UNIVERSITY OF KENTUCKY
Purchasing Division

INVITATION FOR BIDS

KD-CC23-19694-1
ADDENDUM# 4
03/20/2023

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

IMPORTANT: BID AND ADDENDUM MUST BE RECEIVED BY: 03/22/2023 @ 3:00 P.M. LEXINGTON, KY TIME

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

1. Please refer to and incorporate into your bid the attached questions and answers and updated drawings provide by the Project Team.

2. If you have any questions, please contact Ken Scott at the number below or at cckbidquestions@uky.edu.

OFFICIAL APPROVAL
UNIVERSITY OF KENTUCKY

Ken Scott 03/20/2023

Ken Scott / (859) 257-9102

SIGNATURE

Typed or Printed Name

University of Kentucky
Purchasing Division
322 Peterson Service Building
Lexington, KY 40506-0005

ADD-04

Medical Office Building - Paintsville
King's Daughters Health System
Paintsville, Kentucky

Bid Package 01 - Addendum Number Four

17 March 2023

SHA.KDH2203

TO ALL BIDDERS OF RECORD AND ALL REGULATORY AGENCIES

This Addendum Four forms part of the Contract Documents and modifies the Project Manual and/or Construction Drawings dated 02 December 2022. Acknowledge receipt of this Addendum in Proposal. Failure to do so may subject Bidder to disqualification.

GENERAL

4.01 **Reference:** Addendum 01, 02, 03 Narratives

Clarification: Incorrect Construction Drawings date indicated in the introductory paragraph. For each addendum, the introductory paragraph as corrected reads:

*"This Addendum Four forms part of the Contract Documents and modifies the Project Manual and/or Construction Drawings dated **02 December 2022**. Acknowledge receipt of this Addendum in Proposal. Failure to do so may subject Bidder to disqualification."*.

4.02 **Question:** Project Manual / Specifications
1) There are two sets of automatic sliding doors shown on the plans but there is no specification.
2) Also I would like to make sure Horton Automatics is approved for the auto sliders.

Clarification: 1) Added Specification 084229 Sliding Automatic Entrances
2) Alternates to the specified product in the provided Specification 084229 (item 1) will be considered as long as the proposed product is comparable/equal.

4.03 **Reference:** Site specific – X-Ray equipment drawings - Radon

Clarification: Included in this Addendum are site specific X-Ray equipment drawings by Radon.

501 EAST HIGH STREET LEXINGTON, KENTUCKY 40502
tel: 859.402.8008 fax: 502.893.1876 www.stengelhill.com

ADD-04

ARCHITECTURAL

4.04 **Reference:** 1-A0.1 – PROJECT INFORMATION / SCHEDULES
1-A4.0 – COMPOSITE FIRST FLOOR PLAN
1-A4.1A – ENLARGED FIRST FLOOR PLAN 'URGENT CARE'
1-A8.3 – CASEWORK SECTIONS & DETAILS

Clarification: Modified building section 04/A8.3, and shifted existing front wall to match. Added keynotes associated with changes.

FIRE PROTECTION

4.05 **Question:** Please confirm no sprinkler work (i.e. turn sprinklers up) is to be done in areas labeled "Future Bid Package Two". Please note these areas are equipped with pendant sprinklers, ceiling grid is present but not ceiling tiles.

Clarification: Provide temporary heat detector devices, wiring and integration for coverage of the Phase 1 and Phase 2 KMDC project area. Connect to the existing building FACP. Maintain detectors throughout the construction duration. Remove temporary detection after the permanent fire protection is operational.

ELECTRICAL

4.06 **Question:** Sheet E5.0 – NOTE A, B, C and G. Is there a PDF of the Vendor's Site-Specific Installation Drawings? Will Trace Creek/KDMC be in charge of coordination with the vendor? Also, will the construction managers be responsible for coordinating and ordering medical equipment and materials? Is there a drawing showing the detail of the installation of the Del Medical Items?

Clarification: Vendor Site-Specific Installation Drawings are attached.

4.07 **Question:** Where are the current locations of Existing PANEL HA and PANEL HB?

Clarification: PANEL HA and PANEL HB are located on the wall along column line G, plan north of the set of doors at the intersection of column lines G and 8, roughly 200' plan south of the main electrical room EL-200.

4.08 **Question:** What is the existing MSB Manufacturer information? Sheet E3.0 – NOTE E17 shows adding a new 200A Fused Switch Assembly to this existing switchboard. Can you provide a model/catalog number for the MSB?

Clarification: Existing MSB is a Square D QED Power Style Switchboard. Photo of nameplate is attached. Existing 200A Fused Switch Assembly is Square D catalog number QMB364W. Photo of nameplate is attached.

4.09 **Question**: SHEET E3.0 – NOTE E19 states to provide a new feeder from existing Switchboard MSB, however it is just pointing to corner of the new mechanical room. What is that circuit intended to feed? What size is the feeder? Where is the location of what is being fed?

Answer: Note E19 refers to the feeder for new panel H1 located in room E100. Refer to one-line diagram for feeder size.

4.10 **Question**: SHEET E3.0 – NOTE E13 states to provide "Extruded Aluminum Raceway with two dedicated circuits. Alternate circuits and space 24" apart" Is there a specific manufacturer for this? Or is there any other info on it? It would help to have a basis of design to go by.

Answer: Basis of design is Legrand AL3000 Series raceway. Raceway may be prewired at the discretion of the contractor.

Addendum Items: 10
Items Attached: 7

List of Items Attached:

1. 000000 – Table of Contents
2. 084229 – Sliding Automatic Entrances
3. 00018-201 - RADON - KDMC PAINTSVILLE
4. 2023-02-15_SD Report_Rad_Del Medical OTC 18_KDMC Paintsville_F1025879_MBF DKF.pdf
5. KDH2203_ADD04_Arch Drawings_2023-03-17.pdf
6. MSB.jpeg
7. Fused Switch.jpeg

JA/N/LO

SECTION 00 00 00

TABLE OF CONTENTS

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

DIVISION 08 - DOORS AND WINDOWS

DIVISION 09 - FINISHES

DIVISION 10 - SPECIALTIES

DIVISION 12 - FURNISHINGS

DIVISION 13 – SPECIAL CONSTRUCTION

DIVISION 20 - MECHANICAL

DIVISION 21 - FIRE PROTECTION

DIVISION 22 - PLUMBING

DIVISION 23 - HVAC

DIVISION 25 - BUILDING AUTOMATION SYSTEM

DIVISION 26 - ELECTRICAL

END OF SECTION

SECTION 084229

SLIDING AUTOMATIC ENTRANCES

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes interior, sliding, power-operated automatic entrances.

B. Related Requirements:

1. Section 084243 "Intensive Care Unit/Critical Care Unit (ICU/CCU) Entrances" for swinging-sliding, manual ICU/CCU entrance door assemblies.

1.03 DEFINITIONS

A. AAADM: American Association of Automatic Door Manufacturers.

B. Activation Device: A control that, when actuated, sends an electrical signal to the door operator to open the door.

C. IBC: International Building Code.

D. Safety Device: A control that, to avoid injury, prevents a door from opening or closing.

E. For automatic door terminology, refer to BHMA A156.10 for definitions of terms.

1.04 COORDINATION

A. Coordinate sizes and locations of recesses in concrete floors for recessed sliding tracks that control automatic entrances. Concrete, reinforcement, and formwork requirements are specified elsewhere.

B. Templates: Distribute for doors, frames, and other work specified to be factory prepared for installing automatic entrances.

C. Coordinate hardware with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish. Coordinate hardware for automatic entrances with hardware required for rest of Project.

D. Electrical System Roughing-in: Coordinate layout and installation of automatic entrances with connections to power supplies.

1.05 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for automatic entrances.
2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. Shop Drawings: For automatic entrances.

1. Include plans, elevations, sections, hardware mounting heights, and attachment details.
2. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include diagrams for power, signal, and control wiring.
4. Indicate locations of activation and safety devices.
5. Include hardware schedule and indicate hardware types, functions, quantities, and locations.

C. Samples for Initial Selection: For units with factory-applied metal-clad finishes.

1. Include Samples of hardware and accessories involving color or finish selection.

D. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.

E. Delegated-Design Submittal: For automatic entrances.

1.06 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Product Certificates: For each type of automatic entrance. Include emergency-exit features of automatic entrances serving as a required means of egress.

C. Product Test Reports: For each type of automatic entrance, for tests performed by a qualified testing agency.

D. Field quality-control reports.

E. Sample Warranties: For manufacturer's special warranties.

1.07 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For automatic entrances, safety devices, and control systems to include in operation and maintenance manuals.

1.08 QUALITY ASSURANCE

A. Manufacturer Qualifications: A manufacturer with company certificate issued by AAADM indicating that manufacturer has a Certified Inspector on staff.

B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation and maintenance of units required for this Project.

1. Maintenance Proximity: Not more than two hours' normal travel time from Installer's place of business to Project site.

C. Certified Inspector Qualifications: Certified by AAADM.

1.09 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of automatic entrances that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including, but not limited to, excessive deflection.
b. Faulty operation of operators, controls, and hardware.
c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period: Two years from date of Substantial Completion.

B. Special Finish Warranty: Manufacturer agrees to repair or replace components on which finishes fail in materials or workmanship within specified warranty period.

1. Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Warranty Period: 10 years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 AUTOMATIC ENTRANCE ASSEMBLIES

A. Source Limitations: Obtain sliding automatic entrances from single source from single manufacturer.

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

C. Power-Operated Door Standard: BHMA A156.10.

2.02 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design automatic entrances.

B. Structural Performance: Automatic entrances shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F (67 deg C), ambient.

D. Operating Temperature Range: Automatic entrances shall operate within minus 20 to plus 122 deg F (minus 29 to plus 50 deg C).

E. Air Infiltration: Maximum air leakage through fixed glazing and framing areas of 1.25 cfm/sq. ft. (6.4 L/s x sq. m) of fixed entrance-system area when tested according to ASTM E 283 at a minimum static-air-pressure difference of 1.57 lbf/sq. ft. (75 Pa).

F. Opening Force:

1. Power-Operated Doors: Not more than 50 lbf (222 N) required to manually set door in motion if power fails, and not more than 15 lbf (67 N) required to open door to minimum required width.
2. Breakaway Device for Power-Operated Doors: Not more than 50 lbf (222 N) required for a breakaway door or panel to open.

G. Entrapment-Prevention Force:

1. Power-Operated Sliding Doors: Not more than 30 lbf (133 N) required to prevent stopped door from closing.

2.03 SLIDING AUTOMATIC ENTRANCES

A. General: Provide manufacturer's standard automatic entrances including doors, sidelites, framing, headers, carrier assemblies, roller tracks, door operators, controls, and accessories required for a complete installation.

B. Sliding Automatic Entrance:

1. Single-Sliding Units: (Basis of Design): Stanley Access Technologies (Farmington, CT) Model: Dura-Glide 2000 Series
2. Configuration: Single-sliding door with one sliding leaf and one fixed leaf and transom above.

a. Traffic Pattern: Two way.
b. Emergency Breakaway Capability: As indicated on Drawings. Both leaves break away when full open.
c. Mounting: Between jambs.

3. Operator Features:

a. Power opening and closing.
b. Drive System: Chain or belt.
c. Adjustable opening and closing speeds.
d. Adjustable hold-open time between zero and 30 seconds.
e. Obstruction recycle.
f. On-off/hold-open switch to control electric power to operator.

4. Sliding-Door Carrier Assemblies and Overhead Roller Tracks: Carrier assembly that allows vertical adjustment; consisting of nylon- or delrin-covered, ball-bearing-center steel wheels operating on a continuous roller track, or ball-bearing-center steel wheels operating on a nylon- or delrin-covered, continuous roller track. Support doors from carrier assembly by cantilever and pivot assembly.

a. Rollers: Minimum of two ball-bearing roller wheels and two anti-rise rollers for each active leaf.

5. Sliding-Door Threshold: Threshold members and bottom-guide-track system with stainless-steel, ball-bearing-center roller wheels.

    a. Configuration: No threshold across door opening and surface-mounted guide-track system at sidelites.

6. Controls: Activation and safety devices according to BHMA standards.

    a. Activation Device: Motion sensor mounted on each side of door header to detect pedestrians in activating zone and to open door.
    b. Safety Device: Presence sensor mounted to underside of door header and two photoelectric beams mounted in sidelite jambs on one side of the door to detect pedestrians in presence zone and to prevent door from closing.

7. Finish: Finish framing, door(s), and header with Class I, clear anodic finish. Finish to match adjacent storefront.

8. Metal Cladding and Finish: Clad framing, door(s), and header with metal sheet in finish matching adjacent storefront.

2.04 ENTRANCE COMPONENTS

A. Framing Members: Extruded aluminum, minimum 0.125 inch (3.2 mm) thick and reinforced as required to support imposed loads.

    1. Nominal Size: 1-3/4 by 4-1/2 inches (45 by 115 mm).
    2. Extruded Glazing Stops and Applied Trim: Minimum 0.062-inch (1.6-mm) wall thickness.

B. Stile and Rail Doors: 1-3/4-inch- (45-mm-) thick, glazed doors with minimum 0.125-inch- (3.2-mm-) thick, extruded-aluminum tubular stile and rail members. Mechanically fasten corners with reinforcing brackets that are welded, or incorporate concealed tie-rods that span full length of top and bottom rails.

    1. Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets.
    2. Stile Design: Narrow stile, 2-1/8-inch (55-mm) nominal width.
    3. Rail Design: 5-inch (125-mm) nominal height.
    4. Muntin Bars: Horizontal tubular rail member for each door; match stile design and finish.

C. Headers: Fabricated from minimum 0.125-inch- (3.2-mm-) thick extruded aluminum and extending full width of automatic entrance units to conceal door operators and controls. Provide hinged or removable access panels for service and adjustment of door operators and controls. Secure panels to prevent unauthorized access.

    1. Mounting: Surface mounted.
    2. Capacity: Capable of supporting doors up to 175 lb (79 kg) per leaf over spans up to 14 feet (4.3 m) without intermediate supports.

        a. Provide sag rods for spans exceeding 14 feet (4.3 m).

D. Brackets and Reinforcements: High-strength aluminum with non-staining, nonferrous shims for aligning system components.

E. Signage: As required by cited BHMA standard.

1. Application Process: Door manufacturer's standard process.
2. Provide sign materials with instructions for field application after glazing is installed.

2.05 MATERIALS

A. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.

1. Extrusions: ASTM B 221 (ASTM B 221M).
2. Sheet: ASTM B 209 (ASTM B 209M).

B. Steel Reinforcement: Reinforcement with corrosion-resistant primer complying with SSPC-PS Guide No. 12.00 applied immediately after surface preparation and pretreatment. Use surface preparation methods according to recommendations in SSPC-SP COM and prepare surfaces according to applicable SSPC standard.

C. Stainless-Steel Bars: ASTM A 276 or ASTM A 666, Type 304.

D. Stainless-Steel Tubing: ASTM A 554, Grade MT 304.

E. Stainless-Steel Sheet: ASTM A 240/A 240M or ASTM A 666, Type 304, stretcher-leveled standard of flatness, in entrance manufacturer's standard thickness.

F. Brass Sheet: ASTM B 36/B 36M, Alloy UNS No. C26000 (cartridge brass, 70 percent copper), in entrance manufacturer's standard thickness.

G. Bronze Sheet: ASTM B 36/B 36M, Alloy UNS No. C28000 (muntz metal, 60 percent copper) or Alloy UNS No. C23000 (red brass, 85 percent copper), in entrance manufacturer's standard thickness.

H. Expanded Aluminum Mesh: Expanded aluminum sheet according to the geometry of ASTM F 1267.

I. Polycarbonate Sheet: ASTM C 1349, Appendix X1, Type II, coated, mar-resistant, UV-stabilized polycarbonate with coating on both surfaces.

J. Glazing: As specified in Section 088000 "Glazing."

K. Sealants and Joint Fillers: As specified in Section 079200 "Joint Sealants."

L. Nonmetallic, Shrinkage-Resistant Grout: Premixed, nonmetallic, noncorrosive, non-staining grout; complying with ASTM C 1107/C 1107M; of consistency suitable for application.

M. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

N. Fasteners and Accessories: Corrosion-resistant, non-staining, nonbleeding fasteners and accessories compatible with adjacent materials.

2.06 DOOR OPERATORS AND CONTROLS

A. General: Provide operators and controls, which include activation and safety devices, according to BHMA standards, for condition of exposure, and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated.

B. Door Operators: Provide door operators of size recommended by manufacturer for door size, weight, and movement.

1. Door Operator Performance: Door operators shall open and close doors and maintain them in fully closed position when subjected to Project's design wind loads.
2. Electromechanical Operators: Concealed, self-contained, overhead unit powered by fractional-horsepower, permanent-magnet dc motor; with closing speed controlled mechanically by gear train and dynamically by braking action of electric motor; with solid-state microprocessor controller; UL 325; and with manual operation with power off.

C. Motion Sensors: Self-contained, K-band-frequency, microwave-scanner units; fully enclosed by its plastic housing; adjustable to provide detection-field sizes and functions required by BHMA A156.10.

1. Provide capability for switching between bidirectional and unidirectional detection.
2. For one-way traffic, sensor on egress side shall not be active when doors are fully closed.

D. Presence Sensors: Self-contained, active-infrared scanner units; adjustable to provide detection-field sizes and functions required by BHMA A156.10. Sensors shall remain active at all times.

E. Photoelectric Beams: Pulsed infrared, sender-receiver assembly for recessed mounting. Beams shall not be active when doors are fully closed.

F. Electrical Interlocks: Unless units are equipped with self-protecting devices or circuits, provide electrical interlocks to prevent activation of operator when door is locked, latched, or bolted.

2.07 HARDWARE

A. General: Provide units in sizes and types recommended by automatic entrance and hardware manufacturers for entrances and uses indicated. Finish exposed parts to match door finish.

B. Breakaway Device for Power-Operated Doors: Device that allows door to swing out in direction of egress to full 90 degrees from any operating position. Maximum force to open door shall be as stipulated in "Performance Requirements" Article. Interrupt powered operation of door operator while in breakaway mode.

C. Deadlocks: Deadbolt operated by exterior cylinder and interior thumb turn, with minimum 1-inch-(25-mm-) long throw bolt; BHMA A156.5, Grade 1.

1. Cylinders: As specified in Section 087100 "Door Hardware."

a. Keying: Integrate into building master key system.

1. Deadbolts: Steel, mortise type, BHMA A156.5, Grade 1.
2. Two-Point Locking for Stile and Rail Sliding Doors: Mechanism in stile of active door leaf that automatically extends second lockbolt into threshold.

D. Automatic Locking: Electrically controlled device mounted in header that automatically locks sliding door against sliding when in closed position. Provide fail safe operation if power fails.

1. Include concealed, vertical-rod exit devices, UL 305, with latching into threshold and overhead carrier assembly and released by [full-width panic bar] [push paddle]; and that prevent emergency breakaway doors from swinging unless released to permit emergency egress.
2. Include locking devices for sidelites to prevent manual break out.

E. Weather Stripping: Replaceable components.

1. Sliding Type: AAMA 701, made of wool, polypropylene, or nylon woven pile with nylon-fabric or aluminum-strip backing.

2.08 FABRICATION

A. General: Factory fabricate automatic entrance components to designs, sizes, and thicknesses indicated and to comply with indicated standards.

1. Form aluminum shapes before finishing.
2. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
3. Use concealed fasteners to greatest extent possible. Where exposed fasteners are required, use countersunk Phillips flat-head machine screws, finished to match framing, fabricated from stainless steel.

    a. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.
    b. Reinforce members as required to receive fastener threads.

4. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.

B. Framing: Provide automatic entrances as prefabricated assemblies. Complete fabrication, assembly, finishing, hardware application, and other work before shipment to Project site.

1. Fabricate tubular and channel frame assemblies with welded or mechanical joints. Provide subframes and reinforcement as required for a complete system to support required loads.
2. Perform fabrication operations in manner that prevents damage to exposed finish surfaces.
3. Form profiles that are sharp, straight, and free of defects or deformations.
4. Provide components with concealed fasteners and anchor and connection devices.
5. Fabricate components with accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion.
6. Fabricate exterior components to drain condensation and water passing joints within system to the exterior.
7. Provide anchorage and alignment brackets for concealed support of assembly from building structure.
8. Allow for thermal expansion of exterior units.

C. Doors: Factory fabricated and assembled in profiles indicated. Reinforce as required to support imposed loads and for installing hardware.

D. Metal Cladding: Factory-fabricated and installed metal cladding, completely covering all visible surfaces as part of prefabricated entrance assembly before shipment to Project site.

