PATIENT CARE TOWER - T1230 MRI ROOM

MU PROJECT NUMBER: CP245321



FOR: THE CURATORS OF THE UNIVERSITY OF MISSOURI

OWH PROJECT NO.: 2498000

BID PACKAGE

ARCHITECTURAL DRAWINGS

COVER A0.0 GENERAL INFORMATION & ABBREVIATIONS AO.1 TYPICAL MOUNTING HEIGHTS FIRST FLOOR LIFE SAFETY PLAN FIRST FLOOR CONSTRUCTION ACCESS PLAN PHASING PLANS FIRST FLOOR - DEMOLITION PLAN & NOTES GROUND & FIRST FLOORS - AREA OF DISTURBANCE PLANS FIRST FLOOR - NEW WORK FLOOR PLAN & NOTES ROOF LEVEL PLAN & NOTES EXTERIOR ELEVATIONS, SECTIONS, AND DETAILS SCHEDULES & PARTITION TYPES & DETAILS DOOR SCHEDULE & DETAILS FINISH FLOOR PLAN FIRST FLOOR - NEW WORK REFLECTED CEILING PLAN & NOTES INTERIOR ELEVATIONS INTERIOR ELEVATIONS INTERIOR ELEVATIONS INTERIOR DETAILS FIRST FLOOR EQUIPMENT PLAN & SCHEDULE RF SHIELDING PLANS/ELEVATIONS

MECHANICAL DRAWINGS

MECHANICAL SYMBOLS & ABBREVIATIONS MECHANICAL FIRST FLOOR DEMO PLAN MECHANICAL FIRST FLOOR DUCT NEW WORK PLAN MECHANICAL FIRST FLOOR PIPING NEW WORK PLAN HVAC ROOF PLAN MECHANICAL PIPING DIAGRAMS MECHANICAL DETAILS MECHANICAL DETAILS MECHANICAL SCHEDULES MECHANICAL CONTROLS MECHANICAL CONTROLS

MECHANICAL CONTROLS

P2.7 PLUMBING DETAILS AND SCHEDULES

MAGNETIC SHIELDING PLANS & SECTIONS

RF SHIELDING DETAILS RF SHIELDING DETAILS

PLUMBING DRAWINGS

PLUMBING SYMBOLS AND ABBREVIATIONS PLUMBING FIRST FLOOR DEMO PLAN PLUMBING GROUND FLOOR DEMO PLAN PLUMBING MEDICAL GAS FIRST FLOOR DEMO PLAN PLUMBING FIRST FLOOR NEW WORK PLAN P2.2 PLUMBING MEDICAL GAS FIRST FLOOR NEW WORK PLAN P2.3 PLUMBING GROUND FLOOR NEW WORK PLAN

FIRE PROTECTION DRAWINGS

FIRE PROTECTION SYMBOLS AND ABBREVIATIONS FIRE PROTECTION FIRST FLOOR DEMO PLAN FIRE PROTECTION FIRST FLOOR NEW WORK PLAN FP2.7 FIRE PROTECTION DETAILS

ELECTRICAL DRAWINGS

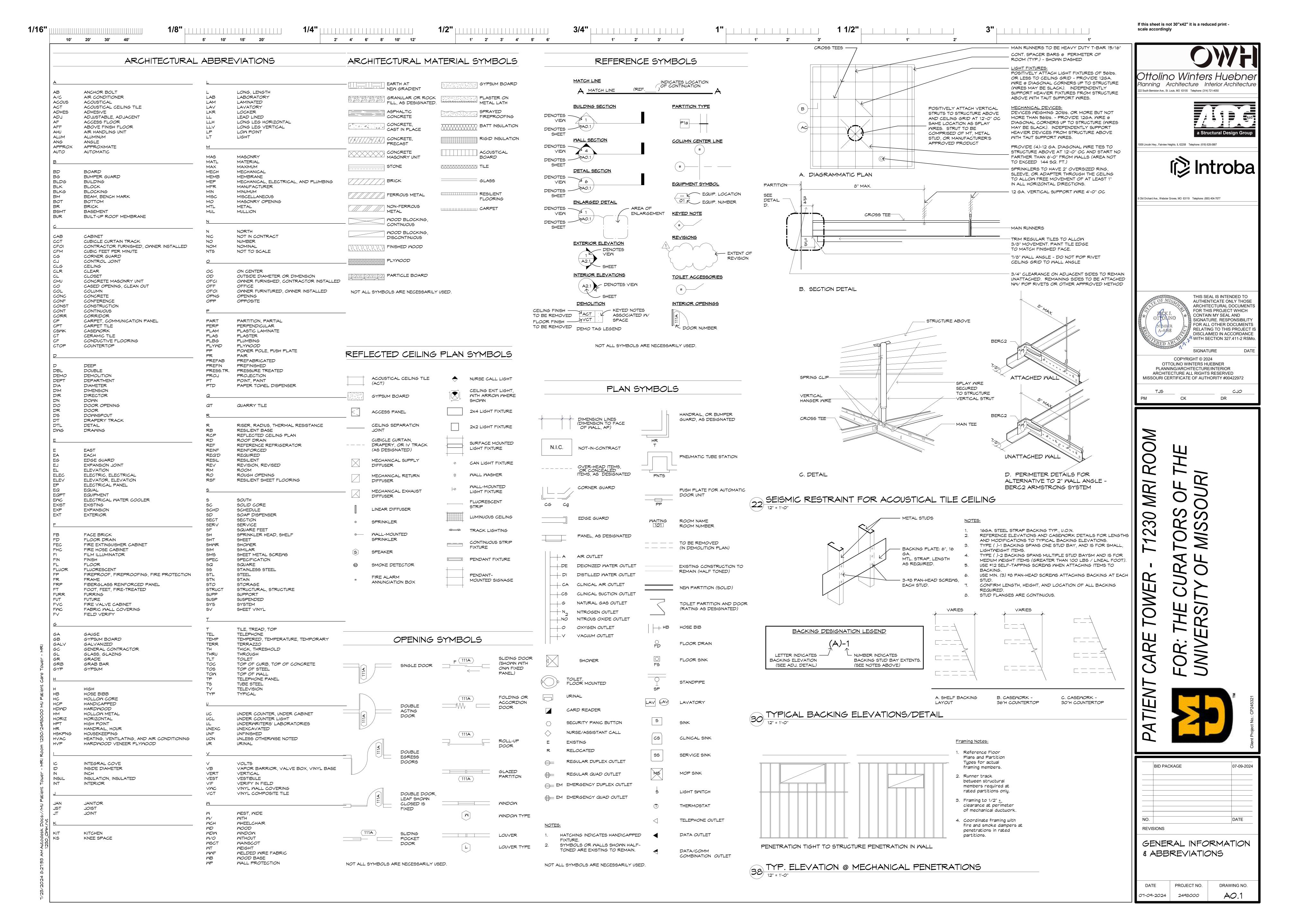
ELECTRICAL LEGEND ELECTRICAL KEY PLAN FIRE ALARM FIRST FLOOR DEMO PLAN LIGHTING FIRST FLOOR DEMO PLAN POWER FIRST FLOOR DEMO PLAN FIRE ALARM FIRST FLOOR NEW WORK PLAN LIGHTING FIRST FLOOR NEW WORK PLAN POWER FIRST FLOOR NEW WORK PLAN POWER ROOF PLAN SIEMENS EQUIPMENT PLAN NEW WORK ONE-LINE DIAGRAM DETAILS AND SCHEDULES DETAILS AND SCHEDULES DETAILS AND SCHEDULES DETAILS AND SCHEDULES DETAILS AND SCHEDULES

