JJCA

Addendum Date: March 28, 2024

To: All Bidders

CC: Stephanie Pielich - JJCA

From: Harold Hadlock - JJCA

Project: Sullivan County Freestanding MOB – 23987.02

Subject: Addendum 03

Addendum No. 03
For
Sullivan County Freestanding MOB

STEPHANIE PIELICH REGISTERED Stephanie Pielich No. AR12300165 03.28.2024 STATE OF INDIANA ARCHITECT

Issued to - All Bidders of Record:

Date Issued: 03/28/24

This Addendum along with its attachments forms a part of the Contract Documents and modifies the Construction Documents, dated 02.28.2024, as noted below. The work reflected in this addendum is to be incorporated into the proposed Contract Sum and Time as if originally issued. Bidders must acknowledge receipt of this Addendum on the Bid Form.

This Addendum consists of FOUR (4) pages and SEVEN (7) attachments.

This addendum is in three parts as follows:

Part I Clarifications
Part II Pertaining to the Project Manual.
Part III Pertaining to the Drawings

PART I – CLARIFICATIONS:

1. Is the Commissioning agent noted in the specifications identified and is there a matrix of the contractor's responsibility?
    a. Reference reissued sheet M0.0.
2. There is a discrepancy between the IT conduits on the enlarged electrical room plans and the site/electrical/ telecom plans.
    a. Reference reissued sheets ES1-1 and T1.0.
3. Please confirm that the Phase 1 contractor will be responsible for fine grading, proof roll or testing, to the designed elevation for the building pad, ready for vapor barrier and slab on grade by the Phase 2 GC.
    a. Phase 1 contractor will construct pad subgrade to 8" below design FFE.
4. As well as fine grade of the parking lot, ready for Phase 2 asphalt.

Johnson Johnson Crabtree Architects P.C. 4551 Trousdale Drive Nashville, TN 37204 tel 615.837.0656 fax 615.837.0657 www.jjca.com

   a. Phase 1 contractor will fine grade stone to plan grade, however we do recommend Phase 2 contractor to include some amount of fine "regarding" before the asphalt paving given there will be a considerable amount of time where construction traffic will be driving across and potentially storing and handling materials for the construction of the building shell. In other words, Phase 2 contractor is responsible to repair any damaged portions to fine stone before paving.

5. Will the Phase 2 GC be responsible for the sequencing of the completion of Phase 1 final grading?
   a. No.
6. On Drawing sheet A1.1d it indicated the areas that receive the build-out, however on the foundation plan drawing sheet S1.1 part of the build-out area doesn't appear to receive a slab. Please advise.
   a. Slab to match A1.1d. Reference reissued sheet S1.1.
7. Can't seem to locate the footing schedule for the covered canopies (calls for some F3 spread footings, assume we would have piers also). Please advise.
   a. Reference reissued sheet S1.1.
8. Spec Section 22-0700, Plumbing Insulation, Paragraph 2.02, Section A, states that we are to use pre-molded fittings on 2-1/2" and larger pipe. Would PVC Fittings and Fiberglass Inserts be able to be used instead?
   a. Not acceptable for piping fittings 2 ½" and larger. This may be used only on piping fittings 2" and less, per specifications.
9. Spec Section 22-0700, Plumbing Insulation, Paragraph 3.03, Section A, states that Foam-glass or Cal-Sil supports are to be used on 2" and larger pipe? Would Fiberglass Blocks with Aluminum Saddles/Shields be able to be used?
   a. Not acceptable for pipe 2" and larger. Provide inserts per specifications.
10. Spec Section 22-0700, Plumbing Insulation, Paragraph 3.03, Section A, states that piping should be exposed (within 8 feet of Finished Floor) in mechanical rooms to get canvas jacket. Would an ASJ Jacket be able to be used instead of Canvas Jacket?
    a. ASJ jacket is considered a vapor barrier and may not be used as a jacket to prevent insulation damage for exposed piping. Provide jacket per specifications.
11. Spec Section 23-0700, HVAC Insulation, Paragraph 2.01, Section B.1 & B.2, states that's ductwork is to be sealed with staples and a vapor barrier sealant – Foil Tape is NOT allowed. Is 4" wide Foil Tape acceptable instead of Staples & Mastic?
    a. Foil tape is not allowed per specification.
12. Verify the R-Value is R-20 for the roof insulation.

   a. R-value of 23 is to be maintained as specified on index. Provide thickness as required per specified product.
13. 07-5400, 2.03.A.1 describes membrane as reinforcing fabrics or scrims (not a fleece on back) this membrane is typically used on new construction, and we believe the intent of the design. Please confirm.
   a. FleeceBACK also falls into this category and is to be provided as specified.
14. 07-5400, 2.04.1A.2 indicate a 25 PSI insulation. This is not typical where a deck does not have overburden weight. The standard is 20 PSI, please confirm acceptability.
   a. 25 PSI is desired for additional hail resistance.
15. 07-5400, 2.04.A.3 describes 1 ½" of ISO as being R-8, per Carlisle insulation chart, this is R-8.6. Please clarify R-20 should be 3.5" of ISO for entire roof assembly.
   a. R-value of 23 is to be maintained as specified on index. Provide thickness as required per specified product. 2.04.A.3 notes a minimum.
16. 07-5400,3.04.B, describes all the roof insulation being set in adhesive. This is very odd for insulation over a wood deck; over a concrete deck this would be a common spec design. This adhesion is also unnecessary and drives up the material and labor significantly. Will mechanical attachment be accepted for the insulation? The roof membrane will remain adhered.
   a. Mechanically attached insulation is acceptable. Modify system as required by manufacturer for other components.
17. The counter flashing is being specified stainless steel. (Detail 4 on A4.2). We believe this counter flashing should be the same as coping/edge material. (Kynar coated 24GA steel) Stainless is very expensive and typically no longer used in the roofing industry.
   a. Per Detail 4/A4.2, the receiver is stainless steel and the flashing insert is aluminum.
18. 07-5400, 2.0.A.1. Lists Carlisle FleeceBACK adhered TPO (a membrane typically used on reroofing existing buildings).
   a. Provide as specified.
19. Is there a schedule for this project? If no, what is a rough idea when roofing would start?
   a. To be determined by general contractor.
20. Will there be drywall attached to the bottom of the wood truss? If so, will the attic space be heated?
   a. Please refer to Addendum No. 02 questions #32 and #33 for clarification.
21. Fire protection supplier is asking – will there be heat above dropped ceiling to roof deck?
22. No floor drains shown in restroom. These are required by code.
23. Substitution submitted but NOT accepted.
   a. 07-2100 Batt Insulation for spray foam insulation.

b. 07-4229 Air Shield LMP WRMeadows.
c. 07-5400 TPO 60mil Duro-last. Total system warranty not provided.
d. 07-5400 TPO 60mil JM. Total system warranty not provided.
e. If a total system warranty is available, then consideration possible after bid submission. Product not to be used in bid submission.

PART II – PERTAINING TO THE PROJECT MANUAL:

1. Reissued Section: 08-4229 Automatic Entrance, dated 03.28.2024.
    a. Updated list for additional acceptable manufacturers.

PART III – PERTAINING TO THE DRAWINGS:

1. Revised sheet S0.1 in the Shell Set, dated 03.28.24.
    a. Slight modification in the SS and S1 values.
2. Revised sheet S1.1 in the Shell Set, dated 03.28.24.
    a. Modified the slab extents.
    b. Added the footing schedule.
3. Revised sheet M0.0 in the Shell Set. dated 03.28.24.
    a. Modified commissioning agent note.
4. Revised sheet M0.1 in the Shell Set, dated 03.28.24.
    a. Modified Seismic Category.
5. Revised sheet ES1.1 in the Shell Set, dated 03.28.24.
    a. Coordination between the IT conduits.
6. Revised sheet T1.0 in the Shell Set, dated 03.28.24.
    a. Coordination between the IT conduits.

ATTACHMENTS: (drawing sheets are tagged in title block with "Addendum No. XX"

- S0.1 General Notes & Quality Assurance Plan Dated 03.28.24 (Shell)
- S1.1 Foundation Plan Dated 03.28.24 (Shell)
- M0.0 Mechanical Legend, Naming Convention and Index Dated 03.28.24 (Shell)
- M0.1 Mechanical Schedules Dated 03.28.24.
- ES1.1 Site Plan – Shell Dated 03.28.24 (Shell)
- T1.0 Technology Plan – Shell Dated 03.28.24 (Shell)

END OF ADDENDUM

SECTION 08-4229
AUTOMATIC ENTRANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Packaged power-operated door assemblies of following types:
   1. Sliding type.

B. Controllers, actuators and safety devices.

C. Coordinate with glazing specified in Section 08-8000.

D. Maintenance.

1.02 SUBMITTALS

A. Follow Section 01-3323 for making construction submittals.
   1. Shop Drawings:
      a. Indicate layout and dimensions; head, jamb, and sill conditions; elevations; components, anchorage, recesses, materials, and finishes, electrical characteristics and connection requirements.
      b. Identify installation tolerances required, assembly conditions, routing of service lines and conduit, and locations of operating components and boxes.
   2. Product Data: Indicating all information which specifies full compliance with requirements of this section, including installation instructions.
   3. Certification: Manufacturer and installer are certified by American Association for Automatic Door Manufacturers (AAADM).

B. Follow sections 01-7700 and 01-7800 for making closeout submittals.
   1. Warranty: As specified elsewhere within this section.
   2. Maintenance Data: Include manufacturer's parts list and maintenance instructions for each type of hardware and operating component.
   3. Maintenance Materials: Furnish wrenches and other tools required for maintenance of equipment.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience and approved by manufacturer.

C. Certification: All labor and equipment shall be provided by American Association for Automatic Door Manufacturers (AAADM) certified installers and distributors.

1.04 DELIVERY, HANDLING, STORAGE

A. Products shall be delivered to job-site in original unopened packages bearing manufacturer's labels.

B. Store and protect products in accordance with manufacturer's recommendations. Maintain temperature and humidity within ranges required by manufacturer's instructions.

1.05 PRE-INSTALLATION CONFERENCE

A. Prior to starting roofing and exterior envelope work, the Contractor shall set up a job site meeting to comply with provisions of Section 01-3119 for the “Envelope and Roofing Pre-Installation Conference”.

1.06 WARRANTY

A. See Section 01-7800 - Closeout Submittals, for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Provide two year manufacturer warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Sliding Automatic Entrance Door Assemblies:
   1. ASSA ABLOY Entrance Solutions; Besam SL500: www.besam-usa.com/#sle.
   2. Portalp USA; Diva Series: www.portalpusa.com/#sle.
   3. ***record-usa; 5100 Series: www.recorddoors.com/#sle. Add 03***
   4. Stanley Access Technologies; Dura-Glide 2000 Sliding: www.stanleyaccesstechnologies.com/sle.
   5. Substitutions: See Section 01-2513 Product Substitution Procedures.

2.02 POWER OPERATED DOORS

A. Power Operated Doors: Provide products that comply with NFPA 101 and requirements of authorities having jurisdiction; provide equipment selected for actual door weight and for light pedestrian traffic, unless otherwise indicated.
   1. Sliding and Folding Door Operators: In the event of power failure, provide for manual open, close, and break-away operation of door leaves.
   2. Packaged Door Assemblies: Provide components by single manufacturer, factory-assembled, including doors, frames, operators, actuators, and safeties.
      a. Finish exposed equipment components to match door and frame finish.
   3. Air Leakage: Maximum of 1.0 cu ft/min/sq ft of wall area, when tested in accordance with ASTM E283 at 1.57 lbs/sq ft pressure differential across assembly.
   4. Exterior and Vestibule Doors: Provide equipment and operator suitable for operating temperature range of minus 20 to plus 140 degrees F ambient. Operator shall be sealed against dust, dirt, and corrosion and lubricated to reduce wear and friction of moving parts.

B. Sliding and Folding Doors with Full Power Operators: Comply with BHMA A156.10; safeties required; provide break-away operation unless otherwise indicated; in the event of break-away operation, interrupt power operation.

1. Comply with UL 325; acceptable evidence of compliance includes UL (DIR) listing.
2. Force Required to Swing Break-Away Panel: 50 pound-force, maximum, measured at 1 inch from the latch edge of the door at any point in the closing cycle.
3. Operator shall be belt-driven and complete with position controller and electronic control box factory-set to provide operating speeds and forces as prescribed by ANSI A156.10. Limit switches of any type not acceptable.
4. Control box in conjunction with position sensor shall automatically set the opening and closing speeds, the opening and closing check positions and the full open and fully closed position of the door system.
5. Time Delay: Door system shall provide a 0 to 30 seconds time delay.

C. Operators:
1. Electric Operators: 3/16 hp minimum, self-contained, gear driven, with release clutch.
a. Operator shall be readily convertible to any band required.
b. Drive train shall have positive constant engagement.
c. Close Speed Control: Accomplished by dynamic braking of the motor; fully adjustable.
d. Motor Protection Circuit: Provided by a locked door motor protection circuit that shuts off current if applied when the door is inadvertently locked or otherwise prevented from opening; power to the motor is restored when the on/off reset switch is turned on.

