ATTENTION: This is not an order. Read all instructions, terms and conditions carefully.

IMPORTANT: BID AND ADDENDUM MUST BE RECEIVED BY 5-9-19 @ 3:00 P.M. LEXINGTON, KY TIME

Bidder must acknowledge receipt of this and any addendum as stated in the Invitation for Bids.

Please see the enclosed clarifications for this project.

OFFICIAL APPROVAL
UNIVERSITY OF KENTUCKY

Jim Sutton
Contracting Officer / (859) 257-5406.

SIGNATURE

________________________________________
Typed or Printed Name
UK Interventional Services
ADDENDUM No. 3
CCK-2401-19
5/2/2019

**Item No. 1**  Re: Form of Proposal TC-168, Mechanical and Plumbing, Attachment B, Use attached revised scope of work.

**Item No. 2**  Re: Form of Proposal TC-169, Electrical and Technology, Attachment B, Scope Item 31 to read:

31) Include **100 hours of Journeyman overtime work hours** to be used for schedule maintenance by the Construction Manager. The trade contractor must include all travel, per diem, fringes, OH&P, etc. costs (a fully loaded rate) on these hours and they are only to be used by the trade contractor at the direction and approval of the Construction Manager. These hours will be logged and usage tracked. Usage of these hours can occur during the week or on Saturdays – no Sundays are intended.

**Item No. 3**  Re: Form of Proposal TC-169, Electrical and Technology, Attachment B, Add Scope Scope Items 79 and 80 to read:

79) This contractor is to provide all required labor and materials for installation of conduits and wires, both internal and external, for the complete operation of the stick built Air Handler Unit.
   a. This contractor is responsible to receive, install, and coordinate start up for all VFDs associated with the Air Handler
   b. This contractor is responsible for all connection lugs for AHU and VFDs
   c. This contractor shall provide conduit and wire from each individual motor to a single J-Box for each VFD
   d. This contractor shall provide two (2) 20-amp circuits for service receptacles and one (1) 20-amp circuit for internal lighting.
   e. This contractor shall provide and install eight (8) light fixtures on the inside of the Air Handler.
   f. This contractor shall provide all conduit, wire, disconnects, and switches for all service outlets and lighting.

80) This contractor is to provide all labor and materials for installation of conduits and wires for all power wiring required for operation of the 15th floor exhaust fans.

**Item No. 4**  Re: Form of Proposal TC-160, General Trades, Attachment B, Use attached revised scope of work.

**Item No. 5**  See attached SK-104 IR Conduit Sleeves at Deck. These are to be used for reference for maintaining fair rating at deck after core drilling for TC-169 Electrical and Technology.

**Item No. 6**  GBBN Architects Addendum No. 03 – include all work scope items, clarifications, etc. as detailed consistent with your trade contract work scope document.

**Item No. 7**  See attached list of written questions and answers.
UNIVERSITY OF KENTUCKY
CAPITAL CONSTRUCTION PROCUREMENT SECTION
FORM OF PROPOSAL TC-160 GENERAL TRADES

Project No. 2402.13  Project Title: UK INTERVENTATIONAL SERVICES
Purchasing Officer: Jim Sutton

NOTE: The following Form of Proposal shall be followed exactly in submitting a proposal for this work. If this copy is lost, an additional copy will be furnished upon written request to the authority issuing Contract Documents.

This Proposal is submitted by: ____________________________
(NAME AND ADDRESS OF BIDDER)

Date: ____________________________

Telephone: ____________________________

TO: BID CLERK
UNIVERSITY OF KENTUCKY
CAPITAL CONSTRUCTION
PROCUREMENT
RM. 322 SERVICE BUILDING
LEXINGTON, KY. 40506-0005

INVITATION TO BID: CCK-2401-19
BID OPENING DATE: May 9th, 2019 (ADD #1)
TIME: 3:00 P.M. E.D.T.

The Bidder, in compliance with your Invitation for Bids for the above referenced Project, having carefully examined the site of the Work, the Drawings and complete Contract Documents as defined in Article I of the General Conditions, as well as the Specifications affecting the work as prepared by the Consultant, hereby proposes to furnish all labor, materials, supplies and services required to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the price stated below without qualification.

The Bidder understands that successful bidder will enter into a contract with Turner Construction Company utilizing Turner’s Subcontract Agreement Form 36 without modification.

The Bidder hereby acknowledges receipt of the following Addenda:
ADDENDUM NO. ____________________________ DATED ____________________________
ADDENDUM NO. ____________________________ DATED ____________________________
ADDENDUM NO. ____________________________ DATED ____________________________
ADDENDUM NO. ____________________________ DATED ____________________________

(Here insert the number and date of any Addenda issued and received. If none has been issued and received, the word NONE should be inserted.)

NOTE: IN ADDITION TO THE SPECIFIC TRADE FORM OF PROPOSAL EACH SUBCONTRACTOR MUST ALSO SUBMIT FORMS FOUND IN THE SUPPLEMENTAL FORM OF PROPOSAL SECTION.
AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST

I hereby certify:

1. That I am the Bidder (if the Bidder is an individual), a partner in the Bidder (if the Bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the Bidder is a corporation);

2. That the submitted Bid or Bids covering Capital Construction Procurement Section Invitation No. CCK-2401-19 have been arrived at by the Bidder independently and have been submitted without collusion with, and without any agreement, understanding or planned common course of action with, any other contractor, vendor of materials, supplies, equipment or services described in the Invitation to Bid, designed to limit independent bidding or competition; as prohibited by provision KRS 45A.325;

3. That the contents of the Bid or Bids have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished with the Bid or Bids and will not be communicated to any such person prior to the official opening of the Bid or Bids;

4. That the Bidder is legally entitled to enter into the contracts with the University of Kentucky and Turner Construction Company and is not in violation of any prohibited conflict of interest, including those prohibited by the provisions of KRS 164.390, and 45A.330 to 45A.340 and 45A.455;

5. This offer is good for 60 calendar days from the date this Bid is opened. In submitting the above, it is expressly agreed that upon proper acceptance by the Capital Construction Procurement Section of any or all items Bid above, a contract shall thereby be created with respect to the items accepted;

6. That I have fully informed myself regarding and affirm the accuracy of all statements made in this Form of Proposal including Bid Amount.

7. Unless otherwise exempted by KRS 45.590, the Bidder intends to comply in full with all requirements of the Kentucky Civil Rights Act and to submit data required by the Kentucky Equal Employment Act upon being designated the successful contractor.

8. That the bidding contractor and all subcontractors to be employed do not and will not maintain any facilities they provide for employees in a segregated manner and they are in full compliance with provisions of 41 CFR 60-1.8 that prohibits the maintaining of segregated facilities.

9. In accordance with KRS45A.110(2), the undersigned hereby swears under penalty of perjury that he/she has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky and that the award of a contract to the bidder will not violate any provision of the campaign finance laws of the Commonwealth of Kentucky.

READ CAREFULLY - SIGN IN SPACE BELOW - FAILURE TO SIGN INVALIDATES BID

SIGNATURE______________________________TITLE______________________________

PRINT NAME____________________________FIRM______________________________

ADDRESS____________________________AREA CODE & PHONE________________

________________________FAX________________________

CITY________________STATE________________ZIP CODE________________

DATE________________EMAIL______________________________
LUMP SUM PROPOSAL

The Bidder agrees to furnish all labor, materials, supplies and services required to complete the Work, for the above referenced Project, for the Capital Construction Procurement Section, University of Kentucky, as described in the Specifications and Contract Documents and shown on the Drawings enumerated below and as modified by the Addenda listed above.

TC-160 GENERAL TRADES

FOR THE LUMP SUM OF ____________________________

(USE WORDS)

______________________________ DOLLARS AND ____________________________ CENTS.

(USE WORDS) (USE WORDS)

($__________________________) BIDDER MUST TURN IN BID BREAKOUT SHEET WITH THIS FORM OF PROPOSAL

(USE FIGURES)

ALTERNATES – NONE

Current Experience Modification Rating ________________

OSHA Incident Rates: Recordable _____________ Date of Proposal ________________

THE FOLLOWING ITEMS ARE HEREWITH ENCLOSED AS REQUIRED BY KRS 45A.185:

1. Bid Bond or Certified Check in an amount not less than five percent (5%) of total Bid.
2. Authentication of Bid and Statement of Non-Collusion and Non-Conflict of Interest.
3. VENDOR NUMBER: It is imperative that you furnish your Federal Employer Identification Number in the space provided below. Failure to do so may delay the processing of purchase orders issued to your firm.

________________________

(Nine Digit Number)

4. Form of Proposal Supplemental Information
5. TC-____ Bid Breakout sheet (from Attachment ‘B’)

SUPERINTENDENT
In accordance with Article 17 of the General Conditions a full-time superintendent will be required on this project. Below, please list the superintendent your firm will employ on this project. The successful Bidder will be required to furnish a resume of the superintendent’s qualifications and or past projects.

List the Superintendent’s Name ____________________________

Scope of Work Page 3 of 20 Original date 04/2019
UNIT PRICES

NOTE: Unit Prices shall include the furnishing of all labor, materials, supplies and services and shall include all items of cost, overhead and profit for the Contractor and any subcontractor involved, and shall be used uniformly without modifications for either additions or deductions. The Unit Prices as established shall be used to determine the equitable adjustment of the Contract Price in connection with changes, deletions or extra work performed under the Contract and the "Rules of Measurement" set forth in the General Conditions shall govern.

All Bidders will be required to complete and submit the following information with the bid. The information requested in this submittal is required to assist the University in determining contractor responsibility to complete the project being bid.

KY FAIRNESS ACT: UNIT PRICES SHALL BE SUBJECT TO REVIEW / ADJUSTMENT AT TIME OF BID REVIEW / AWARD BASED ON “NET COST” CONCEPT. PROVIDE DETAIL BREAKDOWN 24 HOURS AFTER BID.

<table>
<thead>
<tr>
<th>HOURLY RATES:</th>
<th>UNIT PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification</td>
<td>Base rate</td>
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<tr>
<td></td>
<td>(Ins/taxes/other)</td>
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</table>
### BID BREAKOUT

Fill in the following breakdown of costs included in your base bid. Each item shall include labor, material & equipment. These will not be considered unit prices nor will the numbers listed here limit obligations required in the bid documents. It will be used only to aid in verifying completeness of the bids.

<table>
<thead>
<tr>
<th>DESCRIPTION OF WORK</th>
<th>COST INCLUDED IN BID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilizations (Permits &amp; Fees, Submittals, Engineering)</td>
<td>$____________________</td>
</tr>
<tr>
<td>Division 2 - Selective Demolition</td>
<td>$____________________</td>
</tr>
<tr>
<td>Division 3 &amp; 4 –Concrete and Masonry (note: MEP concrete EQ. pads by MEP’s)</td>
<td>$____________________</td>
</tr>
<tr>
<td>Division 5, 6 &amp; 7 (Metal Fabrications, Rough Carpentry, Sealants)</td>
<td>$____________________</td>
</tr>
<tr>
<td>Division 8 Hollow Metal, Wood Doors &amp; Hardware (Install) &amp; Glazing (F &amp; I)</td>
<td>$____________________</td>
</tr>
<tr>
<td>ICU / CCU Entrances</td>
<td>$____________________</td>
</tr>
<tr>
<td>Automatic Door Operators</td>
<td>$____________________</td>
</tr>
<tr>
<td>Division 10 Specialties</td>
<td>$____________________</td>
</tr>
<tr>
<td>Division 11 Owner Furnished Medical Equipment</td>
<td>$____________________</td>
</tr>
<tr>
<td>Division 12 Modular Metal Casework</td>
<td>$____________________</td>
</tr>
<tr>
<td>Division 05 Metals</td>
<td>$____________________</td>
</tr>
<tr>
<td>Strut cost per Procedure Room = $____________________</td>
<td></td>
</tr>
<tr>
<td>Healthcare Technology Boom Supports</td>
<td>$____________________</td>
</tr>
<tr>
<td>Infection Control/Yard Boss/General Cleaning</td>
<td>2800 hours x __________ = $____________________</td>
</tr>
<tr>
<td>Labor Rate</td>
<td></td>
</tr>
<tr>
<td>Water Spill Kit Containment Allowance</td>
<td>$ 2,500 (ADD #2)</td>
</tr>
<tr>
<td>Division 14 Conveying Equipment Allowance</td>
<td>$ 104,000 (ADD #2)</td>
</tr>
<tr>
<td>Infection Control Allowance</td>
<td>$ 15,000</td>
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<tr>
<td>Hard IC Barrier Allowance</td>
<td>$ 40,000</td>
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<tr>
<td>3rd Floor AHU Coordination Allowance – Steel, Hand Rails, Misc. Iron</td>
<td>$ 10,000</td>
</tr>
<tr>
<td>Covers for Medical Equipment Allowance</td>
<td>$ 20,000 (ADD #3)</td>
</tr>
<tr>
<td>Miyabi Garage Door Allowance</td>
<td>$ 10,000</td>
</tr>
<tr>
<td>General Work Requirements</td>
<td>$____________________</td>
</tr>
<tr>
<td>Remaining work not listed above, Overhead &amp; Profit (not to exceed 10% of proposal)</td>
<td>$____________________</td>
</tr>
</tbody>
</table>

**TOTAL BID AMOUNT (SHOULD MATCH PROPOSAL)**

$____________________

Cost of Performance and Payment Bond

$____________________

**DO NOT INCLUDE THIS COST IN YOUR BID**
The work of this Agreement shall include, but not be limited to, all labor, materials, apparatus, hoisting, rigging, tools, equipment, plant, supplies, accessories, samples, submittals, shop drawings, certifications, engineering, layout, transportation, storage, supervision, temporary construction, special services, contributions, insurance, taxes (unless specifically excluded by the Contract Documents), compliance with all governing agencies (city, county, state, federal and others as may be required), permits, fees, all other services and facilities and other items necessary for the performance of the **General Trades Work** as shown, detailed and/or implied in the contract documents outlined in the General Scope of Work.

The Scope of Work Document is being provided for your use as a general guideline. Please note, this Document is not all-inclusive. It is this Subcontractor's responsibility to provide a complete bid, including all work for this trade indicated on ALL of the contract documents (include plans, specifications, Bid Manual, etc). It is this Subcontractor's responsibility for the entire scope of this Bid Package and coordination between all trades.

**E. WORK INCLUDED - SCOPE-SPECIFIC ITEMS**

1) Trade Specifications Specifically Included, but not limited to the following:

   a) **DIVISION 00 - PROCUREMENT & CONTRACTING REQUIREMENTS (ALL SECTIONS)**

   b) **DIVISION 01 - GENERAL REQUIREMENTS (ALL SECTIONS)**

   c) **DIVISION 2 - EXISTING CONDITIONS** (Partial) as required for this trade and as defined below

      SECTION 02 4100 - DEMOLITION

      SECTION 02 4110 - SELECTIVE DEMOLITION

   d) **DIVISION 3 - CONCRETE** (Complete)

      SECTION 03 3000 - CAST-IN-PLACE CONCRETE

   e) **DIVISION 5 – METALS** (Complete)

      SECTION 05 1200 - STRUCTURAL STEEL

      SECTION 05 5000 - METAL FABRICATIONS

      SECTION 05 5050 - MEDICAL EQUIPMENT SUPPORT SYSTEMS

   f) **DIVISION 6 - WOODS, PLASTICS & COMPOSITES** (Partial)

      SECTION 06 1050 - MISCELLANEOUS ROUGH CARPENTRY

   g) **DIVISION 7 - THERMAL AND MOISTURE PROTECTION** (Partial) as...

      SECTION 07 2100 - INSULATION

      SECTION 07 8100 - APPLIED FIREPROOFING

      SECTION 07 8400 - FIRESTOPPING

      SECTION 07 9200 - JOINT SEALANTS

   h) **DIVISION 8 – OPENINGS** (Partial)

      SECTION 08 1100 - HOLLOW METAL DOORS & FRAMES

      SECTION 08 1400 - WOOD DOORS

      SECTION 08 1423 - VYNAL CLAD WOOD DOORS (ADD #2)

      SECTION 08 1713 - INTEGRATED METAL DOOR OPENINGS ASSEMBLIES (ADD #2)

      SECTION 08 4100 - ENTRANCES AND STOREFRONTS (ADD #2)

      SECTION 08 4123 - FIRE-RATED GLASS AND FRAMING SYSTEMS (ADD #2)

      SECTION 08 4243 - INTESIVE CARE UNIT – CRITICAL CARE UNIT ENTRANCES
SECTION 08 7100  DOOR HARDWARE
SECTION 08 7100.1 DOOR HARDWARE SETS  (ADD #2)
SECTION 08 7100.2 ELECTRIFIED HARDWARE DEVICE OPERATIONS SCHEDULE (ADD #2)
SECTION 08 7113 AUTOMATIC DOOR OPERATORS
SECTION 08 8000 GLAZING
SECTION 08 8836 SWITCHABLE PRIVACY GLASS  (ADD #2)

DIVISION 10 – SPECIALTIES (Complete)
SECTION 10 1100 - VISUAL DISPLAY SURFACES
SECTION 10 1400 — SIGNAGE (By others)
SECTION 10 2113 - TOILET COMPARTMENTS
SECTION 10 2120 - CUBICLE CURTAIN TRACK SYSTEMS
SECTION 10 2600 - WALL PROTECTION (Partial)
SECTION 10 2813 - TOILET ROOM ACCESSORIES
SECTION 10 4400 - FIRE PROTECTION SPECIALTIES
SECTION 10 5113 - METAL LOCKERS
SECTION 10 5116 - WOOD LOCKERS

DIVISION 11 – EQUIPMENT (Partial)
SECTION 11 7000 - MEDICAL EQUIPMENT
VENDOR SUPPLIED DRAWINGS, DESCRIPTIONS AND SPECS.
(REFER TO VOLUME 4 – EQUIPMENT)

DIVISION 12 – FURNISHINGS (Complete)
SECTION 12 2400 - ROLLER WINDOW SHADES
SECTION 12 3570 - MODULAR METAL CASEWORK

DIVISION 13 - SPECIAL CONSTRUCTION (Partial)
SECTION 13 4900 - RADIATION PROTECTION
SECTION 13 4900.2 - RADIATION SHIELDING PLAN-PEDS-ENDO

DIVISION 14 – CONVEYING EQUIPMENT (Complete)
SECTION 14 2123 – MACHINE ROOM-LESS ELEVATORS
SECTION 14 2123.1 – EXISTING ENTRANCES SHOP DRAWINGS
SECTION 14 2123.2 – EXISTING SIGNALS AND FIXTURE SHOP DRAWINGS

b)  Bidder shall also include referenced specification sections listed in above specification sections as necessary to furnish complete work of this trade

c)  Subcontractor includes all work indicated in specification COMPLETE, unless this scope of work specifically and clearly excludes a portion of a specification.

2)  Contract Price is LUMP SUM.  There shall be NO additional labor and material escalations allowed

3)  Examination of Site – Subcontractor warrants that they have sufficiently reviewed the project site to inform themselves of all items about existing site that are relevant to their work, and the cost of their work.

4)  Include protection all adjacent structures during performance of this work.  Plan for protection of adjacent structures must be part of the overall plan submitted for approval prior to start of work.

5)  SITE LOGISTICS:  Refer to the Site Logistics plans included in the Contract Documents.  Delivery trucks are to be scheduled with Turner at least one (1) week in advance.
6) Subcontractor change order requests shall be provided with sufficient detail (as acceptable to Turner) to allow for satisfactory review. Subcontractor shall be allowed a maximum markup for overhead and profit per the markup provisions included in the Subcontract Agreement, or as clarified in Contract Documents above.

7) TC-160 Subcontractor understands that time is of the essence in the prosecution of Work under this agreement.

8) Verify layout provided by others. Where this subcontractor is performing work using layout provided by others, this subcontractor shall perform sufficient verification of that layout to reasonably ascertain the validity of that layout. Any deficiencies (or suspected deficiencies found) shall be reported to Turner immediately to allow corrections as needed before start of work by this subcontractor.

9) All Subcontractors must be licensed as required by local, State, or Federal jurisdiction required for work of this trade in this project location.

10) This contractor will comply with Turner’s corporate safety policy and comply with Site Specific Safety Plan that will include but is not limited to 100% tie-off above 6 feet, 100% Safety Glasses, High Visibility Vests or High Vis style T-Shirts with reflective strips, 100% glove policy, Ladders Last Policy and Nothing Hits the Ground. If you are unfamiliar with any of these policies please ask to see the policy prior to submitting your bid. Failure to be familiar with these policies will not exclude you from complying with them.

11) Refer to Project General Work Requirements in volume one of the project manual. Any costs for work scope items listed in this section shall be included in your lump sum bid. Some work items are listed for specific trade contractors and they shall include those costs in their respective total lump sum bid price.

12) Condoc keynote legend will dictate your scope of work unless noted otherwise.

13) This Contractor shall coordinate/incorporate the MATERIAL IDENTIFICATION CODES (AS RELATED TO THIS SCOPE OF WORK) into their scope of work as shown on the Contract Documents and SECTION 01 6600.

14) This contractor shall provide DEMOLITION & SELECTIVE DEMOLITION (Partial as required for this trade) as shown on the Contract Documents and in accordance with Sections 024100 & 02 4110.

   a) This contractor is NOT responsible for demolition of MEP items. Demo of MEP Items will be done by appropriate Trade Contractor(s).

   b) Remove, repair, and later reinstall… D7

   c) Include demo of existing flooring in existing corridor between existing shells A01260 and A01300

   d) Remove existing door and frame… D3

15) This contractor shall provide CAST-IN-PLACE CONCRETE (COMPLETE) as shown on the Contract Documents and in accordance with Section 03 3000.

   a) Exclude MEP concrete equipment pads. These are by the MEP contractors.

   b) Include saw cutting, removal, and grinding of twenty (20) 10’ long x 1’ wide x 2” deep trenches in the existing concrete slab for use by the TC-169 Electrical and Technology contractor. (ADD #3)

16) This contractor shall provide METAL FABRICATIONS (COMPLETE) as shown on the Contract Documents and in accordance with Section 05 5000.

   a) Refer to documents – Specifically include framing on S001 and S101

      a. Coordinate structure for Equipment Garage with TC-162 Doors and Hardware (2/S001 and 3/S001)

   b) Assume all work to reinforce below slab to be done on 3rd shift/premium time hours.

   c) Include the appropriate fireproofing

   d) Include Division 11 Medical Equipment and Project Manual Volume 4; reference column “Qty F/I” for responsibility. Include ALL associated work for O/C and C/C. Exclude Guldmann overhead support and equipment installation.
17) This contractor shall provide **MEDICAL EQUIPMENT SUPPORT SYSTEMS** (COMPLETE) as shown on the Contract Documents and in accordance with Section 05 5050.
   a) This work is intended to be design-build. See specification for details
   b) Review vendor drawings for anticipated loads of equipment needing support
   c) The intent of the drawings is for the strut support system to be installed in the Phase 1 rooms only. The strut system for the phase 2 rooms will be installed in a later project. (ADD #3)

18) This contractor shall provide receipt, transport, staging, and installation of all **HEALTHCARE TECHNOLOGY (HT) BOOM SUPPORTS.** See HT Drawings Title Page, LO.MYABI, LO.PRO 1, LO.PRO 2, LO.PRO 3, LO.PRO 4, LO.PRO 5, LO.PRO 6, LO.PRO 7, LO.PRO 8, LO.PRO 9, LO.PRO 12, LO.PRO 13, S.1. Provide all equipment and material to anchor and assemble the supports. Include a minimum of 3 ea. ½” x 4 ½” Anchors for each A.600 Pan Joist Hanger. Include all layout and coordination of assembly with Structural Ceilings, HT and Berchtold/Stryker for the final installation location and heights. Include any shims as needed for adjustments based on field conditions.
   a) The intent of the drawings is for the boom supports to be installed in the Phase 1 rooms only. The boom supports for the phase 2 rooms will be installed in a later project. (ADD #3)

19) This contractor shall provide **ROUGH CARPENTRY** (COMPLETE) as shown on the Contract Documents and in accordance with Section 06 1050 which includes but not limited to:
   a) All blocking required (where explicitly shown on the Contract Documents or not) for “your” divisions of work and installation of items in this scope of work.
   b) All blocking for all owner equipment listed on the owner Equipment Schedule, whether shown on the contract documents or not.
   c) This includes base of wall blocking at bottom of all wall partitions per “typical base detail”. This blocking to be installed within the stud cavity so it is “flush” with stud face.
   d) Install 16 ga. metal studs and full-height FRT plywood blocking behind all wall-hung ice machines.

20) This contractor shall provide all **INSULATION** (AS RELATED TO THIS SCOPE OF WORK) as shown on contract documents and as specified in Section 07 2100 Insulation.

21) This contractor shall provide **APPLIED FIREPROOFING** (Complete) as shown on the Contract Documents and in accordance with Section 07 8100.

22) This contractor shall provide **FIRESTOPPING** (AS RELATED TO THIS SCOPE OF WORK) as shown on the Contract Documents and in accordance with Section 07 8400.

23) This contractor shall provide **JOINT SEALANTS** (AS RELATED TO THIS SCOPE OF WORK) as shown on the Contract Documents and in accordance with Section 07 9200.

