcontractors and consultants shall not use the name, logo, trademarks, or any other marks owned by or associated with Indiana University or the name of any representative of Indiana University, in a manner whatsoever, including, but not limited to, sales materials, promotional materials, or advertising, without the prior written permission of Indiana University in each instance.
    g. Public Communications. Pursuant to school policy, a contractor of Indiana University is prohibited from making a public statement in the contractor's official capacity on behalf of Indiana University unless the statement (1) relates to the business or operation of Indiana University or to a Indiana University sponsored event; or (2) has been approved by the Board of Trustees of Indiana University.

10. Management and Supervision:
    a. Each subcontractor and sub-subcontractor shall have daily huddle meetings at the beginning of each work shift, at a minimum. The huddle meetings shall review all activities on site and provide an open forum for all participants to review safety hazards and procedures to safely conduct the work. All personnel shall attend each huddle meeting and attendance shall be taken daily. Daily foreman huddle meetings are required for each subcontractor on site.

b. Subcontractor shall have full-time supervision on the job at all times while Subcontractor's work is being performed. This requirement applies to all work under Subcontractor's Scope of Work. This superintendent must be present at all Subcontractor coordination meetings and safety meetings held by Contractor each week. Employees of Subcontractor shall be required to attend weekly job site safety meetings.
c. The CM will be utilizing a web-based information management system, Procore, to facilitate communications among project partners including but not limited to Owners, Architects, Engineers, CM, and Subcontractors. Use of this system is mandatory for all subcontractors. All subcontractors must have an e-mail address and have access to the internet.
d. Subcontractor to provide a three (3) week look ahead schedule every week. Subcontractor to review, comment, and/or accept Contractor's P6 Schedule at every update within seven (7) working days of issuance of the updated P6 Schedule.

11. Protection of Work or Property:
    a. Commencement of finishing work (completion of work started by others) by subcontractor shall constitute subcontractor's approval of substrate surfaces for receiving work. Any resulting failure or development of defects in work in these areas shall be repaired at the expense of subcontractor applying finish material. Discrepancies in the work of others shall be brought to the CM's attention prior to starting subcontractor's work.
    b. Where new work connects with existing, do all necessary cutting and patching required to make a satisfactory connection with the work to be performed under the Contract Documents to leave the entire work in a finished and workmanlike condition. This requirement shall include all required work where new items connect, fit, or otherwise interface with existing surfaces. Provide all labor and materials to this end, whether or not shown or specified. Verify and match existing conditions.

12. Access to Jobsite/Work Times:
    a. The jobsite will be open during normal working hours, Monday-Friday 7:00AM-4:30PM EST. Work hours outside of these normal working times will be required due to utility shutdowns, work in occupied spaces, site work, exterior building work, and/or loud or noisy work activities due to adjacent neighbor or owner restrictions. The CM reserves the right to change work hours as necessary. This does not alleviate the subcontractor's responsibility to work overtime as required to maintain the schedule. The CM shall try to accommodate any requests by subcontracts to have the jobsite open at different times/days.
    b. Each subcontractor shall include off-hours work for work in or near areas that could affect the function of the existing facility, as required to complete the scopes of work. The existing facility will remain fully functional throughout the duration of construction. Construction activities taking place shall be planned to minimize/eliminate any interruptions within the facility. Working in existing spaces shall be completed during non-first shift work hours as required to facilitate the on-going operations of the hospital. All costs to complete this work shall be included in this bidder's base bid.
    c. Saturdays will be utilized on the project as a make-up workday for any lost time during the normal work week. This includes lost time due to weather impacts.
    d. Saturdays will also be utilized to maintain the project schedule when work activities or durations have fallen behind schedule.

e. If the perimeter of the jobsite is enclosed by construction fencing, any Subcontractor that must relocate the temporary construction fencing shall put it back in place, in the state it was found at the end of each workday.
f. Subcontractor shall be prohibited from blocking traffic on any public streets or sidewalks. If blocking of public areas are required, Subcontractor is to coordinate and comply with all local requirements, permits, traffic controls, etc.

13. Parking - Parking on site is not permitted. Subcontractor to make accommodations to transport employees to and from the job site.

14. Storage & Delivery:
    a. There will be limited space available for on-site construction office trailers. Tool/Storage containers shall only be placed with the prior approval of the CM.
    b. The project site is limited on lay down, storage, preparation areas, etc. All subcontractors will be required to deliver material to the project on an “as needed” basis and as discussed and approved with the CM.
    c. All materials delivered to the site shall be neatly organized (as discussed with the CM) and adequately protected from weather at all times and shall be received and stored at the jobsite in an approved manner as established by the manufacturer, specifications, and CM. All materials to be delivered shall be sized, bundled, or packaged in such a fashion to fit in the building.
    d. Each subcontractor shall take care to plan their work and storage of materials in a manner that does not overload the structure.
    e. All construction deliveries and access to the site will be thru the designated construction entrance as directed by the CM. Subcontractors requiring alternate access must review their plan for access with the CM prior to proceeding with work. This subcontractor shall provide any cleaning of streets, de-icing and snow removal of work area, temporary signage, barricades, flagmen, etc. required to conduct their work.
    f. If any vehicle working under this subcontractor carries mud or dirt on any roadways or pavements, this subcontractor shall clean it immediately.

15. Special Project Conditions:
    a. A Project Specific QA/QC Plan will be prepared by the CM for this project and distributed to all subcontractors for review and submission of a “scope specific” QAQC plan for their scope of work.
    b. Subcontractor shall provide their own temporary power and task specific lighting. Basic OSHA required lighting inside the building will be provided by the CM.
    c. Subcontractors have included all project specific or required mock-up provisions for the project as shown or called out in the Bid Documents.
    d. CM will provide a portion of total necessary port-o-lets as defined by OSHA guidelines. Trade Contractors will be responsible for additional port-o-lets as necessary.
    e. Subcontractor shall provide their own drinking water for their workers. A designated lunch area will be established for the job site. No food or drinks other than water will be allowed in other areas of the building or site.
    f. All utility shutdown requests shall be requested and coordinated with the CM and Owner.
    g. All subcontractors will be required to acquire an ID Hardhat Sticker during their on-site orientation.

h. There will be very minimal, if any, laydown available onsite. All deliveries are to be JIT (just in time) Delivery. All deliveries are to be coordinated so that the items can be offloaded in a timely manner.
i. CM will provide one (1) operated lull for everyone's use during construction. If additional means are required to hoist materials, this must be coordinated with the CM. Any hoisting that requires specialty equipment or cranes will be provided by subcontractor.
j. Each subcontractor is responsible for repair of firestopping or other materials integral to the proper and complete installations of another trades work that is required to maintain a fire rating or code compliance that was previously installed. The subcontractor is responsible for the cost for the repair by the Subcontractor who warrants the installation. If more extensive patching is required, this will result in a back charge to the subcontractor creating same.
k. Subcontractors shall examine the conditions under which the work is to be installed and notify the CM in writing of any discrepancies or conditions detrimental to proper performance of the work. This subcontractor is not to proceed until the required corrections are accomplished. However, this requirement does not alleviate a preceding subcontractor from his responsibility to correct deficient work or pay the subsequent subcontractor's cost of rework.
l. In the event of discrepancies in the Contract Documents each subcontractor shall assume the higher quality and greater quantity on bid day and include a list of said discrepancies with their bid. The CM and A/E will determine the correct assignment of work and scope will be adjusted accordingly. Each subcontractor is responsible for the complete review of and coordination with the Bid Categories of all other subcontractors.
m. Bidders shall review the documents and note the basis of design with regard to manufacturers. Refer to architectural specification sections for substitution procedures. Bidders using manufacturers other than the basis of design shall be responsible for all costs that may be incurred to accommodate the manufacturer utilized by the bidder. These costs including costs that may be incurred by other trades to accommodate the manufacturer shall be borne by the subcontractor providing the alternative equipment.
n. Each subcontractor shall provide any required utility extensions, utility connection/tap fees and/or additional services beyond those shown or specified in order to complete their scope. This subcontractor shall coordinate with the utility companies for verification of underground services prior to beginning work.
o. Project specific requirements for utility services needs listed and defined i.e. electrical service, lighting, water, etc.
p. This subcontractor shall provide 1 worker per every 10 (or one individual if work crew is less than 10) to serve as a member of the composite cleanup crew directed by the CM. This composite cleanup crew will occur once per week or as required to maintain a clean and safe work environment.
q. MEP subcontractors shall include all required and UL Listed firestopping for all their respective MEP thru fire rated wall penetrations.
r. Each subcontractor is responsible for the entire set of Construction Documents for their complete scope of work. No changes in cost will be considered for work shown on any drawings regardless of discipline where shown (i.e. Electrical connections/requirements shown on plumbing drawing).
s. Roofing Penetrations –The roofing subcontractor shall be responsible for cutting/repairing of all roof penetrations required as determined by the MEP documents. This includes cutting, flashing, protecting and maintaining the roofing warranty. All MEP subcontractors

shall coordinate with the Roofing subcontractors for final locations of all scope related roofing penetrations.

t. Each Subcontractor must coordinate with any and all Owner-Furnished equipment, materials and connections as it relates to your bid item/ package Scope of Work.

u. Subcontractor will be required to attend the weekly subcontractor meeting prepared with a weekly work plan for the coming week and a review of the work activities to take place in the next 6-week work period.

v. All inserts and sleeves shall be cast-in-place whenever feasible. No sleeve shall be placed through any concrete element unless specifically called for on the structural drawings, approved sleeve submittal or specifically authorized in writing by the structural engineer.

w. Core drilling shall not be permitted unless authorized in writing by the structural engineer. Any and all core drilling will follow the standard protocol assigned by the structural engineer or Construction Manager.

x. Joint sealants and caulking is assigned to the respective bid packages. Further definition is found in each bid package and bid item Scope of Work. If not more specifically defined, each Subcontractor is responsible for sealant and caulking as required for components which that Subcontractor is responsible for providing and installing.

y. All Subcontractors who have work that incorporates MEP components or associated Architectural components that are tied into the MEP systems shall be required to actively participate in BIM/MEP coordination meetings. These BIM/MEP meetings will be scheduled and run by the CM VDC Coordinator/Subcontractor. Each Subcontractor may be required to provide the appropriate BIM/Revit files to the CM VDC Coordinator for purposes of loading into the BIM model along with other trades to determine and resolve all “clash detections” to the satisfaction of the CM VDC Coordinator. All subcontractors shall be required to produce a final set of as-built documents necessary for project closeout.

z. The project will be BIM Coordinated per Exhibit “J” of the schedule “A”. Subcontractors will participate in this coordination to the fullest extent required by the contract documents.

aa. Subcontractors will be required to actively participate in the final building commissioning and to complete any required documentation and paperwork.

SCOPE OF WORK

BE4-01A – General Trades

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
061053	Miscellaneous Rough Carpentry
062000	Finish Carpentry (Install only)
064100	Architectural Wood Casework (Install only)
064200	Wood Paneling (Install only)
079200	Joint Sealant (as applicable)
081113	Hollow Metal Doors and Frames (Furnish & Install)
087100	Door Hardware (Furnish & Install)
098430	Wood Veneer Acoustic Panels (Install Only)
098433	Wood Veneer Sound Absorbing Units (Sound Absorbing Wall Units) (Install Only)
123661	Simulated Stone Countertops (Install Only)
126200	Upholstered Furniture (Install Only)
101100	Visual Display Boards (Install only)
102113.13	Metal Toilet Compartments (Furnish & Install)
102239	Folding Panel Partitions (Install only)
102600	Wall and Door Protection (Install only)
102800	Toilet, Bath, and Laundry Accessories (Install only)
104300	Emergency Aid Specialties (Furnish & Install)
104400	Fire Protection Specialties (Furnish and Install)
105113	Metal Lockers (Install Only)
105129	Phenolic Lockers (Install Only)
105617	Wall Mounted Standards and Shelving (Furnish & Install)
129313	Bicycle Racks (Install only)

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall install all hollow metal doors, frames, and hardware on the project.
    a. Aluminum doors and hardware by others.
    b. Includes vision lites in wood doors.
2. Include all fire-rated door and frame assemblies as included in the contract documents.
3. Include storage of materials under cover off the ground on wood blocking on floors in a manner that will preclude racking, distortion, physical damage and prevent rust.
4. Include storage of doors. These are to be stored vertically not stacked flat.

5. Do not cover with plastic or canvas shelter unless proper ventilation is provided to avoid creating a humidity chamber.
6. Include all necessary hardware for a complete installation. Follow specifications for each type of frame installation including hardware for CMU locations.
7. Include unit price (labor) for replacement frames that may be damaged by other trades.
8. Include after assembly to have all tool marks and surface imperfections dressed smooth by grinding, filling and sanding if necessary.
9. Include unit price (labor and material) for replacement frames that may be damaged by other trades.
10. Doors shall not be installed until written approval has been given by the Contractor.
11. Coordinate door frame installation with metal stud and CMU contractors.
12. Coordinate with electrical contractor for all access control hardware. Include all necessary preparations needed for a complete installation.
13. Include insulation and grout in ~~window and~~ door frame cavities of rough openings and building frame cavities as required by the contract documents.
14. Includes **supply and installation** of the trash receptacles for the site as shown in detail 3/LA201.
15. Includes **supply and installation** of all fire extinguishers and cabinets.
    a. Includes recessed and surface-mounted cabinets & brackets.
    b. Includes fire-rated recessed fire extinguisher cabinets.
    c. Includes fire extinguishers with brackets.
16. Includes supply and installation of emergency aid specialties.
17. Includes supply and installation of wall mounted standards and shelving.
18. Includes installing Division 10 specialties items, see furnish bid packages detailed scope of work for each item for further details.
    a. Toilet, bath, laundry accessories
    b. Metal toilet compartments
    c. Corner guards and wall protection.
    d. Lockers
    e. Visual Display Units
    f. Operable Partitions
19. Subcontractor to include installation of bike racks on the site.
20. Subcontractor to include installation of all finished carpentry on the project. See BE4-06A scope of work for more details of what is included in the furnish scope of work.
    a. Subcontractor to include field measuring as required. If project areas requiring field measurements are not available at the time that materials are required to be ordered, Subcontractor shall advise the Contractor and request direction.
    b. Subcontractor is responsible for off-loading all materials and equipment, and for their distribution throughout the jobsite.
    c. Subcontractor shall provide storage and protection of materials and equipment as required.
    d. Subcontractor shall include all necessary labor and equipment for stocking and moving materials to maintain the construction schedule.

e. Include joint sealants for between similar surfaces (i.e. Wood & Casework / Millwork and backsplashes to tops). Joint sealants between dissimilar surfaces shall be done by “others”.
f. Provide and install filler panels and finished end panels as required for complete and proper installation: scribe tight to walls – No caulk at JT.
g. Includes all miscellaneous fasteners to complete this work.

21. Subcontractor shall provide **deduct** alternates (see Bid Package Standard Bid Form) for the following scopes of work:
    a. Installation of toilet accessories and partitions.
    b. Installation of lockers.
    c. Installation of wall protection.
    d. Installation of visual display units.
    e. Installation of operable partitions
    f. Installation of bike racks.
    g. Installation of finished carpentry.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.

SCOPE OF WORK

BE4-05A Decorative Railings

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
057300	Decorative Metal Railings
057500	Decorative Formed Metal (as required)

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all decorative railings on the project
2. Includes all decorative 14-gauge perforated metal panel w/ slotted pattern
    a. See elevations & sections on A422, A450, and A452 for reference
3. Includes decorative hand rails, stair rails, and perforated metal infill panels
4. Includes all hardware, anchors, and attachments for a complete installation
    a. Blocking material and installation by others, provide shop drawings with all blocking and attachment points required clearly shown and dimensioned
5. Touch-up field welds with proper coating / finish
6. Includes any required field measurements
7. Includes shop-drilled hole in posts for LED light strip (F&I others)
8. Includes all mock-ups
9. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.

BE4-06A – Finished Carpentry (Furnish)

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
062000	Finish Carpentry
064100	Architectural Wood Casework
064200	Wood Paneling
079200	Joint Sealant (as applicable)
099300	Staining and Transparent Finishing
098430	Wood Veneer Acoustic Panels
098433	Wood Veneer Sound Absorbing Units (Sound Absorbing Wall Units)
123661	Simulated Stone Countertops
126200	Upholstered Furniture

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish a complete millwork and finished carpentry pack for the project which includes:
    a. Custom plastic laminate casework, custom fabricated wood casework, and shelving including all internal supports, hardware, and accessories.
    b. All countertops and backsplashes
        i. Includes quartz countertops.
    c. Key locks, all keyed alike
    d. Plastic laminate surfacing.
    e. Wood wall paneling.
    f. Built-in benches including upholstery.
    g. Architectural wood slat partitions and solid surface bases.
    h. Solid surface.
    i. Built-in's with seating.
2. Includes wood blocking and plywood sheathing integral to millwork and finished carpentry.
3. Include any support brackets, fasteners, or accessories required for installation by others.
4. Includes detailed shop drawings.
5. Includes samples and mock ups as required.

6. Include in-wall blocking drawings for any blocking required for this package. Installation of blocking is by others. Blocking/nailers required for direct installation of millwork/casework outside wall cavities will be included in this scope. Coordination with installer(subcontractor) is included in this scope.
7. Include joint sealants for between similar surfaces (i.e. Wood & Casework / Millwork and backsplashes to tops). Joint sealants between dissimilar surfaces shall be done by "others".
8. Includes all LEED documentation.
9. Provide add alternates as listed in Specification 01 2300 for Alternate No. 02 – Wood Slat Walls:
    a. **Base Bid Item:** Base Bid Item: Section 09 2116 and Drawing number A112A - A115B and A122A - A125B including metal stud framing wall construction with field-painted gypsum board finish to act as screen walls in the open office areas on floors 2-5 as indicated on the drawings.Section 09 6519 and 09 6513 and Drawing number IF000 - IF115B including resilient tile flooring and resilient cove base in all labs, adjacent equipment rooms, autoclave, consumables, cell culture, lab supply, freezer room, enviro room, and adjacent lab corridors with the exception of Advanced Wet Lab 108A.
    b. **Alternate Item:** Section 06 2000 and 06 4200 and Drawing number A112A - A115B, A122A - A125B, and A721 including an alternate cost to SUBSTITUTE a wood slat wall system with wood base to act as screen walls in the open office areas on floors 2-5, as indicated on the drawings, in lieu of metal stud framing wall construction with field-painted gypsum board.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.
3. Installation of finished carpentry, an add alternate can be provided, please see bid package standard bid form.

BE4-06B – Translucent Panel

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
066413	Translucent Resin Panel Fabrications

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install the architectural feature wall and backlit IU Logo in the Atrium lobby.
2. Includes the fabricated resin panels, ledgers, standoffs, fasteners, hardware, and rear-facing white LED halo lighting for the logo feature as well as a structural engineering analysis of the system for validation of the design.
    a. Final lighting and power connection by Electrical Contractor.
3. Includes 1/8” gauge panels for logo to be directly adhered to fire rated plywood substrate.
    a. Fire rated plywood to be included.
    b. Stud framing to be included.
    c. Paint by others.
4. Includes 3/8” gauge panels adhered to fire rated plywood substrate with aluminum angle ledger support at the bottom of every panel and ribs with cleats to hold panels to rea wall.
    a. Fire rated plywood to be included.
    b. Stud framing to be included.
5. Includes expansion joints between sections.
6. Includes all mockups required.
7. Includes seamed return on bottom edge.
8. Includes concealed mounting hardware.
9. Include mitered corner seams.
10. Provide all equipment, lifts, power, water, fuel, etc. required to complete the Work.
    a. Provide an allowance of $15,000 for shared scaffolding with the drywall contractor.
11. Includes protection of adjacent surfaces, materials, and equipment as required for this work.
12. Subcontractor includes all clean-up for their work.
13. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.

BE4-07A – Joint Sealants

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
079200	Joint Sealants

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all sealants and caulking as described below.
2. Includes all architectural caulking per plans.
3. Includes sealants at millwork, casework, benches, shelves and countertops to adjacent surfaces.
4. Includes sealants at fire extinguisher cabinets.
5. Includes sealants at hollow metal door frames.
6. Includes sealants for site concrete
7. Includes sealants for SOG isolation joints.
8. Include caulk at base of concrete to flag poles, fence posts, signs, as required.
9. Include caulk the joints between work surface, splash trims, and wall surfaces.
10. Include caulk around all toilet and sink fixtures, all bases of toilet partitions, and utility mop sinks to wall and floor conditions as required by the contract documents.
11. Include caulk all miscellaneous joints between dissimilar materials as required (i.e. wood & casework / millwork to adjacent surfaces).
12. Include caulk tops of all tile base where dissimilar surfaces apply. Tile to tile locations will not be required.
13. Include caulk for all exterior door frames once frames have been painted. Caulk all interior door frames.
14. Includes sealants at interior side of exterior glass façade.
15. Includes sealant at elevator door frames.
16. Includes sealants of interior glass partition systems
17. Includes all required LEED documentation.

Work Performed by Others and Excluded:

1. Exterior caulking of all exterior aluminum-framed entrances and storefronts.
2. Caulking between backsplashes and countertops.
3. Sounding Caulking at top & bottom of walls.
4. Firestopping
5. Payment and Performance Bond, to be included as an alternate.

6. Sales Tax.

SCOPE OF WORK

BE4-08A – Hollow Metal Doors, Frames, & Hardware (Furnish)

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
081113	Hollow Metal Doors and Frames
083400	Special Function Doors
087100	Door Hardware
099113	Exterior Painting (as applicable)
099123	Interior Painting (as applicable)

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish all interior and exterior hollow metal doors, frames, and finish hardware including electrified for the project.
    a. Aluminum doors and hardware by others.
    b. Vision lites in HM doors by others.
2. Includes inventory and delivery of hardware sets organized and delivered to the project site in individual packages for each opening.
    a. Subcontractor shall have a representative onsite during all initial deliveries to inventory and verify the accuracy, condition, and quantity of materials when they arrive.
3. Provide permanent cores and keys for the project.
4. Supplier will expedite and deliver exterior opening doors, frames, and hardware as an early release and delivery.
5. Provide (20) construction cores and key sets for construction use.
6. Include all fire-rated door and frame assemblies as included in the contract documents.
7. Include tags or marks for doors and frames to include their respective location as approved on Shop Drawings.
8. Include unit price (material) for replacement frames that may be damaged by other trades.
9. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Installation of hollow metal doors, frames, and hardware. An add alternate can be provided, please see bid package standard bid form.
2. Exclude aluminum storefront hardware, to be provided by others
3. Payment and Performance Bond, to be included as an alternate.

4. Sales Tax.

BE4-08B – Interior Glass & Glazing

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
061035	Miscellaneous Rough Carpentry (as applicable)
079200	Joint Sealants (as applicable)
081116	Aluminum Doors and Frames
084312	Aluminum-Framed Entrances
087100	Door Hardware (as applicable)
088720	Architectural Glazing Film
088113	Fire Rated Glazing

Additionally, this scope of work includes, but is not limited to, the following:

1. Furnish and Install all required wood blocking integral to glazing and storefront systems.
2. Furnish and Install all interior aluminum entrance doors.
    a. Excludes 199B.2, 199K.2 and 199M.2 at the entry vestibules.
3. Furnish and Install all interior aluminum door hardware.
4. Furnish and Install all interior glazing, storefront, and framing.
5. Furnish and Install vision glass for hollow metal door lites.
6. Furnish and Install exterior caulking including external joints to adjacent surfaces. Include all head and jamb details for aluminum-framed entrances to complete a watertight system.
7. Furnish and Install all threshold installations for openings. Set in beads of joint sealant for interior locations.
8. Provide all required embeds that need to be installed in cast-in-place concrete.
9. Includes final cleaning of the exterior surfaces and glass. Interior glass cleaning is by others.
10. Furnish and Install interior mullion extensions, shoes, and caps as indicated on the Contract Documents.
11. Furnish and Install decorative film, custom graphic glass film, etc.
12. Furnish and Install all fire rated glazing units and compounds.
13. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Installation of cast in place embeds, to be by others.
3. Exterior glazing and curtain wall systems.
4. Sales Tax.

BE4-08C – Fire Curtains

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
078700	Smoke Containment Barriers

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all fire and smoke curtains on the project.
2. Coordination with electrical and fire alarm systems is included.
3. Electrician to provide point of contact wiring.
4. Conduit and wiring from disconnect to unit components is included.
5. All required equipment to meet the specifications is to be included.
6. Testing of system prior to final inspection is included.
7. Wood blocking locations required to be provided in shop drawing form to be included.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.

BE4-09A – Terrazzo

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
096623	Resinous Matrix Terrazzo Flooring

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all Terrazzo flooring and base in a custom color as shown on the contract documents.
    a. Includes terrazzo stair treads and required nosings.
2. Includes all crack isolation membrane required to provide the jointing as shown on the contract documents.
3. Includes all reveal, transition, and control joint strips as shown on contract documents.
    a. Including transition strips from terrazzo to all adjacent materials.
4. This subcontractor shall keep the installation area clean and maintain his own barricade during the installation process.
5. Includes cost and provisions for a project mock-up and samples as required.
6. Includes all required slip and stain resistant sealers.
7. Subcontractor shall provide multiple mobilizations to accommodate the construction schedule, efforts will be made to group activities together.
8. Includes transition, reducer, and termination strips as indicated on the Contract Documents.
9. Ramboard or equivalent will be installed upon completion over finished flooring in high traffic areas such as corridors. Protection to be subject to inspection and acceptance by construction manager.
10. Includes all required floor preparation.
11. This Subcontractor shall provide final floor preparation including sanding concrete for the Work before installing any flooring materials in order to ensure proper adhesive/connection for flooring material.
12. Prepare multiple and numerous concrete moisture tests as would be reasonably required for a project of this size and coordinated with the General Contractor's Superintendent.
13. Subcontractor shall furnish and install all mock-ups as required by the contract documents.
14. Includes all clean up and containment of work.
15. Slurry removal off-site included.
16. Power requirements for equipment prior to mobilization.

17. Coordination with steel-stair supplier for precast attachment.
18. Includes all required shop drawings.
19. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.

BE4-09B – Tile

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
079200	Joint Sealants (as applicable)
093013	Ceramic Tile

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all porcelain and ceramic tile for both wall and floor applications for this project.
2. Furnish and install underlayment, transition strips, (including beveled strips that comply with ADA), Schluter Systems, outside tile corners, reducers, termination strips, reinforcing mesh, waterproofing and crack isolation membrane, primer, joint sealants, and sealers as required for this scope per the contract documents.
3. Subcontractor has included all Schluter trims for this scope per the contract documents.
4. Subcontractor shall install tile based on provided set out points in the contract documents. If set out points are not clearly defined, subcontractor shall submit RFI for clarification ahead of installation.
5. Perform alkalinity and adhesion testing as recommended by floor tile manufacturer prior to proceeding with installation.
6. Subcontractor shall comply with TCNA's "Handbook for Ceramic, Glass, and Stone Tile Installation" for TCNA installation methods specified in tile installation schedules.
7. Proceed with installation only after substrates pass testing according to flooring manufacturer's written recommendations, but not less than the following.
    a. Submit test results to Architect for review prior to installation.
8. Prepare the subfloor by cleaning, removing any contaminants, level floor to correct deficiencies that cannot be corrected with setting mortar, and apply primer if recommended by the underlayment manufacturer.
9. Apply anti-fracture waterproof membrane to concrete below all thin set tile to form continuous waterproof barrier. Install in thin-set mortar with watertight seams. Extend membrane up wall as recommended by manufacturer, not less than 8" or height of wall base. Waterproofing should extend up vertical walls receiving ceramic tiling at a minimum of 7'-0". Reinforce membrane at corner, change in plane, and cracks in substrate.
10. Extend tile work into recesses and under or behind equipment and fixtures to form a complete covering without interruptions.

11. Submit shop drawings of each type of tile to the Architect for approval ahead of installation.
12. Includes setting and/or grout beds.
13. Grout and fill in around floor drains for positive water drainage and waterproofing. Subcontractor must notify Contractor if they are unable to attain positive drainage to floor drains. Failure to notify Contractor will result in Subcontractor correcting said work at their own cost.
14. Includes floor protection for finished work.
15. Subcontractor shall furnish and install joint sealants at locations indicated for this scope of work.
16. Includes final cleaning of all tile and grout and applications as required by the Documents.
17. Includes minor floor prep and crack protection as required by Contract Documents.
18. Includes attic stock per the Documents. If attic stock quantities are not defined, provide a minimum of three percent of material.
19. Subcontractor has included multiple mobilizations for this project.
20. Includes setting or grout beds.
21. Grout and fill in around floor drains for positive water drainage and waterproofing.
22. Includes caulking at interior tile corners.
23. Includes final cleaning of all tile and grout and application of sealants as required by the Documents.
24. Subcontractor has included all hoisting and loading in and out for this scope of work.
25. Include a $20,000 allowance for floor prep beyond minor floor prep (“more than 3/8”), all prep is to be documented via signed ticket with CM Superintendent any savings remaining will be reimbursed to the project. Rates will be provided prior to contract issuance.
26. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.

BE4-09C – Soft Flooring

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
096513	Resilient Base and Accessories
096516	Resilient Sheet Flooring
096519	Resilient Tile Flooring
096536	Static-Control Resilient Flooring
096813	Tile Carpeting

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all carpeting, LVT, sheet vinyl, soft flooring materials, and specified base types for the Project.
2. Includes all labor, materials, and accessories for a complete installation of rubber treads and nosings for the stairs.
3. Subcontractor has included all necessary accessory materials including leveling & patching compound, adhesives, and any other manufacturer-recommended products for a complete installation.
4. Apply base to walls, columns, pilasters, casework, cabinets in toe spaces and other permanent fixtures in rooms and areas where base is required.
5. Fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material at irregular substrates, such as masonry.
6. Prepare concrete substrates according to ASTM F 710. Remove any coatings/substances on substrates that are incompatible with flooring adhesives.
7. Maintain dye lot integrity - do not mix die lots in same area.
8. Immediately after installation, remove excess adhesive and surface blemishes, include yarns that protrude from the tile surface.
9. Installation drawings shall be submitted to the Architect for approval prior to any placement. Reference Finish Plan Schedule for carpet locations.
10. Subcontractor shall reference IF Series Drawings for Luxury Vinyl Tile locations. Shop drawings are required for each type of floor tile and shall be submitted to the Architect for approval prior to any placement.
11. Includes all transition, reducer, edge, and termination strips as indicated for this scope of work per the Contract Documents.
12. Includes Kraft paper or plastic protection installation over finished flooring.
13. Includes minor floor prep and crack protection as required by Contract Documents. A complete leveling skim coat is included for all sheet goods.

14. This Subcontractor shall provide final floor preparation including sanding concrete for the Work before installing any flooring materials in order to ensure proper adhesive/connection for flooring material.
15. This Subcontractor shall provide adhesives as recommended by the manufacturer.
16. Prepare multiple concrete moisture tests as would be reasonably required for a project of this size and coordinate with the General Contractor's Superintendent.
17. Understanding that flooring work is to be installed in such a manner as to provide workmanship in accordance with applicable standards; provide straight and uniformly wide joints, use split tile only when absolutely necessary, layout from center lines outward, etc.
18. Subcontractor shall furnish and install all mock-ups as required by the contract documents.
19. Attic stock material for all floor types to be turned over to the Owner at project completion. If no quantities are provided in the specifications, a minimum of three percent is to be turned over.
20. This subcontractor shall keep the installation area clean and maintain his own barricade during the installation process.
21. Subcontractor shall provide multiple mobilizations to accommodate the construction schedule, efforts will be made to group activities together
22. Include an allowance of $60,000 for floor prep outside of minor floor prep(”more than 3/8), to be tracked via tickets that are signed by CM Superintendent any savings remaining will be reimbursed to the project. Rates will be provided prior to contract issuance.
23. Final clean of all flooring after installation.
24. Includes furnishing and application of temporary floor protection during construction activities.
25. Includes all LEED documentation.
26. Provide add alternates as listed in Specification 01 2300 for Alternate No. 05 - Vinyl Sheet Flooring in Labs:
    a. **Base Bid Item:** Section 09 6519 and 09 6513 and Drawing number IF000 - IF115B including resilient tile flooring and resilient cove base in all labs, adjacent equipment rooms, autoclave, consumables, cell culture, lab supply, freezer room, enviro room, and adjacent lab corridors with the exception of Advanced Wet Lab 108A.
    b. **Alternate Item:** Section 09 6516 and Drawing number IF000 - IF115B including an alternate to SUBSTITUTE sheet vinyl flooring and resilient cove base in all labs, adjacent equipment rooms, autoclave, consumables, cell culture, lab supply, freezer room, enviro room, and adjacent lab corridors in lieu of resilient tile flooring and resilient cove base.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.
3. Tile
4. Terrazzo
5. Resinous Flooring
6. Polished Concrete

BE4-09D – Painting & Wallcoverings

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
097200	Wall Coverings
099000	High Performance Coatings
099113	Exterior Painting
099123	Interior Painting
096723	Resinous Flooring (as applicable)

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all painting, primers, sealers, stains, etc., for this project.
2. Includes painting of the following items:
    a. All exterior surfaces requiring painting, metals, etc.
    b. All interior finishes and surfaces.
    c. Exposed steel lintels.
    d. CMU walls, gypsum wallboard.
    e. Hollow metal doors and frames.
    f. Handrails, railings, stair stingers, risers and other exposed metals.
    g. Exterior metals specialty coating systems.
    h. Visible ductwork behind grills and registers.
    i. Areas that are exposed to deck.
3. Includes all vinyl wall coverings, painting, papers, graphics, etc. Priming of walls for vinyl wallcovering, if required.

Interior Painting

1. Includes minor wall preparation, miscellaneous touch-up, spackling, etc. required for painting.
2. Subcontractor shall accept substrate of surfaces prior to start of the work.
3. Subcontractor shall provide the number of coats and/or mil thickness required by the contract documents and this bid package and shall remedy non-compliant work until final sign-off by owner and architect.
4. Provide maintenance data, manufacturer's warranties and color records for Closeout as indicated.
5. Provide proper delivery and storage techniques in compliance with specifications and manufacturer's recommendations.

6. Subcontractor shall protect other construction from paint/damage and repair as needed.
7. Subcontractor shall provide and place “Wet Paint” signs as needed to protect newly painted finishes.
8. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease before mechanical cleaning.
9. Subcontractor has included all sanding and surface preparation needed to apply coating, wallcoverings, etc. Per the contract documents.
10. Recoat primed/sealed surfaces where there is evidence of suction spots or unsealed areas in first coat.
11. Remove discarded paint materials, rubbish, cans and rags from site at the end of each workday. Properly remove any rags containing stain, varnish, and possible flammable liquids properly. Do not throw in garbage cans until particulates are no longer flammable.
12. Upon completion of painting, clean window glass and any other paint-splattered surfaces without scratching or otherwise damaging finished surfaces.
13. Paint all items listed in the Schedule on walls, structures, and ceilings per type listed and colors described in the contract documents.
14. Paint samples shall be provided for each color and sheen shown in the contract documents. Drawdowns shall indicate color, sheen, paint manufacturer, location, formula, type, and Architect’s paint designation.
15. Include paint in exposed ceiling areas and areas above ceiling visible to view.
16. Include painting of conduit, piping, pipe insulation, pipe hangers and supports exposed in stairway or other open finished spaces.
17. Paint surfaces behind movable equipment and furniture. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before installation.
18. Provide samples and mock-ups as required for approval of finishes.
19. Apply finish coats in 2 coats minimum completely covering surface to receive opaque, smooth finish of uniform color, appearance and coverage. Provide finish free of cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections.
20. Paint interior caulking in with adjacent surfaces unless location and color precludes the need for paint color.
21. Prime coats specified in "Schedule of Painting" will be required even on items delivered with prime or shop coats already applied unless noted otherwise. Touch- up all prime or shop coats, whether receiving additional paint or not.
22. Includes black out painting for areas behind grilles and diffusers.
23. Includes painting of fire rated plywood for the translucent panel at the feature wall in the Atrium lobby.

Exterior Painting

1. Provide maintenance data, manufacturer's warranties, and color records for Closeout as indicated in the contract documents.
2. Provide sample applications/mock-ups as listed; coordinate with Contractor and schedule for timing.

3. Proper delivery & storage techniques in compliance with specifications and manufacturer's recommendations.
4. Exterior paint shall be per specifications.
5. Subcontractor shall protect other construction from paint/damage and repair as needed.
6. Subcontractor shall provide & place "Wet Paint" signs as needed to protect newly painted finishes.
7. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease before mechanical cleaning.
8. Surface preparation is included in this scope. Clean ungalvanized ferrous metal surfaces that have not been shop-coated by removing oil, grease, dirt, loose mill-scales and any other surfaces that impair bond. Touch up bare and damaged areas of shop applied primers using same primer as shop coat.
9. Clean all exterior surfaces that will receive paint, remove dirt, oil, and other contaminants prior to paint application. Use mineral spirits on aluminum surfaces.
10. Tint undercoats lighter to distinguish each coat where multiple coats of same material are required.
11. Paint all exposed surfaces in areas scheduled to be painted except prefinished and factory-finished items UNO.
12. Prime coats specified in "Schedule of Painting" will be required even on items delivered with prime or shop coats already applied unless noted otherwise. Touch- up all prime or shop coats, whether receiving additional paint or not.
13. Back priming with same material as specified for front side will be required herein for all wood trim.
14. All closets and storage areas (not including metal and wood cabinets) shall be finished the same as adjoining rooms, unless otherwise specified or directed by the Architect.
15. Field painting will not be required on items specified to be finished at factory or on aluminum, copper, brass, bronze and other non-ferrous metal unless specifically designated.
16. Finish exterior doors on tops, bottoms, and side edges same as exterior faces.
17. Allow each coat to dry before applying next coat so that application of next coat of paint does not cause lifting, loss of adhesion, or other damage to undercoats.
18. Recoat primed/sealed surfaces where there is evidence of suction spots or unsealed areas in first coat.
19. Apply finish coats in 2 coats minimum completely covering surface to receive opaque, smooth finish of uniform color, appearance and coverage. Provide finish free of cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, and other surface imperfections.
20. Remove discarded paint materials, rubbish, cans and rags from site at the end of each workday. Properly remove any rags containing stain, varnish, and possible flammable liquids properly. Do not throw in garbage cans until particulates are no longer flammable.
21. Upon completion of painting, clan window glass and any other paint-splattered surfaces without scratching or otherwise damaging finished surfaces.
22. Adhere to Primer and Finish Scheule included in Specifications.