D. Locks: Installed in accordance with NFPA 101 requirements and shall not interfere with egress.
1. Key Lock: Cylinder type, keyed two sides.

2.03 AUTOMATIC ENTRANCE DOOR ASSEMBLIES

A. Comply with applicable local building codes for egress requirements.

B. Framing and Transom Members: Provide manufacturer's standard extruded aluminum framing, reinforced as required to support imposed loads.
1. Nominal Sizes:
a. Single Slide and Bi-Parting Sliding Doors: 1-3/4 inch wide by 4-1/2 inch deep.
2. Concealed Fastening: Provide concealed fastening pocket in framing, with continuous flush insert cover extending full length of each framing member.
3. Transoms: Provide flush glazed transom with framing that is integral with automatic entrance framing system.

C. Door and Sidelight Construction: Heavy duty interlocked extruded aluminum tubular stile and rail sections, through-rod bolted construction with steel corner support at hinge stile of carrier-suspended swinging panels or mechanically fastened corners with welded reinforcing brackets to reduce sag in sliding or breakout mode.
1. Door Thickness: 1-3/4 inch, nominal.
2. Stile Design:
a. Wide stile, 4 inch, nominal width.

3. Top Rail Height: 4 inch, nominal.
4. Bottom Rail Height: 10 inch, nominal.
5. Glazing Stops: Manufacturer's standard snap-on extruded aluminum square stops with preformed resilient glazing gaskets.
6. Glazing Stop Width: Manufacturers standard.
7. Glazing Thickness: See Section 08-8000.

D. Sliding Automatic Door: Single leaf track-mounted, electric operation, extruded aluminum glazed door, with frame, and operator concealed overhead.
1. Operation: Power open, power close operation.
2. Exterior-Side Actuator/Safety: Motion sensor.
3. Interior-Side Actuator/Safety: Motion sensor.
4. Hold Open: Toggle switch at inside head of doors.
5. Door and Frame Finish: Same as storefront framing system.
6. Threshold: Continuous standard tapered extrusion square by bevel, with bevel to exterior

2.04 CONTROLLERS, ACTUATORS, AND SAFETIES

A. Controller: Provide microprocessor operated controller for each door.
1. Adjustable Time Delay: Capable of adjustable time delay of 2 to 30 seconds.

B. Comply with BHMA A156.10 for actuator and safety types and zones.

C. Motion Sensor Actuator/Safety: Microwave; distance of control sensitivity adjustable.
1. Overhead operator shall be complete with anti-vandalism which will insure that the change of zone size by unauthorized movement of the unit is not possible.
2. Overhead operator shall have a discriminating signal input circuit, automatic compensation for voltage variations, and automatic rejection of fixed objects within the zone.

D. Photo-Electric Actuator/Safety: Horizontal single ray device, with aluminum housing for light source and relay units.

2.05 ACCESSORIES

A. Subsills for Sidelights:
1. Fabricate to shapes indicated of not less than 1/8 inch thick extruded aluminum, one piece full length of opening if practical, with concealed anchors.
2. If not practical to use one piece, provide 6 inch long back-up plate of same material, thickness and shape as sill member. Provide for expansion and contraction. Line center of subsill with expansion joints in window mullions.
3. Subsills turned-up back edge not less than 1 inch. Front edge provided with 1-1/2 inch (minimum) drip. End dams turned-up 1-1/2 inch.
4. Do not bridge thermal breaks.
5. Refer to drawings for details.

B. Gasketing:
1. Adjustable nylon sweeps on bottom of sliding doors.

2. Double pile weatherstripping on lead edges of sliding doors including the area of lock and elsewhere as needed for a weathertight installation.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work and dimensions are as indicated on shop drawings.

B. Verify that electric power is available and is of the correct characteristics.

C. Beginning of entrance door work means acceptance of existing conditions.

3.02 INSTALLATION

A. Install equipment in accordance with approved shop drawings and manufacturer's published instructions.

B. Provide for thermal expansion and contraction of door and frame units and live and dead loads that may be transmitted to operating equipment.

C. Provide for dimensional distortion of components during operation.

D. Coordinate installation of components with related and adjacent work; level and plumb.

E. Set subsills in bed of mastic with provisions for sealant and shims.

3.03 ADJUSTING

A. After repeated operation of completed installation, re-adjust door operators and controls for optimum condition, safety, and compliance with accessibility and governing building codes.

3.04 CLEANING

A. Remove temporary protection, clean exposed surfaces.

3.05 CLOSEOUT ACTIVITIES

A. Demonstrate operation, operating components, adjustment features, and lubrication requirements.

3.06 MAINTENANCE

END OF SECTION

STRUCTURAL GENERAL NOTES

DESIGN AND CODE INFORMATION

1. ALL CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE, 2012 IBC w/ 2014 INDIANA AMENDMENTS.

2. VERIFY EXISTING CONDITIONS AND ALL DIMENSIONS AND NOTIFY ARCHITECT OF ANY CONDITIONS WHICH CONFLICT WITH OTHER PLANS AND SPECIFICATIONS. STRUCTURAL DRAWINGS MUST BE COORDINATED WITH ARCHITECTURAL DRAWINGS. STRUCTURAL DRAWINGS ARE NOT INTENDED FOR BUILDING LAYOUT.

3. SHOP DRAWINGS WILL NOT BE REVIEWED BY THE DESIGNER UNTIL AFTER THE GENERAL CONTRACTOR HAS THOROUGHLY REVIEWED THE SHOP DRAWINGS, VERIFIED EXISTING CONDITIONS, AND COORDINATED THE SHOP DRAWINGS WITH OTHER AFFECTED TRADES. SUBMIT PDF COPIES OF REVIEWED DRAWINGS FOR ENGINEER'S REVIEW. ONLY PDF SETS OF MARKED UP SHOP DRAWINGS SHALL BE RETURNED BY THE DESIGNER. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.

4. COMPLETE SHOP DRAWINGS AND CALCULATIONS FOR COMPONENTS NOT DESIGNED BY THE ENGINEER OF RECORD AND NOT SPECIFIED ON THE PROJECT CONSTRUCTION DOCUMENTS SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT STATE AND SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO BEGINNING FABRICATION, INCLUDING BUT NOT LIMITED TO THE FOLLOWING COMPONENTS:

   (X) WOOD TRUSSES

5. THE STRUCTURE IS UNSTABLE UNTIL ALL LOAD BEARING WALLS ARE ERECTED AND STEEL MEMBERS ARE ERECTED, CONNECTIONS ARE COMPLETELY BOLTED AND/OR WELDED AND INSPECTED, THE STEEL DECK ATTACHED TO THE STEEL FRAMING, AND THE CONCRETE FLOORS PLACED AND ATTAINS 75% OF 28-DAY STRENGTH. UNTIL SUCH TIME, TEMPORARY BRACING IS REQUIRED. THE DESIGN ADEQUACY OF TEMPORARY BRACING AND SHORING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

6. DO NOT SCALE STRUCTURAL DRAWINGS, AND FOR LOCATION OF MISCELLANEOUS ITEMS (OPENINGS, BENT PLATES, INSERTS, ETC.) AFFECTING STRUCTURAL WORK, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.

7. DEAD LOADS:
   SELF-WEIGHT OF STRUCTURE
   ROOF: 20 PSF

8. LIVE LOADS:
   OFFICES: 100 PSF (INCLUDING PARTITIONS) REDUCIBLE PER CODE
   ROOFS: 20 PSF (REDUCIBLE PER CODE)

9. ROOF LOADS:
   GROUND SNOW LOAD: 20 PSF
   SNOW EXPOSURE Ce: 1.0
   SNOW IMPORTANCE I: 1.0
   THERMAL FACTOR Ct: 1.0
   FLAT ROOF SNOW LOAD: 20 PSF

10. WIND LOADS:
    BASIC WIND SPEED: CATEGORY II BASIC WIND SPEED 106 MPH
    WIND EXPOSURE FACTOR: C
    INTERNAL PRESSURE COEFFICIENT: ± 0.18
    CLADDING LOAD: SEE DIAGRAMS ON S0.1

11. RAIN LOADS:
    DESIGN LOAD: 20 PSF

12. SEISMIC LOADS: (ADD #3)
    RISK CATEGORY: II
    SEISMIC IMPORTANCE Ie: 1.0
    .2 SEC SPECTRAL RESPONSE ACCELERATION Ss: 0.365
    1.0 SEC SPECTRAL RESPONSE ACCELERATION S1: 0.134
    SITE CLASS: C
    DESIGN SPECTRAL RESPONSE SDS: 0.316
    DESIGN SPECTRAL RESPONSE SD1: 0.134
    SEISMIC DESIGN CATEGORY: C
    RESISTING SYSTEM: LIGHT-FRAMED WOOD WALLS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE.
    RESPONSE MODIFICATION FACTOR R: 6.5
    SEISMIC RESPONSE COEFFICIENT Cs: 0.016
    ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
    BASE SHEAR: 50 kips

SPECIAL INSPECTIONS AND TESTING

1. THE CONTRACTOR/OWNER SHALL EMPLOY AN INDEPENDENT TESTING COMPANY TO PERFORM SITE INSPECTIONS AND TESTING IN ACCORDANCE WITH THE QUALITY ASSURANCE PLAN SHEET S0.2.

2. THE CONTRACTOR/OWNER SHALL EMPLOY AN INDEPENDENT TESTING COMPANY TO PERFORM THE FOLLOWING FABRICATION INSPECTIONS AND TESTING PER SECTION 1704.2.5.1:

   WOOD TRUSSES IF FABRICATOR IS NOT TPI CERTIFIED

STRUCTURAL OBSERVATIONS

1. THE ENGINEER OF RECORD HAS BEEN EMPLOYED TO PERFORM PERIODIC VISUAL OBSERVATIONS OF THE STRUCTURE DURING CONSTRUCTION FOR GENERAL CONFORMANCE TO THE DESIGN DRAWINGS.

FOUNDATION NOTES

1. FOUNDATION DESIGN IS BASED ON A REPORT FROM TTL DATED 11-13-2023. REPORT # 000230802085.00

2. FOOTINGS ARE DESIGNED TO BEAR ON UNIFORM SOIL CAPABLE OF SUPPORTING 2000 PSF (ISOLATED FOOTINGS) 1500PSF (CONTINUOUS FOOTINGS).

3. THE SOIL BEARING CAPACITY AND CONSISTENCY SHALL BE VERIFIED FOR THE BUILDING LIMITS BY A REGISTERED GEOTECHNICAL ENGINEER WHEN FOUNDATION EXCAVATIONS HAVE BEEN CARRIED DOWN TO THE PROPOSED ELEVATIONS. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 2'-0" MINIMUM BELOW FINISHED GRADE.

4. WHERE FOOTING EXCAVATIONS ARE TO REMAIN OPEN AND MAY BE EXPOSED TO RAINFALL, THE EXCAVATIONS SHALL BE UNDERCUT AND A 3-INCH-THICK MUD MAT OF 2000 PSI CONCRETE SHALL BE PLACED IN THE BOTTOM TO PROTECT THE BEARING SOILS.

5. WHERE FOOTING STEPS ARE NECESSARY, THEY SHALL BE NO STEEPER THAN 1 VERTICAL TO 2 HORIZONTAL, UNLESS SHOWN OTHERWISE ON PLANS.

REINFORCED CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," (ACI 318).

2. REINFORCING STEEL SHALL BE DEFORMED BARS ASTM A-615 (GRADE 60).

3. MATERIAL PROPERTIES – CONCRETE:

		Class Exposure	F'c psi at 28 days	Max. W/C Ratio	Max.* Slump Inches	Total Air Content (±1.5%)	Nom. Max. Aggregate Size
3.1	Cast-in-place concrete						
a.	Footings	C1	4,000	0.50	4	No test	2"
b.	Slab on grade						
	Int. Slab		4,000	0.45	4	No test	1"
	Ext. Slab	F1, C2	5,000	0.40	4	6	1"
c.	All other		4,000	0.45	4	5	3/4"
d.	Concrete fill on metal deck (Lightweight & Normal)		4,000	0.45	4	4-7	3/4"
3.2.	Other concrete						
a.	Masonry wall						
	Grout fill		2,000		8-10	No test	3/8"

*Prior to adding water reducer

4. EXPOSURE CLASS SHALL BE FO, SO, PO, AND CO PER ACI 318 UNO.

5. LAP SPLICES FOR REINFORCING BARS SHALL BE CLASS B IN ACCORDANCE WITH ACI 318, UNLESS NOTED OTHERWISE.

6. THE LONGITUDINAL REINFORCING STEEL IN BOND BEAMS, WALLS, AND FOOTINGS SHALL BE CONTINUOUS AROUND CORNERS. SEE TYPICAL DETAILS.

7. CLEAR CONCRETE COVER FOR REINFORCING STEEL:

   MASONRY WALLS: LOCATE IN CENTER OF WALL (UNO)
   SLAB ON GRADE: ¾" TOP STEEL
   1½" BOTTOM STEEL
   FOOTINGS: 2" FORMED EDGES
   3" CAST AGAINST GROUND

8. CONCRETE WALLS AND SLABS SHALL BE REINFORCED AROUND ALL OPENINGS WITH 2-#5 BARS IN EACH FACE, ON ALL SIDES AND EXTENDED 2'-0" BEYOND THE OPENING, UNLESS SHOWN OTHERWISE.