24) This contractor shall **Install WOOD DOORS and VINYL CLAD WOOD DOORS** (Complete) as shown on the Contract Documents and in accordance with specification Section 08 1400 Wood Doors & Section 08 1423 Vinyl Clad Wood Doors. Doors and Hardware to be provided by TC-162. (ADD #2)
   a. This includes the sliding doors for the equipment garage A01522B. Coordinate installation with all trades including TC-162, TC-163 and Unistrut Installer for installation of these doors. Provide all lifting equipment, safety equipment, transport equipment, and protection needed for receipt, transport and installation of the doors. Provide a complete installation plan for review and approval prior to installation.
   b. Provide field coordination and verification of all HM Frame Installations by TC-163 contractor. Provide field review and checklist of all installed door frames for plumb and straightness at completion of drywall installation for any corrections or repairs required prior to door install. (ADD #2)
   c. Include shimming of all doors to maintain required gap per hospital standards. Shims to be included (shipped loose) by TC-162 Doors and Hardware supplier.
   d. Include sealants when setting thresholds for air / water tight conditions.
e. Contractor shall submit a written safety plan on the installation of lead lined doors. (ADD #2)

f. Maintain all Door Protection provided with Doors until directed to remove by Turner Superintendent. Remove and dispose of all door protection into site dumpster as directed. (ADD #2)

g. Receive and inventory, shake-out and hang, ALL hollow metal and wood doors; coordinate inventory with Construction Manager

h. Discard all packaging, skids, etc. to site dumpster unless instructed otherwise by hardware/door supplier.

i. Remove and reinstall various pieces of hardware to allow for Painting. MEP contractors to make final wiring connections. TC-160 contractor to include installation of “loose” hardware into the frame and not include as “pre-installed” such as devices mounted on/in the frame (i.e. shear locks, door contact) or after the door is mounted (i.e. closer). Coordinate installation with TC-169 Electrical and Integrated Technology Contractors.

25) This contractor shall provide INTEGRATED METAL DOOR OPENINGS ASSEMBLIES (COMPLETE) as shown on the Contract Documents and in accordance with Section 08 1713. (ADD #2)

26) This contractor shall provide ENTRANCES AND STOREFRONTS (COMPLETE) as shown on the Contract Documents and in accordance with Section 08 4100. (ADD #2)

27) This contractor shall provide FIRE-RATED GLASS AND FRAMING SYSTEMS (COMPLETE) as shown on the Contract Documents and in accordance with Section 08 4123. (ADD #2)

28) This contractor shall provide ICU CCU ENTRANCES (COMPLETE) as shown on the Contract Documents and in accordance with Section 08 4243.

29) This contractor shall provide AUTOMATIC DOOR OPERATORS (COMPLETE) as shown on the Contract Documents and in accordance with Section 08 7113.

30) This contractor shall provide GLAZING (COMPLETE) as shown on the Contract Documents and in accordance with Section 08 8000.

   a. Doors indicated to receive insulating glass with integral blinds must have factory installed units. This contractor TC-160 must purchase (Unicel) blinds (with custom color finish) and ship to the door Manufacturer for TC-162 Doors and Hardware, for factory installation. These cannot be field installed.

   b. This contractor shall include all window film as indicated on the project documents. Coordinate sizing and timing with new and/or existing conditions. Example: 08-8000-A109

   c. Contractor shall submit a written safety plan on the installation of lead lined glass.

   d. This includes all glass doors

31) This contractor shall provide VISUAL DISPLAY SURFACES as shown on the Contract Documents and in accordance with Section 10 1100.

32) This contractor shall provide TOILET COMPARTMENTS as shown on the Contract Documents and in accordance with Section 10 2113

33) This contractor shall provide CUBICLE CURTAIN TRACK SYSTEMS (COMPLETE) as shown on the Contract Documents and in accordance with Section 10 2123.

   a) Provide all blocking required by this specification to install cubicle curtain tracks.

34) This contractor shall provide WALL PROTECTION (COMPLETE) as shown on the Contract Documents and in accordance with Sections 10 2600. This contractor shall include caulking the edges of all metal corner guards and fiberglass reinforced plastics with clear silicone caulk.

35) This contractor shall provide TOILET ROOM ACCESSORIES (COMPLETE) as shown on the Contract Documents and in accordance with Section 10 2813 and the Toilet Room Accessories Schedule.
36) This contractor shall provide FIRE PROTECTION SPECIALTIES (COMPLETE) as shown on the Contract Documents and in accordance with Section 10 4400.
   a. Contractor shall review drawings for fire ratings associated with fire extinguisher cabinets

37) This contractor shall provide METAL LOCKERS (COMPLETE) as shown on the Contract Documents and in accordance with Sections 10 5113.

38) This contractor shall provide WOOD LOCKERS (COMPLETE) as shown on the Contract Documents and in accordance with Sections 10 5116

39) This contractor shall receive, shake-out, store at a location within Pavilion A, transport to place of installation and install MEDICAL EQUIPMENT as shown on the Contract Documents, Vendor Drawings and in accordance with Section 11 7000, Section 12 3570 and Volume 4. All items noted as O/C and C/C shall be Furnish and/or installed by this contractor. This contractor to provide all blocking, fasteners, supports, etc. to install this work scope.
   a. Witness delivery of equipment to jobsite. Inspect all equipment prior to unloading and identify in writing and damage observed. Notify Turner immediately upon discovery of any and all manufacturing flaws, missing components or damaged parts; include documentation and pictures. Missing equipment shall be noted on the packing slip at time of delivery.
   b. Include Division 11 Medical Equipment and Project Manual Volume 4; reference column “Qty F/I” for responsibility. Include ALL associated work for O/C and C/C.
   c. TC-160 shall “install” ALL (Bed Locator, Monitor Brackets, Sharps Disposal, Soap Dispenser, Hand Sanitizer, White Boards, Paper Towel Dispenser, Ice Machine, Bins & Shelving, Glove Dispenser, Patient Boards, TV Bracket, Otoscope Dispenser, Rail system Headwall, Over bed Light ceiling Mount, Otoscope mount, TV’s, TP Dispenser).
   d. Guldmann overhead support and equipment is O/V installed.
   e. Installation of headwalls is by this scope.

40) This contractor shall receive, shake-out, store at a location within Pavilion A, MODULAR METAL CASEWORK as shown on the Contract Documents, Vendor Drawings and in accordance with Section 12 3570.

41) This contractor shall provide ROLLER WINDOW SHADES (COMPLETE) as shown on the Contract Documents and in accordance with Section 12 2400.

42) This contractor shall coordinate with TC-163 Drywall and Ceiling Contractor and RADIATION PROTECTION (Partial) as shown on the Contract Documents and in accordance with Section 13 4900 and 134900.2 UK Physicist Report for any doors and hardware installed within this scope.

43) This contractor shall provide CONVEYING EQUIPMENT (Complete) as shown on the Contract Documents and in accordance with Section 14 2123.
   a. Coordinate with TC-163 contractor to assist with demo and/or reconstruction of the new elevator stops. (See A701).
   b. Include adding a stop to the “Big Boy” elevator (EL-47) on the 1st floor of Pavilion A.
   c. Include programing of elevators 35 and 47 to revise the floors accessible.
   d. This work shall be performed by DC elevator. Dale Howard for more information (859) 254-8224. (ADD #2)

44) This contractor shall provide a preconstruction damage survey of the existing building and surrounding construction limits. This shall consist of the existing elevator, exterior elevations, access routes and fit-out space. Survey shall include photographs, narrative and video. Submit survey to Construction Manager for project records.

45) This Contractor shall provide BIM MODELING for all work associated with each of the specification sections noted above for TC-160 Scope of work. This will include at a minimum Doors, Door Frames, Entrances, Glazing, Visual Display Surfaces, Curtain Tracks, Toilet Partitions, Wall Protection, Toilet Accessories, Fire Extinguishers, Metal Lockers, Wood Lockers, Medical Equipment, Modular Casework, Roller Shades, and Radiation Protection. In
addition to BIM coordination, this contractor will provide layout and coordination of all TC-160 installation scope either on the floor or in wall framing for the purpose of coordination of all installations with wall trades.

46) This contractor shall furnish, install, maintain for duration, and remove all (including glue residue) TEMPORARY PROTECTION as described below

a. Elevator protection on floor/door/frames and cab for construction use of Pavilion A elevators 35 and 47. Protection on frame includes threshold, jambs and head every stop for this project. Protection of elevator cab is walls and ceiling. Includes installation and maintenance of all protection for locations as needed to support project.

b. Masonite door protection for all current existing doors to remain after construction is complete. Protect doors upon mobilizing to site.
   i. This includes IDF and EIDF Closets, Electrical rooms, Stair 04, Stair 05 (level 1 and 2), Elevator Machine rooms, etc.

c. Cardboard sheet door protection for all NEW wood doors for the entire project. Install heavy cardboard protection upon installation of new doors and so that subsequent work activities have access to need door features.

d. Hollow Metal Door Frame Guards, plastic or cardboard, that snap-fit over the HM frames for protection until final painting and/or Door installation. Install as soon as HM frames have been installed.

e. Plastic protection at all headwalls to protect new headwall installation from dust and dirt. Install plastic so that subsequent work activities have access to needed rough-in portions of headwall.

f. This contractor shall include vacuuming and cleaning of the headwall interiors, and bed pan cabinets prior to punch list activities.

g. This includes plywood protection for the existing fan enclosure on the east side of the hospital (see SK-101 for approximate location). Coordinate installation with CM

h. Roof protection for delivery ramp. This includes, but is not limited to, insulation, plastic, and plywood.
   i. Contractor to review roof in pre-construction damage survey. Contractor shall repair any damages associated with the delivery ramp installation or usage.

i. Building envelope protection at delivery ramp. This includes above the construction dumpster and at the weather tight doors into the project (see SK-101 and 102).

47) This contractor is to include the paving of the “purple and pink” lots as shown on SK-103. This includes all demo, landscaping, earthwork, grading, base material, asphalt and striping for both areas. For the purposes of this proposal include the following costs: Assume 15 Truck Loads (20 tons/truck) for a min. 6” base for leveling, compact for Asphalt, and Assume 2 Lifts of 1 1/2” Asphalt Base for Purple and Pink areas. Assume providing and installing 40 concrete wheel stops.

48) This contractor shall provide EDGE GUARD Infection Control Barriers and Equipment for use during construction and deliver all materials and equipment to the University at the completion of the project. An allowance of $40,000 has been established for purchase of this system materials. A final list of components and purchase list will be developed with Turner Superintendent.

49) This contractor shall provide removal and re-installation of Window Wall System at East side of project area for material and equipment delivery access. See SK-101 and 102 for location. Window system to be removed, packaged as needed for safe keeping and re-installed as directed for completion of the room(s) immediately inside the window.

50) This contractor shall provide monthly professional photographs of the interior construction each month at the direction of the Turner Superintendent utilizing MultiVista. Photos to provide interior progression, and slide shows. Views to include floor, walls, and ceiling progression. Photos are due to Turner before the 25th of the month. Only electronic versions are required and Turner will be the owner of the files and have all rights to the electronic media. No cell phone or tablet photos allowed. Photos shall be of professional service quality. Continue until project final completion.
51) This contractor shall provide once per week cleaning services for the CM/AE/Owner offices located on the 12th floor Pavilion A from 05/13/19 through FINAL project completion. This shall be “professional” in nature providing “hospital like” sanitary conditions. Approximately 9,000 SF of office space + existing men’s and women’s restroom. Cleaning shall consist of sweeping and mopping floors, taking out trash, furnish all required materials and restocking paper supplies in the restrooms, cleaning plumbing fixtures, furnish paper supplies for restrooms, replacing trash can liners, etc.

52) This Contractor shall also provide the same weekly cleaning services above for the 2nd and 12th floor contractor restrooms (see SK-101) from construction mobilization through final completion. Cleaning to include complete weekly cleaning of the following areas including sanitary moping of; Men’s and Women’s restrooms and all fixtures, Kitchen area including Utility Sink and Turner Construction Office area including all chairs and tables.

53) This contractor shall also include once/week floor sweeping and cleaning of the 12th floor “common” area between the office and elevators. Also include bi-weekly sweeping of the two (2) main stairwells from 12th floor down to 11th floor landing. Perform until FINAL completion.

54) This contractor shall provide and maintain a floor scrubbing/sucking machine (sim. to Global® Auto Floor Scrubber 26") for the duration of the project to be used by all contractors, cleanup crew, etc. This machine’s primary function shall be available to cleanup an accidental water leak from construction activity. TC-160 will be responsible for maintaining an adequate charge of this machine’s battery.

55) This contractor shall also include maintenance for the existing “Red Scrubber” for the duration of the project. The scrubber is a Factory Cat Mini HD.

56) This contractor shall provide a budget of $3,000 for Temporary Construction Signs to be procured and installed as directed by Turner Construction.

57) This contractor shall include $8,100 for project reproduction / production of temporary wayfinding, safety signage, and other project communications.

58) This contractor to provide once per month (20-months total) service for Two (2) onsite first aid boxes using Cintas. First Aid boxes are located on the 12th and 2nd floors.

59) This contractor shall include $3,000 for receiving and unloading Pneumatic Tube materials and misc. structural modifications for Pneumatic Tube system supplied.

F. CONSTRUCTION SCHEDULE
Contract Price is based on the project schedule included in Bid Manual and as clarified within these Additional Provisions.

G. WORK EXCLUDED
This Scope of Work shall exclude the following
1) Payment & Performance Bond
2) 08 8836 Switchable Privacy Glass is by TC-162 Doors and Hardware.

H. ALTERNATE PRICES
Alternates shall be complete for providing only the Work with no other credits. All alternate prices are to be priced as stand-alone alternates. Any number of alternates, or no alternates, may be accepted as part of this Work.
Indicate Add/Deduct Price on the BID FORM
I. ALLOWANCES

The following Allowances are to be included in the base bid:

1) Water Spill Kit Containment Allowance $2,500 (ADD #2)
2) Conveying Equipment Allowance $104,000 (ADD #2)
3) Infection Control Allowance as directed by Turner Construction $15,000
4) Hard Infection Control Barriers Allowance $40,000
5) 3rd Floor AHU Coordination Allowance $10,000
6) Covers for Medical Equipment Allowance $20,000 (ADD #3)
7) Miyabi Garage Door Allowance $10,000

The above allowances are to be included in the base bid/Subcontract Price. All overhead and profit related to the Work performed under each Allowance shall be included in the Base Bid/Subcontract Price. Only direct Labor and Material costs authorized in writing by the Construction Manager after approval by the Owner are to be charged to the Allowance. Progress Payments will be made against Allowance expenditures, based on approved monthly invoices & writing Allowance Authorization from the Construction Manager/Owner. Any unused funds remaining in these allowances will be credited back to the Project.

J. UNIT PRICES

The following unit prices are applicable for changes in the Work. The unit prices are for Work complete and in place and include all costs such as material, labor, equipment, freight, taxes, insurance, fringe benefits, and overhead and profit. Also include costs for coordination with other trades work where applicable. In the event the unit prices quoted exceed industry standards or fair market value, the Turner reserves the right to request pricing for changes at cost plus allowable mark-up for overhead and profit or a lump-sum under the terms of the Agreement

1) Labor Rates - Submit detailed labor rates to Turner Project Manager for approval. Detail shall show all fringes, benefits, taxes, insurance, markups, and any other add-ons to allow verification of rate.
   - See “Form of Proposal” (Bid Form) for bid day information. The apparent low bidder will submit detailed breakdown with-in 24 hours after bid day.

2) Equipment Rates – Submit detailed rates for equipment that may be used on project, and may be part of change order pricing.

END OF TECHNICAL SCOPE OF WORK
FORM OF PROPOSAL
SUPPLEMENTAL INFORMATION

THE FOLLOWING INFORMATION PERTAINS TO ALL TRADE CONTRACTORS

NOTE: MUST BE SUBMITTED WITH THE BID SUBMITTAL.
Failure to comply will result in rejection of Bidder’s Proposal.

Contractor Report of Prior Violations of
Chapters 136, 139, 141, 337, 338, 341, and 342

Pursuant to KRS 45A.485, the Contractor shall, prior to the award of a Contract, reveal final determinations of any violations of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, and 342 by the Contractor that have occurred in the previous five (5) year period.

This statute also requires for the duration of the Contract established, the Contractor be in continuous compliance with the provisions of Chapters 136, 139, 141, 337, 338, 341, and 342 that apply to the Contractor’s operations. The Contractor’s failure to reveal a final determination of a violation of KRS Chapters 136, 139, 141, 337, 338, 341, and 342, or failure to comply with any of the above cited statutes for the duration of the Contract shall be grounds for the cancellation of the Contract, and the disqualification from eligibility for future contracts for a period of two (2) years.

The Contractor, by signing and submitting a Bid on this Invitation, agrees as required by KRS 45A.485 to submit final determinations of any violations of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, and 342 that have occurred in the previous five (5) years prior to the award of a Contract and agrees to remain in continuous compliance with the provisions of these statutes during the duration of any contract that may be established. Final determinations of any violations of these statutes, must be provided to the University by the successful Contractor prior to the award of a Contract.

BUSINESS CLASSIFICATION

Please complete this form which is necessary for the University of Kentucky vendor database.
Mark only one classification. Refer to "Definitions" for assistance in determining correct classification.

(01)_____Small Business   (06)_____Woman-Owned Large Business
(02)_____Large Business    (07)_____Disadvantaged Woman-Owned
(03)_____Disadvantaged Small Small Business
    Business
(04)_____Disadvantaged Large
    Business
(05)_____Woman-Owned Small Business
    (08)_____Disadvantaged Woman-Owned
    Large Business
(09)_____Other

Scope of Work Page 15 of 20 Original date 04/2019
DEFINITIONS

(01) SMALL BUSINESS: A business concern that is organized for profit, is independently owned and operated, is not dominant in the field of operations in which it is bidding, and meets the size standards as prescribed in the Code of Federal Regulations, Title 13, Part 121. Consult your local or district Small Business Administration (SBA) office if further clarification is needed.

(02) LARGE BUSINESS: A business concern that exceeds the small business size code standards established by SBA.

(03) DISADVANTAGED SMALL BUSINESS: A business concern (a) that is at least 51 percent owned by one or more socially and economically disadvantaged individuals (as defined below), or a publicly owned business, having at least 51 percent of its stock owned by one or more socially and economically disadvantaged individuals; and (b) has its management and daily business operations controlled by one or more such individuals. Socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans and other minorities or individuals found to be disadvantaged by the SBA.

(04) DISADVANTAGED LARGE BUSINESS: A concern that meets the definition of socially and economically disadvantaged individuals, but which is not a small business by the SBA's size standards.

(05) WOMAN-OWNED SMALL BUSINESS: A small business that is at least 51 percent owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" means actively involved in the day to day management.

(06) WOMAN-OWNED LARGE BUSINESS: A concern that meets the definition of woman owned and operated, but which is not a small business by the SBA's standards.

(07) DISADVANTAGED, WOMAN-OWNED SMALL BUSINESS: A concern that meets the definition of both (03) and (05) above.

(08) DISADVANTAGED, WOMAN OWNED LARGE BUSINESS: A concern that meets the definition of both (04) and (06) above.

(09) OTHER: A concern that does not meet any of the above definitions.

BIDDER'S QUALIFICATIONS

The Commonwealth of Kentucky Model Procurement Code (KRS 45A.080) requires contracts to be awarded, “to the responsive and responsible bidder whose bid offers the best value” to the University of Kentucky. In order to determine if the Bidder has the experience, qualifications, resources and necessary attributes to provide the quality workmanship, materials and management required by the plans and specifications, the Bidder may be required to complete and submit the information requested on the University of Kentucky Contractor Bidder Determination of Responsibility questionnaire. Failure to provide the information requested on the questionnaire or failure to provide any additional submittals or information that may be requested to make this determination may be grounds for a declaration of nonresponsibility with respect to the Bidder. A copy of the Contractor Determination of Responsibility questionnaire is available upon request to all Bidders.
TIME LIMIT FOR EXECUTION OF CONTRACT DOCUMENTS

It is further agreed, that in the event this Proposal is accepted by the Owner and the undersigned shall fail to execute the Contract and furnish satisfactory Payment and Performance Bond within ten (10) consecutive calendar days from the date of notification of the award of the Contract, the Owner may at his option, determine that the undersigned has abandoned the Contract and thereupon, the Proposal shall become null and void and the Bid guarantee, check or Bid bond which accompanied it shall be forfeited and become the property of the Owner as liquidated damages for each failure and no protest pursuant to such action will be made. If the Undersigned shall execute the Contract, and furnish satisfactory Payment Bond and Performance Bond, it is understood that the Bid Guarantee or Bid Bond will be returned to the undersigned by the Owner.

IDENTIFICATION OF MINORITY SUBCONTRACTORS AND MATERIAL SUPPLIERS

Participation of Minority and Women owned Contractors and businesses.

The University of Kentucky encourages and supports the participation of minority and women owned businesses. Goal is 10% MBE/WBE

1. Minority and Women Subcontractors

   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________

2. Minority and Women Material Suppliers

   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________
   _______________________________________________________________

This proposal includes ______% certified MBE participation

This proposal includes ______% certified WBE participation

If your firm has no minority or women owned subcontractors or suppliers, it is required that you complete the list of minority and/or women owned businesses below. List the names of firms that were solicited to bid the project and describe why they were not successful (i.e. not low bid, did not respond, etc).
RECORD OF MBE/WBE SOLICITATION

______________________________  Certifies that the following

BIDDER’S NAME

Minority/Women-Owned firms were contacted to solicit pricing as subcontractors/suppliers for
Invitation to Bid No. _____________  The following firms were not selected for use on this project for the reasons stated
in the RESULT column.

This list of Minority or Women owned firms is to be executed and submitted as a part of the Bidder’s Proposal. Failure to
comply will result in rejection of Bidder’s Proposal.

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<tr>
<th>FIRM NAME</th>
<th>MBE/WBE</th>
<th>WORK ITEMS SOLICITED</th>
<th>RESULT: NO RESPONSE OR NOT LOW BIDDER</th>
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________________________  ____________
Signature                        Date

______________________________
Title

Scope of Work Page 18 of 20 Original date 04/2019
LIST OF MATERIALS AND EQUIPMENT

The apparent low bidder will be required to furnish this information within 24 hours of bid submittal. Failure to comply will result in rejection of Bidder's Proposal.

Each item listed under the different phases of construction must be clearly identified so that the Owner will definitely know what the Bidder proposes to furnish.

The use of a manufacturer's or dealer's name only, or stating "as per Plans and Specifications," will not be considered as sufficient identification.

Where more than one "Make" or "Brand" is listed for any one item, the Owner has the right to select the one to be used.

CONTRACTOR NAME & ADDRESS:  ________________________________________________
                                                                                     ________________________________________________
                                                                                     ________________________________________________
                                                                                     ________________________________________________
                                                                                     ________________________________________________
                                                                                     ________________________________________________
                                                                                     ________________________________________________
                                                                                     ________________________________________________
                                                                                     ________________________________________________

TRADE CONTRACT: TC-  _______  SCOPE OF WORK:  _______________________________
                     (INSERT NUMBER)                     (INSERT NAME OF TRADE CONTRACT)

The information requested in this submittal is required to assist the University in determining contractor responsibility to complete the project being bid.

<table>
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<tr>
<th>ITEM</th>
<th>MATERIALS AND EQUIPMENT</th>
<th>BRAND OR MANUFACTURER</th>
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PRIMARY LIST OF PROPOSED SUBCONTRACTORS

The apparent low bidder will be required to furnish this information within 24 hours of bid submittal. Failure to comply will result in rejection of Bidder's Proposal.

All subcontractors are subject to the approval of the Capital Construction Procurement Section and Capital Project Management Division, University of Kentucky, Lexington, KY.

If certain branches of the Work are to be done by the Prime Contractor, so state.

CONTRACTOR NAME & ADDRESS: ____________________________________________
_________________________________________
_________________________________________

TRADE CONTRACT: TC - (INSERT NUMBER) SCOPE OF WORK: (INSERT NAME OF BID CATEGORY)

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<tr>
<th>DIVISION OF WORK</th>
<th>NAME AND ADDRESS OF SUBCONTRACTOR</th>
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UNIVERSITY OF KENTUCKY  
CAPITAL CONSTRUCTION PROCUREMENT SECTION  
FORM OF PROPOSAL TC-168 PLUMBING & MECHANICAL  

Project No. 2402.13 Project Title: UK INTERVENTIONAL SERVICES  
Purchasing Officer: Jim Sutton  

NOTE: The following Form of Proposal shall be followed exactly in submitting a proposal for this work. If this copy is lost, an additional copy will be furnished upon written request to the authority issuing Contract Documents.  

This Proposal is submitted by:  
(NAME AND ADDRESS OF BIDDER)  

Date:  

Telephone:  

TO: BID CLERK  
UNIVERSITY OF KENTUCKY  
CAPITAL CONSTRUCTION  
PROCUREMENT  
RM. 322 SERVICE BUILDING  
LEXINGTON, KY. 40506-0005  

INVITATION TO BID: CCK-2401-19  
BID OPENING DATE: May 9th, 2019 (ADD #1)  
TIME: 3:00 P.M. E.D.T.  

The Bidder, in compliance with your Invitation for Bids for the above referenced Project, having carefully examined the site of the Work, the Drawings and complete Contract Documents as defined in Article I of the General Conditions, as well as the Specifications affecting the work as prepared by the Consultant, hereby proposes to furnish all labor, materials, supplies and services required to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the price stated below without qualification.  

Bidder understands that successful bidder will enter into a contract with Turner Construction Company utilizing Turner’s Subcontract Agreement Form 36 without modification.  

The Bidder hereby acknowledges receipt of the following Addenda:  
ADDENDUM NO. DATED  
ADDENDUM NO. DATED  
ADDENDUM NO. DATED  
ADDENDUM NO. DATED  

(Here insert the number and date of any Addenda issued and received. If none has been issued and received, the word NONE should be inserted.)  

NOTE: IN ADDITION TO THE SPECIFIC TRADE FORM OF PROPOSAL EACH SUBCONTRACTOR MUST ALSO SUBMIT FORMS FOUND IN THE SUPPLEMENTAL FORM OF PROPOSAL SECTION.
FORM OF PROPOSAL

AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST

I hereby certify:

1. That I am the Bidder (if the Bidder is an individual), a partner in the Bidder (if the Bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the Bidder is a corporation);

2. That the submitted Bid or Bids covering Capital Construction Procurement Section Invitation No. CCK-2401-19 have been arrived at by the Bidder independently and have been submitted without collusion with, and without any agreement, understanding or planned common course of action with, any other contractor, vendor of materials, supplies, equipment or services described in the Invitation to Bid, designed to limit independent bidding or competition; as prohibited by provision KRS 45A.325;

3. That the contents of the Bid or Bids have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished with the Bid or Bids and will not be communicated to any such person prior to the official opening of the Bid or Bids;

4. That the Bidder is legally entitled to enter into the contracts with the University of Kentucky and Turner Construction Company and is not in violation of any prohibited conflict of interest, including those prohibited by the provisions of KRS 164.390, and 45A.330 to 45A.455;

5. This offer is good for 60 calendar days from the date this Bid is opened. In submitting the above, it is expressly agreed that upon proper acceptance by the Capital Construction Procurement Section of any or all items Bid above, a contract shall thereby be created with respect to the items accepted;

6. That I have fully informed myself regarding and affirm the accuracy of all statements made in this Form of Proposal including Bid Amount.