23. Attic stock material for all paint types to be turned over to the Owner at project completion. If no quantities are provided a minimum of three percent is to be turned over.
24. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Sealed Concrete. Can provide a voluntary add alternate to provide and install SC2 and SC3 on the project, see bid package standard bid form.
2. Staining and Transparent Finishing.
3. Payment and Performance Bond, to be included as an alternate.
4. Sales Tax.

SCOPE OF WORK

BE4-09E – Sealed Concrete & Epoxy Flooring

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
096723	Resinous Flooring

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install concrete sealer.
    a. Includes SC2 and SC3. SC1 is by others.
2. Include products listed in Specifications. Product data must be submitted and approved by the Architect. Only approved products shall be used.
3. Clean substrates of dust, dirt, oil, grease or any other materials that may hinder penetration of the sealer.
4. Completely remove all excess sealer from the surface once application is complete. Remove any white residue by grinding or sanding as recommended by the sealer manufacturer and reapply.
5. Cleanup of work areas after completion.
6. Includes all LEED documentation.
7. Provide Add Alternate as listed in Specification 01 23000: Alternate No. 01 - Resinous Epoxy Flooring System. See Bid Package Standard Bid Form.
    a. **Base Bid Item**: Section 03 3511 and Drawing number IF000 - IF116B including topical concrete floor sealer in mechanical rooms, plumbing rooms, lab storage and waste spaces, and mechanical penthouse as identified on the noted interior finish drawings.
    b. **Alternate Item:** Section 09 6723 and Drawing number IF000 - IF116B including an alternate cost to SUBSTITUTE resinous epoxy flooring system in mechanical rooms, plumbing rooms, lab storage and waste spaces, and mechanical penthouse as identified on the noted interior finish drawings in lieu of a topical concrete floor sealer.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.

BE4-10A – Toilet Partitions & Bathroom Accessories (Furnish)

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
102113.13	Metal Toilet Compartments
102800	Toilet, Bath, and Laundry Accessories

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish all toilet partitions and bathroom accessories on the project.
2. Includes all mounting hardware and fasteners
    a. Blocking material by others, provide shop drawing indicating all required blocking for installation
3. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Installation by others
2. Payment and Performance Bond, to be included as an alternate.
3. Sales Tax.

BE4-10B – Lockers (Furnish)

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
105113	Metal Locker
105129	Phenolic Lockers

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish all phenolic and metal lockers on the project.
2. Includes shop drawings with all required blocking and/or mounting points clearly shown and dimensioned.
3. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Installation by others
2. Blocking material and installation
3. Payment and Performance Bond, to be included as an alternate.
4. Sales Tax.

BE4-10C – Wall Protection (Furnish)

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
102600	Wall and Door Protection

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish all wall protection and corner guards for the project.
2. Includes all corner guards. Reference tags CG1 – CG5.
3. Includes stainless steel and corner trims.
4. CG4 and CG5 to be a custom color match.
5. Subcontract shall furnish all sheet wall protection. Reference tags SWP1 and SWP2.
6. Shop drawings inclusive of all required blocking.
7. Includes all required LEED documentation.

Work Performed by Others and Excluded:

1. Installation by others
2. Payment and Performance Bond, to be included as an alternate.
3. Sales Tax.

BE4-10D – Visual Display Units (Furnish)

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
101100	Visual Display Boards

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish all visual display units for the project.
    a. Includes writable glass. Reference tags WG1 and WG2.
    b. Includes nonmagnetic glass markerboards.
2. All LEED documentation
3. Provide detailed shop drawing inclusive of all required blocking.

Work Performed by Others and Excluded:

1. Installation by others.
2. Payment and Performance Bond, to be included as an alternate.
3. Sales Tax.

BE4-10E – Operable Partitions (Furnish)

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
102239	Folding Panel Partitions (Furnish)
260533.13	Conduit for Electrical Systems (as required)
260583	Wiring Connections (as required)

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish the folding partition at classrooms 102/104.
2. Include all hardware, fasteners, and accessories for a complete installation.
3. Includes furnish of the full coverage acoustic wall panel as referenced at AWP6.
4. Provide shop drawings with all blocking and attachments clearly shown and dimensioned
5. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Installation by others. An add alternate can be provided for installation, see Bid Package Standard Bid Form.
2. Blocking material and installation
3. Point of contact to be provided by EC.
4. Payment and Performance Bond, to be included as an alternate.
5. Sales Tax.

SCOPE OF WORK

BE4-10F – Signage (Interior & Exterior)

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
101400	Interior Signage
101419	Dimensional Letter Signage

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all interior and exterior signage on the project.
2. Includes exterior signage shown on A710:
    a. North Entry “1301 Indiana Avenue”
    b. North Screenwall IU Trident and “Indiana University Launch Accelerator for Biosciences”
    c. North Tower IU Trident and “Indiana University”
    d. South Tower IU Trident and “Indiana University”
    e. South IU Trident (lower)
    f. Monument Lettering “Indiana University Launch Accelerator for Biosciences” and “26 Tech Innovation District” on LA202
3. Includes interior signage:
    a. All signage listed on the Signage Schedule – IF910.
    b. Excludes room schedulers – to be by others.
4. Provide Shop drawing inclusive of all required blocked and electrical connections.
    a. Illuminated signs to include integral lighting system and controls.
5. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.

BE4-10G – Walkable Ceiling

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install the walkable ceiling on the project as shown in detail on A140.
2. Includes delegated design.
3. Subcontractor shall submit shop drawings with calculations.
    a. Includes loads as required by applicable codes.
    b. Floor to be minimum 4” and max 14” away from perimeter bulkhead.
    c. Support system from main structural members only.
4. Includes fiberglass grating floor with grit surface
    a. To be shop painted with touch ups included as necessary.
5. Coordinate location of grating openings (and toe boards as required) with others
6. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Provide voluntary alternate adder to provide the complete delegate design, furnish, and install of “Winch System for Lowering Fans” as outlined on A140.
2. Payment and Performance Bond, to be included as an alternate.
3. Sales Tax.

BE4-12A – Window Treatments

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
122413	Roller Window Shades

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all roller window shades and controls as shown on the contract documents.
    a. Includes installation of all controls wiring, conduit, and devices
2. Subcontractors shall include all required brackets, supplemental anchorage, pockets, and enclosures.
3. Shop drawings will be provided in a timely manner per subcontract agreement for coordination with drywall sub for shade pocket framing.
4. Subcontractor shall provide black-out shades where indication in plan notes.
5. Includes miscellaneous fitting, cutting, and patching in conjunction with the work.
6. Subcontractor shall furnish and install all mock-ups as required by the contract documents.
7. Includes field measure. If project areas requiring field measuring are not available at the time that materials are required to be ordered, this Subcontractor shall advise the CM and request direction.
8. Subcontractor is responsible for all their materials management, equipment, and hoisting within their scope of work. Coordinate with the CM for secure storage areas.
9. Includes shop drawing inclusive of all required blocking and supports.
10. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Final electrical connection to be by others.
3. Sales Tax.

BE4-13A – Lab Casework & Equipment

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
079200	Joint Sealants (as applicable)
115300	Misc. Lab Equipment
115313	Laboratory Fume Hoods
115317	Laboratory Glassware
115313	Laboratory Sterilizers with Electric Steam Generators
123553	General Requirements for Laboratory Casework and Fume Hoods
123553.03	Adaptable Laboratory Casework Systems
123553.13	Metal Laboratory Casework with Wood Fronts
123661	Simulated Stone Countertops

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all lab casework, countertops, equipment, fixtures, hardware etc.
    a. Reference QF Drawing Series and above-mentioned specifications.
    b. All equipment to be furnished and installed by contractor unless noted otherwise in the contract documents or the exclusions listed below.
2. Includes service fixtures as listed on the service fixture schedule.
3. Furnish and install all fume hoods and associated exhaust valves, including valves in future fume hood locations.
4. All connections including final to this equipment supplied and or installed by this contractor to be by others.
5. Joint sealants and caulking against dissimilar surfaces of installed products.
6. Subcontractor to supply shop drawing inclusive of all required blocking.
7. Coordination of deliveries and storage with CM superintendent.
8. Subcontractor to provide any and all mockups required per specifications.
9. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Provide voluntary alternate to include: Installation of owner furnished lab vacuum system. Piping to be by others. Final connection to be made by this subcontractor.
3. 3 Sterilizers to be OFOI.
4. Environmental Rooms to be OFOI.
5. 2 Icemakers and bins to be OFOI.

6. 1 Glassware Washers to be OFOI.
7. Biological Safety Cabinets to be OFOI
8. Sales Tax.

BE4-32A – Flagpoles

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
107500	Flagpoles

Additionally, this scope of work includes, but is not limited to, the following:

1. Furnish and install all flagpoles as shown on contract documents.
2. Includes all labor and materials for complete installation; including but not limited to: foundation tube sleeve, pole base attachment, lighting grounding cable, finishes, hand crank operator, accessories, etc.
3. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Flagpole foundations to be by others.
3. Sales Tax.

SCOPE OF WORK

BE4-32B – Bike Racks (Furnish)

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
129313	Bicycle Racks

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish all bike racks for the project.
2. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Installation by others. An add alternate can be provided for installation, see Bid Package Standard Bid Form. Includes foundations.
2. Payment and Performance Bond, to be included as an alternate.
3. Sales Tax.

SCOPE OF WORK

BE4-32C – Bus Shelter

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
107343	Transportation Stop Shelters

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install the prefabricated bus shelter as shown on contract documents
    a. Anchor Bolts and mounting hardware as required.
2. Includes all LEED documentation.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.

SCOPE OF WORK

BE4-32D – Site Railings

The work for this Bid Package specifically includes, but is not limited to, all work as defined in the following Specification Sections:

Division 00	Procurement and Contract Requirements
Division 01	General Requirements
055213	Pipe and Tube Railings

Additionally, this scope of work includes, but is not limited to, the following:

1. Subcontractor shall furnish and install all site railings for the project.
2. Includes all necessary materials, hoisting, hot work permits, etc. required to install complete and code compliant site rail systems.
3. Furnish and install all necessary anchors, post mount flanges, etc.

Work Performed by Others and Excluded:

1. Payment and Performance Bond, to be included as an alternate.
2. Sales Tax.



Indiana University

4. CONTRACT DOCUMENTS

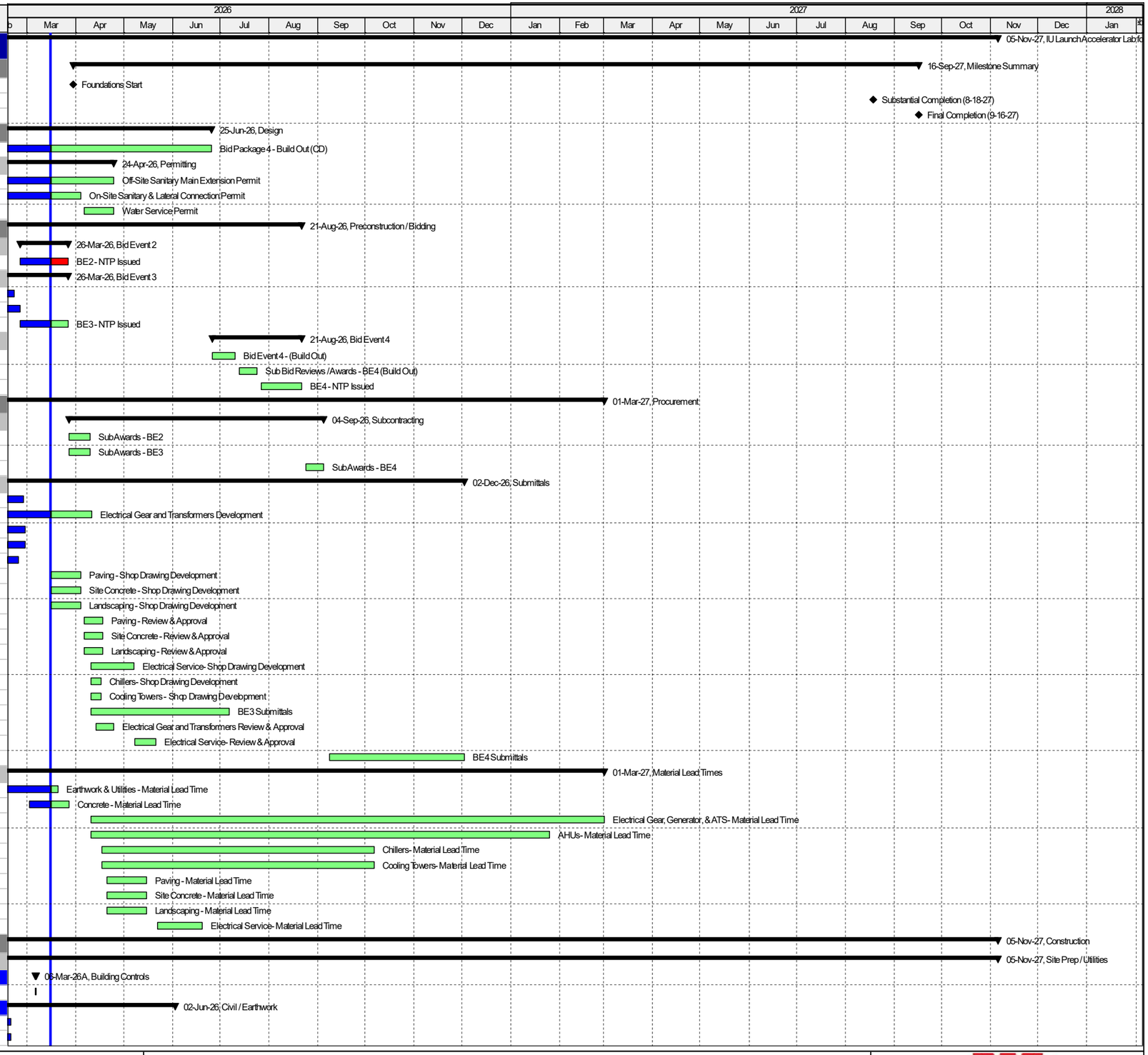
IU Launch Accelerator for Biosciences

Indianapolis, IN

CONSTRUCTION SCHEDULE

(Also available as a separate attachment in Building Connected)

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish
IU Launch Accelerator Lab for Biosciences - COPY		485	420	10-Dec-25A	05-Nov-27
Milestone Summary		374	374	30-Mar-26	16-Sep-27
A1020	Foundations Start	0	0	30-Mar-26	
A3000	Substantial Completion (8-18-27)	0	0		18-Aug-27
A3010	Final Completion (9-16-27)	0	0		16-Sep-27
Design		95	73	10-Dec-25A	25-Jun-26
A1070	Bid Package 4 - Build Out (CD)	73	73	17-Dec-25A	25-Jun-26
Permitting		70	30	10-Dec-25A	24-Apr-26
P1000	Off-Site Sanitary Main Extension Permit	30	30	10-Dec-25A	24-Apr-26
P1010	On-Site Sanitary & Lateral Connection Permit	30	15	10-Dec-25A	03-Apr-26
P1020	Water Service Permit	15	15	06-Apr-26	24-Apr-26
Preconstruction / Bidding		178	113	22-Dec-25A	21-Aug-26
Bid Event 2		9	9	24-Feb-26A	26-Mar-26
A1160	BE2 - NTP Issued	9	9	24-Feb-26A	26-Mar-26
Bid Event 3		74	9	22-Dec-25A	26-Mar-26
A1170	Bid Event 3 - (Core & Shell - Balance)	10	0	22-Dec-25A	20-Feb-26A
A1180	Sub Bid Reviews /Awards - BE3 (Core & Shell Balance)	10	0	04-Feb-26A	24-Feb-26A
A1190	BE3 - NTP Issued	9	9	24-Feb-26A	26-Mar-26
Bid Event 4		40	40	26-Jun-26	21-Aug-26
A1200	Bid Event 4 - (Build Out)	10	10	26-Jun-26	10-Jul-26
A1210	Sub Bid Reviews /Awards - BE4 (Build Out)	10	10	13-Jul-26	24-Jul-26
A1220	BE4 - NTP Issued	20	20	27-Jul-26	21-Aug-26
Procurement		279	244	19-Dec-25A	01-Mar-27
Subcontracting		114	114	27-Mar-26	04-Sep-26
A1240	SubAwards - BE2	10	10	27-Mar-26	09-Apr-26
A1250	SubAwards - BE3	10	10	27-Mar-26	09-Apr-26
A1260	SubAwards - BE4	10	10	24-Aug-26	04-Sep-26
Submittals		218	183	19-Dec-25A	02-Dec-26
A1280	Earthwork & Utilities - Shop Drawing Development	15	0	19-Dec-25A	26-Feb-26A
A1850	Electrical Gear and Transformers Development	25	20	29-Jan-26A	10-Apr-26
A1610	Generator, & ATS- Review & Approval	5	0	12-Feb-26A	27-Feb-26A
A1320	Concrete - Review & Approval	10	0	16-Feb-26A	27-Feb-26A
A1800	AHUs- Shop Drawing Development	5	0	16-Feb-26A	23-Feb-26A
A1290	Paving - Shop Drawing Development	15	15	16-Mar-26	03-Apr-26
A1300	Site Concrete - Shop Drawing Development	15	15	16-Mar-26	03-Apr-26
A1310	Landscaping - Shop Drawing Development	15	15	16-Mar-26	03-Apr-26
A1340	Paving - Review & Approval	10	10	06-Apr-26	17-Apr-26
A1350	Site Concrete - Review & Approval	10	10	06-Apr-26	17-Apr-26
A1360	Landscaping - Review & Approval	10	10	06-Apr-26	17-Apr-26
A1570	Electrical Service- Shop Drawing Development	20	20	10-Apr-26	07-May-26
A1810	Chillers- Shop Drawing Development	5	5	10-Apr-26	16-Apr-26
A1820	Cooling Towers - Shop Drawing Development	5	5	10-Apr-26	16-Apr-26
A1830	BE3 Submittals	60	60	10-Apr-26	06-Jul-26
A1860	Electrical Gear and Transformers Review & Approval	10	10	13-Apr-26	24-Apr-26
A1580	Electrical Service- Review & Approval	10	10	08-May-26	21-May-26
A1840	BE4 Submittals	60	60	08-Sep-26	02-Dec-26
Material Lead Times		254	244	22-Jan-26A	01-Mar-27
A1380	Earthwork & Utilities - Material Lead Time	20	5	22-Jan-26A	20-Mar-26
A1370	Concrete - Material Lead Time	20	10	02-Mar-26A	27-Mar-26
A1620	Electrical Gear, Generator, & ATS- Material Lead Time	225	225	10-Apr-26	01-Mar-27
A1770	AHUs- Material Lead Time	200	200	10-Apr-26	25-Jan-27
A1780	Chillers- Material Lead Time	120	120	17-Apr-26	06-Oct-26
A1790	Cooling Towers- Material Lead Time	120	120	17-Apr-26	06-Oct-26
A1390	Paving - Material Lead Time	20	20	20-Apr-26	15-May-26
A1400	Site Concrete - Material Lead Time	20	20	20-Apr-26	15-May-26
A1410	Landscaping - Material Lead Time	20	20	20-Apr-26	15-May-26
A1590	Electrical Service- Material Lead Time	20	20	22-May-26	19-Jun-26
Construction		442	420	12-Feb-26A	05-Nov-27
Site Prep / Utilities		442	420	12-Feb-26A	05-Nov-27
Building Controls		1	0	06-Mar-26A	06-Mar-26A
BC1000	Initial Control Points Set	1	0	06-Mar-26A	06-Mar-26A
Civil / Earthwork		78	56	12-Feb-26A	02-Jun-26
A1430	Site Make Ready - SWPP Installation	5	0	12-Feb-26A	18-Feb-26A
A1550	OHE & Poles Removal	5	0	12-Feb-26A	18-Feb-26A



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

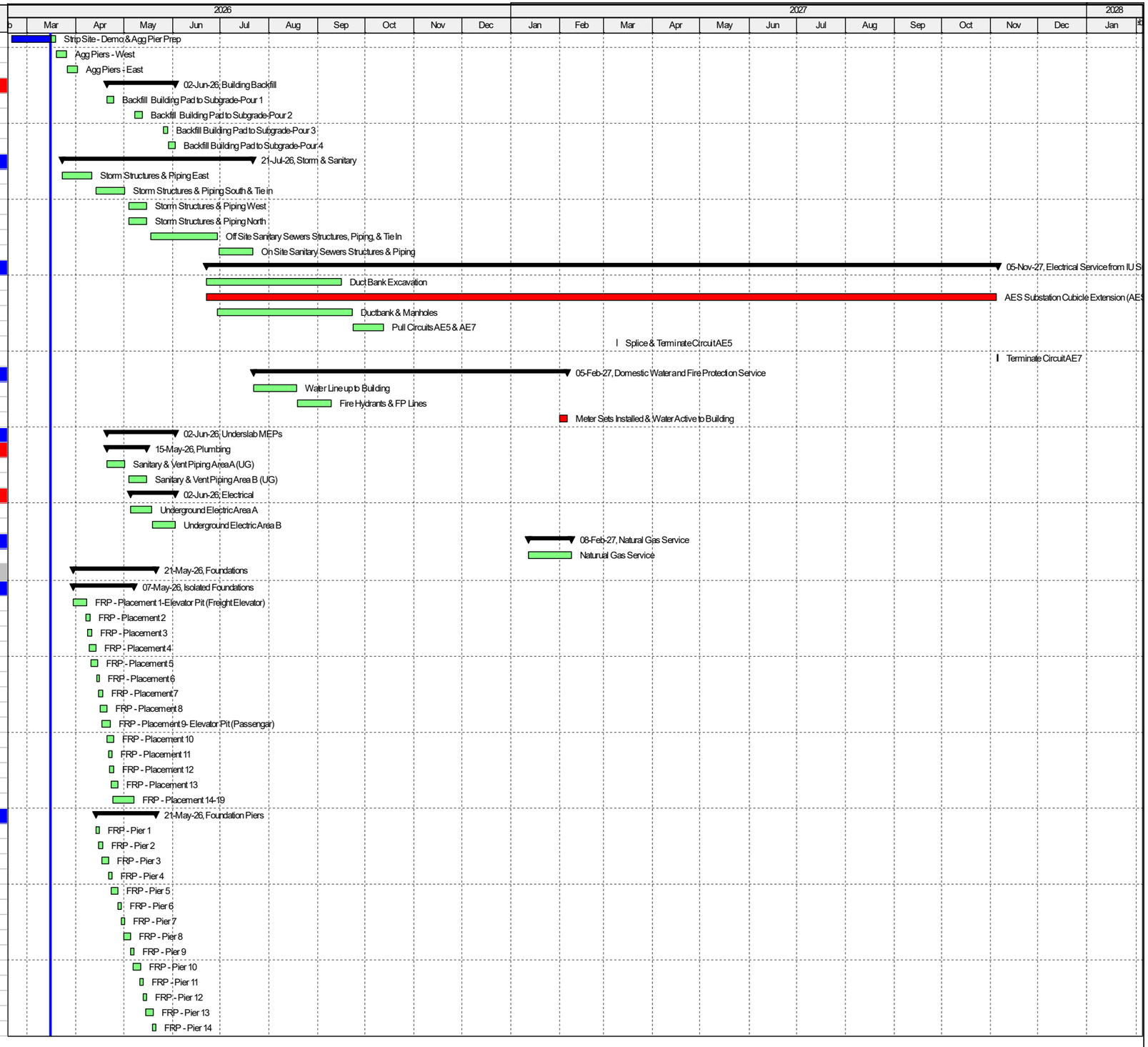
Data Date = 16-Mar-26
Schedule Printed on 30-Mar-26, at 13:00

IU Launch Accelerator Lab for Biosciences - COPY

Full Schedule - Standard Layout

F.A.WILHELM CONSTRUCTION

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish
A1540	Strip Site - Demo & Agg Pier Prep	10	3	19-Feb-26A	18-Mar-26
A1440	Agg Piers - West	5	5	19-Mar-26	25-Mar-26
A1450	Agg Piers - East	5	5	26-Mar-26	01-Apr-26
Building Backfill		31	31	20-Apr-26	02-Jun-26
CIV2000	Backfill Building Pad to Subgrade-Pour 1	5	5	20-Apr-26	24-Apr-26
CIV2010	Backfill Building Pad to Subgrade-Pour 2	3	3	08-May-26	12-May-26
CIV2020	Backfill Building Pad to Subgrade-Pour 3	3	3	26-May-26	28-May-26
CIV2030	Backfill Building Pad to Subgrade-Pour 4	3	3	29-May-26	02-Jun-26
Storm & Sanitary		85	85	23-Mar-26	21-Jul-26
A1460	Storm Structures & Piping East	15	15	23-Mar-26	10-Apr-26
A1470	Storm Structures & Piping South & Tie in	15	15	13-Apr-26	01-May-26
A1480	Storm Structures & Piping West	10	10	04-May-26	15-May-26
A1490	Storm Structures & Piping North	10	10	04-May-26	15-May-26
A1670	Off Site Sanitary Sewers Structures, Piping, & Tie In	30	30	18-May-26	29-Jun-26
A1640	On Site Sanitary Sewers Structures & Piping	15	15	30-Jun-26	21-Jul-26
Electrical Service from IU Substation		351	351	22-Jun-26	05-Nov-27
A1560	Duct Bank Excavation	60	60	22-Jun-26	15-Sep-26
A1650	AES Substation Cubicle Extension (AES DRIVEN)	350	350	22-Jun-26	04-Nov-27
A1500	Ductbank & Manholes	60	60	29-Jun-26	22-Sep-26
A1510	Pull Circuits AE5 & AE7	14	14	23-Sep-26	12-Oct-26
A1630	Splice & Terminate Circuit AE5	1	1	09-Mar-27	09-Mar-27
A1660	Terminate Circuit AE7	1	1	05-Nov-27	05-Nov-27
Domestic Water and Fire Protection Service		138	138	22-Jul-26	05-Feb-27
A1680	Water Line up to Building	20	20	22-Jul-26	18-Aug-26
A1690	Fire Hydrants & FP Lines	15	15	19-Aug-26	09-Sep-26
A1720	Meter Sets Installed & Water Active to Building	5	5	01-Feb-27*	05-Feb-27
Underslab MEPs		31	31	20-Apr-26	02-Jun-26
Plumbing		20	20	20-Apr-26	15-May-26
A1700	Sanitary & Vent Piping Area A (UG)	10	10	20-Apr-26	01-May-26
A1710	Sanitary & Vent Piping Area B (UG)	10	10	04-May-26	15-May-26
Electrical		20	20	05-May-26	02-Jun-26
A1730	Underground Electric Area A	10	10	05-May-26	18-May-26
A1740	Underground Electric Area B	10	10	19-May-26	02-Jun-26
Natural Gas Service		20	20	12-Jan-27	08-Feb-27
A1750	Naturual Gas Service	20	20	12-Jan-27	08-Feb-27
Foundations		39	39	30-Mar-26	21-May-26
Isolated Foundations		29	29	30-Mar-26	07-May-26
FDN1000	FRP - Placement 1-Elevator Pit (Freight Elevator)	7	7	30-Mar-26	07-Apr-26
FDN1010	FRP - Placement 2	3	3	07-Apr-26	09-Apr-26
FDN1020	FRP - Placement 3	3	3	08-Apr-26	10-Apr-26
FDN1030	FRP - Placement 4	3	3	09-Apr-26	13-Apr-26
FDN1040	FRP - Placement 5	3	3	10-Apr-26	14-Apr-26
FDN1050	FRP - Placement 6	2	2	14-Apr-26	15-Apr-26
FDN1060	FRP - Placement 7	3	3	15-Apr-26	17-Apr-26
FDN1070	FRP - Placement 8	3	3	16-Apr-26	20-Apr-26
FDN1080	FRP - Placement 9- Elevator Pit (Passengar)	4	4	17-Apr-26	22-Apr-26
FDN1090	FRP - Placement 10	5	5	20-Apr-26	24-Apr-26
FDN1100	FRP - Placement 11	3	3	21-Apr-26	23-Apr-26
FDN1110	FRP - Placement 12	3	3	22-Apr-26	24-Apr-26
FDN1120	FRP - Placement 13	3	3	23-Apr-26	27-Apr-26
FDN1130	FRP - Placement 14-19	10	10	24-Apr-26	07-May-26
Foundation Piers		29	29	13-Apr-26	21-May-26
FDN1140	FRP - Pier 1	3	3	13-Apr-26	15-Apr-26
FDN1150	FRP - Pier 2	3	3	15-Apr-26	17-Apr-26
FDN1160	FRP - Pier 3	3	3	17-Apr-26	21-Apr-26
FDN1170	FRP - Pier 4	3	3	21-Apr-26	23-Apr-26
FDN1180	FRP - Pier 5	3	3	23-Apr-26	27-Apr-26
FDN1190	FRP - Pier 6	3	3	27-Apr-26	29-Apr-26
FDN1200	FRP - Pier 7	3	3	29-Apr-26	01-May-26
FDN1210	FRP - Pier 8	3	3	01-May-26	05-May-26
FDN1220	FRP - Pier 9	3	3	05-May-26	07-May-26
FDN1230	FRP - Pier 10	3	3	07-May-26	11-May-26
FDN1240	FRP - Pier 11	3	3	11-May-26	13-May-26
FDN1250	FRP - Pier 12	3	3	13-May-26	15-May-26
FDN1260	FRP - Pier 13	3	3	15-May-26	19-May-26
FDN1270	FRP - Pier 14	3	3	19-May-26	21-May-26



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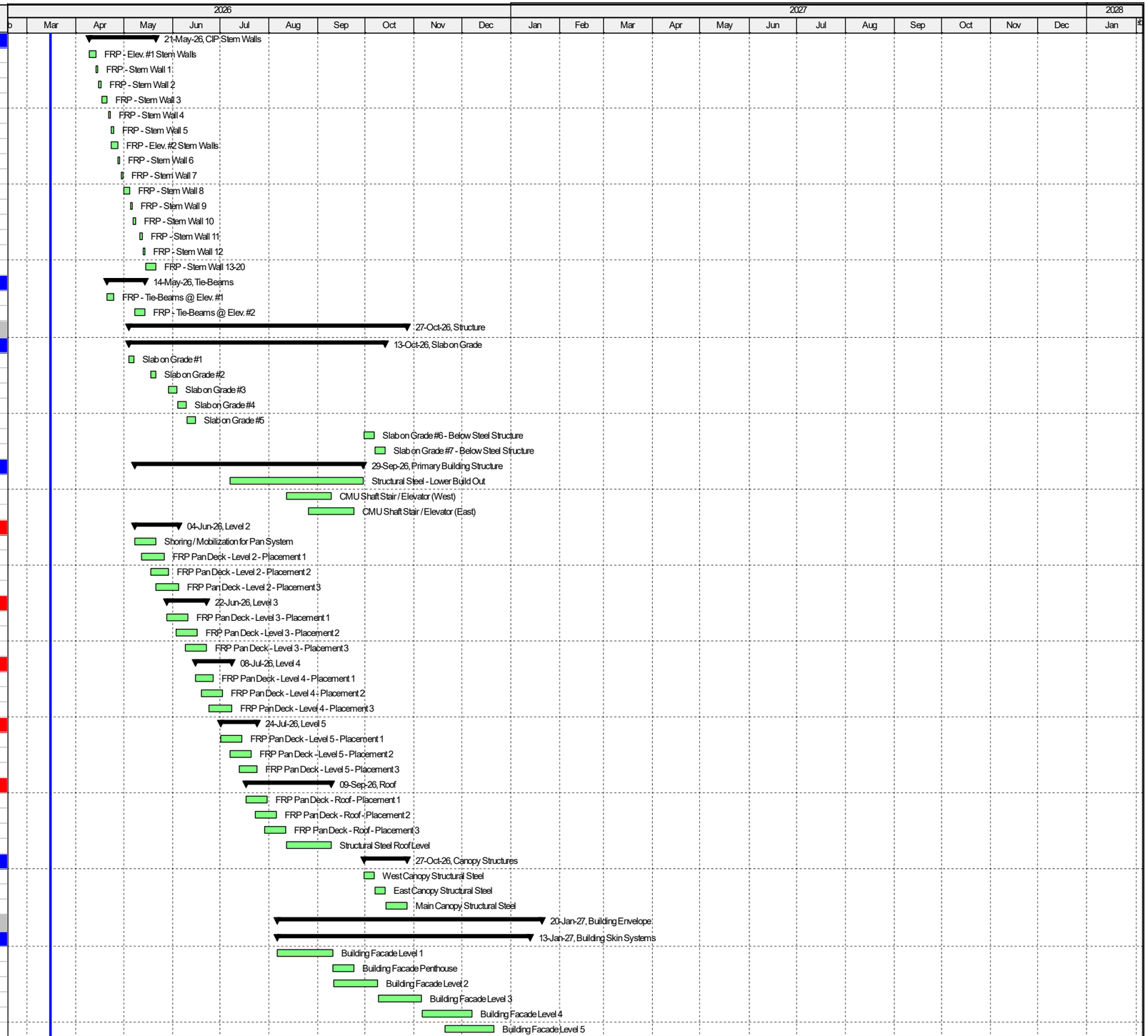
IU Launch Accelerator Lab for Biosciences - COPY

Full Schedule - Standard Layout

F.A.WILHELM CONSTRUCTION

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish
CIP Stem Walls		31	31	09-Apr-26	21-May-26
FDN1410	FRP - Elev. #1 Stem Walls	3	3	09-Apr-26	13-Apr-26
FDN1280	FRP - Stem Wall 1	2	2	13-Apr-26	14-Apr-26
FDN1290	FRP - Stem Wall 2	2	2	15-Apr-26	16-Apr-26
FDN1300	FRP - Stem Wall 3	2	2	17-Apr-26	20-Apr-26
FDN1310	FRP - Stem Wall 4	2	2	21-Apr-26	22-Apr-26
FDN1320	FRP - Stem Wall 5	2	2	23-Apr-26	24-Apr-26
FDN1420	FRP - Elev. #2 Stem Walls	3	3	23-Apr-26	27-Apr-26
FDN1330	FRP - Stem Wall 6	2	2	27-Apr-26	28-Apr-26
FDN1340	FRP - Stem Wall 7	2	2	29-Apr-26	30-Apr-26
FDN1350	FRP - Stem Wall 8	2	2	01-May-26	04-May-26
FDN1360	FRP - Stem Wall 9	2	2	05-May-26	06-May-26
FDN1370	FRP - Stem Wall 10	2	2	07-May-26	08-May-26
FDN1380	FRP - Stem Wall 11	2	2	11-May-26	12-May-26
FDN1390	FRP - Stem Wall 12	2	2	13-May-26	14-May-26
FDN1400	FRP - Stem Wall 13-20	5	5	15-May-26	21-May-26
Tie-Beams		19	19	20-Apr-26	14-May-26
FDN1430	FRP - Tie-Beams @ Elev. #1	5	5	20-Apr-26	24-Apr-26
FDN1440	FRP - Tie-Beams @ Elev. #2	5	5	08-May-26	14-May-26
Structure		124	124	04-May-26	27-Oct-26
Slab on Grade		114	114	04-May-26	13-Oct-26
SOG1000	Slab on Grade #1	4	4	04-May-26	07-May-26
SOG1010	Slab on Grade #2	4	4	18-May-26	21-May-26
SOG1020	Slab on Grade #3	4	4	29-May-26	03-Jun-26
SOG1030	Slab on Grade #4	4	4	04-Jun-26	09-Jun-26
SOG1040	Slab on Grade #5	4	4	10-Jun-26	15-Jun-26
SOG1050	Slab on Grade #6 - Below Steel Structure	5	5	30-Sep-26	06-Oct-26
SOG1060	Slab on Grade #7 - Below Steel Structure	5	5	07-Oct-26	13-Oct-26
Primary Building Structure		100	100	08-May-26	29-Sep-26
STR1230	Structural Steel - Lower Build Out	60	60	07-Jul-26	29-Sep-26
STR1000	CMU Shaft Stair / Elevator (West)	20	20	12-Aug-26	09-Sep-26
STR1010	CMU Shaft Stair / Elevator (East)	20	20	26-Aug-26	23-Sep-26
Level 2		19	19	08-May-26	04-Jun-26
STR1020	Shoring / Mobilization for Pan System	10	10	08-May-26	21-May-26
STR1030	FRP Pan Deck - Level 2 - Placement 1	10	10	12-May-26	26-May-26
STR1040	FRP Pan Deck - Level 2 - Placement 2	9	9	18-May-26	29-May-26
STR1050	FRP Pan Deck - Level 2 - Placement 3	10	10	21-May-26	04-Jun-26
Level 3		18	18	28-May-26	22-Jun-26
STR1070	FRP Pan Deck - Level 3 - Placement 1	10	10	28-May-26	10-Jun-26
STR1080	FRP Pan Deck - Level 3 - Placement 2	10	10	03-Jun-26	16-Jun-26
STR1090	FRP Pan Deck - Level 3 - Placement 3	10	10	09-Jun-26	22-Jun-26
Level 4		17	17	15-Jun-26	08-Jul-26
STR1110	FRP Pan Deck - Level 4 - Placement 1	10	10	15-Jun-26	26-Jun-26
STR1120	FRP Pan Deck - Level 4 - Placement 2	10	10	19-Jun-26	02-Jul-26
STR1130	FRP Pan Deck - Level 4 - Placement 3	10	10	24-Jun-26	08-Jul-26
Level 5		17	17	01-Jul-26	24-Jul-26
STR1150	FRP Pan Deck - Level 5 - Placement 1	9	9	01-Jul-26	14-Jul-26
STR1160	FRP Pan Deck - Level 5 - Placement 2	10	10	07-Jul-26	20-Jul-26
STR1170	FRP Pan Deck - Level 5 - Placement 3	10	10	13-Jul-26	24-Jul-26
Roof		38	38	17-Jul-26	09-Sep-26
STR1190	FRP Pan Deck - Roof - Placement 1	10	10	17-Jul-26	30-Jul-26
STR1200	FRP Pan Deck - Roof - Placement 2	10	10	23-Jul-26	05-Aug-26
STR1210	FRP Pan Deck - Roof - Placement 3	10	10	29-Jul-26	11-Aug-26
STR1240	Structural Steel Roof Level	20	20	12-Aug-26	09-Sep-26
Canopy Structures		20	20	30-Sep-26	27-Oct-26
STR1260	West Canopy Structural Steel	5	5	30-Sep-26	06-Oct-26
STR1250	East Canopy Structural Steel	5	5	07-Oct-26	13-Oct-26
STR1270	Main Canopy Structural Steel	10	10	14-Oct-26	27-Oct-26
Building Envelope		115	115	06-Aug-26	20-Jan-27
Building Skin Systems		110	110	06-Aug-26	13-Jan-27
ENV1000	Building Facade Level 1	25	25	06-Aug-26	10-Sep-26
ENV1070	Building Facade Penthouse	10	10	10-Sep-26	23-Sep-26
ENV1010	Building Facade Level 2	20	20	11-Sep-26	08-Oct-26
ENV1040	Building Facade Level 3	20	20	09-Oct-26	05-Nov-26
ENV1050	Building Facade Level 4	20	20	06-Nov-26	07-Dec-26
ENV1060	Building Facade Level 5	20	20	20-Nov-26	21-Dec-26