1. Perform fabrication operations in manner that prevents damage to exposed finish surfaces.
2. Form profiles that are sharp, straight, and free of defects or deformations.
3. Provide components with concealed fasteners and anchor and connection devices.
4. Fabricate components with accurately fitted joints with ends coped or mitered to produce hairline joints free of burrs and distortion.
5. Fabricate exterior components to drain water passing joints and condensation and moisture occurring or migrating within system to the exterior.
6. Allow for thermal expansion at exterior entrances.

E. Door Operators: Factory fabricated and installed in headers, including adjusting and testing.

F. Glazing: Fabricate framing with minimum glazing edge clearances for thickness and type of glazing indicated, according to GANA's "Glazing Manual."

G. Hardware: Factory install hardware to greatest extent possible; remove only as required for final finishing operation and for delivery to and installation at Project site. Cut, drill, and tap for factory-installed hardware before applying finishes.

1. Provide sliding-type weather stripping, mortised into door, at perimeter of doors.

H. Controls:

1. General: Factory install activation and safety devices in doors and headers as required by BHMA A156.10 for type of door and direction of travel.

2.09 GENERAL FINISH REQUIREMENTS

A. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

B. Apply organic and anodic finishes to formed metal after fabrication unless otherwise indicated.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.10 ALUMINUM FINISHES

A. Color Anodic Finish: AAMA 611, [AA-M12C22A42/A44, Class I, 0.018 mm] [AA-M12C22A32/A34, Class II, 0.010 mm] or thicker. Match finish of aluminum storefront on existing building.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances, header support, and other conditions affecting performance of automatic entrances.

B. Examine roughing-in for electrical systems to verify actual locations of power connections before automatic entrance installation.

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

3.02 INSTALLATION

A. General: Install automatic entrances according to manufacturer's written instructions and cited BHMA standard for direction of pedestrian travel, including signage, controls, wiring, and connection to the building's power supply.

1. Do not install damaged components. Fit frame joints to produce hairline joints free of burrs and distortion. Rigidly secure nonmovement joints. Seal joints watertight.

2. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.
3. Where aluminum will contact concrete or masonry, protect against corrosion by painting contact surfaces with bituminous coating.

B. Entrances: Install automatic entrances plumb and true in alignment with established lines and grades without warp or rack of framing members and doors. Anchor securely in place.

1. Install surface-mounted hardware using concealed fasteners to greatest extent possible.
2. Set headers, carrier assemblies, tracks, operating brackets, and guides level and true to location with anchorage for permanent support.
3. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within system to exterior.
4. Level recesses for recessed thresholds using non-shrink grout.

C. Door Operators: Connect door operators to electrical power distribution system.

D. Access-Control Devices: Connect access-control devices to access-control system as specified in Section 281300 "Access Control."

E. Controls: Install and adjust activation and safety devices according to manufacturer's written instructions and cited BHMA standard for direction of pedestrian travel. Connect control wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

F. Guide Rails: Install rails according to BHMA A156.10, including Appendix A, and manufacturer's written instructions unless otherwise indicated.

G. Glazing: Install glazing as specified in Section 088000 "Glazing."

H. Sealants: Comply with requirements specified in Section 079200 "Joint Sealants" to provide weathertight installation.

1. Seal perimeter of framing members with sealant.

I. Signage: Apply signage on both sides of each door as required by cited BHMA standard for direction of pedestrian travel.

J. Wiring within Automatic Entrance Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's written limitations on bending radii. Provide and use lacing bars and distribution spools.

3.03 FIELD QUALITY CONTROL

A. Certified Inspector: Engage a Certified Inspector to test and inspect components, assemblies, and installations, including connections.

B. Perform the following tests and inspections with the assistance of a factory-authorized service representative:

1. Test and inspect each automatic entrance, using AAADM inspection forms, to determine compliance of installed systems with applicable BHMA standards.

C. Automatic entrances will be considered defective if they do not pass tests and inspections.

D. Prepare test and inspection reports.

3.04 ADJUSTING

A. Adjust hardware, moving parts, door operators, and controls to function smoothly, and lubricate as recommended by manufacturer; comply with requirements of applicable BHMA standards.

1. Adjust exterior doors for weathertight closure.

B. Readjust door operators and controls after repeated operation of completed installation equivalent to three days' use by normal traffic (100 to 300 cycles).

C. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

3.05 CLEANING

A. Clean glass and metal surfaces promptly after installation. Remove excess glazing and sealant compounds, dirt, and other substances. Repair damaged finish to match original finish.

1. Comply with requirements in Section 088000 "Glazing".

3.06 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain automatic entrances.

END OF SECTION

KDMC PAINTSVILLE

TABLE OF CONTENTS

Baughan Engineering

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BECKLEY, WV, 25705

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CLIENT

RADON MEDICAL IMAGING

PROJECT

KING'S DAUGHTERS

KDMC PAINTSVILLE
2201 LEXINGTON AVE
ASHLAND, KY 41101

REVISION

ISSUED FOR CONSTRUCTION

TABLE OF CONTENTS

DRAWING NUMBER: 00018-201-000

A. GENERAL

AS PART OF THE INSTALLATION AND OPERATION OF THE SYSTEM, CUSTOMER IS RESPONSIBLE FOR ALL, BUT NOT LIMITED TO, THE FOLLOWING

1. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION. THE ENGINEER OF RECORD SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES. BAUGHAN ENGINEERING HAS MADE NO INDEPENDENT INVESTIGATION AND ASSUMES NO RESPONSIBILITY FOR THE ACCURACY, OR LACK THEREOF, FOR THE LOCATIONS, OR EXISTENCE, OF ANY EXISTING ITEMS.
2. DO NOT SCALE THESE DRAWINGS
3. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER THESE GENERAL NOTES.
4. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODES:
   NFPA 70 - NATIONAL ELECTRICAL CODE (NEC) LATEST REVISION
   OCCUPATIONAL HEALTH AND SAFETY ACT (OSHA)
   STATE AND LOCAL CODES/ REGULATIONS
   INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
   INSULATED POWER CABLE ENGINEERS ASSOCIATION (IPCEA)
   NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
   NATIONAL ELECTRICAL SAFETY CODE (NESC)
   MANUFACTURER STANDARDS
5. ALL SPECIFICATIONS AND CODES NOTED SHALL BE THE LATEST APPROVED EDITIONS AND REVISIONS BY THE GOVERNMENT AGENCY HAVING JURISDICTIONS OVER THIS PROJECT.

B. STRUCTURAL NOTES

1. IT IS RESPONSIBILITY OF THE INSTALLER AND STRUCTURAL ENGINEER TO DETERMINE THE BEST METHOD FOR MOUNTING THE BASE TO THE FLOOR. BEFORE MOUNTING THE BASE, CONSULT WITH THE BUILDING MAINTENANCE SUPERVISOR ABOUT DRILLING HOLES IN THE FLOOR. ENSURE THERE ARE NO DRILLING HAZARDS UNDER THE FLOOR SUCH AS PIPES, CONDUITS, OR STRUCTURAL CABLES.
2. THE GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL STRUCTURAL SUPPORT MEMBERS AND NEEDED HARDWARE FOR THE INSTALLATION OF ALL X-RAY AND ANCILLARY EQUIPMENT.
3. EXAMINATION ROOM FLOOR IS TO BE FLAT AND LEVEL TO WITH ±1/8" IN ALL DIRECTIONS FROM TABLE CENTER TO 10' RADIUS AND CAPABLE OF SUPPORTING THE TABLE WEIGHT OVER AN AREA OF 60"x36" MINIMUM.
4. ANY STRUCTURAL DETAILS SHOWN ARE SAMPLE DETAILS BASED UPON STANDARD BUILDING PRACTICES AND ARE NOT INTENDED FOR CONSTRUCTION USE. ACTUAL CONSTRUCTION DETAILS, LOADING FACTORS, SPECIFICATIONS, AND ALL CALCULATIONS SHALL BE PREPARED BY A PROFESSIONAL STRUCTURAL ENGINEER AT THE HOSPITAL'S EXPENSE.
5. METHODS OF SUPPORT FOR THE STEELWORK THAT WILL PERMIT ATTACHMENT TO STRUCTURAL STEEL OR THROUGH BOLTS IN CONCRETE CONSTRUCTION SHOULD BE FAVORED. DO NOT USE SCREW ANCHORS IN DIRECT TENSION.
6. EQUIPMENT VENDOR OR DESIGNATED REPRESENTATIVES ARE IN NO WAY RESPONSIBLE FOR THE DESIGN OR INSTALLATION OF THE SUPPORT STRUCTURE FOR ANY IMAGING EQUIPMENT. THIS IS THE RESPONSIBILITY OF THE PURCHASER AND PURCHASER'S CONTRACTOR.
7. PURCHASER OR HIS CONTRACTOR IS RESPONSIBLE FOR LOCATING AND MARKING ALL POST TENSION CABLES OR OTHER OBSTACLES THAT MAY INTERFERE WITH PROPER LOCATION AND INSTALLATION OF REQUIRED DIAGNOSTIC IMAGING EQUIPMENT FLOOR ANCHORS. ANY OBSTRUCTIONS OR CABLES NOTED NEAR THE AREA OF ANCHOR POINTS ARE TO BE MARKED AND INDICATED BEFORE INSTALLATION OF THE DIAGNOSTIC IMAGING SYSTEM AND RELATED EQUIPMENT.
8. ANY NOTED POSSIBLE OBSTRUCTIONS OR CABLES THAT MAY REQUIRE REPOSITIONING OR MODIFICATION OF THE DIAGNOSTIC IMAGING SYSTEM AND RELATED EQUIPMENT MUST BE COORDINATED WITH THE AUTHORIZED EQUIPMENT VENDOR PERSONNEL OR DESIGNATED REPRESENTATIVE PRIOR TO INSTALLATION.
9. ALL OVERHEAD STRUCTURAL SUPPORT MEMBERS SHALL BE TRUE, SQUARE, LEVEL, PARALLEL, AND COPLANAR IN RESPECT TO EACH OTHER WITH ALL HORIZONTAL STRUCTURAL SUPPORT MEMBERS TO BE LOCATED AND SET WITH A WATER LEVEL OR TRANSIT.
10. THE OVERHEAD STRUCTURE SUPPORT SYSTEM SHALL BE FIXED, RIGID, AND BRACED FOR SWAY WITH A MAXIMUM DEFLECTION OF 0.625" AT ANY GIVEN POINT.
11. UNISTRUT CHANNEL SHALL BE FLUSH MOUNTED IN FINISHED CEILING UNLESS OTHERWISE SPECIFIED ON THESE DRAWINGS. ALL EXPOSED CHANNELS SHALL BE PAINTED THE SAME COLOR AS THE FINISHED CEILING. CONTRACTOR TO SUPPLU AND INSTALL CLOSURE STRIPS IN ALL EXPOSED UNISTRUT.
12. ALL UNISTRUT MEMBERS HAVE BEEN COORDINATED WITH THE X-RAY EQUIPMENT. ANY DEVIATION FROM THIS PAN SHALL BE APPROVED BY SIGNATURE THROUGH THE EQUIPMENT VENDOR.
13. DO NOT USE SCREWS TO FASTEN CEILING GRID TO UNISTRUT. AN ALTERNATE METHOD SUCH AS TACK OR SPOT WELDING, ETC. SHOULD BE CONSIDERED.
14. THE EQUIPMENT VENDOR OR VENDOR'S DESIGNER IS IN NO WAY RESPONSIBLE FOR THE DESIGN OR INSTALLATION OF THE SUPPORT STRUCTURE FOR ANY EQUIPMENT. THIS IS THE RESPONSIBILITY OF THE PURCHASER OR PURCHASER'S CONTRACTOR. IT IS STRONGLY RECOMMENDED THAT A STRUCTURAL ENGINEER IN CONJUNCTION WITH UNISTRUT REPRESENTATIVES COORDINATE ANY UNISTRUT SUPPORT STRUCTURE.

B. ELECTRICAL

1. GENERAL

1.1. ALL BOXES, CONDUITS, WIREMOLD, DUCT, MAIN BREAKERS, LOAD CENTERS, ETC. INDICATED ON THESE DRAWINGS HAVE BEEN COORDINATED WITH X-RAY EQUIPMENT PLACEMENT. CONTACT EQUIPMENT VENDOR FOR PROPER VERIFICATION OF EQUIPMENT PLACEMENT AND CLEARANCES BEFORE MAKING ANY CHANGES TO THE LOCATIONS INDICATED ON THESE DRAWINGS.

1.2. ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL ALL BOXES, CONDUITS, DUCT, WIRE, MAIN SWITCHES, ETC. REQUIRED TO MAKE THE X-RAY SYSTEM OPERATIONAL WITHIN THE SPACE PROVIDED.

1.3. ELECTRICAL CONTRACTOR TO PROVIDE 120 VAC CONVENIENCE OUTLETS WITHIN 10' OF ALL X-RAY EQUIPMENT INDICATED. ADDITIONAL OUTLETS MAY BE REQUIRED BY CODE. CONSULT CODES FOR REQUIREMENTS AND OUTLET PLACEMENT ABOVE FLOOR OR COUNTER TOPS AS REQUIRED.

1.4. INCOMING POWER FOR X-RAY SYSTEMS DISTRIBUTION SHALL BE DEDICATED LINES RUN DIRECTLY FROM THE NEAREST HOSPITAL MAIN DISTRIBUTION TRANSFORMER OR DISTRIBUTION PANEL NOT SUPPLYING "SPARKY" OR HIGH INSTANTANEOUS PEAK LOAD DEVICES (I.E. MOTORS, ELEVATORS, AIR CONDITIONERS, ETC.). UNDER NO CIRCUMSTANCES SHALL ANY OTHER ELECTRICAL EQUIPMENT BE CONNECTED TO THE X-RAY EQUIPMENT POWER LINES NOW OR IN THE FUTURE.

1.4.1. LINE REQUIREMENTS

1.4.1.1. NO TRANSIENTS (IMPULSES FROM 0.5 TO 800 MICROSECONDS) THAT EXCEED 30% OF NOMINAL PEAK LINE VOLTAGE AS MEASURED BY A DRANETZ POWER LINE ANALYZER (MODEL 606B OR EQUIVALENT) WITH THE SYSTEM IN STANDBY SHALL OCCUR.

1.4.1.2. TRANSIENTS EQUAL TO OR LESS THAN 30% OF NOMINAL PEAK LINE VOLTAGE SHALL NOT OCCUR MORE THAN ONCE PER HOUR OR EXCEED MORE THAN 12 IMPULSES PER 24-HOUR PERIOD.

1.5. GENERAL ROOM LIGHTING IS NOT INDICATED ON THESE DRAWINGS AND IS THE RESPONSIBILITY OF THE PURCHASER**.** IT IS SUGGESTED THAT DIMMERS BE USED TO CONTROL THE LIGHT LEVELS, ESPECIALLY IN AREAS WHERE MONITORS ARE USED.

2. WIRING

2.1. ALL WIRES ARE TO BE TYPE THHN, OR THW STRANDED COPPER UNLESS OTHERWISE NOTED.

2.2. ELECTRICAL CONTRACTOR TO PROVIDE 10'-0" WIRE TAILS FOR ALL WIRES UNLESS SPECIFIED AND IDENTIFY BOTH ENDS OF ALL WIRES

3. RACEWAYS

3.1. CONDUIT AND DUCT RUNS ARE SHOWN SCHEMATICALLY. ACTUAL BUILDING CONDITIONS WILL DETERMINE CONDUIT AND DUCT ROUTES. MAKE THE MOST DIRECT ROUTE POSSIBLE FOR THE SHORTEST POINT TO POINT DISTANCES BETWEEN OPENINGS.

3.2. CONDUIT TURNS TO HAVE LARGE, SWEEPING BENDS WITH MINIMUM RADIUS AS SPECIFIED IN NEC ARTICLE 346-10, 90° ELBOWS ARE NOT ACCEPTABLE.

3.3. PROVIDE REMOVABLE COVERS FOR ALL BOXES

3.4. LEAVE PULL WIRE IN ALL RACEWAYS

3.5. ALL CONDUITS INDICATED ON THESE DRAWINGS SHALL CONNECT TO THE CONTROL CABLE SIDE OF THE TROUGH UNLESS OTHERWISE NOTED.

3.6. CONTRACTOR MAY USE AND/OR ADAPT ALL EXISTING CONDUITS, BOXES, WIRES, MAIN SWITCHES, ETC., WHERE POSSIBLE.

3.7. ALL TROUGH TO BE SQUARE D, WALKERDUCT OR EQUAL FLOOR AND WALL TRENCH DUCT WITH REMOVABLE COVERS THE FULL LENGTH.

3.8. ALL TROUGH SHALL BE FLUSH WITH FINISHED SURFACES UNLESS OTHERWISE SPECIFIED AND PROVIDED WITH OVERSIZED REMOVABLE COVERS THE FULL LENGTH. COVERS SHALL BE CLEAR OF ANY OBSTRUCTION FOR INSERTION OF VENDER SUPPLIED CABLES. IF IT IS NECESSARY THAT THE TROUGH BE INSTALLED OTHER THAN THE WAY INDICATED IN THESE DRAWINGS, CONTACT EQUIPMENT VENDOR OR REPRESENTATIVE FOR PROPER VERIFICATION OF ALL EQUIPMENT PLACEMENT AND TROUGH CLEARANCES.

3.9. ALL DUCT ABOVE CEILING OR BELOW FLOOR TO BE PROVIDED WITH REMOVABLE COVERS FACING UP. PROVIDE ADEQUATE SPACE ABOVE DUCT FOR INSTALLATION OF VENDOR SUPPLIED CABLES AT THE TIME OF EQUIPMENT INSTALLATION. MAINTAIN MINIMUM CLEARANCE ABOVE CEILING OR BELOW FLOOR TO DUCT FOR SHORTEST CABLE RUNS. DUCT INSTALLED MORE THAN 12" ABOVE CEILING OR 18" BELOW FLOOR IS UNACCEPTABLE.

3.10. CONTRACTOR TO SUPPLY AND INSTALL 2 REMOVABLE DIVIDER STRIPS WITHIN DUCT TO FORM THREE EQUAL AREAS FOR SEPARATION OF HIGH VOLTAGE CABLES, LOW VOLTAGE CABLES, AND DATA CABLES. PROVIDE CROSSOVER TUNNELS AT ALL INTERSECTIONS.

4. GROUNDING

4.1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING AND INSTALLING PATIENT GROUNDING SYSTEM WHEN REQUIRED BY CODE.

4.1.1. A SPECIAL GROUNDING SYSTEM IS REQUIRED IN DIAGNOSTIC ROOMS BY SOME STATE AND LOCAL CODES. IT IS STRONGLY RECOMMENDED IN AREAS WHERE ELECTRONICALLY SUSCEPTIBLE PATIENTS MAY BE EXAMINED OR TREATED UNDER PRESENT, FUTURE, OR EMERGENCY CONDITIONS. CONSULT THE GOVERNING ELECTRICAL CODE AND CONFER WITH APPROPRIATE HOSPITAL ADMINISTRATIVE PERSONNEL TO DETERMINE THE AREAS REQUIRING THE GROUNDING SYSTEM. IF SUCH A SYSTEM IS REQUIRED, CONTRACTOR TO DESIGN AND INSTALL GROUNDING SYSTEM AND INCLUDE ALL METAL OBJECTS AND FIXTURES, OTHER THAN DIAGNOSTIC X-RAY EQUIPMENT.

4.2. ALL HIGH VOLTAGE PARTS, INCLUDING x-RAY TUBES, SHALL BE MOUNTED WITHIN GROUNDING ENCLOSURES. AIR, OIL, GAS, OR OTHER SUITABLE INSULATING MEDIA SHALL BE USED TO INSULATE THE HIGH-VOLTAGE FROM THE GROUNDED ENCLOSURE. THE CONNECTION FROM THE HIGH-VOLTAGE EQUIPMENT TO X-RAY TUBES AND OTHER HIGH-VOLTAGE COMPONENTS SHALL BE MADE WITH HIGH VOLTAGE SHIELDED CABLES.

4.3. LOW-VOLTAGE CABLES CONNECTING TO OIL-FILLED UNITS THAT ARE NOT COMPLETELY SEALED, SUCH AS TRANSFORMERS, CONDENSERS, OIL COOLERS, AND HIGH-VOLTAGE SWITCHES, SHALL HAVE INSULATION OF THE OIL-RESISTANT TYPE.