7. Unless otherwise exempted by KRS 45.590, the Bidder intends to comply in full with all requirements of the Kentucky Civil Rights Act and to submit data required by the Kentucky Equal Employment Act upon being designated the successful contractor.

8. That the bidding contractor and all subcontractors to be employed do not and will not maintain any facilities they provide for employees in a segregated manner and they are in full compliance with provisions of 41 CFR 60-1.8 that prohibits the maintaining of segregated facilities.

9. In accordance with KRS45A.110(2), the undersigned hereby swears under penalty of perjury that he/she has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky and that the award of a contract to the bidder will not violate any provision of the campaign finance laws of the Commonwealth of Kentucky.

READ CAREFULLY - SIGN IN SPACE BELOW - FAILURE TO SIGN INVALIDATES BID

SIGNED BY_________________________________________ TITLE_________________________________________

PRINT NAME_____________________________________ FIRM_________________________________________

ADDRESS_________________________________________ AREA CODE & PHONE ___________________________

________________________________________________ FAX_______________________________

CITY_________________________ STATE__________ ZIP CODE________________________

DATE_________________________ EMAIL_____________________________________________
LUMP SUM PROPOSAL

The Bidder agrees to furnish all labor, materials, supplies and services required to complete the Work, for the above referenced Project, for the Capital Construction Procurement Section, University of Kentucky, as described in the Specifications and Contract Documents and shown on the Drawings enumerated below and as modified by the Addenda listed above.

TC-168 PLUMBING & MECHANICAL

FOR THE LUMP SUM OF ________________________________

(USE WORDS)

________________________________ DOLLARS AND ________________________________ CENTS.

(USE WORDS)

(USE WORDS)

($ __________________________ ) BIDDER MUST TURN IN BID BREAKOUT SHEET WITH THIS FORM OF PROPOSAL

(USE FIGURES)

ALTERNATES – NONE

Current Experience Modification Rating ________________

OSHA Incident Rates: Recordable ___________ Date of Proposal _________________

THE FOLLOWING ITEMS ARE HEREWITH ENCLOSED AS REQUIRED BY KRS 45A.185:

1. Bid Bond or Certified Check in an amount not less than five percent (5%) of total Bid.

2. Authentication of Bid and Statement of Non-Collusion and Non-Conflict of Interest.

3. VENDOR NUMBER: It is imperative that you furnish your Federal Employer Identification Number in the space provided below. Failure to do so may delay the processing of purchase orders issued to your firm.

______________________________

(Nine Digit Number)

4. Form of Proposal Supplemental Information

5. TC-_____ Bid Breakout sheet (from Attachment ‘B’)

SUPERINTENDENT

In accordance with Article 17 of the General Conditions a full-time superintendent will be required on this project. Below, please list the superintendent your firm will employ on this project. The successful Bidder will be required to furnish a resume of the superintendent’s qualifications and or past projects.

List the Superintendent’s Name ________________________________
NOTE: Unit Prices shall include the furnishing of all labor, materials, supplies and services and shall include all items of cost, overhead and profit for the Contractor and any subcontractor involved, and shall be used uniformly without modifications for either additions or deductions. The Unit Prices as established shall be used to determine the equitable adjustment of the Contract Price in connection with changes, deletions or extra work performed under the Contract and the "Rules of Measurement" set forth in the General Conditions shall govern.

All Bidders will be required to complete and submit the following information with the bid. The information requested in this submittal is required to assist the University in determining contractor responsibility to complete the project being bid.

KY FAIRNESS ACT: UNIT PRICES SHALL BE SUBJECT TO REVIEW / ADJUSTMENT AT TIME OF BID REVIEW / AWARD BASED ON “NET COST” CONCEPT. PROVIDE DETAIL BREAKDOWN 24 HOURS AFTER BID.

<table>
<thead>
<tr>
<th>HOURLY RATES:</th>
<th>UNIT PRICE</th>
</tr>
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<tbody>
<tr>
<td>Classification</td>
<td>Base rate</td>
</tr>
<tr>
<td>(Ins/taxes/other)</td>
<td>(Pier Diems)</td>
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## BID BREAKOUT

<table>
<thead>
<tr>
<th>DESCRIPTION OF WORK</th>
<th>COST INCLUDED IN BID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering &amp; layout, Permits &amp; Fees, Shop drawings and submittals</td>
<td>$________________________</td>
</tr>
<tr>
<td>Demolition</td>
<td>$________________________</td>
</tr>
<tr>
<td>Sanitary Piping System</td>
<td>$________________________</td>
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<tr>
<td>Building Water Systems</td>
<td>$________________________</td>
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<tr>
<td>Building Storm Systems</td>
<td>$________________________</td>
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<tr>
<td>Hydronic Piping System</td>
<td>$________________________</td>
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<tr>
<td>Medical Gas System</td>
<td>$________________________</td>
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<tr>
<td>Insulation – piping and HVAC</td>
<td>$________________________</td>
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<tr>
<td>Ductwork</td>
<td>$________________________</td>
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<tr>
<td>Duct Insulation</td>
<td>$________________________</td>
</tr>
<tr>
<td>Grilles, Registers and Diffusers</td>
<td>$________________________</td>
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<tr>
<td>Equipment</td>
<td>$________________________</td>
</tr>
<tr>
<td>Installation of Owner-furnished equipment</td>
<td>$________________________</td>
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<tr>
<td>Temporary Installations, General Req’s Items</td>
<td>$________________________</td>
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<tr>
<td>Testing</td>
<td>$________________________</td>
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<tr>
<td>Test and Balance</td>
<td>$________________________</td>
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<tr>
<td>Commissioning Participation</td>
<td>$________________________</td>
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<tr>
<td>MEP Coordination / BIM</td>
<td>$________________________</td>
</tr>
<tr>
<td>HVAC Controls Instrumentation Allowance (TC-168A Directed Budget)</td>
<td>$771,946 (ADD #3)</td>
</tr>
<tr>
<td>BIM 3-D Server Allowance</td>
<td>$4,500</td>
</tr>
<tr>
<td>Alterations allowance</td>
<td>$20,000</td>
</tr>
<tr>
<td>Existing Penetration Fire Stopping Allowance</td>
<td>$2,000</td>
</tr>
<tr>
<td>3rd Floor Mechanical Room AHU Install – Utility Relocation Allowance</td>
<td>$10,000 (ADD #3)</td>
</tr>
<tr>
<td>Relocate Existing Controls Allowance</td>
<td>$10,000 (ADD #3)</td>
</tr>
<tr>
<td>AHU Install - Stick Built Unit – Labor, Material, Equipment, Safety, Planning for:</td>
<td>$________________________</td>
</tr>
<tr>
<td>(Receive, Transport, Rig, Lift, Assemble, Connect, Test)</td>
<td>$________________________</td>
</tr>
<tr>
<td>Firestopping</td>
<td>$________________________</td>
</tr>
<tr>
<td>Safety and Housekeeping</td>
<td>$________________________</td>
</tr>
<tr>
<td>Remaining work not listed above, Overhead &amp; Profit (not to exceed 10% of proposal)</td>
<td>$________________________</td>
</tr>
</tbody>
</table>

**TOTAL BID AMOUNT (SHOULD MATCH PROPOSAL)**

$________________________

Cost of Performance and Payment Bond

**DO NOT INCLUDE THIS COST IN YOUR BID**
The work of this Agreement shall include, but not be limited to, all labor, materials, apparatus, hoisting, rigging, tools, equipment, plant, supplies, accessories, samples, submittals, shop drawings, certifications, engineering, layout, transportation, storage, supervision, temporary construction, special services, contributions, insurance, taxes (unless specifically excluded by the Contract Documents), compliance with all governing agencies (city, county, state, federal and others as may be required), permits, fees, all other services and facilities and other items necessary for the performance of the Plumbing and Mechanical Work as shown, detailed and/or implied in the contract documents outlined in the General Scope of Work.

The Scope of Work Document is being provided for your use as a general guideline. Please note, this Document is not all-inclusive. It is this Subcontractor's responsibility to provide a complete bid, including all work for this trade indicated on ALL of the contract documents (include plans, specifications, Bid Manual, etc.). It is this Subcontractor's responsibility for the entire scope of this Bid Package and coordination between all trades.

E. WORK INCLUDED - SCOPE-SPECIFIC ITEMS

1) Trade Specifications Specifically Included, but not limited to the following:
   a) DIVISION 00 - PROCUREMENT & CONTRACTING REQUIREMENTS (ALL SECTIONS)
      DIVISION 01 - GENERAL REQUIREMENTS (ALL SECTIONS)
      DIVISION 02 – EXISTING CONDITIONS (ALL SECTIONS)

      DIVISION 3 – Concrete (applicable to your work scope)

      DIVISION 5 – METALS (applicable to your work scope)

      DIVISION 7 - THERMAL AND MOISTURE PROTECTION (applicable to your work scope)
      SECTION 07 8110 – APPLIED FIREPROOFING (for patching work)
      SECTION 07 8400 - FIRE STOPPING (for patching work)
      SECTION 07 9200 - JOINT SEALANTS (Partial)

      DIVISION 11 – EQUIPMENT (applicable to your work scope)

      DIVISION 13 - SPECIAL CONSTRUCTION (applicable to your work scope)

      DIVISION 20 - GENERAL MECHANICAL REQUIREMENTS (ALL SECTIONS)

      DIVISION 22 – PLUMBING (ALL SECTIONS)

      DIVISION 23 – HEATING VENTILATING & AIR CONDITIONING (ALL SECTIONS)

      DIVISION 26 - ELECTRICAL (For HVAC Controls Work)
      SECTION 26 0000 - GENERAL ELECTRICAL REQUIREMENTS
      SECTION 26 0510 - LOW-VOLTAGE ELECT POWER CONDUCTORS AND CABLES
      SECTION 26 0526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
      SECTION 26 0529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
      SECTION 26 0533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
      SECTION 26 0553 - ELECTRICAL SYSTEMS IDENTIFICATION
SECTION 26 0593 - ELECTRICAL SYSTEMS FIRESTOPPING

DIVISION 27 - COMMUNICATION (for HVAC Controls Work)
SECTION 27 0000 - GENERAL COMMUNICATIONS REQUIREMENTS

DIVISION 28 - ELECTRONIC SAFETY AND SECURITY
SECTION 28 3116 – MULTIPLEXED FIRE DETECTION & ALARM SYS. (coord. with this work scope)

b) Bidder shall also include referenced specification sections listed in above specification sections as necessary to furnish complete work of this trade

c) Subcontractor includes all work indicated in specification COMPLETE, unless this scope of work specifically and clearly excludes a portion of a specification.

2) Contract Price is LUMP SUM. There shall be NO additional labor and material escalations allowed

3) Examination of Site – Subcontractor warrants that they have sufficiently reviewed the project site to inform themselves of all items about existing site that are relevant to their work, and the cost of their work.

4) Include protection all adjacent structures during performance of this work. Plan for protection of adjacent structures must be part of the overall plan submitted for approval prior to start of work

5) SITE LOGISTICS: Refer to the Site Logistics plans included in the Contract Documents. Delivery trucks are to be scheduled with Turner at least one (1) week in advance.

6) Subcontractor change order requests shall be provided with sufficient detail (as acceptable to Turner) to allow for satisfactory review. Subcontractor shall be allowed a maximum mark up for overhead and profit per the markup provisions included in the Subcontract Agreement, or as clarified in Contract Documents above

7) Subcontractor understands that time is of the essence in the prosecution of Work under this agreement.

8) Verify layout provided by others. Where this subcontractor is performing work using layout provided by others, this subcontractor shall perform sufficient verification of that layout to reasonably ascertain the validity of that layout. Any deficiencies (or suspected deficiencies found) shall be reported to Turner immediately to allow corrections as needed before start of work by this subcontractor.

9) All Subcontractors must be licensed as required by local, State, or Federal jurisdiction required for work of this trade in this project location

10) This Subcontractor will comply with Turner’s corporate safety policy and comply with Site Specific Safety Plan that will include but is not limited to 100% tie-off above 6 feet, 100% Safety Glasses, High Visibility Vests or High Vis style T-Shirts with reflective strips, 100% glove policy, Ladders Last Policy and Nothing Hits the Ground. If you are unfamiliar with any of these policies please ask to see the policy prior to submitting your bid. Failure to be familiar with these policies will not exclude you from complying with them.

11) Refer to Project General Work Requirements in volume one of the project manual. Any costs for work scope items listed in this section shall be included in your lump sum bid. Some work items are listed for specific trade contractors and they shall include those costs in their respective total lump sum bid price.

12) Condoc keynote legend will dictate your scope of work unless noted otherwise.

13) Label and identify all piping and components associated with this contract fire protection as required.

14) All Ground Floor (underfloor work for 1st floor) shall take place under special shift work planning. Provide Trade Workers as needed for two (2) 12 hour shifts per day, five days a week for 30-weeks working shift type hours to survey, pilot hole, core-drill and install all Ground Floor Plumbing work. This work will proceed the 1st floor installations within existing ground floor ceiling spaces working in “small zone” type manner.

   a. Assume all work will occur under work hours as detailed in General Requirements.

   b. Barriers, negative pressure fans, ceiling removal and replacement, and infection control will be by TC-160 contractor, TC-168 contractor is responsible for daily cleanup of their work and work area.

   c. This trade contractor is responsible to coordinate work scope each shift with all other trades for flow of work to maintain progress and schedules.

   d. This trade contractor shall provide all required temporary support of ceiling diffusers/grilles where the ceilings are being removed for plumbing work. Provide labor and material to re-set diffusers/grilles at completion of work above ceilings.
15) The contract price shall not be altered for any work that could have been reasonably inferred from the Contract Documents. The following items are listed as examples of the intent of this statement, but is not limited to these items alone:

a) Variations to avoid interference and obstructions.

b) Providing all HVAC components and services usually supplied with a specific system.

c) The providing of all necessary HVAC equipment and appurtenances, whether shown or not, for a complete operating system in strict code compliance based on equipment and fixtures indicated on the Contract Documents.

d) Testing performed in accordance with the requirements of the Contract Documents to meet the needs of the construction schedule and to not delay the work of other trades.

16) This Trade Contractor is responsible for demolition/rework of existing Plumbing and HVAC piping and sheet metal, etc. Systems as indicated on the contract drawings, including any permits or fees associated with the work indicated. This work includes, but is not limited to the following.

a) Provide demolition/rework of existing plumbing, med gas, HVAC i.e. all “like” systems indicated on the contract drawings. This includes piping and duct supports/hangers, etc. Remove all items back to source and to structure.

b) This contractor is to pay particular attention on how demolition affects existing areas. This contractor shall perform the following: (1) take initial air flow (balance information) readings, etc. in existing areas prior to demolition; This contractor is to also re-balance the effect occupied areas after modifying the systems as shown via demolition drawings; and finally, this contractor is to final balance the completed systems shared with existing areas after new ductwork is tie-in, etc. Provide reports of all readings and findings coordinating data and any needed response with mechanical engineer and construction manager.

c) Provide demolition/rework of any existing HVAC control systems conduit, boxes, cabinets, JACE, etc. Coordinate relocated work with new construction. Remove all items back to source and to structure.

d) This contractor is to patch back any floor, wall, ceiling, etc. locations where existing materials were removed with like materials and reinforcing as is adjacent. Appropriate temporary protection is required immediately after removal for safety.

e) This contractor is to demo existing HHW and Glycol piping systems as shown on drawings HD201A and HD201B. this contractor shall scrap demoed piping and return the funds the construction manager. These funds will be used for safety materials and events for the project.

17) This Trade Contractor shall include all materials, labor, tools, and equipment required to install complete and functioning building sanitary sewer system.

a) Provide connection(s) to existing under-slab, and underfloor piping previously roughed-in sanitary and vent systems. Include all new piping and any additional required rework/offsets and temporary means to install completed system. Remove all non-used existing piping back to the mains and cap. Include all sawcutting, trenching, backfill, excavation, testing, and concrete pour back, etc. as required to tie-in new piping at any ground floor areas as applicable.

b) Provide all indirect waste piping and vents as required from equipment installed under this contract and Owner-furnished medical equipment to the nearest drain (or to another location if otherwise directed).

c) Include all corrosion resistant and/or specialty plumbing systems.

d) Provide all plumbing fixtures and piping for areas included in this project, include re-testing any piping previously installed required for a complete system test for this project.

e) Include all dialysis boxes, fittings, piping and other details for complete system as shown.

18) This Trade Contractor shall include all materials, labor, tools, and equipment required to install complete and functioning building water systems.

a) Provide connection(s) to existing water lines as shown. Include all outage work to shut down and tie-in new water service. Install new valves on each line during day of tie-in to bring existing water lines back online as soon as possible.

b) Provide makeup water system and connection for equipment as indicated on the contract drawings.

c) Provide all related equipment, including but not limited to backflow preventers, water heaters and water softeners.
d) Provide all piping insulation.
e) Provide all water balancing as required for a complete system.
f) Provide flushing and chlorination of domestic water systems.

19) This Trade Contractor shall include all materials, labor, tools, and equipment required to install a complete and functioning building storm sewer system.

a) Make all connections to existing storm piping as shown. Provide all above-ground piping, insulation and other details as required for complete system.

20) This Trade Contractor shall include all materials, labor, tools, devices, and equipment required to install complete and functioning building medical gas systems.

a) Provide all medical gas systems complete, including but not limited to oxygen, nitrous oxide, nitrogen, medical air, and medical vacuum. This includes all equipment not owner pre-purchased.
b) Provide nitrogen, nitrous oxide and carbon dioxide manifolds; include equipment pads if required.
c) Provide low voltage raceway and wiring for all medical gas devices and alarm panels. Coordinate and identify any line voltage required to be provided by the electrical contractor.
d) Provide all alarm panels, alarm wiring, alarm conduit, connections, and accessories needed for complete and operational med gas alarm system.
e) Provide all testing, certifications and any gases required for testing.
f) This contractor shall receive, assemble, and install manifolds supplied by owner. Assume the manifold will arrive in multiple pieces and that it will need to be fabricated to meet the installation details.
g) This contractor shall have ALL medical gas hook-ups at all headwalls, booms, outlets, etc. as detailed in the design documents. This includes installation of all hoses from manifold to boom or headwall. Installation of boom and headwall assemblies are by others.
h) This contractor shall receive, assemble, and install manifolds supplied by owner’s equipment vendors as required. This manifold shall be installed no higher than 24” above ceiling for boom installations. Coordinate with manufacturer (Stryker) and CM. Assume the manifold will arrive in multiple pieces and that it will need to be fabricated to meet the installation details.

21) This Trade Contractor shall include all materials, labor, tools, and equipment required to install a complete and functioning hydronic piping system.

a) Provide low, medium and high pressure steam/return and condensate pump discharge systems, hot and chilled water supply/return piping systems, heating hot water systems, equipment, etc. Connect to existing systems as indicated on the documents.
b) Provide a complete humidification, clean steam system as shown. This includes all manifolds, humidifiers, valves, pumps, after-coolers, piping, etc. to complete system. Coordinate condensate drains with plumbing system, provide splash guards at floor drain locations as needed.
c) Connect to existing hydronic piping on each floor as shown. Provide all valves as necessary and needed for complete system. Provide all labor, materials and equipment for 3rd shift or weekend shut-downs and outages required for all connections to existing operational piping systems.
d) Provide all testing, flushing and cleaning of all piping systems prior to operation. Confirm CM and Facilities Management that flushing is completed and system is ready for activation from main building systems prior to opening system valves.
e) This contractor is to include all chemicals to bring the system back within UK standard after draining for a shut down. See “232500S01 HVAC WATER TREATEMENT” for details

22) This Trade Contractor shall include all materials, labor, tools, and equipment required to install complete and functioning mechanical sheetmetal systems.

a) This Trade Contractor shall include all materials, labor, tools, and equipment required to install a complete and functioning mechanical sheetmetal system, including, but not limited to: ductwork, ductwork specialties, insulation, hangers, vibration isolation, housekeeping pads, fire stopping, air terminal units, equipment, starters, devices, and owner-furnished equipment installation. Maintain duct cleanliness per SMACNA “Advanced Level” guidelines.
b) Provide all specialty ductwork and exhaust systems. This contractor to install all duct to roof locations as shown through the existing shafts/old dumb waiter riser/etc. Install all necessary fan equipment, curbs, penetrations,
fan, firestopping, etc. for this work. This contractor is to cut and patch all necessary openings in existing shaft for new ductwork, etc. Coordinate with construction manager.

c) Include all underground ductwork as shown including any connections to equipment, and all sawcutting, trenching, backfill, excavation, testing, insulation, and concrete pour back, etc. as required for new installation.

d) Coordinate with and connect to HVAC sheetmetal systems installed previously.

e) Furnish and install smoke and fire/smoke dampers and operators and fire caulking where shown and specified. Provide all fire and fire/smoke dampers required by code at rated wall penetrations of ductwork. Include 100% pre-testing, final testing, and inspection as required by local code authorities. Reference Life Safety drawings to identify the rated walls.

f) This contractor shall insulate all supply diffusers.

g) This Trade Contractor shall provide all duct leakage testing per the specifications.

h) This contractor to provide all filter, filter housings, etc. as designed and scheduled. Coordinate sizing and fit into any existing conditions with mechanical engineer and construction manager prior to installation.

23) This Trade Contractor shall provide all HVAC equipment not provided by the Owner, including but not limited to exhaust fans, smoke exhaust fans, pumps, motor starters, booster humidifiers, supply/return air terminal units and exhaust valves (including those based on Phoenix valves), heating coils for all Supply Air Terminal Units (including those for Phoenix valves), sound attenuators, etc. as indicated on the contract documents. All controls for equipment provided by this contractor shall be electric, not pneumatic. This contractor to include any chain wheel operators as detailed in the mechanical drawings and specifications, or any valves more than 12’ above finished floor elevation. This Trade contractor to confirm controls/access orientation prior to ordering.

24) This Trade Contractor shall include all materials, labor, tools, and equipment required to install a complete and functioning HVAC Controls Instrumentation systems including, but not limited to, all scope of work noted in Drawings and Specifications (ADD #3)

a) Provide all required controls and instrumentation devices including, but not limited to: control valves, flow meters, water pressure differential taps, flow switches, thermal wells, thermal and pressure sensors, current sensors, actuators, air flow monitoring stations, control dampers, etc. as needed for a complete and operational system. Provide coordination of locations of all control devices and device wells/taps with Mechanical, Plumbing and Electrical trade contractors.

b) Coordinate and provide all required connections, components, control devices, dampers and accessories, etc. needed for a complete installation of AHU, Phoenix Valves, Terminal Units, Exhaust Fans and Fan Coil Unit Controls. This contractor shall also furnish all control programming, cabling, etc. and isolation dampers not included with the AHU purchase. Provide and install all damper actuators for all dampers at the new AHU.

c) Connect to existing systems and coordinate with systems installed in this contract. This includes, but not limited to, FSDs, Control Panels, Security Panels, VFDs, Air Valves, Terminal Boxes, etc.

d) This Contractor will provide all raceways and cables, etc. for a complete HVAC controls system, including connections to devices provided by other contractors; smoke detectors, elevators, lighting control panels, etc.

e) This contractor to provide all conduits and wire necessary for CAT6A cabling required for network communications. Termination at EIDF Closet and activation of network to be provided by TC-169 Integrated Technology contractor.

f) This contractor is to provide thirty (30) additional command points for use by the construction manager. This shall include a complete integration into the project controls system as if needed for the construction. This shall include all wiring, controllers, JACE/NAE capacity and anything required to properly tie these points into the system.

g) This contractor will provide all required BIM modeling for all controls. This includes, but is not limited to: above ceilings, access zones, and all control panels for coordination with other trades and proper access and maintenance. The intent is to BIM coordinate devices and conduit in wall at all procedure and patient rooms. Reference Attachment G for additional details.
h) This contractor will provide all required technician support for all Commissioning of the HVAC, Fire Alarm, Security and Lighting Control Systems.

i) This Contractor shall provide and install all VFDs for AHU & Exhaust Fans. This includes start-up, commissioning, and warranty. This includes all necessary accessories for a complete installation. TC-169 Electrical Contractor will install and connect power.

j) This contractor will provide complete detailed point’s lists as needed for Graphics Programming by UKMC PPD. Provide all required technician/programmer time necessary for coordination of point’s lists, field installation specific notes for addresses and locations, point to point testing information and other information needed for coordination of and completion of the HVAC Controls System Graphics.

k) This Contractor shall provide ALL Tridium interfaces, programming, naming conventions per UKMC PPD, etc. complete for ALL HVAC Controls, Lighting Control, and other representative systems other than the fire alarm system. UKMC PPD to create and complete graphics, this contractor to provide all nodes, interface signatures and addresses for the graphics development. Coordinate with UKMC PPD and Construction Manager to turn over complete and functioning Tridium system integration.

i. Coordinate with TC-169 (Electrical/Integrated Tech.) to provide complete operating Tridium systems. Fire alarm programming and interface to Tridium is by TC-169 Electrical TC.

ii. Points shall be named using the following format:

Building_Floor_RoomNumber_System_SubSystem_Component_ShortName_Function

iii. Reference instrumentation drawings for additional details regarding points list and details. The controls

iv. Contractor is to utilize the entire drawing and specification set as a whole to formulate controls sequence.

l) This work is to be complete by Johnson Controls. Contact Robert Rogers at (859) 227-5514 with any questions. Their bid form is attached for reference.

25) This Contractor shall furnish all Fan Coil Units (FCU) for installation in the equipment rooms. Provide all BIM modeling, Coordination with other trades, Supports, Anchors, and Condensate piping required for complete installations. Provide all components and accessories for connection to Glycol Chilled Water System. Coordinate all controls and power wiring with other trades, provide all accessories required for complete operation and commissioning of FCU’s.