9. MECHANICAL VIBRATORS SHALL VIBRATE ALL CONCRETE.

10. CHAMFER EXPOSED CORNERS OF BEAMS, COLUMNS AND WALLS 3/4 INCH.

11. UNLESS OTHERWISE DIRECTED BY THE OWNER, CONCRETE SLABS SHALL BE FINISHED TO THE FOLLOWING FLATNESS CRITERIA. THESE FLOOR FLATNESS CRITERIA ARE NOT APPLICABLE TO COMPOSITE STEEL CONSTRUCTION. SEE ARCHITECTURAL REQUIREMENTS FOR ADDITIONAL FLOOR FINISH INFORMATION:

    SPECIFIED OVERALL F NUMBERS
    FLATNESS FF = 35
    LEVEL FL = 25

    MINIMUM LOCAL F NUMBERS
    FLATNESS FF = 24
    LEVEL FL = 17

12. COORDINATE ALL VAPOR RETARDERS, VAPOR BARRIERS, AND WATERPROOFING OF CONCRETE SLABS-ON-GRADE AND CONCRETE WALLS WITH FINISH MATERIAL REQUIREMENTS AND ARCHITECTURAL SPECIFICATIONS.

CONCRETE MASONRY

1. MASONRY CONSTRUCTION SHALL CONFORM TO ACI 530/TMS 402 AND ACI 530.1/TMS 602.

2. CONCRETE MASONRY SHALL CONFORM TO THE NATIONAL CONCRETE MASONRY ASSOCIATION SPECIFICATIONS, AND HAVE A DENSITY OF 125 PCF AND SHALL HAVE A MINIMUM PRISM STRENGTH (F'M) OF 2000 PSI.

3. GROUT FOR FILLING CONCRETE MASONRY CELLS SHALL CONFORM TO STANDARD SPECIFICATIONS FOR "MORTAR AND GROUT FOR REINFORCED MASONRY, "ASTM C-476, AND SHALL HAVE A COMPRESSIVE PRISM STRENGTH (F'M) OF 2000 PSI AT 28 DAYS. THE SLUMP SHALL BE BETWEEN 9 INCHES AND 11 INCHES. WHERE THE MINIMUM DIMENSION OF ANY CONTINUOUS VERTICAL CELL IS 3 INCHES OR LESS, USE FINE GROUT, OTHERWISE USE COARSE (PEA GRAVEL) GROUT.

4. MORTAR FOR CONCRETE MASONRY SHALL BE TYPE "S" AND SHALL CONFORM TO ASTM C-270.

5. ALL REINFORCING BARS IN FILLED CELLS SHALL BE DOWELED INTO FOOTINGS WITH STANDARD 90-DEGREE HOOKS.

6. MASONRY LAP SPLICES SHALL BE 48 BAR DIAMETERS (U.N.O.)

7. REINFORCEMENT IN WALLS SHALL BE PLACED IN THE CENTER OF THE WALL

WOOD TRUSSES

1. ROOF TRUSSES SHALL BE DESIGNED TO SUPPORT THE FOLLOWING LOADS:

   TOP CHORD: 12 PSF DEAD LOAD
   20 PSF LIVE LOAD

   BOTTOM CHORD: 8 PSF DEAD LOAD

2. IN ADDITION TO THE UNIFORM LOADING SPECIFIED FOR TRUSS DESIGN, THE TRUSS SUPPLIER SHALL INCLUDE ANY CONCENTRATED LOADS CAUSED BY ARCHITECTURAL FEATURES OR MECHANICAL EQUIPMENT IN THE TRUSS DESIGN.

3. SEE ARCHITECTURAL DRAWINGS FOR BEARING CONDITIONS AND DIMENSIONS OF TRUSSES.

4. A REGISTERED ENGINEER IN THE PROJECT STATE SHALL DESIGN TRUSSES. SHOP DRAWINGS, INCLUDING INDIVIDUAL TRUSS DESIGNS, PLAN LAYOUT, ALL TEMPORARY BRACING AND PERMANENT TRUSS MEMBER BRACING BEARING THE ENGINEERS SEAL SHALL BE SUBMITTED FOR REVIEW.

5. TRUSSES SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH APPLICABLE STANDARDS OF THE TRUSS PLATE INSTITUTE.

6. UNLESS NOTED OTHERWISE ON DRAWINGS, TRUSS SUPPLIER SHALL BE RESPONSIBLE FOR DESIGNING AND SUPPLYING OR SPECIFYING ALL TEMPORARY BRACING AND PERMANENT INDIVIDUAL TRUSS MEMBER BRACING REQUIRED BY DESIGN, ALL TRUSS-TO-TRUSS CONNECTIONS, AND ALL UPLIFT CONNECTIONS AT BEARING LOCATIONS. ALL PERMANENT BRACING OF TRUSS MEMBERS SHALL BE CONTINUOUS AND BE ATTACHED TO AN END-WALL STUD OR HIP-TRUSS TOP CHORD WITH 2 #16D COMMON NAILS.

7. FIELD REPAIR OF DAMAGED TRUSSES MUST BE APPROVED IN WRITING BY THE TRUSS ENGINEER AND ENGINEER OF RECORD.

8. ALL ROOF TRUSS BEARING WALLS SHALL HAVE METAL FASTENERS TO RESIST UPLIFT FORCES AS NOTED ON ROOF FRAMING PLANS OR AS REQUIRED BY THE TRUSS ENGINEER.

9. TRUSS SUPPLIER IS TO PROVIDE PLAN AND PROCEDURES FOR INSTALLING, SECURING, AND BRACING OF ALL TRUSSES.

10. TRUSS SUPPLIER SHALL PROVIDE TRUSS BLOCKS CAPABLE OF TRANSFERRING LATERAL LOADS AS NOTED ON PLANS AND/OR DETAILS.

11. TRUSS MANUFACTURER TO COORDINATE WITH MECH./PLUMBING DRAWINGS FOR ADDITIONAL CONCENTRATED LOADS DUE TO DOMESTIC WATER AND SPRINKLER PIPE SUPPORTS.

12. TRUSS MANUFACTURER SHALL COORDINATE TRUSS LAYOUT WITH MECH/PLUMBING DRAWINGS TO ALLOW ALL PIPES AND DUCTS ADEQUATE SPACE FOR PROPER INSTALLATION.

13. PRE-ENGINEERED METAL PLATE CONNECTED WOOD TRUSSES SHALL BE BRACED IN INFORMATION BOOKLET, BCSI 1-03" AND RELATED SUMMARY SHEETS.

LUMBER FRAMING

1. ALL NON-PREFABRICATED LOAD BEARING FRAMING MEMBERS SHALL BE #2 SOUTHERN YELLOW PINE 19% MOISTURE CONTENT UNLESS OTHERWISE NOTED.

2. STUDS IN LOAD BEARING WALLS MAY BE DOUGLAS FIR, SOUTHERN YELLOW PINE OR SPRUCE (#2) , UNLESS NOTED OTHERWISE.

3. CONTRACTOR TO PROVIDE TEMPORARY WALL BRACING UNTIL ALL PLYWOOD DECKING, ROOF TRUSSES, AND SHEAR WALLS ARE INSTALLED.

4. ALL PLYWOOD SHEATHING SHALL BE APA RATED, SEE PLAN.

5. THE ALLOWABLE STRESSES FOR FIRE RETARDANT TREATED LUMBER SHALL BE REDUCED 10%.

6. LVL AND PSL LUMBER SHALL BE MICROLAM OR PARALLAM LUMBER AS MANUFACTURED BY WEYERHAEUSER, OR EQUAL.
   LVL MEMBERS SHALL BE (MIN): f_b=2600 PSI, f_v=285 PSI, E=1,900,000 PSI
   PSL BEAMS SHALL BE (MIN): f_b=2900 PSI, fr=290 PSI, E=2,000,000 PSI

7. WALLS MUST HAVE BLOCKING BETWEEN STUDS AT MAXIMUM SPACING OF 6'-3" OR AT PANEL EDGES. THE BLOCKING MUST BE 2" IN THICKNESS AND MATCH THE STUD WIDTH.

POST-INSTALLED ANCHORS

1. UNLESS NOTED OTHERWISE, POST-INSTALLED CONCRETE ANCHORS SHALL COMPLY WITH ICC-ES ACCEPTANCE CRITERIA FOR ANCHORS IN CRACKED CONCRETE AND SEISMIC APPLICATIONS.

2. POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS UNLESS APPROVED OTHERWISE BY THE ENGINEER.

3. PLACE POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REBAR AND EMBEDS.

4. DRILL AND PREPARE HOLES AND INSTALL ANCHORS IN ACCORDANCE WITH EVALUATION REPORTS.

5. POST-INSTALLED ANCHORS SHALL BE INSPECTED BY A QUALIFIED SPECIAL INSPECTOR IN ACCORDANCE WITH THE PROJECT STATEMENT OF SPECIAL INSPECTION AND THE ICC-ES REPORT.

   UNLESS OTHERWISE NOTED IN THE ICC-ES REPORT, THE SPECIAL INSPECTOR SHALL INSPECT THE INITIAL INSTALLATION OF EACH TYPE OF ANCHOR AND PERIODICALLY INSPECT INSTALLATION THEREAFTER.

6. MECHANICAL ANCHORS FOR USE IN CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED IN ACCORDANCE WITH ACI 355.2 AND ICC-ES193. ACCEPTABLE MECHANICAL ANCHORS FOR USE IN CONCRETE INCLUDE THE FOLLOWING:

   HILTI KWIK BOLT TZ2 (ICC-ES ESR 1917)
   HILTI KWII HUS-EZ (ICC-ES ESR 3027)
   SIMPSON STRONG-TIE STRONG-BOLT 2 (ICC-ES ESR 3037)
   SIMPSON STRONG-TIE TITEN-HD (ICC-ES ESR-2713)
   DEWALT POWER – STUD + SP2 (ICC ESR-2713)
   DEWALT SCREW-BOLT + (ICC ESR-3889)

7. ADHESIVE ANCHORS, INCLUDING REBAR, FOR USE IN CONCRETE SHALL HAVE BEEN TESTED AND QUALIFIED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308. ADHESIVE ANCHOR SHALL BE INSTALLED INTO DRY HOLES DRILLED USING A CARBIDE DRILL BIT THAT HAS CURED FOR AT LEAST 21 DAYS. ACCEPTABLE ADHESIVE ANCHORS FOR USE IN CONCRETE INCLUDE THE FOLLOWING:

   HILTI HIT RE 500 V3 (ICC-ESR 3814)
   HILTI HIT-HY 200 ANCHOR RODS AND REINFORCING BAR (ICC-ES ESR 3187)
   SIMPSON STRONG-TIE SET-XP (ICC-ES ESR 2508)
   DEWALT PURE 110 + (ICC ESR-3298)

STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS/QUALITY ASSURANCE PROGRAM

GENERAL:

THIS STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS PLAN IDENTIFIES THE RESPONSIBILITIES OF THE CONTRACTOR AND THE SPECIAL INSPECTOR IN PERFORMING THE STRUCTURAL TESTING AND INSPECTION OF THE WORK REQUIRED BY CHAPTER 17 OF THE BUILDING CODE THAT IS WITHIN THE SCOPE OF THE STRUCTURAL ENGINEERING SERVICES FOR THIS PROJECT. REFER TO OTHER PORTIONS OF THE CONSTRUCTION DOCUMENTS FOR TESTING AND INSPECTIONS REQUIRED OF ARCHITECTURAL, MECHANICAL, ELECTRICAL, OR OTHER BUILDING COMPONENTS.

CONTRACTOR RESPONSIBILITIES:

THE CONTRACTOR SHALL SUBMIT TO THE BUILDING OFFICIAL AND THE ARCHITECT A WRITTEN STATEMENT OF RESPONSIBILITY THAT CONTAINS THE FOLLOWING:

1. ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED WITHIN THIS STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS.
2. ACKNOWLEDGEMENT THAT CONTROL SHALL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.
3. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING, AND THE DISTRIBUTION OF REPORTS.
4. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

THE STRUCTURAL TESTING/INSPECTION AGENCY THAT IS TO ACT AS THE SPECIAL INSPECTOR WILL BE HIRED BY THE OWNER, BUT CONTRACTOR SHALL PAY FOR ANY ADDITIONAL STRUCTURAL TESTING/INSPECTION REQUIRED FOR WORK OR MATERIALS NOT COMPLYING WITH THE CONSTRUCTION DOCUMENTS DUE TO NEGLIGENCE OR NONCONFORMANCE AND SHALL PAY FOR ANY ADDITIONAL STRUCTURAL TESTING/INSPECTION REQUIRED FOR HIS CONVENIENCE.

CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SPECIAL INSPECTOR IS PRESENT FOR ALL WORK REQUIRING SPECIAL INSPECTION. ANY WORK THAT REQUIRES SPECIAL INSPECTION AND IS PERFORMED WITHOUT THE SPECIAL INSPECTOR BEING PRESENT IS SUBJECT TO BEING DEMOLISHED AND RECONSTRUCTED.