4.4. NON-CURRENT CARRYING METAL PARTS OF X-RAY AND ASSOCIATED EQUIPMENT (CONTROLS, TABLES, X-RAY TUBE SUPPORTS, TRANSFORMER TANKS, SHIELDED CABLES, X-RAY TUBE HEADS, ETC.) SHALL BE CONNECTED TO AN EQUIPMENT GROUNDING CONDUCTOR IN THE MANNER SPECIFIED IN NEC PART VII OF ARTICLE 250, AS MODIFIED BY NEC ARTICLE 517.13 (A) AND (B)

A. CUSTOMER REQUIREMENTS FOR INSTALLATION

AS PART OF THE INSTALLATION AND OPERATION OF THE SYSTEM, CUSTOMER IS RESPONSIBLE FOR ALL, BUT NOT LIMITED TO, THE FOLLOWING

1. AS APPLICABLE TO RADIATION PRODUCING EQUIPMENT, SUBMITTING A SHIELDING DESIGN TO THE APPROPRIATE FEDERAL, STATE, LOCAL OR OTHER REQUIRING GOVERNMENT AGENCY AND GETTING APPROVAL FOR INSTALLATION OF EQUIPMENT FROM SAID AGENCY.
2. ENSURE THAT ALL FEDERAL, STATE, LOCAL OR OTHER REQUIRING GOVERNMENT AGENCY REQUIREMENTS ARE MET PRIOR TO AND AFTER INSTALLATION OF EQUIPMENT, INCLUDING BUT NOT LIMITED TO SHIELDING DESIGN AND POST INSTALLATION RADIATION SURVEY.
3. AN EMPLOYEE FROM RADON WILL NEED TO SURVEY CURRENT INSTALLATION PRIOR TO SCHEDULING OF THIS JOB TO ENSURE THAT APPROPRIATE POWER AND ELECTRICAL RUNS ARE AVAILABLE FOR EQUIPMENT INSTALLATION AND ALL NETWORK REQUIREMENTS ARE MET AS REQUIRED FOR SYSTEM COMMUNICATION AND REMOTE SERVICE ACCESS PURPOSES.
4. RADON WILL SUPPLY EQUIPMENT LAYOUT AND SPECIFICATIONS UPON REQUEST. ANY DEVIATION FROM RADON'S SPECIFICATIONS MUST BE APPROVED BY RADON. ENSURING THAT THE USERS OF THE SYSTEM ARE ADVISED AND UNDERSTAND THAT THE SYSTEM IS AN AID IN PRACTICE OF HEALTHCARE AND IS NOT A SUBSTITUTE FOR PROFESSIONAL JUDGEMENT.
5. PROVIDE APPROPRIATE POWER AND ELECTRICAL RUNS FOR EQUIPMENT.
6. INSTALLING AND MAINTAINING ANY DEDICATED MODEMS AND PHONE LINES NECESSARY TO SUPPORT THE EQUIPMENT AND THE SOFTWARE.
7. PROVIDE ALL NETWORK CABLES, DROPS, ETC. FOR NETWORK COMMUNICATIONS REQUIRED.
8. HAVE A NETWORK SPEED OF AT LEAST 700Mbps ON THE SEGMENT THAT COMPANY'S SERVER AND CLIENT WORKSTATIONS WILL BE CONNECTED TO OR A DEDICATED 10Mbps SEGMENT SPECIFIC THE SYSTEM.
9. PROVIDING AND MAINTAINING AN APPROPRIATE NETWORK CONNECTION TO ANY DEVICE SUPPLIED AT THE SITE BY COMPANY.
10. INSTALLING AND MAINTAINING ANY "FIREWALLS" AND OTHER SECURITY PROTOCOLS AND DEVICES THAT ARE ADEQUATE TO ENSURE THAT UNAUTHORIZED THIRD PARTIES CANNOT ACCESS OR MANIPULATE DATA WITHIN THE SYSTEM. CUSTOMER WILL MAKE EVERY REASONABLE EFFORT TO PREVENT AND CORRECT ANY PROBLEMS ARISING FROM SUCH OTHER EQUIPMENT, SOFTWARE, HARDWARE, FIRMWARE AND INTERFACES OR MALICIOUS ACTIVITY BY PERSONS KNOWN OR UNKNOWN. IF CUSTOMER'S SYSTEM IS ACCESSED BY UNAUTHORIZED THIRD PARTIES, WHETHER SUCH ACCESS IS INTERNAL OR EXTERNAL, CUSTOMER IS SOLELY RESPONSIBLE FOR ALL COSTS OF RESTORING CUSTOMER'S NETWORK AND THE SYSTEM, AND FOR ANY DATA LOSS OR CORRUPTION. ANY SERVICE FROM COMPANY REQUIRED OR REQUESTED IN ORDER TO REPAIR OR RESTORE THE SYSTEM WILL BE CHARGED TO CUSTOMER AT COMPANY'S THEN-CURRENT SERVICE RATES.
11. INSTALLING AND MAINTAINING REMOTE CONNECTIONS, INCLUDING COMMUNICATIONS NECESSARY TO SUPPORT THE SYSTEM (EQUIPMENT, SOFTWARE AND ALL OTHER RELATED COMPONENTS) REQUIRED FOR REMOTE SUPPORT AND MAINTENANCE. IF REMOTE CONNECTIONS ARE NOT AVAILABLE AT THE SITE AND SYSTEM EVALUATION CANNOT BE PERFORMED REMOTELY, TRAVEL CHARGES WILL OCCUR AT RADON'S CURRENT RATE IF RADON IS REQUIRED TO COME ON-SITE TO TROUBLESHOOT OR RESOLVE A SYSTEM PROBLEM.
12. THE SUPERVISION, MANAGEMENT AND CONTROL OF ITS USE OF THE SYSTEM, INCLUDING BUT NOT LIMITED TO ENSURING THAT PROPER CONTROLS ARE IN PLACE TO VALIDATE DATA AND RESULTS OBTAINED THROUGH THE USE OF THE SYSTEM.
13. REGULARLY BACKING UP THE SYSTEM AND ARCHIVING DATA AS MAY BE NECESSARY TO MEET CUSTOMER'S BACKUP NEEDS AND TO PROTECT AGAINST UNANTICIPATED DATA LOSS. CUSTOMER IS REQUIRED TO MAINTAIN AND DOCUMENT THESE BACKUP PROCEDURES AND PROVIDE SAID DOCUMENTATION TO COMPANY'S OR COMPANY'S SERVICE CONTRACTOR'S TECHNICAL SUPPORT UPON REQUEST.
14. MAINTAINING THE SITE AND ENVIRONMENT (INCLUDING TEMPERATURE AND HUMIDITY CONTROL, INCLUDING POWER QUALITY, AND FIRE PROTECTION SYSTEM) IN A MANNER CONSISTENT WITH MANUFACTURER'S RECOMMENDATION AND DOCUMENTATION. CUSTOMER WILL MAINTAIN DOCUMENTATION OF SUCH SITE AND ENVIRONMENTAL CONDITIONS WHERE THE SYSTEM IS LOCATED AND PROVIDE SUCH DOCUMENTATION TO COMPANY'S OR COMPANY'S SERVICE CONTRACTOR'S TECHNICAL SUPPORT UPON REQUEST.
15. ASSURING THAT, AT ALL TIMES, PROPERLY QUALIFIED AND APPROPRIATELY LICENSED PERSONNEL USE THE SYSTEM IN THE MANNER SPECIFIED BY COMPANY AND THE MANUFACTURER.
16. ASSUMING FULL RESPONSIBILITY FOR THE SAFETY AND ANY CONSEQUENCE OF LACK OF THE SYSTEM IN POSSESSION OR CONTROL OF THE SYSTEM.
17. APPOINT AND HAVE AVAILABLE A SYSTEM ADMINISTRATOR DURING THE ENTIRE INSTALLATION PROCESS AVAILABLE FOR TRAINING, AND THEREAFTER, HAVE A SYSTEM ADMINISTRATOR DESIGNATED WHO POSSESSES THE SKILLS TO PROPERLY CONDUCT DAY-TO-DAY ADMINISTRATIVE ACTIVITIES FOR THE SYSTEM.
18. MAKING DOMAIN AND SYSTEM ADMINISTRATIVE PRIVILEGES AVAILABLE TO COMPANY'S TECHNICIANS (IF APPLICABLE). IF THIS IS NOT POSSIBLE, A CUSTOMER REPRESENTATIVE WITH SUCH PRIVILEGES MUST BE AVAILABLE AT ALL TIMES DURING THE INSTALLATION, AND THEREAFTER IF REQUIRED BY THE COMPANY IN ORDER TO SERVICE THE SYSTEM.
19. MAKING SURE THAT ALL OF THE CLIENT WORKSTATIONS ARE COMMUNICATING WITH THE SYSTEMS SERVER
20. EXPEDITIOUSLY COMMUNICATION INSTALLATION DATES TO ANY THIRD PARTY VENDORS WHOSE COOPERATION IS NECESSARY TO COMPLETE INSTALLATION (FOR EXAMPLE, BROADBAND SERVICE PROVIDERS, OTHER RELATED SYSTEM VENDERS, ETC.)
21. EXPEDITIOUSLY COMMUNICATING COMPANY'S INTERFACE SPECIFICATIONS (e.g., STANDARD HL7 SPECIFICATIONS) TO ANY THIRD PARTY VENDOR WHOSE COOPERATION IS NECESSARY TO COMPLETE INTERFACE TESTING (FOR EXAMPLE, RIS VENDORS) AND CONFIRMING SAID COMMUNICATIONS TO THE APPROPRIATE COMPANY REPRESENTATIVE (TYPICALLY THE PROJECT MANAGER) IN A TIMELY FASHION.
22. PLACING SERVICE CALLS AND REQUESTS TO COMPANY WHEN APPROPRIATE AS SPECIFIED BY COMPANY OR THE MANUFACTURER'S THEN-PREVAILING PROTOCOLS.
23. MAKING THE SYSTEM AVAILABLE WITHOUT RESTRICTION FOR SERVICE IN ACCORDANCE WITH A MUTUALLY ACCEPTABLE SERVICE APPOINTMENT SCHEDULE
24. PROPER ELECTRICAL CURRENT FOR OPERATION OF THE PRODUCTS WILL BE BROUGHT TO THE SAFETY SWITCHED AND OUTLETS BY CUSTOMER AND THE CUSTOMER WILL SUPPLY ALL OF THE NECESSARY CONDUITS, WIRING, UNISTRUT STEEL OR SIMILAR SUPPORTS IN THE CEILING AND WALLS, PLUMING, CARPENTRY, CONSTRUCTION WORK AND RIGGING, AND ALL OTHER SITE PREPARATION AND INSTALLATION ACCESSORIES WHICH MAY BE REQUIRED FOR MAKING THE INSTALLATION.
25. IF ANY CERTIFICATES OR OTHER APPROVALS OF ANY GOVERNMENTAL AUTHORITY ARE REQUIRED TO BE OBTAINED FOR THE INSTALLATION, THE SAME SHALL BE PROCURED BY CUSTOMER AT CUSTOMER'S EXPENSE BEFORE THE SCHEDULED DELIVERY DATE.
26. IF TRADE UNIONS PREVENT INSTALLATION BY RADON EMPLOYEES, CUSTOMER SHALL MAKE ALL REQUIRED ARRANGEMENTS WITH TRADE UNIONS TO PERMIT COMPLETION OF THE INSTALLATION, THE ADDITIONAL COST OF WHICH SHALL BE PAID BY CUSTOMER.

RADON MEDICAL IMAGING

DRAWING STATUS:

ISSUED FOR CONSTRUCTION

REVISION HISTORY

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BAB	BAB	BAB	01/17/2023

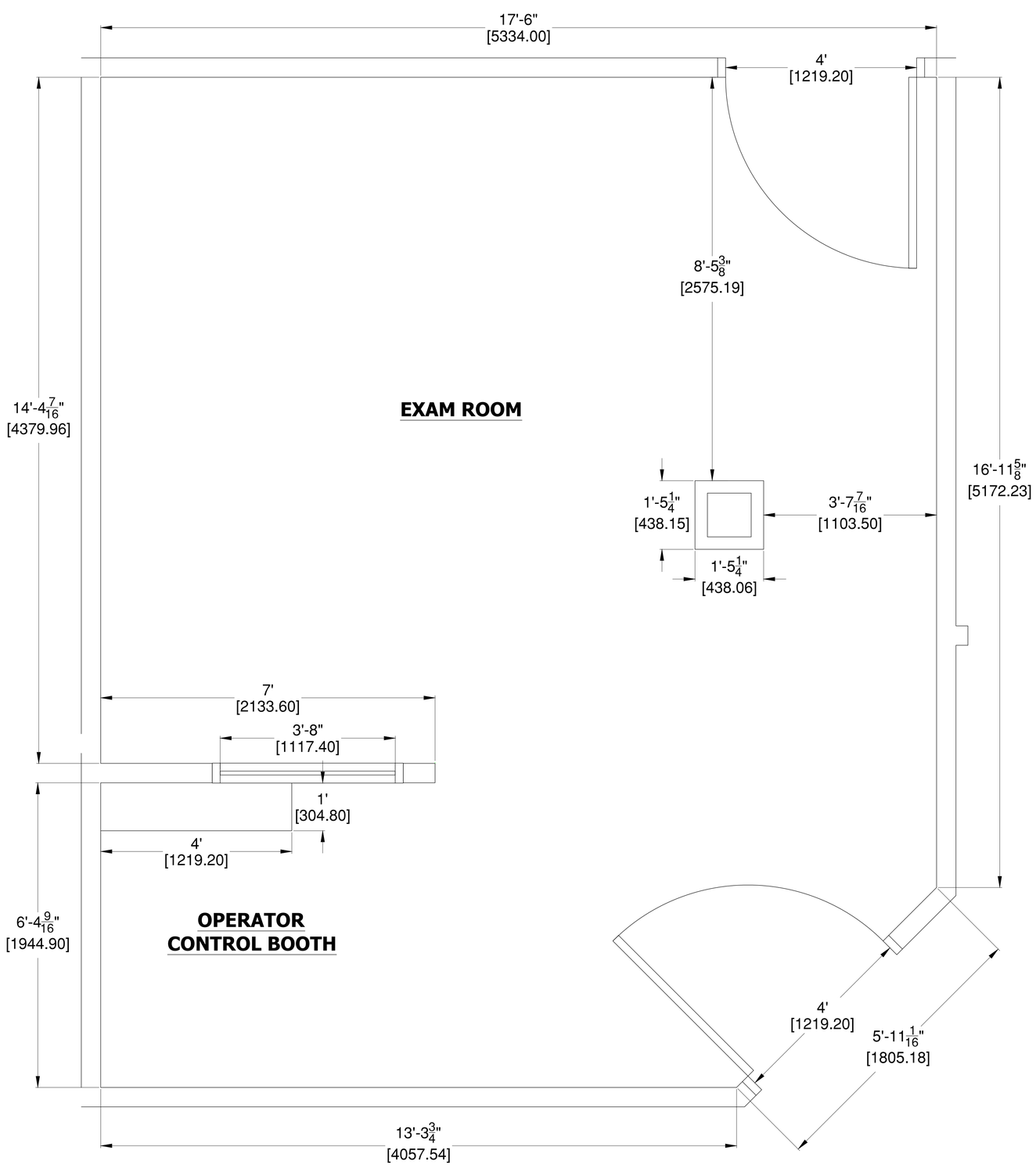
Baughan Engineering
367 GEORGE STREET
BECKLEY, WV, 25801
(304)-225-0537

KDMC PAINTSVILLE
X-RAY ROOM 119
GENERAL
NOTES

COUNTY/PARISH: JOHNSON | STATE: KENTUCKY | REVISION: 0

DRAWING NUMBER: 00018-201-001

DRAWING SCALE: NONE | SHEET: 1 OF 1



NOTES:

1. OPERATOR CONTROL BOOTH COUNTERTOP TO BE DESIGNED, SUPPLIED, AND INSTALLED BY CUSTOMER/CONTRACTOR. RECOMMENDED TO UTILIZE EXISTING BOOTH WING AND COUNTER
   - 1.1. PROVIDE A 3" DIAMETER GROMMET OPENING IN COUNTER FOR CABLES.
   - 1.2. OPERATOR SHALL NOT BE ALLOTTED LESS THAN 7.5 SQUARE FEET OF UNOBSTRUCTED FLOOR SPACE IN BOOTH
2. VIEW WINDOW TO BE DESIGN, SUPPLIED, AND INSTALLED BY CUSTOMER/CONTRACTOR.
   - 2.1. THE WINDOW SHALL HAVE A VIEWING AREA OF AT LEAST 1 SQUARE FOOT.
   - 2.2. REGARDLESS OF SIZE OR SHAPE, AT LEAST 1 SQUARE FOOT OF THE WINDOW AREA MUST BE CENTERED NO LESS THAN 2 FEET FROM THE OPEN EDGE OF THE BOOTH AND NO LESS THAN 5 FEET FROM THE FLOOR.
3. LIGHTS, SPRINKLER SYSTEMS, AND VENTS TO BE FLUSH MOUNTED.
4. MINIMUM CEILING HEIGHT IS 105.12"

GENERAL NOTES:

1. CONTRACTOR TO CONFORM TO ALL LOCAL, STATE, AND NATIONAL STANDARDS FOR INSTALLATION.

RADON MEDICAL IMAGING

DRAWING STATUS:

ISSUED FOR CONSTRUCTION

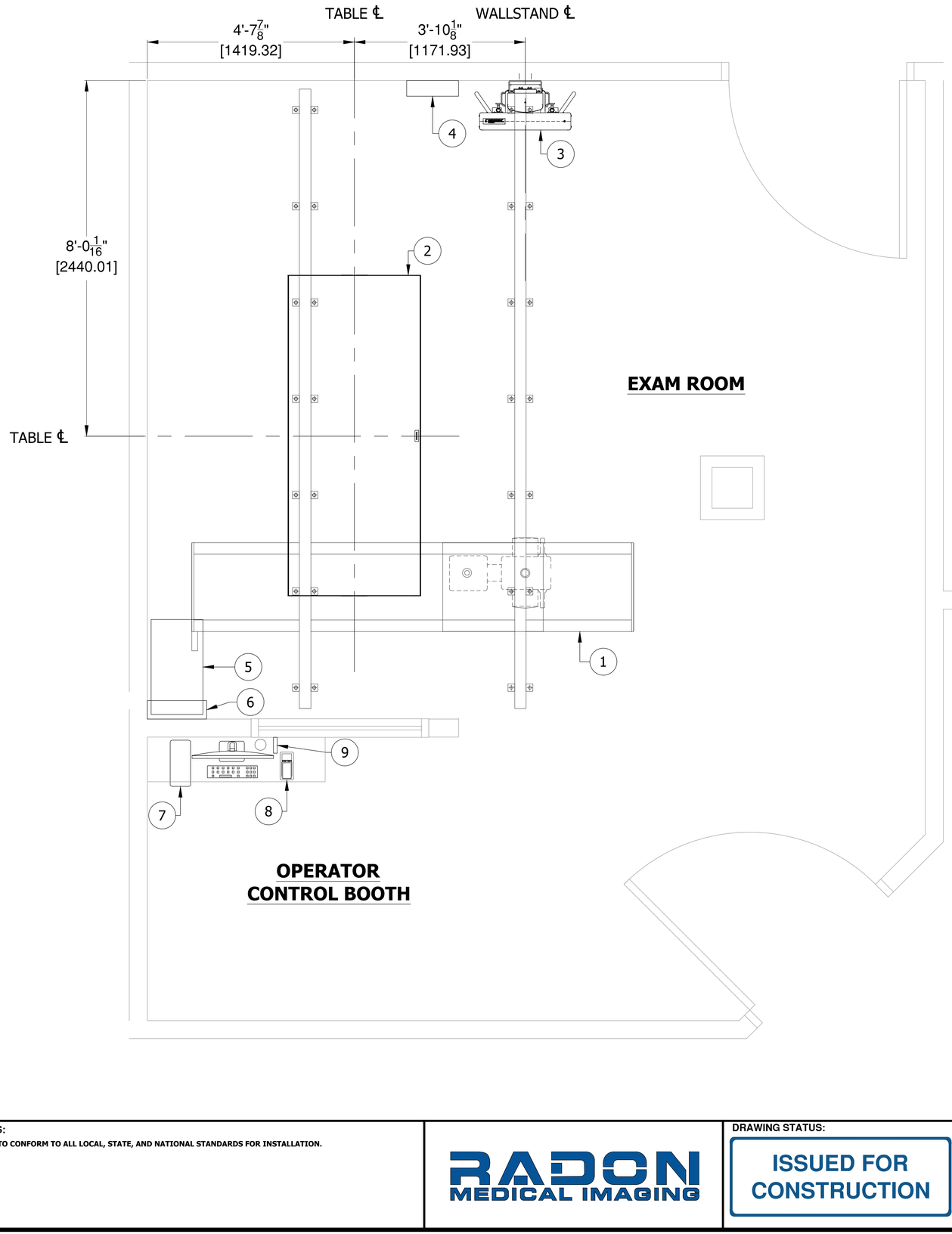
REVISION HISTORY

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BAB	BAB	BAB	01/17/2023

Baughan Engineering
367 GEORGE STREET
BECKLEY, WV, 25801
(304)-225-0537

KDMC PAINTSVILLE
X-RAY ROOM 119
ROOM
LAYOUT

COUNTY/PARISH: JOHNSON	STATE: KENTUCKY	REVISION
DRAWING NUMBER: 00018-201-101		0
DRAWING SCALE: NONE	SHEET: 1 OF 1	



EQUIPMENT LEGEND

ITEM	PART NUMBER	DESCRIPTION	DIMENSIONS (W"xD"xH")	WT/LBS	BTU/HR	REMARKS
1	DM-OTC18-T	DEL MEDICAL OVERHEAD TUBE CRANE WITH TOUCHSCREEN AND AUTO TRACKING	119.28" x 167.32" x 103.54"	661	1200	DIMENSIONS INCLUDES RAILS AND MAX HEIGHT
2	DM-EV800	DEL MEDICAL ELEVATING TABLE WITH FOUR-WAY FLOAT TOP (86.6" x 35.9)	86.66" x 35.91" x 34.25"	563	300	
3	DM-VS300	DEL MEDICAL WALL STAND	27.35" x 13.5" x 83"	200	35	
4	VS300 TRACKING KIT	DEL MEDICAL WALL STAND TRACKING KIT	14" x 4.25" x 14"	10		
5	DM-CM65DR	DEL MEDICAL 65kW, 800mA, HIGH FREQUENCY GENERATOR	13.7" x 25.6" x 24.3"	135	1200	3 PHASE / 480VAC
6	DM-PSI	DEL MEDICAL POWER SYSTEM INTEGRATION BOX	16" x 5" x 19"	10		
7	DM-CM-DR-CANON	DEL MEDICAL CANON DIGITAL INTERFACE (MONITOR, KEYBOARD, DESKTOP)	24" LCD MONITOR	-	-	
8	DM-CM-CSL-MINI	DEL MEDICAL MINI CONSOLE	3.6" x 7.5"	5	35	
9		EXPOSURE HAND SWITCH		-	-	