26) This Contractor shall provide a complete Outage Plan for revisions to the Glycol System for connections in the West Shaft as noted on Drawing H201B. Plant to be submitted and approved prior to proceeding with any work. Plan shall include all details for shut down, piping work, valve installations, recharge of system, re-start of system and purging of systems. This work scope shall include all added Glycol required to re-instate the system to operational parameters as required by UK Facilities. Coordinate opening and access to the Shaft Area with TC-163 Drywall Contractor.

27) This Trade Contractor is responsible to receive and install the Owner Furnished Air Handler Unit (AHU). The Unit will be delivered in “knock-down” component sections for field transport and assembly on the platform in the 3rd Floor Mechanical Room, see drawing H204A for location and arrangement of completed Air Handler.

a) Provide all labor, materials, equipment, Crane rental, rigging, safety systems for elevated work space, elevated work training, rigging training and planning required for installation of the AHU. Provide all tools, caulking, fasteners, and spare parts necessary for complete assembly of the AHU, coordinating assembly with Manufacturer’s Representative to be on site during assembly.

b) Provide all labor and materials for installation of conduits and wires both internal and external of the AHU for all power and controls wiring required for operation of the AHU, providing a single point of connection for power wiring to be connected by TC-169 Electrical Contractor.

c) Provide covers for all duct openings sufficient to pressure test the assembled AHU at a pressure value determined by the Mechanical Engineer.

d) Provide a third party Test & Balance contractor to pressure test the AHU for static and deflection per specifications and manufacturers recommendations. Test plan to be submitted and approved by UK prior to testing. Coordinate with Unit Manufacturer to make any and all corrections necessary for final acceptance of the AHU.
e) Provide all AHU condensate piping to nearest floor drain with trap fittings as required for Unit static pressure. Provide Air Gap and Funnel at floor drain to prevent spillage at floor.

28) All JACE/NAE panels shall be located in EIDF closets and be placed on owner-furnished UPS power. No power supplies for mechanical systems shall be installed in IDF/EIDF closets.

29) This Trade Contractor shall provide interface with Life Safety systems, including but not limited to, Fire Alarm, Security, etc. Provide all raceways and cables connecting HVAC Controls devices to these systems.

30) This Trade Contractor is responsible for power conduit and wiring to all devices included in this contract, where required for a complete operational system, but not indicated in electrical documents Coordinate power with TC-169 Contractor which will terminate within their panels. TC-169 Electrical contractor provides circuits and breakers. This contractor shall provide all associated wiring between devices and TC-169 electrical panels.

31) This contractor is to include $3,500 for labor and materials to patch existing insulation on existing plumbing and ductwork.

32) Control valves and dampers are a priority to furnish for early installation.

33) This Trade Contractor to furnish and install Fourteen (14) 30" x 30" x 2" deep Sheet Metal Drip Pans (22 ga. galv.) for Radiology Cooling Units in their respective Equipment Rooms. No drains required. Coordinate exact size and location with Turner Construction and Equipment Vendor.

35) This Trade Contractor to furnish and install all Fire Wrap for UPS Battery Exhaust Duct.

36) All rough-in and finish condition work in and around curbs and roof penetrations of walls, floors, and roof. The cutting of metal deck as required to install the work shall be included. Any reinforcement of the deck that is required but not shown on the structural drawings is to be included in this work. This Trade Contractor is responsible for protection of all sleeves installed and roof penetration attachments shall be subject to Division 13 specifications. This contractor is required to provide all coupons, etc. for any rough-in work through radiation protection. All work in and around radiation protection is to be performed by a trained worker, this contractor to provide required training for all workers as needed to work in these areas while protection enclosures are in place. See drawing A603 for examples.

37) Provide grounding and bonding for equipment installed in this contract. Coordinate grounding and bonding to system installed by TC-169 contractor. Provide all grounding and bonding in all procedure rooms as identified in Detail 2/E800 for all exposed diffusers, piping, equipment connections, med gas outlets & panels, etc.

38) Ceiling removals and replacements required to install new installations for this work scope within existing spaces (underfloor work, runs to existing shafts, etc.) will be completed by TC-163 Drywall and Ceilings contractor. Coordinate with construction manager and TC-163 for locations and areas.

39) This Trade Contractor shall furnish and install all sleeves and blockouts for this contract penetrations of walls, floors, and roof. The cutting of metal deck as required to install the work shall be included. Any reinforcement of the deck that is required but not shown on the structural drawings is to be included in this work. This Trade Contractor is responsible for all curbs, thimbles, counter flashings, clamping rings, sealants, etc., required at roof penetrations of material and equipment covered by this work. This would include but not be limited to vents flashings, and any special curbs or flashing required. Removal of existing curb coverings, etc. are included in this work scope.

a) Per UK standards, all sleeves/blockouts shall be a minimum of 1.5” above finished floor. This work scope shall include “metal collars” (sealed) as necessary for any existing or new sleeve installations not 1.5” above the finished floor elevation (not concrete elevation). This Trade Contractor is responsible for protection of all sleeves installed for (or existing) their scope of work.

b) This contractor is to gain fire stopping inspection at the floor level PRIOR to installing the 1.5” metal collar. The installation of the metal collar and floor fire stopping shall not be in one action preventing proper fire stop inspection.

c) This contractor to provide 2 hour F & T rated sleeve assemblies for all floor penetrations for all piping and plumbing systems.

40) All roof penetration attachments are to be included in this work scope. This contractor is to include all costs to repair, tie-in, patch, demo the existing roof curbs and/or install new curbs for new roof fans. Survey all adjoining roof areas and provide any patching required prior to work scope and after completion of work scope utilizing the warranty roofing contractor of record. This includes any work included in this contract. Remove and dispose of temporary curb covers as equipment is installed. Any roof or floor protection required for the movement of workmen or equipment is to be included. (ADD #3)

41) This Trade Contractor shall provide labor and materials to transport new Roof Exhaust Fans to the 15th floor roof elevation. Work scope to include disassembly and re-assembly of roof fans in order to hand carry up narrow stairs from 14th floor.
TC-168 – Plumbing & Mechanical

SCOPE OF WORK

Attachment “B”

TERMINAL UNITS

51) The intent is that this Trade Contractor shall install terminal units in corridors as shown and locate all others similarly as much as possible to allow accessibility for maintenance without disturbing patients.

52) Unless otherwise indicated in the documents, provide volume dampers at all run-outs to the supply air outlets and return air outlets. Provide standoff bracket on manual volume dampers in round duct, to facilitate the installation of the handle outside of the insulation. Bending of volume dampers handle is not acceptable. In addition, provide volume dampers in main and branch ductwork as required for proper balancing of the system. Provide additional balancing dampers deemed necessary during the HVAC balancing process, if the system is not satisfactorily balanced to deliver design air quantities.

53) Fabricate and install drip pans as required for your work above all patient areas, electrical equipment, or other applicable areas.

54) Installation, testing and insulation shall be scheduled by area as sequenced by the Construction Manager, in order to not delay the progress of other trades. Multiple tests or comebacks as may be required for this coordination are to be included. This contractor shall pre-test all piping with air prior to hydrostatic testing. The Construction Manager will witness these and hydrostatic tests.

55) Coordinate grille, diffuser and exposed equipment locations with Architectural drawings.

56) Review and coordinate tie-in to Plumbing systems according to HVAC and Plumbing documents.

57) This contractor to seal all existing system installations contained in or similar to this work scope. This includes acoustically, fire, or otherwise sealing around existing piping, conduits, supports, etc. This also includes installation of the correct UL listed assemblies and labeling of existing installations through new partition walls.

58) The equipment pre-purchased by the Owner is identified in Volume 4 and division 1 specifications. This subcontractor (also referred to as “Installing Trade Contractor” for applicable equipment) is responsible for the coordination, installation,
and all other miscellaneous provisions for this equipment as if it were purchased directly by this subcontractor. This includes receipt, protection, temporary weather protection, inventory, storage, and storage maintenance ((lube, rotation, etc.) until turned over to the owner. For owner furnished equipment which may have utility connection requirements, provide rough-in and final connections to the Owner furnished equipment and coordinate complete installation as required. Coordinate any plumbing and mechanical work shown on documents with the appropriate subcontractor.

59) This Contractor will closely coordinate his work with the installation of casework. Make provisions to adequately support piping to allow the installation of the casework to proceed unimpeded. Receive, handle, install any mechanical piping and ductwork accessories, and make all necessary connections.

60) Provide and level equipment, supports and isolators required to complete this scope of work. Coordinate with appropriate Trade Contractors to ensure proper installation of this work. Include any miscellaneous framing for penetrations, hangers, etc. required but not indicated on structural drawings. Provide sound and vibration isolators as required by local building codes and the specifications.

61) This Trade Contractor is required to label and identify all piping and components associated with this contract as required by the design documents.

62) All concealed piping and ductwork shall be tested and inspected prior to covering work.

63) Provide all motor starters for mechanical equipment supplied by this Contractor. Wiring on equipment side of factory furnished panels, whether integral with equipment or separate, shall be the responsibility of this Trade Contractor unless specifically noted otherwise.

64) This Trade Contractor shall provide and install any curbs and/or housekeeping pads for all equipment, etc. contained in this work scope. This includes pads that are not shown on the contract drawings, yet required for the work of this contract. This includes concrete for any pre-purchased equipment (AHUs, etc.), including AHU inertia bases, which are to be installed by this contractor. Install traffic coating on any new curbs and pads within existing spaces.

65) The above equipment may come with loose miscellaneous accessories such as Thermometers, Pressure Gauges, Drain Valves, Sensors, Switches, etc. and multiple points of connection over and above what is called for in the documents. This Contractor shall provide any miscellaneous piping, wiring, testing, etc. to make the equipment fully operational.

66) This contractor shall include all costs for overtime/shift work required for utility outages to connect new systems installed in this contract to existing. Submit an Outage Log for all expected outages within 10 days of contract award.

67) This Trade Contractor shall provide any temporary testing equipment/panels required to test all systems without disruption to existing systems. Once successfully tested and commissioned, new systems will be integrated with existing systems.

68) Provide and coordinate all support and all blocking required for this scope of work.

69) HVAC Contractor shall support the Integrated Technology contractor to ensure a complete system and complete turn over to Owner.

70) This Contractor shall participate in HVAC Commissioning per the specifications.

71) Provide Testing and Balancing of all plumbing, HVAC hydronic and air systems and all other requirements of the work as specified, shown and required, including existing systems.

72) Include all costs for all “after normal business hours” Life Safety Inspections required by the inspection agency including trades related over time exposure.

73) This Trade Contractor shall participate in the coordination process using 3-D Building Information Modeling (BIM) as outlined in Attachment “H”, in lieu of the conventional 2-D drawing process. All costs for the BIM process for this scope of work shall be included in the base bid. Include the scheduled BIM Allowance for Vicon/Box server use and hardware/software. This allowance is not for the use of the MEP trades for their coordination. Each BIM participating Trade Contractor is responsible for updating contract and field changes in the BIM model throughout the project. All trades will need to coordinate structural support hangers. It is imperative that the coordination begin immediately after contract award to meet the schedule milestones. The details of sequencing and timing of this process will be discussed immediately after contract award. Provide required resources to coordinate, purchase, fabricate, and deliver materials to meet the schedule installation start dates.

74) This Trade Contractor shall be responsible to reflect the actual location of piping and duct where connections are to be made with existing work in the BIM model. This contractor is to review and coordinate the existing installations that are shown to stay and coordinate these with the new work. This contractor can elect to relocate any existing utilities (where possible) to create a more efficient final installation.

75) This Contractor shall provide BIM modeling of all Plumbing and Mechanical Systems including coordination with Wall Framing, Backing, toilet partition supports, moveable partitions, overhead doors, projection screens, smart boards,
monitors, supports for patient lifts, above-ceiling structural frame mounting for medical equipment including Medical Booms, Radiology Equipment, Unitstrut Support Systems, Boom Support Structures, etc. (reference Volume 4, Vendor Drawings and Div. 1 specs). This Trade Contractor shall also provide BIM Modeling of all in wall piping, in wall valve boxes, in wall medical gas components, coordinated with framing models. This Trade Contractor shall base the BIM models on shop drawings and coordinate with installing contractors of these materials; reasonable abstractions for space allocation of these items is acceptable. Update the BIM model based on approved shop drawings as needed.

76) This Trade Contractor shall also include an **additional 80 hours of BIM coordination** to be used at the Owner/CM’s discretion.

77) The intent is to utilize the coordination in the 3D model to prefabricate off-site as much material as possible. All materials possible will be pre-fabricated and packaged for Just-in-Time delivery at the job site and be on wheels for delivery to the area of installation. No pre-packaged or loose materials to be delivered to the job site that will not be installed within 4 days of delivery.

78) This Contractor shall also provide BIM coordination of pneumatic tube system, in cooperation with pneumatic tube contractor.

79) This Trade Contractor shall participate in the construction of on-site **mock-ups** as specified and indicated by the documents and/or noted elsewhere. This shall include providing of materials required for this trade contract scope of work, coordinating with other trade contractors with regard to sequencing of installations and protection of materials etc., furnishing shop drawings and/or setting drawings and so on. Materials for in place or interim mock-ups shall be secured in advance of normal procurement to allow for ALL trade contractor installations, owner/designer and user reviews and evaluations, meetings, approvals and directive if applicable. Mockups are understood to start with arrangement of wall rough-in through complete room finishes.

80) This contractor shall install, maintain, and remove **Two Temporary Exhaust Fans** in the construction areas to maintain a **negative air pressure** relative to surrounding spaces. Provide three (3) temporary Magnehelic pressure monitors – one at each end and one in the middle of the area – coordinate locations with CM. Provide Plenum, Ducting and Grille at each location for exhausting over top of temporary doors or at removed windows. Provide inlet filter rack on fans and change filters monthly during operation of fans. Check the spaces daily to record pressures and submit checklist weekly to the Construction Manager as documentation.

81) This contractor shall provide labor and materials to extend supply ducting from existing 30 x 24 Phoenix Air Valve Supply SAV-18-1 in Shell Space on 2nd floor to supply air to the Turner Temporary Construction Office. Provide ducting and grilles for 8ea. 400 CFM 2‘x2‘ lay-in supply grilles. Provide 6ea. 2‘x2‘ lay-in non-ducted Return Grilles to relieve air back into shell space area. Install and activate one new thermostat for operation of this supply to the Turner offices, current thermostat in shell space area to operate remaining two supply air valves.

82) This contractor shall provide labor and materials to install and maintain 3ea. 30 x 30 x 2 Merv 14 Return Inlet Filters on all Return Inlets in the 2nd Floor shell space area. Provide replacement filters on all inlets every 3 months at a minimum.

83) The permanent HVAC systems included in the Contract Documents will be used for conditioning the spaces for finishes. This contractor shall provide any resources required to meet the schedule milestones. This contractor is to include all required controls and instrumentation for preliminary operation of the new air handler, supply and return VAV boxes, and supply & exhaust phoenix valves. Provide full documentation of installation/startup of all components to be used for conditioning of the spaces. Provide 100% OSA and 100% exhaust for conditioning of spaces. Return air activation will be when directed by the construction manager (with contractor input) and the University of Kentucky.

a) This Trade Contractor **shall supply and install temporary filters** and filter media as needed to support temporary operation of HVAC systems. For new AHU provide a complete set of filters for all scheduled filter racks. In addition prove two (3) sets of 2” MERV 11 construction filters to be installed over Pre-Filters and changed on a monthly basis. Provide two additional sets of scheduled filters, one set prior to testing and balancing and one set at turnover. At time of test and balance, remove construction filters and verify if filters are still within manufacturer’s pressure drop parameters, if so do not replace, continue with test and balance, and deliver two unused sets of filters to Construction Manager. Maintain temporary ventilation and dust control as required by Division 1. Cover ALL exhaust and return air grilles with filter media and replace filter media on a routine basis and/or as directed by the Construction Manager.

84) All systems must be maintained to be turned over to the Owner in a “like-new” condition.

85) Trade Contractor will provide 24/7 response for **maintenance** of all temporary HVAC and Control systems for duration of project as needed.

86) This Trade Contractor shall provide all **firestopping** associated with this scope of work in accordance with the contract documents, including identification per the specifications. This includes firestopping for all penetrations associated with this scope of work, including core drilled penetrations and sleeves installed by others for this scope of work. Additionally,
this Trade Contractor shall ensure that sleeves installed in this scope of work for future fit-out areas maintain appropriate
fire ratings around the shelled areas, and that they are installed so as not to inhibit future installation of piping or other
systems. All penetrations created by this Trade Contractor shall be coordinated with other applicable trades and performed
in a neat and workmanlike manner. Provide a Mock-up of all anticipated firestop penetration types to be used, provide data
sheets of all firestop systems in Mock-up for review and acceptance prior to work in place.

87) This Contractor shall provide an equipment list for all equipment installed under this scope of work, including but not
limited to, description, identifier, room location, manufacturer, supplier, installing contractor and areas served, in a standard
format acceptable to UK (UKMC PPD Preventative Maintenance equipment Excel format listing).

88) This contractor shall be responsible for removing and reinstalling the Hypobaric vents on the 1st floor Pavilion A (see P101B)
(ADD #3)
   a) This includes creating the new penetration through the precast panel. This penetration is to be sealed back to a
      weatherproof and waterproof condition after piping is installed.
   b) This includes sealing the existing penetrations in the precast panels to a weatherproof and waterproof condition.
   c) This includes replacing concrete in the deck where the existing penetrations were and core drilling for the new
      penetrations.

F. CONSTRUCTION SCHEDULE

Contract Price is based on the project schedule included in the bid manual and as clarified within these Additional Provisions.

G. WORK EXCLUDED

This Scope of Work shall exclude the following

1) Payment & Performance Bond

H. ALTERNATE PRICES

Alternates shall be complete for providing only the Work with no other credits. All alternate prices are to be priced as stand-alone
alternates. Any number of alternates, or no alternates, may be accepted as part of this Work.

Indicate Add/Deduct Price on the BID FORM

I. ALLOWANCES

The following Allowances are to be included in the base bid:

1) HVAC Controls Instrumentation Allowance $ 771,946 (ADD #3)
2) BIM 3-D Server Allowance $ 4,500
3) Alterations Allowance $ 20,000
4) Existing Penetration Fire Stopping Allowance $ 2,000
5) 3rd Floor Mechanical Room AHU Install Utility Relocation Allowance $ 10,000
6) Relocate Existing Controls Allowance $ 10,000 (ADD #3)

The above allowances are to be included in the base bid/Subcontract Price. All overhead and profit related to the Work
performed under each Allowance is to be included in the Base Bid/Subcontract Price. Only direct Labor and Material costs
authorized in writing by the Construction Manager after approval by the Owner are to be charged to the Allowance. Progress
Payments will be made against Allowance expenditures, based on approved monthly invoices & writing Allowance Authorization
from the Construction Manager/Owner. Any unused funds remaining in these allowances will be credited back to the Project.

J. UNIT PRICES

The following unit prices are applicable for changes in the Work. The unit prices are for Work complete and in place and include all
costs such as material, labor, equipment, freight, taxes, insurance, fringe benefits, and overhead and profit. Also include costs for
coordination with other trades work where applicable. In the event the unit prices quoted exceed industry standards or fair market
value, the Turner reserves the right to request pricing for changes at cost plus allowable mark-up for overhead and profit or a lump-sum
under the terms of the Agreement

1) Labor Rates - Submit detailed labor rates to Turner Project Manager for approval. Detail shall show all fringes, benefits,
taxes, insurance, markups, and any other add-ons to allow verification of rate.
   • See “Form of Proposal” (Bid Form) for bid day information. The apparent low bidder will submit detailed
     breakdown with-in 24 hours after bid day.
2) **Equipment Rates** – Submit detailed rates for equipment that may be used on project, and may be part of change order pricing.

END OF TECHNICAL SCOPE OF WORK
FORM OF PROPOSAL
SUPPLEMENTAL INFORMATION

THE FOLLOWING INFORMATION PERTAINS TO ALL TRADE CONTRACTORS

NOTE: MUST BE SUBMITTED WITH THE BID SUBMITTAL. Failure to comply will result in rejection of Bidder’s Proposal.

Contractor Report of Prior Violations of Chapters 136, 139, 141, 337, 338, 341, and 342

Pursuant to KRS 45A.485, the Contractor shall, prior to the award of a Contract, reveal final determinations of any violations of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, and 342 by the Contractor that have occurred in the previous five (5) year period.

This statute also requires for the duration of the Contract established, the Contractor be in continuous compliance with the provisions of Chapters 136, 139, 141, 337, 338, 341, and 342 that apply to the Contractor’s operations. The Contractor’s failure to reveal a final determination of a violation of KRS Chapters 136, 139, 141, 337, 338, 341, and 342, or failure to comply with any of the above cited statutes for the duration of the Contract shall be grounds for the cancellation of the Contract, and the disqualification from eligibility for future contracts for a period of two (2) years.

The Contractor, by signing and submitting a Bid on this Invitation, agrees as required by KRS 45A.485 to submit final determinations of any violations of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, and 342 that have occurred in the previous five (5) years prior to the award of a Contract and agrees to remain in continuous compliance with the provisions of these statutes during the duration of any contract that may be established. Final determinations of any violations of these statutes, must be provided to the University by the successful Contractor prior to the award of a Contract.

BUSINESS CLASSIFICATION

Please complete this form which is necessary for the University of Kentucky vendor database. Mark only one classification. Refer to "Definitions" for assistance in determining correct classification.

(01) Small Business
(02) Large Business
(03) Disadvantaged Small Business
(04) Disadvantaged Large Business
(05) Woman-Owned Small Business
(06) Woman-Owned Large Business
(07) Disadvantaged Woman-Owned Small Business
(08) Disadvantaged Woman-Owned Large Business
(09) Other
DEFINITIONS

(01) SMALL BUSINESS: A business concern that is organized for profit, is independently owned and operated, is not dominant in the field of operations in which it is bidding, and meets the size standards as prescribed in the Code of Federal Regulations, Title 13, Part 121. Consult your local or district Small Business Administration (SBA) office if further clarification is needed.

(02) LARGE BUSINESS: A business concern that exceeds the small business size code standards established by SBA.

(03) DISADVANTAGED SMALL BUSINESS: A business concern (a) that is at least 51 percent owned by one or more socially and economically disadvantaged individuals (as defined below), or a publicly owned business, having at least 51 percent of its stock owned by one or more socially and economically disadvantaged individuals; and (b) has its management and daily business operations controlled by one or more such individuals. Socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans and other minorities or individuals found to be disadvantaged by the SBA.

(04) DISADVANTAGED LARGE BUSINESS: A concern that meets the definition of socially and economically disadvantaged individuals, but which is not a small business by the SBA's size standards.

(05) WOMAN-OWNED SMALL BUSINESS: A small business that is at least 51 percent owned by a woman or women who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" means actively involved in the day to day management.

(06) WOMAN-OWNED LARGE BUSINESS: A concern that meets the definition of woman owned and operated, but which is not a small business by the SBA's standards.

(07) DISADVANTAGED, WOMAN-OWNED SMALL BUSINESS: A concern that meets the definition of both (03) and (05) above.

(08) DISADVANTAGED, WOMAN OWNED LARGE BUSINESS: A concern that meets the definition of both (04) and (06) above.

(09) OTHER: A concern that does not meet any of the above definitions.

BIDDER'S QUALIFICATIONS

The Commonwealth of Kentucky Model Procurement Code (KRS 45A.080) requires contracts to be awarded, “to the responsive and responsible bidder whose bid offers the best value” to the University of Kentucky. In order to determine if the Bidder has the experience, qualifications, resources and necessary attributes to provide the quality workmanship, materials and management required by the plans and specifications, the Bidder may be required to complete and submit the information requested on the University of Kentucky Contractor Bidder Determination of Responsibility questionnaire. Failure to provide the information requested on the questionnaire or failure to provide any additional submittals or information that may be requested to make this determination may be grounds for a declaration of nonresponsibility with respect to the Bidder. A copy of the Contractor Determination of Responsibility questionnaire is available upon request to all Bidders.
TIME LIMIT FOR EXECUTION OF CONTRACT DOCUMENTS

It is further agreed, that in the event this Proposal is accepted by the Owner and the undersigned shall fail to execute the Contract and furnish satisfactory Payment and Performance Bond within ten (10) consecutive calendar days from the date of notification of the award of the Contract, the Owner may at his option, determine that the undersigned has abandoned the Contract and thereupon, the Proposal shall become null and void and the Bid guarantee, check or Bid bond which accompanied it shall be forfeited and become the property of the Owner as liquidated damages for each failure and no protest pursuant to such action will be made. If the Undersigned shall execute the Contract, and furnish satisfactory Payment Bond and Performance Bond, it is understood that the Bid Guarantee or Bid Bond will be returned to the undersigned by the Owner.

IDENTIFICATION OF MINORITY SUBCONTRACTORS AND MATERIAL SUPPLIERS

Participation of Minority and Women owned Contractors and businesses.

The University of Kentucky encourages and supports the participation of minority and women owned businesses. Goal is 10% MBE/WBE

1. Minority and Women Subcontractors

   __________________________________________
   __________________________________________
   __________________________________________

2. Minority and Women Material Suppliers

   __________________________________________
   __________________________________________
   __________________________________________

This proposal includes ______% certified MBE participation

This proposal includes ______% certified WBE participation

If your firm has no minority or women owned subcontractors or suppliers, it is required that you complete the list of minority and/or women owned businesses below. List the names of firms that were solicited to bid the project and describe why they were not successful (i.e. not low bid, did not respond, etc).
RECORD OF MBE/WBE SOLICITATION

Certifies that the following Minority/Women-Owned firms were contacted to solicit pricing as subcontractors/suppliers for Invitation to Bid No. ______________. The following firms were not selected for use on this project for the reasons stated in the RESULT column.

This list of Minority or Women owned firms is to be executed and submitted as a part of the Bidder’s Proposal. Failure to comply will result in rejection of Bidder’s Proposal.

