UM Addendum Format

ADDENDUM #01
DATE: 07/08/2025

TO CONTRACT DOCUMENTS ENTITLED:

PROJECT MANUAL FOR:

Critical Care Addition
Paralleling Switchgear Replacement

PROJECT NUMBER: CP252281

ADVERTISEMENT DATE: 06/17/2025

PREPARED FOR: The Curators of the University of Missouri

CONSULTANT:

McClure Engineering
1000 Clark Avenue
St. Louis, MO 63102
(314) 645-6232

Drawings and Specifications for the above noted project and the work covered thereby are herein modified as follows, and except as set forth herein, otherwise remain unchanged and in full force and effect:

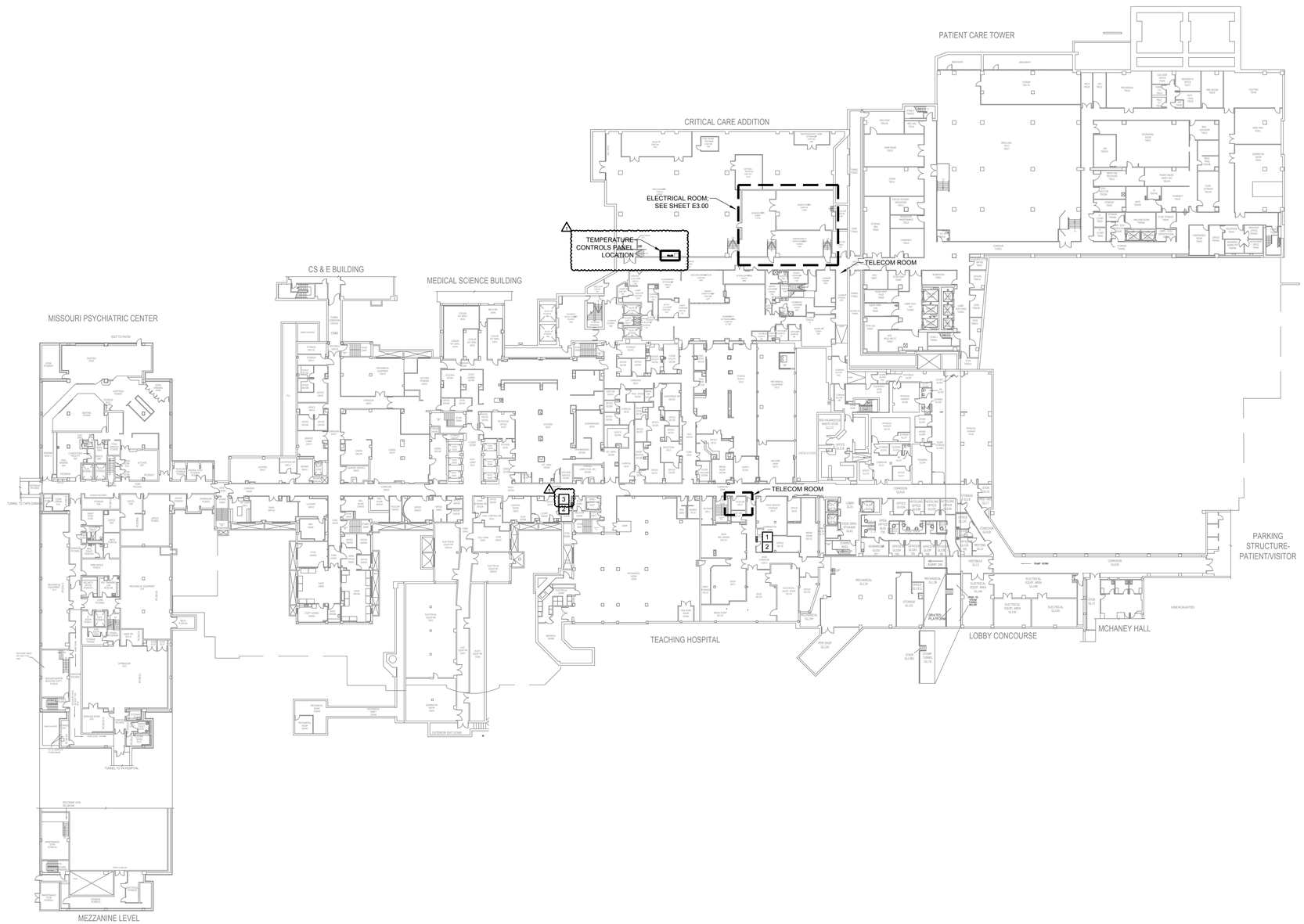
SPECIFICATION CHANGES:

1. REMOVED Section 250000, 251000 and 255000 in their entirety.
2. ADDED Section 230900 JCI Control Systems.

DRAWING CHANGES:

1. Sheet E1.01 – Overall Ground Floor Plan
    a. ADDED Temperature controls panel location where JCI points shall be connect.
    b. ADDED Keyed note 3 to clarify new versus existing annunciators.
    c. CHANGED Keyed note 1 to 3 for the west annunciator panel.