NOTES:

1. EXPOSURE HAND SWITCH TO BE MOUNTED AT LEAST 40" FROM ANY POINT SUBJECT TO DIRECT SCATTER, LEAKAGE, OR PRIMARY BEAM RADIATION. MOUNTING LOCATION SHALL ALLOW OPERATOR TO USE THE MAJORITY OF THE AVAILABLE VIEWING WINDOWS.
2. IT IS RECOMMENDED TO WALL MOUNT THE PC MONITOR TO ALLOW FOR MORE TABLE WORK SPACE AND TO MOUNT THE PC DESKTOP TO THE UNDERSIDE OF THE OPERATORS COUNTER. PC DESKTOP TO REMAIN OFF THE FLOOR.
3. LIGHTS, SPRINKLER SYSTEMS, AND VENTS TO BE FLUSH MOUNTED.

GENERAL NOTES:

1. **CONTRACTOR TO CONFORM TO ALL LOCAL, STATE, AND NATIONAL STANDARDS FOR INSTALLATION.**

RADON MEDICAL IMAGING

DRAWING STATUS:

ISSUED FOR CONSTRUCTION

REVISION HISTORY

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BAB	BAB	BAB	01/17/2023

Baughan Engineering
367 GEORGE STREET
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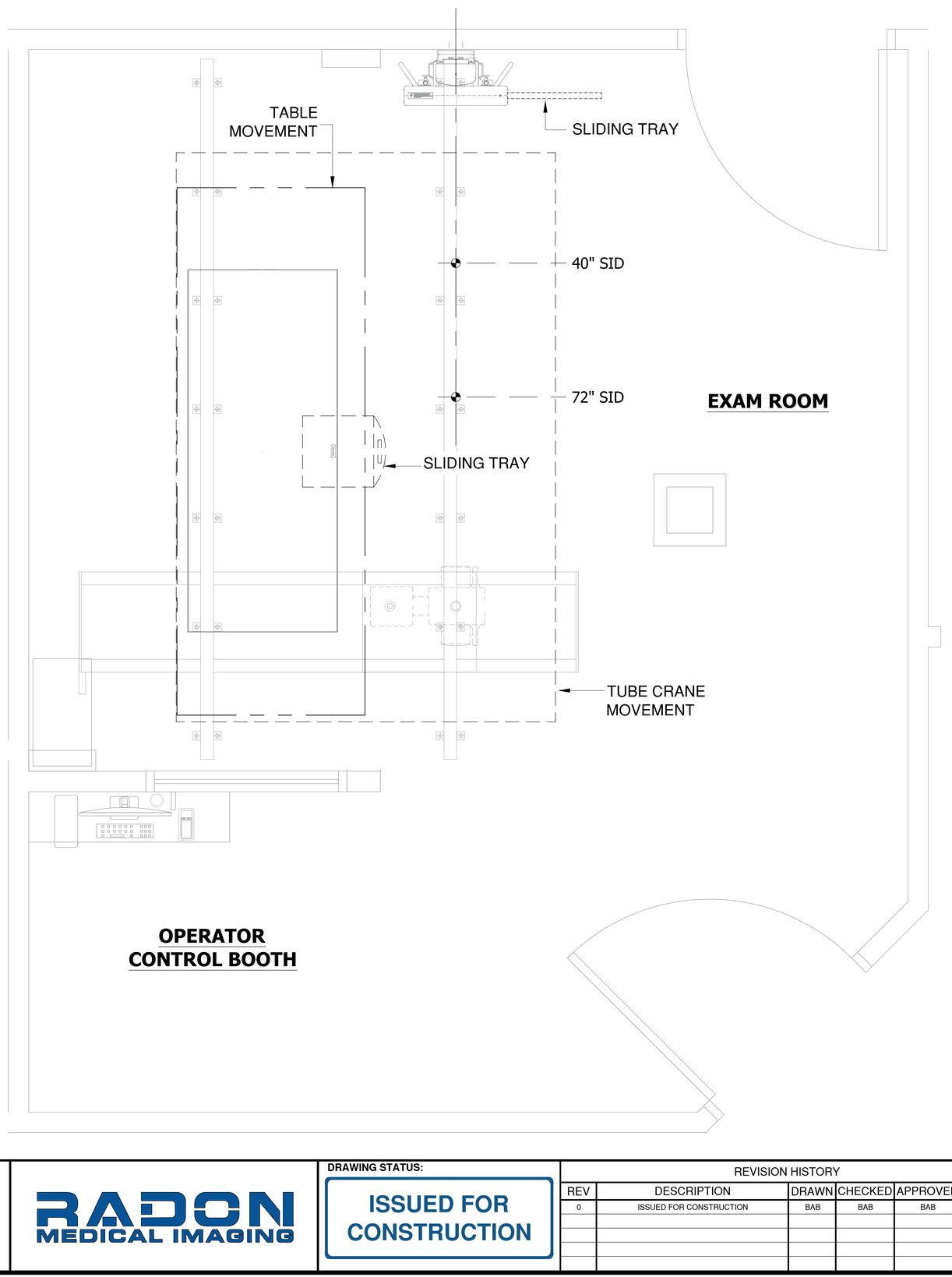
(681)-254-4670

KDMC PAINTSVILLE
X-RAY ROOM 119
PRELININARY
LAYOUT

COUNTY/PARISH: JOHNSON	STATE: KENTUCKY	REVISION
DRAWING NUMBER: 00018-201-102		0
DRAWING SCALE: NONE	SHEET: 1 OF 1	



NOTES:

1. **OTC18T - OVERHEAD TUBE CRANE**
   - 1.1. TRANSVERSE TRAVEL RANGE - 86.6"
   - 1.2. LONGITUDINAL TRAVEL RANGE - 136"
   - 1.3. VERTICAL TRAVEL RANGE - 70.9"
   - 1.4. CEILING HEIGHT (STANDARD) - 105"-127"
   - 1.5. CURRENT CEILING HEIGHT - 107.54"
   - 1.6. ROTATION RANGE AROUND VERTICAL AXIS - (-154° TO +180°)
   - 1.7. ROTATION RANGE AROUND HORIZONTAL AXIS - (±120°)
   - 1.8. VERTICAL AXIS MECHANICAL DETENTS - (-90°, 0°, +90°, +180°)
   - 1.9. HORIZONTAL AXIS MECHANICAL DETENTS - (-90°, 0°, +90°)
2. **EV800 - ELEVATING TABLE**
   - 2.1. TABLE TOP - 86.5" x 35.9"
   - 2.2. HEIGHT ADJUSTMENT - 21.75" TO 33.77"
   - 2.3. TABLE TOP MOVEMENT - ±19.75" LONGITUDINAL, ±2.5" TRANSVERSE
   - 2.4. BUCKY TRAVEL - ±8.5" LONGITUDINAL
3. **VS300 - WALL STAND**
   - 3.1. HEIGHT ADJUSTMENT - 15.5" TO 72"
   - 3.2. SLIDING TRAY ALLOWANCE - 22.5"
4. LIGHTS, SPRINKLER SYSTEMS AND VENTS ARE TO BE FLUSH MOUNTED.

GENERAL NOTES:

1. **CONTRACTOR TO CONFORM TO ALL LOCAL, STATE, AND NATIONAL STANDARDS FOR INSTALLATION.**

RADON MEDICAL IMAGING

DRAWING STATUS:

ISSUED FOR CONSTRUCTION

REVISION HISTORY

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BAB	BAB	BAB	01/17/2023

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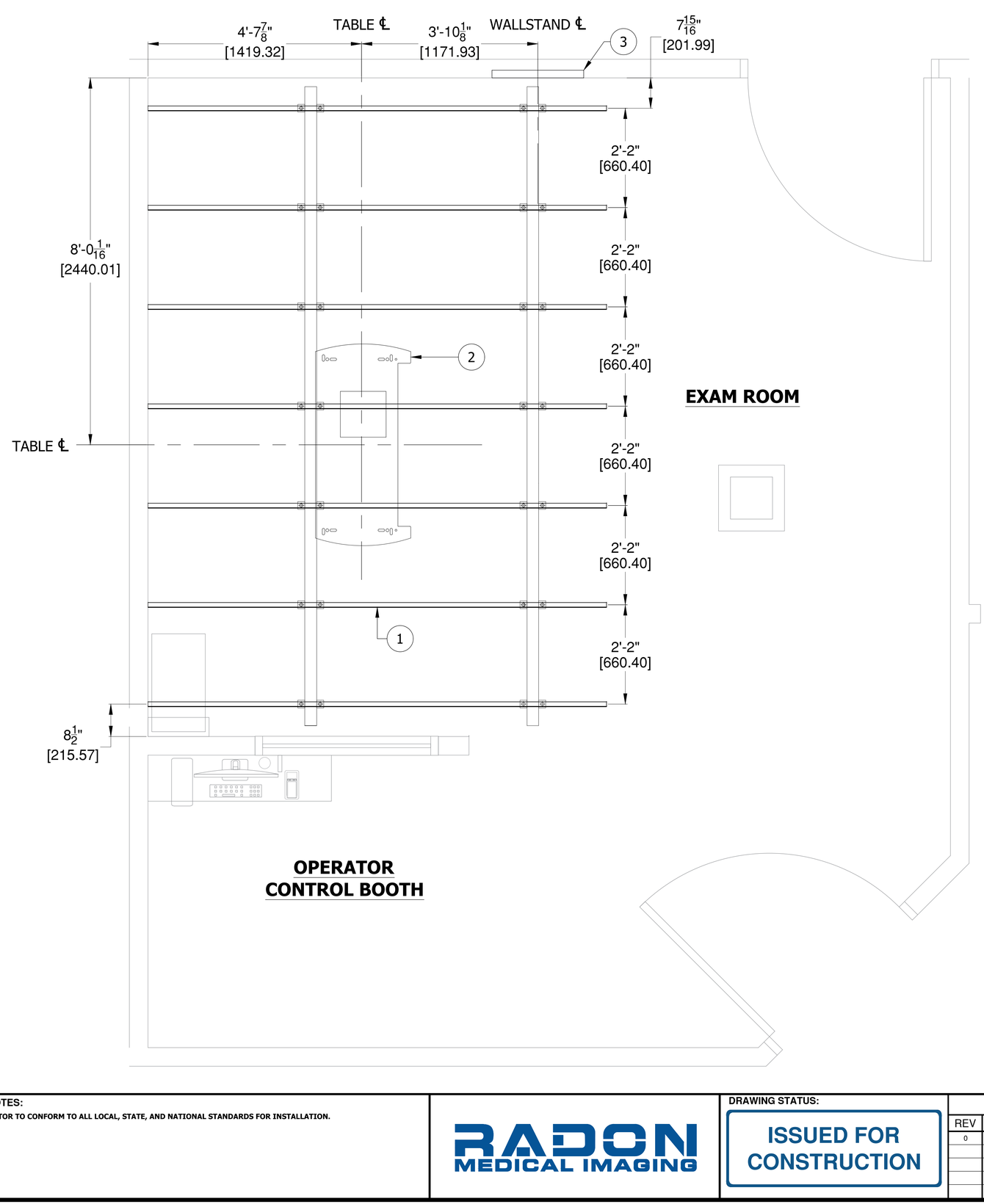
367 GEORGE STREET
BECKLEY, WV, 25801
(304)-225-0537

KDMC PAINTSVILLE
X-RAY ROOM 119
MOVEMENT
LAYOUT

COUNTY/PARISH: JOHNSON	STATE: KENTUCKY	REVISION
DRAWING NUMBER: 00018-201-103		0
DRAWING SCALE: NONE	SHEET: 1 OF 1	



EQUIPMENT LEGEND		
ITEM	DESCRIPTION	DETAIL #
1	UNISTRUT SUPPORT SYSTEM ABOVE FINISHED CEILING AS REQUIRED FOR OVERHEAD TUBE CRANE RAILS	S3
2	EV800 BOLT PATTERN	S1
3	2" x 8" x 24" BOARD FOR WALL STAND MOUNTING	S2

NOTES:

1. ANY STRUCTURAL DETAILS SHOWN ARE SAMPLE DETAILS BASED UPON STANDARD BUILDING PRACTICES AND ARE NOT INTENDED FOR CONSTRUCTION USE. ACTUAL CONSTRUCTION DETAILS, LOADING FACTORS, SPECIFICATIONS, AND ALL CALCULATIONS SHALL BE PREPARED BY A PROFESSIONAL STRUCTURAL ENGINEER AT THE HOSPITAL'S EXPENSE.
2. ALL OVERHEAD STRUCTURAL SUPPORT MEMBERS SHALL BE TRUE, SQUARE, LEVEL, PARALLEL, AND COPLANAR IN RESPECT TO EACH OTHER WITH ALL HORIZONTAL STRUCTURAL SUPPORT MEMBERS TO BE LOCATED AND SET WITH A WATER LEVEL OR TRANSIT.
3. THE OVERHEAD STRUCTURE SUPPORT SYSTEM SHALL BE FIXED, RIGID, AND BRACED FOR SWAY WITH A MAXIMUM DEFLECTION OF 0.625" AT ANY GIVEN POINT.
4. UNISTRUT CHANNEL SHALL BE FLUSH MOUNTED IN FINISHED CEILING UNLESS OTHERWISE SPECIFIED ON THESE DRAWINGS. ALL EXPOSED CHANNELS SHALL BE PAINTED THE SAME COLOR AS THE FINISHED CEILING. CONTRACTOR TO SUPPLY AND INSTALL CLOSURE STRIPS IN ALL EXPOSED UNISTRUT.
5. ALL UNISTRUT MEMBERS HAVE BEEN COORDINATED WITH THE X-RAY EQUIPMENT. ANY DEVIATION FROM THIS PAN SHALL BE APPROVED BY SIGNATURE THROUGH THE EQUIPMENT VENDOR.
6. DO NOT USE SCREWS TO FASTEN CEILING GRID TO UNISTRUT. AN ALTERNATE METHOD SUCH AS TACK OR SPOT WELDING, ETC. SHOULD BE CONSIDERED.
7. THE EQUIPMENT VENDOR OR VENDOR'S DESIGNER IS IN NO WAY RESPONSIBLE FOR THE DESIGN OR INSTALLATION OF THE SUPPORT STRUCTURE FOR ANY EQUIPMENT. THIS IS THE RESPONSIBILITY OF THE PURCHASER OR PURCHASER'S CONTRACTOR. IT IS STRONGLY RECOMMENDED THAT A STRUCTURAL ENGINEER IN CONJUNCTION WITH UNISTRUT REPRESENTATIVES COORDINATE ANY UNISTRUT SUPPORT STRUCTURE.

GENERAL NOTES:

1. **CONTRACTOR TO CONFORM TO ALL LOCAL, STATE, AND NATIONAL STANDARDS FOR INSTALLATION.**

RADON MEDICAL IMAGING

DRAWING STATUS:

ISSUED FOR CONSTRUCTION

REVISION HISTORY

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BAB	BAB	BAB	01/17/2023

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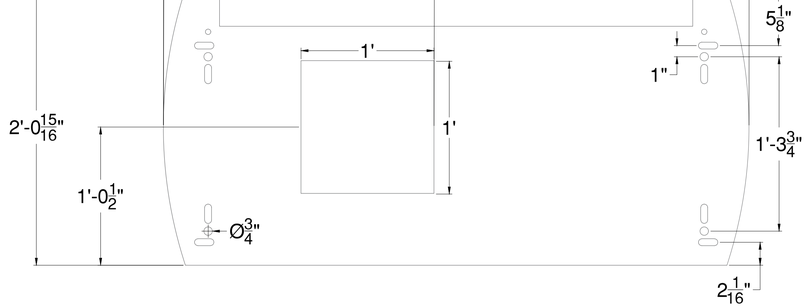
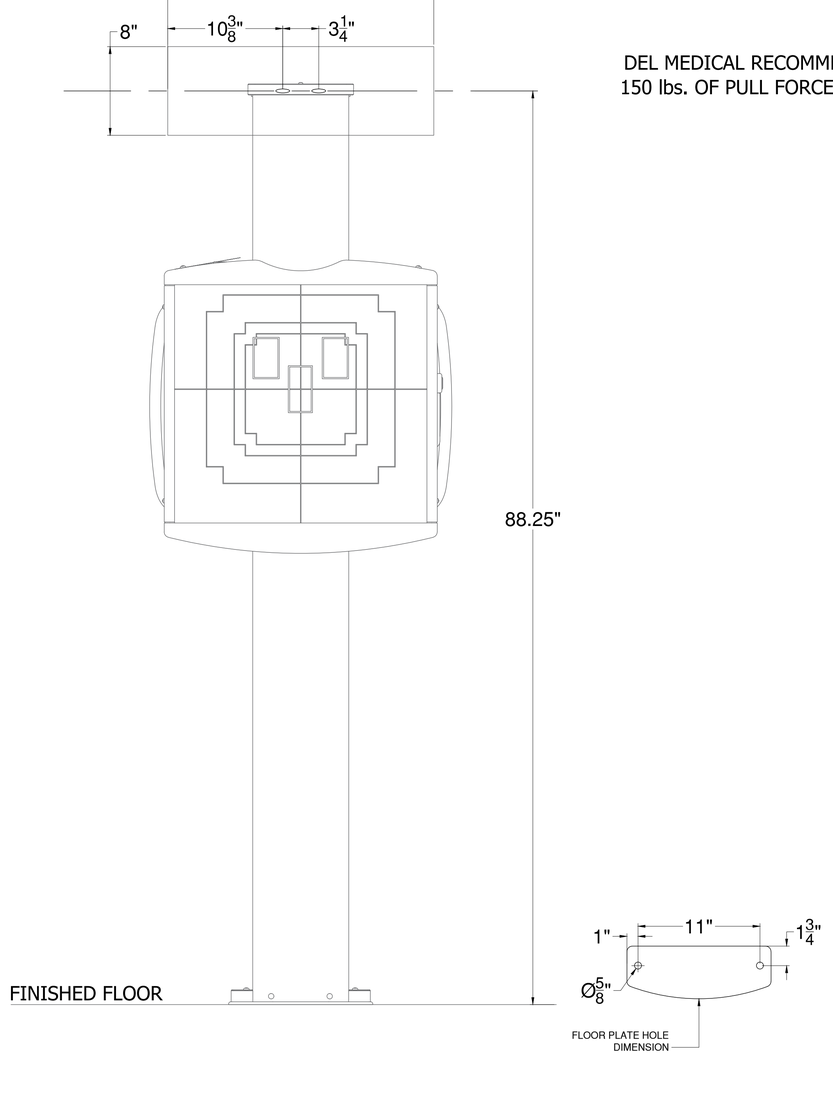
KDMC PAINTSVILLE
X-RAY ROOM 119
STRUCTURAL
LAYOUT