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<th>FIRM NAME</th>
<th>MBE/WBE</th>
<th>WORK ITEMS SOLICITED</th>
<th>RESULT: NO RESPONSE OR NOT LOW BIDDER</th>
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__________________  ____
Signature                                    Date

__________________________________________
Title
LIST OF MATERIALS AND EQUIPMENT

The apparent low bidder will be required to furnish this information within 24 hours of bid submittal. Failure to comply will result in rejection of Bidder's Proposal.

Each item listed under the different phases of construction must be clearly identified so that the Owner will definitely know what the Bidder proposes to furnish.

The use of a manufacturer’s or dealer’s name only, or stating “as per Plans and Specifications,” will not be considered as sufficient identification.

Where more than one “Make” or “Brand” is listed for any one item, the Owner has the right to select the one to be used.

CONTRACTOR NAME & ADDRESS:  ______________________________________________________
   ______________________________________________________
   ______________________________________________________

TRADE CONTRACT: TC-_________________________  SCOPE OF WORK: ____________________________
   (INSERT NUMBER)          (INSERT NAME OF TRADE CONTRACT)

The information requested in this submittal is required to assist the University in determining contractor responsibility to complete the project being bid.

<table>
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<th>ITEM</th>
<th>MATERIALS AND EQUIPMENT</th>
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# PRIMARY LIST OF PROPOSED SUBCONTRACTORS

The apparent low bidder will be required to furnish this information within 24 hours of bid submittal. Failure to comply will result in rejection of Bidder's Proposal.

All subcontractors are subject to the approval of the Capital Construction Procurement Section and Capital Project Management Division, University of Kentucky, Lexington, KY.

If certain branches of the Work are to be done by the Prime Contractor, so state.

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<th>CONTRACTOR NAME &amp; ADDRESS:</th>
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| TRADE CONTRACT: TC - _______ | SCOPE OF WORK: _________________________ |
| (INSERT NUMBER)             | (INSERT NAME OF BID CATEGORY)        |
|                            |                                   |                                   |

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<thead>
<tr>
<th>DIVISION OF WORK</th>
<th>NAME AND ADDRESS OF SUBCONTRACTOR</th>
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Scope of Work
Page 23 of 23
04/2019
TURNER CONSTRUCTION COMPANY

Interventional Radiology
UK PROJECT 2402.13

SCOPE OF WORK
TC-168A – HVAC Controls Instrumentation

UNIVERSITY OF KENTUCKY
CAPITAL CONSTRUCTION PROCUREMENT SECTION
FORM OF PROPOSAL TC-168A – HVAC Controls Instrumentation

Project No. 2402.13 Project Title: UK INTERVENTIONAL RADIOLOGY
Purchasing Office: Jim Sutton

NOTE: The following Form of Proposal shall be followed exactly in submitting a proposal for this work. If this copy is lost, an additional copy will be furnished upon written request to the authority issuing Contract Documents.

This Proposal is submitted by:

Johnson Controls Inc

Date: 26 APR 19

Telephone: 859-227-5514

TO: BID CLERK
UNIVERSITY OF KENTUCKY
CAPITAL CONSTRUCTION
PROCUREMENT
RM 322 SERVICE BUILDING
LEXINGTON, KY 40506-0005

INVITATION TO BID: CCK-2400-19
BID OPENING DATE: April 17th, 2019
TIME: 3:00 P.M. E.D.T.

The Bidder, in compliance with your Invitation for Bids for the above referenced Project, having carefully examined the site of the Work, the Drawings and complete Contract Documents as defined in Article I of the General Conditions, as well as the Specifications affecting the work as prepared by the Consultant, hereby proposes to furnish all labor, materials, supplies and services required to construct the Project in accordance with the Contract Documents, within the time set forth therein, and at the price stated below without qualification. Bidder understands that successful bidder will enter into a contract with Turner Construction Company utilizing Turner’s Subcontract Agreement Form 36 without modification.

The Bidder hereby acknowledges receipt of the following Addenda:

ADDENDUM NO. 1 DATED 09 APR 19
ADDENDUM NO. 2 DATED 19 APR 19
ADDENDUM NO. DATED
ADDENDUM NO. DATED

(Here insert the number and date of any Addenda issued and received. If none has been issued and received, the word NONE should be inserted.)

NOTE: IN ADDITION TO THE SPECIFIC TRADE FORM OF PROPOSAL EACH SUBCONTRACTOR MUST ALSO SUBMIT FORMS FOUND IN THE SUPPLEMENTAL FORM OF PROPOSAL SECTION.
FORM OF PROPOSAL

AUTHENTICATION OF BID AND STATEMENT OF NON-COLLUSION AND NON-CONFLICT OF INTEREST

I hereby certify:

1. That I am the Bidder (if the Bidder is an individual), a partner in the Bidder (if the Bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the Bidder is a corporation);

2. That the submitted Bid or Bids covering Capital Construction Procurement Section Invitation No. CCK-2403-19 have been arrived at by the Bidder independently and have been submitted without collusion with, and without any agreement, understanding or planned common course of action with, any other contractor, vendor of materials, supplies, equipment or services described in the Invitation to Bid, designed to limit independent bidding or competition; as prohibited by provision KRS 45A.325;

3. That the contents of the Bid or Bids have not been communicated by the Bidder or its employees or agents to any person not an employee or agent of the Bidder or its surety on any bond furnished with the Bid or Bids and will not be communicated to any such person prior to the official opening of the Bid or Bids;

4. That the Bidder is legally entitled to enter into the contracts with the University of Kentucky and Turner Construction Company and is not in violation of any prohibited conflict of interest, including those prohibited by the provisions of KRS 164.390, and 45A.330 to 45A.340 and 45A.455;

5. This offer is good for 60 calendar days from the date this Bid is opened. In submitting the above, it is expressly agreed that upon proper acceptance by the Capital Construction Procurement Section of any or all items Bid above, a contract shall thereby be created with respect to the Items accepted;

6. That I have fully informed myself regarding and affirm the accuracy of all statements made in this Form of Proposal including Bid Amount;

7. Unless otherwise exempted by KRS 45.590, the Bidder intends to comply in full with all requirements of the Kentucky Civil Rights Act and to submit data required by the Kentucky Equal Employment Act upon being designated the successful contractor;

8. That the bidding contractor and all subcontractors to be employed do not and will not maintain any facilities they provide for employees in a segregated manner and they are in full compliance with provisions of 41 CFR 60-1.8 that prohibits the maintaining of segregated facilities;

9. In accordance with KRS45A.110(2), the undersigned hereby swears under penalty of perjury that he/she has not knowingly violated any provision of the campaign finance laws of the Commonwealth of Kentucky and that the award of a contract to the bidder will not violate any provision of the campaign finance laws of the Commonwealth of Kentucky.

READ CAREFULLY - SIGN IN SPACE BELOW. FAILURE TO SIGN INVALIDATES BID

SIGNED BY ___________________________ TITLE _______________
PRINT NAME ___________________________ FIRM ___________________________
ADDRESS _______________ AREA CODE & PHONE ________
LEXINGTON KY 40509
LEXINGTON \ STATE ZIP CODE
DATE _______________ EMAIL ___________________________

Scope of Work Page 2 of 15 4/2019
LUMP SUM PROPOSAL

The Bidder agrees to furnish all labor, materials, supplies and services required to complete the Work, for the above referenced Project, for the Capital Construction Procurement Section, University of Kentucky, as described in the Specifications and Contract Documents and shown on the Drawings enumerated below and as modified by the Addenda listed above.

TC-168A – HVAC Controls Instrumentation

FOR THE LUMP SUM OF $784,000.00

USE WORDS

SIX HUNDRED EIGHTY-FOUR THOUSAND DOLLARS AND ZERO CENTS.

USE WORDS

BIDDER MUST TURN IN BID BREAKOUT SHEET WITH THIS FORM OF PROPOSAL

USE FIGURES

ALTERNATES – NONE

Current Experience Modification Rating .52

OSHA Incident Rates: Recordable 1.74 Date of Proposal 19SEP18

THE FOLLOWING ITEMS ARE HERewith ENCLOSED AS REQUIRED BY KRS 45A.185:

1. Bid Bond or Certified Check in an amount not less than five percent (5%) of total Bid.

2. Authentication of Bid and Statement of Non-Collusion and Non-Conflict of Interest.

3. Vendor Number: It is imperative that you furnish your Federal Employer Identification Number in the space provided below. Failure to do so may delay the processing of purchase orders issued to your firm.

3903861-6

(Nine Digit Number)

4. Form of Proposal Supplemental Information

5. TC-168a Bid Breakout sheet (from Attachment ‘B’)

SUPERINTENDENT

In accordance with Article 17 of the General Conditions a full-time superintendent will be required on this project. Below, please list the superintendent your firm will employ on this project. The successful Bidder will be required to furnish a resume of the superintendent’s qualifications and or past projects.

List the Superintendent’s Name Craig Hubbard
NOTE: Unit Prices shall include the furnishing of all labor, materials, supplies and services and shall include all items of cost, overhead and profit for the Contractor and any subcontractor involved, and shall be used uniformly without modifications for either additions or deductions. The Unit Prices as established shall be used to determine the equitable adjustment of the Contract Price in connection with changes, deletions or extra work performed under the Contract and the "Rules of Measurement" set forth in the General Conditions shall govern.

All Bidders will be required to complete and submit the following information with the bid. The information requested in this submittal is required to assist the University in determining contractor responsibility to complete the project being bid.

**KY FAIRNESS ACT: UNIT PRICES SHALL BE SUBJECT TO REVIEW / ADJUSTMENT AT TIME OF BID REVIEW / AWARD BASED ON "NET COST" CONCEPT. PROVIDE DETAIL BREAKDOWN 24 HOURS AFTER BID.**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Base rate</th>
<th>Fringe</th>
<th>Burden</th>
<th>(If)</th>
<th>(SUM) (ST)</th>
<th>(SUM) (T&amp;1/2)</th>
<th>(SUM) (DT)</th>
<th>OH/P %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proj Mgr</td>
<td>65</td>
<td>42</td>
<td>38</td>
<td>0</td>
<td>145</td>
<td>145</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>Sr Tech</td>
<td>45</td>
<td>42</td>
<td>38</td>
<td>0</td>
<td>125</td>
<td>140.5</td>
<td>170</td>
<td></td>
</tr>
<tr>
<td>Tech</td>
<td>37</td>
<td>35</td>
<td>38</td>
<td>0</td>
<td>110</td>
<td>120.5</td>
<td>147</td>
<td></td>
</tr>
<tr>
<td>Tech App</td>
<td>20</td>
<td>12</td>
<td>24</td>
<td>0</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td></td>
</tr>
</tbody>
</table>

Scope of Work Page 4 of 15
BID BREAKOUT

Fill in the following breakdown of costs included in your base bid. Each item is to include labor, material & equipment. These will not be considered unit prices nor will the numbers listed here limit obligations required in the bid documents. It will be used only to aid in verifying completeness of the bids.

<table>
<thead>
<tr>
<th>DESCRIPTION OF WORK</th>
<th>COST INCLUDED IN BID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demolition</td>
<td>$10,000</td>
</tr>
<tr>
<td>Controls Engineering &amp; layout, Permits &amp; Fees, Shop drawings and submittals</td>
<td>$59,000</td>
</tr>
<tr>
<td>Controls Valves, Dampers, Flow Stations, Components</td>
<td>$75,000</td>
</tr>
<tr>
<td>Control Panels, Conduit, Wire</td>
<td>$40,000</td>
</tr>
<tr>
<td>Controls Instrumentation</td>
<td>$40,000</td>
</tr>
<tr>
<td>Controls BIM, Test &amp; Balance Coordination</td>
<td>$20,000</td>
</tr>
<tr>
<td>Controls Graphics and Commissioning Coordination</td>
<td>$40,000</td>
</tr>
<tr>
<td>Variable Frequency Drives (VFD)</td>
<td>$10,000</td>
</tr>
<tr>
<td>Relocation of Existing Controls Allowance</td>
<td>$10,000</td>
</tr>
<tr>
<td>Fireslapping, Safety and Housekeeping</td>
<td>$13,000</td>
</tr>
<tr>
<td>Remaining work not listed above, Overhead &amp; Profit (not to exceed 10% of proposal)</td>
<td>$13,000</td>
</tr>
</tbody>
</table>

**TOTAL BID AMOUNT (SHOULD MATCH PROPOSAL)**

$784,000

Credit for Control Dampers - $2,054

Total Value: $771,946
THE FOLLOWING INFORMATION PERTAINS TO ALL TRADE CONTRACTORS

NOTE: MUST BE SUBMITTED WITH THE BID SUBMITTAL.
Failure to comply will result in rejection of Bidder’s Proposal.

Contractor Report of Prior Violations of
Chapters 136, 139, 141, 337, 338, 341, and 342

Pursuant to KRS 45A.485, the Contractor shall, prior to the award of a Contract, reveal final determinations of any violations of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, and 342 by the Contractor that have occurred in the previous five (5) year period.

This statute also requires for the duration of the Contract established, the Contractor be in continuous compliance with the provisions of Chapters 136, 139, 141, 337, 338, 341, and 342 that apply to the Contractor’s operations. The Contractor’s failure to reveal a final determination of a violation of KRS Chapters 136, 139, 141, 337, 338, 341, and 342, or failure to comply with any of the above cited statutes for the duration of the Contract shall be grounds for the cancellation of the Contract, and the disqualification from eligibility for future contracts for a period of two (2) years.

The Contractor, by signing and submitting a Bid on this Invitation, agrees as required by KRS 45A.485 to submit final determinations of any violations of the provisions of KRS Chapters 136, 139, 141, 337, 338, 341, and 342 that have occurred in the previous five (5) years prior to the award of a Contract and agrees to remain in continuous compliance with the provisions of these statutes during the duration of any contract that may be established. Final determinations of any violations of these statutes, must be provided to the University by the successful Contractor prior to the award of a Contract.

BUSINESS CLASSIFICATION

Please complete this form which is necessary for the University of Kentucky vendor database. Mark only one classification. Refer to “Definitions” for assistance in determining correct classification.

(01)____Small Business

(02)____Large Business

(03)____Disadvantaged Small Business

(04)____Disadvantaged Large Business

(05)____Woman-Owned Small Business

(06)____Woman-Owned Large Business

(07)____Disadvantaged Woman-Owned Small Business

(08)____Disadvantaged Woman-Owned Large Business

(09)____Other
DEFINITIONS

(01) SMALL BUSINESS: A business concern that is organized for profit, is independently owned and operated, is not dominant in the field of operations in which it is bidding, and meets the size standards as prescribed in the Code of Federal Regulations, Title 13, Part 121. Consult your local or district Small Business Administration (SBA) office if further clarification is needed.

(02) LARGE BUSINESS: A business concern that exceeds the small business size code standards established by SBA.

(03) DISADVANTAGED SMALL BUSINESS: A business concern (a) that is at least 51 percent owned by one or more socially and economically disadvantaged individuals (as defined below), or a publically owned business, having at least 51 percent of its stock owned by one or more socially and economically disadvantaged individuals; and (b) has its management and daily business operations controlled by one or more such individuals. Socially and economically disadvantaged individuals include Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans and other minorities or individuals found to be disadvantaged by the SBA.

(04) DISADVANTAGED LARGE BUSINESS: A concern that meets the definition of socially and economically disadvantaged individuals, but which is not a small business by the SBA’s size standards.

(05) WOMAN-OWNED SMALL BUSINESS: A small business that is at least 51 percent owned by a woman or women who also control and operate it. “Control” in this context means exercising the power to make policy decisions. “Operate” means actively involved in the day to day management.

(06) WOMAN-OWNED LARGE BUSINESS: A concern that meets the definition of woman owned and operated, but which is not a small business by the SBA’s standards.

(07) DISADVANTAGED, WOMAN-OWNED SMALL BUSINESS: A concern that meets the definition of both (03) and (05) above.

(08) DISADVANTAGED, WOMAN OWNED LARGE BUSINESS: A concern that meets the definition of both (04) and (06) above.

(09) OTHER: A concern that does not meet any of the above definitions.

BIDDER’S QUALIFICATIONS

The Commonwealth of Kentucky Model Procurement Code (KRS 45A.080) requires contracts to be awarded, “to the responsive and responsible bidder whose bid offers the best value” to the University of Kentucky. In order to determine if the Bidder has the experience, qualifications, resources and necessary attributes to provide the quality workmanship, materials and management required by the plans and specifications, the Bidder may be required to complete and submit the information requested on the University of Kentucky Contractor Bidder Determination of Responsibility questionnaire. Failure to provide the information requested on the questionnaire or failure to provide any additional submittals or information that may be requested to make this determination may be grounds for a declaration of nonresponsibility with respect to the Bidder. A copy of the Contractor Determination of Responsibility questionnaire is available upon request to all Bidders.
TIME LIMIT FOR EXECUTION OF CONTRACT DOCUMENTS

It is further agreed, that in the event this Proposal is accepted by the Owner and the undersigned shall fail to execute the Contract and furnish satisfactory Payment and Performance Bond within ten (10) consecutive calendar days from the date of notification of the award of the Contract, the Owner may at his option, determine that the undersigned has abandoned the Contract and thereupon, the Proposal shall become null and void and the Bid guarantee, check or Bid bond which accompanied it shall be forfeited and become the property of the Owner as liquidated damages for each failure and no protest pursuant to such action will be made. If the Undersigned shall execute the Contract, and furnish satisfactory Payment Bond and Performance Bond, it is understood that the Bid Guarantee or Bid Bond will be returned to the undersigned by the Owner.

IDENTIFICATION OF MINORITY SUBCONTRACTORS AND MATERIAL SUPPLIERS

Participation of Minority and Women owned Contractors and businesses.

The University of Kentucky encourages and supports the participation of minority and women owned businesses. Goal is 10% MBE/WBE

1. Minority and Women Subcontractors

   NONE

2. Minority and Women Material Suppliers

   NONE

This proposal includes \( \phi \) % certified MBE participation

This proposal includes \( \phi \) % certified WBE participation

If your firm has no minority or women owned subcontractors or suppliers, it is required that you complete the list of minority and/or women owned businesses below. List the names of firms that were solicited to bid the project and describe why they were not successful (i.e. not low bid, did not respond, etc).
Minority/Women-Owned firms were contacted to solicit pricing as subcontractors/suppliers for Invitation to Bid No. TC-168A. The following firms were not selected for use on this project for the reasons stated in the RESULT column.

This list of Minority or Women owned firms is to be executed and submitted as a part of the Bidder's Proposal. Failure to comply will result in rejection of Bidder's Proposal.

<table>
<thead>
<tr>
<th>FIRM NAME</th>
<th>MBE/WBE</th>
<th>WORK ITEMS SOLICITED</th>
<th>RESULT: NO RESPONSE OR NOT LOW BID</th>
</tr>
</thead>
<tbody>
<tr>
<td>LVS</td>
<td>WBE</td>
<td>Electrical</td>
<td>Not Low Bid</td>
</tr>
</tbody>
</table>

Signature: [Signature]  Date: [Date]

Title: [Title]
The apparent low bidder will be required to furnish this information within 24 hours of bid submittal. Failure to comply will result in rejection of Bidder's Proposal.

Each item listed under the different phases of construction must be clearly identified so that the Owner will definitely know what the Bidder proposes to furnish.

The use of a manufacturer's or dealer's name only, or stating "as per Plans and Specifications," will not be considered as sufficient identification.

Where more than one "Make" or "Brand" is listed for any one item, the Owner has the right to select the one to be used.

**CONTRACTOR NAME & ADDRESS:**

Johnson Controls Inc  
933 Boasley St, Suite 150  
Lexington, KY 40509

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**TRADE CONTRACT: TC-168A (INSERT NUMBER)  SCOPE OF WORK: HVAC Controls Instrumentation (INSERT NAME OF TRADE CONTRACT)**

The information requested in this submittal is required to assist the University in determining contractor responsibility to complete the project being bid.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>MATERIALS AND EQUIPMENT</th>
<th>BRAND OR MANUFACTURER</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS-NAEXxx</td>
<td></td>
<td>Johnson Controls</td>
</tr>
<tr>
<td>MS-FECxx</td>
<td></td>
<td>Johnson Controls</td>
</tr>
<tr>
<td>MS-UMAXy</td>
<td></td>
<td>Johnson Controls</td>
</tr>
<tr>
<td>MS-1OMxx</td>
<td></td>
<td>Johnson Controls</td>
</tr>
<tr>
<td>Nest Stat</td>
<td></td>
<td>Johnson Controls</td>
</tr>
<tr>
<td>Discharge air temp sensor</td>
<td></td>
<td>Johnson Controls</td>
</tr>
<tr>
<td>VFDs</td>
<td></td>
<td>ABB</td>
</tr>
</tbody>
</table>
PRIMARY LIST OF PROPOSED SUBCONTRACTORS

The apparent low bidder will be required to furnish this information within 24 hours of bid submittal. Failure to comply will result in rejection of Bidder's Proposal.

All subcontractors are subject to the approval of the Capital Construction Procurement Section and Capital Project Management Division, University of Kentucky, Lexington, KY.

If certain branches of the Work are to be done by the Prime Contractor, so state.

CONTRACTOR NAME & ADDRESS: Johnson Controls Inc
973 Beasley St Suite 150
Lexington, KY 40507

TRADE CONTRACT: TC - 168 A
(SCOPE OF WORK: HVAC Controls Instrumentation
(INsert number)

DIvision of Work
Lab controls

Electrical Instrumentation

NAME AND ADDRESS OF SUBCONTRACTOR
Purdy Air Equipment Company
Lexington, KY

Besco
649 Bizzell Dr
Lexington, KY
Bid Bond

CONTRACTOR:
(Name, legal status and address)
Johnson Controls, Inc.
973 Deasley Street, Suite 130
Lexington, KY 40509

SURETY:
(Name, legal status and principal place of business)
Liberty Mutual Insurance Company
175 Berkeley Street
Boston, MA 02116

MAILING ADDRESS FOR NOTICES
175 Berkeley Street
Boston, MA 02116

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

OWNER:
(Name, legal status and address)
University of Kentucky
322 Peterson Service Building
Lexington, KY 40506

BOND AMOUNT: 5% Five Percent of Amount Bid

PROJECT:
(Name, location or address, and Project number, if any)
Renovate/Expand UK Healthcare Facilities Pavilion A- Interventional Services, No. 2402.13 Bid Package 1

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid, Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this 25th day of April, 2019.

[Signature]
Witness: Joshua Sanford

[Signature]
Witness: Aliza Anderson

By: Ashley Alexis
 Attorney-in-Fact

Liberty Mutual Insurance Company
(Surety)

By: Danielle D Johnson
 Attorney-in-Fact

Johnson Controls, Inc.
(Principal)

S-0054AS 8/10
DELEGATION OF AUTHORITY

The undersigned President of Johnson Controls, Inc., a Wisconsin corporation (the "Company"), pursuant to the authority vested in him by a certain resolution adopted by the Board of Directors of the Company on October 25, 2016, hereby authorizes:

Ashley Alexis, Assistant Client Service Specialist
Willis of New York, Inc.
10 State House Square, Floor 11
Hartford, CT, 06103

to perform, on behalf of the Company, the acts described below:

To execute, seal and deliver, as attorney-in-fact for the Company, surety bonds forwarded to Willis of New York, Inc. by the Company that do not exceed Two Million Dollars ($2,000,000.00) that are necessary and proper in carrying on the business of the Company.

This authority shall remain in full force and effect for one (1) year from the date of issue unless earlier revoked in writing by the Company President or any Vice President.

Signed at Milwaukee, Wisconsin, this 17 day of August 2018.

[Signature]
Michael R. Petersen, President

[Signature]
Marc B. L. Vandepenbeeck, Treasurer
This Power of Attorney vests the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated. Not valid for mortgage, note, loan, letters of credit, bank deposits, currency rate, interest rate or residual value guarantees. To confirm the validity of this Power of Attorney call 610-332-8246 between 9:00 am and 4:00 pm EST on any business day.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the “Companies”), pursuant to and by authority hereby set forth, does hereby name, constitute and appoint, Joel M. Carey, a duly authorized officer of the Company, to be my true and lawful attorney-in-fact, with full power and authority hereby conferred to sign, execute and acknowledge the following surety bonds:

Principal Name: Johnson Controls, Inc.
Obligee Name: University of Kentucky
Surety Bond Number: Bid Bond
Bond Amount: See Bond Form

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 12th day of December, 2018.

The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: [signature]
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA
COUNTY OF MONTGOMERY

On this 12th day of December, 2018, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and thereon, as such, being duly authorized to do so, execute the foregoing instrument for the purpuses therein contained by signing on behalf of the corporations or his as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.

COMMONWEALTH OF PENNSYLVANIA
Notary Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Affiant, Pennsylvania Association of Notaries

By: [signature]
Teresa Pastella, Notary Public

This Power of Attorney is valid and executed pursuant to law by authority of the following By-laws and authorizations of Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company, which resolutions are made in full force and effect, as follows:

ARTICLE IV — OFFICERS — Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitations as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary for act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach therein the seal of the Corporation.

ARTICLE XIII — Contracts of Employment — Section 6. Surety Bonds and Undertakings. Any officer or the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach therein the seal of the Company. When so executed, such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation — The President of the Company, acting pursuant to the By-laws of the Company, authorizes David M. Carey, Assistant Secretary in apparent such attorneys-in-fact as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization — By unanimous consent of the Company’s Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any Assistant Secretary of the Company, whether appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually executed.

I, Renee C. Linnamen, undersigned Assistant Secretary, of Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company do hereby certify that this power of attorney executed by said Companies is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 26th day of April, 2019.