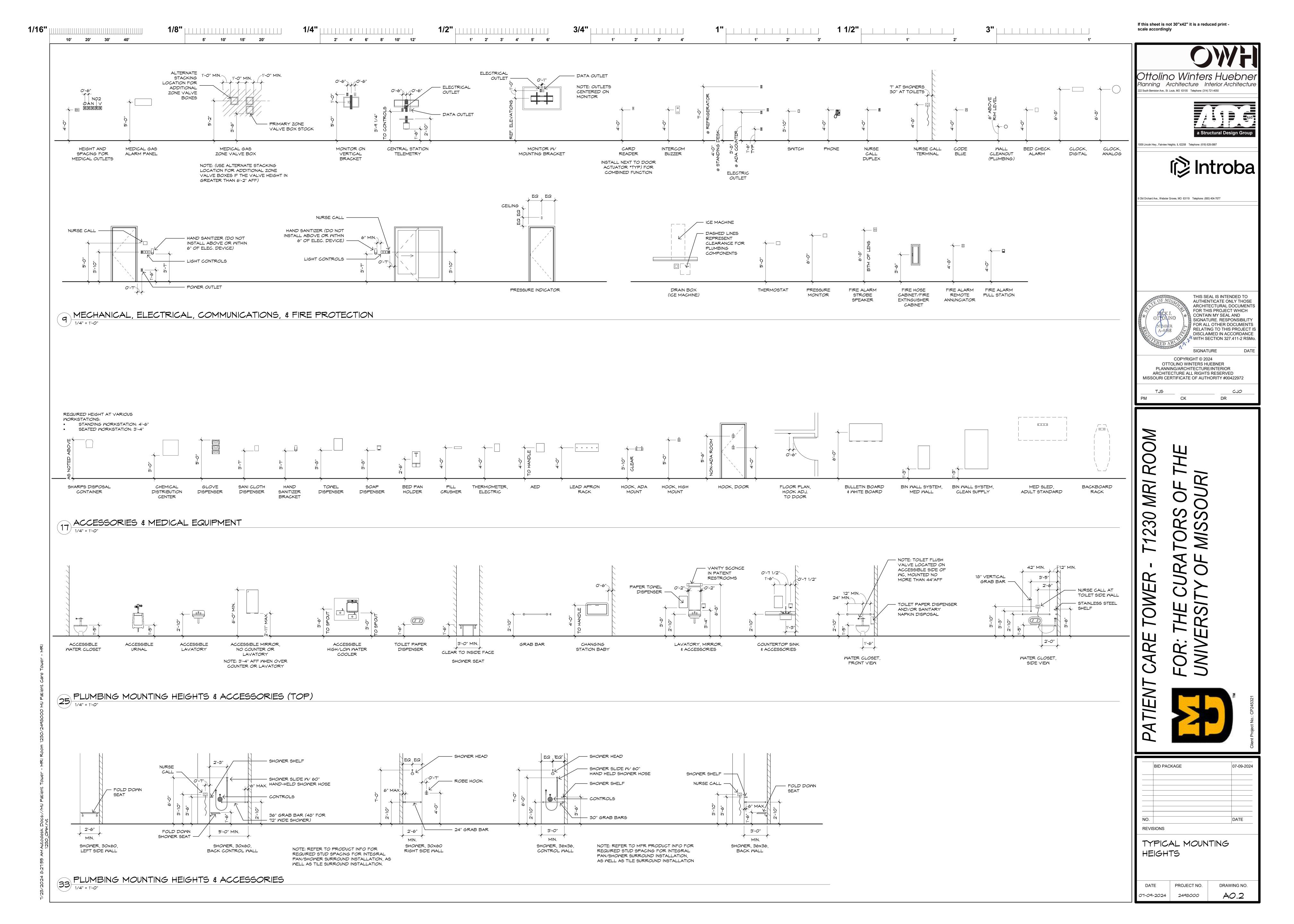


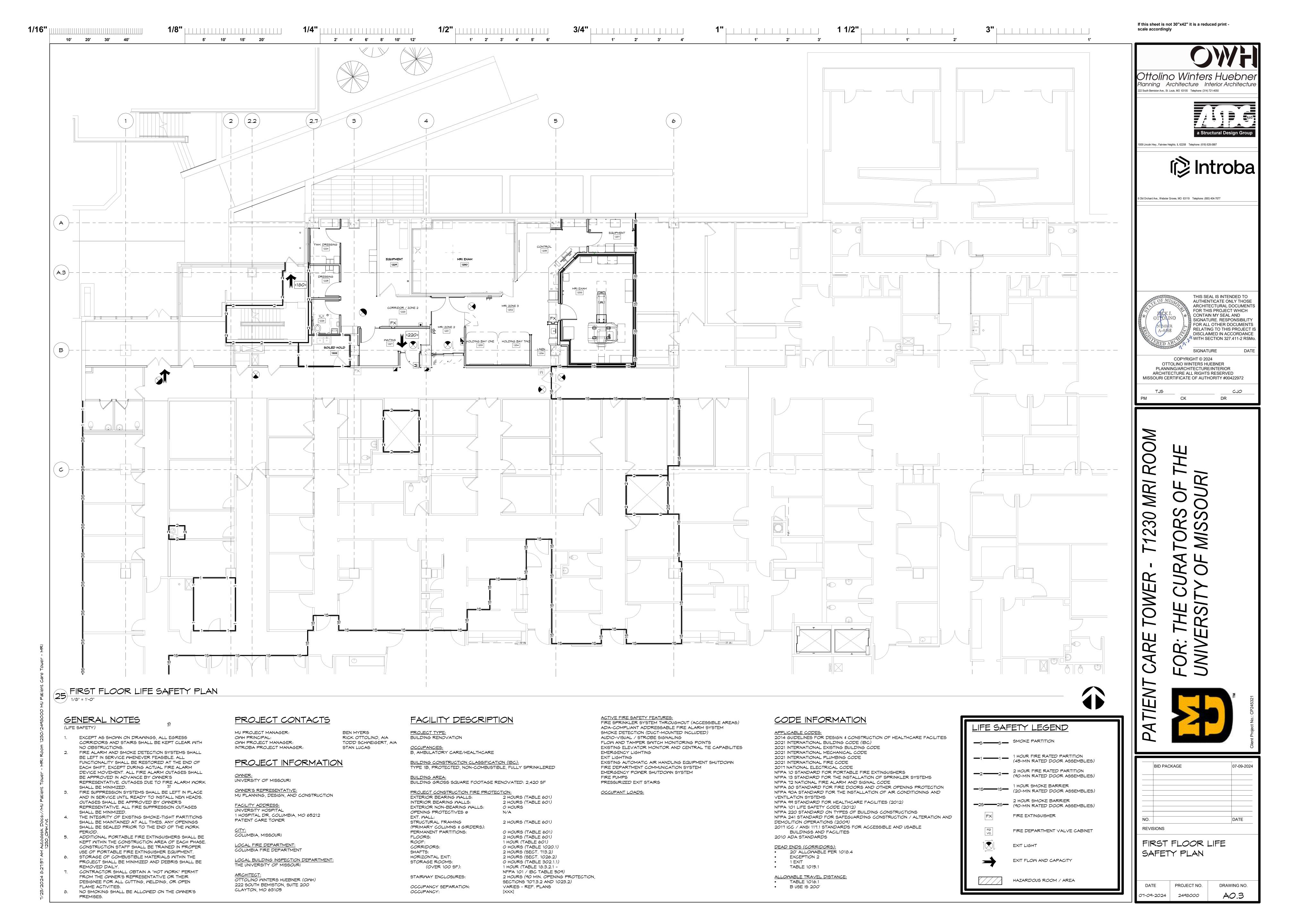


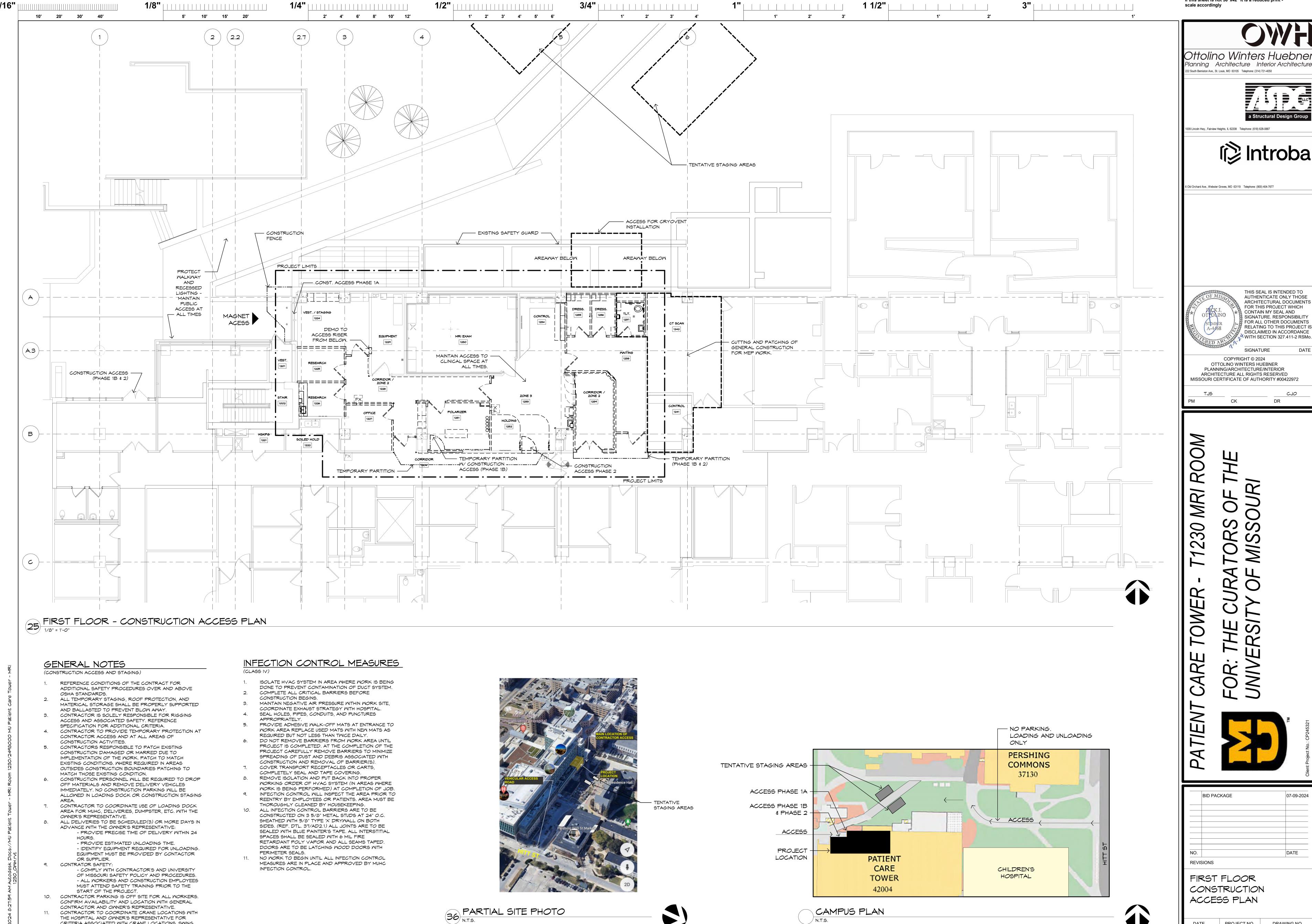