CONTRACTOR HAS THE FOLLOWING RESPONSIBILITIES TO THE SPECIAL INSPECTOR:

1. PROVIDE COPY OF CONSTRUCTION DOCUMENTS TO THE SPECIAL INSPECTOR.
2. NOTIFY THE SPECIAL INSPECTOR SUFFICIENTLY IN ADVANCE OF OPERATIONS TO ALLOW ASSIGNMENT OF PERSONNEL AND SCHEDULING OF TESTS.
3. COOPERATE WITH SPECIAL INSPECTOR AND PROVIDE ACCESS TO WORK.
4. PROVIDE SAMPLES OF MATERIALS TO BE TESTED IN REQUIRED QUANTITIES.
5. PROVIDE STORAGE SPACE FOR THE SPECIAL INSPECTOR'S EXCLUSIVE USE, SUCH AS FOR STORING AND CURING CONCRETE TESTING SAMPLES.
6. PROVIDE LABOR TO ASSIST THE SPECIAL INSPECTOR IN PERFORMING TESTS/INSPECTIONS.

SPECIAL INSPECTOR'S RESPONSIBILITIES:

THE SPECIAL INSPECTOR SHALL BE A PROFESSIONAL ENGINEER LICENSED IN AND PRACTICING IN THE STATE OF INDIANA. SPECIAL INSPECTORS SHALL BE A LICENSED ENGINEER IN THE STATE OF INDIANA OR IS PERFORMING APPROPRIATE DUTIES DIRECTLY UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF INDIANA AND HAS A THOROUGH UNDERSTANDING OF THE SPECIAL INSPECTION REQUIREMENTS OF THE 2012 IBC. THE SPECIAL INSPECTOR SHALL BE AN INDIVIDUAL OR INDIVIDUALS CERTIFIED OR EXPERIENCED TO PERFORM SUCH INSPECTIONS IN A PARTICULAR FIELD.

THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND FURNISH REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. PERIODIC REPORTS SHALL BE PROVIDED AND SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED TO THE SATISFACTION OF THE SPECIAL INSPECTOR, THE DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.

A WEEKLY REPORT OF INSPECTIONS DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED. AT THE COMPLETION OF THE SPECIAL INSPECTIONS, THE LICENSED PROFESSIONAL ENGINEER IN CHARGE OF PERFORMING THE SPECIAL INSPECTION SHALL CERTIFY THE FINAL SPECIAL INSPECTION REPORT AND AFFIX HIS/HER SEAL TO THE SPECIAL INSPECTOR'S FINAL REPORT. PROVIDE THREE (3) COPIES OF THIS REPORT; TWO TO THE ARCHITECT AND ONE TO THE STRUCTURAL ENGINEER OF RECORD.

THE SPECIAL INSPECTOR FOR THIS PROJECT IS AS FOLLOWS:

SOILS AND FOUNDATIONS:

SPECIAL INSPECTOR SHALL PERFORM PERIODIC INSPECTIONS TO VERIFY THE FOLLOWING:

1. STRUCTURAL FILL COMPLIES WITH SPECIFICATIONS AND THE PROJECT GEOTECHNICAL.
2. OBSERVE PROOFROLLING.
3. PERFORM FIELD DENSITY TEST TO VERIFY COMPACTION OF STRUCTURAL FILL. AS A MINIMUM, PERFORM ONE TEST PER LIFT FOR EVERY 2500 SQUARE FEET OF FILL PLACED.
4. FOUNDATION BEARING CAPACITY OF ALL FOOTINGS.

WOOD CONSTRUCTION:

CONTRACTOR SHALL PERFORM THE FOLLOWING:

1. SUBMIT CERTIFICATION THAT THE FABRICATOR OF PRE-ENGINEERED WOOD PRODUCTS AND TRUSSES IS REGISTERED AND APPROVED BY THE BUILDING OFFICIAL TO PERFORM REQUIRED WORK WITHOUT SPECIAL INSPECTIONS.
2. IF FABRICATOR IS NOT REGISTERED AND APPROVED, SPECIAL INSPECTION OF THE FABRICATED ITEMS SHALL BE REQUIRED. SPECIAL INSPECTOR SHALL VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF THE WORKMANSHIP AND THE FABRICATOR'S ABILITY TO CONFORM TO APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS.

SPECIAL INSPECTOR SHALL PERFORM PERIODIC INSPECTIONS OF THE FOLLOWING:

1. VISUAL INSPECTION OF WOOD FRAMING TO VERIFY COMPLIANCE WITH DETAILS ON THE APPROVED CONSTRUCTION DOCUMENTS AND SHOP DRAWINGS INCLUDING MEMBER SIZES, LOCATIONS, BRACING, CONNECTION DETAILS, NAIL SIZES, NAIL SPACING, ETC.
2. VISUAL INSPECTION OF ROOF AND FLOOR DIAPHRAGMS FOR SHEATHING INSTALLATION, BOLTED CONNECTIONS, NAILING PATTERN, BLOCKING, ETC.
3. VISUAL INSPECTION OF SHEAR WALLS FOR SHEATHING INSTALLATION, BOLTED CONNECTIONS, NAILING PATTERN, BLOCKING, ETC.

EMC STRUCTURAL ENGINEERS, P.C.
4525 Trousdale Drive
Nashville, Tennessee 37204
(615) 781-8199
www.emcnashville.com

23239_R23

Construction Documents

tel 615.837.0656
fax 615.837.0657
4551 Trousdale Drive
Nashville, TN 37204
P.C.
Johnson Johnson
Crabtree Architects
JJCA

Freestanding Medical Office Building Shell for:
Sullivan County Community Hospital
Sullivan, Indiana

MARK W. SAVAGE
REGISTERED
No. PE11200057
STATE OF
INDIANA
PROFESSIONAL ENGINEER
[illegible] 3-28-24

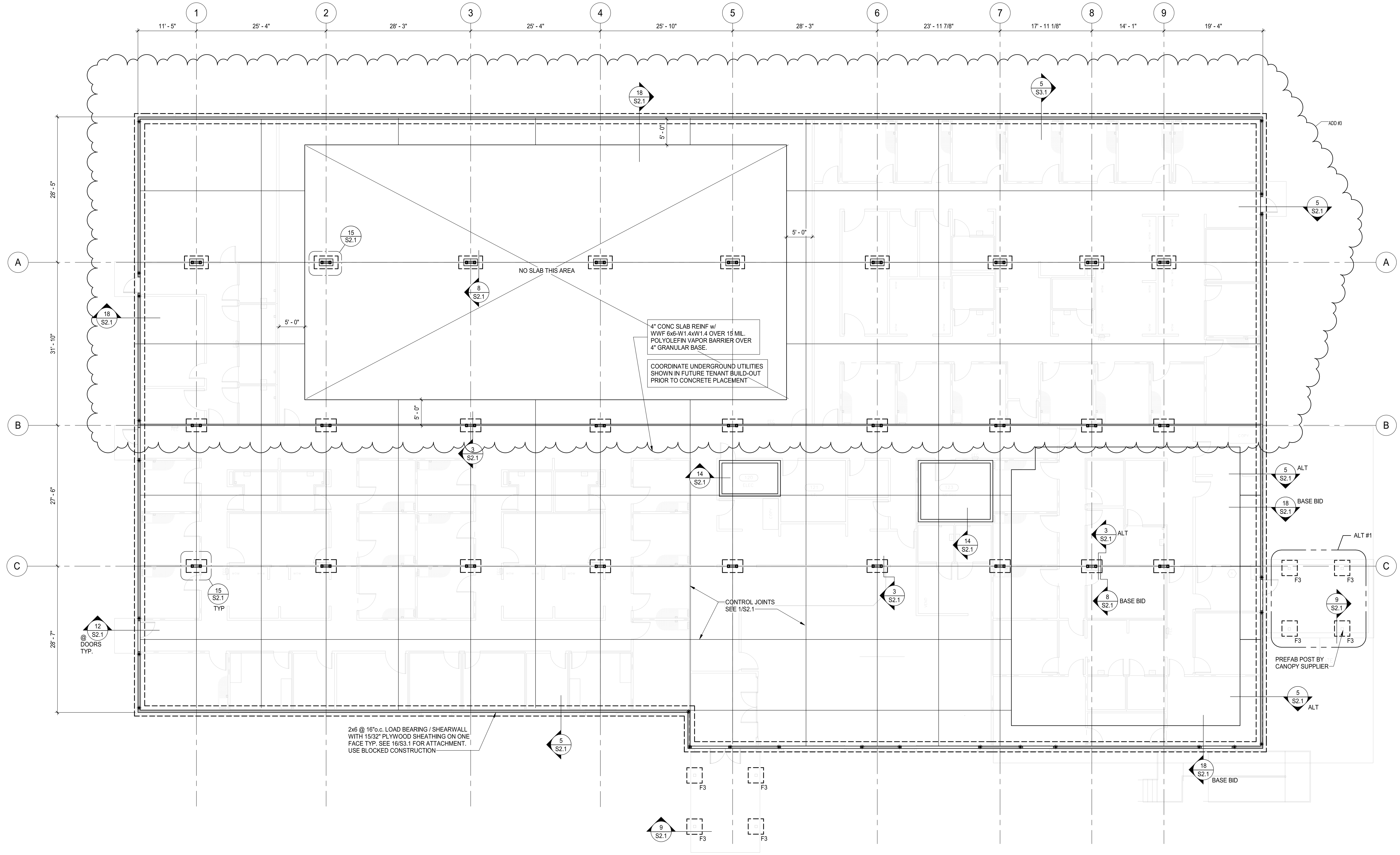
Sheet Re-Issue Log
(Individual revisions clouded and labeled within sheet)

ADD #3 3/28/24

PROJECT NUMBER
23987.02
DATE
February 28, 2024

S0.1

GENERAL NOTES & QUALITY ASSURANCE PLAN



FOOTING SCHEDULE

MARK	SIZE			REBAR	REMARKS
	LENGTH	WIDTH	THICK.		
F3	3' - 0"	3' - 0"	1' - 0"	(5) #5 EA. WAY	

ADD #3

FOUNDATION PLAN

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

NOTES:

1) TOP OF EXTERIOR FTG. = F.F.E. -2'-0" OR 2'-0" BELOW EXTERIOR GRADE WHICHEVER IS LOWER U.N.O.
2) THE CONTRACTOR SHALL COORDINATE ANY UNDER SLAB PIPING, CONDUITS OR ANY UTILITIES PRIOR TO PLACING FOOTINGS. REPORT ANY CONFLICT TO ENGINEER IMMEDIATELY.
3) SEE ARCH. DWG FOR ANY LOCATIONS AND OR DIMENSIONS NOT SHOWN.
4) ✳ INDICATES SIMPSON HDU-2-SDS2.5 HOLDOWN.
5) SEE 6&7/S2.1 FOR REINFORCING @ FOOTING INTERSECTIONS.

EMC STRUCTURAL ENGINEERS, P.C.
4525 Trousdale Drive
Nashville, Tennessee 37204
(615) 781-8199
www.emcnashville.com
23239_R23

Construction Documents

JJCA
Johnson Johnson Crabtree Architects P.C.
4551 Trousdale Drive
Nashville, TN 37204
tel 615.837.0656
fax 615.837.0657

Freestanding Medical Office Building Shell for:
Sullivan County Community Hospital
Sullivan, Indiana

MARK W. SAVAGE
REGISTERED
No. PE11200057
STATE OF INDIANA
PROFESSIONAL ENGINEER
3-28-24

Sheet Re-Issue Log
(Individual revisions clouded and labeled within sheet)

ADD #3 3/28/24

PROJECT NUMBER
23987.02
DATE
February 28, 2024

S1.1

FOUNDATION PLAN

MECHANICAL LEGEND

(NOT ALL SYMBOLS MAY BE USED)

DUCTWORK

SYMBOL / ABBREVIATION	DESCRIPTION
	RECTANGULAR SUPPLY DUCT - UP
	RECTANGULAR SUPPLY DUCT - DOWN
	RECTANGULAR RETURN / EXHAUST DUCT - UP
	RECTANGULAR RETURN / EXHAUST DUCT - DOWN
	ROUND SUPPLY DUCT - UP
	ROUND SUPPLY DUCT - DOWN
	ROUND RETURN / EXHAUST DUCT - UP
	ROUND RETURN / EXHAUST DUCT - DOWN
	OVAL SUPPLY DUCT - UP
	OVAL SUPPLY DUCT - DOWN
	OVAL RETURN / EXHAUST DUCT - UP
	OVAL RETURN / EXHAUST DUCT - DOWN
	FIRE DAMPER
	SMOKE DAMPER
	COMBINATION FIRE/SMOKE DAMPER
MVD MVD	MANUAL VOLUME DAMPER
M M	MOTORIZED DAMPER
A A	AIR FLOW MONITORING STATION
DP DP	DIFFERENTIAL PRESSURE SENSOR
SP SP	STATIC PRESSURE SENSOR
CO_2 CO_2	CARBON DIOXIDE DETECTOR
CO CO	CARBON MONOXIDE DETECTOR
O_2 O_2	DUCT SENSOR
	TRAVERSE DUCT TEST AND BALANCE
H-XX HUM H-XX H	HUMIDIFIER WITH IDENTIFICATION
	TRANSITION
	RADIUS ELBOW
	SQUARE THROAT ELBOW WITH TURNING VANES
	BRANCH DUCT CONNECTION RECTANGULAR OR ROUND BRANCH. RECTANGULAR TRUNK. MVD REQUIRED TO AIR DEVICES
R/D R/D	RISE/DROP IN ELEVATION
X X	SPLITTER WITH SPLIT SIZE SHOWN
X X	SPLITTER WITH SPLIT SIZES SHOWN
	BRANCH DUCT CONNECTION CONICAL TEE AND TAP ROUND TRUNK.
	BRANCH DUCT CONNECTION BEVELED TEE. ROUND TRUNK. MVD REQUIRED TO AIR DEVICES.