By: [signature]
Renee C. Linnamen, Assistant Secretary
**Interventional Radiology Project**

- **6" Conduit Sleeves at Deck**
  - Rated Insert & Sch. 80 PVC

- **Cap and seal top of stub up until grout fill has been placed, cut flush with floor & cut out for slot to center of bed**

- **Fire Grout Fill around Conduit and Fire Sleeve**

- **8" Core Drill**

- **14" x 14" x 4" - 16 ga. galv. Grout Pan with flanged top for attaching and sealing to deck**

- **CD600 Fire Sleeve mounted in Grout Pan and sealed**

- **6" PVC through sleeve and connected to J-Box**

- **18" x 18" x 6" J-Box**

- **2" deep x 6" wide slot for Siemens Cables**

- **Cap and seal top of stub up until grout fill has been placed, cut flush with floor & cut out for slot to center of bed**

- **Fire Grout Fill around Conduit and Fire Sleeve**

- **8" Core Drill**

- **Interventional Radiology Project**

- **SK-104**

- **14" x 14" x 4" - 16 ga. galv. Grout Pan with flanged top for attaching and sealing to deck**

- **CD600 Fire Sleeve mounted in Grout Pan and sealed**

- **6" PVC through sleeve and connected to J-Box**

- **18" x 18" x 6" J-Box**

- **2" deep x 6" wide slot for Siemens Cables**

- **Cap and seal top of stub up until grout fill has been placed, cut flush with floor & cut out for slot to center of bed**

- **Fire Grout Fill around Conduit and Fire Sleeve**

- **8" Core Drill**

- **Interventional Radiology Project**

- **SK-104**
Interventional Radiology Project

3" Conduit Sleeves at Deck Rated Insert & Sch. 80 PVC

Center of Aux Cables

2" deep x 6" wide slot for Siemens Cables

0'-4"

2'-0"

0'-6"

Cap and seal top of stub up until grout fill has been placed, cut flush with floor & cut out for slot to center of bed

24" x 24" x 6" J-Box

18" x 18" x 4" - 16 ga. galv. Grout Pan with flanged top for attaching and sealing to deck

CD301 Fire Sleeves mounted in Grout Pan and sealed

3" PVC through sleeve and connected to J-Box

6" Cores Typ.

Fire Grout Fill around Conduit and Fire Sleeve

Center of Bed

2" deep x 6" wide slot for Siemens Cables

2'-0"

0'-9"

Center of Bed

Cap and seal top of stub up until grout fill has been placed, cut flush with floor & cut out for slot to center of bed

6" Cores Typ.

Fire Grout Fill around Conduit and Fire Sleeve

Interventional Radiology Project

Mounting Clips as required

18" x 18" x 4" - 16 ga. galv. Grout Pan with flanged top for attaching and sealing to deck

CD301 Fire Sleeves mounted in Grout Pan and sealed

3" PVC through sleeve and connected to J-Box

24" x 24" x 6" J-Box
Interventional Radiology Project

Cable Slot SS Cover Details
Plan View

Center of Cable Feed to Bed or Aux.

2" deep x 6" wide slot for Siemens Cables

10 ga. 316 Stainless Steel Cover Plate Typ.

1'4"

0'8"

Note:
If Bed is centered over Joist, then cover plate is only necessary where slot is not under bed skirt.

If Bed is centered over core in middle of joist space, no cover plate is required.

6" Cores Typ.

10 ga. 316 Stainless Steel Cover Plate Typ.

Nora Flooring Typ.

Note:
Nora Flooring and 10 Ga. SS are approximately same thickness. SS cover plates to be installed at completion of Cable Installation, mounted with full perimeter bed of Hospital Grade Silicone and all edges sealed with Silicone and/or welded to flooring by Nora contractor.

Cable Slot & Core Opening SS Cover Details
Section A-A

Center of Cable Feed to Bed or Aux.

2" deep x 6" wide slot for Siemens Cables

6" Cores Typ.

10 ga. 316 Stainless Steel Cover Plate Typ.

Nora Flooring Typ.

Note:
Nora Flooring and 10 Ga. SS are approximately same thickness. SS cover plates to be installed at completion of Cable Installation, mounted with full perimeter bed of Hospital Grade Silicone and all edges sealed with Silicone and/or welded to flooring by Nora contractor.
ADDENDUM NO. 3

BY: GBBN Architects, Inc.
609 West Main Street
Louisville, Kentucky 40202
502.583.0700

SUBJECT: University of Kentucky
Renovate/Expand UK Healthcare Facilities
Pavilion A - Interventional Services
UK # 2402.13

FOR: University of Kentucky
222 Peterson Service Building
Lexington, Kentucky 40506

TO: All Bidders of Record

Acknowledge receipt of this Addendum by inserting its number and date in the space provided on the Bid Form. Failure to do so may subject bidders to disqualification. This Addendum forms a part of the Bidding Documents and revises the Bidding Documents as follows:

PART 1 PROJECT MANUAL

1.1 Architectural Specifications
A. Section 08 7100 – DOOR HARDWARE
   1. Add Section 08 7100.3 - Sample Wire Diagrams.
B. Section 10 5113 – METAL LOCKERS
   1. Add Paragraph 2.2, A, 3: WEC Manufacturing

1.2 Mechanical Specifications
A. Section 23 0594 – WATER SYSTEMS TEST ADJUST BALANCE
   1. Delete Paragraph 1.3 H.
B. Section 23 0595 – AIR SYSTEMS TEST ADJUST BALANCE
   1. Delete Paragraph 1.3 H.
C. Section 23 3400 – FANS
   1. Added High Plume exhaust fan specification.
D. Section 23 3713 – DIFFUSERS, REGISTERS AND GRILLES
   1. Added info to modular ceiling system spec for clarification.
E. 23 4114 – FILTERS
   1. Removed Bag-in bag-out containment filter housing spec.
1.3   Electrical Specifications
   A. None

1.4   Technology Specifications
   A. None

1.5   Plumbing Specifications
   A. None.

PART 2 DRAWINGS

2.1   General Drawings:
   A. None

2.2   Life Safety Drawings:
   A. None

2.3   Civil Drawings:
   A. None.

2.4   Architectural Drawings:
   A. Sheet A101A.1
      1. Revise drawing per ASK_ADDM-3_01
   B. Sheet A101B.1 & A010B.2:
      1. Revise drawing per ASK_ADDM-3_02

2.5   Structural Drawings:
   A. None

2.6   Vendor Drawings:
   A. None

2.7   Mechanical Drawings:
   A. Sheet H101A:
1. Removed distribution ductwork from future procedure rooms.
2. Revised two grilles to tap off EF1-TE-01E duct main.
3. Revised an exhaust duct size.
4. Revised supply elbow to have splitter vane.

B. Sheet H101B
   1. Removed distribution ductwork from future procedure rooms.

C. Sheet H201A
   1. Added two pipe sizes for clarification.

D. Sheet H215
   1. Revised EF3-ISO-01 fan and added sheet keynote 1.

E. Sheet H801
   1. Added note to hot water heating coil detail to omit strainer and balance valve from pump detail.

F. Sheet H900
   1. Added items to accessories list on fan coil unit schedule.

G. Sheet H901
   1. Added performance data to sound attenuating device schedule
   2. Updated exhaust fan schedule with revised ESP and revised EF3-ISO-01 fan selection.

2.8 Instrumentation and Control Drawings:

A. None

2.9 Plumbing Drawings:

A. Sheet P100B:
   1. Showing the new location of the sanitary, vent risers and connecting to the existing piping in ceiling.

B. Sheet P101B:
   1. Offsetting the existing sanitary, vent risers in ceiling from above floor and dropping down in a new location.
   2. Added new keynotes

C. Sheet P201A:
   1. Updated medical gas outlet tags for procedure rooms 12, 13.
   2. Removed medical gas piping in procedure rooms 6,7,8 on the outlet side of zone valve box. Piping to be capped in ceiling and valving to be closed at zone valve box.
   3. Updated keynotes.

D. Sheet P201B:
   1. Removed medical gas piping in procedure rooms 6,7,8 on the outlet side of zone valve box. Piping to be capped in ceiling and valving to be closed at zone valve box.
   2. Updated keynotes.
E. Sheet P700:
   I. Updated drawing note.

F. Sheet P900
   I. Updated medical gas outlets schedule.

G. Sheet PD101B:
   I. Demoing sanitary and vent risers going up to 1st floor.
   2. Updated keynotes.

2.10 Electrical Drawings:

A. Sheet E303A:
   I. Add sheet keynote #5 and required locations.

B. Sheet E403A:
   I. Add sheet keynote #1 and required locations.

2.11 Technology Drawings:

A. Sheet T101A:
   I. Removed unassociated text annotation of “NEW 30”X4” CABLE TRAY” from area of Staff Restroom A01407B.

PART 3 ATTACHMENTS

3.1 Specifications

A. Section 23 3400 – FANS
   I. Re-issued 05/01/19.

B. Section 23 3713 – DIFFUSERS, REGISTERS AND GRILLES
   I. Re-issued 05/01/19.

C. 23 4114 – FILTERS
   I. Re-issued 05/01/19.

3.2 Drawings

A. Architectural Drawings:
   I. None

   I. Re-issued 05/01/19.

   I. Re-issued 05/01/19.
D. Electrical Drawings: E303A, E403A
   1. Re-issued 05/01/19.

E. Technology Drawings: T101A
   1. Re-issued 5/1, 2019

3.3 Sketches

A. ASK_ADDM-3_01 & ASK_ADDM-3_02 dated 05/01/19

3.4 Copy of RFI’s

A. None

3.5 Supplemental Information

A. None

END OF ADDENDUM
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OPERATION DESCRIPTION

- One keyswitch is used to enable/disable the shear locks.
- One keyswitch is used to enable/disable the auto operator.
- One keyswitch is used to enable/disable the wall mounted mag holders.

DAY MODE:
- Wall mags are enabled & doors are held open.
- Free entry & egress.

NIGHT MODE:
- Wall mags are disabled and doors close & lock.
- Entry is by a valid card read which signals the auto operator to trigger the shear locks to release before opening the doors.
- The interior ADA actuator is always active.
- Pressing the interior actuator, a signal from the TUG system, or a signal from the intercom system signals the auto operator to trigger the shear locks to release before opening the doors.
- Motion detector (PIR) releases the shear locks and sends a rex signal on approach from the secure side.
- Emergency exit button is a code required back-up which releases the shear locks for a timed period.
- On fire alarm activation or power loss, shear locks and wall mags release.
OPERATION DESCRIPTION

- Doors are normally closed and secured by magnetic shear locks.
- One keyswitch is used to enable/disable the shear locks.
- One keyswitch is used to enable/disable the auto operator.
- Entry is by a valid card read which signals the auto operator to trigger the shear locks to release before opening the doors.
- The interior ADA actuator is always active.
- Pressing the interior actuator, or a signal from the TUG system, signals the auto operator to trigger the shear locks to release before opening the doors.
- Motion detector (PIR) releases the shear locks and sends a rex signal on approach from the secure side.
- Emergency exit button is a code required back-up which releases the shear locks for a timed period.
- On fire alarm activation or loss of power, shear locks release.
OPERATION DESCRIPTION

- Doors are normally closed and latched by exit devices.
- Keyswitch is used to enable/disable the operator.
- Entry is by a valid card read which signals the auto operator to trigger the exit devices to release before opening the doors.
- Entry also by key override.
- The interior ADA actuator is always enabled.
- Pressing the interior actuator, or a signal from the TUG system, signals the auto operator to trigger the exit devices to release before opening the doors.
- On fire alarm activation, the signals from the card reader, ADA actuator, & TUG system are disabled. The doors close & latch.
- Free egress at all times by depressing either exit device bar.

WIRING COLOR DESCRIPTION

- BLACK (-) 24 VDC
- RED (+) 24 VDC
- BLUE - RX (COM)
- BROWN - RX (N.O.)
- YELLOW - RX (N.C.)
- WHITE - UNUSED
- GREEN - UNUSED
- ORANGE - UNUSED
- BLUE - RX (COM)
- BROWN - RX (N.O.)
- YELLOW - RX (N.C.)
- VIOLET - UNUSED
- GREY - UNUSED
- PINK - UNUSED
- TAN - UNUSED

SAMPLE WIRE DIAGRAM
WIRING DIAGRAM

OPERATION DESCRIPTION:
- Door is normally closed & secured by a fail secure mortise lock in both directions.
- Door position switch indicates door open/closed.
- Entry is by a valid card read, from either side, which releases the outside trim (lever) on both sides.
- Entry also by key override on either side.

WIRING COLOR DESCRIPTION

DEVICE SIDE OF EL-EPT
(1) BLACK (-) 24 VDC
(2) RED (+) 24 VDC
(3) WHITE
(4) GREEN
(5) ORANGE
(6) BLUE
(7) BROWN
(8) YELLOW

VIOLET - UNUSED
GREY - UNUSED
PINK - UNUSED
TAN - UNUSED

REMOTE TECH CLOSET
SEE CHART AT LEFT FOR TECH CLOSET # USED AT EACH DOOR
(EACH TECH CLOSET HAS A SEPARATE DRAWING SHOWING POWER SUPPLY CONNECTIONS)
OPERATION DESCRIPTION:
- Doors are normally held open by wall magnets.
- Key switch is used to enable/disable wall magnets.
- On fire alarm activation or loss of power, wall magnets release & doors close.
- Free egress at all times.
WIRING DIAGRAM

<table>
<thead>
<tr>
<th>DOOR #</th>
<th>HW SET #</th>
<th>TECH CLOSET</th>
</tr>
</thead>
<tbody>
<tr>
<td>A11024B</td>
<td>254</td>
<td>A110003</td>
</tr>
<tr>
<td>A11024C</td>
<td>82</td>
<td>A110003</td>
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<td>A11024D</td>
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<td>A11152</td>
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<tr>
<td>A11L005</td>
<td>15</td>
<td>A110006</td>
</tr>
</tbody>
</table>

SAMPLE WIRE DIAGRAM

REMOTE TECH CLOSET
SEE CHART AT LEFT FOR TECH CLOSET # USED AT EACH DOOR
(EACH TECH CLOSET HAS A SEPARATE DRAWING SHOWING POWER SUPPLY CONNECTIONS)

OPERATION DESCRIPTION:
- Door is normally closed & secured by a fail secure mortise lock.
- Door position switch indicates door open/closed.
- REX indicates interior trim (lever) being used for egress.
- Entry is by a valid card read which releases the outside trim (lever).
- Emergency entry by key override.
- Free egress at all times.

WIRING COLOR DESCRIPTION

<table>
<thead>
<tr>
<th>DEVICE SIDE OF EL-EPT</th>
<th>TO HINGE</th>
<th>FROM LOCK</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLACK (-) 24 VDC</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RED (+) 24 VDC</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>WHITE - RX (COM)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>GREEN - RX (N.O.)</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>ORANGE - RX (N.C.)</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>BLUE - UNUSED</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>BROWN - UNUSED</td>
<td>7</td>
<td></td>
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<td>YELLOW - UNUSED</td>
<td>8</td>
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<td>VIOLET - UNUSED</td>
<td>1</td>
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<td>GREY - UNUSED</td>
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<td></td>
</tr>
<tr>
<td>PINK - UNUSED</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>TAN - UNUSED</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: 1- Set the slide switch to 24V.
WIRING DIAGRAM

OPERATION DESCRIPTION
- Doors are normally closed and secured by magnetic shear locks.
- One keyswitch is used to enable/disable the shear locks.
- One keyswitch is used to enable/disable the auto operator.
- Entry is by a valid card read which signals the auto operator to trigger the shear locks to release before opening the doors.
- The interior ADA actuator is always active.
- Pressing the interior actuator, a signal from the TUG system, or a signal from the intercom system signals the auto operator to trigger the shear locks to release before opening the doors.
- Motion detector (PIR) releases the shear locks and sends a rex signal on approach from the secure side
- Emergency exit button is a code required back-up which releases the shear locks for a timed period.
- On fire alarm activation or loss of power, shear locks release.

SAMPLE WIRE DIAGRAM
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SECTION 23-3400

FANS

PART 1 GENERAL

1.1 RELATED WORK

A. Section 20-0513 - Motors
B. Section 20-0514 - Variable Frequency Drive (VFD) System
C. Section 23-0550 - Vibration Isolation
D. Section 26-2816 - Enclosed Switches and Circuit Breakers

1.2 REFERENCE

A. The Work under this Section is subject to requirements of the Contract Documents including the General Conditions, Supplementary Conditions, and sections under Division 01 General Requirements.

B. This section specifies a system or a component of a system being commissioned as defined in Section 01 91 00 Commissioning. Testing of these systems is required, in cooperation with the Owner and the Commissioning Authority. Refer to Section 01 91 00 Commissioning for detailed commissioning requirements.

1.3 SUBMITTALS

A. Shop drawings including, but not limited to, the following:
   1. Manufacturer's name and model number
   2. Identification as referenced in the documents
   3. Capacities/ratings
   4. Fan curves
   5. Materials of construction
   6. Sound power levels
   7. Fan type, size, class, drive arrangement, discharge/rotation, bearings, drives
   8. Wheel type, diameter, rpm, tip speed
   9. Required fan horsepower including drive losses
   10. Motor data (refer to Section 20 0513 - Motors)
   11. Vibration isolators furnished with fans
   12. Dimensions and weights
   13. Special coatings where applicable
   14. Color selection charts where applicable
   15. Manufacturer's installation instructions
   16. All other appropriate data
B. Fan curves shall include series of curves indicating relationship of flow rate (cfm) to static or total pressure for various fan speeds, brake horsepower curves, and selection range (surge curves, maximum rpm, etc).

C. Indicate performance data, based on both design air quantity and 110% of design air quantity.

D. For variable air volume application, indicate operating points at 100, 80, 60 and 40% of design capacity on fan curves including data to indicate effect of capacity control devices such as inlet vanes on flow, pressure and horsepower.

1.4 DESIGN CRITERIA

A. Fan ratings shall be tested and certified in accordance with AMCA Standards 211 and 311 and fans shall bear AMCA Seal.

B. Fans shall be furnished complete with motors, wheels, drive assemblies, bearings and accessories as hereinafter specified. Motors for V-belt drives shall be furnished with adjustable rails or bases.

C. Each fan wheel shall be statically and dynamically balanced to grade G6.3 per ANSI S2.19. Complete fan assembly shall be factory balanced statically and dynamically in accordance with Standard AMCA 204-96 for Balance Quality and Vibration Levels for Fans and meet or exceed guidelines in Application Category BV-3.

D. For fans furnished with 5 HP or larger HP motors, each fan assembly shall have factory run test including vibration signatures taken on each bearing in horizontal, vertical and axial direction. Filter-in reading as measured at fan, scheduled rpm shall not exceed the following values when fan is rigidly mounted.
   1. Belt Drive (except Vane Axial) 0.15 in/sec peak velocity
   2. Belt Drive Vane Axial 0.08 in/sec peak velocity
   3. Direct Drive 0.08 in/sec peak velocity
   4. Written records of run test and vibration test shall be available upon request.

E. Furnish fans specified with V-belt drives with either variable-pitch or fixed-pitch sheaves for drives 3 HP and smaller and fixed-pitch sheaves for drives 5 HP and larger. Select variable pitch sheaves to drive fan at such speed as to produce specified capacity at approximate midpoint of sheave adjustment.

F. When fixed-pitch sheaves are furnished, system air balancing shall be accomplished by either trial of different fixed-pitch sheaves or use of temporary adjustable-pitch sheaves. This Contractor shall provide necessary trial and final sheaves and drive belts as required by TAB Contractor.

G. Select each fan to operate at single stable operating point as predicted by fan curve. Fans having 2 potential operating points on fan curves are not acceptable.

H. Unless otherwise indicated, V-belt drives shall be selected for 150% of motor nameplate horsepower.

I. Provide OSHA compliant belt and shaft guards for belt driven fans. Provide speed test openings at shaft locations. Paint guards bright yellow. Belt driven fans on smoke exhaust systems shall be provided with 1.5 time required number of belts (2 minimum).

J. Sound power levels shall be based on tests performed in accordance with AMCA Standards 300 and 301.
K. Each fan and motor combination shall be capable of delivering 110% of air quantity scheduled at scheduled static pressure. Motor furnished with fan shall not operate into motor service factor in any of these cases.

L. Consider drive efficiency in motor selection according to manufacturer’s published recommendation, or according to AMCA Publication 203, Appendix L.

M. Where inlet and outlet ductwork at any fan is changed from that shown on drawings, submit scaled layout of change and system effect factor calculations indicating increased static pressure requirements as described in AMCA Publication 201. This Contractor shall be responsible for costs associated with any motor, drive, and/or wiring changes required as a result of duct configuration changes at fan.

N. Exhaust fans serving fume hoods shall be marked with arrows to indicate proper direction of rotation.

O. Unless otherwise scheduled, AMCA Type A spark resistant construction shall be used for fans handling flammable or grease laden, vapors.

P. Fans scheduled with baked phenolic coating shall have internal parts in contact with air stream sand blasted to white metal finish and coated within 24 hours. Coating thickness shall be 5 mils minimum, equal to Heresite P-4403 (first 3 coats) and L-66L (final 2 coats) with each coat baked separately. Dry film thickness must be verified before final baking. Paint all exterior metal parts with prime coat after metal cleaning and surface preparation. In addition, apply second coat of paint to all exterior surfaces.

PART 2 PRODUCTS

2.1 CENTRIFUGAL FANS

A. Manufacturers: Greenheck, Barry, Peerless, Buffalo, Chicago Blower, New York Blower, Trane, Twin City or Cook.

B. Housings: Heavy gauge steel, continuously welded throughout, braced and supported by structural channels or angle irons to prevent vibration or pulsation, flanged outlet, fully streamlined inlet.

C. Wheels: Non-overloading airfoil blades welded to spun wheel cones unless otherwise indicated.

D. Bearings: Air handling quality, heavy duty, grease lubricated, ball or roller, self-aligning, pillow block type. Bearings shall be selected for minimum life (ABMA L-10) of not less than 40,000 hrs operation at maximum cataloged operating speed based on ABMA 9 and 11. Furnish bearings with pressure relief type external grease fittings.

E. Painting: All metal parts shall be painted with prime coat after metal cleaning and surface preparation. In addition, apply second coat of paint to all exterior surfaces.

F. Mounting Rails: Furnish common mounting rails for fan and motor as appropriate for fan arrangement indicated.

G. Discharge Dampers: Provide gravity backdraft dampers, for fans not provided with motorized dampers, for mounting at fan discharge outlet. Backdraft dampers shall be similar to Ruskin Model CBS 92, having aluminum airfoil-shaped blades, ball bearings and be rated to 4000 fpm. Dampers shall have blade and jamb seals with leakage rating no higher than 13.5 cfm/ft² for damper width 36" and larger based on pressure differential of 1" WG.
H. Inlet Screens: Minimum 16 gauge galvanized, 1" wire mesh for fans without inlet ductwork.

I. Access Doors: Bolted and gasketed type in fan housing for inspection of interiors and wheel.

J. Provide NEMA 4 rated disconnect switch.

2.2 HIGH PLUME EXHAUST FAN

A. Manufacturers: Twin City, Greenheck, or MK Plastics

B. All fan components shall have two part electrostatically applied and baked, corrosion resistant coating equivalent of Heresite P-413C. Coating thickness shall be 6 mils (min), not affected by UV, and have superior corrosion resistance to acid, alkali, and solvents. Coating system shall exceed 4000 h ASTM B117 Salt Spray Resistance.

C. Fan impeller shall be centrifugal, backward inclined, with non-stall characteristics. The impeller shall be electronically balanced both statically and dynamically per AMCA Standard 204.

D. Bearings: Air handling quality, heavy duty, grease packed, cast iron, pillow block type with grease seal, furnished with external grease fittings, selected for minimum life (ABMA L-10) of not less than 80,000 h (equivalent to L-50 average life of 400,000 h) at maximum cataloged operating speed. Bearings shall be fixed to fan shaft using concentric mounting locking collars.

E. Fan housing to be aerodynamically designed with high-efficiency inlet, engineered to reduce incoming air turbulence. Fan housing shall be welded steel and meet specification section B. for corrosion resistant coating. No uncoated metal fan parts shall be acceptable. Provide housing drain for removal of rain and condensation. A bolted and gasketed access door shall be supplied in the fan housing allowing for servicing and cleaning, impeller inspection or removal of impeller, shaft and bearings without removal of the fan housing.

F. A high velocity conical discharge nozzle shall be supplied by the fan manufacturer and be designed to efficiently handle an outlet velocity of up to 6000 FPM (30.48 m/s). Discharge nozzles shall be steel with corrosion resistant coating meeting specification section B. Discharge stack caps or hinged covers, impeding exhaust flow shall not be permitted.

G. Bypass air plenum: A bypass air plenum shall be provided as shown on drawings. The plenum shall be equipped with a bypass air damper and intake air hood with bird screen for introducing outside air at roof level upstream of the fan. The plenum shall be constructed of fully welded steel, meet specification section B. for corrosion resistant coating, and mount on roof curb.

   a. Bypass air dampers shall be opposed-blade design and coated with up to 4 mils of Hi-Pro Polyester resin, electrostatically applied and baked.

   b. Fan manufacturer shall supply structural support curbs for the plenum. Curb shall be minimum 12” high, constructed of minimum 14 gauge galvanized steel or extruded aluminum with continuous welded corner seams, treated wood nailer, minimum (1-1/2") thick, (3 lb) density, rigid mineral fiberboard insulation with metal liner.
PART 3 EXECUTION

3.1 INSTALLATION

A. Install units as shown on drawings, and according to manufacturer's installation instructions. On units provided with drain connection, install drain valve and cap discharge of drain.

B. Trade Contractor will install fans on existing room curbs per manufacturer’s installation instructions and details.

C. Perform field mechanical balancing, if necessary, to meet vibration tolerance specified in Section 23 0550 - Vibration Isolation.

3.2 COMMISSIONING

A. System functional performance testing is part of the Commissioning Process as specified in Section 01 91 00. Functional performance testing shall be performed by the contractor and witnessed and documented by the Commissioning Authority.

END OF SECTION
### Fan Data Sheet

#### General
- **Project Identification**: 
- **Service Location**: 
- **Type Manufacturer**: 
- **Model Number**: 

#### Performance
- **Capacity Efficiency (%)**: 
- **Brake Horsepower at design flow rate (cfm)**: 
- **Brake Horsepower at 110% of design flow rate (cfm)**: 

#### Physical Characteristics
- **Size Class**: 
- **Drive Arrangement Discharge Rotation**: 
- **Drive Bearing**: 

#### Motor
- **Manufacturer**: 
- **Horsepower Voltage**: 
- **Phase Hertz RPM**: 
- **Type Enclosure Type Frame Type Insulation Class NEMA Design Designation Service Factor Nominal Efficiency Nominal Power Factor Full Load Amps Variable Frequency Drive Driven (Yes or No)**: 

#### Miscellaneous
- **Vibration Isolators**: 
- **Special Coating (Yes or No)**: 
- **Special Coating Type**: 

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Addendum 003 - Renovate-Upgrade UK Healthcare Facilities Pavilion A - Interventional Services UK Project No. 2403.13

Project No. 13848.02 FANS

Issue Date: May 1, 2019
SECTION 23 3713
DIFFUSERS, REGISTERS AND GRILLES

PART 1 - GENERAL

1.1 REFERENCE
A. Work under this Section is subject to requirements of Contract Documents including General Conditions, Supplementary Conditions, and sections under Division 01 General Requirements.