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PROJECT NO.

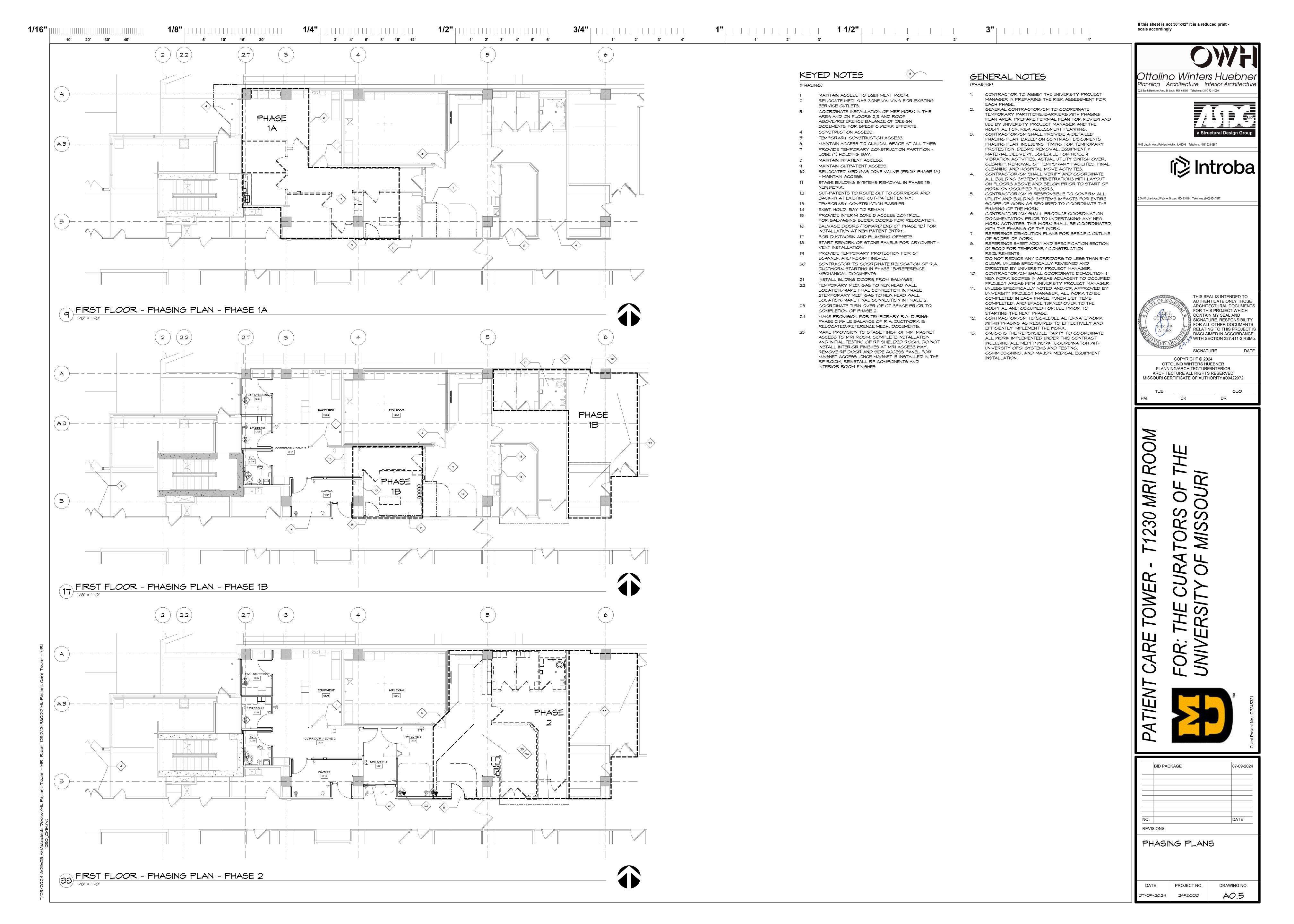
07-09-2024 2498000

DRAWING NO.