SYMBOL / ABBREVIATION 12"X12" FACE	24"X24" FACE	DESCRIPTION
	SX	SUPPLY DIFFUSER AND AIR QUANTITY. BLANK OUTS INDICATE NO AIR FLOW IN THIS DIRECTION. (X DENOTES TYPE. SEE NOTE 1 OF AIR DISTRIBUTION DEVICE SCHEDULE)
	RX	RETURN GRILLE AND AIR QUANTITY (X DENOTES TYPE)
	EX	EXHAUST GRILLE AND AIR QUANTITY (X DENOTES TYPE)
100SX	100SX	LAMINAR FLOW SUPPLY DIFFUSER AND AIR FLOW QUANTITY (X DENOTES TYPE)
	100	LINEAR SLOT DIFFUSER AND AIR FLOW QUANTITY
100		SCREENED OPENING AND AIR FLOW QUANTITY
AT-XX-XX		SOUND ATTENUATOR
XXX		HEATING COIL WITH IDENT.
XXX		ELECTRIC HEATING COIL WITH IDENT.
ATU-XX-XX XXX		AIR TERMINAL UNIT WITH IDENT. & MAX CFM
ATU-XX-XX XXX		AIR TERMINAL UNIT WITH IDENT., MIN AND MAX CFM
CB-XX-XX XXX		CHILLED BEAM WITH IDENT. & CFM
CFM		AIRFLOW TRANSFER RATE AT DOOR
CS		COLD DECK SUPPLY
DD		DRYER EXHAUST DUCT
DE		DISHWASHER EXHAUST
EA		EXHAUST AIR
GE		GREASE EXHAUST
HE		HOOD EXHAUST
HS		HOT DECK SUPPLY
IE		ISOLATION EXHAUST
LE		LAB EXHAUST
OA		OUTSIDE AIR
PE		PHARMACY EXHAUST
RA		RETURN AIR
SA		SUPPLY AIR LOW PRESSURE
SA		SUPPLY AIR MEDIUM PRESSURE
AD		ACCESS DOOR
AFF		ABOVE FINISHED FLOOR
ATC		AUTOMATIC TEMPERATURE CONTROL PANEL
BDD		BACKDRAFT DAMPER
BOD		BOTTOM OF DUCT
BOP		BOTTOM OF PIPE
DDC		DIRECT DIGITAL CONTROL
D.L.		INTERNAL DUCT LINING
FD		FIRE DAMPER
FSD		COMBINATION FIRE/SMOKE DAMPER
ML		MARINE LIGHT
MVD		MANUAL VOLUME DAMPER
OBD		OPPOSED BLADE DAMPER
SD		SMOKE DAMPER
SO		SCREENED OPENING
SWR		SIDEWALL REGISTER
SWG		SIDEWALL GRILLE
TG		TRANSFER GRILLE
UNO		UNLESS NOTED OTHERWISE

CONTROL DEVICES

SYMBOL	DESCRIPTION
T	THERMOSTAT OR TEMP SENSOR
H	HUMIDISTAT OR HUMIDITY SENSOR
DP	DIFFERENTIAL PRESSURE SENSOR
CO_2	CARBON DIOXIDE SENSOR
CO	CARBON MONOXIDE SENSOR
RM-X	ROOM MONITOR
EPO	EMERGENCY POWER OFF
NO_2	NITROGEN DIOXIDE SENSOR
R	REFRIGERANT SENSOR

EQUIPMENT NOMENCLATURE

EQUIPMENT IDENTIFICATION TAGS ARE COMPOSED AS FOLLOWS:

[EQUIPMENT TYPE] - [LEVEL & AREA] - [EQUIPMENT TAG NUMBER WITHIN EACH SECTOR]

EXAMPLE:

EXHAUST FAN — LEVEL 4 & AREA B — EQUIPMENT TAG NUMBER OF 1

EF-4B-1

LEVELS:			AREA / QUAD / SECTOR:		
1 = LEVEL 1	4 = LEVEL 4	7 = LEVEL 7	A = AREA A	D = AREA D	G = AREA G
2 = LEVEL 2	5 = LEVEL 5	8 = LEVEL 8	B = AREA B	E = AREA E	H = AREA H
3 = LEVEL 3	6 = LEVEL 6	9 = LEVEL 9	C = AREA C	F = AREA F	I = AREA I

MECHANICAL EQUIPMENT NAMING CONVENTION

ABB.	DESCRIPTION	ABB.	DESCRIPTION	ABB.	DESCRIPTION
ATU	AIR TERMINAL UNIT	RTU	ROOFTOP PACKAGE UNIT	VFD	VARIABLE FREQUENCY DRIVE
EF	EXHAUST FAN	SAF	SUPPLY AIR FAN		
REF	RELIEF AIR FAN	SAT	SOUND ATTENUATOR		
RH	RADIANT HEAT PANEL	UH	UNIT HEATER		

SHEET INDEX - SHELL

MECHANICAL COMMISSIONING COORDINATION

A. COMMISSIONING SHALL BE PROVIDED FOR THIS PROJECT PER THE IECC CHAPTER C408. THE COMMISSIONING AGENT SHALL BE DESIGNATED BY THE OWNER AND BE RESPONSIBLE FOR TASKS SPECIFIED BY IECC C408.2.1. MECHANICAL, TEST AND BALANCE, CONTROLS, AND ELECTRICAL CONTRACTORS SHALL PROVIDE SUPPORT FOR THE COMMISSIONING AGENT AS REQUIRED BY THE COMMISSIONING PLAN.

SECTION C408
MAINTENANCE INFORMATION AND SYSTEM COMMISSIONING

C408.1 General. This section covers the provision of maintenance information and the commissioning of, and the functional testing requirements for, building systems.

C408.1.1 Building operations and maintenance information. The building operations and maintenance documents shall be provided to the owner and shall consist of manufacturers' information, specifications and recommendations; programming procedures and data points; narratives; and other means of illustrating to the owner how the building, equipment and systems are intended to be installed, maintained and operated. Required regular maintenance actions for equipment and systems shall be clearly stated on a readily visible label. The label shall include the title or publication number for the operation and maintenance manual for that particular model and type of product.

C408.2 Mechanical systems and service water-heating systems commissioning and completion requirements. Prior to the final mechanical and plumbing inspections, the *registered design professional or approved agency* shall provide evidence of mechanical systems *commissioning* and completion in accordance with the provisions of this section.

Construction document notes shall clearly indicate provisions for *commissioning* and completion requirements in accordance with this section and are permitted to refer to specifications for further requirements. Copies of all documentation shall be given to the owner or owner's authorized agent and made available to the *code official* upon request in accordance with Sections C408.2.4 and C408.2.5.

Exceptions: The following systems are exempt:

1. Mechanical systems and service water heater systems in buildings where the total mechanical equipment capacity is less than 480,000 Btu/h (140.7 kW) cooling capacity and 600,000 Btu/h (175.8 kW) combined service water-heating and space-heating capacity.
2. Systems included in Section C403.5 that serve individual *dwelling units* and *sleeping units*.

C408.2.1 Commissioning plan. A *commissioning plan* shall be developed by a *registered design professional* or *approved agency* and shall include the following items:

1. A narrative description of the activities that will be accomplished during each phase of *commissioning*, including the personnel intended to accomplish each of the activities.
2. A listing of the specific equipment, appliances or systems to be tested and a description of the tests to be performed.
3. Functions to be tested including, but not limited to, calibrations and economizer controls.
4. Conditions under which the test will be performed. Testing shall affirm winter and summer design conditions and full outside air conditions.
5. Measurable criteria for performance.

C408.2.2 Systems adjusting and balancing. HVAC systems shall be balanced in accordance with generally accepted engineering standards. Air and water flow rates shall be measured and adjusted to deliver final flow rates within the tolerances provided in the product specifications. Test and balance activities shall include air system and hydronic system balancing.

C408.2.2.1 Air systems balancing. Each supply air outlet and *zone* terminal device shall be equipped with means for air balancing in accordance with the requirements of Chapter 6 of the *International Mechanical Code*. Discharge dampers used for air-system balancing are prohibited on constant-volume fans and variable-volume fans with motors 10 hp (18.6 kW) and larger.

Air systems shall be balanced in a manner to first minimize throttling losses then, for fans with system power of greater than 1 hp (0.746 kW), fan speed shall be adjusted to meet design flow conditions.

Exception: Fans with fan motors of 1 hp (0.74 kW) or less are not required to be provided with a means for air balancing.

C408.2.2.2 Hydronic systems balancing. Individual hydronic heating and cooling coils shall be equipped with means for balancing and measuring flow. Hydronic systems shall be proportionately balanced in a manner to first minimize throttling losses, then the pump impeller shall be trimmed or pump speed shall be adjusted to meet design flow conditions. Each hydronic system shall have either the capability to measure pressure across the pump, or test ports at each side of each pump.

Exception: The following equipment is not required to be equipped with a means for balancing or measuring flow:

1. Pumps with pump motors of 5 hp (3.7 kW) or less.
2. Where throttling results in not greater than 5 percent of the nameplate horsepower draw above that required if the impeller were trimmed.

C408.2.3 Functional performance testing. Functional performance testing specified in Sections C408.2.3.1 through C408.2.3.3 shall be conducted.

C408.2.3.1 Equipment. Equipment functional performance testing shall demonstrate the installation and operation of components, systems, and system-to-system interfacing relationships in accordance with approved plans and specifications such that operation, function, and maintenance serviceability for each of the commissioned systems is confirmed. Testing shall include all modes and *sequence of operation*, including under full-load, part-load and the following emergency conditions:

1. All modes as described in the *sequence of operation*.
2. Redundant or *automatic* back-up mode.
3. Performance of alarms.
4. Mode of operation upon a loss of power and restoration of power.

Exception: Unitary or packaged HVAC equipment listed in Tables C403.3.2(1) through C403.3.2(3) that do not require supply air economizers.

C408.2.3.2 Controls. HVAC and service water-heating control systems shall be tested to document that control devices, components, equipment and systems are calibrated and adjusted and operate in accordance with approved plans and specifications. Sequences of operation shall be functionally tested to document they operate in accordance with *approved* plans and specifications.

3. Functional performance test procedures used during the commissioning process including measurable criteria for test acceptance, provided herein for repeatability.

Exception: Deferred tests that cannot be performed at the time of report preparation due to climatic conditions.

C408.3 Functional testing of lighting controls. Automatic lighting controls required by this code shall comply with this section.

C408.3.1 Functional testing. Prior to passing final inspection, the *registered design professional* shall provide evidence that the lighting control systems have been tested to ensure that control hardware and software are calibrated, adjusted, programmed and in proper working condition in accordance with the *construction documents* and manufacturer's instructions. Functional testing shall be in accordance with Sections C408.3.1.1 through C408.3.1.3 for the applicable control type.

C408.3.1.1 Occupant sensor controls. Where *occupant sensor controls* are provided, the following procedures shall be performed:

1. Certify that the *occupant sensor* has been located and aimed in accordance with manufacturer recommendations.
2. For projects with seven or fewer *occupant sensors*, each sensor shall be tested.
3. For projects with more than seven *occupant sensors*, testing shall be done for each unique combination of sensor type and space geometry. Where multiples of each unique combination of sensor type and space geometry are provided, not less than 10 percent and in no case fewer than one, of each combination shall be tested unless the *code official* or design professional requires a higher percentage to be tested. Where 30 percent or more of the tested controls fail, all remaining identical combinations shall be tested.

For *occupant sensor controls* to be tested, verify the following:

3.1. Where *occupant sensor controls* include status indicators, verify correct operation.
3.2. The controlled lights turn off or down to the permitted level within the required time.
3.3. For auto-on *occupant sensor controls*, the lights turn on to the permitted level when an occupant enters the space.
3.4. For manual-on *occupant sensor controls*, the lights turn on only when manually activated.
3.5. The lights are not incorrectly turned on by movement in adjacent areas or by HVAC operation.

C408.2.3.3 Economizers. Air economizers shall undergo a functional test to determine that they operate in accordance with manufacturer's specifications.