COUNTY/PARISH: JOHNSON	STATE: KENTUCKY	REVISION
DRAWING NUMBER: 00018-201-201		0
DRAWING SCALE: NONE	SHEET: 1 OF 1	



TOTAL BASE AREA - 8.8 SQ-FT
FLOOR LOADING - 56.8 LBS/SQ-FT
BOLT HOLE DIAMETER - 0.75" (4 LOCATIONS)

DETAIL - S1
DEL MEDICAL EV800 TABLE FLOOR BOLT PATTERN



DEL MEDICAL RECOMMENDS AT LEAST
150 lbs. OF PULL FORCE PER FASTENER

DETAIL - S2
DEL MEDICAL VS300 WALL STAND DETAIL

GENERAL NOTES:

1. CONTRACTOR TO CONFORM TO ALL LOCAL, STATE, AND NATIONAL STANDARDS FOR INSTALLATION.

RADON MEDICAL IMAGING

DRAWING STATUS:

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REVISION HISTORY

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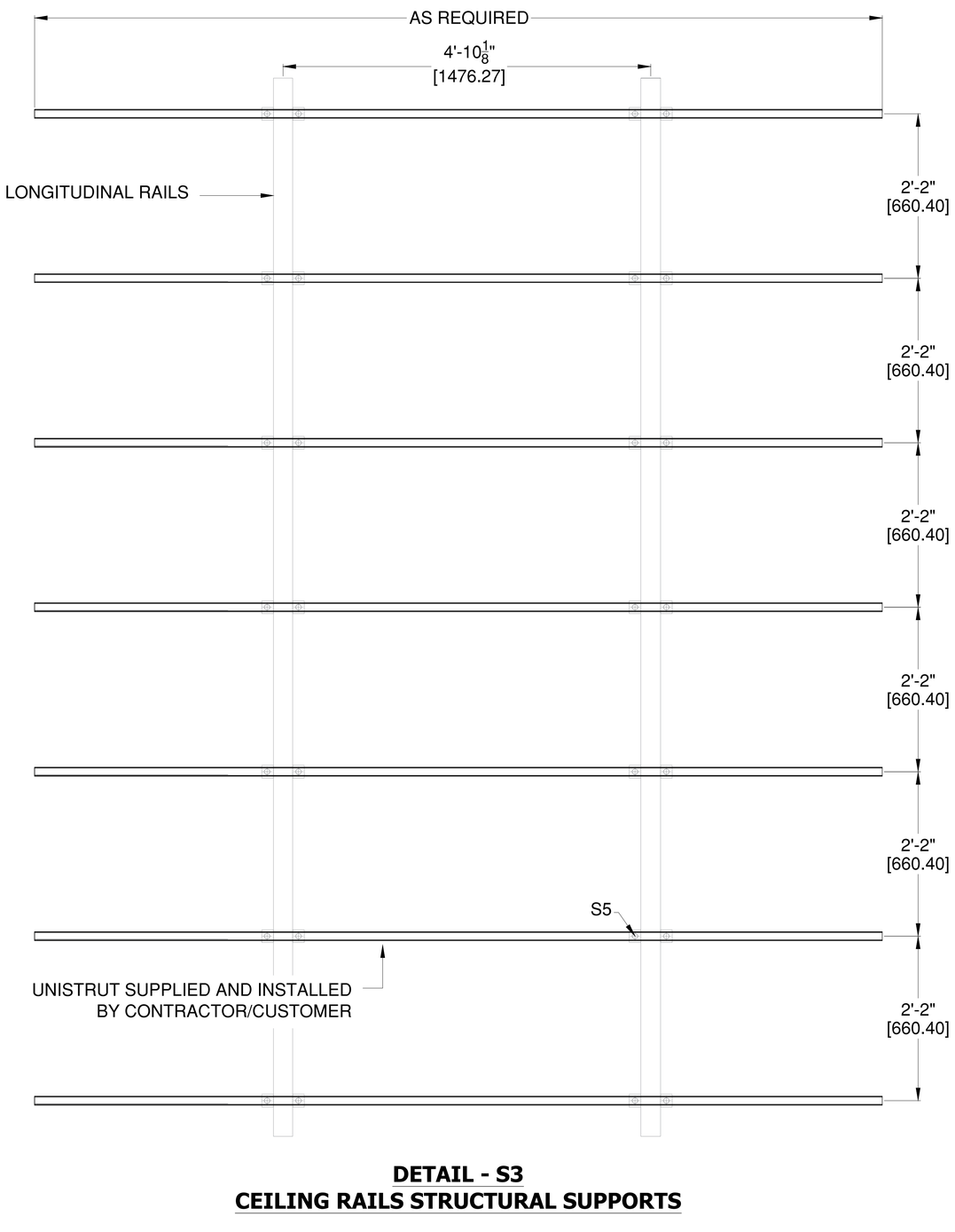
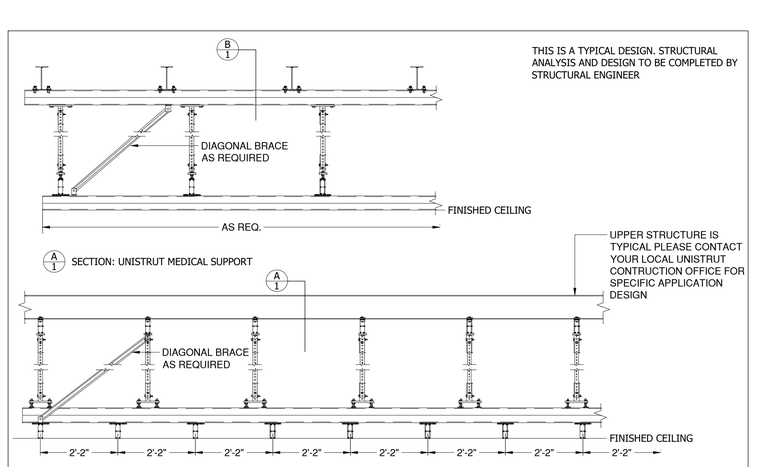
KDMC PAINTSVILLE
X-RAY ROOM 119
STRUCTURAL
DETAILS

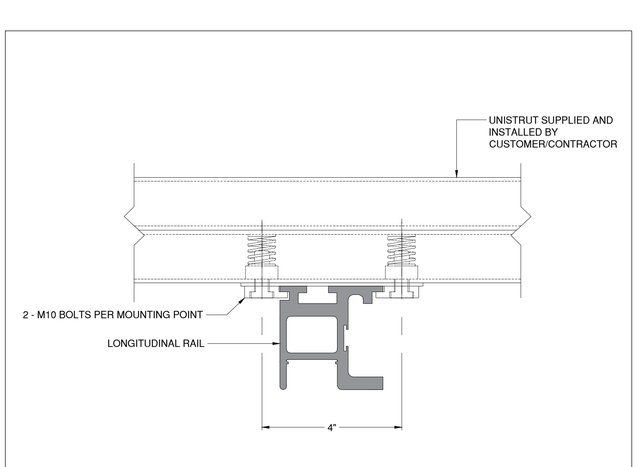
COUNTY/PARISH: JOHNSON	STATE: KENTUCKY	REVISION
DRAWING NUMBER: 00018-201-202		0
DRAWING SCALE: NONE	SHEET: 1 OF 1	



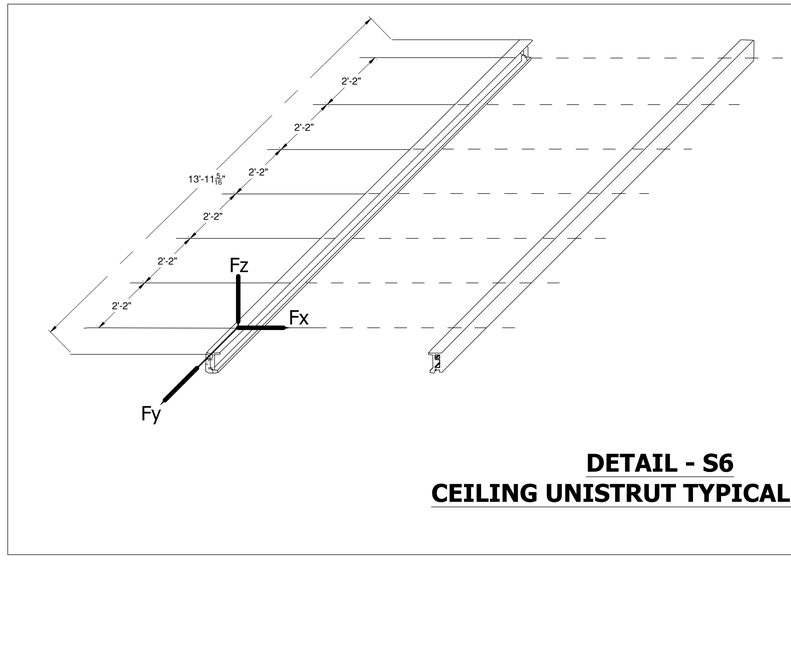
DETAIL - S3
CEILING RAILS STRUCTURAL SUPPORTS



DETAIL - S4
CEILING UNISTRUT TYPICAL DETAIL



DETAIL - S5
RAILING MOUNTING POINT TYPICAL DETAIL



NOTES:

AT LEAST 4 MOUNTING POINTS ARE REQUIRED FOR EACH STANDARD LONGITUDINAL RAIL.

THE SPECIFIED LOADS INCLUDE THE STATIC AND DYNAMIC LOADS UP TO A MOVEMENT SPEED OF 2ft/S IN THE Fy DIRECTION:

DIRECTION AXIS	HOLDING FORCE PER MOUNTING POINT
Fx	607 lbf
Fy	472 lbf
Fz	1574 lbf

TABLE SHOWS HOLDING FORCES PER MOUNTING POINT WITH A RAIL OVERHANG OF 7.9 IN. MAX

DETAIL - S6
CEILING UNISTRUT TYPICAL DETAIL

GENERAL NOTES:

1. CONTRACTOR TO CONFORM TO ALL LOCAL, STATE, AND NATIONAL STANDARDS FOR INSTALLATION.

RADON MEDICAL IMAGING

DRAWING STATUS:

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REVISION HISTORY

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0	ISSUED FOR CONSTRUCTION	BAB	BAB	BAB	01/17/2023

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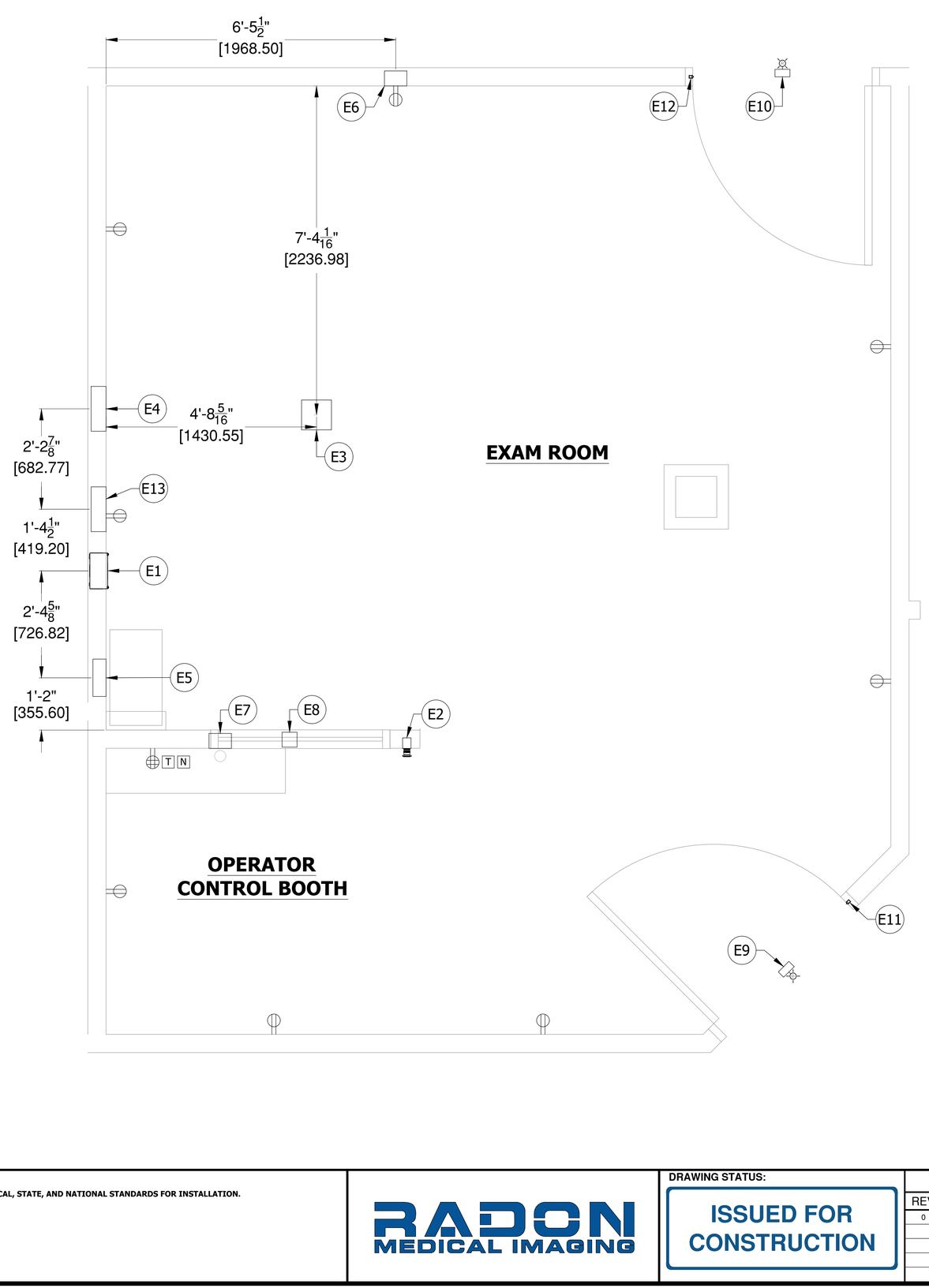
KDMC PAINTSVILLE
X-RAY ROOM 119
STRUCTURAL
DETAILS

COUNTY/PARISH: JOHNSON | STATE: KENTUCKY | REVISION

DRAWING NUMBER: 00018-201-203 | 0

DRAWING SCALE: NONE | SHEET: 1 OF 1



ELECTRICAL EQUIPMENT LEGEND

ITEM	DESCRIPTION
E1	240 VAC, 3 PHASE, 100A SHUNT TRIP CIRCUIT BREAKER AND ENCLOSURE. LOCATE PER NEC
E2	REMOTE SWITCH FOR SHUNT TRIP. RED MUSHROOM TYPE "EMERGENCY OFF" BUTTON (TWO LOCATIONS RECOMMENDED, INSTALL PER CODE REQUIREMENTS AND CUSTOMER REQUEST)
E3	8"x8"X4" DEEP JUNCTION BOX. SPLIT REMOVABLE COVER SHALL CONTAIN A 3" GROMMET OPENING. LOCATE COVER FLUSH WITH THE FLOOR
E4	12"x12"x4" DEEP JUNCTION BOX. SPLIT REMOVABLE COVER SHALL CONTAIN A 3" GROMMET OPENING. LOCATE JUST BELOW FINISHED CEILING.
E5	10"x3 1/2" DEEP FLUSH MOUNTED VERTICAL RISER. FLUSH MOUNT IN WALL AT FLOOR LEVEL AND TERMINATE ABOVE THE FINISHED CEILING TO ALLOW FOR CONDUIT CONNECTIONS. PROVIDE COVER PLATES FOR TROUGH PER DETAIL. PROVIDE DIVIDERS FOR LOW AND HIGH VOLTAGE. ENSURE PARTITIONS ARE NOT DIRECTLY BEHIND CABLE ACCESS HOLES.
E6	6x6"x4" DEEP JUNCTION BOX. SPLIT REMOVABLE COVER SHALL CONTAIN A 2" GROMMET OPENING. LOCATE COVER 3' ABOVE FINISHED FLOOR
E7	6x6"x4" DEEP JUNCTION BOX. SPLIT REMOVABLE COVER SHALL CONTAIN A 2" GROMMET OPENING. LOCATE COVER 6" BELOW COUNTER TOP.
E8	4"x4"x2" JUNCTION BOX TO BE FLUSH MOUNT WITH CEILING ABOVE OPERATOR CONTROL BOOTH WALL FOR WIRELESS ACCESS POINT
E9	4"x4"x2" BOX FOR "X-RAY IN USE" WARNING SIGN. EXACT LOCATION TO BE DETERMINED BY OTHERS. FLUSH MOUNT IN WALL OR CEILING. (INSTALL ONLY IF REQUIRED BY PREVAILING CODE OR REQUESTED BY CUSTOMER)
E10	4"x4"x2" BOX FOR "X-RAY IN USE" WARNING SIGN. EXACT LOCATION TO BE DETERMINED BY OTHERS. FLUSH MOUNT IN WALL OR CEILING. (INSTALL ONLY IF REQUIRED BY PREVAILING CODE OR REQUESTED BY CUSTOMER)
E11	DOOR ACTIVATED SWITCH. CONTRACTOR TO INSTALL SWITCH (INSTALL ONLY IF REQUIRED BY PREVAILING CODE OR REQUESTED BY CUSTOMER)
E12	DOOR ACTIVATED SWITCH. CONTRACTOR TO INSTALL SWITCH (INSTALL ONLY IF REQUIRED BY PREVAILING CODE OR REQUESTED BY CUSTOMER)
E13	120/240 VAC, 100A, 1ϕ DISTRIBUTION PANEL TO FEED X-RAY ROOM. LOCATE PER NEC.