THE HOSPITAL AND OWNER'S REPRESENTATIVE FOR

AND WEIGHT CRITERIA, TRAFFIC CONTROL, ETC.

CRITERIA ASSOCIATED WITH CRANE LOCATIONS. SWING,



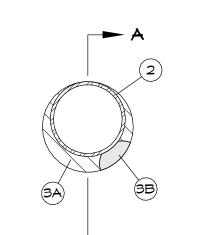
10' 20' 30' 40'

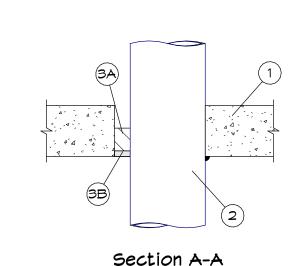
5' 10' 15' 20'

2' 4' 6' 8' 10' 12'

1' 2' 3' 4' 5' 6'

1' 2' 3' 4'



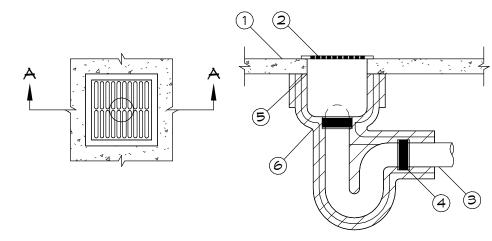


- Floor or Mall Assembly Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow-core Precast Concrete Units*. Max diam of opening is 8 in. (203 mm). Max diam of opening in floor constructed of hollow-core precast concrete units is 7 in. (178 mm). See Precast Concrete Units (CFTV) category in the Fire Resistance Directory for names of
- 2. Through Penetrant One metallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between pipes or conduits and periphery of opening shall be min O in. (point contact) to max 1-3/8 in. (35 mm). Pipe or conduit to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes or
 - Steel Pipe Nom. 6 in. (152mm) dia. (or smaller) Schedule 10 (or heavier) steel pipe. Iron Pipe - Nom. 6 in. (152mm) dia. (or smaller) cast or ductile iron pipe. Conduit - Nom. 4 in. (102mm) dia. (or smaller) steel electrical metallic tubing or nom. 6 in. (152mm) dia. steel conduit.
- 3. Firestop System The firestop system shall consist of the following: A. Packing Material - Min 2 in. (51 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. When floor is constructed of hollow-core precast concrete units, depth of packing material to be increased to extend above top of hollow core penetrated by pipe or conduit. Packing material to be recessed from bottom surface of floor or from either surface of solid concrete wall as required to
 - accommodate the required thickness of fill material. Fill, Void or Cavity Material* - Sealant - Min 1/2 in. (13 mm) thickness of fill material applied within the annulus, flush with bottom surface of floor or with one surface of solid concrete wall assembly. At the point contact location between through penetrant and concrete, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the concrete/through penetrant interface on the bottom surface of floor and on one surface of solid concrete wall. SPECIFIED TECHNOLOGIES INC - SpecSeal LC 150 Sealant, SpecSeal LE600 Sealant

*Bearing the UL Classification Mark

U.L. System No. F-A-1135

F Rating - 2 Hr. T Rating - 1/2 Hr. L-Rating at Ambient - Less than 1 CFM/sq ft L-Rating at 400°F - 4 CFM/sq ft



Lightweight or normal weight concrete floor assembly (minimum 2-1/2" thick)(2-hr.

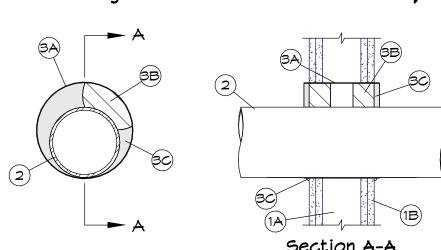
Section A-A

- Maximum 12"x12"x10" deep cast iron floor sink cast or grouted into floor. Sink flanges to bear on top plane of floor. Cast iron grating to be installed on top of
- Maximum 4" nominal diameter cast iron pipe secured to outlet of floor sink with no-hub coupling. Pipe to be rigidly supported beneath floor away from floor sink with suitable hanges.
- Corrugated stainless steel "no-hub" connector.

Top view

- around periphery of floor sink at floor interface. Two layers (nominal 1-1/2" thick) faced or unfaced firemaster fast wrap xI,
- firemaster fastwrap+, or pyroscat ductwrap xI (manufactured by thermal ceramics), or fyrewrap duct insulation or fyrewrap duct 1.5 insulation (manufactured by unifrac IIc), tightly wrapped around sink and frain pipe. Both layers to extend minimum 24" betond the bottom surface of floor and held in position using 16 GA. steel wire ties spaced maximum 8" on center and maximum 1" from ends of layers. An additional layer of duct wrap to extend minimum 6" below floor and held in position using 16 GA. steel tie wires spaced maximum 1" from ends of layer.

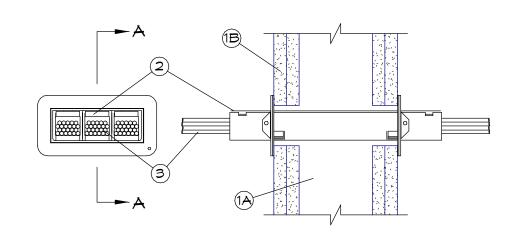
U.L. System No. W-L-1079 F Ratings - 1 and 2 Hr (See Item 1B) T Rating - O Hr L Rating At Ambient - Less Than 1 CFM/sq ft L Rating At 400 F - Less Than 1 CFM/sq ft



- Wall Assembly The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features: A. Studs - Mall framing may consist of either wood studs or steel channel studs. Mood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-5/8 in. wide and spaced max 24 in. OC. B. Gypsum Board* - 5/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type and sheet orientation shall be as specified type, thickness, number of layers, fastener in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max of opening is in wood stud walls is 13 in. Max diam of opening in steel stud walls is 16 in. The hourly F rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
- 2. Through Penetrant One metallic pipe or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between pipes or conduits and periphery of opening shall be min O in. (point contact) to max 3 in. Pipe or conduit to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes or conduits may be used: Steel Pipe - Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
- Iron Pipe- Nom 12 in. diam (or smaller) cast or ductile iron pipe. Conduit - Nom 4 in. diam (or smaller) electrical metallic tubing, nom 6 in. diam (or smaller) steel conduit or nom 1 in. diam (or smaller) flexible steel tubing.
- D. Copper Pipe Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe. E. Copper Tube - Nom 6 in. diam (or smaller) Type L (or heavier) copper tube.
- 3. Firestop System The firestop system shall consist of the following: A. Metallic Sleeve - Cylindrical sleeve fabricated from 0.0165 in. thick (28 gauge) galv sheet steel and having a min 2 in. lap along the longitudinal seam. Length of steel sleeve to be equal to or max 6 in. greater than the thickness of wall. Sleeve installed by coiling the steel to a diam smaller than the through opening, inserting the coil through the openings and releasing against the circular cutouts in the gypsum wallboard layers. the coil to let it uncoil The ends of the steel sleeve shall be flush with or extend max 3 in. beyond each surface of the
- B. Packing Material Min 2 in. thickness of min 4 pcf mineral wool batt insulation tightly packed into annular space between metallic pipe, conduit or tubing and steel sleeve on both sides of the wall assembly+. Packing material to be recessed from each end of steel sleeve as required to accommodate the required thickness of fill material.
- Fill, Void or Cavity Material* Sealant- Min 1/2 in. thickness of fill material within annulus, flush with ends of steel sleeve. A min 1/4 in. diam bead of fill material shall be applied at the metallic penetrant/steel sleeve interface on both sides of wall assembly. A min 1/4 in. bead of fill material shall be applied at the steel sleeve/gypsum board interface on both surfaces of wall. SPECIFIED TECHNOLOGIES INC - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant

*Bearing the UL Classification Mark

<u>U.L. System No. W-L-3339</u> F Ratings - 1, 2, 3 and 4 Hr (See Item 1) T Ratings - 1, 1-1/4 and 1-3/4 Hr (See Item 2)



- Wall Assembly The 1, 2, 3 or 4 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described within the individual U300 or U400 Series Wall or Partition Designs in the UL Fire Resistance Directory and shall incorporate the following construction features:
- A. Studs Wall framing shall consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced max 16 in. (406 mm) OC. Steel studs to be min 3-1/2 in. (89 mm) wide and spaced max 24 in. (610 mm) OC. B. Gypsum Board* - Thickness, type, number of layers and fasteners as specified in the individual Wall and Partition Design. Opening in gypsum board to be max 2 in. (51 mm) diam or 1/4 in. (6 mm) larger then width and height dimensions of firestop device(s). The hourly F Rating of the firestop system is dependent upon the hourly rating of the wall in which it is installed. 2. Firestop Device* - Three firestop device modules consisting of a 4 in. by 4-5/8 in. by 14 in. (101.6 mm by 118 mm by 356 mm) long galv steel tube with an intumescent material lining. Firestop device modules to be installed in accordance with the accompanying installation instructions. The space between the firestop device modules and the periphery of the opening shall be min O in. (O mm, point contact) to max 1/8 in. (3.2 mm). Firestop device module(s) secured in place by means of
- The firestop device module is to be installed with ends projecting an equal distance beyond each surface of the wall assembly. SPECIFIED TECHNOLOGIES INC - EZ PATH Series 44 Fire Rated Pathway 3. Cables - Within the loading area for each firestop device module, the cables may represent a O to 100 percent visual fill. Cable fill to be distributed at a uniform height across the width of the firestop device module. Cables to be rigidly supported on both sides of the wall assembly. Any

steel wall plates installed with gasketing material supplied with product. Steel wall plates installed on

both sides of wall and secured to each device by means of steel set screws provided with device.

A. Max 200 pair No. 24 AWG (or smaller) copper conductor telecommunication cable with polyvinyl chloride (PVC) or plenum-rated jacketing and insulation. B. Max 350 kcmil single copper conductor power cable with XLPE jacket and insulation or plenum-rated jacketing and insulation. C. Max 7/C No. 12 AWG copper conductor control cable with PVC or XLPE jacket and

combination of the following types of cables may be used:

insulation or plenum-rated jacketing and insulation.

of the wall assembly is 2 hr, the T Rating is 1-1/4 hr when

- Max 3/C No. 2/O AMG metal clad or armored cable with steel or aluminum jacket. Max 3/C No. 8 AMG NM cable (Romex) with PVC insulation and jacket or plenum-rated jacketing and insulation. Max four pair No. 22 AMG (or smaller) copper conductor data cable with PVC or plenum rated jacketing and insulation.
- 6. Coaxial cable with fluorinated ethylene or PVC insulation and jacketing or plenum rated jacketing and insulation having a max diam of 5/8 in. (16 H. Optical fiber cable with PVC or polyethylene (PE) jacket and insulation or plenum rated jacketing and insulation and having a max diam of 5/8 in. Optical Fiber Raceway+ - Max 3/4 in. (19 mm) diam (or smaller) optical fiber raceway ("innerduct") formed of either PVC or polyvinylidene fluoride (PVDF) with optical fiber cable fill. Raceways installed in accordance with Article 770 of the National Electrical Code (NFPA 70). When rating of the wall assembly is 1 hr, the T Rating is 1 hr. When the hourly fire rating

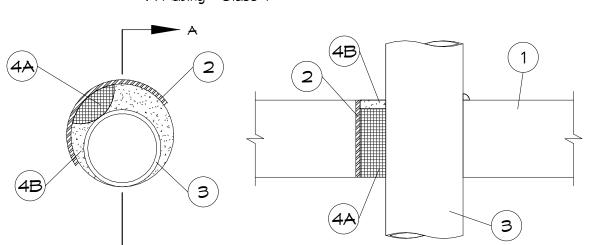
cables are installed and

*Bearing the UL Classification Mark

1-3/4 hr when no cables are installed.

System No. C-AJ-1198

T Rating - 0 Hr L Rating At Ambient - Less Than 1 CFM/Sq Ft L Rating At 400F - Less Than 1 CFM/Sq Ft W Rating - Class 1



Section A-A

- 1. Floor or Wall Assembly Min 4-1/2 in. (114 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete floor or min 5 in. (127 mm) thick reinforced lightweight or normal weight concrete wall. Wall may also be constructed of any UL Classified Concrete Blocks* Floor may also be constructed of any UL Classified hollow core Precast Concrete Units*. Max diam of opening is 7 in. (178 mm) when floor is constructed of hollow-core precast concrete units. Otherwise, max diam of opening is 26 in. (660 mm).
- SeeConcrete Blocks(CAZT) and Precast Concrete Units(CFTV) categories in the Fire Resistance Directory for names of 2. Steel Sleeve - (Optional, Not Shown) - Max 14 in. (356 mm) diam Schedule 10 (or heavier) steel pipe sleeve or max 14 in. (356

mm) diam No. 26 ga (or heavier) sheet steel with square flange spot-welded to the sleeve near its midheight and sized to be a

surfaces of floor or wall. When steel sleeve is used, F Rating of firestop system is 2 Hr. 3. Through Penetrant - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space between pipes, conduits or tubing and periphery of opening shall be min O in. (O mm, point contact) to max 2-1/4 in. (57 mm). Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following

min of 2 in. (51 mm) larger than the OD of the through penetrant. Sleeve cast or grouted into floor or wall flush with both