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

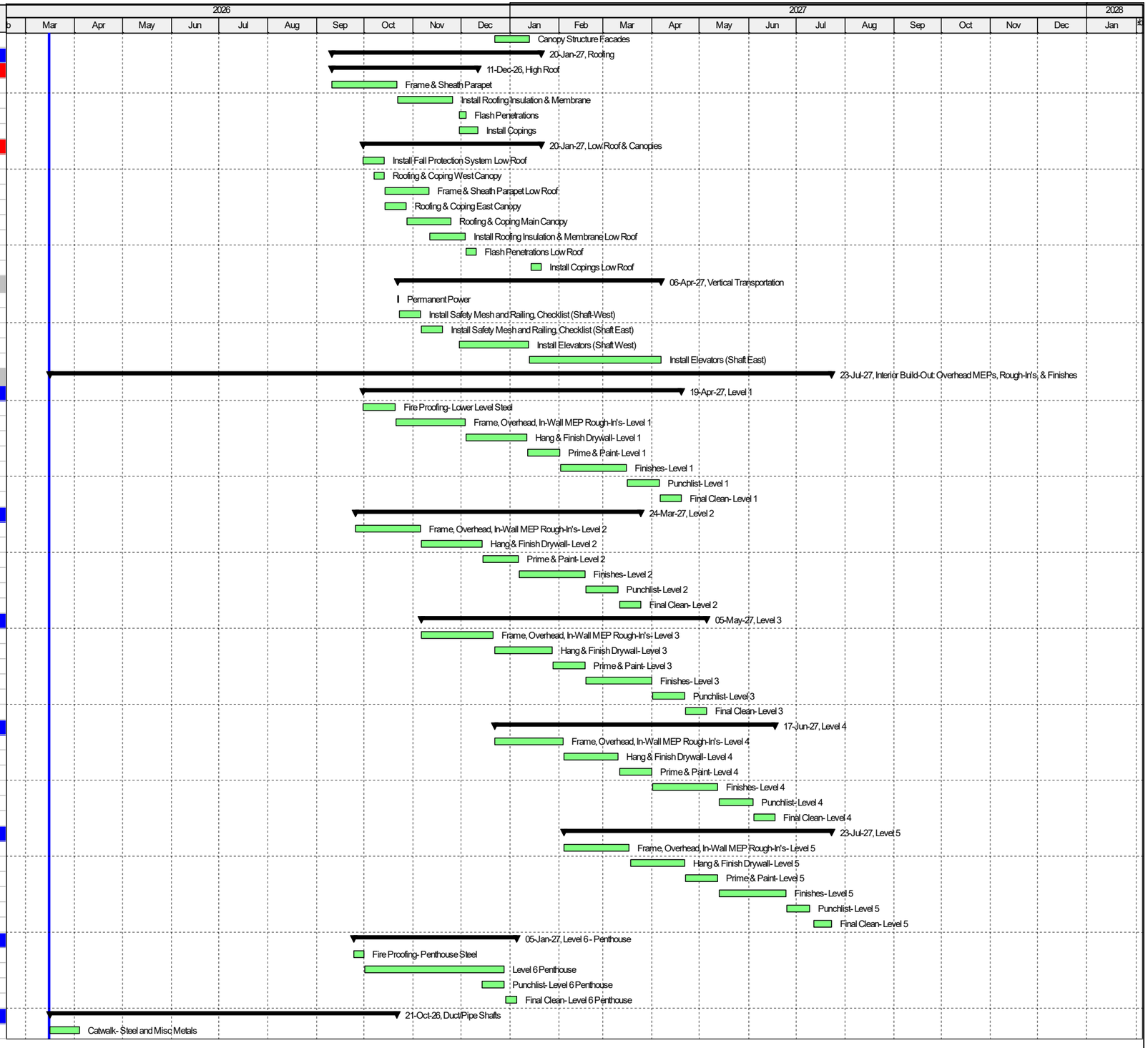
Data Date = 16-Mar-26
Schedule Printed on 30-Mar-26, at 13:00

IU Launch Accelerator Lab for Biosciences - COPY

Full Schedule - Standard Layout

F.A.WILHELM CONSTRUCTION

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish
ENV1030	Canopy Structure Facades	15	15	22-Dec-26	13-Jan-27
Roofing		91	91	10-Sep-26	20-Jan-27
High Roof		65	65	10-Sep-26	11-Dec-26
ENV1090	Frame & Sheath Parapet	30	30	10-Sep-26	21-Oct-26
ENV1110	Install Roofing Insulation & Membrane	25	25	22-Oct-26	25-Nov-26
ENV1100	Flash Penetrations	5	5	30-Nov-26	04-Dec-26
ENV1120	Install Copings	10	10	30-Nov-26	11-Dec-26
Low Roof & Canopies		77	77	30-Sep-26	20-Jan-27
ENV1130	Install Fall Protection System Low Roof	10	10	30-Sep-26	13-Oct-26
ENV1190	Roofing & Coping West Canopy	5	5	07-Oct-26	13-Oct-26
ENV1140	Frame & Sheath Parapet Low Roof	20	20	14-Oct-26	10-Nov-26
ENV1180	Roofing & Coping East Canopy	10	10	14-Oct-26	27-Oct-26
ENV1200	Roofing & Coping Main Canopy	20	20	28-Oct-26	24-Nov-26
ENV1150	Install Roofing Insulation & Membrane Low Roof	15	15	11-Nov-26	03-Dec-26
ENV1160	Flash Penetrations Low Roof	5	5	04-Dec-26	10-Dec-26
ENV1170	Install Copings Low Roof	5	5	14-Jan-27	20-Jan-27
Vertical Transportation		115	115	22-Oct-26	06-Apr-27
ELEV 1000	Permanent Power	1	1	22-Oct-26	22-Oct-26
ELEV 1010	Install Safety Mesh and Railing, Checklist (Shaft-West)	10	10	23-Oct-26	05-Nov-26
ELEV 1030	Install Safety Mesh and Railing, Checklist (Shaft East)	10	10	06-Nov-26	19-Nov-26
ELEV 1020	Install Elevators (Shaft West)	30	30	30-Nov-26	12-Jan-27
ELEV 1040	Install Elevators (Shaft East)	60	60	13-Jan-27	06-Apr-27
Interior Build-Out: Overhead MEPs, Rough-In's, & Finishes		346	346	16-Mar-26	23-Jul-27
Level 1		140	140	30-Sep-26	19-Apr-27
ROUG1000	Fire Proofing- Lower Level Steel	15	15	30-Sep-26	20-Oct-26
ROUG1010	Frame, Overhead, In-Wall MEP Rough-In's- Level 1	30	30	21-Oct-26	03-Dec-26
ROUG1020	Hang & Finish Drywall- Level 1	25	25	04-Dec-26	11-Jan-27
ROUG1030	Prime & Paint- Level 1	15	15	12-Jan-27	01-Feb-27
ROUG1040	Finishes- Level 1	30	30	02-Feb-27	15-Mar-27
ROUG1050	Punchlist- Level 1	15	15	16-Mar-27	05-Apr-27
ROUG1060	Final Clean- Level 1	10	10	06-Apr-27	19-Apr-27
Level 2		125	125	25-Sep-26	24-Mar-27
ROUG1070	Frame, Overhead, In-Wall MEP Rough-In's- Level 2	30	30	25-Sep-26	05-Nov-26
ROUG1080	Hang & Finish Drywall- Level 2	25	25	06-Nov-26	14-Dec-26
ROUG1090	Prime & Paint- Level 2	15	15	15-Dec-26	06-Jan-27
ROUG1100	Finishes- Level 2	30	30	07-Jan-27	17-Feb-27
ROUG1110	Punchlist- Level 2	15	15	18-Feb-27	10-Mar-27
ROUG1120	Final Clean- Level 2	10	10	11-Mar-27	24-Mar-27
Level 3		125	125	06-Nov-26	05-May-27
ROUG1130	Frame, Overhead, In-Wall MEP Rough-In's- Level 3	30	30	06-Nov-26	21-Dec-26
ROUG1140	Hang & Finish Drywall- Level 3	25	25	22-Dec-26	27-Jan-27
ROUG1150	Prime & Paint- Level 3	15	15	28-Jan-27	17-Feb-27
ROUG1160	Finishes- Level 3	30	30	18-Feb-27	31-Mar-27
ROUG1170	Punchlist- Level 3	15	15	01-Apr-27	21-Apr-27
ROUG1180	Final Clean- Level 3	10	10	22-Apr-27	05-May-27
Level 4		125	125	22-Dec-26	17-Jun-27
ROUG1190	Frame, Overhead, In-Wall MEP Rough-In's- Level 4	30	30	22-Dec-26	03-Feb-27
ROUG1200	Hang & Finish Drywall- Level 4	25	25	04-Feb-27	10-Mar-27
ROUG1210	Prime & Paint- Level 4	15	15	11-Mar-27	31-Mar-27
ROUG1220	Finishes- Level 4	30	30	01-Apr-27	12-May-27
ROUG1230	Punchlist- Level 4	15	15	13-May-27	03-Jun-27
ROUG1240	Final Clean- Level 4	10	10	04-Jun-27	17-Jun-27
Level 5		120	120	04-Feb-27	23-Jul-27
ROUG1250	Frame, Overhead, In-Wall MEP Rough-In's- Level 5	30	30	04-Feb-27	17-Mar-27
ROUG1260	Hang & Finish Drywall- Level 5	25	25	18-Mar-27	21-Apr-27
ROUG1270	Prime & Paint- Level 5	15	15	22-Apr-27	12-May-27
ROUG1280	Finishes- Level 5	30	30	13-May-27	24-Jun-27
ROUG1290	Punchlist- Level 5	10	10	25-Jun-27	09-Jul-27
ROUG1300	Final Clean- Level 5	10	10	12-Jul-27	23-Jul-27
Level 6 - Penthouse		70	70	24-Sep-26	05-Jan-27
ROUG1400	Fire Proofing- Penthouse Steel	5	5	24-Sep-26	30-Sep-26
ROUG1310	Level 6 Penthouse	60	60	01-Oct-26	28-Dec-26
ROUG1350	Punchlist- Level 6 Penthouse	10	10	14-Dec-26	28-Dec-26
ROUG1360	Final Clean- Level 6 Penthouse	5	5	29-Dec-26	05-Jan-27
Duct/Pipe Shafts		155	155	16-Mar-26	21-Oct-26
ROUG1370	Catwalk- Steel and Misc Metals	15	15	16-Mar-26	03-Apr-26



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

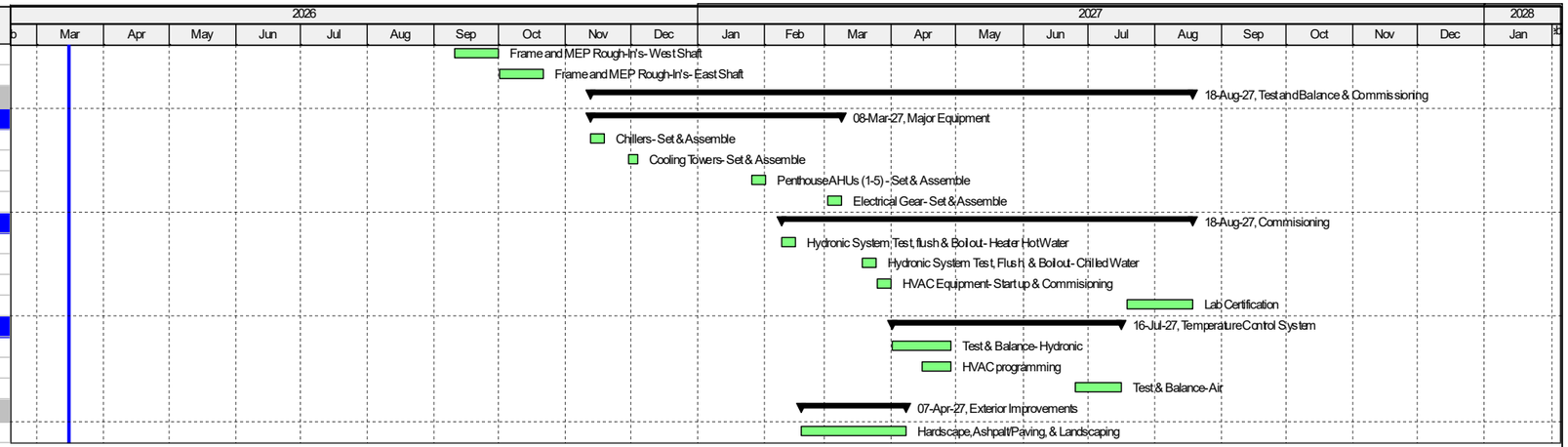
Data Date = 16-Mar-26
Schedule Printed on 30-Mar-26, at 13:00

IU Launch Accelerator Lab for Biosciences - COPY

Full Schedule - Standard Layout

F.A.WILHELM CONSTRUCTION

Activity ID	Activity Name	Original Duration	Remaining Duration	Start	Finish
ROUG1380	Frame and MEP Rough-In's- West Shaft	15	15	10-Sep-26	30-Sep-26
ROUG1390	Frame and MEP Rough-In's- East Shaft	15	15	01-Oct-26	21-Oct-26
Test and Balance & Commissioning		194	194	12-Nov-26	18-Aug-27
Major Equipment		79	79	12-Nov-26	08-Mar-27
MEQ1010	Chillers- Set & Assemble	5	5	12-Nov-26	18-Nov-26
MEQ1020	Cooling Towers- Set & Assemble	5	5	30-Nov-26	04-Dec-26
MEQ1000	Penthouse AHUs (1-5) - Set & Assemble	5	5	26-Jan-27	01-Feb-27
MEQ1030	Electrical Gear- Set & Assemble	5	5	02-Mar-27	08-Mar-27
Commisioning		135	135	09-Feb-27	18-Aug-27
COM1010	Hydronic System Test, flush & Boilout- Heater Hot Water	5	5	09-Feb-27	15-Feb-27
COM1020	Hydronic System Test, Flush, & Boilout- Chilled Water	5	5	18-Mar-27	24-Mar-27
COM1030	HVAC Equipment- Start up & Commisioning	5	5	25-Mar-27	31-Mar-27
COM1040	Lab Certification	23	23	19-Jul-27	18-Aug-27
Temperature Control System		75	75	01-Apr-27	16-Jul-27
TAB1010	Test & Balance- Hydronic	20	20	01-Apr-27	28-Apr-27
TAB1000	HVAC programming	10	10	15-Apr-27	28-Apr-27
TAB1020	Test & Balance- Air	15	15	25-Jun-27	16-Jul-27
Exterior Improvements		35	35	18-Feb-27	07-Apr-27
EXTR1000	Hardscape, Ashpalt/Paving, & Landscaping	35	35	18-Feb-27	07-Apr-27



Remaining Level of Effort
Actual Level of Effort
Actual Work
Remaining Work
Critical Remaining Work
Milestone

Data Date = 16-Mar-26
Schedule Printed on 30-Mar-26, at 13:00

IU Launch Accelerator Lab for Biosciences - COPY

Full Schedule - Standard Layout

F.A.WILHELM CONSTRUCTION

SITE LOGISTICS PLAN

(Also available as a separate attachment in Building Connected)

Site Logistic Plan-Preliminary

Buckhoist

Construction Fence

Entrance Gate Deliveries

Entrance Gate Deliveries

Laydown Yard

Entrance Gate-Trailers

CM Construction Trailer

INDIANA AVENUE

CONFLUENCE WAY

SUBJECT PARCEL 2
INDIANA UNIVERSITY FOUNDATION
WARRANTY DEED
INST #2002-0135715

BLOCK I
16 TECH LINE A2
INST #20240002267
3.278 ACRES±

SUBJECT PARCEL 1
THE TRUSTEES OF INDIANA UNIVERSITY
WARRANTY DEED
INST #2001-0021271
PARCEL V
0.931 ACRES±

ADJOINER
DEPARTMENT OF PUBLIC UTILITIES OF INDIANAPOLIS
LIMITED WARRANTY DEED
INST #201100086305
PARCEL 2 OF TRACT XII

NEW BUILDING F.F.E 694.80

NEW BUILDING F.F.E 694.80

S40°42'34"E – 429.07'

N40°42'34"W – 166.01'

S23°34'09"E – 128.11'

N36°26'07"W 0.17'

Curve Data
R = 454.00'
L = 113.50'

0 20 40 FEET
SCALE:1"=20'

JPS Consulting Engineers - K:\Civil Projects\2025\25JPSC19 IU Lab Accelerator Building - 16 Tech\Drawings\IC300.dwg June 17, 2025 - 2:03 PM CMiller



Indiana University

5. SUBCONTRACTOR EXHIBITS

IU Launch Accelerator for Biosciences

Indianapolis, IN

SUBCONTRACT EXHIBIT 1 – SAMPLE SUBCONTRACT AGREEMENT

(Also available as a separate attachment in Building Connected)

SUBCONTRACT AGREEMENT

SA#
DATE:

F. A. WILHELM CONSTRUCTION CO., INC. ("Contractor")
3914 PROSPECT STREET • P.O. BOX 516 • INDIANAPOLIS, IN 46206
TELEPHONE: (317) 359-5411 • FAX: (317) 359-8346

SUBCONTRACTOR: _____

PROJECT: _____

ARCHITECT:

OWNER: _____

PRIME CONTRACTOR (if applicable)**:**

CONSTRUCTION MANAGER (if applicable)**:**

JOB:	COST CODE:

Sample Subcontract Agreement

Subcontractor's Work. Subcontractor shall execute the following portion of the Work described in the Subcontract Documents, including all labor, materials, tools, equipment, services, taxes, wages, employee benefits, insurance, freight and other items required to complete such portion of the Work, except to the extent specifically called for in the Subcontract Documents to be the responsibility of others:

Subcontract Documents. The Subcontract Documents consist of: (1) this Subcontract Agreement and any attachments hereto or documents referred to herein; (2) the Prime Contract, consisting of the agreement between Contractor and ***[insert either -*** Owner, Prime Contractor or Construction Manager***]*** and the other contract documents incorporated therein, including conditions of the contract (general, supplementary and other conditions), drawings, specifications, and any addenda thereto, which are available for review and on file in the office of Contractor located at the above address; (3) Schedule "A" to this Subcontract Agreement and any documents referred to therein; (4) the attached Project Insurance Requirements; and (5) any other documents set forth below.

Subcontract Sum. Contractor shall pay Subcontractor for performance of this Subcontract Agreement the Subcontract Sum of _____ Dollars ($_____), subject to additions and deductions as provided by written change orders. Provided, however, that if the Subcontract Sum is to be determined on a unit price, time and material or cost of the Work plus a fee basis, such shall be established in Schedule "A".

THE ATTACHED TERMS AND CONDITIONS ARE HEREBY MADE A PART OF THIS SUBCONTRACT AGREEMENT. This Subcontract Agreement has been entered into as of the date written above. In the event Subcontractor has performed any of the Work prior to the date of this Subcontract Agreement, pursuant to authorizations to proceed, letters of intent or otherwise, this Subcontract Agreement shall govern to the same extent as though such Work was performed after the above date.

CONTRACTOR

_____
(Signature)

_____
(Printed name and title)

SUBCONTRACTOR

_____
(Signature)

_____
(Printed name and title)

TERMS AND CONDITIONS

1. Progress payments, less retention of ten percent (10%) unless otherwise stated in Schedule "A", shall be made to Subcontractor for Work, satisfactorily performed in accordance with the Subcontract Documents, within ten (10) working days after Contractor has received payment from Owner or Prime Contractor for Subcontractor's Work. Receipt of payment by Contractor for Subcontractor's Work is a condition precedent to Contractor's obligation to pay Subcontractor for that Work. Final payment of the balance due on the Subcontract Sum shall be made to Subcontractor upon the same conditions stated herein for progress payments. Progress and final payments are also subject to receipt of such waivers of liens and claims, affidavits, warranties and guarantees as required by the Subcontract Documents or by Contractor. The Subcontract Sum includes the cost of all labor, materials, tools, equipment, services, taxes, wages, employee benefits, insurance, freight and all other costs of any kind, and Subcontractor shall be solely responsible for all federal, state and local excise, sales or use taxes applicable to this Subcontract Agreement, and for any license, privilege, income or receipts tax imposed on Subcontractor. Subcontractor shall accept any valid sales or use tax exemption certificates. At Contractor's sole discretion, Contractor may make payments to Subcontractor by joint check payable jointly to Subcontractor and its sub-subcontractors, suppliers and/or creditors on the Project.

2. To the extent that the provisions, terms and conditions (whether relating to scope of work, payment, dispute resolution, project administration, or other obligations or responsibilities) of the Prime Contract apply or relate in whole or in part to Subcontractor's Work or the administration of the Project, Subcontractor agrees to be bound to Contractor by the same provisions, terms and conditions that apply to Contractor and assumes toward Contractor all obligations and responsibilities that Contractor assumes toward Owner, Prime Contractor, Construction Manager and/or Architect under the Prime Contract, and agrees to ensure that all of its material suppliers and subcontractors are likewise bound. Where a provision, term or condition of the Prime Contract, this Subcontract Agreement and/or the Subcontract Documents are in conflict with one another, the provision, term or condition that imposes the greater obligation or responsibility on Subcontractor shall govern.

3. To the extent Subcontractor has been properly paid amounts due under this Subcontract Agreement, Subcontractor agrees to keep the Project, Owner's funds, real estate and other real and personal property, and any Project bonds or other surety instruments free and clear of all claims, liens or encumbrances of any kind by or from Subcontractor, its subcontractors or material suppliers, or from any others claiming through Subcontractor, and Subcontractor shall secure release of the same.

4. Subcontractor shall commence its Work upon notification by Contractor. Time is of the essence. The schedule of the Project work, including that of this Subcontract Agreement, shall be prepared by Contractor and may be revised by Contractor as the Project progresses. Subcontractor shall provide Contractor with any requested scheduling information relating to Subcontractor's Work. Subcontractor shall complete its Work in a timely manner and in accordance with Contractor's schedule.

5. No changes, amendments or modifications to this Subcontract Agreement shall be effective until and unless accepted in writing by Contractor. Subcontractor may be ordered in writing by Contractor, without invalidating this Subcontract Agreement, to make changes in Subcontractor's Work consisting of additions, deletions or other revisions, the Subcontract Sum and Contractor's schedule being adjusted accordingly. Within seven (7) working days of receiving notice of such change, Subcontractor shall submit to Contractor a quotation covering any addition or deduction to the Subcontract Sum and any impact to Contractor's schedule, along with all details and backup necessary to support the quotation. Unless otherwise directed in writing by Contractor, Subcontractor shall not commence such changed or revised Work until after Contractor has reviewed and accepted Subcontractor's quotation, and Contractor and Subcontractor have signed a written change order setting forth any adjustments to the Subcontract Sum or Contractor's schedule.

Sample Subcontract Agreement

6. Subcontractor agrees that in order for it to make a claim against Contractor for additional cost, extensions of time or other damages which arise out of any event or occurrence not covered by paragraph no. 5 above, Subcontractor, as a condition precedent, must give Contractor written notice of such claim within seven (7) working days of the event or occurrence giving rise to the claim or within the time which Contractor has to make such a claim against the Owner or Prime Contractor, whichever is shorter, or the claim will be waived. Subcontractor's sole remedy for the performance of its Work being delayed or interfered with on account of acts of God, fire or other casualty, or any other cause whether or not within Contractor's control, shall be limited to an extension of time to the extent Contractor is granted an extension from the Owner or Prime Contractor. Furthermore, Subcontractor shall not be entitled to recover any increase in the Subcontract Sum or damages from Contractor for delay, acceleration or interference, except to the extent Contractor recovers such sums or damages from Owner, Prime Contractor or other third parties on Subcontractor's behalf.

7. Subcontractor acknowledges that the Subcontract Sum includes any and all material and/or labor cost escalation for the duration of the Project and that Subcontractor shall not be entitled to a change order or adjustment to the Subcontract Sum for any such material and/or labor cost escalation.

8. Should Subcontractor fail to satisfy deficiencies in its performance of this Subcontract Agreement (including but not limited to failure to maintain Contractor's schedule) within two (2) working days from receipt of Contractor's written notice of such deficiency, then Contractor, without prejudice to any other right or remedy, shall have the right to reserve or withhold payment, terminate this Subcontract Agreement for default, take possession of all materials and equipment purchased by Subcontractor for use in the Project, and/or take whatever steps it deems necessary to correct said deficiencies and charge the cost thereof to Subcontractor, who shall be liable for payment of same, including reasonable overhead, profit and attorney's fees. Said notice is not required for Contractor to exercise the remedies under this paragraph when Subcontractor's deficiency in performance threatens safety or involves Subcontractor's failure to keep the Project site clean as required by paragraph no. 14 below. Furthermore, Contractor may terminate this Subcontract Agreement for its convenience and without cause upon two (2) working days prior written notice to Subcontractor. If Subcontractor is terminated upon Contractor's position that Subcontractor is in default, but it is subsequently determined that Subcontractor was not in default, then such termination shall be deemed a termination for convenience. If this Subcontract Agreement is terminated for convenience, then Subcontractor's recovery shall be limited to the unpaid value of authorized and approved Work performed by Subcontractor prior to notice of termination, adjusted for amount and damages, if any, for which Subcontractor is liable or which Contractor is entitled to retain and withhold pursuant to the terms of this Subcontract Agreement. The payment provided by this paragraph shall constitute Subcontractor's exclusive remedy in the event of such termination.

9. Subcontractor shall comply with all applicable federal, state and local laws, orders, rules and regulations, and shall obtain and provide all notices to authorities, permits, fees, licenses, assessments, inspections and taxes necessary to complete its Work.

10. Subcontractor shall take the proper precautions in the performance of its Work to protect all persons and property from being injured by the Work or by the condition of the site, shall comply with any safety measures initiated by Contractor or set forth in the Subcontract Documents, and shall comply with OSHA and any other applicable Federal, State or local safety laws, rules, orders or regulations. Notwithstanding anything in this Subcontract Agreement to the contrary. Subcontractor shall be and shall remain responsible for the safety programs and precautions applicable to its own Work and shall be and remain responsible to others that may be affected by the Subcontractor's Work. Subcontractor shall always be the controlling employer as to the safety of its Work, employees, sub-subcontractor employees, and any other individual or entity for whom Subcontractor is responsible. If the Contractor is subsequently determined to have a non-delegable duty of jobsite safety, that duty runs only to the injured party and not to

Sample Subcontract Agreement

Subcontractor and shall not excuse Subcontractor from its indemnity obligations to the Contractor nor shall Subcontractor's insurers be excused from their duties to provide coverage to the Contractor as an additional insured.

11. Subcontractor shall be responsible for all field measurements and layout necessary to perform its Work and shall be responsible for the accuracy of its Work. Subcontractor shall submit to Contractor shop drawings and samples required by the Subcontract Documents sufficiently in advance of the time any fabrication or shipment of materials or other item for Subcontractor's Work is to occur. Review and/or approval by Contractor, Architect, Prime Contractor, Construction Manager or Owner of Subcontractor's submittals shall in no way relieve Subcontractor of its obligation that its Work conforms with the Subcontract Documents.

12. Subcontractor shall maintain an adequate work crew on site at all times, with sufficient manpower to meet Contractor's schedule and with a competent foreman or superintendent continuously present. Subcontractor shall not permit employment of unfit or unsafe persons or persons not skilled in tasks assigned to them.

13. Organized breaks will not be allowed on the Project.

14. Subcontractor shall continuously maintain and protect the Work from damage and shall daily clean the job site of any dirt or debris caused by the performance of its Work.

15. Prior to the start of its Work, Subcontractor shall procure and maintain in force, for at least the duration of its Work, insurance as is called for by the attached Project Insurance Requirements, plus any additional insurance that is required of Contractor under the Prime Contract. Contractor, Owner, Prime Contractor, Construction Manager and Architect shall be named as additional insureds on each of the required policies, except for worker's compensation. Subcontractor shall furnish insurance certificates to Contractor verifying the required insurance prior to beginning its Work, but no later than ten (10) days from the date of this Subcontract Agreement. If any of the foregoing insurance coverages are required to remain in force after final payment, an additional certificate evidencing continuation of such coverage shall be submitted with Subcontractor's final application for payment. This insurance coverage provided by Subcontractor shall be primary and non-contributory to any other insurance.

16. Subcontractor warrants to Contractor, Owner, Prime Contractor, Construction Manager and Architect that materials furnished hereunder will be of good quality and new unless otherwise permitted by the Subcontract Documents and that its Work is free from defects and conforms to the Subcontract Document requirements. Work not conforming to these requirements may be considered defective. This warranty is in addition to and not a limitation of any other warranty or remedy provided under the law or the Subcontract Documents. All manufacturer warranties shall be assigned to Owner and Contractor.

17. If, within one year after the date of substantial completion of the Project or such longer time period as may be prescribed by the Subcontract Documents, any of the Work is found to be defective, Subcontractor shall promptly correct the Work at its cost. If Subcontractor fails to correct as required herein, Contractor may correct the Work and recover the costs of correction and damages, including attorneys' fees, against Subcontractor. Nothing contained in this paragraph shall be construed to establish a period of limitation with respect to any obligation or responsibility owed by Subcontractor except the express duty to correct defective Work.

18. To the fullest extent permitted by law, Subcontractor shall indemnify, hold harmless, and defend at its own expense Contractor, Owner, Prime Contractor, Construction Manager, Architect, and their respective agents, employees and assigns (herein collectively referred to as "Indemnitees") from and against any claims, causes of action, damages, losses and expenses (including litigation costs and attorney's fees) of any nature whatsoever, including but not limited to claims for or relating to injury, sickness or disease to any persons (including death), damages to property (including the lost use thereof and consequential damages therefrom), economic loss, liens or Project delays, which arise out of or are alleged to arise out of: a) the performance of Subcontractor's Work; b) the Subcontractor's breach of this

Sample Subcontract Agreement

Subcontract Agreement; and/or c) any act or omission of Subcontractor, its subcontractors or material suppliers, anyone directly or indirectly employed by them or anyone for whose acts they may be liable; regardless of whether or not such claim, cause of action, damage, loss or expense is contributed to or caused by the negligence, breach of contract or warranty, strict liability, or any other breach of duty of any Indemnitee; provided, however, that Subcontractor shall not be obligated to indemnify an Indemnitee for its sole negligence or willful misconduct where such indemnification is contrary to law, but otherwise it is the intent of the parties that Subcontractor shall indemnify the Indemnitees to the fullest extent permitted by law.

19. To the extent there are any design services required to be performed by Subcontractor either incidental to Subcontractor's Work or as a primary design-build undertaking by Subcontractor in respect to the Project, such design services shall be procured from licensed, independent design professionals retained by the Subcontractor or furnished by licensed employees of the Subcontractor, or as permitted by the law of the place where the Project is located. Subcontractor shall be responsible for coordinating its design with the Project Architect, engineers and others providing design services for the Project. Subcontractor shall prepare, for approval by the Project Architect and engineers, Construction Documents consisting of drawings, specifications, and other appropriate instruments ("Instruments of Service") sufficient to set forth in detail the requirements for the construction of the Subcontractor's Work. Subcontractor shall assist the Owner, Architect, Engineers, and/or Contractor in connection with the filing of documents required for the approval of government authorities having jurisdiction over the Project. All ownership of or other rights in respect of the Instruments of Service shall be transferred by Subcontractor to Owner upon request.

20. Subcontractor shall not assign any of its rights or obligations in or under this Subcontract Agreement without prior written consent of Contractor. Any such assignment, even with consent, shall not in any manner relieve Subcontractor from any of its obligations under this Subcontract Agreement. Subcontractor shall incorporate the terms of this Subcontract Agreement, including but not limited to the requirements to provide insurance, by flowing them down into all contracts with or held by sub-subcontractors or vendors performing any portion of Subcontractor's Work. Subcontractor shall not misclassify any of its employees as independent contractors, and any entity performing Work for Subcontractor on the Project that Subcontractor classifies or treats as an independent contractor must be disclosed as a sub-subcontractor and meet the requirements set forth in this Subcontract Agreement.

21. Subcontractor shall perform its duties hereunder as an independent contractor and not as an employee of the Contractor. Neither Subcontractor nor any agent or employee of Subcontractor shall be or shall be deemed an agent or employee of Contractor. Subcontractor shall pay when due all required employment taxes and income tax withholding, including all federal, state and local income tax on any monies paid pursuant to this Subcontract Agreement. Subcontractor shall have no authorization, express or implied, to bind Contractor to any agreements, liability, or understanding except as expressly set forth in this Subcontract Agreement. Subcontractor shall be solely responsible for the acts of Subcontractor, its employees, sub-subcontractors, vendors and agents.

22. Subcontractor shall keep full and detailed records and accounts related to this Subcontract Agreement, and shall exercise such controls, as may be necessary for proper financial management under this Subcontract Agreement and to substantiate all costs incurred. Contractor and/or the Contractor's auditors shall, during regular business hours and upon reasonable notice, be afforded access to, and shall be permitted to audit and copy the Subcontractor's records and accounts, including complete documentation supporting accounting entries, payroll, books, job cost reports, correspondence, instructions, drawings, receipts, subcontracts, proposals, invoices, purchase orders, vouchers, memoranda, safety records, quality control records, and other data relating to the administration of this Subcontract Agreement. The Subcontractor shall preserve these records for a period of five years after final payment, or for such longer period as may be required by law.

Sample Subcontract Agreement

23. Subcontractor shall abide by all federal, state and local laws and regulations that prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities and shall prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity or national origin. Moreover, 41 CFR 60-1.4(a), 60-300.5(a) and 60-741.5(a) require that covered contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or veteran status.

24. This Subcontract Agreement and the rights and duties of all persons arising from or related to this Subcontract Agreement shall be governed by the laws of the State of Indiana. Any dispute arising under or related to this Subcontract Agreement, the performance of Work or provision of any materials pursuant hereto, shall be brought only in state court in Marion County, State of Indiana, or if federal jurisdiction is available, in the U.S. District Court for the Southern District of Indiana. The parties to this Subcontractor Agreement agree to: a) participate in mediation; b) accept such venues if mediation is unsuccessful; c) waive trial by jury in all proceedings; and d) waive, as against each other, any claim or entitlement to punitive or exemplary damages. In the event of a dispute, Subcontractor shall continue to proceed diligently with the performance of its Work pending final resolution of the dispute, unless directed otherwise in writing by Contractor. If Contractor is in a dispute with the Owner, Prime Contractor and/or Construction Manager that involves Subcontractor's Work, acts or omissions, then Contractor may elect to join Subcontractor as a party to such dispute and the dispute resolution and litigation provisions in the Prime Contract would govern if Contractor made such election of joinder.

25. If any term, provision or part of a provision to this Subcontract Agreement should be invalid or unenforceable under the governing law, the validity and enforceability of the remaining terms, provisions and parts thereof shall not be affected, with interpretation and enforcement to occur as if such invalid or unenforceable term, provision or part was never written.

26. Subcontractor agrees that the subject matter of this Subcontract Agreement is confidential in nature and that Subcontractor will not provide any third party with any information contained herein without the expressed written consent of Contractor. However, Subcontractor may disclose confidential information, after seven (7) days' notice to Contractor, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. Subcontractor may also disclose confidential information to its employees, consultants, sureties, sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

27. The Subcontract Documents, including this Subcontract Agreement, represent the entire integrated agreement between Subcontractor and Contractor, and supersede all prior negotiations, representations or agreements relating to Subcontractor's Work. The failure of Contractor to enforce at any time any provision of this Subcontract Agreement shall in no way affect the validity of this Subcontract Agreement or any part hereof or the right of Contractor thereafter to enforce each and every such provision. No waiver of any breach of this Subcontract Agreement shall be held to be a waiver of any other or subsequent breach.

Sample Subcontract Agreement

SCHEDULE "A" to Subcontract Agreement No. _____ dated _____, between F.A. Wilhelm Construction Company, Inc. ("Contractor") and _____ ("Subcontractor"). This Schedule "A" is hereby made a part of and incorporated into the Subcontract Agreement.

1. **Subcontractor's Work.** In addition to the Work described on the face of the Subcontract Agreement, Subcontractor's Work includes, but is not limited to, the following specific items:

   A. Subcontractor has agreed to a total Subcontract Sum for its Work based on the following breakdown, which is provided for accounting purposes only:

Base Bid	$x,xxx,xxx
Deduct	$x,xxx
ADD	$x,xxx
Total Contract Value	$x,xxx,xxx

   Alternates:

   B. Specification Sections:
   - Section
   -

   C. General Scope of Work Includes:
   1. All specified mock-ups and samples.

   D. Specific Scope of Work Includes:
   1. All _____ work as shown on or indicated by the Contract Documents.
   2.

   E. Specific Scope of Work Excludes:
   1. Initial Building Permit

Sample Subcontract Agreement

2. **Subcontract Documents.** The Subcontract Documents also include the following:

   A. This Schedule "A".
   B. The Prime Contract, consisting of the agreement between Contractor and Owner is entitled _____ and dated _____ and the other contract documents incorporated therein, including conditions of the contract (general, supplementary and other conditions), drawings, specifications, and any addenda thereto.
   C. The following addenda to the Prime Contract:
   D. The following Requests for Information that have been answered prior to the execution of this Subcontract Agreement:
   E. The following attached Exhibits:
   - Exhibit "A" - Subcontractor/Supplier Affidavit & Waiver of Liens & Claims. Subcontractor shall submit this document with each application for payment.