END OF ADDENDUM #1



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OVERALL GROUND FLOOR PLAN

SCALE: 1/32"=1'-0"

0 8" 16" 24" 32" 1'-0"

KEYED NOTES

1. EXISTING GENERATOR ANNUNCIATOR PANELS TO BE REMOVED AND REPLACED WITH NEW ANNUNCIATOR PANELS. NEW PANELS SHALL BE CONNECTED TO EXISTING WIRING FROM GENERATOR. CONNECT NEW PANELS TO MUHC NETWORK FOR REMOTE VIEWING CAPABILITIES. ROUTE NEW TELECOMMUNICATIONS CABLES TO NEAREST TELECOM CLOSET.
2. PROVIDE (10) 2/C TWISTED SHIELDED CABLE FROM EXISTING PARALLELING SWITCHGEAR TO ANNUNCIATOR. CONNECT TO AUXILIARY CONTACT ON EXISTING GENERATOR BREAKERS AND TO SPARE ANNUNCIATOR LIGHT. LABEL AND WIRE SUCH THAT WHEN EACH GENERATOR BREAKER IS IN OPEN POSITION, LIGHT IS ILLUMINATED.
3. NEW GENERATOR ANNUNCIATOR PANEL TO BE INSTALLED IN TELECOM ROOM. NEW PANEL SHALL BE CONNECTED TO EXISTING GENERATORS. CONNECT NEW PANELS TO MUCH NETWORK FOR REMOTE VIEWING CAPABILITIES. ROUTE TELECOMMUNICATIONS CABLES TO NEAREST TELECOM CLOSET.

SHEET IS PLOTTED TO SCALE IF ADJACENT LINE MEASURES 1 INCH

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Missouri State Certificate of Authority #000087

TM

CP252281
SWITCHGEAR PARALLELING CONTROLS UPGRADE
UNIVERSITY OF MISSOURI HEALTHCARE
CRITICAL CARE ADDITION
1 HOSPITAL DRIVE
COLUMBIA, MISSOURI

STATE OF MISSOURI
PHILIP J. WENTZ
NUMBER E-29111
7/9/2025

PHILIP J. WENTZ
PE-29111

REVISIONS

NO	DATE	DESCRIPTION
1	07/08/25	ADDENDUM #1

DATE: 06/10/2025
PROJECT #: CP252281
DRAWN BY: NAM
CHECKED BY: MJC

OVERALL GROUND FLOOR PLAN

E1.01

BID DOCUMENTS - 06/10/2025

SECTION 230900

CONTROL SYSTEMS

PART 1 GENERAL

1.01 SUMMARY

A. University of Missouri Controls Specification.

B. This section contains requirements for pneumatic, electric and digital control systems as indicated on the contract drawings.

C. Contractor is responsible for providing, installing and connecting all sensors, pneumatic actuators, control valves, control dampers, electrical components and all interconnecting pneumatic tubing and electrical wiring between these devices and up to the Direct Digital Controller (DDC).

D. DDC systems consist of Johnson Controls METASYS controllers. Contractor shall install owner provided control enclosures. Owner will provide and install controllers. After all equipment has been installed, wired and piped, Owner will be responsible for all termination connections at the DDC controller's and for checking, testing, programming and start-up of the control system. Contractor must be on site at start-up to make any necessary hardware adjustments as required.

1.01 RELATED SECTIONS

A. Drawings and general provisions of Contract, including General and Special Conditions apply to work of this section.

1.03 QUALITY ASSURANCE

A. Contractor's Qualifications:
   1. Contractor shall be regularly engaged in the installation of digital control systems and equipment, of types and sizes required. Contractor shall have a minimum of five years' experience installing digital control systems. Contractor shall supply sufficient and competent supervision and personnel throughout the project in accordance with General Condition's section 3.4.1 and 3.4.4.

B. Codes and Standards:
   1. Electrical Standards: Provide electrical components of control systems which have been UL-listed and labeled, and comply with NEMA standards.
   2. NEMA Compliance: Comply with NEMA standards pertaining to components and devices for control systems.
   3. NFPA Compliance: Comply with NFPA 90A "Standard for the Installation of Air Conditioning and Ventilating Systems" where applicable to controls and control sequences.
   4. NFPA Compliance: Comply with NFPA 70 "National Electric Code."

1.04 SUBMITTALS

A. Shop Drawings: Submit shop drawings for each control system, containing the following information:

B. Product data for each damper, valve, and control device.

C. Schematic flow diagrams of system showing fans, pumps, coils, dampers, valves, and control devices.

D. Label each control device with setting or adjustable range of control.

E. Indicate all required electrical wiring. Clearly differentiate between portions of wiring that are factory-installed and portions to be field-installed.