- types and sizes of metallic pipes, conduits or tubing may be used: A. Steel Pipe - Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe. When steel sleeve is used, the max pipe diam is 12 in. (305 mm). B. Iron Pipe - Nom 24 in. (610 mm) diam (or smaller) cast or ductile iron pipe. When steel sleeve is used, the max pipe
- diam is 12 in. (305 mm). C. Conduit Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing, nom 6 in. diam (or smaller) rigid steel conduit or nom 1 in. diam (or smaller) flexible steel conduit. D. Copper Tubing - Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing. When max 6 in. (152 mm)
- diam copper tubing is used, F Rating is 2 hr. When max 4 in. (102 mm) diam copper tubing is used, F Rating is 3 hr. When steel sleeve is used, the max copper tubing diam is 4 in. (102 mm). E. Copper Pipe - Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe. When max 6 in. (152 mm) diam copper pipe is used, F Rating is 2 hr. When max 4 in. (102 mm) diam copper pipe is used, F Rating is 3 hr. When
- 4. Firestop System The firestop system shall consist of the following: A. Packing Material - Min 4 in. (102 mm) thickness of min 4 pcf (64 kg/m3) mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall to accommodate the required thickness of fill material. When floor is constructed of hollow-core precast concrete units the packing material is to be flush with the bottom surface of the floor and extend through the thickness of the
- floor except for the recess required at the top surface of the floor to accommodate the fill material. B. Fill, Void or Cavity Material* - Sealant - Fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall. At the point contact location between penetrating item and concrete, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the concrete/penetrating item interface on the top surface of floor and on both surfaces of wall. When steel sleeve is used in concrete floor, a thin film of fill material shall be applied to cover edge of sleeve and to lap a min of 1/2 in. onto concrete. A min 1/4 in. (6 mm) thickness of sealant is required in the annulus for the 2 hr F Rating. A min 1/2 in. (13 mm) thickness of sealant is required in the annulus for the 3 hr F Rating. SPECIFIED TECHNOLOGIES INC - Pensil 300 Sealant or SpecSeal Series SIL300 Sealant for floors or walls and Pensil 300 S/L Sealant or SpecSeal Series SIL300SL Sealant for floors only.

*Bearing the UL Classification Mark

steel sleeve is used, the max copper pipe diam is 4 in. (102 mm).

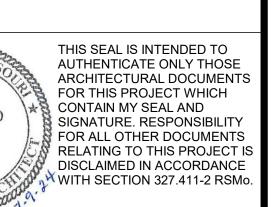


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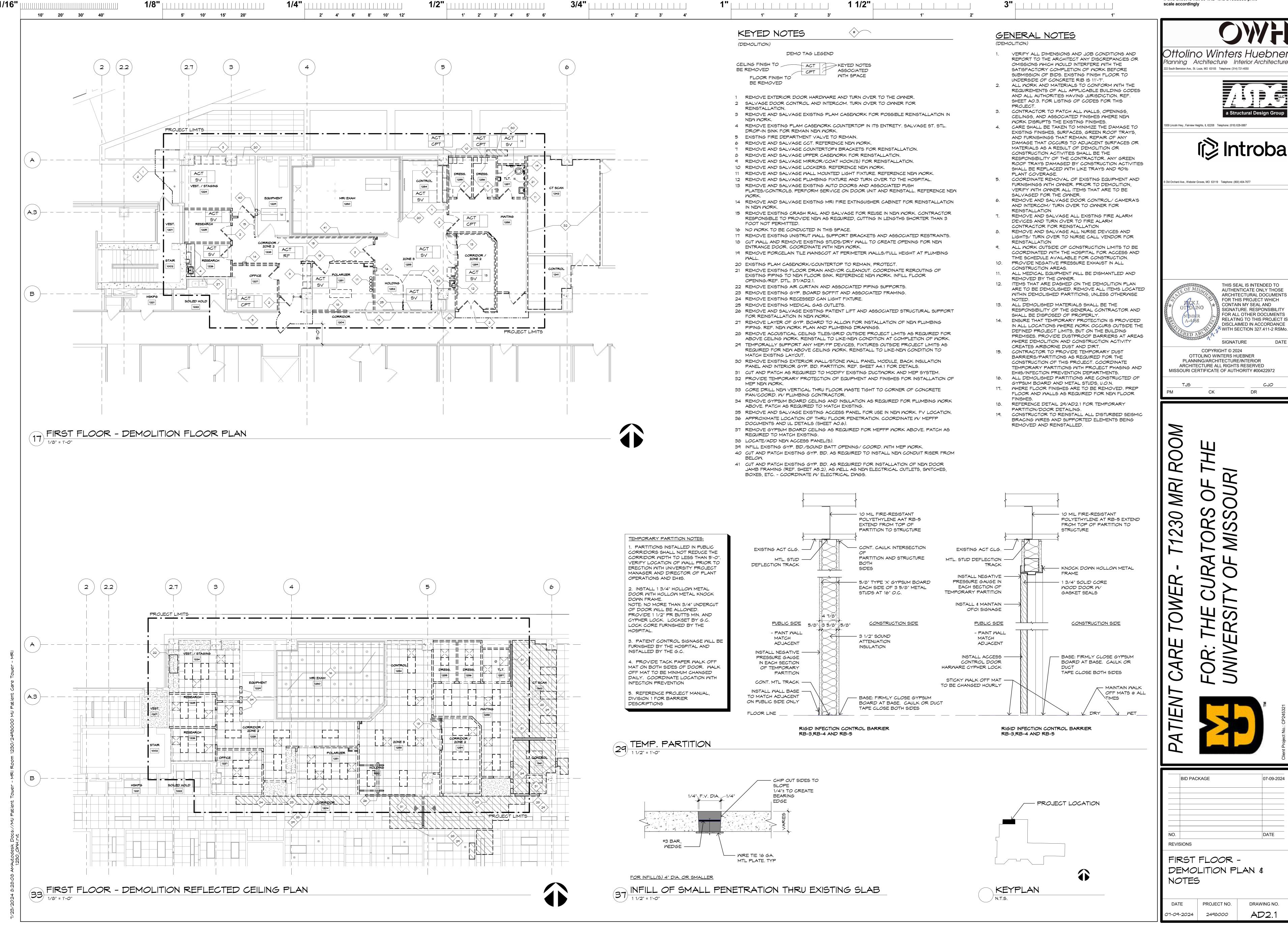




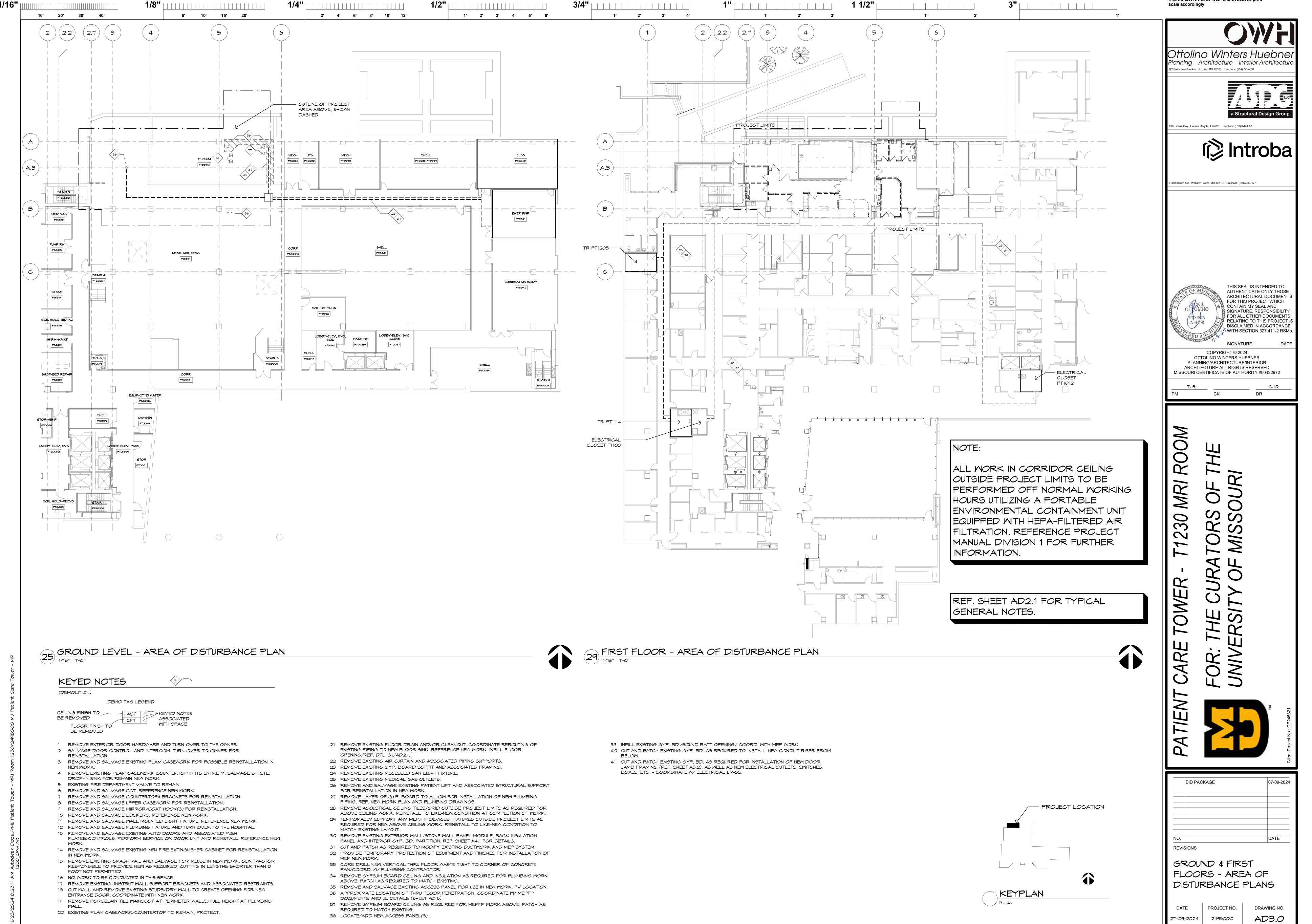
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Fire-rating). sink. Metal dome strainer may be used in sink drain.