- Exhibit "B" - Sub-subcontractors and Suppliers Disclosure Affidavit. Subcontractor shall submit this document within 10 days of receiving this Subcontract Agreement and shall update the information on the document with each application for payment.
- Exhibit "C" - Sub-Subcontractor/Supplier Affidavit and Waiver of Liens & Claims. With each application for payment, Subcontractor shall submit this document for each person or entity listed on the Sub-subcontractors and Suppliers Disclosure Affidavit Exhibit "B".
- Exhibit "D" – Corporate Safety Manual – Section 14: Subcontractor General Requirements. Exhibit "D" includes the Underground Utility Locating, Directional Boring and other hidden utility procedures that Subcontractor is required to follow.
- Exhibit "E" – E-Verify Affidavit. Subcontractor shall sign and submit to Contractor. the attached E-Verify affidavit prior to commencing its Work, and abide by the representations and obligations set forth therein.
- Exhibit "F" – Subcontract Performance and Payment Bond forms that are acceptable to Contractor if Subcontractor is required to provide bond(s) on the Project.
- Exhibit "G" - Documents Log. The documents listed in Exhibit "G" are also incorporated into the Subcontract Agreement by reference as Subcontract Documents.
- Exhibit "H" - Project Schedule.
- Exhibit "I" – Scaffold/Equipment Agreement. Subcontractor agrees not to use any scaffold and/or equipment that is owned, leased and/or erected by Contractor without first obtaining written authorization from Contractor by way of an executed Contractor's Scaffold/Equipment Agreement – Exhibit "I".
- Exhibit "J" - BIM Technical Kickoff Package. ***[Only to be used for subcontractors participating in BIM process.]***
- *Exhibit "K" LEEDs plan*

Sample Subcontract Agreement

3. **Schedule.** Subcontractor agrees to the following specific scheduling requirements and milestone dates:

Subcontractor will perform its Work in accordance with the Project Schedule attached as Exhibit "H" and titled "PROJECT SCHEDULE XYZ", data date of xx/xx/xx, schedule printed date of xx/xx/xx.

In addition, the following schedule items and milestones are included:

- Shop drawings and submittals complete by xx/xx/xx
- Mock-up requirements completed by xx/xx/xx
- Other milestones.

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A. Subcontractor shall, within ten (10) days after the date of this Subcontract Agreement, prepare and submit to Contractor for review a detailed schedule, showing the order in which Subcontractor proposes to carry out all major activities and indicating the dates on which the several activities representing the complete performance of the Subcontract (including submittals, procurement of materials, and equipment) will be started and finished. This schedule shall list the sequence of activities anticipated by Subcontractor and the anticipated duration of each activity. Subcontractor acknowledges that Subcontractor has

scheduled and sequenced its Work on the basis of the Contractor's schedule and any milestone and performance requirements established above and by the Subcontract Documents.

1. Subcontractor acknowledges and understands that in development and updating of Contractor's schedule, Subcontractor's proposed activity sequence and durations may need to be amended by the Contractor to allow Contractor's schedule to meet the performance requirements established by the Subcontract Documents. Should any aspect of Contractor's schedule be at variance with the desired sequencing or duration of Subcontractor's activities, Subcontractor shall notify Contractor in writing of such variation within five (5) days of its receipt of Contractor's schedule. Subcontractor's failure to submit its proposed schedule when required or to notify Contractor in writing of any variation or conflict between Subcontractor's proposed schedule and Contractor's schedule shall preclude Subcontractor from receiving any consideration for an extension of time to the extent allowed under the Subcontract Agreement. Contractor may require Subcontractor to prosecute its work in such sequence as Contractor may reasonably require in order to maintain the progress of other subcontractors and the Contractor's schedule.
2. Subcontractor shall prosecute its Work with due diligence, without delay, and will not in any manner, by delay or otherwise, interfere with the work of the Contractor or any other subcontractors; and shall manage its Work in a manner that will allow the total Project to be completed within the Prime Contract specified time.
3. Subcontractor will submit a 3-Week Look-Ahead list of work activities prior to each weekly Project meeting in a form acceptable to Contractor's Superintendent.
4. Subcontractor will provide sufficient workforce, equipment, materials, supervision, etc. to work simultaneously on different floors or areas of the building as required by the Project Schedule.

Sample Subcontract Agreement

4. **Project Requirements**. The Subcontractor's Work shall be performed in accordance with the following Project Requirements:

A. General Requirements:

1. Subcontractor has reviewed and will abide by the section from Contractor's Corporate Safety Program entitled "Subcontractor General Requirements" attached as Exhibit "D". Prior to commencing its work, Subcontractor shall develop its own Site Specific Safety Plan (SSSP) identifying the hazards with its Work and how it plans to address the hazards. Subcontractor's SSSP is to be kept on site and made available for review by Contractor upon request. Subcontractor shall update its SSSP as Project circumstances deem necessary. The jobsite will be drug and alcohol free. As such, Subcontractor agrees that all employees on the jobsite will be subject to the applicable drug and alcohol policies, whether Owner, Contractor, union or government required.
2. Subcontractor is responsible to install, maintain and replace temporary railings, barricades, etc. required as a result of Subcontractor's Work. If Subcontractor removes a safety railing or barricade, it is responsible to immediately re-install per the applicable state and/or federal OSHA requirements.
3. OSHA required temporary lighting will be provided by an electrical contractor. Subcontractor is to include its own specific lighting beyond the temporary lighting provided by the electrical contractor. If the lighting provided by the electrical contractor does not meet the applicable state and/or federal OSHA requirements, it is the Subcontractor's responsibility to notify Contractor and to make sure that such is

corrected before Subcontractor proceeds with its Work in an area with inadequate lighting.

4. All general conditions required to perform Subcontractor's Work are included in the Subcontract Sum, except for those specifically excluded in Section 1 of this Schedule "A." This includes, but is not limited to: ladders, permits, scaffolding, lifting and accessory devices, drinking water, power supply and distribution, cleaning materials, wax based sweeping compound, office space, telephones, fax machines, temporary storage requirements, etc.
5. Subcontractor warrants that it has visited and examined the Project site, and further warrants that it shall make no claims for additional sums on account of existing site conditions.
6. Subcontractor shall formalize all questions to Contractor in writing by use of a Request for Information ("RFI") form that is set up in the web based construction management software that is to be used by Subcontractor on the Project as determined by Contractor.
7. Weekly progress meetings will be held at the job site. An authorized, decision making representative of Subcontractor will be required to attend, as requested, or while working on site.
8. Subcontractor will submit by 9:00 a.m. the following workday, a report, which states how many workers were on site the previous day and what tasks they performed on the daily report form set up in the web based construction management software that is to be used by Subcontractor on the Project.
9. Existing building and facilities are not to be entered or used unless authorized by Contractor.
10. If and when ordered in writing by Contractor, Subcontractor shall furnish to Contractor a payment and performance bond for 100% of the Subcontract Sum. The bond shall be in a form consistent with Exhibit "F" and from a surety acceptable to Contractor and shall have a dual-obligee rider naming any parties requested by the Contractor to be a dual-obligee on the bond. The cost of the bond shall be added to the Subcontract Sum, unless the bond is otherwise required by the Subcontract Documents.
11. Subcontractor's access and deliveries to the site must be coordinated 48 hours in advance of arrival with Contractor's Superintendent. Failure to do so may result in the access and/or delivery being prohibited by Contractor's Superintendent, at their discretion.
12. Subcontractor is responsible for its own cutting and patching.
13. If parking is not available on site, Subcontractor must provide parking, permits, etc. for all employees and assume responsibility for all costs.
14. Subcontractor is responsible for obtaining and paying for all project documents, including drawings and specifications.
15. Subcontractor will not change field supervision without the previous approval from Contractor.
16. The use of tobacco and the use of electronic cigarettes a/k/a vape are not permitted in any existing building or building under construction.
17. Subcontractor is responsible for the timely location and placement of all sleeves, box-outs and embeds to the extent associated with its Work. Failure to provide placement information in a timely manner for items supplied by Subcontractor, but specifically identified as being installed by others, shall result in Subcontractor being responsible for any corrective measurements required. It is the Subcontractor's responsibility to monitor the progress of the Work and communicate requirements with the Contractor's Superintendent and Project Manager.
18. Subcontractor is responsible to ensure damage to new construction is minimized to the fullest extent. Subcontractor is responsible to repair all damage that it causes at no

Sample Subcontract Agreement

additional cost to the Contractor. Subcontractor is responsible to provide protective coverings for its materials as applicable, whether stored or installed.

19. Subcontractor's personnel will eat lunch in an area designated by Contractor's Superintendent.
20. Personal radios, headsets, any other entertainment listening or viewing devices, etc. are not permitted on the Project.
21. Subcontractor is responsible for cleaning the job site daily and removing from the premises any debris caused by the performance of its Work. Subcontractor shall keep clean the general work area, areas around the trailers, workers shanties, tool sheds, storage facilities, and workmen's parking area, and shall remove all papers, luncheon wrappers, food containers, and garbage continuously. The work area shall be continuously maintained at a minimum of broom clean. Should Subcontractor fail to perform such cleanup, or fail to accomplish any corrective work required by the Contractor, Contractor will provide such cleanup service and such corrective work on behalf of Subcontractor, and the costs incurred by the Contractor will be charged to Subcontractor plus 10%.
22. Subcontractor shall make a punchlist for its own Work and complete the listed items before requesting Contractor, Architect and/or Owner to make up a punchlist. Subcontractor will complete in a timely manner all punchlist Work items as generated by Contractor, Architect and/or Owner. Multiple punchlists may be generated on this Project. Punchlists are complete when the initiating party accepts them as being complete. The Procore web based construction management software shall be used by Subcontractor for administering punchlist on this Project, unless otherwise stated herein.
23. Subcontractor is responsible for all firestopping, sealant, acoustical sealant, etc. around all floor, wall and ceiling penetrations to the extent associated with its Work. Subcontractor is to monitor and coordinate partition, ceiling and floor construction to ensure that construction around the penetration is correct and allows for a proper and acceptable sealing detail.
24. Subcontractor's use of lifts, hoists, and other similar equipment (in connection with Work to be performed inside buildings and/or facilities) shall be subject to Contractor's Superintendent's approval.
25. Subcontractor's starting of any Work that is to be attached to or supported by the work of others or existing conditions shall constitute acceptance of such work or conditions, and Subcontractor warrants that it shall make no claims for additional sums on account such work of others or existing conditions.
26. Subcontractor, its subcontractors or suppliers, or anyone for whom it is responsible shall not use or allow on the Project any rigging materials which were made in China. Rigging materials include but are not necessarily limited to alloy steel chains, wire rope slings, natural rope slings, synthetic fiber rope slings, synthetic web slings, shackles and hooks.

Sample Subcontract Agreement

B. Submittal Requirements:

1. Within ten (10) days of the date of this Subcontract Agreement, Subcontractor will provide a listing of all material suppliers, vendors and sub-subcontractors that are required to furnish submittals on the Project, indicating a scope of work or materials to be supplied and the specification section that submittals will be furnished under. This list must be satisfactory to the Contractor. Subcontractor must notify the Contractor in writing with any proposed changes once the list has been submitted.

2. All submittals must have an approved submittal stamp signed and dated by the Subcontractor and will identify the specification section and other specific identification information.
3. Subcontractor is responsible to confirm and coordinate all dimensions at the job site. If Subcontractor submittals are returned and require additional work or material beyond what is required by the Subcontract Documents, Subcontractor shall submit a quotation to Contractor for these scope revisions in accordance with the Subcontract Documents.
4. A comprehensive submittal schedule, listing proposed submittal dates, manufacturer lead times, and anticipated critical components, shall be sent to Contractor within fifteen (15) days of the date of this Subcontract Agreement. Upon review and acceptance of the submittal schedule, Subcontractor shall furnish a detailed delivery schedule for all materials used on the Project.
5. Subcontractor shall use the web based construction management software that is to be used by Subcontractor for submittals on this Project. Subcontractor shall provide samples as required by the Subcontract Documents.
6. Subcontractor shall not be relieved of responsibility for any deviation from the requirements of the Subcontract Documents by Architect, Owner or Contractor's acceptance of shop drawings, product data, samples, and submittals as required by Subcontract Documents, unless Subcontractor has specifically informed Contractor in writing of such deviation at the time of submission and the Owner and Contractor have given written approvals to the specific deviation.
7. Shop drawings and product data that are incomplete or are not in compliance with the Subcontract Documents shall not be submitted.
8. Any deviations from the Subcontract Documents must be proposed as a change to the Subcontract Agreement and approved as a change order before procurement. All changes and proposed changes to the Subcontract Documents are to be noted on the cover letter of the shop drawings and/or product data during the submittal process.
9. Data sheets, brochures and/or transmittals being submitted must include the specification section and a reference number.
10. When general catalog or data sheets are submitted, they must be specifically marked with items only relevant to this Project. Details not relevant to the Project shall be deleted or marked out. If these are submitted without clearly indicating which materials or details are applicable, they will be returned without review.
11. Mechanical, Electrical, Plumbing and/or Fire Protection (collectively "MEPFP") subcontractors are required to be involved in the overall Building Information Modeling ("BIM") and MEPFP coordination processes and participate in the related meetings. If Subcontractor has any MEPFP Work, then Subcontractor is required to meet or exceed all guidelines and technical requirements required by the Subcontract Documents Project and/or as detailed in the Contractor's BIM Technical Kickoff Package. Subcontractor understands that the BIM coordination process and respective models created to support it shall accurately reflect the Subcontractor's entire scope of work and planned installation(s).

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C. Billing Requirements:

1. Subcontractor's monthly billing shall be submitted on the AIA form G702 by the **[??]** day of each month, along with its completed Subcontractor/Supplier Affidavit and Waiver of Liens and Claims, its completed Sub-Subcontractors and Suppliers Disclosure Affidavit and a Sub-Subcontractor/Supplier Affidavit and Waiver of Liens & Claims for each person or entity listed on the Sub-subcontractors and Suppliers Disclosure Affidavit. A pencil copy must be submitted five (5) days prior for review by Contractor's Project

Manager. Upon approval of the pencil copy by Contractor's Project Manager, Subcontractor shall submit final copies to apinvoice@fawilhelm.com.

2. All applications for payment must indicate the percentage of Work completed through the billing date, and a percentage of approved change order Work completed through the billing date.
3. All applications for payment MUST reflect retainage of ten percent (10%) to be withheld.
4. All extra work tickets must be signed for by Contractor's Superintendent, approved by Contractor's Project Manager, and included in a change order prior to inclusion with any billing.
5. Subcontractor cannot include off-site storage of materials on pay applications unless approved by Architect and Owner prior to submission of the applicable pay application.
6. Subcontractor's invoices shall not exceed the current Subcontract Sum.
7. Subcontractor does hereby sell, transfer, assign and convey to Contractor the goods, materials, parts, supplies, equipment, and accessions required by the Subcontract Documents (collectively, the "Goods") and located at the Subcontractor's premises or the Subcontractor's suppliers' premises, manufactured or in the process of manufacture for delivery to, or for use on or in connection with the construction of the Project. In the event that any of the Goods are in the process of manufacture, Subcontractor expressly intends to sell, transfer, assign and convey the same in their completed state, as well as in the form and state the Goods possess at the time of execution of this Subcontract Agreement. It is the express intention of the parties that (i) by their identification in the Subcontract Documents, Contractor acquires a special property to and insurable interest in the Goods, (ii) title to the Goods passes to Contractor upon execution of this Subcontract Agreement, subject to rejection, refusal to receive or retain the Goods or a justified revocation of acceptance of the Goods by Contractor. Subcontractor represents, warrants and covenants to Contractor that Subcontractor (i) is the lawful owner of the Goods, (ii) has good right to sell the Goods to Contractor, and (iii) warrants and will defend the Contractor's rights to the Goods as against any and all claims and demands of Subcontractor's creditors or other third parties. The foregoing representations, warranties and covenants shall survive the execution of this Subcontract Agreement. For so long as Subcontractor maintains possession or control of the Goods, Subcontractor will provide safe and proper storage of the Goods on its own premises or such other premises as the Goods may be located from time to time. Subcontractor shall not move the Goods or Subcontractor's place of business, unless it first provides Contractor thirty (30) days advance written notice. Subcontractor will physically separate and segregate the Goods by means of ropes or other barriers, or as otherwise may be directed by Contractor, from all other items of inventory and will cause to be placed conspicuously and securely on the Goods a sign or signs in a form satisfactory to Contractor, which identifies the Goods as the property of Contractor and as intended for use on or in connection with the Project.

Sample Subcontract Agreement

Notwithstanding the foregoing, and in addition to all of Contractor's other rights in connection with the Goods available to Contractor by law or contract, Subcontractor hereby grants to Contractor, to the fullest extent it is capable of doing so, a security interest in and to the Goods, now existing or hereinafter acquired, to secure Subcontractor's performance of its obligations under this Subcontract Agreement, and any other agreement entered into by the parties. Subcontractor acknowledges that this Subcontract Agreement shall constitute a Security Agreement for the security interest granted hereby in accordance with the provisions of the Uniform Commercial Code. Subcontractor hereby irrevocably nominates, constitutes, appoints and designates Contractor as its attorney-in-fact with the rights, but not the obligation, to make, execute, file and deliver any and all other documents or papers, including, without limitation, any

financing statements or security agreements deemed necessary and proper by Contractor in order to give full effect not only to the intent and meaning of the sale, transfer, conveyance and assignment contemplated herein, but also to the full protection intended to be herein given to Contractor under all other provisions of this Subcontract Agreement and the other agreements entered into between the parties and applicable law. Subcontractor hereby ratifies and confirms all acts and actions taken and done by Contractor as attorney-in-fact. This provision is in addition to any other rights and remedies, common and equitable, available to Contractor under this Subcontract Agreement.

D. Closeout Requirements:

1. Subcontractor shall provide manufacturer's field services, service engineering, written warranties, operation and maintenance manuals, training, orientations and demonstrations, as required in the Subcontract Documents, and as applicable for all Work contained in this Subcontract Agreement.
2. Prior to Contractor accepting a billing for Work in excess of 25% complete, Subcontractor must have completed and submitted a list of closeout documents, including the status of those documents. Prior to Contractor accepting a billing in excess of 75% complete, Subcontractor must have submitted all appropriate closeout documentation. Contractor may withhold progress billings until all closeout documents are received and approved. Prior to Contractor releasing the final retention, Subcontractor shall provide a record copy of all shop drawings and submittals fully corrected with field modifications and revisions for the Project, along with any attic stock that is required to be provided by the Subcontract Documents. Subcontractor shall provide as-built drawings on bluelines and CAD files.

Sample Subcontract Agreement

5. Change Order Administration. Quotations for changed or revised work submitted pursuant to Paragraph No. 5 of the Terms and Conditions on the back of the Subcontract Agreement shall follow one or more of the following methods of calculation, at the option of Contractor:

a) Cost plus a fee or time and material (may include a not to exceed amount)
b) Lump sum
c) Unit prices contained in this Schedule "A" (if any)

Change quotations shall set forth any addition or deduction to the Subcontract Sum and any impact to Contractor's schedule, along with all details and backup that Contractor, Owner, Prime Contractor, Architect and/or Construction Manager may deem necessary to support the quotation. The administration of any claims for additional cost or additional time shall meet the requirements of the Subcontract Documents, including the Prime Contract.

a) Cost Plus or Time and Material. If Work is to be performed on a cost plus or time and material basis, tickets indicating manpower, material, equipment and tools are to be submitted each day for the Contractor's Superintendent's signature. Costs associated with the change are to be summarized and submitted to the Project Manager at regular intervals not to exceed 30 days. Failure to have tickets signed or to issue cost summaries within 30 days will result in the claim for such costs being waived. Any fees or mark-ups shall be those established in the Subcontract Documents, including the Prime Contract. Provided, however, that if such fees and mark-ups are not established in the Subcontract Documents, they shall be agreed upon in writing prior to the commencement of the Work.

Costs. In case of cost plus compensation, costs shall be limited to: cost of materials, including cost of delivery and taxes; cost of labor in the field, including social security, unemployment and medical insurance, and employment benefits; bond premiums; and rental value of power tools and equipment at rates not to exceed those contained in the Associated Equipment Distributors Construction Equipment Rental Rates, Current Edition as of the date of the Subcontract Agreement.
Overhead and profit for cost plus compensation shall include: wages of superintendents, project managers, project engineers, non-working foremen, timekeepers, watchmen and clerks; hand tools; incidentals; general office expense; warranty expense; and all other expenses not included in "costs" as defined above.

The following percentages for overhead and profit, as appropriate, are to be added to approved costs:

		O.H.& PROFIT
a)	To Subcontractor on work not performed by its own forces.	5%
b)	To Subcontractor for work performed by its own forces.	10%

b) Lump Sum. When a lump sum price for the addition or deletion of any Work is requested from the Subcontractor, Subcontractor shall submit a lump sum quotation with an itemized breakdown of all increases or decreases in the costs of Subcontractor and its sub-subcontractors and material suppliers, in the following detail: a) material quantity and unit cost; b) labor costs, broken down per item of Work, including man-hours, payroll taxes and insurance; c) construction equipment; d) sales tax; e) delivery charges; f) overhead; and g) profit.

d) Unit Prices. Any unit prices accepted as part of the Subcontract Agreement or incorporated into the Subcontract Agreement by change order are not to be considered or interpreted as prior approval to proceed with changes to Subcontractor's Work. All such changes shall be governed by Paragraph No. 5 on the back of the Subcontract Agreement.

Sample Subcontract Agreement

6. Insurance Requirements. Subcontractor will provide the following minimum insurance requirements for the Project plus any additional insurance that is required of Contractor under the Prime Contract. A copy of an approved insurance certificate must be on file with the Contractor, at the main office location, prior to the commencement of work on the Project. Submit insurance certificate to inscerts@fawilhelm.com.

A. Required Insurance Coverages:

1. Commercial General Liability
   - ✓ Occurrence Form
   - ✓ Aggregate per Project Endorsement

- ✓ Subcontractor's Products / Completed Operations coverage shall be continued for one year after completion of its work or for such period otherwise provided by the Subcontract Documents, whichever is longer.
- ✓ Contractual Liability
- ✓ No exclusion for Explosion, Collapse & Underground (XCU)
- ✓ No exclusion for liability assumed in an insured contract

2. Automobile Liability (Business)
   - ✓ Including Hired and Non-Owned Auto liability coverage
   - ✓ Contractual Liability
   - ✓ No exclusion for liability assumed in an insured contract
3. Worker's Compensation/Employer's Liability
   - ✓ Statutory as required by the State where the project is located
4. Excess Liability
   - ✓ Umbrella Form – follow form coverage on all liability policies

B. Minimum Limits of Insurance Required:

1. Commercial General Liability	
a. General Aggregate (other than Products / Completed Operations)	**$2,000,000**
b. Products / Completed Operations Aggregate	**$2,000,000**
c. Bodily Injury and Property Damage (each occurrence)	**$1,000,000**
d. Personal & Advertising Injury (any person or organization)	**$1,000,000**
e. Fire Damage (any one fire)	**$ 50,000**
f. Medical Expenses (any one person)	**$ 5,000**
2. Automobile Liability (Business)	
a. Combined Single Limit Per Accident or Loss – Bodily Injury & Property Damage	**$1,000,000**
3. Worker's Compensation/Employer's Liability	
a. Bodily Injury by Accident – Each Accident	**$ 500,000**
b. Bodily Injury by Disease – Policy Limit	**$1,000,000**
c. Bodily Injury by Disease – Each Employee	**$ 500,000**
4. Excess Liability	
a. Each Occurrence	**$5,000,000**

Sample Subcontract Agreement

C. Additional Insured(s) - applies to all insurance coverage, except Worker's Compensation and Employer's Liability. The following shall be named as Additional Insured(s), including coverage for ongoing and completed operations, on Subcontractor's policies:

F.A. Wilhelm Construction Co., Inc. **AND** Wilhelm Construction, Inc. and their respective affiliates, subsidiaries, officers, directors, employees and representatives.

D. In the event the Subcontractor has or obtains coverage in amounts in excess of those minimum limits outlined above during the period that coverage is required under the Subcontract Agreement, those organizations listed above as Additional Insureds shall also be named as Additional Insureds for such excess amounts. The amounts of insurance (including endorsements thereto) carried in compliance with these insurance requirements are not to be construed as either a limitation or satisfaction of the Subcontractor's liability.

E. Subcontractor waives any and all claims against those organizations listed above as Additional Insureds and their respective insurers for damages caused by any occurrence or peril covered by the insurance required by the Subcontract Documents (waiver of subrogation/waiver of right of recovery).

F. Subcontractor and its insurance carrier shall give Contractor at least thirty (30) days written notice prior to cancellation, non-renewal and/or any material change of any required coverage.

G. If any portion of the Subcontractor’s Work involves project design, architectural services, engineering services or other consulting services, soil boring or reporting of results of same or site surveying or reporting of results of same, professional liability coverage (errors and omissions) with minimum limits of $1,000,000 per claim and $3,000,000 general aggregate and maximum deductible of $25,000 shall be required. It shall also be required that this professional liability policy, and any replacement policy, have a retroactive date no later than the date of this subcontract and that the coverage be continued for a minimum of five years after final completion.

The insurance coverage provided by Subcontractor under this Subcontract Agreement shall be primary and non-contributory to any other insurance.

Sample Subcontract Agreement

EXHIBIT “A”

SUBCONTRACTOR/SUPPLIER
AFFIDAVIT & WAIVER OF LIENS & CLAIMS

Partial ( ) Final ( )

We, the undersigned, having been employed by **F. A. Wilhelm Construction Co., Inc. (“Contractor”)** to furnish labor, services, equipment and/or materials for construction work on the Project known as **Project** constructed on real estate located in the County of **County** in the State of **Project State**, hereby warrant that the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and the improvements thereon cannot be made subject to any valid claim, lien or encumbrance by anyone who furnished labor, services, equipment or materials to the undersigned for use in the Project, and the undersigned hereby waive and release any and all claims, liens and encumbrances of whatsoever kind or nature against the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and improvements thereon for any labor, services, equipment or materials furnished through _____, _____.

The above waiver and release are given in order to induce payment in the Amount Due of $_____ and upon receipt by the undersigned of the Amount Due, the above waiver and release become valid, enforceable and of full effect. Upon attachment of the cancelled check and the legal description of the Project, this release may be recorded by the owner(s) or mortgage holder(s) of the Project.

Notwithstanding the foregoing, the undersigned does hereby unconditionally waive and release any and all claims, liens and encumbrance of whatsoever kind or nature against the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and any improvements thereon with respect to monies due the undersigned for previous payment requests in the total sum of $_____, the receipt and sufficiency of which is hereby acknowledged by the undersigned.

Sample Subcontract Agreement

Given under our hand and seal this
_____ day of _____, _____

_____
Company

By: _____
Authorized Representative of Company

STATE OF:)
COUNTY OF:)

Subscribed and sworn to before me this _____ day of _____, 20__.

_____
Notary Public:

My Commission Expires:

County of Residence:

EXHIBIT "B"

Sub-Subcontractors and Suppliers Disclosure Affidavit

Subcontractor/
Supplier Name: _____

Application Number: _____
Application Date: _____
Period To: _____

Project Name: _____

Item # on SOV	Sub-Subcontractor/ Material Supplier Name & Address	Scope of Work or Material	Contact	Email	Phone #	Purchase Order #	Contract Amount	Amount Billed	Amount Paid	Current Amount Due	To be Billed Amount

Sample Subcontract Agreement

The undersigned affiant and representative of the Subcontractor/Supplier on oath deposes and says that the above disclosure is a true and complete statement of all such persons or entities, the amounts paid, the amounts due or to become due on the Project. Subcontractor/Supplier has not contracted with any other persons or entities to provide work, services, material or equipment for the Project or for any improvement on the land for which the Project is located.

Authorized Representative of Subcontractor/Supplier Date

EXHIBIT “C”

SUB-SUBCONTRACTOR/SUPPLIER AFFIDAVIT & WAIVER OF LIENS & CLAIMS

Partial ( ) Final ( )

We, the undersigned, having been employed by **Insert FAW’s 1st tier Sub that owes the money** to furnish labor, services, equipment and/or materials for construction work on the Project known as **Project** constructed on real estate located in the County of **County** in the State of **Project State**, hereby warrant that **F.A. Wilhelm Construction Co., Inc. (“Contractor”),** any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and the improvements thereon cannot be made subject to any valid claim, lien or encumbrance by anyone who furnished labor, services, equipment or materials to the undersigned for use in the Project, and the undersigned hereby waive and release any and all claims, liens and encumbrances of whatsoever kind or nature against the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and improvements thereon for any labor, services, equipment or materials furnished through _____, _____.

The above waiver and release are given in order to induce payment in the Amount Due of $_____ and upon receipt by the undersigned of the Amount Due, the above waiver and release become valid, enforceable and of full effect. Upon attachment of the cancelled check and the legal description of the Project, this release may be recorded by the owner(s) or mortgage holder(s) of the Project.

Notwithstanding the foregoing, the undersigned does hereby unconditionally waive and release any and all claims, liens and encumbrance of whatsoever kind or nature against the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and any improvements thereon with respect to monies due the undersigned for previous payment requests in the total sum of $_____ the receipt and sufficiency of which is hereby acknowledged by the undersigned.

Sample Subcontract Agreement

Given under our hand and seal this
_____ day of _____, _____

_____
Company

By: _____
Authorized Representative of Company

STATE OF:)
COUNTY OF:)

Subscribed and sworn to before me this _____ day of _____, 20__.

_____
Notary Public:

My Commission Expires:

County of Residence

WILHELM CONSTRUCTION	**CORPORATE SAFETY MANUAL**	**SECTION:** 14 **REVISION NUMBER:** 10 **REVISION DATE:** 04.29.22 **SUBJECT:** SUBCONTRACTOR GENERAL REQUIREMENTS

Section 14: Subcontractor General Requirements

POLICY

The subcontractor's safety program shall, at a minimum, contain the following:

1. The subcontractor will provide Wilhelm a copy of the list of all chemicals that are specific for the jobsite. MSDS sheets are to be kept in the subcontractor's trailer.

2. Each subcontractor will prepare a Site Specific Safety Plan ("SSSP") prior to the commencement of the subcontractor's work, and shall update the SSSP as project circumstances deem necessary. The Subcontractor's SSSP shall identify the hazards with Subcontractor's work and how it plans to address the hazards. The SSSP shall be kept at the job site and made available to Contractor for review upon request. The SSSP shall include a Silica Exposure Control Plan that covers all forms of silica exposure created by Subcontractor's Work. With respect to drywall work, the plan shall provide that all drywall sanding will be performed with the use of dust collection systems and/or the wet sanding method.

3. Each subcontractor will designate an on-site safety representative.

4. The safety representative of each subcontractor will be responsible for the implementation of the subcontractor's safety program. The subcontractor's safety representative shall:

   A. Attend every project safety meeting.
   B. Inspect the project for safety hazards related to the subcontractor's work and for exposure to the employees of the subcontractor and its sub-subcontractors.
   C. Follow up on correction of safety hazards.
   D. Report any discovered safety hazards to the Wilhelm Superintendent that are left uncorrected, regardless of who is responsible for the hazard.
   E. Monitor the subcontractor's "Tool Box" meetings.
   F. Promote "safety awareness" in all subcontractor tradesmen and supervision and maintain communications between the two regarding safety.
   G. Make sure that the subcontractor has adequate safety equipment on the jobsite as necessary to perform the various portions of its work.

5. Subcontractors are responsible for compliance with the applicable state and/or federal OSHA requirements and any site specific safety requirements. At a minimum, this entails indoctrinating their on-the-job representatives with a working knowledge of the state and/or federal OSHA requirements, making sure they have a copy of the safety code Part 1926 on the job and directing them to remain in full compliance with OSHA at all times. They are further responsible for their firm's representation at all project safety meetings.

Sample Subcontract Agreement

6. All subcontractor supervisors and foremen are responsible to plan and accomplish their work with due regard for the safety of all individuals (including the public) on, or adjacent to, the jobsite. They will be expected to eliminate all foreseeable accident hazards when planning the work under their control. Supervisors and foremen will ensure that weekly "Tool Box" meetings are held to implement and further develop the subcontractor's safety program. It is expected that they will observe and correct any accident-producing practices of the crew before injuries occur. If an accident does occur, they will investigate to determine the cause and take the required corrective action to prevent similar accidents. All accidents shall be reported immediately on the "Field Report of Injury/Illness of Employee" form and copied to the Wilhelm Superintendent.

7. All subcontractor supervisors, foremen and workmen are required to observe all local, state and federal safety regulations. They shall use the safety devices provided for their own protection and should never render ineffective any safety device which is in use on the project. They shall report all discovered safety hazards to the subcontractor's on-site safety representative.

8. If an accident occurs, the subcontractor involved will take the following action:

   A. Administer first aid and see to the immediate needs of the injured.
   B. Notify the Wilhelm Superintendent as soon as practicable of the accident, its location, who was involved, what the injured was doing and the known extent of the injuries.
   C. No later than 24 hours after the accident, the subcontractor will submit a copy of its accident report to the Wilhelm Superintendent.

9. Underground Utility Locating Process

A. Purpose:

Wilhelm has established the following procedures to prevent damaging underground utility lines. These mandatory procedures, for below grade work, are the minimum standards to be followed prior to and throughout the project by all subcontractors. These procedures are not optional, they are *mandatory*. Shortcuts to these procedures are unacceptable.

B. Procedure:

- No work shall begin until underground locate calls have been made and completed. The subcontractor needing the locate done will begin the locate process by calling 811 (the utility locate service) and requesting both a "**joint meet**" and a "**locate**". This process normally requires two (2) phone calls to 811, the first call is to setup the meeting and the second call is to schedule the

Sample Subcontract Agreement

actual locate. Prior to the joint meet and subsequent locates, mark out the boundaries where the locate is to be performed. The superintendent for the subcontractor requesting the locate will stay with the locate team throughout both the joint meet and the locate process.

- Calls to the 811 utility locate service should be initiated at least three (3) business days prior to planning to dig. The locate service will want location information such as the address and township where the below grade work will occur. The 811 utility locate service will provide a ticket or dig number at the time of the initial call. Wilhelm requires utility locates for active construction sites to be **refreshed** at least every two (2) weeks or at any time the lines are not clearly visible, until the work is completed. Each time you call in for a refresh, you will be given a new ticket number. It is important that all subcontractors obtain their own locate ticket. **Whoever puts a bucket in the ground must have their own locate ticket.**

- The subcontractor planning to dig must also engage an independent locate company such as Bloodhound, Pinpoint or another private utility locating service to come to the site to locate and mark all known private utilities. The most recent site utility drawings need to be provided to the locate company. Prior to digging, the subcontractor must meet with the Wilhelm Superintendent.

- All subcontractors on the project are to provide Wilhelm with updated as-built information daily for all site utilities being installed during the course of the project, whether it is a permanent or temporary installation. The as-built information is to include coordinates and elevation. Structures, pull or junction boxes, risers, valves etc., are to be included in this information. Piping, duct banks, direct bury cabling should be documented at intervals not to exceed 50'. The subcontractor digging shall provide the information on a daily basis to all excavation personnel, site work foremen, layout engineers, spotters and operators that are doing the work in the ground.

- All subcontractors will install color coded tracer tape (with embedded wire) on the top side of the pipe for all water, gas, chemical, electric, fiber and sanitary forced mains that do not come with tracer capability (such as steel pipe, or a line with tracer wire already embedded). All subcontractors are to install the proper color coded warning tape at 18 inches below grade at **all** utility lines installed for a project. This procedure is to be followed whether for a permanent or a temporary utility.

- The pothole method using hydro excavating equipment ("pothole method") shall be used for location of all gas, electric, water lines, sanitary lines, fiber optics and any other data communication lines. Storm lines may be located by

Sample Subcontract Agreement

means of careful machine excavation and use of a probe rod until located. The same marking process as described above will be utilized. The depths will be recorded; vertical markers will be installed in the potholed location and backfilled; the bottom of these markers should be a minimum of 1' above the utility line, and approximately 2'-4' above grade. Markers will be painted or taped the color of the utility they represent and the depth below grade at that location will be marked with permanent marker. Markers are to be placed no further than **50'** apart.

- If after potholing and taking elevations of a live utility line below a proposed excavation and the utility is determined to be less than 2' below proposed subgrade of the excavation, the subcontractor digging shall expose the entire line within the confines of the proposed excavation prior to any excavation beginning.

- If the excavation is going to cross a live utility that was originally potholed and determined to be greater than 2' below the proposed excavation but falls within the range of 2' to 4' below subgrade, potholing will need to occur at 10' intervals wherever the utility is crossed to verify consistency of the depth of the utility.

- When a live utility line is determined to be less than 2' from the side of a proposed excavation, you must pothole the utility line at 10' intervals for the entire length of the excavation to verify its location prior to any excavation beginning.

- Once excavation has begun, the subcontractor doing the work shall have a full-time spotter watching the excavation and the operator will dig with extreme caution, anticipating the possibility of a branch or tee coming off the line.

- If a subcontractor strikes an underground utility, they are to call the Wilhelm Superintendent immediately.

10. **Directional Boring.** If a subcontractor or one of its sub-subcontractors need to run a directional boring, it must first submit its written project specific boring plan and procedures to Wilhelm and go over them in detail with the Wilhelm Superintendent before mobilizing to the site and beginning the boring process. The boring plan must include set back calculations and diagrams, and a cut section diagram(s) of the bore path(s) which includes boring machine location, existing utilities (type, depth and location), and bore path with distance from existing utilities.

Sample Subcontract Agreement

11. **WALL, FLOOR, AND CEILING MODIFICATION PROCEDURE -** Below are the steps to be taken for any wall, floor, or ceiling modifications. This includes, but is not limited to demolition, cutting, coring, and grinding:

    - Subcontractor is to identify proposed wall, floor, or ceiling shown on drawings that are to be modified.
    - Wall, floor, or ceiling is to be inspected by the subcontractor's superintendent.
    - All interested parties must be aware of not only utilities running through the structure, but Post tension (PT) and Pre-stressed cables as well. Utility indicators are conduits protruding through the concrete in the area, and receptacle and switch boxes. Post Tension (PT) indicators are grouted cavities located on the edge of both Slab on Grade (SOG) and elevated concrete decks.
    - All concrete walls, floors, and Ceilings must be scanned with a concrete scanner prior to any concrete modifications/cutting.
    - When a concrete scanning company arrives onsite, the technician shall be provided with PT Drawings of the proposed area/s that are to be modified as well as any as built drawings. This includes tendon, uniform, and banded cable drawings if they are warranted for this work.
    - A company representative from Wilhelm and the subcontractor need to accompany the scanning technician as they scan the area(s) that are to be modified.
    - If the concrete scanning company's findings are not conclusive, then the subcontractor's quality manager and Wilhelm's quality manager are to be brought in to visit the site for a second opinion.
    - If utility lines are indicated in the floor or wall, each line must be identified as such and labeled where they originate and end. This can be written on the wall and/or an as built.
    - If these lines have been identified and are determined to be in conflict with the proposed modification, the responsible subcontractor shall look into changing the location of the sawcut or core
    - Proper lock out tag out (LOTO) procedures are to be met when deenergizing and removing electrical circuits and/or any stored energy. Proper Lock out tag out (LOTO) procedures are to be met when removing locks from circuits/lines that were shut off during this work. All parties are to be notified prior to circuits being turned on.