F. Provide details of faces on control panels, including controls, instruments, and labeling.

G. Include written description of sequence of operation.

H. Provide wiring diagrams of contractor provided interface and I/O panels.

I. Provide field routing of proposed network bus diagram listing all devices on bus.

PART 2 PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. Conduit and Raceway:
   1. Electrical Metallic Tubing: EMT and fittings shall conform to ANSI C80.3.
   2. Surface Metal Raceway and Fittings: Wiremold 500, Ivory, or approved equal.
   3. Flexible Metal Conduit: Indoors, per National Electric Code for connection to moving or vibrating equipment.
   4. Liquidtight Flexible Conduit: Outdoors, per National Electric Code for connection to moving or vibrating equipment.

PART 3 EXECUTION

3.01 INSTALLATION OF CONTROL SYSTEMS

A. General: Install systems and materials in accordance with manufacturer's instructions, roughing-in drawings and details shown on drawings.

B. Raceway: Raceway is to be installed in accordance with the National Electric Code. Use of flexible metal conduit or liquidtight flexible conduit is limited to 36" to connect from EMT to devices subject to movement. Flexible raceway is not to be used to compensate for misalignment of raceway during installation.

C. Control Wiring: Install control wiring in raceway, without splices between terminal points, color-coded. Install in a neat workmanlike manner, securely fastened. Install in accordance with National Electrical Code.
   1. Install circuits over 25-volt with color-coded No. 12 stranded wire.
   2. Install electronic circuits and circuits under 25-volts with color-coded No. 18 stranded twisted shielded pair type conductor.
   3. N2 communications bus wire shall be 18 AWG, plenum rated, stranded twisted shielded, 3 conductor, with blue outer casing, descripted as 18-03 OAS STR PLNM NEON BLU JK distributed by Windy City Wire, constructed by Cable-Tek, or approved equivalent.
      a) Metastat wiring shall be minimum 20 AWG, plenum rated, stranded, 8 conductor stranded wire.
   4. FC communications bus wire shall be 22 AWG, plenum rated, stranded twisted shielded, 3 conductor, with blue outer casing, descripted as 22-03 OAS STR PLNM NEON BLU

JK distributed by Windy City Wire, constructed by Cable-Tek, or approved equivalent.
   a) Network sensor wiring (SA Bus) shall be 22 gauge plenum rated stranded twisted wire, 4 conductor.
5. All control and control power wiring shall be tagged and labeled (with mechanical label maker), during installation to assist owner in making termination connections at controllers and panels. Label all control wires per bid documents.

D. All low voltage electrical wiring shall be run as follows:
1. Route electrical wiring in concealed spaces and mechanical rooms whenever possible.
2. Provide EMT conduit and fittings in mechanical rooms and where indicated on drawings.
3. Low voltage electrical wiring routed above acoustical ceiling is not required to be in conduit, but wire must be plenum rated and properly supported to building structure.
4. Provide surface raceway, fittings and boxes in finished areas where wiring cannot be run in concealed spaces. Route on ceiling or along walls as close to ceiling as possible. Run raceway parallel to walls. Diagonal runs are not permitted. Paint raceway and fittings to match existing conditions. Patch/repair/paint any exposed wall penetrations to match existing conditions.

E. All devices shall be mounted appropriately for the intended service and location.
1. All control devices shall be tagged and labeled for future identification and servicing of control system.
2. All field devices must be accessible or access panels must be installed.

3.02 ADJUSTING AND START-UP

A. The start-up, testing, and adjusting of digital control systems will be conducted by owner. Once all items are completed by the Contractor for each system, Contractor shall allow time in the construction schedule for owner to complete commissioning of controls before project substantial completion. This task should be included in the original schedule and updated to include the allotted time necessary to complete it. As a minimum, the following items are required to be completed by the Contractor for Owner to begin controls commissioning.
1. Process Control Network
   a) The control boards and enclosures need to be installed in the mechanical rooms.
   b) The fiber optic conduit and box for the process control network needs to be installed. Once in place, Owner needs to be contacted so the length of the owner provided fiber cable can be determined and ordered, if required. Coordinate with Owner to schedule the pull in and termination of the fiber cable. Power should be in place at that time. (Fiber for the process control network is required to allow metering of utilities prior to turn on.)

3.03 CLOSEOUT PROCEDURES

A. Contractor shall provide complete diagrams of the control system including flow diagrams with each control device labeled, a diagram showing the termination connections, and an explanation of the control sequence. The diagram and sequence shall be framed and protected by glass and mounted next to controller.
B. Contractor shall provide as built diagram of network bus routing listing all devices on bus, once wiring is complete prior to scope completion.

END OF SECTION