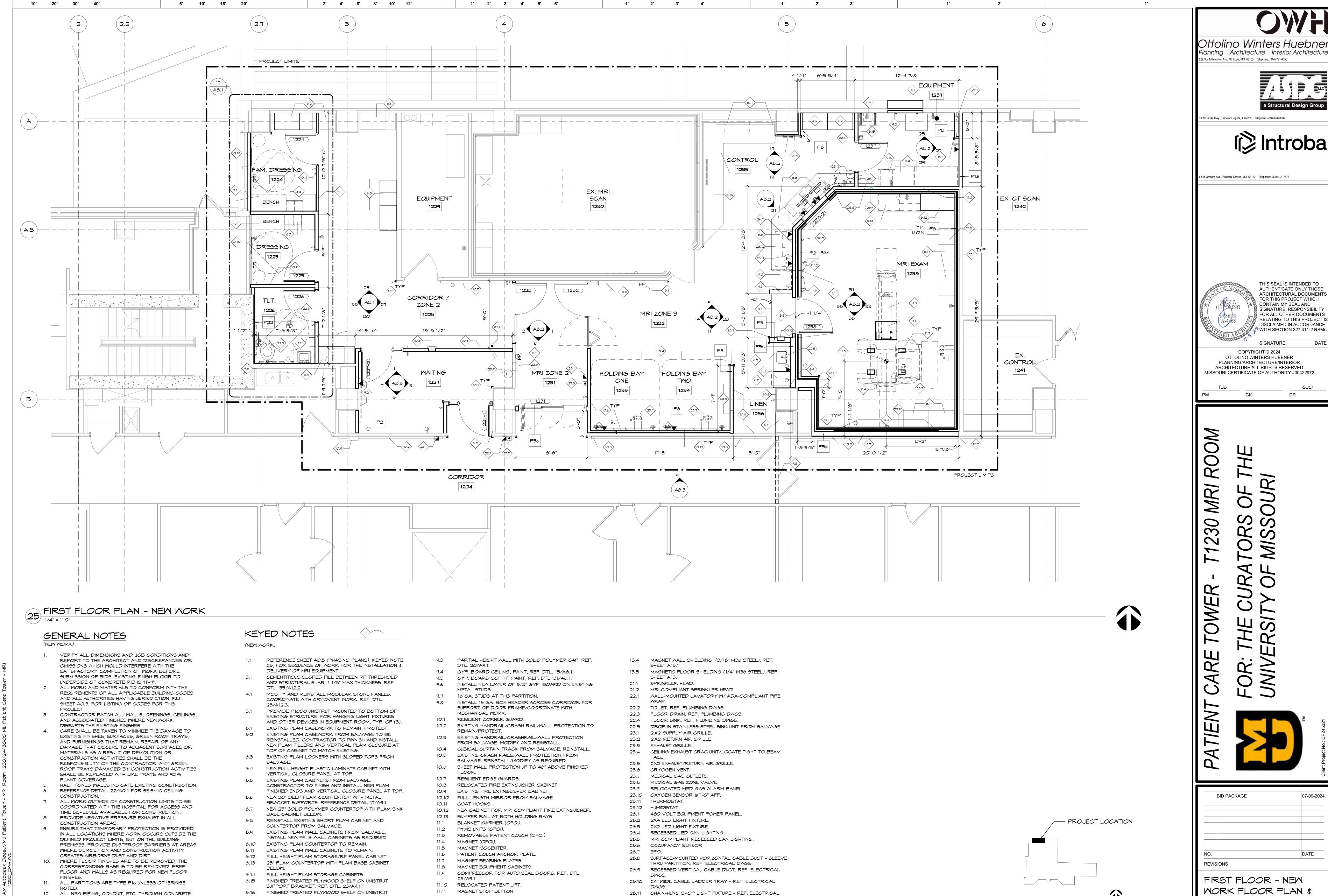
Minimum 1/2" bead hilti fs-one max or fs-one intumescent firestop sealant applied



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DWGS.

27.2 WIRELESS ACCESS POINT.

28.1 CARD READER (OFOI).

28.2 SMOKE DETECTOR.

28.3 FIRE ALARM.

27.3 INTERCOM BUZZER FROM SALVAGE.

27.1 SPEAKER.

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scale accordingly

NOTES

07-09-2024 2498000

PROJECT NO.

DRAWING NO.

A2.1

KEYPLAN

3" _ | | | | | | | | | | | | |

FLOOR TO BE SLEEVED. REF. MEPFP DRAWINGS.

REFERENCE SHEET AO.6 FOR TYPICAL UL DESIGN

REFERENCE 12 SERIES DOCUMENTS FOR RF AND

REFERENCE 11 SERIES DOCUMENTS FOR EQUIPMENT

MAGNETIC SHIELDING SCOPES OF WORK.

CONSTRUCTION.

PLANS AND SCHEDUALS.

PENETRATIONS FOR FIRESTOPPING AND FIRE RATED

11.12 EQUIPMENT TETHER - REF. DTL. 35/A12.2.

4'-0" BENCH UNITS (OFOI).

RF SHIELDED ENCLOSURE.