Sample Subcontract Agreement

EXHIBIT “E”

E-Verify Affidavit – Subcontractors of F.A. Wilhelm Construction Co., Inc.

Subcontractor, acting through its authorized agent, and being first duly sworn, deposes, verifies, and affirms under the penalties for perjury that:

(a) Subcontractor shall enroll in the E-Verify Program conducted through the Illegal Immigration Reform and Immigration Responsibility Act of 1996, as amended, operated by the U.S. Dept. of Homeland Security (“E-Verify Program”) and shall verify the work eligibility status of its employees in compliance with the E-Verify Program and/or any applicable law, except if the E-Verify Program no longer exists;

(b) Subcontractor does not knowingly employ an unauthorized alien;

(c) Subcontractor does not either knowingly employ or contract with an unauthorized alien or retain an employee or contract with a person that the Subcontractor later learns is an unauthorized alien; and

(d) Subcontractor shall obtain written certification from any and all sub-subcontractors providing any services under the Subcontract Agreement that said sub-subcontractors do not either knowingly employ or contract with an unauthorized alien and are enrolled in the E-Verify Program, except if the E-Verify Program no longer exists.

I (we) affirm, under the penalties for perjury, that the foregoing representations are true.

(Subcontractor): _____

By (Written Signature): _____

(Printed Name): _____

(Title): _____

Sample Subcontract Agreement

EXHIBIT “F”

SUBCONTRACT PERFORMANCE BOND

Bond No.:

KNOW ALL BY THESE PRESENTS: That [name of subcontractor], a [state] corporation, as Principal, hereinafter called Principal, and [name of surety], a [state] corporation, as Surety, hereinafter called Surety, are held and firmly bound unto F.A. Wilhelm Construction Company, Inc. with its address at 3914 Prospect Street, Indianapolis, IN 46203, as Obligee, hereinafter called Obligee, in the amount of U.S. Dollars ($) (the “Penal Sum”), for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated entered into a subcontract number with Obligee for the performance of subcontract work , including warranty obligations, in accordance with drawings and specifications for the construction of the project (hereinafter "the Project"), which subcontract is by reference made a part hereof, and is hereinafter referred to as the “Subcontract”.

A. NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that, if Principal shall promptly and faithfully perform said Subcontract, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject to the following conditions: (i) Principal is in default under the Subcontract; and (ii) Principal has been declared by Obligee to be in default under the Subcontract; and (iii) the Obligee has performed its obligations under the Subcontract. Upon the occurrence of each of the above conditions, Surety shall have 30 days (“Investigatory Period”) from the last event to occur of the following: (a) receipt of the written notice of default; (b) the date access to the Project site is provided to Surety; or (c) the date the information and documentation in Obligee’s or its agent’s possession and requested by Surety is received by the Surety, which information and documentation must be requested by Surety within 10 days of its receipt of Obligee’s written notice of default, to:

Sample Subcontract Agreement

(1) Notify Obligee that it has elected to complete the Subcontract through independent contractor(s) retained by Surety and thereafter commence such performance with reasonable promptness. In such event, that portion of the Balance of the Subcontract Price as may be required to complete the Subcontract or remedy the default and to reimburse the Surety for its expenditures shall be paid to the Surety at the times and in the manner as said sums would have been payable to Principal had there been no default under the Subcontract; or

(2) Notify the Obligee that it has elected to arrange for a subcontract between Obligee and a replacement subcontractor reasonably acceptable to Obligee guaranteed by subcontract performance and payment bonds provided by the replacement subcontractor in the amount of the replacement subcontract. In such event, Surety shall pay Obligee the difference between the cost of the replacement subcontractor and the amount that would have been payable to the Principal had there been no default under the Subcontract. Such payments may be in a lump sum (in the case of a lump sum subcontract) or periodically as incurred by Obligee; or

(3) Request that Obligee complete the Subcontract. In such event, Surety shall pay Obligee the difference between the reasonable cost of a replacement subcontractor and the amount that would have been payable to the Principal had there been no default under the Subcontract; or

(4) Arrange to provide financial and/or other assistance to the Principal (“Financing”) to assist the Principal with completion of the Subcontract. In the event Obligee has formally terminated

Principal’s right to proceed under the Subcontract, this option shall be subject to Obligee’s concurrence, which shall not be unreasonably withheld. The Obligee shall pay the Balance of the Subcontract Price as directed by the Surety. In the event Surety provides Financing, Surety, in its sole discretion, may upon written notice to Obligee cease providing such Financing at any time, in which event Surety shall immediately make a further election without a further Investigatory Period under this paragraph A; or

(5) Deny liability and notify the Obligee, citing the reasons therefor; or

(6) After investigation, determine the amount for which it may be liable to the Obligee and, as soon as practicable after the amount is determined, make payment to the Obligee.

B. After Obligee has provided Surety with written notice of the Principal’s default, and during the Investigatory Period and any subsequent period before the commencement of work under paragraph A, subparagraphs 1 or 2, Obligee may take action pursuant to its Subcontract rights to mitigate the damages caused by the Principal’s default. To the extent that Obligee performs obligations under the Subcontract during this period (the “Mitigation Work”) Obligee shall be entitled to deduct the Cost of the Mitigation Work from the Balance of the Subcontract Price. To the extent the Balance of the Subcontract Price is exhausted, and Surety elects to proceed under paragraph A, subparagraphs 1, 2, 3 or 4, Surety shall reimburse Obligee for the difference between the Balance of the Subcontract Price and the Cost of the Mitigation Work incurred and paid by Obligee.

C. If Surety proceeds under paragraph A, subparagraphs 1, 2, 3, 4 or 6, Surety may additionally advise in its notice of its election to Obligee that the Obligee’s claim is disputed as to liability and/or amount and Surety is proceeding under a reservation of all rights and defenses. In that event, Surety shall make all payments otherwise called for under this Bond. However, in the event it is determined that Surety is not liable, in whole or in part, under this Bond and Surety expended monies in excess of the funds paid by Obligee to Surety, then Surety shall be entitled to recover the excess from Obligee.

Sample Subcontract Agreement

D. The Surety’s aggregate liability is limited to the Penal Sum of this Bond, regardless of whether the liability arises from the actions or failure to act of Principal or Surety. All amounts expended by the Surety under paragraphs A and/or B and/or C of this Bond, in excess of funds paid by Obligee to Surety, shall be credited against the Penal Sum. However, in the event it is determined that Surety expended monies in excess of the Penal Sum of this Bond, then Surety shall be entitled to recover the excess from Obligee. The Penal Sum of this Bond shall automatically be increased or decreased by the amount of any change order, provided the change order(s) do not, either singly or in the aggregate, exceed 10% of the original Subcontract amount. Should any change order singly or in the aggregate exceed 10% of the original Subcontract amount, Surety’s written consent must be obtained by Obligee in order to increase the penal sum.

E. Definitions:

(1) The term “Balance of the Subcontract Price,” as used in this Bond, shall mean the total amount payable by Obligee to Principal under the Subcontract and any amendments thereto, less the amounts heretofore properly paid by Obligee under the Subcontract.

(2) The term “Cost of the Mitigation Work” means the cost actually incurred by Obligee in proper performance of work under the Subcontract, including remedying defects in the work of the Principal. Such costs shall be at rates and hours not higher than the standard customarily incurred at the place of the Project except with the prior written consent of the Surety. Obligee’s overhead (both field and home office) as well as profit shall be included in the Cost of the Mitigation Work at a markup of 15% to the actual labor, material,

equipment, and subcontractor costs incurred and paid for by Obligee. Obligee shall not apply markup to the cost of any subcontractor that is affiliated with Obligee.

F. Notwithstanding any provision in this Bond and any document incorporated herein to the contrary, any proceeding, legal or equitable, under this Bond must be instituted in a court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of default or within two years after the Principal ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

G. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Obligee named herein or the heirs, executors, administrators or successors of the Obligee.

H. Any notice given or any demand made under this Bond shall be given in writing and may be provided to the following email address or given by any method of delivery that provides evidence or confirmation of receipt, including personal delivery, express courier (such as Federal Express), and prepaid certified or registered mail with return receipt requested. The Surety’s address for notice is .

I. The Surety shall not be liable to the Obligee or others for obligations of the Principal that are unrelated to the Subcontract work, and the Balance of the Subcontract Price shall not be reduced or set off on account of any such unrelated obligations.

J. The Surety hereby waives notice of change, including changes of time, to the Subcontract, purchase orders or other obligations.

Sample Subcontract Agreement

Signed this day of , .

(Principal)

By: _____

(Surety)

By: _____
, Attorney-in-Fact

SUBCONTRACTOR PAYMENT BOND

Bond No.:

KNOW ALL BY THESE PRESENTS, That we, (subcontractor's name), called the Principal, and (surety's name), a (state) corporation, called the Surety, are held and firmly bound unto F.A. Wilhelm Construction Company, Inc. with its address at 3914 Prospect Street, Indianapolis, IN 46203, hereinafter called the Obligee, in the sum of U.S. Dollars ($) (the “Penal Sum”), for the payment whereof said Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein.

WHEREAS, the Principal has entered into a subcontract numbered with the Obligee, dated , for project ("Subcontract").

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall promptly make payment to all Claimants as hereinafter defined for all labor and material used, consumed or incorporated in the performance of the construction work to be performed under the Subcontract, then this obligation shall be void; otherwise to remain in full force and effect, subject, however, to the following conditions:

Sample Subcontract Agreement

1. A Claimant is defined as one other than the Obligee having a contract with the Principal or with a direct subcontractor of the Principal to supply labor and/or materials and such labor and/or materials are actually used, consumed or incorporated in the performance of the construction work under the Subcontract.

2. The above-named Principal and Surety hereby jointly and severally agree with the Obligee that every Claimant as herein defined who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such Claimant’s work or labor was done or performed or materials were furnished by such Claimant, may bring suit on this bond, prosecute the suit to final judgment for the amount due under Claimant’s contract for the labor and/or materials supplied by the Claimant which were used, consumed or incorporated in the performance of the work, and have execution thereon; provided, however, that a Claimant having a direct contractual relationship with a direct subcontractor of the Principal shall have a right of action on this bond only if said Claimant notifies the Principal and Surety in writing of its claim within ninety (90) days from the date on which said Claimant did or performed the last labor and/or materials for which the claim is made. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in and envelope addressed to the Principal and Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the project is located, save that such service need not be made by a public officer.

3. No suit or action or arbitration shall be commenced hereunder by any Claimant:

a. After the expiration of the earlier of: (1) one year after the day on which the Claimant last supplied the labor and/or materials for which the claim is made; or (2) the limitation period set forth in the public works bond statutes, if any, in the location where the construction work is being performed. Any limitation contained in this bond which is prohibited by any law controlling in the state where the suit is filed shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by the law of that state, and said period of limitation shall be deemed to have accrued and shall

commence to run on the day the Claimant last supplied the labor and/or materials for which the claim is made; and

b. Other than in a state court of competent jurisdiction in the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.

The Obligee shall not be liable for the payment of any costs or expenses of any such suit action or arbitration.

4. The Penal Sum of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder. The Surety's liability hereunder is limited, singly, or in the aggregate, to the Penal Sum of the bond set forth herein.

Signed this day of , 20 .

(Principal)

By: _____

(Surety)

By: _____
, Attorney-in-Fact

Sample Subcontract Agreement

EXHIBIT “F”

DUAL OBLIGEE RIDER

To be attached to and form a part of Performance/Payment Bond No. _____ ,
executed concurrently with this rider, it is agreed that:

Surety, and _____

_____ , Principal,

for valuable consideration, hereby agree that the Bond executed in favor of _____

_____ , Obligee,

in connection with a contract for: _____

_____

which bond and contract are made a part of hereof by reference, shall now include as an additional Obligee:

_____

in its capacity as _____ for the aforementioned project.

The Surety shall not be liable under this bond to the Obligees, or either of them, unless the said Obligees, or either of them, shall make payments to the Principal or to the Surety, in case the Surety arranges for the completion of the contract upon default of the Principal, strictly in accordance with the terms of said contract as to payments, and shall perform all the other obligations to be performed under said contract at the time and in the manner therein set forth.

In no event shall the Surety be liable in the aggregate to both Obligees for more than the penal sum of its Performance Bond, nor shall it be liable except for a single payment for each single breach or default. At the Surety’s election, any payment due to either Obligee may be made by its check issued jointly to both.

WITNESS the following signatures and seals thisday of , .

By: _____

, Attorney-in-Fact

_____

Attest: **(Principal)**

_____ By: _____

S-5344 (12-99

Sample Subcontract Agreement

EXHIBIT “G”

Documents Log

Sample Subcontract Agreement

EXHIBIT “H”

Project Schedule

Sample Subcontract Agreement

EXHIBIT "I"

SCAFFOLD/EQUIPMENT AGREEMENT

F.A. Wilhelm Construction Co., Inc. ("Wilhelm")
3914 Prospect Street;
Indianapolis, Indiana 46203
(317) 359-5411 FAX: (317) 359-8346

LICENSEE: _____

PROJECT: _____

OWNER: _____

ARCHITECT: _____

JOB #	COST CODE:	DATE:

WHEREAS, Wilhelm has made available certain scaffolding and/or equipment (hereinafter "Scaffold/Equipment") which has been erected or furnished (and/or rented/leased) at the Project, and is described as follows: _____

WHEREAS, Licensee wishes to use the above described scaffold/equipment in order to perform its work at the Project.

NOW, THEREFORE, Wilhelm and Licensee acknowledge and agree as follows:

1. **Use of Scaffold/Equipment.** Licensee may use the above-described scaffold/equipment on the Project for the following purposes: _____

2. **Additional Compensation** (if applicable). In addition to the other good and valuable consideration provided by Licensee as set forth herein, Licensee shall provide the following compensation to Wilhelm: _____

3. **Acknowledgment of Scaffold/Equipment Condition.** Licensee hereby confirms that a qualified representative of Licensee has inspected the scaffold/equipment, and warrants that the scaffold/equipment is in safe and satisfactory condition for use by Licensee's employees.

4. **Qualified Use of Scaffold/Equipment.** Licensee hereby confirms and is responsible that all users of scaffold/equipment shall have the appropriate training and/or awareness to operate and/or use said scaffold/equipment in accordance with all applicable regulations. Licensee is responsible for ensuring all users are trained and qualified as necessary prior to use.

TERMS & CONDITIONS OF THIS SCAFFOLD/EQUIPMENT AGREEMENT ARE CONTINUED ON THE FOLLOWING PAGES.

This Scaffold/Equipment Agreement entered into as of the date written above.

WILHELM

_____
(Signature)

_____
(Printed name and title)

LICENSEE

_____
(Signature)

_____
(Printed name and title)

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5. **Inspection and Repair.** Prior to each use of the scaffold/equipment by the employees of Licensee, a qualified representative of Licensee shall make a complete inspection of the scaffold/equipment. If said inspection reveals any defects or dangerous conditions, said information shall be communicated to the management of Wilhelm in writing. Licensee shall cause any defective scaffold/equipment to be repaired before it is used by any person, including Licensee's employees. Licensee shall provide the management of Wilhelm with written notice of any repairs made upon the scaffold/equipment. If Licensee cannot safely repair the scaffold/equipment or if said repairs cannot be made by a qualified worker in a proper and workmanlike manner, Licensee shall immediately cease to use the scaffold/equipment and shall immediately provide the management of Wilhelm with written notice of the condition of the scaffold/equipment.

6. **Alterations and Modifications.** Other than repairs of defects or dangerous conditions as required by Paragraph No. 5, Licensee shall not make any alterations or modifications to the scaffold/equipment without first obtaining written authorization from the management of Wilhelm. Unless otherwise directed in writing by the management of Wilhelm, Licensee, upon completing its use of the scaffold/equipment and before turning the scaffold/equipment back over to Wilhelm, shall: a) remove any alterations or modifications made pursuant to this paragraph; b) return the scaffold/equipment to the same condition and configuration that it was in as of the date this Scaffold/Equipment Agreement was entered into; and c) have a qualified representative inspect the scaffold/equipment and warrant that it is in safe and satisfactory condition for the continued use by Wilhelm.

7. **Safety.** Licensee shall take the proper precautions to protect all persons and property from being injured by Licensee's use of the scaffold/equipment or the condition of the scaffold/equipment, shall comply with any safety measures initiated by Wilhelm, and shall comply with OSHA and any other applicable Federal, State or local safety laws, rules, orders or regulations.

8. **Use of Scaffold/Equipment by Others.** Licensee shall not allow any person other than its own employees to use the scaffold/equipment without written authorization from Wilhelm's management. If Licensee is aware of people trespassing upon the scaffold/equipment, Licensee shall immediately notify Wilhelm's management of the trespassing.

9. **Insurance Coverage.** Prior to its use of the scaffold/equipment, Licensee shall procure and maintain in force the insurance that is called for by the Subcontract Agreement between Wilhelm and Licensee on the above referenced Project.

10. **Release.** Licensee does hereby UNCONDITIONALLY RELEASE AND FOREVER DISCHARGE Wilhelm, Owner, Architect, and their respective officers, directors, agents, employees, legal representatives, subsidiaries, predecessors, successors and assigns (hereinafter collectively referred to as "Released Parties") from any and all claims, causes of action or demands for damages, losses, costs, attorney fees, expenses or consequential damages of any nature whatsoever which arise out of, are related to or connected with the condition of the scaffold/equipment or the use of scaffold/equipment by Licensee.

11. **Indemnification.** To the fullest extent permitted by law, Licensee shall indemnify, hold harmless, and defend at its own expense the Released Parties from and against any and all claims, causes of action, demands, damages, losses and expenses (including litigation costs and attorney's fees) of any nature whatsoever, including but not limited to claims for or relating to injury, sickness or disease to any persons (including death), damages to property (including the lost use thereof and consequential damages therefrom) or economic loss, which arise out of, are alleged to arise out of, are related to or connected with: a) the condition or use of the scaffold/equipment during the time period when Licensee uses or has the right to use the scaffold/equipment; b) the Licensee's breach of this Scaffold/Equipment Agreement; and/or c) any act or omission of Licensee, its subcontractors or material suppliers, anyone directly or indirectly employed by them or anyone for whose acts they may be liable; regardless of whether or not such claim, cause of action, damage, loss or expense is contributed to or caused by the negligence, breach of contract or warranty, strict liability, or any other breach of duty of any Released Party; provided, however, that Licensee shall not be obligated to indemnify a Released Party for its sole negligence or willful misconduct where such indemnification is contrary to law, but otherwise it is the intent of the parties that Licensee shall indemnify the Released Parties to the fullest extent permitted by law.

12. **Governing Law.** This Scaffold/Equipment Agreement and the rights and duties of all persons arising from or related to this Scaffold/Equipment Agreement shall be governed by the laws of the State of Indiana. Any dispute arising under or related to this Scaffold/Equipment Agreement, shall be brought only in state court in Marion County, State of Indiana, or if federal jurisdiction is available, in the U.S. District Court for the Southern District of Indiana. The parties to this Scaffold/Equipment Agreement agree to: a) participate in mediation; b) accept such venues if mediation is unsuccessful; c) waive trial by jury in all proceedings; and d) to waive, as against each other, any claim or entitlement to punitive or exemplary damages.

Sample Subcontract Agreement

13. **Severability.** If any term, provision or part of a provision to this Scaffold/Equipment Agreement should be invalid or unenforceable under the governing law, the validity and enforceability of the remaining terms, provisions and parts thereof shall not be affected, with interpretation and enforcement to occur as if such invalid or unenforceable term, provision or part was never written.

14. **Entire Agreement.** This Scaffold/Equipment Agreement represents the entire integrated agreement between Licensee and Contractor, and supersedes all prior negotiations, representations or agreements relating to Licensee’s use of the scaffold/equipment.

Sample Subcontract Agreement

EXHIBIT "J"

BIM Technical Kickoff Package

OVERVIEW

These guidelines are prepared to serve as a basic standard and to be used in developing a consistent plan for coordination, collision detection, and information exchange. Before setting this plan, F.A. Wilhelm has captured the collective VDC goals and uses on the project. There are many ways to use VDC through design, construction, and facility management. We have worked to define what is critical to the owner.

The collective goals and uses for this project are:

- **(fill this area in with any project-specific goals, challenges, focal points, owner concerns, etc.)**
- **Planning**
- **Coordination**
- **Quality**
- **Efficiency**
- **Lessons Learned**

It is important to understand that this is a collaborative, iterative process and that each model upload represents a snapshot of your work at the time it is uploaded. The expectation is that you will make consistent progress as required to support the project schedule and to deliver a quality, coordinated installation to the owner.

Sample Subcontract Agreement

1. SOFTWARE

Software being used by teams for coordination is listed below. Any object enablers required to view your model files must be uploaded to the project Box site; more details regarding the Box site can be found in section 5 of this document.

COMPANY	SOFTWARE	FUNCTION	VERSION
Construction Manager	Revit / AutoCAD	Modeling	2020
F.A. Wilhelm Construction	Navisworks Manage	Coordination	2020
	Box	Model & File Collaboration	Box Drive
Mechanical / Plumbing	Revit / AutoCAD MEP	Modeling	20XX
Trade Contractor	Navisworks Manage	Model Coordination	20XX
	Box	Model & File Collaboration	Box Drive
Electrical	Revit / AutoCAD MEP	Modeling	20XX
Trade Contractor	Navisworks Manage	Model Coordination	20XX
	Box	Model & File Collaboration	Box Drive
Fire Protection	Revit / AutoCAD / HydraCAD	Modeling	20XX
Trade Contractor	Navisworks Manage	Model Coordination	20XX
	Box	Model & File Collaboration	Box Drive
Structural Steel	Tekla Structures / SDS/2	Modeling	20XX
Trade Contractor	Navisworks Manage	Model Coordination	20XX
	Box	Model & File Collaboration	Box Drive
(Specialty / Other / Misc.)	Revit / AutoCAD MEP	Modeling	20XX
Trade Contractor	Navisworks Manage	Model Coordination	20XX
	Box	Model & File Collaboration	Box Drive

2. Model Scope Overview

Please include the following scope and level of detail in the model files. This is just a quick look at model scope and detail. As a general assumption and guideline, **"if you install it, model it"**. If it is not shown in the model and creates field coordination issues, you will be responsible for moving it in the field at no additional cost. Specific questions can be addressed later along with requirements of contracts.

All conduits/piping in runs of 2 or more need to be modeled regardless of size.

Discipline	Model Examples Include But Are Not Limited To:		
Mechanical	Equipment	Major Equipment Pads	Space Constraints
	Low Pressure Duct	Medium Pressure Duct	Diffusers
	VAV Boxes	Mechanical Piping	Hangers or Supports
	Valves	Valve Handles	Firestop Sleeves (XYZ)
Electrical	Equipment	Major Equipment Pads	Lighting Fixtures
	Cable Trays	Hangers or Supports	Bus Duct
	Panel Boards	Duct Banks	Space Constraints
	Junction Boxes	Branch & Feeder Conduit	Firestop Sleeves (XYZ)
Plumbing	Equipment	Fixtures	Main Lines
	Vents	Hangers or Supports	HW and CW Line
	Sanitary Lines	Space Constraints	Firestop Sleeves (XYZ)
Fire Protection	Sprinkler Mains	Sprinkler Branches	FP Pumps/Equipment
	Panels/Boxes	Sprinkler Head Drops	Space Constraints
	Inspector's Tests	Hangers or Supports	Firestop Sleeves (XYZ)

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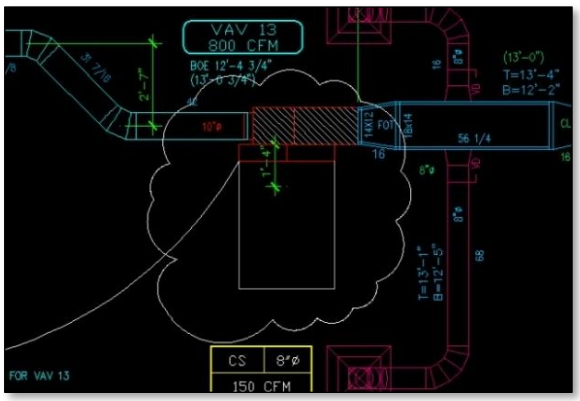
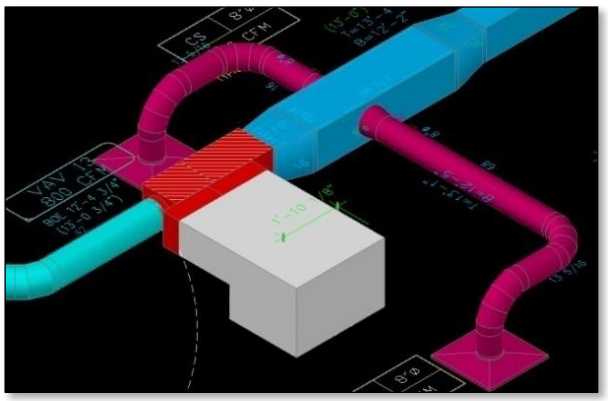
Space Constraints

Space Constraints are areas that equipment, MEP/FP systems, architecture and structural components need for **maintenance, installation, or access**. Space constraints must be modeled, where applicable, by all disciplines.

The example below shows a VAV box with a space constraint for maintenance. This is typically drawn in 2D, but for added coordination, the space is extruded into a 3D element. Place these elements on different layers (or via alternate designation) from other items for use within coordination software. Collision checks with these areas are highlighted as issues if other systems are passing through them. These items can be turned off for plotting.



2D View of a VAV and its Space Constraint



Clearance Zone for Maintenance Purposes

3. VDC Team Roles

Throughout the coordination process, various team members will act in several roles. Below are definitions of these roles and a chart showing who will be filling each of those roles.

BIM Coordination Lead

During coordination F.A. Wilhelm or a Trade Contractor will assume the role of BIM Coordination Lead. By taking on this role this party will be responsible for:

- Running clash detection in accordance with F.A. Wilhelm's guidelines and best practices.
- Running a weekly clash review meeting with other Trade Contractors to discuss and resolve all clashes identified by the Coordination Lead.

Trade BIM Coordinators

Trade BIM Coordinators are responsible for updating models of their scope of work throughout the coordination process and uploading those model changes at least once per week. It is expected that Trade BIM Coordinators are reaching-out to one another individually (outside of our regularly scheduled group meetings) to actively coordinate throughout each week.

FAW VDC Support

FAW VDC Support associates are VDC specialists who will participate in all aspects of VDC on a project. Specifically regarding coordination their responsibilities include:

- Organizing coordination startup.
- Assisting the Coordination Lead and Trade BIM Coordinators with technical issues that may impact the coordination process (e.g. model alignment issues, model conversion problems, etc.).
- Providing oversight for the BIM Coordination process and assistance to ensure that coordination proceeds according to our standards for quality and excellence.

FAW Project Engineers (PE)

FAW PEs are responsible for management of the Trade Contractors. Specifically regarding coordination, their responsibilities include:

- Review and submission of RFIs.
- Review and submission of shop drawings.

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Role	Organization	Person (contact information located in section 11)
BIM Coordination Lead	TBD	Contractor Contact
Trade BIM Coordinators	TBD	Trade Contractor Contact
	TBD	Trade Contractor Contact
	TBD	Trade Contractor Contact
	TBD	Trade Contractor Contact
	TBD	Trade Contractor Contact
FAW VDC Support	F.A. Wilhelm	Office Support Contact Name
FAW PE	F.A. Wilhelm	PE Contact (Mechanical / Plumbing)
FAW PE	F.A. Wilhelm	PE Contact (Electrical)
FAW PE	F.A. Wilhelm	PE Contact (Fire Protection)

4. BIM Coordination Service & Quality Walks Required

Weekly coordination meetings are held to review and resolve coordination issues. Meeting time will be coordinated with the field meeting schedule.

Initial test model upload is performed by all team members prior to starting the weekly cycle. Objectives are:

1. Team members upload latest model information to Box; file formats and naming convention can be found in section 8 of this document.
2. Confirm model geometry is accurately shown in Navisworks.
3. Geometry is correctly aligned in the X, Y, and Z planes.
    a. To verify correct alignment upfront, each model's initial upload is required to include at least 2 grid intersection references represented with both 2D and 3D geometry; these references can be deleted after alignment is verified and the respective Trade Contractor feels comfortable with their model alignment going forward.

Weekly coordination cycle includes:

Coordination Lead

CL1. Trades merge their models for review within Box and Navisworks. The BIM Coordination Lead runs clash detection and organizes clashes into groups for review at the Clash Resolution Meeting.

Trade Contractors

TC1. Weekly (at minimum) uploading of model files to Box.
TC2. Trades model and continue updating and adding to their existing shop models.

Both Teams

BT1. Clash Resolution Meeting: the purpose of this meeting is for the BIM Coordination Lead and Trade BIM Coordinators to review and collaborate on resolutions to all clashes found in that week's clash detection. If necessary to meet the schedule, multiple Clash Resolution Meetings may be held per week.

Extended Team

ET1. BIM MEP Coordination Meeting: the purpose of this meeting is to review major issues, issues that require RFIs, the coordination schedule, and other items the trades will need to continue the coordination process. These meetings are to include an extended team of attendees, such as Superintendents, Project Managers, and the Design Team; Design Team involvement will vary week-by-week.
ET2. Virtual Quality Walk meetings take place after an area is considered to be coordinated/clash-free by the BIM coordination team. Superintendents, Project Managers, and the Trade BIM Coordinators are required to be in attendance for this final review of the area before moving into shop drawings and fabrication; additionally, the Design Team and Owner will be invited to attend. These meetings will commonly be held during the same scheduled time as the typical weekly BIM MEP Coordination Meeting.

	Weekly Coordination Cycle Tasks	Mon.	Tues.	Wed.	Thurs.	Fri.
TC1.	File Upload Deadline					Noon
CL1.	Model Compilation / Clash Detection					
BT1.	Clash Resolution Meeting					
TC2.	Trade Team Modeling and Updates					
ET1.	BIM MEP Coordination Meeting					
ET2.	Virtual Quality Walk (Final Visual Review)					

Typical Weekly Cycle Example (Project-Specific Weekly Cycle to be Set by Project Team)

Sample Subcontract Agreement

5. Box Site Location

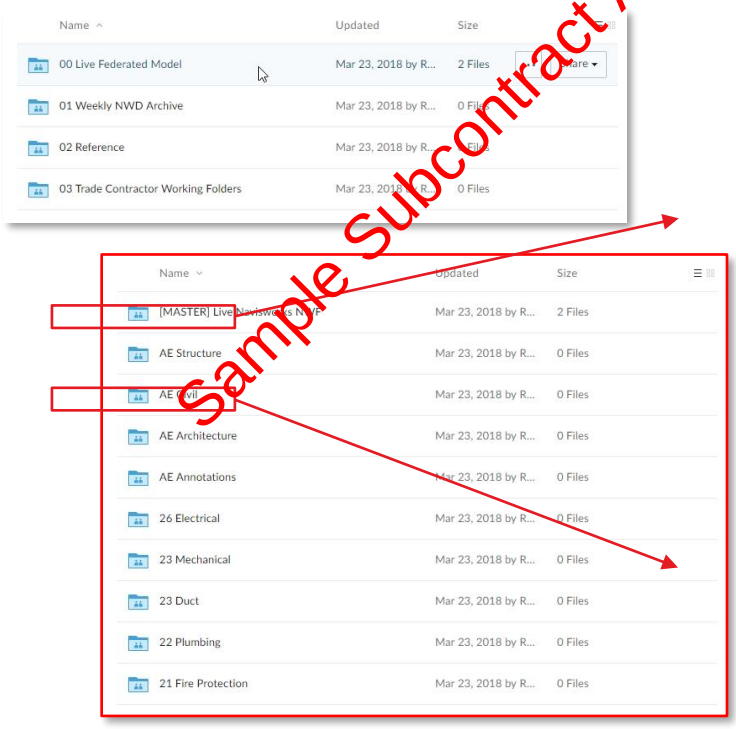
All project files are to be uploaded to the designated Box site. Access to the Box site will be provided to the active participants in the coordination process. If additional team members desire access, please contact your FAW VDC support associate to provide them with contact information and permission levels they will require.

6. Box Site Folder Structure & Box Drive Feature

Individual trade models are to be uploaded to their corresponding folder(s); standard BIM coordination folder structure is shown below.

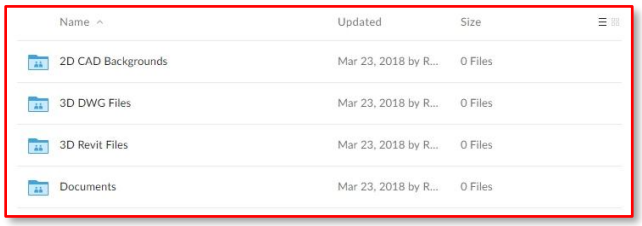
Box Site Folder Structure Overview

00 Live Federated Model *Master NWF & Trade-Specific Linked NWC Folders Within*	storage location where our working version of our composite model file (also referred to as Federated Model) will be located as well as individual trade-specific folders that house each respective linked model file
01 Weekly NWD Archive	storage location where our published versions of our composite model file will be stored (for ease of sharing and general reference)
02 Reference	serves as a general file depository and exchange location; files located in this section should not be actively linked to the Live Federated Model
03 Trade Contractor Working Folders	serves as a storage location where each respective trade contractor may store their working files if they wish to utilize Box’s platform and features



Interface of Box Site Folder Structure on Box.com

00 Live Federated Model Section of Box Site Folder Structure



02 Reference Section of Box Site Folder Structure

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BOX DRIVE SETUP INSTRUCTIONS & OPTIONAL BOX FEATURES

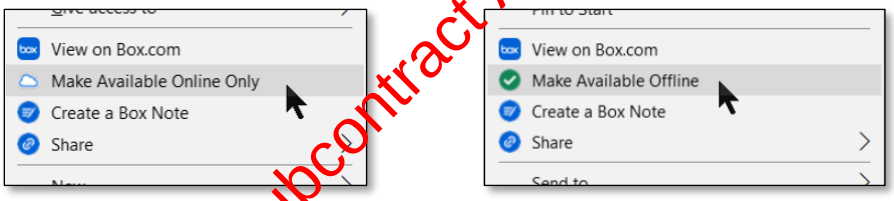
1. Download and install Box Drive: https://www.box.com/resources/downloads/drive
   a. Box Drive allows users to view the Box site and all its contents in a Windows Explorer folder view.

(For current Box Sync users, click here for information on Box Drive vs. Box Sync.)

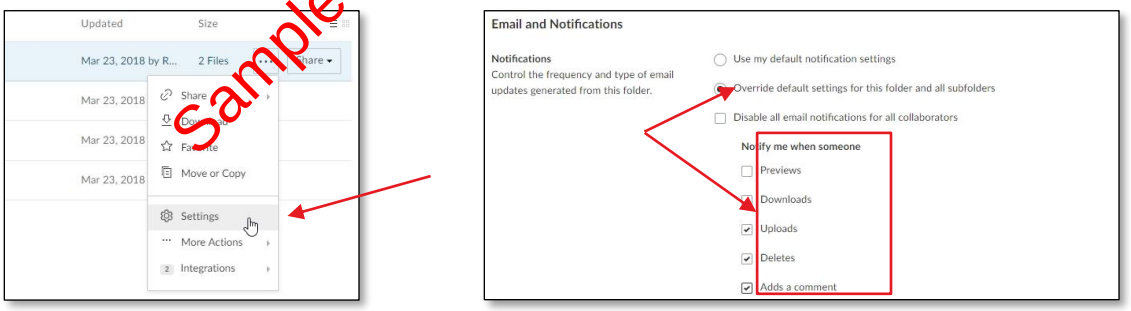
2. By default, Box Drive will not automatically download or sync any folders to your computer; as you open files or require other files as external references (such as NWCs that make up a NWF file or XREFs used/linked within a DWG file), it will download and cache them on your local hard drive.



   a. If you would like a particular folder to always download the latest subfolders/files within that folder, you can simply right-click on the respective folder and select the option to **"Make Available Offline"**.
      i. Once this feature has been enabled on a particular folder, you can right-click on the same folder and select **"Make Available Online Only"** if you no longer wish to have it synced.



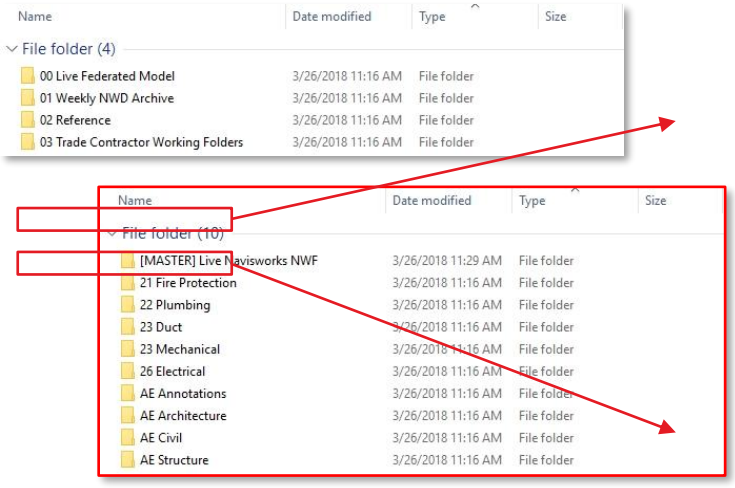
3. Setup preferred email notification settings (default and overrides for specific Box sites can be modified):



Sample Subcontract Agreement

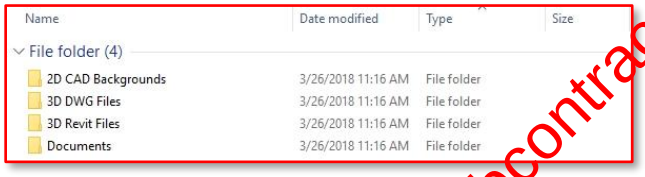
IMPORTANT NOTES RELATING TO THE BOX DRIVE FEATURE & FUNCTIONALITY

1. If you delete a folder from your Box Drive folder, it will assume you want to delete that entire folder and all of its contents/subfolders from the Box site without warning.
2. If you delete individual files from your Box Drive folder, it will assume you want to delete them from the Box site without warning.



Interface of Box Site Folder Structure When Utilizing Box Drive

00 Live Federated Model Folder of Box Site When Utilizing Box Drive



02 Reference Folder of Box Site When Utilizing Box Drive

Sample Subcontract Agreement

7. Drawing / Modeling / Exporting Standards

A list of best practices and/or lessons learned when drawing, modeling, or exporting particular objects and files.