1.2 SUBMITTALS
A. Shop Drawings including, but not limited to, the following:
   1. Manufacturer's name and model number
   2. Identification as referenced in the Documents
   3. Capacities/ratings
   4. Materials of construction
   5. Sound ratings
   6. Dimensions
   7. Finish
   8. Color selection charts where applicable
   9. Manufacturer's installation instructions
   10. All other appropriate data

1.3 DESIGN CRITERIA
A. Performance data shall be based on tests conducted in accordance with ASHRAE Standard 70-2006.
B. Screw holes on surface shall be counter sunk to accept recessed type screws.

PART 2 - PRODUCTS

2.1 MANUFACTURERS
A. Titus, Price, Carnes, Nailor, Anemostat, Metalaire, or Krueger
B. Acceptable manufacturers for specialty products are listed under each item.

2.2 CEILING DIFFUSERS
A. Diffusers shall be aluminum or steel as scheduled, unless otherwise indicated, and furnished with frame type appropriate to installation.
B. Diffuser models, sizes and finishes shall be as shown on drawings and/or as scheduled. Unless noted otherwise, diffusers shall have baked enamel or powder coat finish with color as scheduled.
C. Perforated face ceiling diffusers shall have minimum 51% free face area and pattern controllers accessible through removable or hinged faceplate. Unless otherwise indicated, pattern
controllers shall be curved vane type mounted in neck of diffuser. Unless otherwise indicated, furnish diffusers with round neck inlets with minimum 1” depth.

2.3 REGISTERS AND GRILLES

A. Registers and grilles shall be aluminum or steel as scheduled unless otherwise indicated, and furnished with frame type appropriate to installation.

B. Supply registers and grilles shall be double deflection type blades to provide for air deflection adjustment in all directions.

C. Return and exhaust registers and grilles shall have fixed blade core.

D. Register and grille models, sizes and finishes shall be as shown on drawings and/or as scheduled. Unless noted otherwise, registers and grilles shall have baked enamel finish with color as scheduled.

2.4 ADJUSTABLE LINEAR DIFFUSERS

A. Linear diffusers shall be extruded aluminum and furnished with frame type appropriate to installation with diffuser elements being removable from frame. Diffuser vanes shall provide both air pattern and flow rate adjustment with air pattern having full 180° adjustment. Diffuser vanes of single slot shall be segmented on 2 ft or 3 ft centers.

B. Diffuser models, lengths and slot sizes shall be as shown on drawings and/or as scheduled. Unless otherwise indicated, frame face shall have baked enamel or powder coat finish with color selected by Architect. Diffuser vanes and frame interior shall be finished in flat black.

2.5 FIXED BLADE LINEAR DIFFUSERS AND GRILLES

A. Linear diffusers and grilles to be extruded aluminum with frame type appropriate to sidewall, sill or ceiling installation as indicated.

B. Diffuser and grille models, lengths, blade spacing and blankoff strips to be as shown on drawings and/or as scheduled.

C. Diffusers used for supply air to be furnished with straightening or equalizing vanes. Blades to be fixed at 0 or 15° deflection as scheduled.

D. Unless otherwise indicated, diffusers and grilles shall have anodized aluminum finish with color selected by Architect.

2.6 OPERATING ROOM CEILING DIFFUSERS

A. Diffusers shall be unidirectional flow (laminar flow) type and constructed of 304 stainless steel.

B. Diffusers shall have integral internal baffle for even distribution air over entire perforated diffuser face.

C. Diffusers shall have integral volume dampers accessible and adjustable through diffuser face.

D. Diffusers shall be similar to Price Model LFD.

2.7 PERFORATED SUPPLY DUCT DIFFUSERS

A. Exposed spiral galvanized steel duct constructed in accordance with Section 23 3114 - Ductwork.
B. Outlet patterns shall be 360° perforations designed for supply air distribution unless otherwise noted. Refer to diffuser schedules for special flow patterns requirements.

C. Perforation patterns shall be selected to achieve 50 cfm per square foot of face area with a 0.05” wc pressure drop.

D. Perforated supply duct diffusers used in exposed areas shall be factory spray painted with color selected by Architect. Color shall be semi-gloss white unless otherwise noted. Refer to diffuser schedules for other colors.

2.8 HOSPITAL GRADE MODULAR CEILING SYSTEM

A. Hospital grade welded ceiling system to be heavy-duty, gasketed, extruded aluminum construction. Factory welded in sections to support diffusers, light fixtures and fill-in panels. Basis of design: Price Industries model HGWC.

A.B. Complete modular ceiling system shall include all tees, fill-in panels, gasket tape, and access clips to prevent air leakage between the ceiling plenum and the occupied space below.

B.C. Welded sections to be mechanically fastened in the field by installing contractor.

D. All components of the integrated ceiling system shall be by a single manufacturer and shall be in accordance with ASHRAE standard 170.

E. The ceiling system shall be provided with 0.125 inch thick, closed-cell polyethylene gasket tape to be field applied to the upper surface of all full and half tees.

F. Factory supplied access clips shall be used to hold panels in place to ensure a tight seal against the gasket and allow access to the ceiling plenum.

G. Ceiling system finish shall be white baked-on powder coat finish.

H. Submit shop drawings indicating ceiling configuration for each room with dimensions. Refer to HVAC plans for diffuser layout, lighting plans for light fixture layout and architectural plans for medical equipment locations and room dimensions.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install grilles, registers and diffusers as shown on drawings and according to manufacturer’s instructions.

B. Unless otherwise indicated, size ductwork drops to diffusers or grilles to match unit collar sizes.

C. Seal connections between ductwork drops and diffusers/registers/grilles air tight.

D. Support independently diffusers and grilles designed for T-bar mounting that exceed weight limit of ceiling suspension system in which they are to be installed.

E. Unless otherwise shown, provide wire mesh screen at end of each open ended duct (OED) that is exposed in occupied spaces.

F. Blank off unused portion of linear diffusers and grilles.
**G.** Where diffusers, registers and grilles cannot be installed to avoid seeing inside duct, paint inside of duct with flat black paint to reduce visibility.

**G.H.** Support modular ceiling system using minimum 12 gauge suspension wire on 48 inch centers. Refer to manufacturer’s installation instructions for further details.

**H.I.** Protect diffusers, registers and grilles from construction dirt. Clean or replace those soiled or stained prior to turnover to Client.

**END OF SECTION**
SECTION 23 4114
FILTERS

PART 1 - GENERAL

1.1 REFERENCE
A. Work under this Section is subject to requirements of Contract Documents including General Conditions, Supplementary Conditions, and sections under Division 01 General Requirements.

1.2 SUBMITTALS
A. Shop Drawings including, but not limited to, the following:
   1. Manufacturer's name and model number
   2. Identification as referenced in the Documents
   3. Capacities/ratings; cfm, area, face velocity
   4. Efficiencies and initial/final pressure drop
   5. Materials of construction
   6. Dimensions
   7. Filter gauges data
   8. Manufacturer's installation instructions
   9. All other appropriate data

1.3 DELIVERY, STORAGE AND HANDLING
A. Ship filters in original package to prevent damage or entrance of foreign matter. Perform handling and shipping in accordance with manufacturer’s recommendations. Provide protective coverings during construction.

1.4 DESIGN CRITERIA
A. Filters shall have UL 900 Listing.
B. Holding frames or housings specified in this Section may be furnished by filter manufacturers listed below, or where applicable, as part of factory packaged air handling units.

PART 2 - PRODUCTS

2.1 MANUFACTURERS
A. American Air Filter, Camfil/Farr, Flanders Precisionaire, Glasfloss, Airguard or Filtration Group unless otherwise noted under individual filter.

2.2 PERMANENT PANEL FILTERS
A. Media: Washable, all metal type panels consisting of expanded aluminum foil
B. Holding Frames: Zinc coated holding frame to support panels and to allow for easy removal of panels for cleaning.
C. Filters: 2” thick and of size and capacity as scheduled

2.3 DISPOSABLE PANEL FILTERS

A. Similar to Camfil Farr 30/30 or Flanders Precisionaire PrePleat 40.

B. Media shall be non-woven, fine fibered material laminated to rigid backing to hold pleat formation, having minimum efficiency MERV 8 based on ASHRAE Test Standard 52.2 (average dust spot efficiency of 30 to 35% based on ASHRAE Test Standard 52.1).

C. Filter housing shall consist of air handling or cabinet fan unit manufacturer's low velocity filter section, or holding frame, as scheduled. When holding frame is indicated, it may be furnished by filter manufacturer or it may be contractor fabricated.

D. Filters shall be 2” thick of size and capacity as scheduled. Clean filter pressure drop shall not exceed 0.31” WG based on 500 fpm face velocity.

2.4 DISPOSABLE FILTERS (NON-FIBERGLASS TYPE)

A. Viledon Panel Filter Type R-2/4 or Flanders Precisionaire.
   1. Media shall be 4 plys of progressively structured media, with internal wire support, media shall be 100% non-fiberglass organic synthetic fibers resin bonded with special adhesive tackifier. Minimum ASHRAE 52.2 efficiency shall be MERV 7.
   2. Filters shall be 2” thick of size and capacity as scheduled. Clean filter pressure drop shall not exceed 0.4” WG based on 500 fpm face velocity.

2.5 DISPOSABLE RIGID CARTRIDGE TYPE AIR FILTERS

A. Similar to Camfil Farr Durafil ES RIGA-FLO or Flanders Precisionaire

B. High performance deep pleated, rigid, disposable type filters. Each filter shall consist of high efficiency media, enclosing frame, contour stabilizers on both air entering and exiting sides and support grilles. Filters shall be designed to withstand minimum differential pressure of 6” WG without structural damage to filter frame, seals or media.

C. Filter thickness, size and capacity shall be as scheduled.

D. Filters shall have minimum efficiency MERV 11 based on ASHRAE Test Standard 52.2 (average efficiency of 60-65% based on ASHRAE Test Standard 52.1). Initial resistance at 500 fpm face velocity shall not exceed 0.31” WG.

E. Filters shall have minimum efficiency MERV 13 based on ASHRAE Test Standard 52.2 (average efficiency of 80-90% based on ASHRAE Test Standard 52.1). Initial resistance at 500 fpm face velocity shall not exceed 0.50” WG.

F. Filters shall have minimum efficiency MERV 14 based on ASHRAE Test Standard 52.2 (average efficiency of 90-95% based on ASHRAE Test Standard 52.1). Initial resistance at 500 fpm face velocity shall not exceed 0.57” WG.

2.6 HIGH EFFICIENCY PARTICULATE AIR (HEPA) FILTERS

A. Filters shall be high capacity type. Clean filter pressure drop shall not exceed 1.35” WG based on 500 fpm face velocity.

B. Filter size, capacity, and static pressure drop shall be as scheduled.
C. Filters shall be individually tested and certified shall be 99.97% minimum efficient with handling 0.3 micron particles in accordance with DOP test method. DOP efficiency along with filter serial number and name of manufacturer shall be marked on filter.

D. Each filter element shall consist of glass fiber media, fire retardant epoxy or self-extinguishing neoprene rubber sealer and neoprene gasket all contained in suitable protected steel frame. Each filter element shall be constructed by self-supporting pleating continuous sheet of formed, corrugated medium. Mount filters in side access housing or holding frames specified elsewhere in this section.

E. Filters shall be listed or classified under UL 586 test standard.

2.7 GAS PHASE FILTERS (CARBON ADSORBERS)

A. Filter size, capacity, and static pressure drop shall be as scheduled.

B. Filter frame shall be constructed of 14 ga T-304 stainless steel with 2” deep beds arranged in V-bank configuration. Adsorber screens shall be perforated 26 ga T-304 stainless steel. Adsorber shall be filled with mesh, granular, activated, impregnated carbon that meets requirements of U.S. NRC Reg. Guide 1.52 and Article FF-5000 of ASME/ANSI AG-1-1991. At rated flow of 1000 cfm, each adsorber shall provide 0.125 second residence time with approximate pressure drop of 1.45” WG. Adsorber to exhibit minimum mechanical efficiency of 99.9% when tested in accordance with IES Designation RP-8.

2.8 [BAG IN-BAG OUT] [CONTAINMENT] HEPA FILTRATION HOUSING ASSEMBLY

A. Manufacturers: Flanders/CSC, American Air Filter, Donaldson, Camfil or Barnebey-Cheney

B. Filter size, capacity and efficiency shall be as scheduled.

C. Unless otherwise indicated, filter arrangement shall be prefilter and HEPA filter from inlet to outlet.

D. Unless otherwise indicated, filter arrangement shall be prefilter, HEPA filter and charcoal filter from inlet to outlet.

E. Unless otherwise indicated, filter arrangement shall be prefilter, charcoal filter and HEPA filter from inlet to outlet.

F. Filter housing shall be bag in-bag out assembly allowing filter change without physical contact with filter cartridge.

G. Housing shall be fabricated from 14 ga Type 304 stainless steel all welded and suitably reinforced to withstand a minimum internal and external pressure of 10” WG in accordance with ANSI-N509-1980. All welding procedures, welders and welder operators shall be qualified in accordance with ASME Boiler and Pressure Vessel Code, Section IX. All internal parts shall be constructed of 300 Series stainless steel. All pressure retaining weld joints and seams shall be continuously welded with no pores allowed. All production welds shall be visually inspected per the workmanship acceptance criteria described in sections 5 and 6 of ANSI/AWS D9.1-1990, “Specifications for Welding Sheet Metal”. Filter housing shall be manufactured under quality assurance program that meets all the basic requirements of ASME NQA-1, “Quality Assurance Program Requirements for Nuclear Facilities”.

H. Housings located outdoors shall be furnished with weather cap. Weather cap shall be same materials and finish as housing and be welded to top of each housing.
I. Positive seal clamping device shall be designed as complete stainless steel replaceable integrated mechanism. To facilitate filter removal and installation, filter clamping mechanism must have minimum travel of 5/8” from full-open to full-close position. Design sealing device shall exert minimum of 1400 lbs force on filter. This force shall be supplied by pre-loaded springs, which will insure tight seal after gasket takes permanent set.

J. Provide 1 shared access opening per 2 filters to permit smooth removal and installation of filters. Refer to drawings for access door locations.

K. Filter housings shall be supported from their base off floor with adjustable stand.

L. Housing shall be tested for filter fit, operation of filter clamping mechanism, and leak tightness before leaving factory. Both filter sealing surface and complete assembly pressure boundary shall be leak tested by “Pressure Decay Method”, in accordance with ASME N510-1995 "Reaffirmed", “Testing of Nuclear Air Treatment Systems”, paragraphs 6 and 7. Pressure readings are recorded once a minute until pressure decays to 75% of test pressure or for 5 minutes. There shall be a maximum leak rate of 0.0005 cfm per cubic foot of housing volume at 10" WG.

M. Provide filters for each filter housing.

N. Furnish housing assembly with bubble-tight isolation dampers of 304 stainless steel construction, upstream and downstream of filter housing to facilitate filter changing. Bubble-tight dampers shall be constructed as specified in Section 23 3314 – Ductwork Specialties. Bubble-tight dampers shall be sized and actuated as scheduled.

O. Provide transitions/plenums from filter housing to bubble-tight dampers or system ductwork connections as shown on drawings. Transitions shall meet construction requirements as specified for filter housings. Filter housing shall be complete factory package unit.

P. Static pressure taps shall be 1/4” NPT half coupling, Type 304 stainless steel and be provided in housing so that pressure drop can be measured across any filter element. Provide factory-mounted pressure gauges equal to Dwyer Series 2000, on each unit to read across each type of filters.

Q. Filter housings shall be provided with test sections upstream and downstream of HEPA filter section. Provide DOP test ports in accordance with ANSI N510 testing. Test sections shall meet same requirements as filter housings.

R. Provide decontamination ports upstream and downstream of HEPA filter section. Each decontamination port shall be 1-1/2” in diameter and have lockable stainless steel high-pressure ball valve with sanitary connection with cap.

S. Filter removable tray shall be provided to support filter that is being removed from housing and replacement filter during change-out. Shelf shall be fastened to housing by means of door latches following removal of door.

T. Standard filter housing modules shall be seismically qualified based on comparison to previous shake table testing and by analysis. These housings shall be qualified in accordance with criteria of Uniform Building Code (1997) up to Seismic Zone 3 levels.

U. This Contractor shall be responsible for providing in-place (field) performance test. Refer to Part 3 – Execution.
2.92.8 FILTER HOLDING FRAMES

A. Frames shall be minimum 16 ga galvanized steel construction with provisions for assembly in a bank. Frames shall be suitable for filters scheduled and incorporate gaskets and spring clips to prevent air bypass.

2.402.9 FILTER PRESSURE DROP GAUGES

A. Dwyer Series 3000 MRS Photohelic pressure switch/gauge. Differential pressure switch shall be SPST (NO) solid state relay and will be used by BAS contractor for dirty filter alarm. Switch setting shall be externally adjustable.

B. Dwyer Series 605 Magnehelic Differential Pressure Indicating Transmitter. Unit shall provide both visual indication and electronic DP signal to be used by BAS Contractor for remote indication and alarm.
   1. Accuracy: ............±1.0% full scale, ±0.5% reading
   2. Stability: ............±1.0% full scale/year
   3. Output signal: ......4-20 mA

C. Unless otherwise indicated below, select scale range to be most appropriate to clean and dirty filter pressure drops.

<table>
<thead>
<tr>
<th>Filter Type</th>
<th>Scale Range (&quot; WG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throwaway filters</td>
<td>0-0.5</td>
</tr>
<tr>
<td>Filters with 25 to 30% efficiency based on atmospheric dust spot test</td>
<td>0-1.0</td>
</tr>
<tr>
<td>Filters with 31 to 99% efficiency based on atmospheric dust spot</td>
<td>0-2.0</td>
</tr>
<tr>
<td>HEPA filters</td>
<td>0-4.0</td>
</tr>
<tr>
<td>Charcoal filters</td>
<td>0-2.0</td>
</tr>
</tbody>
</table>

D. Provide gauges for each filter bank, including gauges across each individual filter bank in built-up rack assemblies, suitable for flush mounting in a panel, including air filter gauge accessory package for use with 1/4" OD copper tubing.

E. Provide 3/4" spacer at one 2' x 2' filter section between filter elements in built-up rack, adjacent to unit wall for placement of intermediate pressure probe.

2.442.10 ADDITIONAL FILTER MEDIA

A. For disposable panel filters, enough media for 3 filter changes, shall be provided for each air handler. Media used during construction shall be replaced when system is air balanced. Third set of media not used shall be turned over to Owner as spare.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install filters as shown on drawings and according to manufacturer's instructions.

B. Provide supports as required and necessary clearance for changing filters.
C. Provide structural supports, outside casing and blank-off materials for all field assembled filter banks, and filter banks where housings are not furnished by filter manufacturer.

3.2 FILTER PRESSURE DROP GAUGES

A. Mount gauge near each filter bank and install static pressure sensors according to manufacturer's instructions.

B. Mount gauge on control panel.

3.3 FILTER HOLDING FRAMES

A. Provide frames for all filter banks as required. Install built-up filter banks in accordance with manufacturer's installation instructions.

3.4 BAG IN-BAG OUT FILTRATION AND HOUSING ASSEMBLY

A. In-place (field) performance test shall be performed by accredited certifying testing agency in accordance with IEST-RC-CC034.3HEPA and ULPA Filter Leak Test.

B. Coordinate test with Engineer and Owner at least 14 days in advance of its occurrence and conduct test in presence of Owner’s Representative.

C. Test results shall be documented and certified by testing agency in accordance with Standards.

END OF SECTION
PARTIAL PLANS
FIRST LEVEL FLOOR PLAN - AREA A

SCALE: 1/8" = 1'-0"

DOORS & CARDREADERS RELOCATED. COORDINATE RELOCATION OF CARDREADERS WITH SECURITY DRAWINGS.
RELOCATE EXISTING VENTS PER PLUMBING DRAWINGS:
- CORE DRILL EXTERIOR WALL 1-INCH DIAMETER LARGER THAN VENT PIPE
- COMPATIBLY SEAL PIPE PENETRATION TO EXISTING AIR BARRIER
- SEAL PIPE TO STONE WITH SANDED SEALANT TO MATCH EXISTING
PROVIDE MANUAL BALANCING DAMPER AT EACH DIFFUSER AND GRILLE WHERE THERE IS MORE THAN ONE ON A RUN. INSTALL BALANCING DAMPERS AS CLOSE TO BRANCH TAKEOFF AS POSSIBLE.

WITH REFLECTED CEILING PLAN.

REQUIREMENTS.

1. INSTALL 14x12 SA

2. INSTALL 14x10 RA

3. INSTALL 1150 CFM FCU

4. INSTALL 22x14 SA

5. INSTALL 1000 CFM FCU

6. INSTALL 14ø EA

7. INSTALL 780 CFM

8. INSTALL 12ø EA

9. INSTALL 355 CFM

10. INSTALL 195 CFM

11. INSTALL 465 CFM

12. INSTALL 120 CFM

13. INSTALL 405 CFM

14. INSTALL 465 CFM

15. INSTALL 270 CFM

16. INSTALL 18x12 EA

17. INSTALL 580 CFM

18. INSTALL 100 CFM

19. INSTALL 405 CFM

20. INSTALL 24x12 SA

21. INSTALL 300 CFM

22. INSTALL 18x12 EA

23. INSTALL 80x32 SA

24. INSTALL 250 CFM

25. INSTALL 320 CFM

26. INSTALL 24x10 EA

27. INSTALL 580 CFM

28. INSTALL 14x8 EA

29. INSTALL 16x8 EA
Provide manual balancing damper at each diffuser and grille where there is more than one on a run. Install balancing dampers as close to branch takeoff as possible.

12ø SA

4

160 CFM

930

8ø EA

120

PREP/RECOVERY

120

RT

550

SHAFT

6ø RA

A01363

10ø SA

120

G

P.T.

195

SD

16x10 RA

120

G

REGISTRATION

120

AT

A01322

24x12 RA

22x14 SA

14x12 SA

513.241.3222

120

PUBLIC CORRIDOR

200

v 859.257.5911

120

SD

12x6 EA

12x6 EA

SD

12ø SA

90

SD

S.T.

1

RT

G

120

-"A01300F

-"A01364

A01336

AT

A01367

PREP/RECOVERY

A01224B

120

G

120

AT

A01334

A01334

v 513.241.3222

project number: 2402.13

222 PETERSON SERVICE BUILDING

1.2

be same as neck size unless noted or detailed otherwise. 2. provide method of support for duct work to avoid excessive loads on structural elements.

726x1839

120

315

120

A01327

18x10 SA

120

-"A01339

-"A01331

AT

A01318

120

-"A01352

A01320

1058x1132

A01315

12x6 EA

20x12 SA

120

120

-"A01346

A01340

120

120

-"A01336

AT

A01335

16x10 EA

-"A01318

120

-"A01300A

A01314

A01316

A01314

A01308

240

PREP/RECOVERY

PREP/RECOVERY

200

120

PREP/RECOVERY

CRITICAL

120

PUBLIC CORRIDOR

Hammel, Green and Abrahamson, Inc.
EXISTING HOT WATER PIPING TO TERMINAL UNITS SHALL BE 3/4" UNLESS NOTED OTHERWISE.
ROOFING SCOPE:
- PROVIDE COMPATIBLE MEMBRANE THAT DOES NOT VOID WARRANTY
- REWORK EXISTING CRICKET AS REQUIRED FOR PROPER DRAINAGE
- SUBMIT ROOF CURB FLASHING DETAIL TO ARCHITECT FOR REVIEW

MECHANICAL UNIT
MIN
1'-0"

ROOF TYPE PER PLAN
T/SLAB
MEMBRANE FLASHING
INSULATED MECHANICAL CURB

SCALE: 1 1/2" = 1'-0"

ROOF DETAIL MECH CURB
FABRICATE HOOD FROM .020 GA. SHEET METAL

REFER TO IN-LINE PUMP DETAIL FOR ADDITIONAL REQUIREMENTS. BALANCE VALVE AND STRAINER CAN BE OMITTED FROM PUMP DETAIL IN THIS APPLICATION.

REFER TO SPECIFICATION SECTION 23 2116 FOR UNION AND REDUCING FITTINGS REQUIREMENTS.

REFER TO COOLING COIL CONDENSATE DRAIN TRAP PIPING DETAIL.

ARRANGE RUNOUTS AND HEADERS TO ALLOW FOR COIL PULL.

SLOPE

DRAW BAND SHALL BE: -FURNISHED BY VALVE MANUFACTURER AND INSTALLED IN ACCORDANCE WITH AFTON BEING FULLY DRAWN TOGETHER.

SEALANT AND GASKET TO BE CHEMICAL RESISTANT MATERIAL. REFER TO DRAW BAND GAUGE TO BE MIN. 24 GAUGE.

DRAW BAND INSTALLATION

VENTURI AIR VALVE DUCT CONNECTION

ROUND DUCT INSTALLATION

RECTANGULAR DUCT INSTALLATION

HOT WATER HEATING COIL PIPING (MULTIPLE COILS W/ COIL PUMP 2-WAY CV)

CHILLED WATER COOLING COIL PIPING (MULTIPLE COILS 2-WAY CV)

CT GLYCOL PIPING DETAIL

CHILLED WATER COOLING CIRCUIT

PIPING AND HOSE SCHEMATIC CLOSED LOOP CHILLED WATER piping and fixtures to be specified by the mechanical engineer of record and to be supplied and installed by the mechanical contractor.