C408.2.4 Preliminary commissioning report. A preliminary report of *commissioning* test procedures and results shall be completed and certified by the *registered design professional* or *approved agency* and provided to the building owner or owner's authorized agent. The report shall be organized with mechanical and service hot water findings in separate sections to allow independent review. The report shall be identified as "Preliminary Commissioning Report," shall include the completed Commissioning Compliance Checklist, Figure C408.2.4, and shall identify:

1. Itemization of deficiencies found during testing required by this section that have not been corrected at the time of report preparation.
2. Deferred tests that cannot be performed at the time of report preparation because of climatic conditions.
3. Climatic conditions required for performance of the deferred tests.
4. Results of functional performance tests.
5. Functional performance test procedures used during the commissioning process, including measurable criteria for test acceptance.

C408.2.4.1 Acceptance of report. Buildings, or portions thereof, shall not be considered as acceptable for a final inspection pursuant to Section C105.2.6 until the *code official* has received the Preliminary Commissioning Report from the building owner or owner's authorized agent.

C408.2.4.2 Copy of report. The *code official* shall be permitted to require that a copy of the Preliminary Commissioning Report be made available for review by the *code official*.

C408.2.5 Documentation requirements. The *construction documents* shall specify that the documents described in this section be provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the *certificate of occupancy*.

C408.2.5.1 System balancing report. A written report describing the activities and measurements completed in accordance with Section C408.2.2.

C408.2.5.2 Final commissioning report. A report of test procedures and results identified as "Final Commissioning Report" shall be delivered to the building owner or owner's authorized agent. The report shall be organized with mechanical system and service hot water system findings in separate sections to allow independent review. The report shall include the following:

1. Results of functional performance tests.
2. Disposition of deficiencies found during testing, including details of corrective measures used or proposed.

C408.3.1.2 Time-switch controls. Where *time-switch controls* are provided, the following procedures shall be performed:

1. Confirm that the *time-switch control* is programmed with accurate weekday, weekend and holiday schedules.
2. Provide documentation to the owner of *time-switch controls* programming including weekday, weekend, holiday schedules, and set-up and preference program settings.
3. Verify the correct time and date in the time switch.
4. Verify that any battery back-up is installed and energized.
5. Verify that the override time limit is set to not more than 2 hours.
6. Simulate occupied condition. Verify and document the following:
   6.1. All lights can be turned on and off by their respective area control switch.
   6.2. The switch only operates lighting in the enclosed space in which the switch is located.
7. Simulate unoccupied condition. Verify and document the following:
   7.1. Nonexempt lighting turns off.
   7.2. Manual override switch allows only the lights in the enclosed space where the override switch is located to turn on or remain on until the next scheduled shutoff occurs.
8. Additional testing as specified by the *registered design professional*.

C408.3.1.3 Daylight responsive controls. Where *daylight responsive controls* are provided, the following shall be verified:

1. Control devices have been properly located, field calibrated and set for accurate setpoints and threshold light levels.
2. Daylight controlled lighting loads adjust to light level setpoints in response to available daylight.
3. The calibration adjustment equipment is located for *ready access* only by authorized personnel.

C408.3.2 Documentation requirements. The *construction documents* shall specify that the documents described in this section be provided to the building owner or owner's authorized agent within 90 days of the date of receipt of the *certificate of occupancy*.

C408.3.2.1 Drawings. Construction documents shall include the location and catalogue number of each piece of equipment.

C408.3.2.2 Manuals. An operating and maintenance manual shall be provided and include the following:

1. Name and address of not less than one service agency for installed equipment.
2. A narrative of how each system is intended to operate, including recommended setpoints.
3. Submittal data indicating all selected options for each piece of lighting equipment and lighting controls.
4. Operation and maintenance manuals for each piece of lighting equipment. Required routine maintenance actions, cleaning and recommended relamping shall be clearly identified.
5. A schedule for inspecting and recalibrating all lighting controls.

C408.3.2.3 Report. A report of test results shall be provided and include the following:

1. Results of functional performance tests.
2. Disposition of deficiencies found during testing, including details of corrective measures used or proposed.

COMMERCIAL ENERGY EFFICIENCY

Project Information: ____________________________ Project Name: ____________________________

Project Address: ____________________________

Commissioning Authority: ____________________________

Commissioning Plan (Section C408.2.1)

☐ Commissioning Plan was used during construction and includes all items required by Section C408.2.1

☐ Systems Adjusting and Balancing has been completed.

☐ HVAC Equipment Functional Testing has been executed. If applicable, deferred and follow-up testing is scheduled to be provided on:__________________

☐ HVAC Controls Functional Testing has been executed. If applicable, deferred and follow-up testing is scheduled to be provided on:__________________

☐ Economizer Functional Testing has been executed. If applicable, deferred and follow-up testing is scheduled to be provided on:__________________

☐ Lighting Controls Functional Testing has been executed. If applicable, deferred and follow-up testing is scheduled to be provided on:__________________

☐ Service Water Heating System Functional Testing has been executed. If applicable, deferred and follow-up testing is scheduled to be provided on:__________________

☐ Manual, record documents and training have been completed or scheduled

☐ Preliminary Commissioning Report submitted to owner and includes all items required by Section C408.2.4

I hereby certify that the commissioning provider has provided me with evidence of mechanical, service water heating and lighting systems commissioning in accordance with the 2018 IECC.

Signature of Building Owner or Owner's Representative __________________ Date__________

FIGURE C408.2.4
COMMISSIONING COMPLIANCE CHECKLIST

ADD #03

MECHANICAL GENERAL NOTES

A. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT SCOPE, UTILITY CONNECTIONS, AND ALL BUILDING SERVICES.

B. STANDARD DETAILS ILLUSTRATED ON THE DRAWINGS SHALL BE APPLIED IN ALL CASES WHERE THE FEATURE OCCURS IN THE SYSTEM DESIGN.

C. ALL DUCTWORK SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS IN INCHES. ALL DUCTWORK NOTED AS (D.L.) SHALL BE PROVIDED WITH INTERNAL DUCT LINING. REFER TO SPECIFICATION SECTION 230700 FOR DUCT INSULATION & LINING REQUIREMENTS.

D. MAJOR EQUIPMENT SHOWN ON THE PLANS AND ELEVATIONS ILLUSTRATE THE GENERAL ARRANGEMENT AND SPACE ALLOCATIONS. THE CONTRACTOR SHALL VERIFY THE SPACE REQUIREMENTS FOR EACH SYSTEM COMPONENT USING MANUFACTURER CERTIFIED SHOP DRAWINGS AND MAKE THE NECESSARY ADJUSTMENTS IN EQUIPMENT PLACEMENT AND CONNECTION IN ORDER TO ACCOMMODATE THE EXACT EQUIPMENT TO BE INSTALLED.

E. SUPPORTS, ANCHOR BOLTS, AND HANGERS FOR ALL EQUIPMENT SPECIFIED IN DIVISION 23 SHALL CONFORM TO THE SPECIFICATIONS. MISCELLANEOUS STEEL BRACING SUPPORTS AND REINFORCING STEEL NEEDED TO SUPPORT EQUIPMENT SPECIFIED IN DIVISION 23 SHALL BE PART OF THE SCOPE OF WORK OF DIVISION 23.

F. DIFFUSERS, REGISTERS, AND GRILLES SHOWN ON THE MECHANICAL DRAWINGS SHALL BE IN ACCORDANCE WITH THE AIR DISTRIBUTION DEVICE SCHEDULE AND SPECIFICATIONS. BRANCH DUCTS TO AIR DEVICES SHALL BE IN ACCORDANCE WITH THE SCHEDULE UNLESS NOTED OTHERWISE.

G. FIRE/SMOKE DAMPERS SHALL BE INSTALLED IN DUCTWORK PENETRATIONS THROUGH RATED PARTITIONS, WALLS, BARRIERS, FLOORS, AND SHAFTS IN ACCORDANCE WITH THE PROJECT APPLICABLE BUILDING CODES. DAMPERS SHALL MEET THE REQUIREMENTS OF THE FIRE/SMOKE RATING AND BE "U.L." LABELED. REFER TO ARCHITECTURAL DRAWINGS FOR THE LOCATIONS AND RATINGS OF ALL WALLS AND FLOORS.

H. PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SLEEVED, SEALED AND FIRESAFED TO MAINTAIN THE INTEGRITY OF THE WALL AND FLOOR UL FIRE RESISTANCE RATING.

I. DUCTWORK AND LARGER ROUTED PARALLEL TO A RATED WALL SHALL BE INSTALLED WITH A MINIMUM 6" CLEARANCE TO ALLOW FOR INSPECTION OF WALL PENETRATIONS.

J. DUCTWORK STORED ON-SITE AWAITING INSTALLATION SHALL REMAIN PROPERLY SEALED AND PROTECTED. OPEN ENDS OF DUCTWORK SHALL BE CAPPED AND SEALED AFTER INSTALLATION.

K. SMOKE DETECTORS SHALL BE LOCATED AS INDICATED ON THE MECHANICAL PLANS AND IN CONFORMANCE WITH NFPA 90A AND LOCAL CODES.

L. CEILING DIFFUSER LOCATIONS SHALL BE AS SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLANS.

M. CEILING DIFFUSERS, REGISTERS AND GRILLES SHALL BE FURNISHED WITH MOUNTING FRAMES AND FEATURES IN ACCORDANCE WITH THE CEILING TYPE.

N. PROVIDE MANUAL BALANCING/VOLUME DAMPERS AT ALL LOW PRESSURE BRANCH TAKE-OFFS TO DIFFUSERS AND GRILLES FROM SUPPLY, RETURN AND EXHAUST MAINS AND SUB-MAINS, AND AT ALL LOW PRESSURE DUCT SPLITS OR SUB-MAIN TAKE-OFFS. DAMPERS SHALL BE INSTALLED ABOVE AN ACCESSIBLE CEILING OR ACCESS PANEL.

O. DRAWINGS ARE SCHEMATIC IN NATURE AND SHALL NOT BE SCALED. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING EXACT ROUTING OF ALL SERVICES WITH EXISTING CONDITIONS AND WITH ALL OTHER TRADES. REFER TO SPECIFICATIONS FOR COORDINATION DRAWING REQUIREMENTS.

P. MAINTAIN ACCESSIBILITY OF ALL EQUIPMENT, DAMPERS, CONTROL PANELS, VALVES, AND OTHER DEVICES. PROVIDE ACCESS PANELS AS REQUIRED. COORDINATE PLACEMENT WITH THE ARCHITECT PRIOR TO INSTALLATION.

Q. CONTRACTOR SHALL COORDINATE WITH THE ARCHITECT PRIOR TO CUTTING ANY OPENING IN THE STRUCTURE.

R. OUTSIDE AIR INTAKES SHALL BE A MINIMUM OF 25 FEET AWAY FROM PLUMBING VENTS, EXHAUST VENTS, AND OTHER SOURCES OF NOXIOUS FUMES AND/OR ODORS. INTAKES SHALL BE A MINIMUM OF 36" ABOVE FINISHED ROOF AND 72" ABOVE FINISHED GRADE.

S. IN RETURN AIR PLENUM APPLICATIONS, CONTRACTOR SHALL PROVIDE MINIMUM 32" X 16" ACOUSTICALLY LINED AIR TRANSFER OPENING WITH TOP OF OPENING TIGHT TO PLENUM DECK ABOVE ROOM ENTRY DOOR IN FULL-HEIGHT WALLS. PROVIDE FIRE AND/OR SMOKE DAMPERS AT PENETRATIONS OF ALL FIRE AND SMOKE RATED WALLS AS REQUIRED TO MEET WALL RATING. PROVIDE SMOKE DETECTORS AT INLET OF EACH OPENING IN RATED SMOKE WALLS. CONTRACTOR IS DIRECTLY RESPONSIBLE FOR THIS COORDINATION AND INSTALLATION OF AIR TRANSFER OPENINGS IN FULL-HEIGHT WALLS.

Smith Seckman Reid, Inc.
4551 Trousdale Drive
Nashville, TN 37204
tel 615.837.0656
fax 615.837.0657

JJCA
Johnson Johnson Crabtree Architects P.C.