- NWC Exports: When Exporting Level-Based Models, **Utilize the Floor Plans' "View Range" in Conjunction With the "Orient to View" Function/Technique** in Order to Cut Each Level-Based Model Precisely at Essentially Top of Slab/Floor Elevations in the Z-Direction; If Required to Cut Each Floor into Separate Areas, **a Square Crop Box Can Be Used** in the Floor Plan Being Utilized for "Orient to View" in Order to Crop Information in the X/Y-Directions (Ask Your BIM Lead Coordinator Unaware of this Method)
- NWC Exports: **Hide "Revit Links"** in NWC Export Views or **Make Sure "Convert linked Revit files" Checkbox in Not Selected/Checked** in "Navisworks settings…" (Button Found at Bottom of NWC File Naming Dialog Box During NWC Export Process)
- NWC Exports: **Hide "Imported Categories"** in NWC Export Views or **Make Sure "Convert linked CAD formats" Checkbox is Not Selected/Checked** in "Navisworks settings…" (Button Found at Bottom of NWC File Naming Dialog Box During NWC Export Process)
- Clearance Zones: **Ensure Clearance Zones Are Assigned a Separate Material** From Their Respective Equipment (**Name Their Material "Clearance"** So All Clearances Can Be Easily Selected En Masse)
- NWC Exports: Remove/Hide Miscellaneous Items Drawn Off to the Sides of Models (aka, "Model Junk")
- NWC Exports: Unless Notified Otherwise By BIM Lead Coordinator, Export NWCs Per **Shared Coordinates** in "Navisworks settings…" (Button Found at Bottom of NWC File Naming Dialog Box During NWC Export Process)

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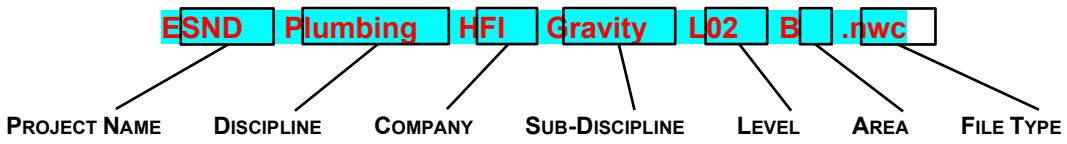
8. File Naming and Format

Model files are to conform to the standards below before being uploaded to the designated Box site.

File Format

The minimum expectation is a **2020 3D NWC / IFC and a 3D native file (RVT / DWG / etc.)** are to be provided.

File Naming



Reference Files	*Required*	*Required*	*Required*	*As Needed*	*Required*	*Project Specific*
Date	**Project Name**	**Discipline**	**Company**	**Sub-Discipline**	**Level**	**Area**
YYMMDD	ESND	Architecture	FAW	Steel	L00	A
		Structure	AE (varies)	Precast	L01	B
		Duct	TC (varies)	Power	L01M	C
		Hydronic		Lighting	L02	D
		Process		Equipment	L03	
		Electrical		Gravity	L04	
		Plumbing		Pressure	ROOF	
		Fire Protection		Gridlines	(etc.)	
		Annotations		Room Tags		
		(etc.)		(etc.)		

EXHIBIT “J”

BIM Technical Kickoff Package

Diagram of File Naming Convention

Sample Subcontract Agreement

9. File Orientation in the XYZ

All models produced by Trade Contractors and F.A. Wilhelm that are uploaded to Box will need to be located to match the agreed upon alignment for this project. A 2D CAD reference file with the project grid lines located in the appropriate coordinate system is available on the Box site. The expectation is that each modeler will begin modeling by referencing this CAD file, origin to origin.

Design team models that have NWC exports into the merged model will be aligned in Navisworks via the "Units and Transform" function; these transform values will be defined for the team and posted to the Box site.

All trade contractor drawings are required to have the designated gridline intersection at the X and Y coordinates below. The designated gridline corresponds to plan north, not true north.

The XY-alignment as well as the Z-elevation to be used for this project's coordination models are defined as:

Axis	Dimension	Reference Grid/Level
X	0'	A
Y	0'	1
Z	0' / Sea Level	L01 FFE
Note:	**Reference "Coordination Grid" File in 2D CAD Backgrounds Section of Box Site**	

XYZ Drawing Location

Sample Subcontract Agreement

10. Layering

If using a DWG-based modeling software, internal format for layer names can remain the same with exception to major equipment. Please separate each major piece of equipment onto its own respective layer; the minimum expectation would be that any piece of equipment that is given a unique identifier on the contract documents is assigned to its own layer.

Please send layering list with brief layer description to the F.A. Wilhelm VDC support contact at the end of this document.

Examples: *Layer Name:* **SA-BOH-AHU**
Layer Description: **Supply Air - Back of House - AHU**

Layer Name: **AHU-03**
Layer Description: **Air Handling Unit Identified as AHU-03 on Contract Documents**

If using Revit, use either the Comments parameter or a custom Project Parameter to label equipment per its respective unique identifier on the contract documents.

11. Contact Information

The contact information below uses all of the team members involved with the BIM / MEP coordination effort.

A. Main Modeling Contacts

Company	Name	Title	Role	Phone / Email
Mechanical / Plumbing TC	Person	Title	HVAC Modeler & Coordinator	(###) ###-#### (O/M) email@company.com
Mechanical / Plumbing TC	Person	Title	Plumbing Modeler & Coordinator	(###) ###-#### (O/M) email@company.com
Electrical TC	Person	Title	Electrical Modeler & Coordinator	(###) ###-#### (O/M) email@company.com
Fire Protection TC	Person	Title	Fire Protection Modeler & Coordinator	(###) ###-#### (O/M) email@company.com
(Specialty / Other / Misc. TC)	Person	Title	Role	(###) ###-#### (O/M) email@company.com

Main Modeling Contact List

B. BIM Coordination Contacts

Company	Name	Title	Role	Phone / Email
Coordination Lead GC/TC	Person	Title	Coordination Lead	(###) ###-#### (O/M) email@company.com
F.A. Wilhelm	Person	Title	VDC Support	(###) ###-#### (O/M) email@fawilhelm.com
F.A. Wilhelm	Person	Title	PE	(###) ###-#### (O/M) email@fawilhelm.com
F.A. Wilhelm	Person	Title	Project Manager	(###) ###-#### (O/M) email@fawilhelm.com
F.A. Wilhelm	Person	Title	Superintendent	(###) ###-#### (O/M) email@fawilhelm.com
Mechanical / Plumbing TC	Person	Title	Project Manager	(###) ###-#### (O/M) email@company.com
Mechanical / Plumbing TC	Person	Title	Superintendent	(###) ###-#### (O/M) email@company.com
Electrical TC	Person	Title	Project Manager	(###) ###-#### (O/M) email@company.com
Electrical TC	Person	Title	Superintendent	(###) ###-#### (O/M) email@company.com
Fire Protection TC	Person	Title	Project Manager	(###) ###-#### (O/M) email@company.com
Fire Protection TC	Person	Title	Superintendent	(###) ###-#### (O/M) email@company.com
(Specialty / Other / Misc. TC)	Person	Title	Role	(###) ###-#### (O/M) email@company.com

BIM Coordination Contact

Sample Subcontract Agreement

SUBCONTRACT EXHIBIT 2 – SAMPLE PURCHASE ORDER

(Also available as a separate attachment in Building Connected)

F.A. WILHELM
CONSTRUCTION

"Date"

RE: #20250072 IU Launch Accelerator for Biosciences

[Insert Person's Name from Viewpoint]

Attached for your company's signature is Purchase Order #_____-____ dated _____.
An authorized representative from your firm is to sign this Purchase Order via DocuSign.

Please note a current - job specific - Certificate of Insurance is required to be on file prior to delivery of materials. Submit Certificate of Insurance to inscerts@fawilhelm.com.

If you have any questions, please contact this office at the listed address below.

Sincerely,

"Name"
"Title"

cc: FAW PM
Accounting
Insurance

F.A. WILHELM CONSTRUCTION

PO#
Date:

PURCHASE ORDER

F. A. WILHELM CONSTRUCTION CO., INC. ("Contractor")

3914 PROSPECT STREET • P.O. BOX 516 • INDIANAPOLIS, IN 46206
TELEPHONE: (317) 359-5411 • FAX: (317) 359-8346

SUPPLIER:

PROJECT: #20250072 IU LAUNCH ACCELERATOR FOR BIOSCIENCES

ARCHITECT:

OWNER: INDIANA UNIVERSITY

PRIME CONTRACTOR (if applicable) **:**

CONSTRUCTION MANAGER (if applicable)**:**
F.A. Wilhelm Construction Co. Inc.

JOB: 11313	**COST CODE:**
Sales and/or Use taxes for location of the Project:	☐ **Included** ☐ **Excluded**

Delivery tickets and invoices must list PO No. and cost code.

Supplier's Work. Supplier shall furnish all goods, materials, labor, tools, equipment, services, taxes, wages, employee benefits, insurance, freight and other items required to provide the following to the Project (F.O.B. jobsite) in strict accordance with the Purchase Order Documents:

Purchase Order Documents. The Purchase Order Documents consist of: (1) this Purchase Order and any attachments hereto or documents referred to herein; (2) the Prime Contract, consisting of the agreement between Contractor and ***[insert either -*** Owner, Prime Contractor or Construction Manager***]*** and the other contract documents incorporated therein, including conditions of the contract (general, supplementary and other conditions), drawings, specifications, and any addenda thereto, which are available for review and on file in the office of Contractor located at the above address; (3) Schedule "A" to this Purchase Order and any documents referred to therein; (4) the attached Project Insurance Requirements; and (5) any other documents set forth below.

Purchase Order Sum. Contractor shall pay Supplier for performance of this Purchase Order the Purchase Order Sum of _____ Dollars ($_____), subject to additions and deductions as provided by written change orders. Provided, however, that if the Purchase Order Sum is to be determined on a unit price, time and material or cost of the Work plus a fee basis, such shall be established in Schedule "A".

THE ATTACHED TERMS AND CONDITIONS ARE HEREBY MADE A PART OF THIS PURCHASE ORDER. Acceptance is limited to the terms and conditions set forth in the Purchase Order Documents. Contractor objects to and rejects any additional or different terms and conditions proposed by supplier.

This Purchase Order entered into as of the date written above.

CONTRACTOR

_____
(Signature)

SUPPLIER

_____
(Signature)

TERMS AND CONDITIONS

(Printed name and title)	*(Printed name and title)*

1. Supplier's written acceptance or commencement of any performance or service under this Purchase Order shall constitute Supplier's acceptance of the terms and conditions set forth in the Purchase Order Documents. Contractor objects to and rejects all terms and conditions proposed by Supplier which are different from or in addition to the terms and conditions contained in the Purchase Order Documents and such terms shall not become a part of this Purchase Order. If this Purchase Order is deemed to be an acceptance of a prior offer by Supplier, such acceptance is conditional on Supplier's assent to all additional or different terms and conditions contained in the Purchase Order Documents. The terms and conditions contained in the Purchase Order Documents cannot be changed in any manner except by a Contractor initiated change order pursuant to Paragraph No. 15 below.
2. Unless otherwise noted on the face of this Purchase Order or in Schedule 'A', payment shall be made to Supplier monthly from funds received by Contractor from Owner or Prime Contractor for Supplier's Work on the following schedule: progress payments in the amount of ninety percent (90%) of the value of goods, materials and services delivered to the job site as determined by Contractor and approved by Owner and Prime Contractor. Final payment of the balance due on the Purchase Order Sum shall be made to Supplier within ten (10) working days after receipt by Contractor of final payment from Owner or Prime Contractor for Supplier's Work. These payments are subject to receipt of such backup, delivery tickets signed by Contractor's Project Superintendent, waivers of liens and claims, affidavits, warranties and guarantees as required by the Purchase Order Documents or by Contractor. The Purchase Order Sum includes the cost of all goods, materials, labor, tools, equipment, services, insurance, freight and all other costs of any kind, and Supplier shall be solely responsible for all federal, state and local excise, sales or use taxes applicable to this Purchase Order, and for any license, privilege, income or receipts tax imposed on Supplier. Supplier shall accept any valid sales or use tax exemption certificates. At Contractor's sole discretion, Contractor may make payments to Supplier by joint check payable jointly to Supplier and its suppliers, subcontractors and/or creditors on the Project.
3. The risk of loss, damage, spoilage and deterioration, and all other risks, shall not pass to Contractor until on or after the scheduled delivery date and after Contractor, Owner, Prime Contractor, Construction Manager and Architect have actually inspected and accepted the goods and materials at the location designated for delivery by Contractor. Any rejected goods or materials may be returned at Supplier's expense, including any transportation and other charges and expenses paid by Contractor in connection therewith; no replacement of rejected goods and materials may be made without Contractor's prior written consent.
4. To the extent that the terms and conditions of the Prime Contract apply or relate to Supplier's Work, Supplier agrees to be bound to Contractor by the same terms and conditions which apply to Contractor and assumes toward Contractor all obligations and responsibilities which Contractor assumes toward Owner, Prime Contractor, Construction Manager and/or Architect under the Prime Contract, and agrees to ensure that all of its material suppliers and subcontractors are likewise bound. Where a provision, term or condition of the Prime Contract, this Purchase Order and/or the Purchase Order Documents are in conflict with one another, the provision, term or condition that imposes the greater obligation or responsibility on Supplier shall govern.
5. Supplier may not assign, delegate or subcontract any of its rights, interests or obligations in or under this Purchase Order without Contractor's prior written consent. Notwithstanding Contractor's consent to any such assignment, delegation or subcontracting, Supplier shall not be relieved of any of its obligations pursuant to this Purchase Order, except as otherwise expressly and specifically agreed to in writing by a Contractor initiated changed order pursuant to Paragraph No. 15 below.

TERMS AND CONDITIONS

6. Supplier shall provide all goods, materials and services required by this Purchase Order on the delivery date set forth on the face of this Purchase Order, unless a separate delivery and/or work schedule is attached to this Purchase Order. Time is of the essence. The delivery and/or work schedule may be revised by Contractor as the Project progresses. Supplier shall provide Contractor with any requested scheduling information of Supplier's Work. Any goods or materials delivered in advance of the scheduled delivery date shall, at Contractor's option, be returned to Supplier or stored by Contractor, at Supplier's cost and risk.

7. To the extent Supplier has been properly paid amounts due under this Purchase Order, Supplier agrees to keep Owner's funds and property free and clear of all liens, claims or encumbrances of any kind of Supplier, its subcontractors or suppliers, or from any others claiming through Supplier.

8. Supplier shall comply with all applicable federal, state and local laws, orders, rules and regulations, and shall obtain and provide all notices to authorities, permits, fees, licenses, assessments, inspections and taxes necessary to complete its Work.

9. Supplier shall take the proper precautions in the performance of its Work to protect all persons and property from being injured by the Work or by the condition of the site, shall comply with any safety measures initiated by Contractor or set forth in the Purchase Order Documents, and shall comply with OSHA and any other applicable federal, state or local safety laws, rules, orders or regulations.

10. Supplier shall be responsible for all field measurements and layout necessary to perform its Work, and shall be responsible for the accuracy of its Work. Supplier shall submit to Contractor shop drawings and samples required by the Purchase Order Documents sufficiently in advance of the time any fabrication or shipment of materials, goods or other item for Supplier's Work is to occur. Review and/or approval by Contractor, Architect, Prime Contractor, Construction Manager or Owner of Supplier's submittals shall in no way relieve Supplier from conforming with the Purchase Order Documents.

11. Supplier warrants that neither the manufacture nor the sale nor use of the goods and materials to be sold will infringe on any United States or foreign patent, trademark, service mark, copyright, trade secret, trade name or other intellectual property right of any third party.

12. Supplier warrants that all goods and materials provided pursuant to this Purchase Order will be new, unless otherwise specified in the Purchase Order Documents, and will be of merchantable quality and fit for the purposes intended by Contractor, Architect, Prime Contractor, Construction Manager and/or Owner. Supplier also warrants the goods, materials and services provided pursuant to this Purchase Order against all deficiencies and defects in design, manufacturing, materials and/or workmanship for a period of one (1) year from the date of substantial completion of the Project or for such period otherwise provided by the Purchase Order Documents, whichever is longer, and agrees to satisfy the same without cost to Owner, Prime Contractor, Construction Manager or Contractor. These warranties shall survive inspection, acceptance and payment, shall run to Contractor, Owner, Prime Contractor and their respective successors and assigns, and shall be in addition to and not in limitation of any other warranty (including manufacturer warranties), right or remedy provided by law, the Purchase Order Documents or any other means. All manufacturer warranties shall be assigned to Owner and Contractor.

13. Prior to the start of its Work, Supplier shall procure and maintain in force, for at least the duration of its Work, insurance as is called for by the attached "Insurance Requirements," plus any additional insurance that is required of Contractor under the Prime Contract. Contractor, Owner, Prime Contractor, Construction Manager and Architect shall be named as additional insureds on each of the required policies, except for workers compensation. Supplier shall furnish insurance certificates to Contractor verifying the required insurance prior to beginning its Work, but no later than

ten (10) calendar days from the date of this Purchase Order. If any of the foregoing insurance coverages are required to remain in force after final payment, an additional certificate evidencing continuation of such coverage shall be submitted with Supplier's final application for payment.

14. To the fullest extent permitted by law, Supplier shall indemnify, hold harmless, and defend at its own expense Contractor, Owner, Prime Contractor, Construction Manager, Architect, and their respective agents, employees and assigns (herein collectively referred to as "indemnities") from and against any claims, causes of action, damages, losses and expenses (including litigation costs and attorney's fees) of any nature whatsoever, including but not limited to claims for or relating to injury, sickness or disease to any persons (including death), damages to property (including the lost use thereof and consequential damages therefrom), economic loss, liens, Project delays or intellectual property rights, which arise out of or are alleged to arise out of: a) the performance of Supplier's Work; b) the condition of the goods and/or materials provided pursuant to this Purchase Order; c) the Supplier's breach of this Purchase Order; and/or d) any act or omission of Supplier, its subcontractors or material suppliers, anyone directly or indirectly employed by them or anyone for whose acts they may be liable; regardless of whether or not such claim, cause of action, damage, loss or expense is contributed to or caused by the negligence, breach of contract or warranty, strict liability, or any other breach of duty of any indemnitee; provided, however, that Supplier shall not be obligated to indemnify an indemnitee for its sole negligence or willful misconduct where such indemnification is contrary to law, but otherwise it is the intent of the parties that Supplier shall indemnify the indemnities to the fullest extent permitted by law.

15. Supplier may be ordered in writing by Contractor, without invalidating this Purchase Order, to make changes in Supplier's Work consisting of additions, deletions or other revisions, the Purchase Order Sum and Contractor's schedule being adjusted accordingly. Within seven (7) working days of receiving notice of such change, Supplier shall submit to Contractor a quotation covering any addition or deduction to the Purchase Order Sum and any impact to Contractor's schedule, along with all details and backup necessary to support the quotation. Unless otherwise directed in writing by Contractor, Supplier shall not commence such changed or revised work until after Contractor has reviewed and approved Supplier's quotation, and Contractor and Supplier have signed a written change order setting forth any adjustments to the Purchase Order Sum or Contractor's schedule.

16. Supplier agrees that in order for it to make a claim against Contractor for extensions of time or allowable damages which arise out of any event or occurrence not covered by Paragraph No. 15 above, Supplier, as a condition precedent, must give Contractor written notice of such claim within seven (7) working days of the event or occurrence giving rise to the claim or within the time which Contractor has to make such a claim against the Owner or Prime Contractor, whichever is shorter, or the claim will be waived. In no event shall Contractor be liable to Supplier for anticipated profits, business interruption or incidental or consequential damages. Contractor's liability to Supplier for any claim arising out of or relating to this Purchase Order shall be limited to the price allocable to the goods or services or unit thereof which gives rise to the claim.

17. Supplier acknowledges that the Purchase Order Sum includes any and all material and/or labor cost escalation for the duration of the Project and that Supplier shall not be entitled to a change order or adjustment to the Purchase Order Sum for any such material and/or labor cost escalation.

18. To the extent there are any design services required to be performed by Supplier either incidental to Supplier's construction services or as a primary undertaking by Supplier in respect of the Project, such design services shall be procured from licensed, independent design professionals retained by the Supplier or furnished by licensed employees of the Supplier, or as permitted by the law of the place where the Project is located. Supplier shall be responsible for coordinating its design with the Project Architect, engineers and others providing design services for the Project.

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Supplier shall prepare, for approval by the Project Architect and engineers, Construction Documents consisting of drawings, specifications, and other appropriate instruments ("Instruments of Service") sufficient to set forth in detail the requirements for the construction of Supplier's Work. Supplier shall assist the Owner, Architect, Engineers, or Contractor in connection with the filing of documents required for the approval of government authorities having jurisdiction over the Project. All ownership of or other rights in respect of the Instruments of Service shall be transferred by Supplier to Owner upon request.

19. Should Supplier fail to satisfy deficiencies in its performance of this Purchase Order (including but not limited to failure to maintain Contractor's schedule) within two (2) working days from receipt of Contractor's written notice of such deficiency, then Contractor, without prejudice to any other right or remedy, shall have the right to:

a. terminate this Purchase Order and reject all further deliveries of goods, materials or services;
b. reserve or withhold payment to Supplier and retain or take possession of the goods, materials and services provided, stored, manufactured and/or fabricated until Supplier cures and completes this order; and/or
c. take whatever steps Contractor deems necessary to correct said deficiencies and charge the cost thereof (including the cost of removing and repairing other work and improvements as necessary to correct the deficiencies) to Supplier, who shall be liable for payment of the same, including reasonable overhead, profit and attorney's fees.

Said notice is not required for Contractor to exercise the remedies under this paragraph when Supplier's deficiency in performance threatens safety.

20. Contractor may terminate, without notice, all or any part of this Purchase Order, without liability to Contractor, if Supplier becomes insolvent, makes an assignment for the benefit of creditors, is the subject of a proceeding for the appointment of a receiver or trustee, or files a voluntary petition in bankruptcy or is the subject of an involuntary petition in bankruptcy.

21. Labor disputes, fires, acts of God, public enemy, earthquakes, floods, accidents or other causes beyond Contractor's control shall constitute grounds for suspension of shipment without penalty or cost to Contractor.

22. **Supplier shall abide by all federal, state and local laws and regulations that prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities and shall prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity or national origin. Moreover, 41 CFR 60-1.4(a), 60-300.5(a) and 60-741.5(a) require that covered suppliers, contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or veteran status.**

23. This Purchase Order and the rights and duties of all persons arising from or related to this Purchase Order shall be governed by the laws of the State of Indiana. Any dispute arising under or related to this Purchase Order, the performance of Work or provision of any materials or goods pursuant hereto, shall be brought only in state court in Marion County, State of Indiana, or if federal jurisdiction is available, in the U.S. District Court for the Southern District of Indiana. The parties to this Purchase Order agree to: a) participate in mediation; b) accept such venues if mediation is unsuccessful; c) waive trial by jury in all proceedings; and d) waive, as against each other, any claim or entitlement to punitive or exemplary damages. If Contractor is in a dispute with the Owner, Prime Contractor and/or Construction Manager that involves Supplier's Work, acts or omissions, then Contractor may elect to join Supplier as a party to such dispute and the dispute resolution and litigation provisions in the Prime Contract would govern if Contractor made such election of joinder.

24. Supplier agrees that the subject matter of this Purchase Order is confidential in nature and that Supplier will not provide any third party with any information contained herein without the expressed written consent of Contractor. However, Supplier may disclose confidential information, after seven (7) days' notice to Contractor, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. Supplier may also disclose confidential information to its employees, consultants, sureties, sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

25. If any term, provision or part of a provision to this Purchase Order should be invalid or unenforceable under the governing law, the validity and enforceability of the remaining terms, provisions and parts thereof shall not be affected, with interpretation and enforcement to occur as if such invalid or unenforceable term, provision or part was never written.

26. The failure of Contractor to enforce at any time any provision of this Purchase Order shall in no way affect the validity of this Purchase Order or any part hereof or the right of Contractor thereafter to enforce each and every such provision. No waiver of any breach of this Purchase Order shall be held to be a waiver of any other or subsequent breach.

27. The Purchase Order Documents, including this Purchase Order, represent the entire integrated agreement between Supplier and Contractor, and supersede all prior negotiations, representations or agreements relating to Supplier's Work.

SCHEDULE "A" to Purchase Order No. XXXXX-XX dated June 6, 2024, between F.A. Wilhelm Construction Company, Inc. ("Contractor") and ACME ("Supplier"). This Schedule "A" is hereby made a part of and incorporated into the Purchase Order.

1. **Supplier's Work.** In addition to the Work described on the face of the Purchase Order, Supplier's Work includes the following specific items:

   A. Supplier has agreed to a total Purchase Order Sum for its Work based on the following breakdown, which is provided for accounting purposes only:

   Bid Package XXX:

XXX	$XXX
Total Purchase Order Sum	$XXX

   Alternates:

Payment & Performance Bond	Add $0

   B. Specification Sections:
   - Division 00 – Procurement and Contracting Requirements
   - Division 01 – General Requirements
   - Section XXXXXX – XXXXXXX
   - Section XXXXXX - XXXXXX

   C. General Scope of Work Includes:
   1. All equipment required for the work.
   2. All deliveries F.O.B. to jobsite required for the work.
   3. Unless specifically excluded or limited below, this Supplier is responsible for the complete specification sections listed above for their respective scope. The Supplier is also responsible for specifications not specifically listed but are required by reference in the listed specifications or as required to perform the scope of work described herein.
   4. All fees, permits, inspection costs and coordination required for this scope of work.
   5. Acknowledgement and representation that the Supplier has examined and fully understands the Plans, Specifications, and Reports listed in the Contract Documents.
   6. Acknowledgement and representation that the Supplier has had sufficient opportunity to request changes, clarifications and interpretations of errors, ambiguities, omissions and other issues contained in the Contract Documents prior to Bid.
   7. Include all coordination with drawings and equipment sizing and movability within the existing spaces. Supplier to coordinate and confirm opening sizes and weights of equipment/materials with Contractor.
   8. Acknowledgement and representation that where conflicts arise between the General Notes, Project Plans, Specifications and provisions in the individual bid packages, the provision imposing the greater duty or obligation on the Supplier shall govern.
   9. Review of the contract documents for ALL trades' work to determine the scope of work and necessary coordination for their package.
   10. Coordination of all design details of this work with all design details of interfacing trade work.
   11. Minor items and accessories or devices reasonably inferable or necessary to provide a complete and proper installation of the system, whether or not they are specifically call for by the specifications.

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12. Maintenance of a record set of approved shop drawings, which shall be continuously marked up to clearly reflect final equipment furnished.
13. Coordination of field sequencing with other trades as required. This Supplier may be required to attend and participate in preparation of “Contractors Coordination drawings” and weekly coordination meetings with other trades where requirements, conflicts and coordination issues will be discussed and resolved. Attendance when requested is mandatory. This includes providing 3D models (Revit) of material/equipment supplied for Contractor input into BIM model.
14. Tolerances not to exceed those listed in the drawings or specifications.
15. Supplier shall provide Construction Manager with a minimum of two-week advance notice of any scheduled inspections or site visits.
16. Provide one month and subsequent two week notice of any factory acceptance testing if applicable.
17. Scheduling of all deliveries based on agreed upon job progress dates. Contractor is to be advised of all deliveries for equipment and materials two weeks in advance.
18. The jobsite will be open during normal working hours 7AM to 4:30PM, Monday-Friday. The CM reserves the right to change work hours as necessary.
19. Escalation costs as required for the completion of your work.
20. Compliance with Contractor Corporate Safety Manual and/or a written and approved OSHA compliant Site-Specific Safety Plan.
21. The Construction Manager shall provide temporary, onsite toilet facilities.
22. Supplier shall be prohibited from blocking traffic on any public streets or sidewalks. If blocking of public areas are required, Supplier is to coordinate and comply with all local requirements, permits, traffic controls, etc.
23. The worksite is a tobacco-free site. All employees of Suppliers will be required to comply with this requirement.

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D. <u>Specific Scope of Work Includes</u>:

1. Scope of Work per Specific Bid Package.
2. Include Scope Review Meeting Notes and Agreements. Meeting held XXXX.

E. <u>Specific Scope of Work Excludes</u>:

1. Sales Tax

2. <u>Purchase Order Documents.</u> The Purchase Order Documents also include the following:

A. This Schedule “A”.
B. The Prime Contract, consisting of the agreement between Construction Manager and Owner which is entitled Standard Form of Agreement Between Owner and Construction Manager as Constructor and dated August 15, 2023 and the other contract documents incorporated therein, including conditions of the contract (general, supplementary and other conditions), drawings, specifications, and any addenda thereto.
C. The following addenda to the Prime Contract: Amendment #1 signed TBD if Applicable
D. The following attached Exhibits:

- Exhibit “A” - Subcontractor/Supplier Affidavit & Waiver of Liens & Claims. Supplier shall submit this document with each application for payment.

- Exhibit “B” - Sub-subcontractors and Suppliers Disclosure Affidavit. Supplier shall submit this document within 10 days of receiving this Purchase Order and shall update the information on the document with each application for payment.
- Exhibit “C” - Sub-Subcontractor/Supplier Affidavit and Waiver of Liens & Claims. With each application for payment, Supplier shall submit this document for each person or entity listed on the Sub-subcontractors and Suppliers Disclosure Affidavit.
- Exhibit “D” – Performance and Payment Bond forms that are acceptable to Contractor if Supplier is required to provide bond(s) on the Project.
- Exhibit “E” - Documents Log. The documents listed in Exhibit “E” are also incorporated into the Purchase Order by reference as Purchase Order Documents.

3. **Schedule.** Supplier agrees to the following specific scheduling requirements and milestone dates:

1. Reference the attached Bid Schedule.
2. Initial Submittal Received XXX, 2024.
3. Release into fabrication by XXX, 2024.
4. Delivery by XXX, 2025.

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A. Supplier shall, within ten (10) days after the date of this Purchase Order, prepare and submit to Contractor for review a detailed schedule, showing the order in which Supplier proposes to carry out all major activities and indicating the dates on which the several activities representing the complete performance of the Purchase Order (including submittals, procurement of materials and equipment) will be started and finished. This schedule shall list the sequence of activities anticipated by Supplier and the anticipated duration of each activity. Supplier acknowledges that Supplier has scheduled and sequenced its Work on the basis of the Contractor’s schedule and any milestone and performance requirements established above and by the Purchase Order Documents.

Supplier acknowledges and understands that in development and updating of Contractor’s schedule, Supplier’s proposed activity sequence and durations may need to be amended by the Contractor to allow Contractor’s schedule to meet the performance requirements established by the Purchase Order Documents. Should any aspect of Contractor’s schedule be at variance with the desired sequencing or duration of Supplier’s activities, Supplier shall notify Contractor in writing of such variation within five (5) days of its receipt of Contractor’s schedule. Supplier’s failure to submit its proposed schedule when required or to notify Contractor in writing of any variation or conflict between Supplier’s proposed schedule and Contractor’s schedule shall preclude Supplier from receiving an extension of time to the extent allowed under the Purchase Order. Contractor may require Supplier to prosecute its Work in such sequence as Contractor may reasonably require in order to maintain the progress of other subcontractors and the Contractor’s schedule.

4. **Project Requirements.** The Supplier’s Work shall be performed in accordance with the following Project Requirements:

A. **General Requirements:**

1. Supplier warrants that it has visited and examined the Project site, and further warrants that it shall make no claims for additional sums on account of existing site conditions.
2. Supplier shall formalize all questions to Contractor in writing by use of a Request for Information ("RFI") form that is set up in the web based construction management software that is to be used by Subcontractor on the Project as determined by Contractor.
3. Supplier's access and deliveries to the site must be coordinated 48 hours in advance of arrival with Contractor's Superintendent. Failure to do so may result in the access and/or delivery being prohibited by Contractor's Superintendent, at their discretion.
4. Supplier's use of lifts, hoists, and other similar equipment (in connection with Work to be performed inside buildings and/or facilities) shall be subject to Contractor's Superintendent's approval.
5. The use of tobacco and the use of electronic cigarettes a/k/a vape are not permitted in any existing building or building under construction.
6. Supplier is responsible for the timely location and placement of all sleeves, box-outs and embeds associated with its Work. Failure to provide placement information in a timely manner for items supplied by Supplier, but specifically identified as being installed by others, shall result in Supplier being responsible for any corrective measurements required. It is the Supplier's responsibility to monitor the progress of the work and communicate requirements with the Contractor's Superintendent and Project Manager.
7. If and when ordered in writing by Contractor, Supplier shall furnish to Contractor a payment and performance bond for 100% of the Purchase Order Sum. The bond shall be in a form consistent with Exhibit "D" and from a surety acceptable to Contractor and shall have a dual-obligee rider naming any parties requested by the Contractor to be a dual-obligee on the bond. The cost of the bond shall be added to the Purchase Order Sum, unless the bond is otherwise required by the Purchase Order Documents

Sample Purchase Order

B. <u>Submittal Requirements:</u>

1. Within 10 days of receipt of this Purchase Order, Supplier will provide a listing of all material suppliers, vendors and sub-suppliers that are required to furnish submittals on the Project, indicating a scope of work or materials to be supplied and the specification section that submittals will be furnished under. This list must be satisfactory to the Contractor. Supplier must notify the Contractor in writing with any proposed changes once the list has been submitted.
2. All submittals must have an approved submittal stamp signed and dated by the Supplier and will identify the specification section and other specific identification information.
3. Supplier is responsible to confirm and coordinate all dimensions at the job site. If Supplier submittals are returned and require additional work or material beyond what is required by the Purchase Order Documents, Supplier shall submit a quotation to Contractor for these scope revisions in accordance with the Purchase Order Documents.
4. A comprehensive submittal schedule, listing proposed submittal dates, manufacturer lead times, and anticipated critical components, shall be sent to Contractor within 15 days of this Purchase Order or a Notice to Proceed, whichever occurs first. Upon review and acceptance of the submittal schedule, Supplier shall furnish a detailed delivery schedule for all materials used on the Project.
5. Supplier shall use the web based construction management software that is to be used by Supplier for submittals on this Project. Supplier shall provide samples as required by the Purchase Order Documents.
6. Shop drawings and product data that are incomplete or are not in compliance with the Purchase Order Documents shall not be submitted.

7. Supplier shall not be relieved of responsibility for any deviation from the requirements of the Purchase Order Documents by Architect, Owner or Contractor's acceptance of shop drawings, product data, samples, and submittals as required by Purchase Order Documents, unless Supplier has specifically informed Contractor in writing of such deviation at the time of submission and the Owner and Contractor have given written approvals to the specific deviation.
8. Any deviations from the Purchase Order Documents must be proposed as a change to the Purchase Order and approved as a change order before procurement. All changes and proposed changes to the Purchase Order Documents are to be noted on the cover letter of the shop drawings and or product data during the submittal process.
9. Data sheets, brochures and/or transmittals being submitted must include the specification section and a reference number.
10. When general catalog or data sheets are submitted, they must be specifically marked with items only relevant to this Project. Details not relevant to the Project shall be deleted or marked out. If these are submitted without clearly indicating which materials or details are applicable, they will be returned without review.

C. Billing Requirements:

Sample Purchase Order

1. Supplier's monthly billing shall be submitted on the AIA form G702 by the 20th day of each month, along with its completed Subcontractor/Supplier Affidavit and Waiver of Liens and Claims, its completed Sub-Subcontractors and Suppliers Disclosure Affidavit and a Sub-Subcontractor/Supplier Affidavit and Waiver of Liens & Claims for each person or entity listed on the Sub-subcontractors and Suppliers Disclosure Affidavit. A pencil copy must be submitted five (5) days prior for review by Contractor's Project Manager. Upon approval of the pencil copy by Contractor's Project Manager, subcontractor shall submit final copies to apinvoice@fawilhelm.com.
2. All applications for payment must indicate the percentage of Work completed through the billing date, and a percentage of approved change order Work completed through the billing date.
3. All applications for payment MUST reflect retainage of ten percent (5%) to be withheld.
4. All extra work tickets must be signed for by Contractor's Superintendent and approved by Contractor's Project Manager, and included in a change order prior to inclusion with any billing.
5. Supplier cannot include off-site storage of materials on pay applications unless approved by Architect and Owner prior to the submission of the applicable pay application.
6. Supplier's invoices shall not exceed the current Purchase Order Sum.
7. Supplier does hereby sell, transfer, assign and convey to Contractor the goods, materials, parts, supplies, equipment, and accessions required by the Purchase Order Documents (collectively, the "Goods") and located at the Supplier's premises or the Supplier's suppliers' premises, manufactured or in the process of manufacture for delivery to, or for use on or in connection with the construction of the Project. In the event that any of the Goods are in the process of manufacture, Supplier expressly intends to sell, transfer, assign and convey the same in their completed state, as well as in the form and state the Goods possess at the time of execution of this Purchase Order. It is the express intention of the parties that (i) by their identification in the Purchase Order Documents, Contractor acquires a special property to and insurable interest in the Goods, (ii) title to the Goods passes to Contractor upon execution of this Purchase Order, subject to rejection, refusal to receive or retain the Goods or a justified revocation of acceptance of the Goods by Contractor. Supplier represents, warrants and covenants to Contractor that Supplier (i) is the lawful owner of the Goods, (ii) has good right to sell

the Goods to Contractor, and (iii) warrants and will defend the Contractor’s rights to the Goods as against any and all claims and demands of Supplier’s creditors or other third parties. The foregoing representations, warranties and covenants shall survive the execution of this Purchase Order. For so long as Supplier maintains possession or control of the Goods, Supplier will provide safe and proper storage of the Goods on its own premises or such other premises as the Goods may be located from time to time. Supplier shall not move the Goods or Supplier’s place of business, unless it first provides Contractor thirty (30) days advance written notice. Supplier will physically separate and segregate the Goods by means of ropes or other barriers, or as otherwise may be directed by Contractor, from all other items of inventory and will cause to be placed conspicuously and securely on the Goods a sign or signs in a form satisfactory to Contractor, which identifies the Goods as the property of Contractor and as intended for use on or in connection with the Project.

Notwithstanding the foregoing, and in addition to all of Contractor’s other rights in connection with the Goods available to Contractor by law or contract, Supplier hereby grants to Contractor, to the fullest extent it is capable of doing so, a security interest in and to the Goods, now existing or hereinafter acquired, to secure Supplier’s performance of its obligations under this Purchase Order, and any other agreement entered into by the parties. Supplier acknowledges that this Purchase Order shall constitute a Security Agreement for the security interest granted hereby in accordance with the provisions of the Uniform Commercial Code. Supplier hereby irrevocably nominates, constitutes, appoints and designates Contractor as its attorney-in-fact with the rights, but not the obligation, to make, execute, file and deliver any and all other documents or papers, including, without limitation, any financing statements or security agreements deemed necessary and proper by Contractor in order to give full effect not only to the intent and meaning of the sale, transfer, conveyance and assignment contemplated herein, but also to the full protection intended to be herein given to Contractor under all other provisions of this Purchase Order and the other agreements entered into between the parties and applicable law. Supplier hereby ratifies and confirms all acts and actions taken and done by Contractor as attorney-in-fact. This provision is in addition to any other rights and remedies, common and equitable, available to Contractor under this Purchase Order.