NOTES:

1. ALL FLUSH MOUNTED BOXES/ ENCLOSURES TO HAVE OVERSIZED COVERS TO CONCEAL OPENING AROUND THE BOX.
2. RECEPTACLES ARE TO BE LOCATED BY CONTRACTOR PER LOCAL/NATIONAL CODE REQUIREMNENTS. LOCATIONS PROVIDED ALLOW FOR ALL CONNECTIONS FOR X-RAY EQUIPMENT. ANY CHANGES IN RECEPTACLE LOCATIONS SHALL BE DISCUSSED WITH X-RAY EQUIPMENT VENDOR BEFORE BEING MOVED.
3. REMOTE SWITCH FOR SHUNT TRIP LOCATION TO BE LOCATED PER LOCAL/NATIONAL CODE REQUIREMENTS

LEGEND

- DUPLEX RECEPTACLE
- QUAD RECEPTACLE
- N — RJ-45 NETWORK CONNECTION
- T — TELEPHONE JACK

GENERAL NOTES:

1. CONTRACTOR TO CONFORM TO ALL LOCAL, STATE, AND NATIONAL STANDARDS FOR INSTALLATION.

RADON MEDICAL IMAGING

DRAWING STATUS:

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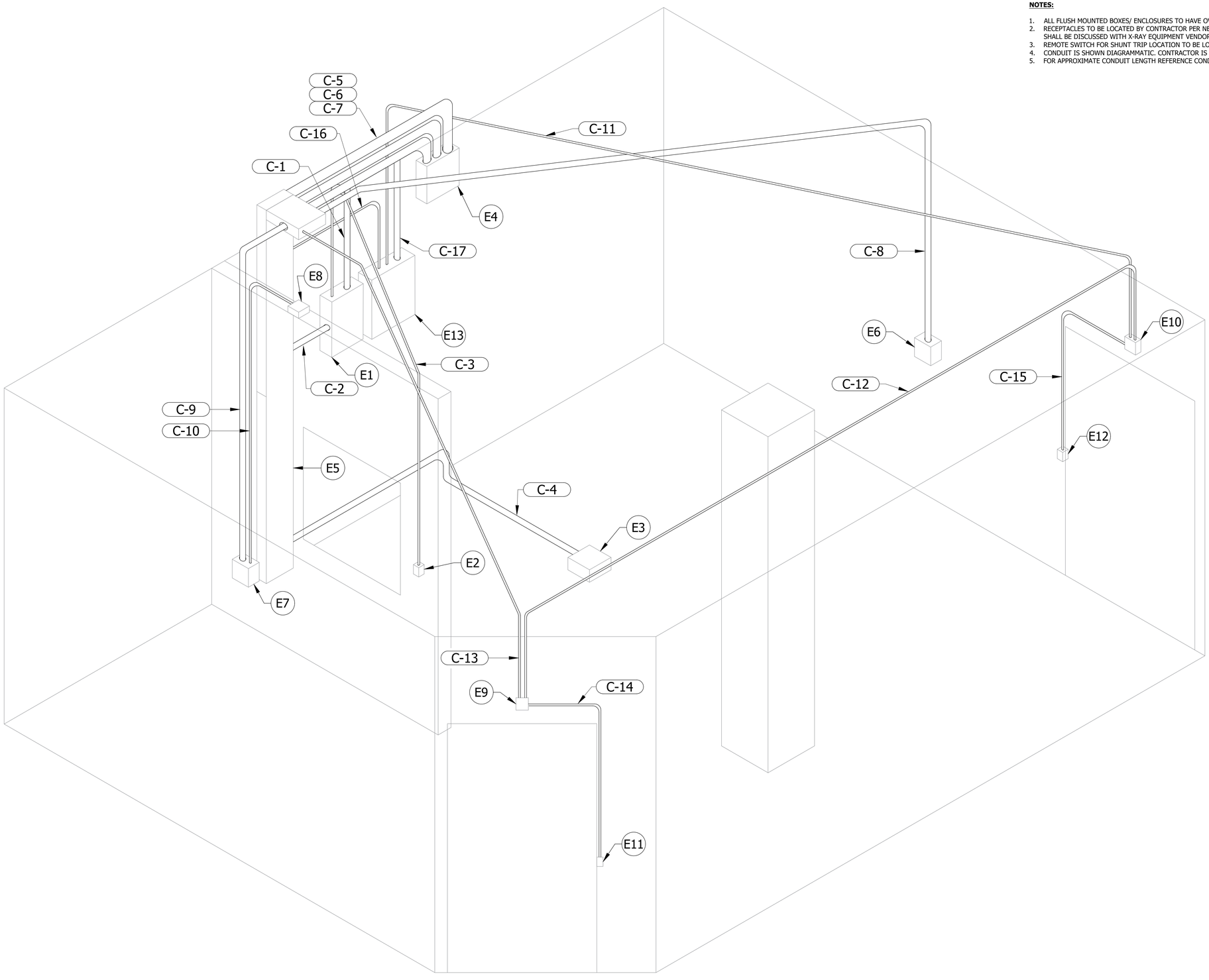
KDMC PAINTSVILLE
X-RAY ROOM 119
ELECTRICAL
LAYOUT

COUNTY/PARISH: JOHNSON | STATE: KENTUCKY | REVISION
DRAWING NUMBER: 00018-201-301 | 0
DRAWING SCALE: NONE | SHEET: 1 OF 1

NOTES:

1. ALL FLUSH MOUNTED BOXES/ ENCLOSURES TO HAVE OVERSIZED COVERS TO CONCEAL OPENING AROUND THE BOX.
2. RECEPTACLES TO BE LOCATED BY CONTRACTOR PER NEC. LOCATIONS PROVIDED ALLOW FOR ALL CONNECTIONS FOR X-RAY EQUIPMENT. ANY CHANGES IN RECEPTACLE LOCATIONS SHALL BE DISCUSSED WITH X-RAY EQUIPMENT VENDOR BEFORE BEING MOVED.
3. REMOTE SWITCH FOR SHUNT TRIP LOCATION TO BE LOCATED PER LOCAL/NATIONAL CODE REQUIREMENTS
4. CONDUIT IS SHOWN DIAGRAMMATIC. CONTRACTOR IS TO ROUTE CONDUIT IN THE SHORTEST ROUTE POSSIBLE IN ACCORDANCE WITH NEC.
5. FOR APPROXIMATE CONDUIT LENGTH REFERENCE CONDUIT SCHEDULE.



CONDUIT CALLOUTS AND SIZES

C-1	TO BE DETERMINED BY CONTRACTOR
C-2	2" EMT
C-3	1/2" EMT
C-4	2" EMT
C-5	3" EMT
C-6	2-1/2" EMT
C-7	2-1/2" EMT
C-8	2" EMT
C-9	2" EMT
C-10	1/2" EMT
C-11	1/2" EMT
C-12	1/2" EMT
C-13	1/2" EMT
C-14	1/2" EMT
C-15	1/2" EMT
C-16	1/2" EMT
C-17	TO BE DETERMINED BY CONTRACTOR
C-18	2" LFMC (FIELD DETERMINED)
C-19	2" LFMC (FIELD DETERMINED)

GENERAL NOTES:

1. CONTRACTOR TO CONFORM TO ALL LOCAL, STATE, AND NATIONAL STANDARDS FOR INSTALLATION.

RADON MEDICAL IMAGING

DRAWING STATUS:

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REVISION HISTORY

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0	ISSUED FOR CONSTRUCTION	BAB	BAB	BAB	01/17/2023

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KDMC PAINTSVILLE
X-RAY ROOM 119
CONDUIT
LAYOUT

COUNTY/PARISH: JOHNSON | STATE: KENTUCKY | REVISION
DRAWING NUMBER: 00018-201-302 | 0
DRAWING SCALE: NONE | SHEET: 1 OF 1

GENERATOR POWER REQUIREMENTS

GENERATOR MODEL NUMBER	GENERATOR SERIES	MAINS VOLTAGE, PHASE	MIN. RECOMMENDED MAINS DISCONNECT TO GENERATOR (15ft MAX)	GENERATOR MOMENTARY LINE CURRENT	MINIMUM RECOMMENDED GENERATOR SERVICE RATING	MINIMUM RECOMMENDED DISTRIBUTION TRANSFORMER RATING	MINIMUM RECOMMENDED GROUND WIRE SIZE	APPARENT MAINS RESISTANCE
CM 65	65kW	480 VAC , 3P	#6 AWG*	105 A	100 A	85kVA	#6 AWG	0.19 Ω

* MAXIMUM WIRE GAUGE IS #2 AWG Cu

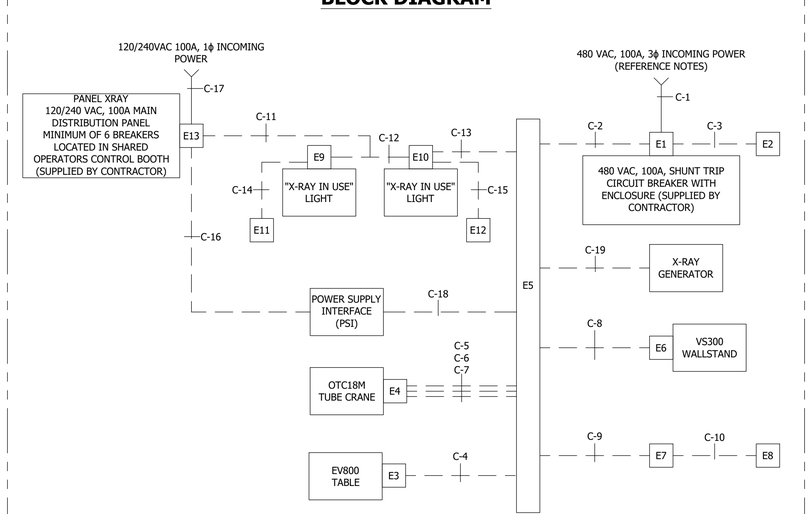
NOTES:

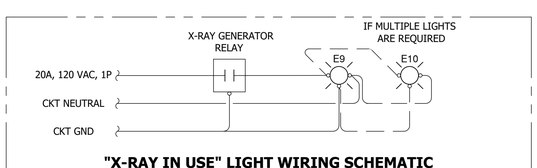
1. ALL WIRES TO BE THHN OR TFFN STRANDED COPPER THERMOPLASTIC 600 VOLT OR EQUIVALENT
2. IF RUN FROM DISCONNECT TO X-RAY GENERATOR EXCEEDS 15', INCREASE WIRE SIZE PROPORTIONALLY.
3. CONDUIT LENGTHS ARE APPROXIMATE. ROUTING TO BE DETERMINED BY ELECTRICAL CONTRACTOR FOR BEST AND SHORTEST ROUTING.
4. CABLE LENGTHS ARE APPROXIMATE. LENGTHS INCLUDE COILED LENGTH IF REQUIRED.

IMPORTANT POWER NOTES:

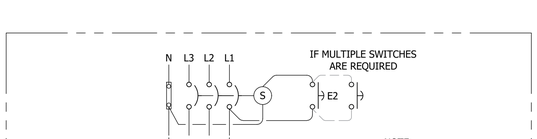
1. POWER LINES FOR X-RAY SYSTEMS SHALL BE DEDICATED LINES RUN FROM NEAREST HOSPITAL MAIN DISTRIBUTION TRANSFORMER. UNDER NO CIRCUMSTANCES SHALL ANY OTHER ELECTRICAL EQUIPMENT BE CONNECTED TO THESE LINES NOW OR IN THE FUTURE.
   - 1.1. LINE REQUIREMENTS
     - 1.1.1. NO TRANSIENTS (IMPULSES FROM 0.5 TO 800 MICROSECONDS) THAT EXCEED 30% OF NOMINAL PEAK LINE VOLTAGE AS MEASURED BY A DRANETZ POWER LINE ANALYZER (MODEL 606B OR EQUIVALENT) WITH THE SYSTEM IN STANDBY SHALL OCCUR.
     - 1.1.2. TRANSIENTS EQUAL TO OR LESS THAN 30% OF NOMINAL PEAK LINE VOLTAGE SHALL NOT OCCUR MORE THAN ONCE PER HOUR OR EXCEED MORE THAN 12 IMPULSES PER 24-HOUR PERIOD.
     - 1.1.3. INCOMING LINE TO MAIN DISCONNECT SHALL MAINTAIN -5%, +10% VOLTAGE REGULATION UNDER INTERMITTENT, NO LOAD TO FULL LOAD CONDITIONS.
     - 1.1.4. ELECTRICAL GROUNDING RESISTANCE LESS THAN 10 OHMS.
2. IF ANY OF THE ABOVE POWER SPECIFICATIONS REGARDING LINE TRANSIENTS, NOMINAL LINE VOLTAGE, AND VOLTAGE REGULATION CANNOT BE MET, THE FOLLOWING CORRECTIVE ACTION MUST BE TAKEN:
   - 2.1. NOISE AND TRANSIENTS
     - 2.1.1. TRANSIENTS AND NOISE SHALL BE REMOVED NY THE USE OF A TRANSIENT SUPPRESSOR AND/OR ISOLATION TRANSFORMER (EITHER FARADAY TYPE OR ULTRA-HIGH TYPE) DEPENDING ON THE SEVERITY OF THE PROBLEM.
   - 2.2. NOMINAL LINE VOLTAGE
     - 2.2.1. A LINE MATCHING TRANSFORMER MUST BE UTILIZED
   - 2.3. VOLTAGE REGULATION
     - 2.3.1. A REGULATION TRANSFORMER OR LINE CONDITIONER DEPENDING ON THE SEVERITY OF THE PROBLEM SHALL BE EMPLOYED TO MAINTAIN LINE VOLTAGE WITHIN 5% UNDER INTERMITTENT, NO LOAD TO FULL LOAD CONDITIONS.
   - 2.4. GROUNDING
     - 2.4.1. DEPENDING ON THE SEVERITY OF THE PROBLEM, INCREASE GROUND RUNS TO FACILITY DISTRIBUTION POINT OR IN SEVERE CONDITIONS, NEW GROUND RODS TO BE INSTALLED AS REQUIRED.

BLOCK DIAGRAM





"X-RAY IN USE" LIGHT WIRING SCHEMATIC



EMERGENCY OFF SWITCH WIRING SCHEMATIC

CONDUIT SCHEDULE

CONDUIT NUMBER	CONDUIT SIZE	CONDUIT LENGTH	CONDUIT % FILL	CONDUIT TYPE	CABLE TYPE	CABLE CONDUCTOR QTY.	CABLE O.D.	CABLE APPROX. LENGTH	VOLTAGE	ORIGINATION	DESTINATION	DESCRIPTION	REMARKS
C-1	TO BE DETERMINED BY CONTRACTOR								480VAC	TBD BY CONTRACTOR	E1	480VAC, 3 PHASE, 100A INCOMING POWER	REFERENCE NOTES.
C-2	2"	5'	5.95%	EMT	#6 AWG	4	0.384	15'	480VAC	E1	E5	480VAC, 100A MAIN WITH SHUNT TRIP DISTRIBUTION FOR GENERATOR POWER	CONTRACTOR TO CONNECT TO 100A SHUNT TRIP CIRCUIT BREAKER AND ROUTE CABLE TO E5. LEAVING 10' COILED
C-3	1/2"	20'	-	EMT	CONTRACTOR TO SUPPLY			35'	-	E1	E2	EMERGENCY OFF SWITCH CIRCUIT	CONTRACTOR TO MAKE ALL CONNECTIONS. REFERENCE "EMERGENCY OFF SWITCH WIRING SCHEMATIC"
C-4	1/2"	15'	-	EMT	VARIES (MANUFACTURER SUPPLIED CABLES)			40-50'	-	E5	E3	TABLE POWER AND COMMUNICATION	CONTRACTOR TO LEAVE PULL STRINGS
C-5	3"	10'	-	EMT	VARIES (MANUFACTURER SUPPLIED CABLES)			40-50'	-	E5	E4	TUBE CRANE COMMUNICATION CABLES	CONTRACTOR TO LEAVE PULL STRINGS
C-6	2-12"	10'	-	EMT	VARIES (MANUFACTURER SUPPLIED CABLES)			40-50'	-	E5	E4	TUBE CRANE HV POWER CABLE	CONTRACTOR TO LEAVE PULL STRINGS
C-7	2-1/2"	10'	-	EMT	VARIES (MANUFACTURER SUPPLIED CABLES)			40-50'	-	E5	E4	TUBE CRANE HV POWER CABLES	CONTRACTOR TO LEAVE PULL STRINGS
C-8	2"	25'	-	EMT	CONTRACTOR TO SUPPLY			40'	-	E5	E6	WALL STAND POWER AND COMMUNICATION	CONTRACTOR TO LEAVE PULL STRINGS
C-9	2"	15'	-	EMT	VARIES (MANUFACTURER SUPPLIED CABLES)			50'	-	E5	E7	CONSOLE CABLES	CONTRACTOR TO LEAVE PULL STRINGS
C-10	1/2"	10'	-	EMT	VARIES			15'	-	E7	E8	WIRELESS ACCESS POINT	CONTRACTOR TO LEAVE PULL STRINGS
C-11	1/2"	30'	-	EMT	CONTRACTOR TO SUPPLY			40'	-	E13	E10	"X-RAY IN USE" CIRCUIT	CONTRACTOR TO ROUTE CONDUIT AND CABLE LEAVING 10' IN E5. X-RAY IN USE SCHEMATIC REFERENCE SCHEMATIC
C-12	1/2"	30'	-	EMT	CONTRACTOR TO SUPPLY			50'	-	E9	E10	"X-RAY IN USE" CIRCUIT	CONTRACTOR TO ROUTE CONDUIT AND CABLE LEAVING 10' IN E5. X-RAY IN USE SCHEMATIC REFERENCE SCHEMATIC
C-13	1/2"	25'	-	EMT	CONTRACTOR TO SUPPLY			40'	-	E5	E10	"X-RAY IN USE" CIRCUIT	CONTRACTOR TO ROUTE CONDUIT AND CABLE LEAVING 10' IN E5. X-RAY IN USE SCHEMATIC REFERENCE SCHEMATIC
C-14	1/2"	10'	9.25%	RMC	#14 AWG	3	0.111	40'	120VAC	E9	E11	DOOR INTERLOCK SWITCH	CONTRACTOR TO CONNECT SWITCH AND ROUTE CABLE TO E5. LEAVING 10' COILED IN E5
C-15	1/2"	10'	9.25%	RMC	#14 AWG	3	0.111	40'	120VAC	E10	E12	DOOR INTERLOCK SWITCH	CONTRACTOR TO CONNECT SWITCH AND ROUTE CABLE TO E5. LEAVING 10' COILED IN E5
C-16	1/2"	10'	-	EMT	CONTRACTOR TO SUPPLY			40'	120VAC	E13	PSI	120VAC, 15A POWER FOR PSI	CONTRACTOR TO CONNECT SWITCH AND ROUTE CABLE TO E5. LEAVING 10' COILED IN E5
C-17	TO BE DETERMINED BY CONTRACTOR								120VAC	TBD BY CONTRACTOR	PSI	120/240 VAC, 100A, DISTRIBUTION PANEL FOR X-RAY ROOMS 1513 & 1517 IN SHARED OPERATOR CONTROL BOOTH	CONTRACTOR TO ROUTE NECESSARY CONDUIT AND CABLE. LEAVING 10' COILED
C-18	2"	F.D.	-	LFMC	VARIES				-	E5	PSI	CONDUIT FOR ALL PSI CABLES	CONTRACTOR TO LEAVE PULL STRINGS
C-19	2"	F.D.	-	LFMC	VARIES				-	E5	GENERATOR	CONDUIT FOR ALL GENERATOR CABLES	

GENERAL NOTES:

1. CONTRACTOR TO PROVIDE A COMPLETE ELECTRICAL INSTALLATION IN ACCORDANCE TO THE LATEST VERSION OF THE NEC
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY LABOR, EQUIPMENT AND MATERIAL TO PROVIDE COMPLETE INSTALLATION

RADON MEDICAL IMAGING

DRAWING STATUS:

ISSUED FOR CONSTRUCTION

REVISION HISTORY

REV	DESCRIPTION	DRAWN	CHECKED	APPROVED	DATE
0	ISSUED FOR CONSTRUCTION	BAB	BAB	BAB	01/17/2023

Baughan Engineering
367 GEORGE STREET
BECKLEY, WV. 25801
(304)-225-0537

KDMC PAINTSVILLE
X-RAY ROOM 119
CONDUIT SCHEDULE

COUNTY/PARISH: JOHNSON | STATE: KENTUCKY | REVISION
DRAWING NUMBER: 00018-201-303 | 0
DRAWING SCALE: NONE | SHEET: 1 OF 1

February 15, 2023

James Boggs
King's Daughters Health System
2201 Lexington Ave.
Ashland, KY 41101

RE: Radiographic Suite Shielding Design Evaluation – King's Daughters Medical Center – Medical Office Building Paintsville
366 N. Mayo Trail, Paintsville KY 41240

Dear James Boggs,

Please find enclosed the radiation shielding design evaluation for your Radiographic suite. The first page of the shielding plan summarizes the total minimum required shielding for each applicable room barrier. Additional information supporting the shielding recommendations constitutes the remaining sheets. You should retain a copy of this shielding design evaluation at your facility in the event that a regulatory agency wishes to verify the room's shielding. We expect that a regulatory audit of the installation will take place, and an inspector will likely request this document at that time.

Thank you for the opportunity to take care of your radiation protection needs. Should you have any questions or comments about this shielding design, we would be happy to speak with you at your convenience. Please feel free to contact us at (866) 275-9378 or at shielding@westphysics.com.