NOTE: SPECIFY TYPE OF HOSE TO BE USED BASED ON THE SYSTEM AND APPLICATION.

NOTE: SPECIFY WATER TEMPERATURE RANGE BASED ON THE SYSTEM AND APPLICATION.

RECOMMENDED ADDITIONAL DETAIL NOTATION:

- MECHANICAL CONTRACTOR TO PROVIDE PIPING AND HOSE DETAILS.
- MECHANICAL CONTRACTOR TO PROVIDE HOSE SUPPORT DETAILS.
- MECHANICAL CONTRACTOR TO PROVIDE HOSE CONNECTION DETAILS.
### VAV Box Silencer Schedule

<table>
<thead>
<tr>
<th>Model</th>
<th>Name</th>
<th>Neck Face</th>
<th>CFM</th>
<th>Service Face</th>
<th>Number</th>
<th>Slot</th>
<th>Length</th>
<th>Color</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>

### Fan Coil Units

<table>
<thead>
<tr>
<th>Model</th>
<th>Name</th>
<th>Inlet</th>
<th>Size</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Max (db re 10 -12W)</th>
<th>Motor VOLT</th>
<th>HP</th>
<th>Type</th>
<th>MERV</th>
<th>PD</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

### Notes:

1. Coordinating SCCR of equipment and controls with Div 26 contractor.

2. Based on price.


4. 12" = 1'-0"
## AIR HANDLING UNITS (OWNER FURNISHED CONTRACTOR INSTALLED)

<table>
<thead>
<tr>
<th>S/n</th>
<th>Code</th>
<th>Description</th>
<th>Make</th>
<th>Model</th>
<th>Type</th>
<th>HP</th>
<th>FLA</th>
<th>VOLT</th>
<th>PH</th>
<th>RPM</th>
<th>CP PRESS.</th>
<th>CAP.</th>
<th>CLS</th>
<th>HP</th>
<th>CP PRESS.</th>
<th>CAP.</th>
<th>CLS</th>
<th>HP</th>
<th>CP PRESS.</th>
<th>CAP.</th>
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<th>HP</th>
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<tbody>
<tr>
<td>1</td>
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</tbody>
</table>

### NOTES:
- Do not include project costs incurred by contractor/subcontractor.
- Includes completion of the project. The contractor is responsible for any additional work.
- The project is complete once all required subcontractors have been coordinated.
- Completion of the project is subject to the approval of the owner and the approval of the project manager.

---

### SOUND ATTENUATING DEVICES

<table>
<thead>
<tr>
<th>Location</th>
<th>Make</th>
<th>Model</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

### EXHAUST FANS

<table>
<thead>
<tr>
<th>Location</th>
<th>Make</th>
<th>Model</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

### CONDENSATE PUMPS

<table>
<thead>
<tr>
<th>Location</th>
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<th>Model</th>
<th>Quantity</th>
</tr>
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### PUMPS

<table>
<thead>
<tr>
<th>Location</th>
<th>Make</th>
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</thead>
<tbody>
<tr>
<td></td>
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</table>
## TAG LOCATION DESCRIPTION MANUFACTURER MODEL NO. WATER WATER NOTES REMARKS

<table>
<thead>
<tr>
<th>CONNECTOR TYPE</th>
<th>MATERIAL</th>
<th>FITTINGS/ASTM #</th>
<th>JOINING METHODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERP</td>
<td>COPPER</td>
<td>TYPE “L”</td>
<td>OXY/MED; ASTM B819 BRAZED JOINTS</td>
</tr>
<tr>
<td>MEDICAL GAS ZONE GAS VALVE BOX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OXYGEN, NITROGEN, CARBON DIOXIDE</td>
<td>COPPER TYPE “L”</td>
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## FIXTURES

<table>
<thead>
<tr>
<th>MANUFACTURER AND MODEL</th>
<th>LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>EWC-1 PUBLIC ELECTRIC WATER COOLER WITH BOTTLE FILLER ELKAY LZSTL8 WSLP BOTTLE FILLING STATION AND BI-LEVEL COOLER, WALL HUNG</td>
<td>1-1/2 1-1/2 1-1/4 1/2</td>
</tr>
<tr>
<td>GGB-1 VARIOUS WALL MOUNTED EMERGENCY EYEWASH, VERTICAL SWING BRADLEY S19274HW</td>
<td>N/A N/A N/A 1/2 1/2</td>
</tr>
<tr>
<td>SS-1 CONTROL ROOMS SINGLE COMPARTMENT SCRUB SINK PROVIDED BY OWNER WITH FAUCETS AND CARRIER</td>
<td>N/A N/A N/A 2 1-1/2 1-1/2 3/4 3/4</td>
</tr>
<tr>
<td>SS-2 CONTROL ROOMS SINGLE COMPARTMENT SCRUB SINK PROVIDED BY OWNER WITH FAUCETS AND CARRIER</td>
<td>N/A N/A N/A 2 1-1/2 1-1/2 3/4 3/4</td>
</tr>
<tr>
<td>WH-1 PUBLIC TOILET ROOMS ENCLOSED IN A FLUSH MOUNTED WALL BOX CHROME FINISH WOODFORD B24</td>
<td>N/A N/A N/A 1/2 N/A</td>
</tr>
<tr>
<td>EW-1 VARIOUS WALL MOUNTED EMERGENCY EYEWASH, VERTICAL SWING BRADLEY S19274HW</td>
<td>N/A N/A N/A N/A N/A N/A 1/2 1/2</td>
</tr>
<tr>
<td>UR-1 TOILET ROOM WALL MOUNT, VITREOUS CHINA AMERICAN STANDARD 6571.014 EXPOSED BATTERY SENSOR FLUSH VALVE, 1.0 GPF SLOAN ROYAL 186</td>
<td>2 1-1/2 2 3/4</td>
</tr>
<tr>
<td>WH-2 PUBLIC TOILET ROOMS HARWOOD WALL BOX CHROME FINISH WOODFORD B24</td>
<td>N/A N/A N/A 1/2 N/A</td>
</tr>
<tr>
<td>WH-3 PUBLIC TOILET ROOMS HARWOOD WALL BOX CHROME FINISH WOODFORD B24</td>
<td>N/A N/A N/A 1/2 N/A</td>
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<tr>
<td>WH-4 PUBLIC TOILET ROOMS HARWOOD WALL BOX CHROME FINISH WOODFORD B24</td>
<td>N/A N/A N/A 1/2 N/A</td>
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<tr>
<td>WH-5 PUBLIC TOILET ROOMS HARWOOD WALL BOX CHROME FINISH WOODFORD B24</td>
<td>N/A N/A N/A 1/2 N/A</td>
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## MEDICAL GAS AREA ALARM PANELS

<table>
<thead>
<tr>
<th>Number</th>
<th>Service Description</th>
<th>General Location</th>
<th>In General Area</th>
<th>In Fire Area</th>
<th>Area of Design</th>
<th>Manufacturer</th>
<th>Model Number</th>
<th>Notes</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Medical Gas Zone Gas Valve Box</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2</td>
<td>Medical Gas Zone Gas Valve Box</td>
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## PIPE MATERIALS SCHEDULE

<table>
<thead>
<tr>
<th>System</th>
<th>Medical Gas Zone Gas Valve Box</th>
<th>Notes</th>
<th>Remarks</th>
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<tbody>
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## DRAINS

<table>
<thead>
<tr>
<th>Equipment Name</th>
<th>Type</th>
<th>Notes</th>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
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## PIPING SPECIALTIES

<table>
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<tr>
<th>Equipment Name</th>
<th>Type</th>
<th>Notes</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
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## MEDICAL GAS OUTLET

<table>
<thead>
<tr>
<th>Number</th>
<th>Service Description</th>
<th>General Location</th>
<th>In General Area</th>
<th>In Fire Area</th>
<th>Area of Design</th>
<th>Manufacturer</th>
<th>Model Number</th>
<th>Notes</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Medical Gas Zone Gas Valve Box</td>
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<tr>
<td>2</td>
<td>Medical Gas Zone Gas Valve Box</td>
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## EQUIPMENT PIPING

<table>
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<tr>
<th>Equipment Name</th>
<th>Type</th>
<th>Notes</th>
<th>Remarks</th>
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<tbody>
<tr>
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## PROJECT LOCATION

- University of Kentucky
- UK Healthcare
- Facilities
- 12" = 1'-0"
<table>
<thead>
<tr>
<th>NO.</th>
<th>Question</th>
<th>Responder</th>
<th>Comment</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>In the past for UK projects we have seen 250 PSIG working pressure requirements for chilled water pumps and components. I do not see that requirement on this project – perhaps it is not tied to the same chilled water system? Please confirm pressure rating requirements.</td>
<td>AEI</td>
<td>All chilled water piping, fittings, specialties and pumps shall be rated for 250 PSIG working pressure at 100°F. Noted in 23 2116 3.7 and 23 2118 2.2 5.</td>
</tr>
<tr>
<td>2</td>
<td>Please clarify whether stainless steel corner guards belong to TC160 or TC161.</td>
<td>Turner</td>
<td>They belong to TC-160 General Trades.</td>
</tr>
</tbody>
</table>
| 3   | **Fire Protection:**                                                                                                               | GBBN      | • SECURITY DETENTION CABINETS ARE NOT REQUIRED  
                                                                     |             | • ~3/8” FLAT TRIM IS ACCEPTABLE.  
                                                                     |             | • FEC-2. PROVIDED RECESSED DOOR PULL AND FRICTION LATCH  
                                                                     |             | ![](https://example.com/fire-extinguisher-cabinet.png)  
                                                                     |             | T.GORMLEY-GBBN  
                                                                     |             | o Are the fire extinguisher cabinets supposed to be heavy gauge security detention cabinets? [The gauges called for in the spec are heavier gauge than Larsen’s standard non-security cabinet gauges.]  
                                                                     |             | o Both FEC-1 & FEC-2 are calling for a fully-recessed cabinet which requires 6 ¼” WD ( NR ) and 7-1/8” WD ( FS ) AND are a 5/16” projection. Larsen does not have a ¾” projection like what is stated in the spec. Please advise.  
                                                                     |             | o The specs state to include rolled edges for the fire extinguisher cabinets which only comes in a semi-recessed cabinet. Should rolled edges be used on all of the cabinets?  
                                                                     |             | o Should there be a cam-action latch (Larsen-Loc) on the FEC-2 cabinets like the other cabinets?  
| 4   | **Lockers:**  
                                                                     | Turner    | Assume all lockers are new. All lockers should be shipping in 2020  
                                                                     |             | ALL LOCKERS ARE NEW. T. GORMLEY - GBBN  
                                                                     |             | o Are any of the lockers already existing or are they all new? (My current count is 66 metal and 8 wood lockers, plus 4 benches)  

BIDDERS QUESTIONS    ADDENDUM #2
<table>
<thead>
<tr>
<th></th>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Will the lockers need to be shipped in 2019 or 2020?</td>
<td>This work is scoped under TC-160. See item number 31 in the scope of work.</td>
</tr>
<tr>
<td></td>
<td><strong>Visual Display:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o Do we need to include an installation quote for the visual display products?</td>
<td>Turner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPEC INCLUDES MASTER LIST OF PRODUCTS. PROVIDE PRODUCTS IDENTIFIED ON THE CONTRACT DOCUMENTS. T. GORMLEY - GBBN</td>
</tr>
<tr>
<td>6</td>
<td><strong>Toilet Room Accessories:</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>o I cannot locate any of the following products which are listed in the Toilet Room Accessories specs:</td>
<td>GBBN</td>
</tr>
<tr>
<td></td>
<td>• 2.3 B. Sanitary Napkin Disposal (SND-3)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 2.3. F. Waste Receptacle (WR-1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 2.3. G. 2. Type 2A Framed Mirror (MIR-2A)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 2.3. G. 4. Type 4 Framed Mirror (MIR-4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 2.3. J. Electric Hand Dryer (EHD-XX)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• If these products should be included in my estimate, please provide quantities, drawings, or some other way to calculate the quantities required.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Openings correlating with hardware set 303 are not shown in the door schedule. Are we to provide hardware for this set?</td>
<td>Turner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hardware set 303 is on the A611 Door and Frame schedule under doors A01522B&amp;C. This will be provided by TC-162.</td>
</tr>
<tr>
<td>8</td>
<td>The lead-lined windows outlined on page A612 states to refer to floor plan for locations. The windows are visible on the floor plans, but the types are not labeled. Please advise as to which types correspond to their associated locations</td>
<td>Turner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Types are located on the Enlarged Plans and Elevations for each procedure room.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>REFER TO ENLARGED FLOOR PLANS AND ELEVATIONS FOR RATED WINDOW LOCATIONS. T. GORMLEY - GBBN</td>
</tr>
<tr>
<td>9</td>
<td>Addendum #2 references changes to division 8 section 08 1423,1713,4100,4123, 7100.1, 7100.2, but there are no specs available.</td>
<td>Turner</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The specs are already in the bid set. The changes were clarifications to the TC-160 scope of work.</td>
</tr>
<tr>
<td>10</td>
<td>Plumbing drawings P100B, P101B, and P700, all have a note similar to the following:</td>
<td>AEI</td>
</tr>
<tr>
<td></td>
<td>• Ground floor: Make connection to existing 1” hypobaric oxygen relief vent, and (2) 3”</td>
<td>The vents are copper. They penetrate the exterior wall and terminate just outside the building. Further details will be clarified in Addendum 03.</td>
</tr>
<tr>
<td>BIDDERS QUESTIONS</td>
<td>ADDENDUM #2</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td><strong>1.</strong> What material should these vents be?</td>
<td><strong>AEI</strong> Correct</td>
<td></td>
</tr>
<tr>
<td><strong>2.</strong> Where do these terminate? Drawing P101B does not call for them to terminate anywhere.</td>
<td><strong>AEI</strong> Correct</td>
<td></td>
</tr>
<tr>
<td><strong>11.</strong> Electrical Single Line Diagram – Normal Power shows 5 new panels being fed out of “1NDLB”. There isn’t a “1NDLB” on the plans but there is a “1NLDB”. I’m assuming these are the same but need clarification.</td>
<td><strong>AEI</strong> Correct</td>
<td></td>
</tr>
<tr>
<td><strong>12.</strong> Electrical Single Line Diagram – Normal Power shows 2 new panels being fed out of “1NDLA”. There isn’t a “1NDLA” on the plans but there is a “1NLDA”. I’m assuming these are the same but need clarification.</td>
<td><strong>AEI</strong> Correct</td>
<td></td>
</tr>
<tr>
<td><strong>13.</strong> Electrical Single Line Diagram – Normal Power shows 2 new panels being fed out of “15NDH2”. There isn’t a “15NDH2” on the plans but there is a “15NHD2”. I’m assuming these are the same but need clarification.</td>
<td><strong>AEI</strong> Correct</td>
<td></td>
</tr>
<tr>
<td><strong>14.</strong> TC-169 scope of work: Note 26 states “TC-168 controls contractor to provide and install any control cabling and conduit”. Note 27 states “This contractor to provide all conduit/raceways for ALL low voltage installations”. Will TC-168 provide all temperature controls conduit, devices, and cabling?</td>
<td><strong>Turner</strong> Yes. TC-168 will provide all temperature controls conduit, devices, and cabling.</td>
<td></td>
</tr>
<tr>
<td><strong>15.</strong> What is the brand of the existing gear for quoting purposes? Square D, GE, ect.</td>
<td><strong>AEI</strong> Typically GE is the existing manufacturer.</td>
<td></td>
</tr>
<tr>
<td><strong>16.</strong> Are panels “1CLPB1” and “1LLPC1” existing?</td>
<td><strong>AEI</strong> Yes, both 1CLPB1 and 1LLPC1 are existing.</td>
<td></td>
</tr>
<tr>
<td><strong>17.</strong> Page E800, detail 3: Is the intent to have a divider inside the box of each switch for low voltage cabling and line voltage cabling? We would also need to provide 2 stubs of conduit. 1 for low voltage cabling and 1 for line voltage.</td>
<td><strong>AEI</strong> If there is low voltage and line voltage wiring within the same box, a divider is required.</td>
<td></td>
</tr>
<tr>
<td><strong>18.</strong> Are the breaker/enclosures that show up on the one line for the Imaging Equipment/UPS, the same as the “MP”s that are in each Siemens room? Siemens drawings: Please clarify which typical corresponds to each procedure room. For example, which typical (SM-2, SM-3, SM-4, SM-5, or SM-6) applies to room A01525?</td>
<td><strong>AEI/Turner</strong> The typicals are labeled by procedure room not room number. Review the architectural drawings for the procedure room numbers. A01525 is SM-10.</td>
<td></td>
</tr>
<tr>
<td><strong>19.</strong> Can you confirm the feeder sizes are correct on panels “1CDHC1” and panel “1CDHA1”? For example, it calls for (5) #300s in 3” conduit feeding off of a 125A breaker.</td>
<td><strong>AEI</strong> Provide as indicated on drawings. Imaging equipment manufacturers are particular about feeder sizes and distance of feeder runs.</td>
<td></td>
</tr>
<tr>
<td><strong>20.</strong> Can homeruns be put in ¾” or is 1” the requirement?</td>
<td><strong>AEI</strong> Provide as required by specification 260533.</td>
<td></td>
</tr>
<tr>
<td><strong>21.</strong> On page T101A, there is a note for “New 30”X4” cable tray” but it is not drawn on the plan. The note is on the lower left hand side, over “Male Locker A01407”. Can this scope of work be defined clearly?</td>
<td><strong>AEI</strong> Disregard that annotation. The annotation will be removed in next issuance.</td>
<td></td>
</tr>
<tr>
<td><strong>22.</strong> Would it be possible to schedule another walkthrough of the space so we can investigate existing space?</td>
<td><strong>Turner</strong> No. A walkthrough was complete with the pre bid review meeting.</td>
<td></td>
</tr>
<tr>
<td><strong>23.</strong> Note 22, (A) of Electrical Scope of Work: Please define how many “work areas” there are.</td>
<td><strong>Turner</strong> There will be 1 work area the temporary audio visual devices need to be installed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Response Options</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>24</td>
<td>Note 59 of Electrical Scope of Work: Can this scope be clearly defined, or can an allowance be provided for this note?</td>
<td>Turner: Review Volume 4 for owner supplied equipment and the miscellaneous accessories that will need to be installed.</td>
</tr>
</tbody>
</table>
|25 | Note 48 of Electrical Scope of Work discusses (2) 12 hour shifts for 17 weeks.  
• Does “ground floor electrical work” refer to Siemens drawings conduit layout above ground floor ceiling, core drills, etc.  
• Is this 17 week timeframe the “install underslab conduit procedure” work in the schedule? | Turner: Yes. Partly. Review activity IDs A200 and A180. There are 6 weeks extra in the scope for unforeseen coordination. |
|26 | Who is the contact for the warranty roofing contractor?                  | Turner/UK: Kalkrueth Roofing and Sheet Metal installed the original roof.                                                                      |
|27 | Who is the contact for the fireproofing contractor?                      | Turner: Whomever is qualified to perform work to the standards set forth in the bid documents.                                                |
|28 | Where is the existing fire alarm panel that we are to tie into?          | AEI: Existing NAC panels are generally located in the EIDF closets, as described in specification 28 3116.                                    |
|29 | Please clarify which acoustical ceiling tile and suspended grid manufacture and model number to use for procedure rooms. Specification 095100-5 indicates Procedure rooms to use 2x2 VL868 with Armstrong's Integral Gasket Co-Extruded aluminum grid. Specification section 233713.2.8 and room finish schedule indicates procedure rooms to receive Price Industries model HGWC with no ceiling tile specified. Reflected ceiling plan shows 4x4 and 2x4 layouts. | GBBN: PROVIDE CEILINGS PER ROOM FINISH SCHEDULE. CEILINGS THAT REFERENC 23-000-A108_MODULAR CEILING SYSTEM ARE SPECIFIED IN SPEC SECTION 23 3718. THESE MODULAR CEILINGS ARE A COMPLETE SYSTEM OF TEES AND INFIL PANELS. INFILL PANELS WILL BE CLARIFIED BY ADDENDUM. |
|30 | Please confirm if room HSKP to receive ACP-2                           | GBBN: A01412 – ACP-2                                                                                                                             |
|31 | Please confirm if room A01436 to receive ACP-2 or ACP-3G                | GBBN: ACP-2                                                                                                                                     |
|32 | Please confirm which ceiling type should rooms A1300k, A01313, A01329 receive. | GBBN: A01313 – ACP-3  
A01329 – ACP-2  
A1300k – ACP-1                                                                 |
<p>|33 | Please clarify if room A01412 to receive ACP-2 or modular ceiling system. Please clarify which tile to go into this room. | GBBN: ACP-2                                                                                                                                     |
|34 | Does the opportunity exist for interested bidders to gain access to the space and re-walk the affected project areas with the Construction Manager? In addition, can access be granted to the existing Turner Construction office on the 12th floor for purposes of determining the manpower required for the weekly cleaning of the CM’s office space. | Turner: No. A walkthrough was complete with the pre bid review meeting.                                                                      |
|35 | In TC-160 General Trades scope of work Item 17, design/build medical equipment support systems are the responsibility General Trades contractor. The scope of work description directs the General Trades contractor to Specification 055050. Specification 055050 provides a general overview of the types of materials to be used in the support systems, shop drawing and engineered calculation requirements, etc. Upon review of Specification 055050, | Turner: Item 16.d in the GT scope of work states “Exclude Guldmann overhead support and equipment installation.” This includes design. Review the architectural cut sheets for the locations of the design build supports. These supports are for the Siemens equipment. |</p>
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<tbody>
<tr>
<td>36</td>
<td>Please confirm the intent of TC-160 General Trades scope of work Item 18 is for the General Trades contractor to provide only anchors and shims for the boom supports. Please confirm the boom supports and support assemblies will be provided by others and installed by the TC-160 General Trades contractor.</td>
<td>Turner</td>
</tr>
<tr>
<td>37</td>
<td>Should TC-160 General Trades scope of work Items 56, 57 and 59 be added to the Section I allowance list on Page 13 of the TC-160 General trades scope of work?</td>
<td>Turner</td>
</tr>
<tr>
<td>38</td>
<td>Please confirm which ceiling tile and suspension grid system should room A01416, A01421, A01424, A01425, A01428, A01436 as finish schedule indicates to use ACP-2, Armstrong Fine Fissured with standard prelude 15/16 grids. However ceiling specification section indicates to use Armstrong clean room grids in procedure rooms and Price</td>
<td>GBBN</td>
</tr>
<tr>
<td>39</td>
<td>Please clarify when to use Armstrong clean room grids and when to use Price pre-welded ceiling grids in procedure room. Please also confirm which type of tile should be used in procedure rooms.</td>
<td>GBBN</td>
</tr>
<tr>
<td>40</td>
<td>Are all outlet boxes for all systems installed in non-fire rated walls to have acoustical putty pads?</td>
<td>GBBN</td>
</tr>
<tr>
<td>41</td>
<td>The Siemens documents state: UPS is supplied and delivered to the customers loading dock by siemens. Customers electrician is responsible for moving from loading dock to final location and completing all final connections. Who will be receiving, unloading and handling Siemens supplied equipment?</td>
<td>Turner</td>
</tr>
<tr>
<td>42</td>
<td>Who is responsible for suppling and installing required Lead on outlet boxes?</td>
<td>Turner</td>
</tr>
<tr>
<td>43</td>
<td>Who is to supply and install uni-strut in ceilings to support Siemens equipment?</td>
<td>Turner</td>
</tr>
<tr>
<td>44</td>
<td>Who supplies and installs blocking/Supports in walls for Siemens equipment?</td>
<td>Turner</td>
</tr>
<tr>
<td>45</td>
<td>Is X-raying for all floor penetrations required?</td>
<td>Turner</td>
</tr>
<tr>
<td>46</td>
<td>past projects there were drawings provided showing door rough in details. There does not appear to be one on this project. Will the owner supplied/ contractor installed termination j-box be used on this project above doors for access control?</td>
<td>AEI/Turner</td>
</tr>
</tbody>
</table>

TC-160 will receive and transport all medical equipment to storage location on jobsite per item 39 in their scope of work.

General Requirements Item 19. “Each contractor is required to provide coupons for their penetration through this system.”

TC-160

TC-160

TC-160

TC-160

WIRE DIAGRAMS ARE A REQUIRED SUBMISSION OF SPEC SECTION 08-7100, 1.2,E. SAMPLE WIRE DIAGRAMS WILL BE INCLUDED BY ADDENDUM. A LOCAL POWER SUPPLY WILL BE PROVIDED BY DIVISION 8 SUBCONTRACTOR AT EACH DOOR REQUIRING ACCESS CONTROL/POWER SUPPLIES.
<table>
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<tr>
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<tbody>
<tr>
<td>47</td>
<td>Access control/Power supplies are note on the ESS100 drawing. None are shown. Are these existing? Where are they located?</td>
<td>AEI</td>
</tr>
<tr>
<td>48</td>
<td>Please clarify if room A01220 public corridor to receive either ACP 4 or ACP 9 as reflected ceiling drawings only show 2x4 layout</td>
<td>GBBN</td>
</tr>
<tr>
<td>49</td>
<td>Please confirm if room A01224 and A01224B to receive ACP 4 as indicated on finish schedule as drawings indicate 2x4 layout.</td>
<td>GBBN</td>
</tr>
<tr>
<td>50</td>
<td>Per TC-168 Scope of Work, the mechanical contractor is to contract the TAB agency, however under the test and balance specifications 230594 &amp; 230595, the owner will contract the TAB. Please clarify if the Test and Balance contractor is to bid to the mechanical contractor or the owner. If it will be direct to the owner, will there be a separate RFP issued to the TAB agencies that includes a specific bid form and direction (allowance) for how duct leakage testing is to be included in pricing</td>
<td>AEI/Turner</td>
</tr>
<tr>
<td>51</td>
<td>Specification 230595 section 3.1-B states the TAB agency is to obtain and record all airflow &amp; pressure setpoints for all existing spaces served by AHU-DT-21AW, including surgery waiting, pharmacy, IDF/EIDF, electrical closets and public spaces. Will drawings be provided for this AHU and each area it serves?</td>
<td>AEI</td>
</tr>
</tbody>
</table>