Freestanding Medical Office Building Shell for:
Sullivan County Community Hospital
Sullivan, Indiana

MICHAEL B BURTON REGISTERED PE12100520 STATE OF INDIANA PROFESSIONAL ENGINEER

[illegible]

03.28.24

Sheet Re-Issue Log
(Individual revisions clouded and labeled within each sheet)

ADD #03 03/28/2024

Project Number
23987.02

DATE
February 28, 2024

M0.0

MECHANICAL LEGEND, NAMING CONVENTION AND INDEX

CONSTRUCTION DRAWINGS

ROOFTOP A/C UNIT SCHEDULE

GENERAL NOTES:
1. REFER TO PLANS FOR OVERALL AHU SIZE, COMPONENTS, AND ARRANGEMENT.
2. SEE SPECIFICATION 23-7413 FOR ADDITIONAL INFORMATION.
3. SUPPLY FAN TOTAL STATIC PRESSURE (TSP) INCLUDES SCHEDULED DIRTY FILTER LOSS.
4. FAN BRAKE HP SHALL BE NO GREATER THAN 85% OF THE MOTOR HP IN NORMAL OPERATING CONDITIONS.
5. DRAIN PAN IN FAN SECTIONS FOR DRAW THRU CONFIGURATIONS.
6. PROVIDE PREMIUM EFFICENCY MOTORS.
7. EXTERNAL STATIC PRESSURE (ESP) PERTAINS TO DUCTWORK AND EXTERNAL COMPONENTS ONLY.
8. SEE CONTROL DRAWINGS FOR SEQUENCE OF OPERATION.
9. REFRIGERANT FOR ALL DX UNITS SHALL BE R410A.
10. ALL FANS IN AIR HANDLING UNITS ARE MEDIUM PRESSURE.
11. ALL AIR HANDLING UNITS ARE MEDIUM PRESSURE.
12. COOLING COIL (DX) LAT INCLUDES FAN HEAT.
13. COOLING COIL (DX) CAPACITIES INCLUDE FAN HEAT.
14. FILER LOSS BASED OFF AIR FILTER SCHEDULE MID-LIFE RESISTANCE.
15. 65 KA RMS SYMETRICAL SCCR RATING

REMARKS:
A. TSP INCLUDES DIRTY FILTER LOSS.
B. VARIABLE SPEED COMPRESSORS WITH 15% MIN TURNDOWN.
C. ECONOMIZER WITH FAN/DAMPER MODULATION.
D. SINGLE POINT PWR W/ INTEGRAL FUSED DISCONNECT
E. UNIT MOUNTED CONTROL PANEL.
F. VFD ON SUPPLY AND RELIEF FAN(S).
G. 120V CONVENIENCE RECEPTACLE
H. 2" MERV-8 PREFILTER.
I. 4" MERV-14 FINAL FILTER.
J. SUPPLY FAN WITH FACTORY MOUNTED VFD AND SHAFT GROUNDING KIT.
K. RELIEF FAN EQUIPPED WITH SHAFT GROUNDING KITS.
L. OA MEASURING STATION.
M. NATURAL GAS PREHEAT WITH MAXITROL BURNER CONTROL.
N. 3'-0" SPRING ISOLATION ROOF CURB FOR SEISMIC DESIGN CATEGORY "C". REFER TO SPECIFICATION 23-0549.
O. PIEZOMETER RING AIRFLOW MEASUREMENT ON SUPPLY FAN

ADD #03

DESIGNATION	AREA SERVED	MANUFACTURER	MODEL NUMBER	NOMINAL TONS	UNIT ELECTRICAL			UNIT EER	SUPPLY FAN						SF MOTOR			COOLING COIL						HOT GAS REHEAT COIL			CONDENSER		COMPRESSOR		RELIEF FAN					REF MOTOR			HEATING COIL					UNIT OPERATING WEIGHT (LBS)	REMARKS
					VOLTAGE	MCA (A)	MOP (A)		CFM	OUTSIDE AIR		ESP (IN. WG)	TSP (IN. WG)	TOTAL FILTER LOSS (IN. WG)	TYPE	QTY	BHP (EA)	HP (EA)	RPM	MAX. FV (FPM)	EAT DB/WB (° F)	LAT DB/WB (° F)	CAPACITY MBTUH	ROWS /FPI	REFRIG.	EAT DB/WB (° F)	LAT DB/WB (° F)	CAPACITY MBTUH	QTY FANS	HP (EA)	QTY	TONS (EA)	CFM	ESP (IN. WG)	TSP (IN. WG)	TYPE	QTY	BHP	HP	RPM	EAT (° F)	LAT (° F)	CAPACITY (MBTUH)	GAS PRESSURE (PSI)	GAS CFH		
										MIN.	MAX.																																			
RTU-1-1	MOB	JCI	PREMIER	50	208/3	320	400	10.7	12200	2770	12200	3.75	5.52	1.5	DDP	1	17.4	25	1302	475	80/67	54/53.6	561.5	4/17	R410A	54/53.6	66.1/56.8	195	4	2	4	7.5/8.5/10/13	12200	0.5	0.77	FC	1	2.3	5	361	45	93.2	608	0.5	730	10,000	A,B,C,D,E,F,G,H,I,J,K,L,M,N,O
RTU-1-2	MOB	JCI	PREMIER	50	208/3	320	400	10.7	12200	2770	12200	3.75	5.52	1.5	DDP	1	17.4	25	1302	475	80/67	54/53.6	561.5	4/17	R410A	54/53.6	66.1/56.8	195	4	2	4	7.5/8.5/10/13	12200	0.5	0.77	FC	1	2.3	5	361	45	93.2	608	0.5	730	10,000	A,B,C,D,E,F,G,H,I,J,K,L,M,N,O

FAN SCHEDULE

GENERAL NOTES:
1. MOTOR H.P. SHALL COMPLY WITH ASHRAE 90.1.
2. BHP SHALL BE NO GREATER THAN 90% OF THE MOTOR H.P.
3. CFM AT SITE ELEVATION OF 1000 FT. STATIC PRESSURE AT SEA LEVEL.
4. FAN EFFICIENCY GRADE (FEG) PER AMCA 205. TOTAL FAN EFFICIENCY AT DESIGN POINT OF OPERATION SHALL BE WITHIN 15% OF THE MAX TOTAL FAN EFFICIENCY.
5. FAN EFFICIENCY INDEX (FEI) AT THE DESIGN POINT OF OPERATION PER AMCA 208. FEI FOR FAN ARRAYS SHALL BE CALCULATED PER AMCA 208 ANNEX C.

FAN TYPES:
PRE - POWER ROOF EXHAUSTER.

STARTER TYPES / ACCESS:
MAG-X-L - COMBINATION MAGNETIC ACROSS THE LINE STARTER.
MMS - MANUAL MOTOR STARTER.
VFD - VARIABLE FREQUENCY DRIVE.
EP - EMERGENCY POWER.

ACCESSORIES:
1. WEATHERPROOF HOUSING.
2. HOUSING DRAIN.
3. OUTLET SCREEN.
4. MOTORIZED OUTLET DAMPERS.
5. ROOF CURB (18" HIGH).
7. SOLID STATE SPEED CONTROLLER (PRE-WIRED).
8. ELECTRONICALLY COMMUNICATED MOTOR (ECM).
9. CONTROL CIRCUIT TRANSFORMER IN MOTOR STARTER.
10. DISCONNECT SWITCH IN FAN HOUSING (PRE-WIRED).

REMARKS:
A. ALUMINUM WHEEL AND HOUSING.
B. TEFC MOTOR.

DESIGNATION	SERVICE	MANUFACTURER	MODEL NUMBER	TYPE	CFM	ESP (IN. WG)	DRIVE	MOTOR							MAX. SONES	ROOF / WALL OPENING	OPERATING WEIGHT (LBS)	ACCESSORIES	REMARKS
								BHP	MIN. HP	RPM	VOLTAGE	PHASE	STARTER	EP					
EF-1-1	GENERAL	GREENHECK	G-100-VG	PRE	1580	0.5	DIRECT	0.35	1/2	1456	115	1	MMS	N	13.5	12x12	100	1,3,5,8,10	A,B
EF-1-2	GENERAL	GREENHECK	G-090-VG	PRE	600	0.5	DIRECT	0.08	1/4	1595	115	1	MMS	N	7.7	10x10	100	1,3,5,8,10	A,B
EF-2-1	GENERAL	GREENHECK	G-100-VG	PRE	1580	0.5	DIRECT	0.35	1/2	1456	115	1	MMS	N	13.5	12x12	100	1,3,5,8,10	A,B
EF-2-2	GENERAL	GREENHECK	G-090-VG	PRE	500	0.5	DIRECT	0.08	1/4	1595	115	1	MMS	N	7.7	10x10	100	1,3,5,8,10	A,B

PROJECT DESIGN CONDITIONS

ABBREVIATIONS
DB = DRY BULB TEMPERATURE
WB = WET BULB TEMPERATURE
MCDB = MEAN COINCIDENT DRY BULB TEMPERATURE
MCWB = MEAN COINCIDENT WET BULB TEMPERATURE

GENERAL NOTES
(1) BASED ON ASHRAE 2021 HANDBOOK - FUNDAMENTALS
(2) DESIGN WINTER OUTDOOR AIR TEMPERATURE IS 99.6% VALUE MINUS 10 DEG F.

WEATHER STATION	LATTITUDE	LONGITUDE	ELEVATION (FT.)	COOLING 0.4%			EVAPORATION 0.4%		HEATING 5-YEAR LOW	
				HOTTEST MONTH	DB (°F)	MCWB (°F)	WB (°F)	MCDB (°F)	COLDEST MONTH	DB (°F)
ROBINSON, IL, USA	39.016N	87.65W	462	JULY	92.8	75.5	79.8	88.3	JANUARY	4.3

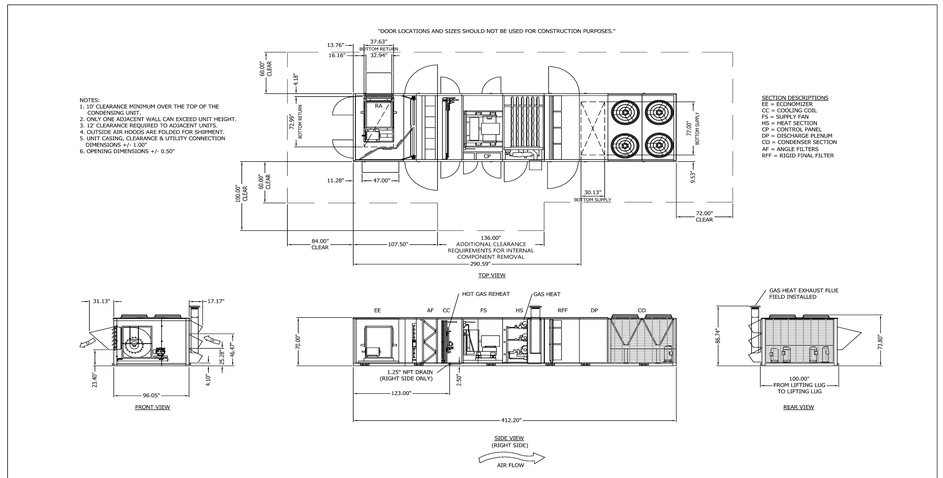
Johnson Controls

Premier
Commercial Rooftop

Page: 6

Project Name: **Sullivan Co AHU** — Unit Model #: **GVD2G3B5FA1P20AF202BF2BDH2C1H0ECEA01001A000QF0002**
Quantity: **1** Tag #: **RTU-1** — System: **GVD2G3B5FA1P20AF202BF2BDH2C1H0ECEA01001A000QF0002**

DRAWINGS



PRODUCT DRAWING
Premier UNIT DETAIL
MODEL: GC_2_2_X_2_1_1_3_1_1_1
NOT FOR CONSTRUCTION
YORKworks Version: Drawing Generator Version : 01.00.24262

Project Name:
Location:
Engineer:
Contractor:
For:

Sold To:
Cust Purch Order#:
Contract#:
Unit#:
TAG: - Sheet 1

Date:
Version:
Form No.:
Dwg. Lev.: 10/18
Dwg. Scale: NTS

Serial Number:
SO Database Number:
YORKworks Release:
Dwg. Name:
Dwg. Location:

Johnson Controls

Information is subject to change without notice. Check local codes.

Printed 11/13/2023

CONSTRUCTION DRAWINGS

Smith Seckman Reid, Inc.
4551 Trousdale Drive Nashville, TN 37204
tel 615.837.0656
fax 615.837.0657

JJCA
Johnson Johnson Crabtree Architects P.C.