Thank you,

Matthew Fitzmaurice, Ph.D., DABR, DABSNM, CHP
Chief Medical Physicist

David Fair, B.S.
Medical Physicist

Enclosure: Radiation Shielding Design Evaluation

Radiation Shielding Design Evaluation

Performed by

Matthew Fitzmaurice, Ph.D., DABR, DABSNM, CHP

Site: King's Daughters Medical Center
Medical Office Building Paintsville
366 N. Mayo Trail
Paintsville, KY 41240

Room: X-Ray # 119

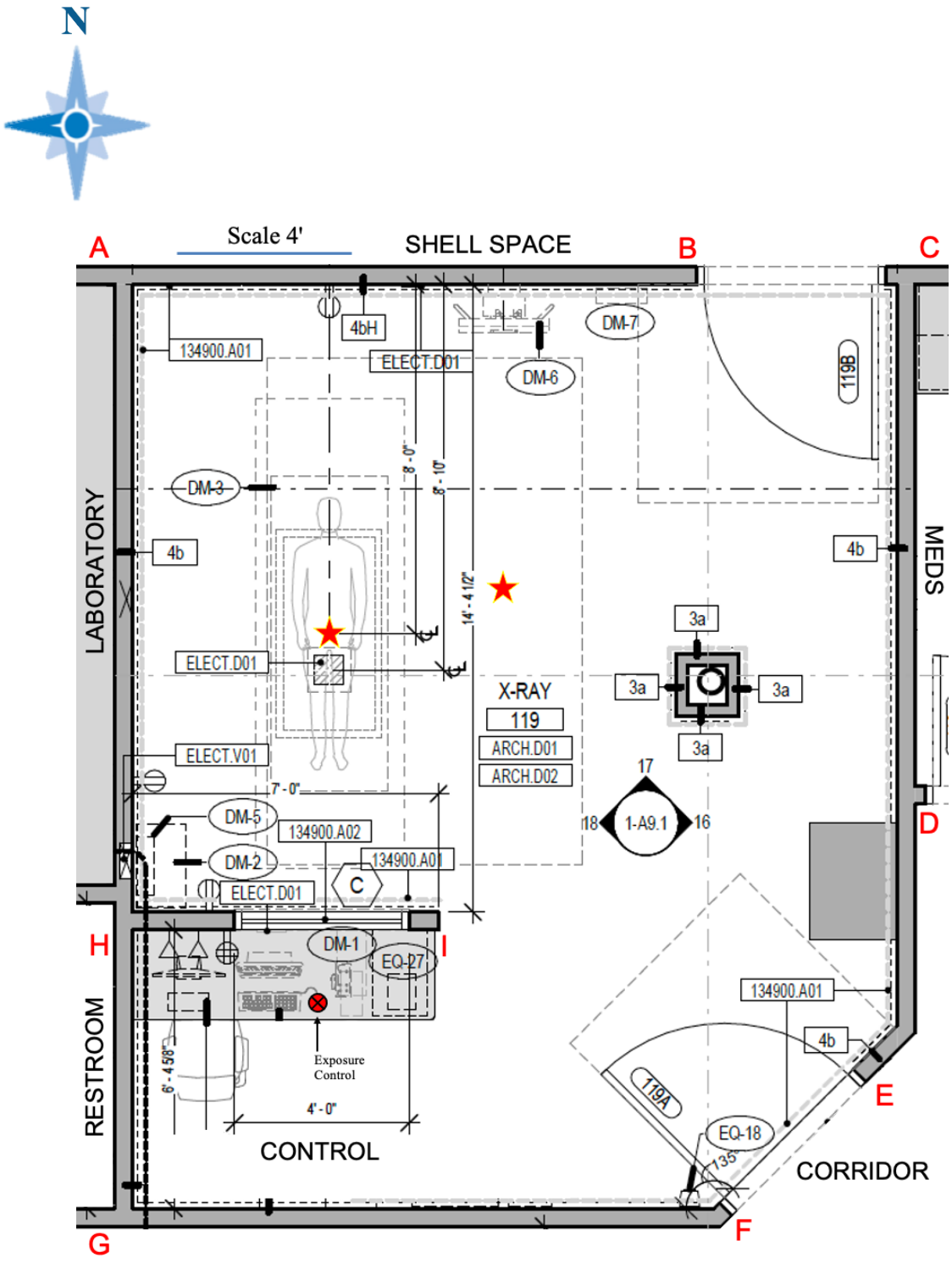
Unit: Del Medical OTC 18

Shielding Design Results:

Barrier	Function of Space Behind Barrier	Controlled or Uncontrolled	Occupancy Factor (T)	Distance (ft, in)	Total Minimum Shielding Required
A-B	Shell Space	Uncontrolled	1.000†	7' 5-1/8"	**1/16" lead or equivalent**
B-C	Shell Space (Door)	Uncontrolled	1.000†	4' 8"	**1/32" lead or equivalent**
C-D	Meds Room	Uncontrolled	1.000	9' 5-3/4"	**1/32" lead or equivalent**
D-E	Corridor	Uncontrolled	0.200	10' 8-1/2"	**1/64" lead or equivalent**
E-F	Corridor Door	Uncontrolled	0.125	14' 3/4"	**1/64" lead or equivalent**
F-G	Corridor	Uncontrolled	0.200	13' 8-1/8"	**7/8" drywall** (Standard 2 × 5/8" drywall panel construction sufficient)
G-H	Restroom	Uncontrolled	0.200	8' 5-1/2"	**1/64" lead or equivalent** (Pre-shielding from Barrier H-I sufficient)
H-I	Control Room	Controlled	1.000	6' 10-1/4"	**1/64" lead or equivalent**
H-A	Laboratory	Uncontrolled	1.000	4' 11-3/8"	**3/64" lead or equivalent**
Floor	Slab	N/A	N/A	N/A	**N/A**
Ceiling	Roof	Uncontrolled	0.025	9' 0"	**1/64" lead, 3/8" standard density concrete, 25-gauge steel, or equivalent***

†Shell spaces are given an occupancy factor of 1.0 to allow for any future use.
***Required concrete ceiling may already be in place. Please double check concrete ceiling thickness.**

Facility Diagram:



Note: Cardinal directions are approximate only. Shielding should be installed carefully and with respect to the function of the surrounding areas to ensure proper barrier thicknesses.

Other Recommendations and Requirements

- The registrant must ensure that each radiation machine is labeled in a conspicuous manner, which cautions individuals that radiation is produced when it is energized.
- Leaded glass of equivalent lead thickness may be used where appropriate.
- **All barrier wall shielding shall extend from floor-to-ceiling unless the required amount of ceiling shielding is satisfied in the X-ray room AND in the ceiling of adjacent rooms (refer to the "Shielding Design Results" table for the minimum ceiling shielding requirement).**
- **If the X-ray room ceiling and the ceiling of adjacent rooms meets the minimum requirement specified in the "Shielding Design Results" table, then all barrier wall shielding shall extend to a height of at least 7 feet.**
- All shielded barriers, including view windows and frames, doors and door frames, should be of the specified shielding equivalencies or greater and should have no voids. Joints between lead sheets should be constructed so that their surfaces are in contact and with an overlap of at least 1 cm.
- Any penetrations in a given barrier should be designed to afford the same shielding equivalency as that specified for the barrier. For example, pipes, electrical outlets, or other barrier penetrations must be wrapped, covered, or backed up with appropriate shielding-equivalent material.
- If any of the above barriers ***already meets*** the ***"total minimum required shielding"*** amount, stated above, no additional shielding is needed.
- If any of the above barriers' existing shielding ***falls short*** of the ***"total minimum required shielding"*** amount, then enough shielding must be added to meet the total requirement.
- Doors, windows, frames, conduits and wall openings must have the same lead equivalency as the walls supporting them.
- The operator shall be allotted no less than 7.5 ft^2 of unobstructed floor space in the booth, exclusive of any encumbrance by the X-Ray control panel such as overhangs, cables, etc.
- Viewing system(s) shall be provided to permit continuous observation of the patient during irradiation and shall be located so that the operator can observe the patient from the control panel.
- The X-Ray control shall be permanently mounted in a protected area so that the operator must remain in that protected area during the entire exposure. This control shall be at least 40 inches from any point subject to direct scatter, leakage or primary beam radiation. If a mobile barrier is used to create the protected area, the barrier must be permanently mounted to the wall and/or floor.
- This shielding design is for the equipment layout and occupancy of adjacent areas as indicated on the attached drawing. If any of these parameters are changed, the shielding design will require re-evaluation by a qualified physicist.
- The shielding requirements specified in this plan review were based on the stated conservative workload(s). If the patient volume increases significantly, the shielding will require re-evaluation by a qualified physicist.
- A qualified contractor with experience in shielded construction should be utilized and a follow-up inspection performed to verify the adequacy of the installation after completion.

Additional Shielding Design Calculation Information

King's Daughters Medical Center – Medical Office Building Paintsville

All calculations were performed in accordance with industry-standard guidance as detailed in NCRP Report No. 147, "Structural Shielding Design and Evaluation for Medical X-Ray Imaging Facilities." Wherever possible, vendor and model-specific information for the x-ray units and/or radioactive sources in question were used. Where appropriate, calculations account for attenuation by primary beam pre-shielding using the equivalent thickness values listed in Table 4.6 of NCRP Report No. 147. Patient throughput estimates as well as workload kVp distributions were used in the following calculations, based on average values contained in NCRP Report No. 147. The recommended shielding amounts are specified in a highly conservative fashion, which will allow for a broad range of patient workloads, technique factors, etc. without creating a radiation exposure issue. However, if any major changes occur (i.e., replacement of the x-ray unit, facility/x-ray room structural layout and/or changes in the usage of the x-ray room surrounding areas), the facility administration is advised to seek the services of a qualified medical physicist to determine whether shielding additions would be needed in those cases.

All shielding design goals, occupancy factors and workloads are as specified in NCRP Report No. 147 unless stated otherwise.

Equipment Specifications and Workload (W):

Equipment Type	kVp (maximum)	Patients per Week	mA-min per patient	Workload (W)
Del Medical OTC 18	150	160	2.5	**400 mA-min/week**

Shielding Design Goals (P):

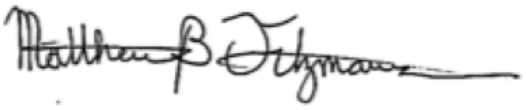
Area Type	Shielding Design Goal (P) (mGy/week)
Controlled	0.10
Uncontrolled	0.02

Methodology:
For this shielding design evaluation, the fitting parameter method for shielding calculation was employed, based on manufacturer data and information provided by the user. The room will be used primarily for general purpose exams directed towards a table-top and chest bucky image receptor. Therefore, barriers in this room are considered to be both primary and secondary barriers; scatter and leakage radiation values were incorporated. This shielding evaluation assumed a conservative number of exposures per week, based on facility estimates of its typical weekly workload. Equation A.3 of NCRP Report No. 147 was used to compute required barrier thicknesses. Fitting parameters for this equation for lead, concrete, glass, and gypsum wallboard thicknesses were found in Tables B.1 and C.1. Patient exam technique was based upon the typical workload distributions defined in Table 4.3 of NCRP Report No. 147 along with facility estimates.

All barrier thickness calculations were performed in Excel. These are available from West Physics and may be furnished upon request of the detailed calculations.

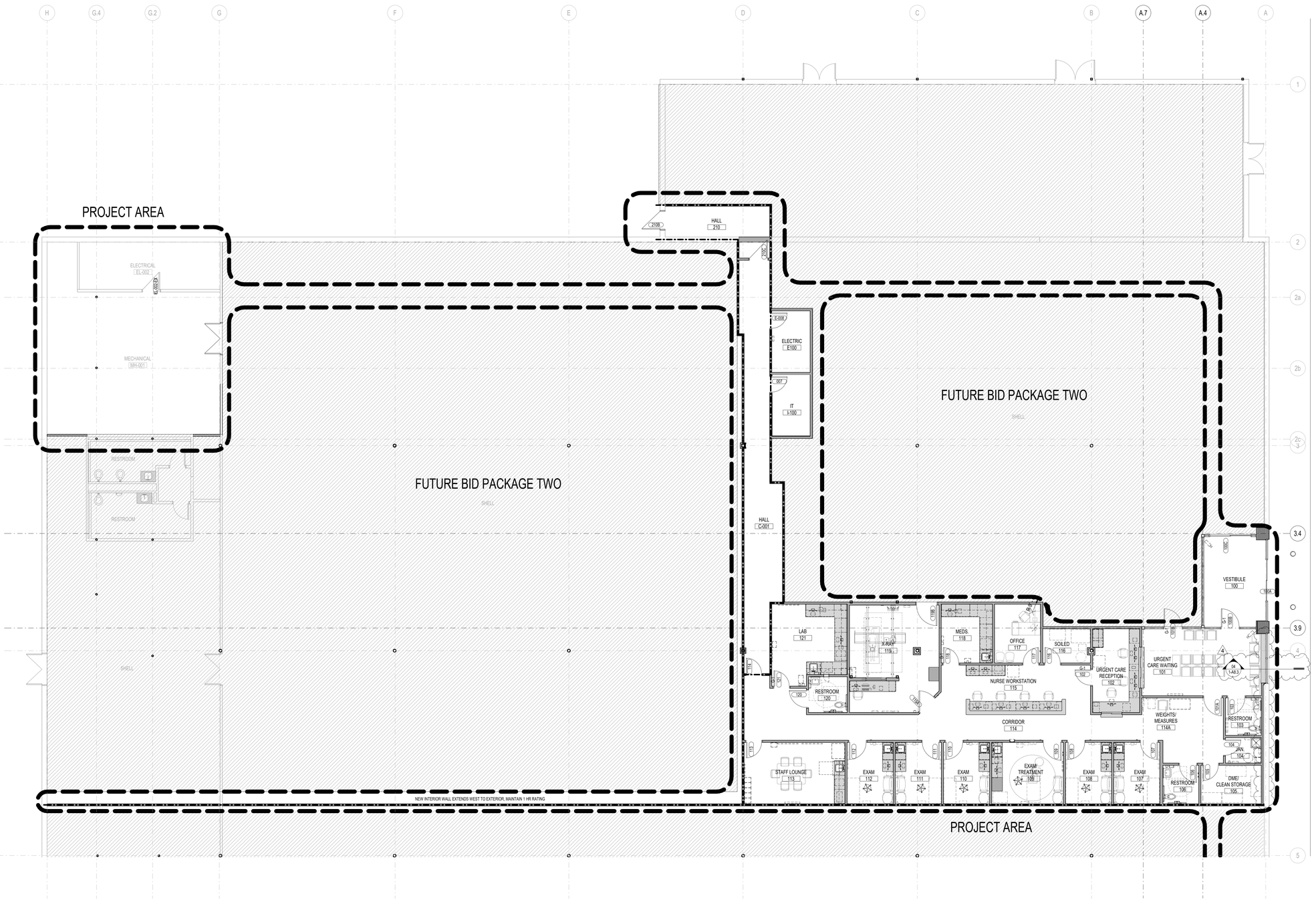
Summary:

The above referenced calculations and recommendations are made by West Physics based on data provided by the facility planners and unit manufacturer. As such, the recommendations made herein are subject to that information's accuracy. This shielding design is hereby certified and executed:



Matthew Fitzmaurice, Ph.D., DABR, DABSNM, CHP
Chief Medical Physicist
KY Qualified Expert License No. 8-03305

02/15/2023
Date



GENERAL NOTES

1. REFERENCE STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR DELINEATION OF ALL ASSEMBLIES WITHIN THEIR RESPECTIVE PORTIONS OF WORK.
2. CONTRACTOR SHALL VERIFY FINAL CONFIGURATION OF ALL EQUIPMENT, INCLUDING CONTRACTOR FURNISHED ARCHITECTURAL, MECHANICAL PLUMBING, AND ELECTRICAL ITEMS ASSOCIATED WITH EQUIPMENT, WITH OWNERS AND ARCHITECT PRIOR TO COMMENCEMENT OF CONSTRUCTION
3. ALL DIMENSIONS ARE FROM FINISH FACE OF WALL TO FINISH FACE OF WALL UNLESS OTHERWISE NOTED.
4. PROVIDE MOISTURE RESISTANT GYPSUM BOARD BEHIND AND WITHIN THREE FEET OF ANY PLUMBING FIXTURE TO A HEIGHT OF 8'-0" A.F.F.
5. ALL INTERIOR PARTITIONS SHALL BE PARTITION TYPE 4b UNLESS OTHERWISE NOTED. EXCEPTION: AT LOCATIONS WHERE ONE SIDE OF INTERIOR PARTITION FACES AN UNOCCUPIABLE SPACE, THE INTERIOR PARTITION SHALL BE TYPE 4a UNLESS OTHERWISE NOTED.
6. GYPSUM WALLBOARD AND ACOUSTICAL INSULATION SHALL EXTEND TO 12" ABOVE CEILING IN ALL LOCATIONS UNLESS OTHERWISE NOTED.
7. REFERENCE SPECIFICATION SECTION 102800 FOR TOILET ACCESSORY ITEMS DENOTED BY THE TA-X TAG.
8. ALIGN NEW WALLS WITH EXISTING AS SHOWN ON PLANS TO PROVIDE A CONTINUOUS SMOOTH SURFACE.
9. CONTRACTOR TO REINSTALL ANY FLOOR, CEILING OR WALL MOUNTED EQUIPMENT REMOVED TO ACCOMMODATE SCOPE OF NEW WORK.
10. PROVIDE CAULK AT ALL GAPS, MATERIAL TRANSITIONS AND DOOR FRAMES THROUGHOUT PROJECT, REFERENCE SPECIFICATIONS FOR ADDITIONAL LOCATIONS
11. CONTRACTOR TO NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN FLOOR PLANS AND EXISTING CONDITIONS
12. HORIZONTAL TOP OF WALL BRACING SHALL BE PROVIDED AT ALL WALLS THAT DO NOT EXTEND TO DECK. BRACE TO INTERSECTING PERPENDICULAR PARTITION AT A 45 DEGREE ANGLE, 2'-0" MINIMUM FROM INTERSECTION. REFER TO SHEET NOTE 01 FOR SPECIAL BRACING CONDITION / LOCATIONS.

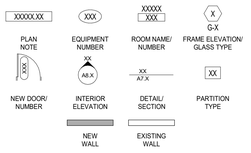
CONTRACTOR SHALL PROVIDE, COORDINATE AND INSTALL BLOCKING FOR THE FOLLOWING ITEMS:

TOILET ACCESSORIES, DOOR ACCESSORIES, MIRRORS, MARKERBOARDS, CHALKBOARDS, TACKBOARDS, COAT/ROBE HOOKS, WALL MOUNTED EQUIPMENT, DIAGNOSTIC SETS, SHARPS CONTAINERS, LEAD-LINED APRON RACKS, ADJUSTABLE SHELVING, MONITORS, TELEVISIONS, CAMERAS, PROJECTORS AND OTHER A/V EQUIPMENT, SIGNAGE IF NEEDED.

REFER TO PROJECT MANUAL (061000) FOR ADDITIONAL BLOCKING REQUIREMENTS. THIS IS A SUMMARY LISTING OF ITEMS AND IS NOT INTENDED AS A COMPREHENSIVE LIST. REQUIREMENTS OF THE PROJECT MANUAL SHALL STILL BE MET.

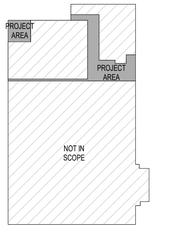
KEYNOTES

FLOOR PLAN LEGEND



KEYPLAN

NOT TO SCALE



01 COMPOSITE FIRST FLOOR PLAN
1-A4.0 — 1/8" = 1'-0"
TRUE NORTH / PLAN NORTH

STENGEL HILL ARCHITECTURE
501 EAST HIGH STREET
LEXINGTON, KENTUCKY 40502
859.402.8008
502.893.1876 fax
Structural Engineering
Mechanical/Electrical Engineering
CMTA
Interior Design

KING'S DAUGHTERS

CONSTRUCTION DOCUMENTS - NOT FOR CONSTRUCTION

COMPOSITE FIRST FLOOR PLAN
MEDICAL OFFICE BUILDING RENOVATION
KING'S DAUGHTERS HEALTH SYSTEM
PAINTSVILLE, KENTUCKY

3	ADD 03	31 January 31
4	ADD 04	17 March 2023

17 APRIL 2023
KDH2203

1-A4.0

GENERAL NOTES

1. REFERENCE STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR DELINEATION OF ALL ASSEMBLIES WITHIN THEIR RESPECTIVE PORTIONS OF WORK.
2. CONTRACTOR SHALL VERIFY FINAL CONFIGURATION OF ALL EQUIPMENT, INCLUDING CONTRACTOR FURNISHED ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ITEMS ASSOCIATED WITH EQUIPMENT, WITH OWNERS AND ARCHITECT PRIOR TO COMMENCEMENT OF CONSTRUCTION
3. ALL DIMENSIONS ARE FROM FINISH FACE OF WALL TO FINISH FACE OF WALL UNLESS OTHERWISE NOTED.
4. PROVIDE MOISTURE RESISTANT GYPSUM BOARD BEHIND AND WITHIN THREE FEET OF ANY PLUMBING FIXTURE TO A HEIGHT OF 6'-0" A.F.F.
5. ALL INTERIOR PARTITIONS SHALL BE PARTITION TYPE 4b UNLESS OTHERWISE NOTED. EXCEPTION: AT LOCATIONS WHERE ONE SIDE OF INTERIOR PARTITION FACES AN UNOCCUPIABLE SPACE, THE INTERIOR PARTITION SHALL BE TYPE 4a UNLESS OTHERWISE NOTED.
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8. ALIGN NEW WALLS WITH EXISTING AS SHOWN ON PLANS TO PROVIDE A CONTINUOUS SMOOTH SURFACE.
9. CONTRACTOR TO REINSTALL ANY FLOOR, CEILING OR WALL MOUNTED EQUIPMENT REMOVED TO ACCOMMODATE SCOPE OF NEW WORK.
10. PROVIDE CAULK AT ALL GAPS, MATERIAL TRANSITIONS AND DOOR FRAMES THROUGHOUT PROJECT, REFERENCE SPECIFICATIONS FOR ADDITIONAL LOCATIONS
11. CONTRACTOR TO NOTIFY ARCHITECT OF ANY DISCREPANCIES BETWEEN FLOOR PLANS AND EXISTING CONDITIONS
12. HORIZONTAL TOP OF WALL BRACING SHALL BE PROVIDED AT ALL WALLS THAT DO NOT EXTEND TO DECK. BRACE TO INTERSECTING PERPENDICULAR PARTITION AT A 45 DEGREE ANGLE, 3'-0" MINIMUM FROM INTERSECTION. REFER TO SHEET NOTE 01 FOR SPECIAL BRACING CONDITION / LOCATIONS.