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D. <u>Closeout Requirements:</u>

1. Supplier shall provide manufacturer’s field services, service engineering, written warranties, operation and maintenance manuals, training, orientations and demonstrations, as required in the Purchase Order Documents, and as applicable for all Work contained in this Purchase Order.
2. Prior to Contractor accepting a billing for Work in excess of 25% complete, Supplier must have completed and submitted a list of closeout documents, including the status of those documents. Prior to Contractor accepting a billing in excess of 75% complete, Supplier must have submitted all appropriate closeout documentation. Contractor may withhold progress billings until all closeout documents are received and approved. Prior to Contractor releasing the final retention, Supplier shall provide a record copy of all shop drawings and submittals fully corrected with field modifications and revisions for the Project, along with any attic stock that is required to be provided by the Purchase Order Documents. Supplier shall provide as-built drawings on bluelines and CAD files.

5. **Insurance Requirements.** Supplier will provide the following minimum insurance requirements for the Project plus any additional insurance that is required of Contractor under the Prime Contract. A copy of an approved insurance certificate must be on file with the Contractor, at the main office location, prior to the commencement of work on the Project. Submit insurance certificate to inscerts@fawilhelm.com.

A. Required Insurance Coverages:

1. Commercial General Liability
   - ✓ Occurrence Form
   - ✓ Aggregate per Project Endorsement
   - ✓ Supplier's Products / Completed Operations coverage shall be continued for one year after completion of its work or for such period otherwise provided by the Purchase Order Documents, whichever is longer.
   - ✓ Contractual Liability
   - ✓ No exclusion for Explosion, Collapse, & Underground (XCU)
   - ✓ No exclusion for liability assumed in an insured contract.
2. Automobile Liability (Business)
   - ✓ Including Hired and Non Owned Auto liability coverage
   - ✓ Contractual Liability
   - ✓ No exclusion for liability assumed in an insured contract.
3. Worker's Compensation/Employer's Liability
   - ✓ Statutory as required by the State where the project is located
4. Excess Liability
   - ✓ Umbrella Form – follow form coverage on all liability policies

Sample Purchase Order

B. Minimum Limits of Insurance Required:

1. Commercial General Liability	
a. General Aggregate (other than Products / Completed Operations)	**$2,000,000**
b. Products / Completed Operations Aggregate	**$2,000,000**
c. Bodily Injury and Property Damage (each occurrence)	**$1,000,000**
d. Personal & Advertising Injury (any person or organization)	**$1,000,000**
e. Fire Damage (any one fire)	**$ 50,000**
f. Medical Expenses (any one person)	**$ 5,000**
2. Automobile Liability (Business)	
a. Combined Single Limit Per Accident or Loss – Bodily Injury & Property Damage	**$1,000,000**
3. Worker's Compensation/Employer's Liability	
a. Bodily Injury by Accident – Each Accident	**$ 500,000**
b. Bodily Injury by Disease – Policy Limit	**$1,000,000**
c. Bodily Injury by Disease – Each Employee	**$ 500,000**
4. Excess Liability	
a. Each Occurrence	**$5,000,000**

C. Additional Insured(s) - applies to all insurance coverage, except Worker's Compensation and Employer's Liability. The following shall be named as Additional Insured(s), including coverage for ongoing and completed operations, on Supplier's policies:

Ball State University **AND** F.A. Wilhelm Construction Co., Inc. **AND** Wilhelm Construction, Inc. and their respective affiliates, subsidiaries, officers, directors, employees and representatives **AND** all others required by contract.

D. In the event the Supplier has or obtains coverage in amounts in excess of those minimum limits outlined above during the period that coverage is required under the Purchase Order, those organizations listed above as Additional Insureds shall also be named as Additional Insureds for such excess amounts. The amounts of insurance (including endorsements thereto) carried in compliance with these insurance requirements are not to be construed as either a limitation or satisfaction of the Supplier’s liability.

E. Supplier waives any and all claims against those organizations listed above as Additional Insureds and their respective insurers for damages caused by any occurrence or peril covered by the insurance required by the Purchase Order Documents (waiver of subrogation/waiver of right of recovery).

F. Supplier and its insurance carrier shall give Contractor at least thirty (30) days written notice prior to cancellation, non-renewal and/or any material change of any required coverage.

G. If any portion of the Supplier’s Work involves project design, architectural services, engineering services or other consulting services, soil boring or reporting of results of same or site surveying or reporting of results of same, professional liability coverage (errors and omissions) with minimum limits of $2,000,000 per claim and $3,000,000 general aggregate and maximum deductible of $25,000 shall be required. It shall also be required that the Excess Liability policy outlined above provide coverage in excess of this professional liability policy. This total coverage shall be continued for Ten (10) years after completion of Supplier’s Work.

Sample Purchase Order

H. Subcontractors and sub-subcontractors performing work involving asbestos abatement and transportation operations shall provide insurance coverage for liability arising from asbestos, including claims for bodily injury, including wrongful death, property damage and environmental cleanup. Said insurance shall not exclude asbestos abatement, asbestos disease or transportation. The policy or policies shall be written by insurance companies with an A.M. Best rating of not less than A- V. The insurance shall have a per occurrence limit of not less than $5,000,000, and all deductibles shall be borne by Subcontractor and shall not exceed $500,000 without written consent of Contractor. If Subcontractor becomes aware of claims or potential claims that would erode 25% of more of the aggregate limit of the policy, Subcontractor shall notify Contractor immediately and provide such information as Contractor shall request to assess the risk of a future claim being uninsured or underinsured. If the policy is "claims-made", it shall include an Extended Claims Discovery Period of not less than 2 years. Said insurance shall cover the Subcontractor's contractual liability for asbestos claims.

I. Subcontractors and sub-subcontractors performing environmental remediation work shall maintain Pollution Liability covering the contractor's liability for bodily injury, property damage, remediation and environmental damage resulting from pollution and related cleanup costs incurred, all arising out of the Subcontractor’s Work or services to be performed under this Agreement. Coverage shall be provided for both Subcontractor’s Work performed on site, as well as during the transport of hazardous materials. Limits of not less than $5,000,000 shall be provided. The policy shall name the Additional Insureds and any parents, subsidiaries, and related entities, but only insofar as the operations under the Agreement are concerned.

The insurance coverage provided by Supplier under this Purchase Order shall be primary and non-contributory to any other insurance.

Sample Purchase Order

EXHIBIT “A”

SUBCONTRACTOR/SUPPLIER
AFFIDAVIT & WAIVER OF LIENS & CLAIMS

Partial ( ) Final ( )

We, the undersigned, having been employed by **F. A. Wilhelm Construction Co., Inc. (“Contractor”)** to furnish labor, services, equipment and/or materials for construction work on the Project known as **Ball State University – AC/TH/MU Renovations** constructed on real estate located in the County of **Delaware** in the State of **Indiana**, hereby warrant that the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and the improvements thereon cannot be made subject to any valid claim, lien or encumbrance by anyone who furnished labor, services, equipment or materials to the undersigned for use in the Project, and the undersigned hereby waive and release any and all claims, liens and encumbrances of whatsoever kind or nature against the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and improvements thereon for any labor, services, equipment or materials furnished through **_____, _____.**

The above waiver and release are given in order to induce payment in the Amount Due of $_____ and upon receipt by the undersigned of the Amount Due, the above waiver and release become valid, enforceable and of full effect. Upon attachment of the cancelled check and the legal description of the Project, this release may be recorded by the owner(s) or mortgage holder(s) of the Project.

Notwithstanding the foregoing, the undersigned does hereby unconditionally waive and release any and all claims, liens and encumbrance of whatsoever kind or nature against the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and any improvements thereon with respect to monies due the undersigned for previous payment requests in the total sum of $_____, the receipt and sufficiency of which is hereby acknowledged by the undersigned.

Sample Purchase Order

Given under our hand and seal this
_____ day of _____, _____

_____
Company

By: _____
Authorized Representative of Company

STATE OF:)
COUNTY OF:)

Subscribed and sworn to before me this _____ day of _____, 20__.

_____
Notary Public

My Commission Expires:

County of Residence

WILHELM CONSTRUCTION

Sub-Subcontractors and Suppliers Disclosure Affidavit

Subcontractor/ Supplier Name: _____

Project Name: _____

Application Number: _____

Application Date: _____

Period To: _____

Sample Purchase Order

Item # on SOV	Sub-Subcontractor/ Material Supplier Name & Address	Scope of Work or Material	Contact	Email	Phone #	Purchase Order #	Contract Amount	Amount Billed	Amount Paid	Current Amount Due	To be Billed Amount

The undersigned affiant and representative of the Subcontractor/Supplier on oath deposes and says that the above disclosure is a true and complete statement of all such persons or entities, the amounts paid, the amounts due or to become due on the Project. Subcontractor/Supplier has not contracted with any other persons or entities to provide work, services, material or equipment for the Project or for any improvement on the land for which the Project is located.

Authorized Representative of Subcontractor/Supplier Date

EXHIBIT "B"

EXHIBIT “C”

SUB-SUBCONTRACTOR/SUPPLIER
AFFIDAVIT & WAIVER OF LIENS & CLAIMS

Partial ( ) Final ( )

We, the undersigned, having been employed by **Insert FAW’s 1st tier Sub that owes the money** to furnish labor, services, equipment and/or materials for construction work on the Project known as **Ball State University – AC/TH/MU Renovations** constructed on real estate located in the County of **Delaware** in the State of **Indiana**, hereby warrant that **F.A. Wilhelm Construction Co., Inc. (“Contractor”),** any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and the improvements thereon cannot be made subject to any valid claim, lien or encumbrance by anyone who furnished labor, services, equipment or materials to the undersigned for use in the Project, and the undersigned hereby waive and release any and all claims, liens and encumbrances of whatsoever kind or nature against the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and improvements thereon for any labor, services, equipment or materials furnished through _____, _____.

The above waiver and release are given in order to induce payment in the Amount Due of $_____ and upon receipt by the undersigned of the Amount Due, the above waiver and release become valid, enforceable and of full effect. Upon attachment of the cancelled check and the legal description of the Project, this release may be recorded by the owner(s) or mortgage holder(s) of the Project.

Notwithstanding the foregoing, the undersigned does hereby unconditionally waive and release any and all claims, liens and encumbrance of whatsoever kind or nature against the Contractor, any surety bond instrument or surety, any Project owner(s), any Project funds, and the Project real estate and any improvements thereon with respect to monies due the undersigned for previous payment requests in the total sum of $_____, the receipt and sufficiency of which is hereby acknowledged by the undersigned.

Sample Purchase Order

Given under our hand and seal this
_____ day of _____, _____

_____
Company

By: _____
Authorized Representative of Company

STATE OF:)
COUNTY OF:)

Subscribed and sworn to before me this _____ day of _____, 20__.

_____
Notary Public

My Commission Expires:

County of Residence:

SUBCONTRACT PERFORMANCE BOND

Bond No.:

KNOW ALL BY THESE PRESENTS: That [name of subcontractor], a [state] corporation, as Principal, hereinafter called Principal, and [name of surety], a [state] corporation, as Surety, hereinafter called Surety, are held and firmly bound unto F.A. Wilhelm Construction Company, Inc. with its address at 3914 Prospect Street, Indianapolis, IN 46203, as Obligee, hereinafter called Obligee, in the amount of U.S. Dollars ($) (the “Penal Sum”), for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, Principal has by written agreement dated entered into a subcontract number with Obligee for the performance of subcontract work , including warranty obligations, in accordance with drawings and specifications for the construction of the project (hereinafter "the Project"), which subcontract is by reference made a part hereof, and is hereinafter referred to as the “Subcontract”.

Sample Purchase Order

A. NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that, if Principal shall promptly and faithfully perform said Subcontract, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject to the following conditions: (i) Principal is in default under the Subcontract; and (ii) Principal has been declared by Obligee to be in default under the Subcontract; and (iii) the Obligee has performed its obligations under the Subcontract. Upon the occurrence of each of the above conditions, Surety shall have 30 days (“Investigatory Period”) from the last event to occur of the following: (a) receipt of the written notice of default; (b) the date access to the Project site is provided to Surety; or (c) the date the information and documentation in Obligee’s or its agent’s possession and requested by Surety is received by the Surety, which information and documentation must be requested by Surety within 10 days of its receipt of Obligee’s written notice of default, to:

(1) Notify Obligee that it has elected to complete the Subcontract through independent contractor(s) retained by Surety and thereafter commence such performance with reasonable promptness. In such event, that portion of the Balance of the Subcontract Price as may be required to complete the Subcontract or remedy the default and to reimburse the Surety for its expenditures shall be paid to the Surety at the times and in the manner as said sums would have been payable to Principal had there been no default under the Subcontract; or

(2) Notify the Obligee that it has elected to arrange for a subcontract between Obligee and a replacement subcontractor reasonably acceptable to Obligee guaranteed by subcontract performance and payment bonds provided by the replacement subcontractor in the amount of the replacement subcontract. In such event, Surety shall pay Obligee the difference between the cost of the replacement subcontractor and the amount that would have been payable to the Principal had there been no default under the Subcontract. Such payments may be in a lump sum (in the case of a lump sum subcontract) or periodically as incurred by Obligee; or

(3) Request that Obligee complete the Subcontract. In such event, Surety shall pay Obligee the difference between the reasonable cost of a replacement subcontractor and the amount that would have been payable to the Principal had there been no default under the Subcontract; or

(4) Arrange to provide financial and/or other assistance to the Principal (“Financing”) to assist the Principal with completion of the Subcontract. In the event Obligee has formally terminated Principal’s right to proceed under the Subcontract, this option shall be subject to Obligee’s concurrence, which shall not be unreasonably withheld. The Obligee shall pay the Balance of the Subcontract Price as directed by the Surety. In the event Surety provides Financing, Surety, in its sole discretion, may upon written notice to Obligee cease providing such Financing at any time, in which event Surety shall immediately make a further election without a further Investigatory Period under this paragraph A; or
(5) Deny liability and notify the Obligee, citing the reasons therefor; or
(6) After investigation, determine the amount for which it may be liable to the Obligee and, as soon as practicable after the amount is determined, make payment to the Obligee.

B. After Obligee has provided Surety with written notice of the Principal’s default, and during the Investigatory Period and any subsequent period before the commencement of work under paragraph A, subparagraphs 1 or 2, Obligee may take action pursuant to its Subcontract rights to mitigate the damages caused by the Principal’s default. To the extent that Obligee performs obligations under the Subcontract during this period (the “Mitigation Work”) Obligee shall be entitled to deduct the Cost of the Mitigation Work from the Balance of the Subcontract Price. To the extent the Balance of the Subcontract Price is exhausted, and Surety elects to proceed under paragraph A, subparagraphs 1, 2, 3 or 4, Surety shall reimburse Obligee for the difference between the Balance of the Subcontract Price and the Cost of the Mitigation Work incurred and paid by Obligee.

Sample Purchase Order

C. If Surety proceeds under paragraph A, subparagraphs 1, 2, 3, 4 or 6, Surety may additionally advise in its notice of its election to Obligee that the Obligee’s claim is disputed as to liability and/or amount and Surety is proceeding under a reservation of all rights and defenses. In that event, Surety shall make all payments otherwise called for under this Bond. However, in the event it is determined that Surety is not liable, in whole or in part, under this Bond and Surety expended monies in excess of the funds paid by Obligee to Surety, then Surety shall be entitled to recover the excess from Obligee.

D. The Surety’s aggregate liability is limited to the Penal Sum of this Bond, regardless of whether the liability arises from the actions or failure to act of Principal or Surety. All amounts expended by the Surety under paragraphs A and/or B and/or C of this Bond, in excess of funds paid by Obligee to Surety, shall be credited against the Penal Sum. However, in the event it is determined that Surety expended monies in excess of the Penal Sum of this Bond, then Surety shall be entitled to recover the excess from Obligee. The Penal Sum of this Bond shall automatically be increased or decreased by the amount of any change order, provided the change order(s) do not, either singly or in the aggregate, exceed 10% of the original Subcontract amount. Should any change order singly or in the aggregate exceed 10% of the original Subcontract amount, Surety’s written consent must be obtained by Obligee in order to increase the penal sum.

E. Definitions:

(1) The term “Balance of the Subcontract Price,” as used in this Bond, shall mean the total amount payable by Obligee to Principal under the Subcontract and any amendments thereto, less the amounts heretofore properly paid by Obligee under the Subcontract.
(2) The term “Cost of the Mitigation Work” means the cost actually incurred by Obligee in proper performance of work under the Subcontract, including remedying defects in the work of the Principal. Such costs shall be at rates and hours not higher than the standard customarily incurred at the place of the Project except with the prior written consent of the Surety. Obligee’s overhead (both field and home office) as well as profit shall be included

in the Cost of the Mitigation Work at a markup of 15% to the actual labor, material, equipment, and subcontractor costs incurred and paid for by Obligee. Obligee shall not apply markup to the cost of any subcontractor that is affiliated with Obligee.

F. Notwithstanding any provision in this Bond and any document incorporated herein to the contrary, any proceeding, legal or equitable, under this Bond must be instituted in a court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of default or within two years after the Principal ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

G. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Obligee named herein or the heirs, executors, administrators or successors of the Obligee.

H. Any notice given or any demand made under this Bond shall be given in writing and may be provided to the following email address or given by any method of delivery that provides evidence or confirmation of receipt, including personal delivery, express courier (such as Federal Express), and prepaid certified or registered mail with return receipt requested. The Surety’s address for notice is .

I. The Surety shall not be liable to the Obligee or others for obligations of the Principal that are unrelated to the Subcontract work, and the Balance of the Subcontract Price shall not be reduced or set off on account of any such unrelated obligations.

J. The Surety hereby waives notice of change, including changes of time, to the Subcontract, purchase orders or other obligations.

Sample Purchase Order

Signed this day of , .

(Principal)

By: _____

(Surety)

By: _____
, Attorney-in-Fact

SUBCONTRACTOR PAYMENT BOND

Bond No.:

KNOW ALL BY THESE PRESENTS, That we, (subcontractor's name), called the Principal, and (surety's name), a (state) corporation, called the Surety, are held and firmly bound unto F.A. Wilhelm Construction Company, Inc. with its address at 3914 Prospect Street, Indianapolis, IN 46203, hereinafter called the Obligee, in the sum of U.S. Dollars ($) (the “Penal Sum”), for the payment whereof said Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein.

WHEREAS, the Principal has entered into a subcontract numbered with the Obligee, dated , for project ("Subcontract").

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall promptly make payment to all Claimants as hereinafter defined for all labor and material used, consumed or incorporated in the performance of the construction work to be performed under the Subcontract, then this obligation shall be void; otherwise to remain in full force and effect, subject, however, to the following conditions:

1. A Claimant is defined as one other than the Obligee having a contract with the Principal or with a direct subcontractor of the Principal to supply labor and/or materials and such labor and/or materials are actually used, consumed or incorporated in the performance of the construction work under the Subcontract.

Sample Purchase Order

2. The above-named Principal and Surety hereby jointly and severally agree with the Obligee that every Claimant as herein defined who has not been paid in full before the expiration of a period of ninety (90) days after the date on which the last of such Claimant’s work or labor was done or performed or materials were furnished by such Claimant, may bring suit on this bond, prosecute the suit to final judgment for the amount due under Claimant’s contract for the labor and/or materials supplied by the Claimant which were used, consumed or incorporated in the performance of the work, and have execution thereon; provided, however, that a Claimant having a direct contractual relationship with a direct subcontractor of the Principal shall have a right of action on this bond only if said Claimant notifies the Principal and Surety in writing of its claim within ninety (90) days from the date on which said Claimant did or performed the last labor and/or materials for which the claim is made. Such notice shall be served by mailing the same by registered mail or certified mail, postage prepaid, in and envelope addressed to the Principal and Surety, at any place where an office is regularly maintained for the transaction of business, or served in any manner in which legal process may be served in the state in which the project is located, save that such service need not be made by a public officer.

3. No suit or action or arbitration shall be commenced hereunder by any Claimant:

a. After the expiration of the earlier of: (1) one year after the day on which the Claimant last supplied the labor and/or materials for which the claim is made; or (2) the limitation period set forth in the public works bond statutes, if any, in the location where the construction work is being performed. Any limitation contained in this bond which is prohibited by any law controlling in the state where the suit is filed shall be deemed to be amended so as to be equal to the minimum period of limitation permitted by the

law of that state, and said period of limitation shall be deemed to have accrued and shall commence to run on the day the Claimant last supplied the labor and/or materials for which the claim is made; and

b. Other than in a state court of competent jurisdiction in the county or other political subdivision of the state in which the project, or any part thereof, is situated, or in the United States District Court for the district in which the project, or any part thereof, is situated, and not elsewhere.

The Obligee shall not be liable for the payment of any costs or expenses of any such suit action or arbitration.

4. The Penal Sum of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder. The Surety's liability hereunder is limited, singly, or in the aggregate, to the Penal Sum of the bond set forth herein.

Signed this day of , 20 .

(Principal)

By: _____

(Surety)

By: _____

, Attorney-in-Fact

Sample Purchase Order

EXHIBIT “F”

DUAL OBLIGEE RIDER

To be attached to and form a part of Performance/Payment Bond No. _____ , executed concurrently with this rider, it is agreed that:

Surety, and _____

_____ , Principal,

for valuable consideration, hereby agree that the Bond executed in favor of _____

_____ , Obligee,

in connection with a contract for: _____

_____

which bond and contract are made a part of hereof by reference, shall now include as an additional Obligee:

_____

_____

in its capacity as _____ for the aforementioned project.

The Surety shall not be liable under this bond to the Obligees, or either of them, unless the said Obligees, or either of them, shall make payments to the Principal or to the Surety, in case the Surety arranges for the completion of the contract upon default of the Principal, strictly in accordance with the terms of said contract as to payments, and shall perform all the other obligations to be performed under said contract at the time and in the manner therein set forth.

In no event shall the Surety be liable in the aggregate to both Obligees for more than the penal sum of its Performance Bond, nor shall it be liable except for a single payment for each single breach or default. At the Surety’s election, any payment due to either Obligee may be made by its check issued jointly to both.

WITNESS the following signatures and seals thisday of , .

By: _____

, Attorney-in-Fact

_____

Attest: **(Principal)**

_____ By: _____

Sample Purchase Order

(Printed name and title) *(Printed name and title)*

1. Supplier's written acceptance or commencement of any performance or service under this Purchase Order shall constitute Supplier's acceptance of the terms and conditions set forth in the Purchase Order Documents. Contractor objects to and rejects all terms and conditions proposed by Supplier which are different from or in addition to the terms and conditions contained in the Purchase Order Documents and such terms shall not become a part of this Purchase Order. If this Purchase Order is deemed to be an acceptance of a prior offer by Supplier, such acceptance is conditional on Supplier's assent to all additional or different terms and conditions contained in the Purchase Order Documents. The terms and conditions contained in the Purchase Order Documents cannot be changed in any manner except by a Contractor initiated change order pursuant to Paragraph No. 15 below.

2. Unless otherwise noted on the face of this Purchase Order or in Schedule 'A', payment shall be made to Supplier monthly from funds received by Contractor from Owner or Prime Contractor for Supplier's Work on the following schedule: progress payments in the amount of ninety percent (90%) of the value of goods, materials and services delivered to the job site as determined by Contractor and approved by Owner and Prime Contractor. Final payment of the balance due on the Purchase Order Sum shall be made to Supplier within ten (10) working days after receipt by Contractor of final payment from Owner or Prime Contractor for Supplier's Work. These payments are subject to receipt of such backup, delivery tickets signed by Contractor's Project Superintendent, waivers of liens and claims, affidavits, warranties and guarantees as required by the Purchase Order Documents or by Contractor. The Purchase Order Sum includes the cost of all goods, materials, labor, tools, equipment, services, insurance, freight and all other costs of any kind, and Supplier shall be solely responsible for all federal, state and local excise, sales or use taxes applicable to this Purchase Order, and for any license, privilege, income or receipts tax imposed on Supplier. Supplier shall accept any valid sales or use tax exemption certificates. At Contractor's sole discretion, Contractor may make payments to Supplier by joint check payable jointly to Supplier and its suppliers, subcontractors and/or creditors on the Project.

Sample Purchase Order

3. The risk of loss, damage, spoilage and deterioration, and all other risks, shall not pass to Contractor until on or after the scheduled delivery date and after Contractor, Owner, Prime Contractor, Construction Manager and Architect have actually inspected and accepted the goods and materials at the location designated for delivery by Contractor. Any rejected goods or materials may be returned at Supplier's expense, including any transportation and other charges and expenses paid by Contractor in connection therewith; no replacement of rejected goods and materials may be made without Contractor's prior written consent.

4. To the extent that the terms and conditions of the Prime Contract apply or relate to Supplier's Work, Supplier agrees to be bound to Contractor by the same terms and conditions which apply to Contractor and assumes toward Contractor all obligations and responsibilities which Contractor assumes toward Owner, Prime Contractor, Construction Manager and/or Architect under the Prime Contract, and agrees to ensure that all of its material suppliers and subcontractors are likewise bound. Where a provision, term or condition of the Prime Contract, this Purchase Order and/or the Purchase Order Documents are in conflict with one another, the provision, term or condition that imposes the greater obligation or responsibility on Supplier shall govern.

5. Supplier may not assign, delegate or subcontract any of its rights, interests or obligations in or under this Purchase Order without Contractor's prior written consent. Notwithstanding Contractor's consent to any such assignment, delegation or subcontracting, Supplier shall not be relieved of any of its obligations pursuant to this Purchase Order, except as otherwise expressly and specifically agreed to in writing by a Contractor initiated changed order pursuant to Paragraph No. 15 below.

6. Supplier shall provide all goods, materials and services required by this Purchase Order on the delivery date set forth on the face of this Purchase Order, unless a separate delivery and/or work schedule is attached to this Purchase Order. Time is of the essence. The delivery and/or work schedule may be revised by Contractor as the Project progresses. Supplier shall provide Contractor with any requested scheduling information of Supplier's Work. Any goods or materials delivered in advance of the scheduled delivery date shall, at Contractor's option, be returned to Supplier or stored by Contractor, at Supplier's cost and risk.

7. To the extent Supplier has been properly paid amounts due under this Purchase Order, Supplier agrees to keep Owner's funds and property free and clear of all liens, claims or encumbrances of any kind of Supplier, its subcontractors or suppliers, or from any others claiming through Supplier.

8. Supplier shall comply with all applicable federal, state and local laws, orders, rules and regulations, and shall obtain and provide all notices to authorities, permits, fees, licenses, assessments, inspections and taxes necessary to complete its Work.

9. Supplier shall take the proper precautions in the performance of its Work to protect all persons and property from being injured by the Work or by the condition of the site, shall comply with any safety measures initiated by Contractor or set forth in the Purchase Order Documents, and shall comply with OSHA and any other applicable federal, state or local safety laws, rules, orders or regulations.

10. Supplier shall be responsible for all field measurements and layout necessary to perform its Work, and shall be responsible for the accuracy of its Work. Supplier shall submit to Contractor shop drawings and samples required by the Purchase Order Documents sufficiently in advance of the time any fabrication or shipment of materials, goods or other item for Supplier's Work is to occur. Review and/or approval by Contractor, Architect, Prime Contractor, Construction Manager or Owner of Supplier's submittals shall in no way relieve Supplier from conforming with the Purchase Order Documents.

11. Supplier warrants that neither the manufacture nor the sale nor use of the goods and materials to be sold will infringe on any United States or foreign patent, trademark, service mark, copyright, trade secret, trade name or other intellectual property right of any third party.

12. Supplier warrants that all goods and materials provided pursuant to this Purchase Order will be new, unless otherwise specified in the Purchase Order Documents, and will be of merchantable quality and fit for the purposes intended by Contractor, Architect, Prime Contractor, Construction Manager and/or Owner. Supplier also warrants the goods, materials and services provided pursuant to this Purchase Order against all deficiencies and defects in design, manufacturing, materials and/or workmanship for a period of one (1) year from the date of substantial completion of the Project or for such period otherwise provided by the Purchase Order Documents, whichever is longer, and agrees to satisfy the same without cost to Owner, Prime Contractor, Construction Manager or Contractor. These warranties shall survive inspection, acceptance and payment, shall run to Contractor, Owner, Prime Contractor and their respective successors and assigns, and shall be in addition to and not in limitation of any other warranty (including manufacturer warranties), right or remedy provided by law, the Purchase Order Documents or any other means. All manufacturer warranties shall be assigned to Owner and Contractor.

13. Prior to the start of its Work, Supplier shall procure and maintain in force, for at least the duration of its Work, insurance as is called for by the attached "Insurance Requirements," plus any additional insurance that is required of Contractor under the Prime Contract. Contractor, Owner, Prime Contractor, Construction Manager and Architect shall be named as additional insureds on each of the required policies, except for workers compensation. Supplier shall furnish insurance certificates to Contractor verifying the required insurance prior to beginning its Work, but no later than ten (10) calendar days from the date of this Purchase Order. If any of the foregoing insurance coverages are required

Sample Purchase Order

to remain in force after final payment, an additional certificate evidencing continuation of such coverage shall be submitted with Supplier's final application for payment.

14. To the fullest extent permitted by law, Supplier shall indemnify, hold harmless, and defend at its own expense Contractor, Owner, Prime Contractor, Construction Manager, Architect, and their respective agents, employees and assigns (herein collectively referred to as "indemnities") from and against any claims, causes of action, damages, losses and expenses (including litigation costs and attorney's fees) of any nature whatsoever, including but not limited to claims for or relating to injury, sickness or disease to any persons (including death), damages to property (including the lost use thereof and consequential damages therefrom), economic loss, liens, Project delays or intellectual property rights, which arise out of or are alleged to arise out of: a) the performance of Supplier's Work; b) the condition of the goods and/or materials provided pursuant to this Purchase Order; c) the Supplier's breach of this Purchase Order; and/or d) any act or omission of Supplier, its subcontractors or material suppliers, anyone directly or indirectly employed by them or anyone for whose acts they may be liable; regardless of whether or not such claim, cause of action, damage, loss or expense is contributed to or caused by the negligence, breach of contract or warranty, strict liability, or any other breach of duty of any indemnitee; provided, however, that Supplier shall not be obligated to indemnify an indemnitee for its sole negligence or willful misconduct where such indemnification is contrary to law, but otherwise it is the intent of the parties that Supplier shall indemnify the indemnities to the fullest extent permitted by law.

15. Supplier may be ordered in writing by Contractor, without invalidating this Purchase Order, to make changes in Supplier's Work consisting of additions, deletions or other revisions, the Purchase Order Sum and Contractor's schedule being adjusted accordingly. Within seven (7) working days of receiving notice of such change, Supplier shall submit to Contractor a quotation covering any addition or deduction to the Purchase Order Sum and any impact to Contractor's schedule, along with all details and backup necessary to support the quotation. Unless otherwise directed in writing by Contractor, Supplier shall not commence such changed or revised work until after Contractor has reviewed and approved Supplier's quotation, and Contractor and Supplier have signed a written change order setting forth any adjustments to the Purchase Order Sum or Contractor's schedule.

16. Supplier agrees that in order for it to make a claim against Contractor for extensions of time or allowable damages which arise out of any event or occurrence not covered by Paragraph No. 15 above, Supplier, as a condition precedent, must give Contractor written notice of such claim within seven (7) working days of the event or occurrence giving rise to the claim or within the time which Contractor has to make such a claim against the Owner or Prime Contractor, whichever is shorter, or the claim will be waived. In no event shall Contractor be liable to Supplier for anticipated profits, business interruption or incidental or consequential damages. Contractor's liability to Supplier for any claim arising out of or relating to this Purchase Order shall be limited to the price allocable to the goods or services or unit thereof which gives rise to the claim.

17. Supplier acknowledges that the Purchase Order Sum includes any and all material and/or labor cost escalation for the duration of the Project and that Supplier shall not be entitled to a change order or adjustment to the Purchase Order Sum for any such material and/or labor cost escalation.

18. To the extent there are any design services required to be performed by Supplier either incidental to Supplier's construction services or as a primary undertaking by Supplier in respect of the Project, such design services shall be procured from licensed, independent design professionals retained by the Supplier or furnished by licensed employees of the Supplier, or as permitted by the law of the place where the Project is located. Supplier shall be responsible for coordinating its design with the Project Architect, engineers and others providing design services for the Project. Supplier shall prepare, for approval by the Project Architect and engineers, Construction Documents consisting of drawings, specifications, and other appropriate instruments ("Instruments of Service") sufficient to set forth in detail the

Sample Purchase Order

requirements for the construction of Supplier's Work. Supplier shall assist the Owner, Architect, Engineers, or Contractor in connection with the filing of documents required for the approval of government authorities having jurisdiction over the Project. All ownership of or other rights in respect of the Instruments of Service shall be transferred by Supplier to Owner upon request.

19. Should Supplier fail to satisfy deficiencies in its performance of this Purchase Order (including but not limited to failure to maintain Contractor's schedule) within two (2) working days from receipt of Contractor's written notice of such deficiency, then Contractor, without prejudice to any other right or remedy, shall have the right to:

a. terminate this Purchase Order and reject all further deliveries of goods, materials or services;
b. reserve or withhold payment to Supplier and retain or take possession of the goods, materials and services provided, stored, manufactured and/or fabricated until Supplier cures and completes this order; and/or
c. take whatever steps Contractor deems necessary to correct said deficiencies and charge the cost thereof (including the cost of removing and repairing other work and improvements as necessary to correct the deficiencies) to Supplier, who shall be liable for payment of the same, including reasonable overhead, profit and attorney's fees.

Said notice is not required for Contractor to exercise the remedies under this paragraph when Supplier's deficiency in performance threatens safety.

20. Contractor may terminate, without notice, all or any part of this Purchase Order, without liability to Contractor, if Supplier becomes insolvent, makes an assignment for the benefit of creditors, is the subject of a proceeding for the appointment of a receiver or trustee, or files a voluntary petition in bankruptcy or is the subject of an involuntary petition in bankruptcy.

21. Labor disputes, fires, acts of God, public enemy, earthquakes, floods, accidents or other causes beyond Contractor's control shall constitute grounds for suspension of shipment without penalty or cost to Contractor.

22. **Supplier shall abide by all federal, state and local laws and regulations that prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities and shall prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity or national origin. Moreover, 41 CFR 60-1.4(a), 60-300.5(a) and 60-741.5(a) require that covered suppliers, contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, disability or veteran status.**

23. This Purchase Order and the rights and duties of all persons arising from or related to this Purchase Order shall be governed by the laws of the State of Indiana. Any dispute arising under or related to this Purchase Order, the performance of Work or provision of any materials or goods pursuant hereto, shall be brought only in state court in Marion County, State of Indiana, or if federal jurisdiction is available, in the U.S. District Court for the Southern District of Indiana. The parties to this Purchase Order agree to: a) participate in mediation; b) accept such venues if mediation is unsuccessful; c) waive trial by jury in all proceedings; and d) waive, as against each other, any claim or entitlement to punitive or exemplary damages. If Contractor is in a dispute with the Owner, Prime Contractor and/or Construction Manager that involves Supplier's Work, acts or omissions, then Contractor may elect to join Supplier as a party to such dispute and the dispute resolution and litigation provisions in the Prime Contract would govern if Contractor made such election of joinder.

24. Supplier agrees that the subject matter of this Purchase Order is confidential in nature and that Supplier will not provide any third party with any information contained herein without the expressed written consent of Contractor. However, Supplier may disclose confidential information, after seven (7) days' notice to Contractor, where disclosure is

Sample Purchase Order

required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. Supplier may also disclose confidential information to its employees, consultants, sureties, sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

25. If any term, provision or part of a provision to this Purchase Order should be invalid or unenforceable under the governing law, the validity and enforceability of the remaining terms, provisions and parts thereof shall not be affected, with interpretation and enforcement to occur as if such invalid or unenforceable term, provision or part was never written.

26. The failure of Contractor to enforce at any time any provision of this Purchase Order shall in no way affect the validity of this Purchase Order or any part hereof or the right of Contractor thereafter to enforce each and every such provision. No waiver of any breach of this Purchase Order shall be held to be a waiver of any other or subsequent breach.

27. The Purchase Order Documents, including this Purchase Order, represent the entire integrated agreement between Supplier and Contractor, and supersede all prior negotiations, representations or agreements relating to Supplier's Work.

Sample Purchase Order

SUBCONTRACT EXHIBIT 3 – INSURANCE REQUIREMENTS

(Also available as a separate attachment in Building Connected)

F.A.WILHELM CONSTRUCTION

INSURANCE REQUIREMENTS

☐ Subcontract Agreement No.
☐ Purchase Order No.

☐ **SUBCONTRACTOR or** ☐ **SUPPLIER:**

PROJECT: **IU Launch Accelerator Biosciences #20250072**

DATE: _____

JOB NUMBER: **11313**

SEND CERTIFICATE TO: INSCERTS@FAWILHELM.COM

REQUIRED COVERAGES	MINIMUM LIMITS OF INSURANCE REQUIRED
COMMERCIAL GENERAL LIABILITY - Occurrence Form - Aggregate per Project Endorsement - Subcontractor's or Supplier's Products / Completed Operations coverage shall be continued for one year after completion of its Work or for such period otherwise provided by the Subcontract or Purchase Order Documents, whichever is longer. - Contractual Liability - No exclusion for Explosion, Collapse & Underground (XCU) - No exclusion for liability assumed in an insured contract	$ 2,000,000 **General Aggregate** (other than Products /Completed operations) $ 2,000,000 **Products/Completed Operations Aggregate** $ 1,000,000 **Bodily Injury and Property Damage** (each occurrence) $ 1,000,000 **Personal & Advertising Injury** (any one person or organization) $ 50,000 **Fire Damage** (any one fire) $ 5,000 **Medical Expenses** (any one person)
AUTOMOBILE LIABILITY (Business) - Including Hired and Non-Owned Auto liability coverage - Contractual Liability - No exclusion for liability assumed in an insured contract.	$ 1,000,000 **Combined Single Limit per accident or loss-** Bodily Injury & Property Damage
WORKER'S COMPENSATION **EMPLOYER'S LIABILITY**	Statutory as required by the State where the Project is located. $ 500,000 **Bodily Injury by Accident -** each accident $ 1,000,000 **Bodily Injury by Disease**-policy Limit $ 500,000 **Bodily Injury by Disease** – each employee
EXCESS LIABILITY - Umbrella Form (follow form coverage on all liability policies)	$ 5,000,000 **Each occurrence**

<u>ADDITIONAL INSURED(S)</u> applies to all insurance coverage except Worker's Compensation/Employer's Liability. The following shall be named Additional Insured(s), including coverage for ongoing and completed operations, on Subcontractor's policies:

> Indiana University **AND** [additional entities TBD] **AND** F.A. Wilhelm Construction Co., Inc. and their respective affiliates, subsidiaries, officers, directors, employees and representatives.