Freestanding Medical Office Building Shell for:
Sullivan County Community Hospital
Sullivan, Indiana

Sheet Re-Issue Log
(Individual revisions clouded and labeled within each sheet)
ADD #03 03/28/2024

Project Number
23987.02
DATE
February 28, 2024

M0.1
MECHANICAL SCHEDULES

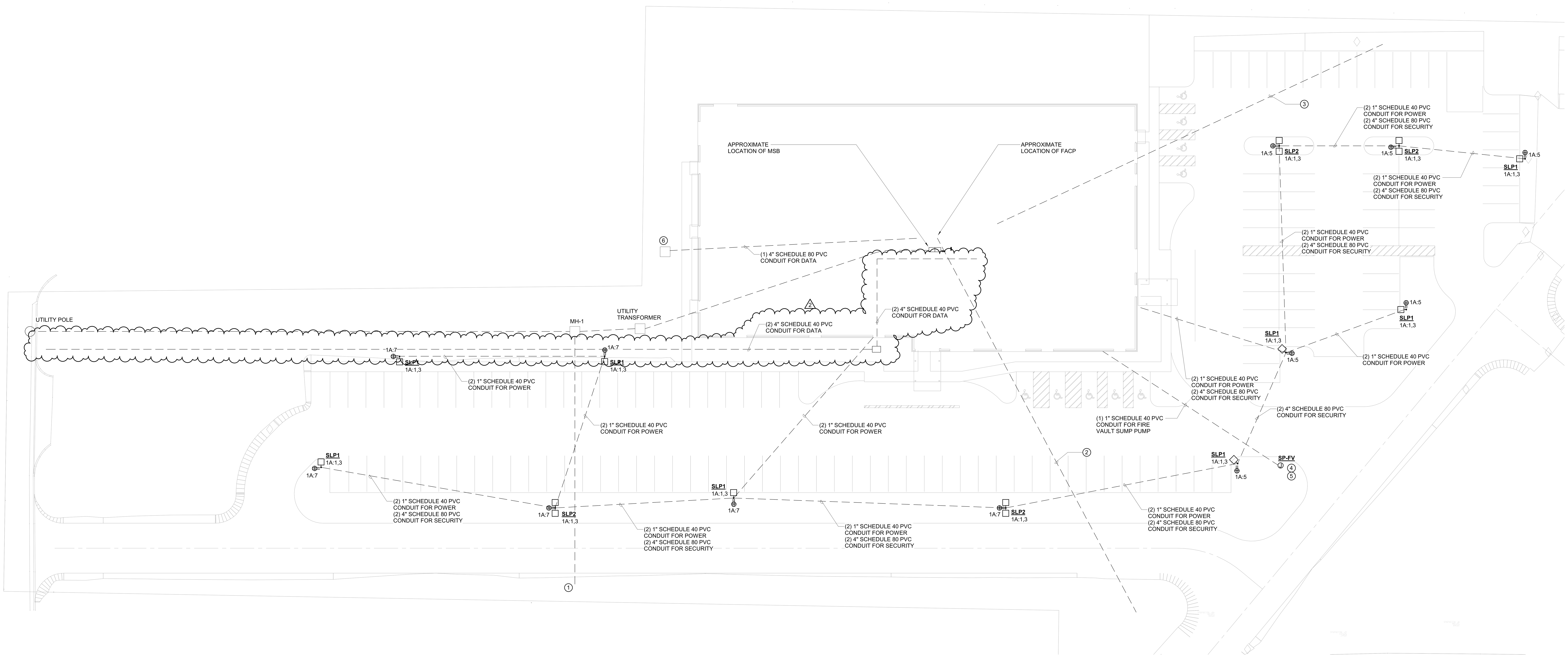
CONSTRUCTION PHASING AND RESPONSIBILITY OF WORK NOTES

A. PHASE 1B - WORK BY OTHERS
   a. CONDUITS AND WIRE FROM UTILITY POLE TO MANHOLE 'MH-1'
   b. CONDUITS WITH PULLSTRING FROM MANHOLE 'MH-1' TO CAPPED AND STAKED LOCATION INDICATED ON SITE PLAN
   c. CONDUITS AND WIRE FROM MANHOLE 'MH-1' TO UTILITY TRANSFORMER
   d. CONDUIT AND PULLSTRING FOR FURTURE CONNECTION TO HOSPITAL FACP FROM 5' OUTSIDE BUILDING TO LOCATION INDICATED ON SITE PLAN
   e. POLE BASES
   f. CONDUITS WITH PULLSTRINGS BETWEEN POLE BASES
   g. CONDUITS WITH PULLSTRINGS FROM POLE BASES TO 5' OUTSIDE OF BUILDING
   h. CONDUIT WITH PULLSTRING FROM FIRE VAULT TO WITHIN 5' OF BUILDING
   i. CONDUITS WITH PULLSTRINGS FROM FUTURE EV CHARGING STATIONS TO WITHIN 5' OF BUILDING
   j. CONDUITS WITH PULLSTRINGS FROM SERVICE PROVIDER TO HANDHOLE. REFER TO TECHNOLOGY DRAWINGS FOR HANHOLE REQUIREMENTS

B. PHASE 2 - WORK BY ELECTRICAL CONTRACTOR
   a. SECONDARY CONDUITS AND WIRE FROM UTILITY TRANSFORMER TO SWITCHBOARD 'MSB'
   b. EXTEND CONDUITS FROM POLEBASES STUBBED 5' FROM BUILDING TO DESIGNATED PANELS
   c. LIGHT POLES, POLE LIGHTING, AND POLE RECEPTACLES
   d. ALL CONDUCTORS FOR POLE LIGHTING AND POLE RECEPTACLES
   e. EXTEND FUTURE FIRE ALARM CONNECTION CONDUIT TO FACP IN BUILDING
   f. EXTEND FUTURE EV CHARGING STAIONS CONDUITS FROM STUBBED 5' FROM BUILDING TO PANEL INDICATED ON PLANS
   g. EXTEND CONDUIT FOR FIRE VAULT FROM 5' OUTSIDE OF BUILDING TO PANEL INDICATED ON PLAN
   h. CONDUCTORS FOR FIRE VAULT SUMP PUMP 'SP-FV'
   i. CONDUITS WITH POULLSTRING FROM HANDHOLE TO IT ROOM
   j. ALL OTHER WORK SHOWN ON SITE PLAN NOT INDICATED UNDER PHASE 1

⊗ SHEET KEYED NOTES

1. CAP AND STAKE CONDUITS. CONDUITS SHALL BE EXTENDED TO NEW UTILITY TRANSFORMER IN SEPARATE PROJECT.
2. PROVIDE 2" SCHEDULE 40 PVC CONDUIT FROM NEW FACP LOCATED IN ELEC ROOM 120 TO LOCATION INDICATED ON PLAN FOR FUTURE CONNECTION TO FACP IN HOSPITAL. CONDUIT SHALL BE CAPPED, STAKED, AND LABELED.
3. PROVIDE (2) 2" SCHEDULE 40 PVC CONDUITS WITH PULLSTRING FOR FUTURE EV CHARGING STATION POWER AND (2) 2" PVC SCHEDULE 40 CONDUITS WITH PULLSTRING FOR TELE/DATA. CONDUITS FOR POWER SHALL BE ROUTED TO PANELBOARD 1A IN ELEC ROOM 120 AND CONDUITS FOR TELE/DATA SHALL BE ROUTED TO I.T. 121. CONDUITS SHALL BE CAPPED, STAKED, AND LABELED.
4. NON-FUSED DISCONNECT SWITCH SHALL BE MOUNTED ADJACENT TO FIRE VAULT. REFER TO EXTERIOR DISCONNECT MOUNTING DETAIL ON SHEET E5.1 FOR ADDITIONAL INFORMATION.
5. TEMPORARY POWER SHALL BE PROVIDED AS PART OF A SEPARATE PROJECT. MAINTAIN TEMPORARY POWER UNTIL FINAL CONNECTION TO PERMANENT POWER IS COMPLETED.
6. PROVIDE 11"x18"x12"DEEP, UL LISTED, OPEN BOTTOM, PRE-CAST HANDHOLE WITH 4-BOLT GASKETED COVER WITH 'COMMUNICATIONS' LOGO FOR FUTURE USE, QUAZITE PART # BOX - PC1118BA12, COVER - PC1118CG12 OR APPROVED EQUALS.



1 SITE PLAN
3/64" = 1'-0"

Freestanding Medical Office Building Shell for:
Sullivan County Community Hospital
Sullivan, Indiana

Smith Seckman Reid, Inc.
4551 Trousdale Drive Nashville, TN 37204
tel 615.837.0656 fax 615.837.0657

JJCA
Johnson Johnson Crabtree Architects P.C.

03.26.24

Sheet Re-Issue Log
(Individual revisions clouded and labeled within each sheet)

1	ADDENDUM 1	03/04/2024
2	ADDENDUM 3	03/28/2024

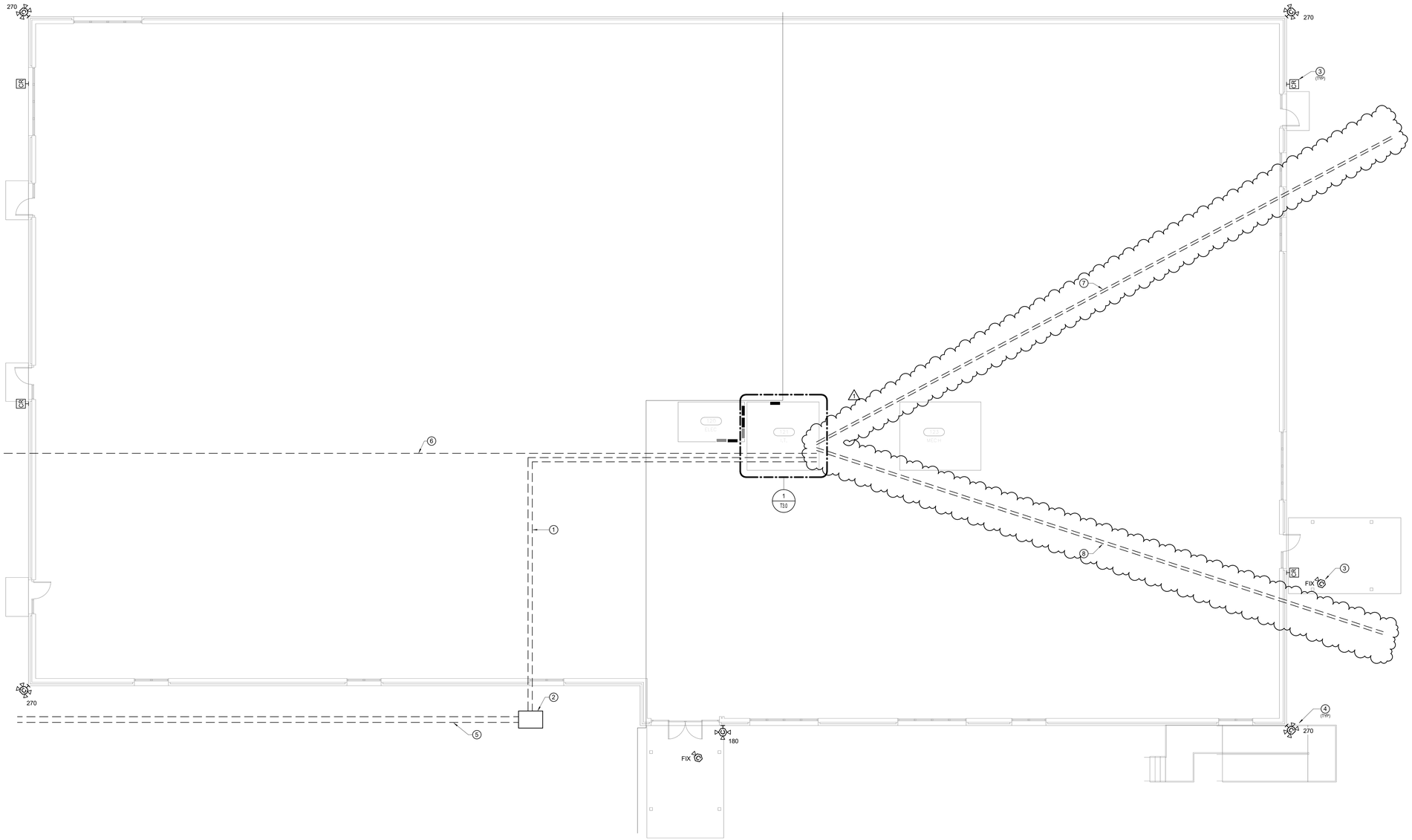
Project Number
23987.02
DATE
February 28, 2024

ES1.1
SITE PLAN - SHELL

CONSTRUCTION DRAWINGS

SHEET KEYED NOTES

1. (2) 4" OSP UNDERGROUND CONDUITS TO STUB UP INTO I.T. ROOM.
2. PROVIDE AND INSTALL QUAZITE 24" X 36" PG STYLE POLYMER HANDHOLE WITH TIER 8 COVER WITH "TELECOMMUNICATIONS" LABEL (OR EQUIVALENT) FOR CONDUITS TO STUB INTO FROM BUILDING AND FOR INCOMING SERVICE PROVIDER CONDUITS TO STUB INTO. COORDINATE EXACT LOCATION WITH ELECTICAL AND CIVIL CONTRACTOR.
3. PROVIDE ROUGH-IN ONLY FOR SHELL.
4. PROVIDE ROUGH-IN ONLY FOR SHELL. REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHTS.
5. (2) 4" OSP UNDERGROUND CONDUITS TO EASEMENT. REFER TO CIVIL SITE PLAN FOR EXACT ROUTING.
6. (1) 4" OSP UNDERGROUND CONDUIT TO STUB UP INTO I.T. ROOM.
7. (2) 2" OSP UNDERGROUND CONDUITS FROM EV CHARGING STATION TO STUB UP IN I.T. ROOM.
8. (2) 4" OSP UNDERGROUND CONDUITS FROM LIGHT POLES TO STUB UP IN I.T. ROOM FOR SITE SECURITY CABLING. REFER TO ELECTRICAL PLANS FOR PARKING LOT CONDUIT ROUTING.



1 TECHNOLOGY PLAN
1/8" = 1'-0"

CONSTRUCTION DRAWINGS

Smith Seckman Reid, Inc.
4551 Trousdale Drive tel 615.837.0656
Nashville, TN 37204 fax 615.837.0657
JJCA
Johnson Johnson Crabtree Architects P.C.

Freestanding Medical Office Building Shell for:
Sullivan County Community Hospital
Sullivan, Indiana

HERBERT M. JENNINGS — REGISTERED ARCHITECT — STATE OF INDIANA — PROFESSIONAL ENGINEER
03.26.24

Sheet Re-Issue Log
(Individual revisions clouded and labeled within each sheet)

1	03/28/2024	ADDENDUM 3

Project Number
23987.02

DATE
February 28, 2024

T1.0
TECHNOLOGY PLAN - SHELL