CONTRACTOR SHALL PROVIDE, COORDINATE AND INSTALL BLOCKING FOR THE FOLLOWING ITEMS:

TOILET ACCESSORIES, DOOR ACCESSORIES, MIRRORS, MARKERBOARDS, CHALKBOARDS, TACKBOARDS, COAT/ROBE HOOKS, WALL MOUNTED EQUIPMENT, DIAGNOSTIC SETS, SHARPS CONTAINERS, LEAD-LINED APRON RACKS, ADJUSTABLE SHELVING, MONITORS, TELEVISIONS, CAMERAS, PROJECTORS AND OTHER A/V EQUIPMENT, SIGNAGE IF NEEDED.

REFER TO PROJECT MANUAL (061000) FOR ADDITIONAL BLOCKING REQUIREMENTS, THIS IS A SUMMARY LISTING OF ITEMS AND IS NOT INTENDED AS A COMPREHENSIVE LIST. REQUIREMENTS OF THE PROJECT MANUAL SHALL STILL BE MET.

KEYNOTES

064100.A01	SOLID SURFACE WINDOW SILL, 1/4" THICK WITH 1" OVERHANG AND 1 1/2" APRON, TYPICAL AT ALL WINDOWS, DEPTHS VARY
085619.A01	C.R. LAWRENCE CUSTOM SHARYN FRAMELESS PASS-THRU WINDOW WITH 1/4" TEMPERED GLASS DOORS, SATIN ANODIZED FINISH, AND PUSH BUTTON LOCK. REFER TO PLANS AND ELEVATIONS.
104400.A06	SEMI-RECESSED (TYPE 1) FIRE EXTINGUISHER CABINET.
105113.A02	WELDED THREE-TIER LOCKERS WITH SLOPED LIDS.
134900.A01	DASHED LINE REFERS TO WALL, WINDOW AND DOOR SEGMENTS REQUIRING X-RAY LEAD SHIELDING IN CT SCAN ROOMS AND X-RAY. FOR SHIELDING REQUIREMENTS, REFER TO THE PHYSICIST REPORT IN SPECIFICATIONS SECTION 000200 - INFORMATION AVAILABLE TO BIDDERS. LEAD-LINED GYPSUM BOARD SHALL BE INSTALLED TO A HEIGHT OF 7'-0" AFF UNLESS OTHERWISE NOTED IN SHIELDING TABLE.
134900.A02	LEAD SHIELDING EQUIVALENCY GLAZING WITH INTEGRAL BLINDS. REFER TO X-RAY SHIELDING LEGEND FOR LEAD EQUIVALENCY REQUIREMENTS.
ARCH.D01	PROVIDE WALL AND FLOOR PROTECTION FRO INSTILLATION AND DELIVERY OF X-RAY EQUIPMENT
ARCH.D02	THE FOOR IN THE X-RAY ROOM MUST BE LEVEL TO WITHIN +/- 1/8" OVER A 10'-0" SPAN, REFER TO VENDOR DRAWINGS.
CIVIL A01	BOLLARD WITH PUSH BUTTON.
ELECT.A13	PANIC BUTTON.
ELECT.A14	DOOR RELEASE.
ELECT.A19	CONTINUOUS POWER STRIP.
ELECT.B02	CONTINUOUS UNDER CABINET LIGHTING IN LAB LOCATION ONLY, REFER TO ELECTRICAL DRAWINGS.
ELECT.D01	JUNCTION BOX, REFFER TO VENDOR AND ELECTRICALDRAWINGS.
ELECT.V01	FLUSH MOUNTED VERTICAL WALL DUCT WITH COVER PLATE (REFERENCE ELECTRICAL AND VENDOR DRAWINGS).
ELECT.V26	X-RAY IN USE SIGN (REFERENCE ELECTRICAL AND VENDOR DRAWINGS).
ID.B02	DECORATIVE WINDOW FILM.
PLUMB.A08	MOP SINK.
SIGN.A03	OWNER SIGNAGE. COORDINATE REQUIREMENTS WITH SIGNAGE VENDOR (REFER TO STRUCTURAL DRAWINGS).
STRUC.B07	STEEL TUBE MOUNTED TO EXISTING SLAB AND BRACED TO EXISTING STRUCTURE ABOVE.

FLOOR PLAN KEYNOTES

01 BRACE TOP OF WALL AT MIDSPAN OR END OF WALL AS INDICATED TO UNDERSIDE OF STRUCTURE ABOVE. KICKERS SHOULD BRACE BOTH SIDES OF WALL

02 SECURE STUDS TO BOTH SIDES OF COLUMN

FLOOR PLAN LEGEND

XXXXX.XX — PLAN NOTE
XXX — EQUIPMENT NUMBER
XXXXX / XXX — ROOM NAME/ NUMBER
X / G.X — FRAME ELEVATION/ GLASS TYPE
XXX — NEW DOOR/ NUMBER
XX / A8.X — INTERIOR ELEVATION
XX / A7.X — DETAIL/ SECTION
XX — PARTITION TYPE
NEW WALL
EXISTING WALL

WALL RATING LEGEND

1-HOUR FIRE BARRIER
1 HOUR FIRE-RESISTANCE RATED FIRE BARRIER PER SECTION 707.
45 MINUTE FIRE RESISTANCE RATED SELF OR AUTOMATIC CLOSING DOORS.
FIRE DAMPERS REQUIRED. SMOKE DAMPERS NOT REQUIRED.

1-HOUR FIRE BARRIER
1 HOUR FIRE-RESISTANCE RATED FIRE BARRIER PER SECTION 8.2.3.
45 MINUTE FIRE RESISTANCE RATED SELF OR AUTOMATIC CLOSING DOORS.
FIRE AND/OR SMOKE DAMPERS NOT REQUIRED.

LIFE SAFETY LEGEND

ALL AREAS WITHIN PROJECT LIMITS SHALL BE PROTECTED BY AN APPROVED AUTOMATIC SPRINKLER SYSTEM AND APPROVED FIRE ALARM SYSTEM AT THE COMPLETION OF THE PROJECT.

FE — FIRE EXTINGUISHER (WALL BRACKET MOUNTED)
FEC — FIRE EXTINGUISHER (CABINET MOUNTED)
FVC — FIRE VALVE (CABINET MOUNTED)
EGRESS CORRIDOR
VERTICAL CIRCULATION
EXIT SIGN WITH DIRECTIONAL INDICATOR

KEYPLAN

NOT TO SCALE

01 / 1-A4.1A — ENLARGED FIRST FLOOR PLAN — 1/4" = 1'-0" — TRUE NORTH / PLAN NORTH

STENGEL HILL ARCHITECTURE
501 EAST HIGH STREET
LEXINGTON, KENTUCKY 40502
859.402.8008
502.893.1876 fax
Structural Engineering
Mechanical/Electrical Engineering
CMTA
Interior Design

KING'S DAUGHTERS

CONSTRUCTION DOCUMENTS - NOT FOR CONSTRUCTION

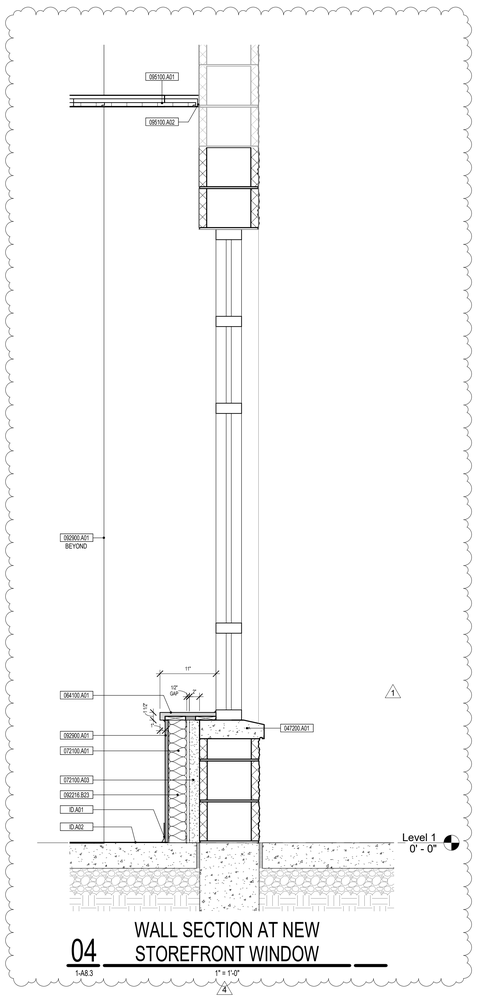
URGENT CARE

ENLARGED FIRST FLOOR PLAN
MEDICAL OFFICE BUILDING RENOVATION
KING'S DAUGHTERS HEALTH SYSTEM
PAINTSVILLE, KENTUCKY

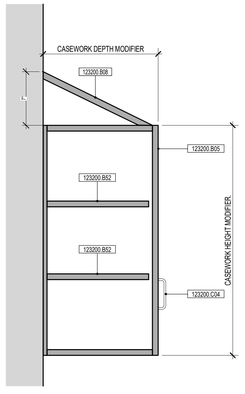
1	ADD 01	20 January 2023
2	ADD 02	26 January 2023
3	ADD 03	31 January 31
4	ADD 04	17 March 2023

17 APRIL 2023
KDH2203

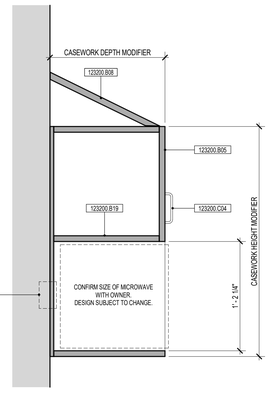
1-A4.1A



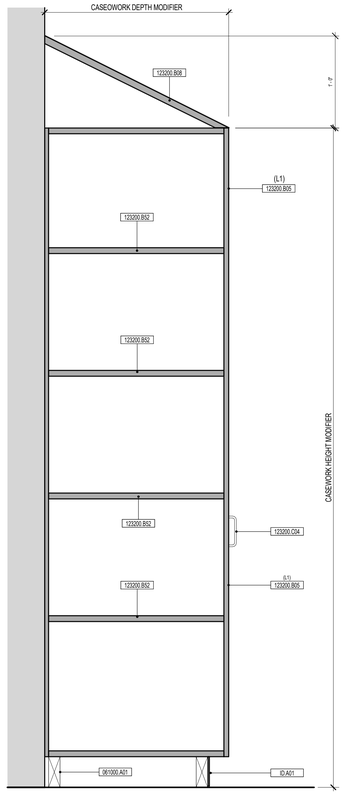
04 WALL SECTION AT NEW STOREFRONT WINDOW
1-A8.3



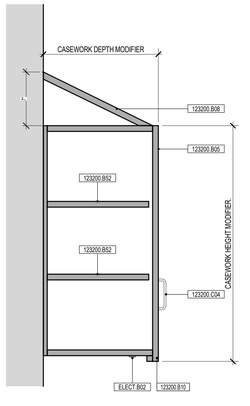
07 TYPICAL UPPER CABINET SECTION
1-A8.3
1 1/2" = 1'-0"



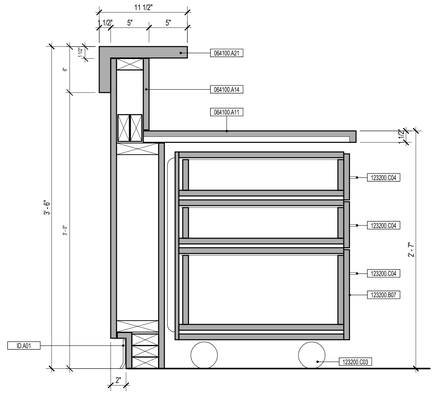
06 TYPICAL UPPER CABINET SECTION
1-A8.3
1 1/2" = 1'-0"



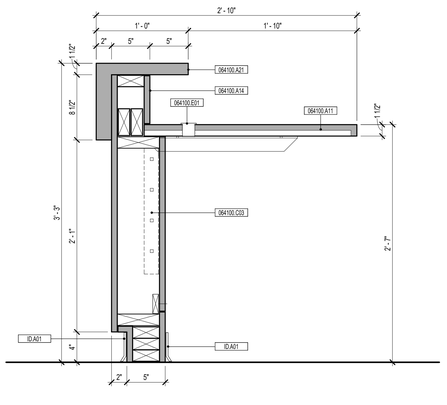
05 TALL CABINET CASEWORK SECTION
1-A8.3
1 1/2" = 1'-0"



03 LAB UPPER CABINET SECTION
1-A8.3
1 1/2" = 1'-0"



02 NURSE STATION COUNTER SECTION
1-A8.3
1 1/2" = 1'-0"



01 NURSE STATION COUNTER SECTION
1-A8.3
1 1/2" = 1'-0"

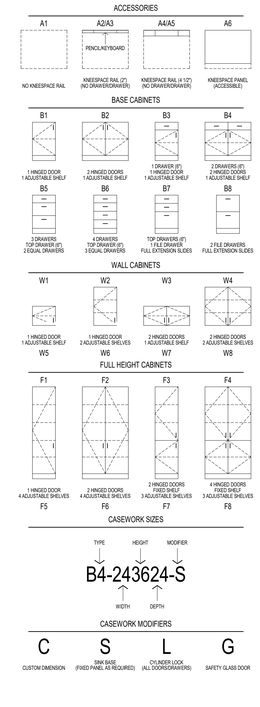
GENERAL NOTES

1. ALL DIMENSIONS ARE FROM FACE OF FINISH WALL TO FACE OF FINISH WALL UNLESS OTHERWISE NOTED.
2. ALL CASEWORK SHALL BE FABRICATED IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF THE MOST CURRENT EDITION OF THE ARCHITECTURAL WOODWORK INSTITUTE (AWI) QUALITY STANDARDS.
3. ALL CASEWORK SHALL BE FABRICATED IN ACCORDANCE WITH ALL APPLICABLE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA), INCLUDING REQUIRED 27" KNEESPACE CLEARANCE.
4. PROVIDE ONE GROMMET AT EACH OPEN KNEESPACE AND/OR KEYBOARD TRAY.
5. ABOVE COUNTER WALL CABINETS SHALL BE MOUNTED AT 7' - 2" A.F.F. TO TOP OF CABINET UNLESS NOTED OTHERWISE.
6. REFERENCE MECHANICAL, PLUMBING, ELECTRICAL, AND INTERIOR DESIGN DRAWINGS FOR DELINEATION OF ALL ASSEMBLIES WITHIN THEIR RESPECTIVE PORTIONS OF WORK.
7. CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND CONFIGURATIONS SHOWN IN THE CONSTRUCTION DRAWINGS.
8. CONTRACTOR SHALL VERIFY FINAL CONFIGURATION OF ALL EQUIPMENT, INCLUDING CONTRACTOR FURNISHED ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ITEMS ASSOCIATED WITH EQUIPMENT, WITH THE OWNER AND THE ARCHITECT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
9. WHERE DIMENSIONS ARE NOT SPECIFICALLY INDICATED FOR POWER AND SYSTEMS OUTLET, ALIGN OUTLETS HORIZONTALLY ON CENTERLINE OF MODULAR CASEWORK SHOWN ON INTERIOR ELEVATIONS.
10. REFERENCE SPECIFICATION SECTION 102800 FOR TOILET ACCESSORY ITEMS DENOTED AS TA-XX TAGS. PROVIDE A TA-XX AND TA-XX TYPICAL AT EVERY SINK, UNLESS OTHERWISE NOTED.
11. WHERE APPLICABLE FILLER PANELS SHALL BE AN EQUAL DIMENSION ON BOTH SIDES WHEN CABINETRY IS BOUND BY ADJACENT CONSTRUCTION.
12. PROVIDE COUNTERTOP SUPPORT BRACKETS AT 3'-0" O.C. (MAXIMUM)
13. REFER TO INTERIOR DESIGN DRAWINGS FOR CASEWORK FINISHES.
14. ALL OUTSIDE CORNERS OF PLASTIC LAMINATE COUNTERTOPS HAVE A 2" RADIUS, AND 1-1/2" RADIUS AT SOLID SURFACE COUNTERTOPS.

KEYNOTES

047200.A01	ARCHITECTURAL CAST STONE SILL BY MANUFACTURE STONE MANUFACTURER. COLOR TO BE SELECTED BY ARCHITECT.
061000.A01	WOOD FRAMING.
064100.A01	SOLID SURFACE WINDOW SILL, 1/4" THICK WITH 1" OVERHANG AND 1 1/2" APRON, TYPICAL AT ALL WINDOWS. DEPTHS VARY
064100.A11	SOLID SURFACE COUNTERTOP WITH 1/2" RADIUSED EDGES.
064100.A14	SOLID SURFACE VERTICAL PANEL.
064100.A21	1 1/2" THICK SOLID SURFACE TRANSACTION COUNTERTOP WITH 1/8" RADIUSED EDGES.
064100.C03	METAL COUNTERTOP SUPPORT BRACKET.
064100.E01	GROMMET HOLES FOR CABLE ACCESS, SEE VENDOR DRAWINGS FOR LOCATION.
072100.A01	GLASS FIBER ACOUSTIC INSULATION (TYPE ?).
072100.A03	SPRAY-APPLIED CLOSED-CELL POLYURETHANE FOAM INSULATION.
092216.B23	3 5/8" METAL STUDS AT 2'-0" O.C. MAXIMUM.
092900.A01	NEW WALL CONSTRUCTION, REFERENCE FLOOR PLAN FOR WALL TYPE.
095100.A01	SUSPENDED ACOUSTICAL CEILING TILE SYSTEM.
095100.A02	EXTRUDED ALUMINUM PERIMETER TRIM CEILING SYSTEM.
123200.B05	PLASTIC LAMINATE CLAD CASEWORK DOOR.
123200.B07	PLASTIC LAMINATE CLAD CASEWORK PULL-OUT DRAWER.
123200.B08	PLASTIC LAMINATE CLAD SLOPED TOP.
123200.B10	PLASTIC LAMINATE CLAD VALANCE.
123200.B19	PLASTIC LAMINATE SHELVES.
123200.B52	PLASTIC LAMINATE CLAD ADJUSTABLE SHELF.
123200.C03	METAL ADJUSTABLE CASEWORK FEET.
123200.C04	CASEWORK PULL.
ELECT.B02	CONTINUOUS UNDER CABINET LIGHTING IN LAB LOCATION ONLY, REFER TO ELECTRICAL DRAWINGS.
ELECT.D01	JUNCTION BOX, REFFER TO VENDOR AND ELECTRICALDRAWINGS.
ID.A01	WALL BASE AS SPECIFIED.
ID.A02	FINISH FLOOR AS SPECIFIED.

CASEWORK LEGEND



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CMTA
Interior Design

KING'S DAUGHTERS

CONSTRUCTION DOCUMENTS - NOT FOR CONSTRUCTION

CASEWORK SECTIONS & DETAILS
MEDICAL OFFICE BUILDING RENOVATION
KING'S DAUGHTERS HEALTH SYSTEM
PAINTSVILLE, KENTUCKY

1	ADD 01	20 January 2023
4	ADD 04	17 March 2023

17 APRIL 2023
KDH2203

1-A8.3


COMPANY
ENCLOSURE TYPE 1
VOLTS 480Y/277
HERTZ 60
MAXIMUM SUPPLY RATING
2000
AMPERES
MAXIMUM SECTION RATING
2000
3 ø 4 W
SYSTEM
3 ø 4 W
SHORT CIRCUIT CURRENT RATING - SEE LABEL INSIDE
FOR ALTERNATE SUPPLY RATINGS - SEE WIRING DIAGRAM
43 PLANT CODE
30745538 A0 CATALOG OR DRAWING NO.
QED
POWER STYLE®
SWITCHBOARD
SQUARE D COMPANY
MADE IN U.S.A.
B80258-133-01


PNL HA
OFF
ON
CAT. NO. QMB364W SER. E1
200 AMP. 3 POLE 600V. AC
240V. AC 3 PH. MAX. H.P. 60
480V. AC 3 PH. MAX. H.P. 125
600V. AC 3 PH. MAX. H.P. 150
SQUARE D
40274-964-02
CIRCUIT NO.
FEEDS: PNL. HA
A-40274-348-01