Subcontractor or Supplier will provide the minimum insurance requirements for the Project, plus any additional insurance that is required of Contractor under the Prime Contract. A copy of an approved insurance certificate must be on file with the Contractor, at the main office location, prior to the commencement of work on the Project. Send certificate to inscerts@fawilhelm.com.

In the event the Subcontractor or Supplier has or obtains coverage in amounts in excess of those minimum limits outlined above during the period that coverage is required under the Subcontract Agreement or Purchase Order, those organizations listed above as Additional Insureds shall also be named as Additional Insureds for such excess amounts. The amount of insurance (including endorsements thereto) carried in compliance with these requirements are not to be construed as either a limitation or satisfaction of the Subcontractor's or Supplier's liability.

Subcontractor or Supplier waives any and all claims against those organizations listed above as Additional Insureds and their respective insurers for damages caused by any occurrence or peril covered by the insurance required by the Subcontract Documents (waiver of subrogation/waiver of right of recovery).

The insurance coverage provided by Subcontractor or Supplier under this agreement shall be primary and non-contributory to any other insurance.

Subcontractor or Supplier and its insurance carrier shall give F.A. Wilhelm Construction Co., Inc. at least thirty (30) days written notice prior to cancellation, non-renewal and/or any material change of any required coverage.

If any portion of the Subcontractor's Work involves project design, architectural services, engineering services or other consulting services, soil boring or reporting of results of same or site surveying or reporting of results of same, professional liability coverage (errors and omissions) with minimum limits of $1,000,000 per claim and $3,000,000 general aggregate and maximum deductible of $25,000 shall be required. It shall also be required that this professional liability policy, and any replacement policy, have a retroactive date no later than the date of the contract and that the coverage be continued for a minimum of five years after final completion.

SUBCONTRACT EXHIBIT 4 – F.A. WILHELM'S EXCAVATION POLICY

(Also available as a separate attachment in Building Connected)

Section 23: Excavation & Trenching

POLICY

Each contractor or subcontractor performing trenching or excavating shall employ a Competent Person to oversee the work. The Competent Person must have specific training in and be knowledgeable about soil analysis Wilhelm and the use of protective systems and the requirements of OSHA Subpart P standards. management will verify experience, knowledge and training of the Competent Person. In addition, the Competent Person must have the authority to take immediate corrective action if a hazard exists.

1. Surface Encumbrances

    A. All surface encumbrances that are located so as to create a hazard to employees shall be removed or supported, as necessary, to safeguard employees.

2. Underground Installations

    A. The estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably may be expected to be encountered during excavation work, shall be determined prior to opening an excavation.
    B. When excavation operations approach the estimated location of underground installations, the exact location of the installations shall be determined by safe and acceptable means.
    C. While the excavation is open, underground installations shall be protected, supported or removed as necessary to safeguard employees.

3. Access and Egress

    A. Structural ramps that are used solely by employees as a means of access or egress from excavations shall be designed by a competent person. Structural ramps used for access or egress of equipment shall be designed by a competent person qualified in structural design, and shall be constructed in accordance with the design.
    B. Ramps and runways constructed of two or more structural members shall have the structural members connected together to prevent displacement.
    C. Structural members used for ramps and runways shall be of uniform thickness.
    D. Cleats or other appropriate means used to connect runway structural members shall be attached to the bottom of the runway or shall be attached in a manner to prevent tripping.

E. Structural ramps used in lieu of steps shall be provided with cleats or other surface treatments to the top surface to prevent slipping.

4. Means of Egress from Trench Excavations

   A. A stairway, ladder, ramp or other safe means of egress shall be located in trench excavations that are 4 feet or more in depth so as to require no more than 25 feet of lateral travel for employees.

5. Exposure to Vehicular Traffic

   A. Employees exposed to public vehicular traffic shall be provided with, and shall wear warning vests or other suitable garments marked with or made of reflectorized or high-visibility material.

6. Exposure to Falling Loads

   A. No employee shall be permitted underneath loads handled by lifting or digging equipment. Employees shall be required to stand away from any vehicle being loaded or unloaded to avoid being struck by any spillage or falling materials. Operators may remain in the cabs of vehicles being loaded or unloaded when the vehicles are equipped, in accordance with 1926.601(b)(6), to provide adequate protection for the operator during loading and unloading operations.

7. Warning System for Mobile Equipment

   A. When mobile equipment is operated adjacent to an excavation, or when such equipment is required to approach the edge of an excavation, and the operator does not have a clear and direct view of the edge of the excavation, a warning system shall be utilized such as barricades, hand or mechanical signals, or stop logs. If possible, the grade should be away from the excavation.

HAZARDOUS ATMOSPHERES

1. Testing and Controls - To prevent exposure to harmful levels of atmospheric contaminants and to assure acceptable atmospheric conditions, the following requirements shall apply:

   A. Where oxygen deficiency (atmospheres containing less than 19.5 percent oxygen) or a hazardous atmosphere exists or could reasonably be expected to exist, such as in excavations in landfill areas or excavations in areas where hazardous substances are stored nearby, the atmospheres in the excavation

shall be tested before employees enter excavations greater than 4 feet in depth.

B. Adequate precautions shall be taken to prevent employee exposure to atmospheres containing less than 19.5 percent oxygen and other hazardous atmospheres. These precautions include providing proper respiratory protection or ventilation in accordance with subparts D and E of this part respectively.
C. Adequate precaution shall be taken such as providing ventilation, to prevent employee exposure to an atmosphere containing a concentration of a flammable gas in excess of 20 percent of the lower flammable limit of the gas.
D. When controls are used that is intended to reduce the level of atmospheric contaminants to acceptable levels, testing shall be conducted as often as necessary to ensure that the atmosphere remains safe.

2. Emergency Rescue Equipment

A. Emergency rescue equipment, such as breathing apparatus, a safety harness and line, or a basket stretcher, shall be readily available where hazardous atmospheric conditions exist or may reasonably be expected to develop during work in an excavation. This equipment shall be attended when in use.
B. Employees entering bell-bottom pier holes, or other similar deep and confined footing excavations, shall wear a harness with a lifeline securely attached to it. The lifeline shall be separate from any line used to handle materials, and shall be individually attended at all times while the employee wearing the lifeline is in the excavation.

3. Protection from Hazards Associated With Water Accumulation

A. Employees shall not work in excavations in which there is accumulated water, or in excavations in which water is accumulating, unless adequate precautions have been taken to protect employees against the hazards posed by water accumulation. The precautions necessary to protect employees adequately vary with each situation, but could include special support or shield systems to protect from cave-ins, water removal to control the level of accumulating water, or use of a safety harness and lifeline.
B. If water is controlled or prevented from accumulating by the use of water removal equipment, the water removal equipment and operations shall be monitored by a competent person to ensure proper operation.
C. If excavation work interrupts the natural drainage of surface water (such as streams), diversion ditches, dikes, or other suitable means shall be used to prevent surface water from entering the excavation and to provide adequate drainage of the area adjacent to the excavation. Excavations subject to runoff from heavy rains will require an inspection by a competent person.

4. Stability of Adjacent Structures

    A. Where the stability of adjoining buildings, walls, or other structures is endangered by excavation operations, support systems such as shoring, bracing, or underpinning shall be provided to ensure the stability of such structures for the protection of employees.
    B. Excavation below the level of the base or footing of any foundation or retaining wall that could be reasonably expected to pose a hazard to employees shall not be permitted except when:
        1) A support system, such as underpinning, is provided to ensure the safety of employees and the stability of the structure; or
        2) The excavation is in stable rock; or
        3) A registered professional engineer has approved the determination that the structure is sufficiently removed from the excavation so as to be unaffected by the excavation activity; or
        4) A registered professional engineer has approved the determination that such excavation work will not pose a hazard to employees.
    C. Sidewalks, pavements and appurtenant structures shall not be undermined unless a support system or another method of protection is provided to protect employees from the possible collapse of such structures.

5. Protection of Employees from Loose Rock or Soil

    A. Adequate protection shall be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling from an excavation face. Such protection shall consist of scaling to remove loose material; installation of protective barricades at intervals as necessary on the face to stop and contain falling material; or other means that provide equivalent protection.
    B. Employees shall be protected from excavated or other materials or equipment that could pose a hazard by falling or rolling into excavations. Protection shall be provided by placing and keeping such materials or equipment at least two feet from the edge of excavations, or by the use of retaining devices that are sufficient to prevent materials or equipment from falling or rolling into excavations, or by a combination of both if necessary.

6. Inspections

    A. Daily inspections of excavations, the adjacent areas, and protective systems shall be made by a competent person for evidence of a situation that could result in possible cave-ins, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions. An inspection shall be conducted by the competent person prior to the start of work and as needed throughout the shift. Inspections shall also be made after every rainstorm or other hazard increasing occurrence.

B. These inspections are only required when employee exposure can be reasonably anticipated.
C. Where the competent person finds evidence of a situation that could result in a possible cave-in, indications of failure of protective systems, hazardous atmospheres, or other hazardous conditions, exposed employees shall be removed from the hazardous area until the necessary precautions have been taken to ensure their safety.

7. Fall Protection

A. Walkways shall be provided where employees or equipment are required or permitted to cross over excavations. Guardrails which comply with 1926.502(b) shall be provided where walkways are 6 feet or more above lower levels.

8. Barricades

A. Excavations left unattended at the end of the work shift shall have barriers established surrounding the excavation. The barriers can be created from:
   1) Spoil Piles
   2) Machinery
   3) Caution Tape
   4) Fencing or Guardrails

9. Protection of Employees in Excavations

A. Each employee in an excavation shall be protected from cave-ins by an adequate protective system designed in accordance with this section except when:
   1) Excavations are made entirely in stable rock; or
   2) Excavations are less than 5 feet in depth and examination of the ground by a competent person provides no indication of a potential cave-in.
   3) Protective systems shall have the capacity to resist without failure all loads that are intended or could reasonably be expected to be applied or transmitted to the system.

10. Design of Sloping and Benching Systems

A. The slopes and configurations of sloping and benching systems shall be selected and constructed by the employer or his designee and shall be in accordance with the requirements of the following paragraph as follows:
   1) Allowable configurations and slopes.

2) Excavations shall be sloped at an angle not steeper than one and one-half horizontal to one vertical (34° measured from the horizontal), unless the employer uses one of the other options listed below.
3) Maximum allowable slopes and allowable configurations for sloping and benching systems shall be determined in accordance with the conditions and requirements set forth in Appendixes A and B of the OSHA subpart.
4) Designs using other tabulated data.

B. Designs of sloping or benching systems shall be selected from and in accordance with tabulated data, such as tables and charts.
C. The tabulated data shall be in written form and shall include all of the following:
1) Identification of the parameters that affect the selection of a sloping or benching system drawn from such data;
2) Identification of the limits of use of the data to include the magnitude and configuration of slopes determined to be safe;
3) Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data;
4) At least one copy of the tabulated data which identifies the registered professional engineer who approved the data shall be maintained at the jobsite during construction of the protective system. After that time, the data may be stored off the jobsite, but a copy of the data shall be made available to the Secretary upon request.

11. Design by a Registered Professional Engineer

A. Sloping and benching systems not utilizing the above options shall be approved by a registered professional engineer.
B. Designs shall be in written form and shall include at least the following:
1) The magnitude of the slopes that were determined to be safe for the particular project;
2) The configurations that were determined to be safe for the particular project;
3) The identity of the registered professional engineer approving the design.
C. At least one copy of the design shall be maintained at the jobsite while the slope is being constructed. After that time the design need not be at the jobsite, but a copy shall be made available to the Secretary upon request.

12. Design of Support Systems, Shield Systems, and Other Protective Systems - Designs of support systems, shield systems, and other protective systems shall be selected and constructed by the employer or his designee and shall be in accordance with the following requirements as follows:

A. Option (1) - Designs for timber shoring in trenches shall be determined in accordance with the conditions and requirements set forth in Appendices A and C of the OSHA Standards.
B. Option (2) - Designs using manufacturer's tabulated data:
    1) Design of support systems, shield systems, or other protective systems that are drawn from manufacturer's tabulated data shall be in accordance with all specifications, recommendations, and limitations issued or made by the manufacturer.
    2) Deviation from the specifications, recommendations, and limitations issued or made by the manufacturer shall only be allowed after the manufacturer issues specific written approval.
    3) Manufacturer's specifications, recommendations, and limitations, and manufacturer's approval to deviate from the specifications, recommendations, and limitations shall be in written form at the jobsite during construction of the protective system. After that time this data may be stored off the jobsite, but a copy shall be made available to the Secretary upon request.
C. Option (3) – Designs using other tabulated data.
    1) Designs of support systems, shield systems, or other protective systems shall be selected from and be in accordance with tabulated data, such as tables and charts.
    2) The tabulated data shall be in written form and include all of the following:
        a) Identification of the parameters that affect the selection of a protective system drawn from such data.
        b) Identification of the limits of use of the data.
        c) Explanatory information as may be necessary to aid the user in making a correct selection of a protective system from the data.
        d) At least one copy of the tabulated data, which identifies the registered professional engineer who approved the data, shall be maintained at the jobsite during construction of the protective system.
        e) After that time the data may be stored off the jobsite, but a copy of the data shall be made available to the Secretary upon request.
D. Option (4) – Design by a registered professional engineer. Support systems, shield systems, and other protective systems not utilizing Option 1, Option 2 or Option 3 above shall be approved by a registered professional engineer.
E. Designs shall be in written form and shall include the following:
    1) A plan indicating the sizes, types, and configurations of the materials to be used in the protective system; and
    2) The identity of the registered professional engineer approving the design.

F. At least one copy of the design shall be maintained at the jobsite during construction of the protective system. After that time, the design may be stored off the jobsite, but a copy of the design shall be made available to the Secretary upon request.

13. Materials and Equipment

A. Materials and equipment used for protective systems shall be free from damage or defects that might impair their proper function.
B. Manufactured materials and equipment used for protective systems shall be used and maintained in a manner that is consistent with the recommendations of the manufacturer and in a manner that will prevent employee exposure to hazards.
C. When material or equipment that is used for protective systems is damaged, a competent person shall examine the material or equipment and evaluate its suitability for continued use. If the competent person cannot assure the material or equipment is able to support the intended loads or is otherwise suitable for safe use, then such material or equipment shall be removed from service and shall be evaluated and approved by a registered professional engineer before being returned to service.

INSTALLATION AND REMOVAL OF SUPPORT

1. General

A. Members of support systems shall be securely connected together to prevent sliding, falling, kick outs, or other predictable failure.
B. Support systems shall be installed and removed in a manner that protects employees from cave-ins, structural collapses, or from being struck by members of the support system.
C. Individual members of support systems shall not be subjected to loads exceeding those which those members were designed to withstand.
D. Before temporary removal of individual members begins, additional precautions shall be taken to ensure the safety of employees, such as installing other structural members to carry the loads imposed on the support system.
E. Removal shall begin at and progress from the bottom of the excavation. Members shall be released slowly so as to note any indication of possible failure of the remaining members of the structure or possible cave-in of the sides of the excavation.
F. Backfilling shall progress together with the removal of support systems from excavations.

2. Additional Requirements for Support Systems for Trench Excavations

    A. Excavation of material to a level no greater than 2 feet below the bottom of the members of a support system shall be permitted, but only if the system is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the support system.
    B. Installation of a support system shall be closely coordinated with the excavation of trenches.

3. Sloping and Benching Systems

    A. Employees shall not be permitted to work on the faces of sloped or benched excavations at levels above other employees except when employees at the lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment.

SHIELD SYSTEMS

1. General

    A. Shield Systems shall not be subjected to loads exceeding those which the system was designed to withstand.
    B. Shields shall be installed in a manner to restrict lateral or other hazardous movement of the shield in the event of the application of sudden lateral loads.
    C. Employees shall be protected from the hazard of cave-ins when entering or exiting the areas protected by shields.
    D. Employees shall not be allowed in shields when shields are being installed, removed, or moved vertically.

2. Additional requirement for shield systems used in trench excavations: Excavations of earth material to a level not greater than 2 feet below the bottom of a shield shall be permitted, but only if the shield is designed to resist the forces calculated for the full depth of the trench, and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the shield.

BASIS OF CLASSIFICATION

1. Classification of Soil and Rock Deposits

    A. Each soil and rock deposit shall be classified by a competent person as Stable Rock, Type A, Type B, or Type C.

B. The classification of the deposits shall be made based on the results of at least one visual and at least one manual analysis. Such analyses shall be conducted by a competent person using tests described or in other recognized methods of soil classification and testing such as those adopted by the American Society for Testing Materials or the U.S. Department of Agriculture textural classification system.

2. Visual and Manual Analysis

A. The Visual and Manual analyses shall be designed and conducted to provide sufficient quantitative and qualitative information as may be necessary to identify properly the properties, factors, and conditions affecting the classification of the deposits.

3. Layered Systems

A. In a layered system, the system shall be classified in accordance with its weakest layer. However, each layer may be classified individually where a more stable layer lies under a less stable layer.

4. Reclassification

A. If, after classifying a deposit, the properties, factors, or conditions affecting its classification change in any way, the changes shall be evaluated by a competent person. The deposit shall be reclassified as necessary to reflect the changed circumstances.

ACCEPTABLE VISUAL AND MANUAL TESTS

1. Visual Tests

A. Visual analysis is conducted to determine qualitative information regarding the excavation site in general, the soil adjacent to the excavation, the soil forming the sides of the open excavation, and the soil taken as samples from excavated material.
B. Observe samples of soil that are excavated and soil in the sides of the excavation. Estimate the range of particle sizes and the relative amounts of the particle sizes. Soil that is primarily composed of find-grained material is cohesive material. Soil composed primarily of coarse-grained sand or gravel is granular material.
C. Observe soil as it is excavated. Soil that remains in clumps when excavated is cohesive. Soil that breaks up easily and does not stay in clumps is granular.
D. Observe the side of the opened excavation and the surface area adjacent to the excavation. Crack-like openings such as tension cracks could indicate

fissured material. If chunks of soil spall off a vertical side, the soil could be fissured. Small spalls are evidence of moving ground and are indications of potentially hazardous situations.

E. Observe the area adjacent to the excavation and the excavation itself for evidence of existing utility and other underground structures and to identify previously disturbed soil.
F. Observe the opened side of the excavation to identify layered systems. Examine layered systems to identify if the layers slope toward the excavation. Estimate the degree of slope of the layers.
G. Observe the area adjacent to the excavation and the sides of the opened excavation for evidence of surface water, water seeping from the sides of the excavation, or the location of the level of the water table.
H. Observe the area adjacent to the excavation and the area within the excavation for sources of vibration that may affect the stability of the excavation face.

2. Manual Tests

    A. Manual analysis of soil samples is conducted to determine quantitative as well as qualitative properties of soil and to provide more information in order to classify soil properly.

3. Plasticity

    A. Mold a moist or wet sample of soil into a ball and attempt to roll it into threads as thin as 1/8" in diameter. Cohesive material can be successfully rolled into threads without crumbling. For example, if at least a 2 inch length of 1/8" thread can be held on one end without tearing, the soil is cohesive.

4. Dry Strength

    A. If the soil is dry and crumbles on its own or with moderate pressure into individual grains or fine powder, it is granular (any combination of gravel, sand, or silt). If the soil is dry and falls into clumps which break up into smaller clumps, but the smaller clumps can only be broken up with difficulty, it may be clay in any combination with gravel, sand or silt. If the dry soil breaks into clumps which do not break up into small clumps and which can only be broken with difficulty, and there is no visual indication the soil is fissured, the soil may be considered unfissured.

5. Thumb Penetration

A. The thumb penetration test can be used to estimate the unconfined compressive strength of cohesive soils. (This test is based on the thumb penetration test described in American Society for Testing and Materials (ASTM) Standard Designation D2488 – "Standard Recommended Practice for Description of Soils (Visual – Manual Procedure).") Type A soils with an unconfined compressive strength of 1.5 tsf can be readily indented by the thumb; however, they can be penetrated by the thumb only with very great effort. Type C soils with an unconfined compressive strength of 0.5 tsf can be easily penetrated several inches by the thumb and can be molded by light finger pressure. This test should be conducted on an undisturbed soil sample, such as a large clump of spoil, as soon as practicable after excavation to keep to a minimum the effects of exposure to drying influences. If the excavation is later exposed to setting influences (rain, flooding), the classification of the soil must be changed accordingly.

6. Other Strength Tests

A. Estimates of unconfined compressive strength of soils can also be obtained by use of a pocket penetrometer or by using a hand-operated shear vane.

7. Drying Test

A. The basic purpose of the drying test is to differentiate between cohesive material with fissures, un-fissured cohesive material, and granular material. The procedure for the drying test involves drying a sample of soil that is approximately 1" thick and 6" in diameter until it is thoroughly dry.
B. If the sample develops cracks as it dries, significant fissures are indicated.
C. Samples that dry without cracking are to be broken by hand. If considerable force is necessary to break a sample, the soil has significant cohesive material content. The soil can be classified as an un-fissured cohesive material and the unconfined compressive strength should be determined.
D. If a sample breaks easily by hand, it is either a fissured cohesive material or a granular material. To distinguish between the two, pulverize the dried clumps of the sample by hand or by stepping on them. If the clumps do not pulverize easily, the material is cohesive with fissures. If they pulverize easily into very small fragments, the material is granular.

TRAINING

1. Competent Person(s) Identification

    A. Must be trained in and knowledgeable of excavation and trenching standards and other programs that may apply (Hazard Communication, Confined Space, and Respiratory Protection).
    B. Must be capable of recognizing hazardous conditions and must have authority to stop work and ensure that hazards are corrected.
    C. Performs "Daily Excavation Inspection" and "Daily Excavation Logs" are available and knows when inspections should be performed.
    D. Must be capable in assuring the proper locations of underground installations or utilities.
    E. Can determine adequate protective system and ensure employees have proper PPE.

2. Hazard Recognition

    A. Types of Hazards:
        1) Definition of excavation or trench
        2) Cave-ins
        3) Hazardous atmosphere
        4) Undermining, surcharge loads, vibrations
        5) Fall hazards
        6) Ladders, stairways, ramps
        7) Placement of spoil
        8) Utility locations
        9) Water accumulation
        10) Rescue procedures and equipment
    B. Project Specific Excavation Hazards
    C. Daily Excavation Inspection Process
    D. Excavation Procedures
    E. Soil Classification Definitions
        1) Type A Soil
        2) Type B Soil
        3) Type C Soil
        4) Methods of Testing Soils
    F. Types of Protective Systems
        1) Sloping
        2) Benching
        3) Shoring
        4) Shields
            a) Personal Protective Equipment
            b) Employee Roles in Excavation Safety Systems

3. Training Verification

    A. Written Training Records
        1) Name
        2) Date
        3) Signature of Trainer

4. Retraining

    A. Changes in excavation protective systems
    B. Changes in workplace or environment
    C. Lack of understanding and skill after initial training

SUBCONTRACT EXHIBIT 5 – IU'S MASK POLICY

(Also available as a separate attachment in Building Connected)

IU plans to make masks optional starting March 4

By **IU Today**

February 18, 2022

With COVID-19 cases declining rapidly at IU and throughout the state, the university intends to make masks optional at all campuses beginning March 4. The action will coincide with the anticipated expiration of state and county public health orders on that date.

Classrooms, residence halls, dining spaces, building common areas and IU Athletics venues are all examples of indoor spaces where mask use will be optional.

Masks will continue to be worn in health-care settings and research spaces.

Dr. Aaron Carroll, chief health officer for IU, says personal choice should increasingly drive decisions related to mask wearing and other precautions: “One-way masking — an individual’s decision to continue wearing a mask — is encouraged for anyone more comfortable wearing a mask in public spaces.”

IU will continue to distribute KN95 and N95 masks.

IU Fort Wayne follows protocols established by Purdue University Fort Wayne.

More information on IU’s COVID-19 policies can be found at https://www.iu.edu/covid/.
Also see: https://www.iu.edu/covid/prevention/masks-and-ppe.html

SUBCONTRACT EXHIBIT 6 – F.A. WILHELM'S EEO STATEMENT

(Also available as a separate attachment in Building Connected)

F.A. Wilhelm Construction Co., Inc.

EQUAL EMPLOYMENT OPPORTUNITY POLICY AND AFFIRMATIVE ACTION PROGRAM

Effective June 19, 2025

Note: Upon request, a copy of this document will be provided to an employee or an employment applicant. The copy will be made available during normal work hours at either the project office or the corporate office.

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1. STATEMENT OF EQUAL EMPLOYMENT OPPORTUNITÉ POLICY AND AFFIRMATIVE ACTION PROGRAM

It is the Equal Employment Opportunity Policy of F.A Wilhelm Construction Co., Inc. (the "Company"} that employment actions taken with respect to qualified employment applicants and Company's employees will be taken in compliance with all applicable executive orders, federal and state statutes, local governmental ordinances and implementing regulations; based only on valid job requirements; and taken without regard to: race, color, religion, sex, sexual orientation, gender identity, age, disability, genetic information, national origin, ancestry, disabled veteran, recently separated veterans, and other protected veterans ("Protected Classes"). Employment actions shall include employment, upgrading, promotion, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship and/or on-the-job training.

Moreover, the Company is committed to maintaining a work environment free of discrimination, harassment, intimidation, threats and coercion based on any Protected Class applicant or employee exercising his/her rights under the law. Employees are encouraged to report any discrimination, harassment, intimidation or coercion without fear of retaliation. ("EEO Policy")

Affirmative Action Program

It is the policy of the Company that equal employment opportunity be provided in the employment and advancement for all qualified individuals. To achieve this goal, the Company is committed to taking affirmative action to employ and advance in employment qualified protected veteran employees and individuals with disabilities.

All personnel actions, including recruitment, hiring, training, and promotion of persons in all job titles, are administered without regard to disability or protected veteran status, and all employment decisions are based solely on valid job requirements. Employees and applicants shall not be subjected to harassment, intimidation, threats, coercion or discrimination because they have engaged in or may engage in any of the following activities:

a. Filing a complaint;

b. Assisting or participating in an investigation, compliance evaluation, hearing, or any other activity related to the administration of the affirmative action provisions of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended (VEVRAA) or any other Federal, state or local law requiring equal opportunity for disabled veterans, recently separated veterans, active wartime or campaign badge veterans, or Armed Forces service medal veterans or Section 503 of the Rehabilitation Act of 1973, as amended (Section 503) or any other federal, state or local law requiring equal opportunity for disabled persons;

c. Opposing any act or practice made unlawful by VEVRAA or its implementing regulations or any other federal, state or local law requiring equal opportunity for disabled veterans, recently separated veterans, active wartime or campaign badge veterans, or Armed Forces service medal veterans or section 503 or its implementing regulations or any other federal, state or local law requiring equal opportunity for disabled persons; or

d. Exercising any other right protected by VEVRAA or Section 503 or their implementing regulations.

The Company's EEO policy statement and affirmative action obligations include the full support of Pat Kenney, President, who has assigned responsibilities for implementation to Jill Vietor, Human Resources Manager.

The Company will also continually design and implement audit and reporting systems that will measure the effectiveness and the compliance of the AAP, identify the need for remedial actions, and determine if objectives were attained.

A copy of the EEO statement is posted in a form that is accessible and understandable to an individual with a disability.

2. RESPONSIBILITY FOR IMPLEMENTATION

EEO Officer Responsibilities. The Company's president will appoint an Equal Employment Opportunity Officer ("EEO Officer") who will have full authority to carry out this EEO Policy and Affirmative Action Program and who will have the following responsibilities:

a. Develop policy statements, personnel policies and procedures, internal and external communication procedures, necessary updates as to any changes in the law and shall monitor the effectiveness of these actions in fulfilling the Company's EEO and affirmative action obligations.

b. Design, implement and monitor the collection of employment data and internal audit and reporting systems to measure program effectiveness and to determine where progress has been made and where further action may be needed.

c. Advise the Company's President quarterly on the progress or problems the Company is experiencing in relation to its implementation of its EEO Policy and Affirmative Action Program.

d. Serve as liaison between the Company and government regulatory agencies, and private organizations that promote equal employment opportunity and training for qualified individuals with disabilities and protected veterans.

e. Review, at least annually, the Company's EEO Policy and Affirmative Action Program with managers and supervisors to ensure that they are aware of the policy and understand their obligation to comply with it in all employment actions.

f. Monitor management and supervisors handling of employees' performance to ensure that non-discrimination and affirmative action are adhered to in employment activities.

g. Encourage all employees to participate in the Company-sponsored recreational activities, training and education regardless of protected veteran or disability status.

h. Provide training for office and field managers and supervisors to ensure that the Company's facilities and project sites are free from harassment, intimidation and coercion of all employees who exercise their rights under the law and the Company's EEO Policy and Affirmative Action Program.

Work with management to facilitate, when applicable, a reasonable accommodation for a qualified applicant or employee.

j. No less than annually, review the Company's EEO Policy, Affirmative Action Program, internal implementation procedures and policies, including audit and reporting, in order to evaluate the effectiveness of the Company's efforts and to make appropriate changes warranted as a result of the review.

3. INTERNAL DISSEMINATION OF THE EEO POLICY STATEMENT

The Company has developed the following internal procedures to communicate its obligation to engage in affirmative action efforts to employ and advance in employment qualified individuals with disabilities and protected veterans.

3.1. The Company employees who are authorized to hire, supervise, promote or discharge employees or who recommend such action will be made fully cognizant of and *will*

implement Company's EEO Policy and Affirmative Action Program. To ensure compliance, the following actions will be taken as a minimum:

a. Periodic meetings with management and supervisory employees, whose job description includes a responsibility to implement the EEO Policy and Affirmative Action Program, will be conducted at which time their implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable Company official.

b. Within 30 day of their hire date, all new management and supervisory employees, whose job description includes a responsibility to implement the EEO Policy and Affirmative Action Program, will be provided appropriate training by the EEO Officer or other knowledgeable Company official with respect to Company's EEO Policy and Affirmative Action Program.

c. The EEO Officer or appropriate Company official will provide all personnel engaged in the direct recruitment of employees relative to the methods followed by the Company in employing and advancing in employment qualified individuals with a disability or protected veterans.

3.2. In order to make Company's EEO Policy and Affirmative Action Program known to ail employees, prospective employees and potential sources of employees, i.e. schools, employment agencies, labor unions, college placement offices, etc., the following actions will be taken:

a. Notices and posters setting forth the EEO Policy and Affirmative Action Program will be placed in areas readily accessible to employees, applicants for employment and potential employees such as office and project site bulletin boards.

b. The Company's procedures to implement said policy will be brought to the attention of employees by means of meetings, employee handbooks or other appropriate means.

c. The Company will provide a copy of its EEO Policy and Affirmative Action Program to: each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding; to any training programs; and to any recruiting sources and community organizations that promote training and hiring of qualified individuals with a disability or protected veterans.

4. EXTERNAL DISSEMINATION OF THE EEO POLICY STATEMENT, RECRUITMENT AND OUYREACH

The Company undertakes appropriate outreach and positive recruitment activities that are reasonably designed to effectively recruit individuals with disabilities and protected veterans such as the following:

a. When advertising for employees, the Company will include in all advertisements for employment the notation "An Equal Opportunity Employer Including Protected Veterans and Individuals with Disabilities". The Company will insert all such advertisements in newspapers or other publications believed to have circulation among disabled and protected veteran individuals in the area from which the Company's work force would normally be derived.

b. The Company will conduct recruitment through public and private employee referral sources likely to yield a qualified disabled and/or protected veteran applicants including, but not limited to: local veterans' employment representative, Department of Veterans Affairs, Regional Office, veterans' counselors and coordinators on college campuses, service officers of national veterans' groups and local veterans' groups and veterans' service centers, state employment agencies, schools, colleges and public and private organizations that train and facilitate
employment of these individuals. To meet these requirements, the Company will, through the

EEO Officer, identify and meet with representatives of recruiting sources of potential, qualified disabled and/or protected veteran
applicants and establish with such identified sources procedures whereby applicants may be referred to the Company for employment consideration.

c. The Company will encourage its present employees to refer qualified disabled and/or protected veteran applicants by posting appropriate notices or bulletins in an area accessible to all such employees. In addition, information and procedures with regard to referring qualified disabled and/or protected veteran applicants will be discussed with employees.

d. The Company incorporates the Equal Opportunity Clause regarding individuals with disabilities and protected veterans in its purchase orders, leases, and contracts as required by law, executive order, and regulation. Written notification of the Equal Opportunity Policy is sent to all subcontractors, vendors, and suppliers requesting appropriate action on their part.

5. REVIEW OF PERSONNEL PROCESSES

The Company reviews its employment procedures to ensure careful, thorough, and systematic consideration of the job qualifications of protected veterans and applicants with disabilities for job vacancies filled either by hiring or promotion, and for all training opportunities offered or available. This review ensures that personnel procedures do not stereotype protected veterans and individuals with disabilities in a manner that limits their access to all jobs for which they are qualified. Applicants and employees with disabilities have equal access to personnel processes, including those implemented through information and communication technologies. The Company periodically reviews its processes, and makes any necessary modifications to ensure its affirmative action obligations are carried

The following are some procedures that may be used to facilitate the review and evaluative process:

5.1. With respect to qualified applicants or employees known to be disabled, a disabled veteran or other protected veteran, the Company will consider the job qualifications of the applicant or employee, and with respect to veterans will rely only on the portion of the individual's military record, including discharge papers, which are relevant to the requirements of the employment opportunity.

5.2. Wages, working conditions and employee benefits shall be established and administered and employment actions of every type, including, but not limited to, hiring, upgrading, promotion, transfer, demotion, layoff and termination, will be taken without regard to disabled ar protected veteran status. The following procedures will be followed:

a. Periodic inspections of project sites will be conducted to ensure that working conditions and employee facilities do not allow discriminatory treatment of project site personnel.

b. Except for job classifications covered by a collective bargaining agreement, the spread of wages paid within each classification will be periodically evaluated to identify potential indicators of salary disparities.

6. PHYSICAL AND MENTAL QUALIFICATIONS

a. Physical and mental job qualification requirements and employment standards are examined and reviewed in December each year to ensure that they are consistently applied, and reflect actual job duties and responsibilities; and that, to the extent the requirements and standards tend to screen out a qualified disabled or protected veteran, they are job related and consistent with business necessity and the safe performance of the job.

b. Whenever the Company applies physical or mental qualifications standards in the selection of applicants or employees for employment or other change in employment status such as promotion, demotion, or training, to the extent that qualification standards tend to screen out a qualified disabled or protected veteran , the standards will be related to the specific job or jobs for which the individual is being considered and consistent with business necessity and the safe performance of the job.

7. REASONABLE ACCOMMODATION

The Company makes reasonable accommodations to the physical and mental limitations of employees or applicants to the extent that such accommodations do not impose an undue hardship on the conduct of its business. When an employee with a known disability or known to be a disabled veteran has significant difficulty performing his or her job, and it is reasonable to conclude that the performance problem may be related to the known disability, the employee is confidentially notified of the performance problem, and asked if the problem is related to the disability. If the employee indicates that the performance problem is related to his or her disability, the employee is asked if reasonable accommodation is needed.

8. TRAINING AND PROMOTION

The Company will assist in locating, qualifying and increasing the skills of qualified disabled or protected veteran employees and applicants for employment.

a. Consistent with Company's manpower requirements, and as permitted by federal and state regulations, the Company will make full use of training programs, i.e. pre-apprenticeship, apprenticeship and/or on-the-job training, including hometown plans, e.g. the Indiana Plan, for the geographical area of contract performance.

b. The Company will advise employees and applicants for employment of available training programs and entrance requirements for each to the extent that Company is aware of such training programs and entrance requirements.

The Company will periodically review the training and promotion potential of protected veterans and individuals with disabilities employees and will encourage eligible employees to apply for such training and promotion.

9. HARASSMENT

The Company develops and maintains procedures to ensure that its employees are not harassed because of their status as an individual with a disability or a protected veteran.

10. AUDIT AND REPORTING SYSTEM

The Company has designed, implemented, and documented an audit and reporting system that:

a. Measures the effectiveness of the affirmative action program.

b. Indicates any need for remedial action.

c. Determines the degree to which the objectives have been attained.

d. Determines whether protected veterans and individuals with known disabilities have the opportunity to participate in all company sponsored educational, training, recreational, and social activities.

e. Measures compliance with the affirmative action program's specific obligations.

Where the affirmative action program is found to be deficient, corrective action is taken to bring the program into compliance.

11. TRAINING

All personnel involved in recruitment, screening, selection, promotion, discipline, and related processes are trained to ensure the implementation of the Company's commitments made in this Affirmative Action Program.

12. DATA COLLECTION ANALYSTS

The Company documents the following computations or comparisons pertaining to applicants and hires on an annual basis, and maintains them for a period of three (3) years:

a. The number of applicants who self-identified as individuals with disabilities pursuant to § 60-741.42(a), or who are otherwise known to be individuals with disabilities;

b. The number of applicants who self-identified as protected veterans pursuant to § 60-300.42(a), or who are otherwise known as protected veterans;

c. The total number of job openings and total number of jobs filled;

d. The total number of applicants for all jobs;

e. The number of protected veterans and individuals with disabilities applicants hired; and

f. The total number of applicants hired.

13. COMPLAINT PROCEDURES

If an employee feels he or she has been discriminated against, harassed, intimidated, or coerced on the basis of their status as an individual with a disability. protected veteran, or any other recognized status under the law, he or she may bring a complaint to his or her immediate supervisor. If the complaint involves the supervisor, the employee has a right to discuss the matter with the department manager or the EEO Officer. The EEO Officer will immediately investigate and take all appropriate corrective actions. Complaints will be treated confidentially as much as possible. Retaliation for use of the complaint procedure will not be tolerated and any retaliation should be reported. This complaint process does not preclude the employee from contacting any local, state or federal civil rights agencies.
The Company will not retaliate against an employee or applicant for filing a complaint

with the appropriate governmental office.

BUILDING WHAT MATTERS.

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