13.3 RF THRESHOLD. REF.DTL. 35/A12.2

13.2 RF EQUIPMENT FILTER PANEL.

13.1

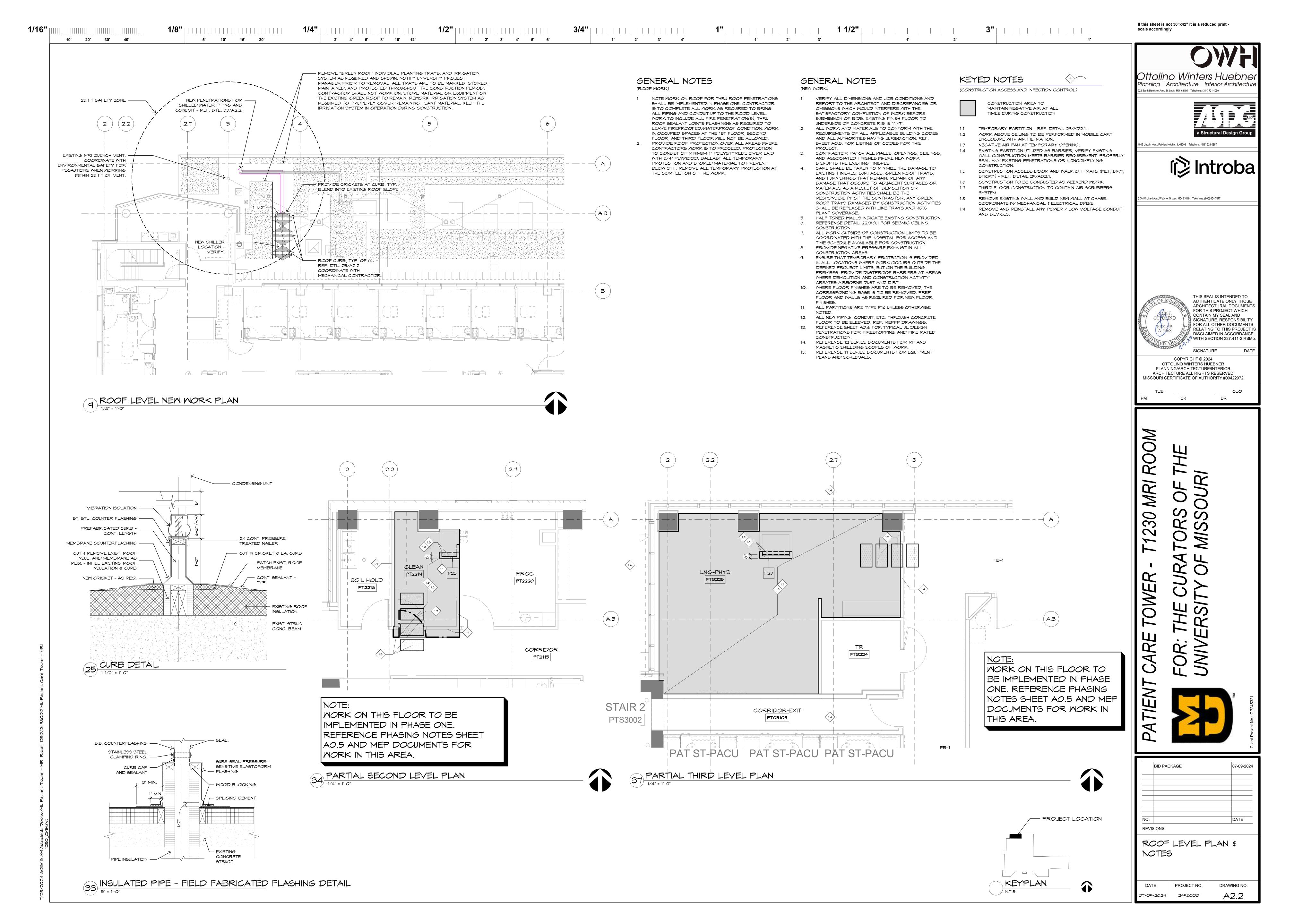
SUPPORT BRACKET. REF. DTL. 21/A9.1.

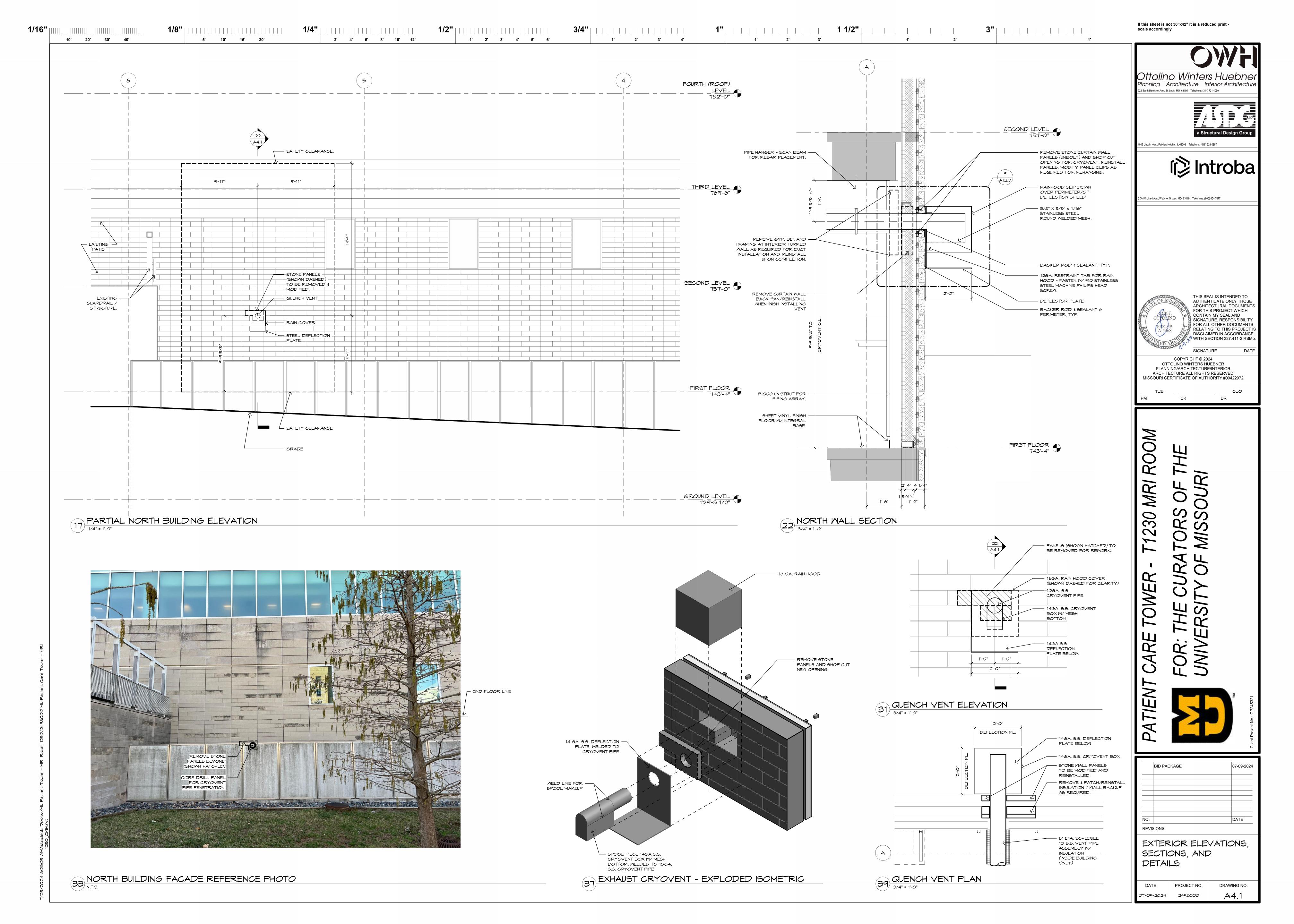
MAGNETIC HOLD OPEN.

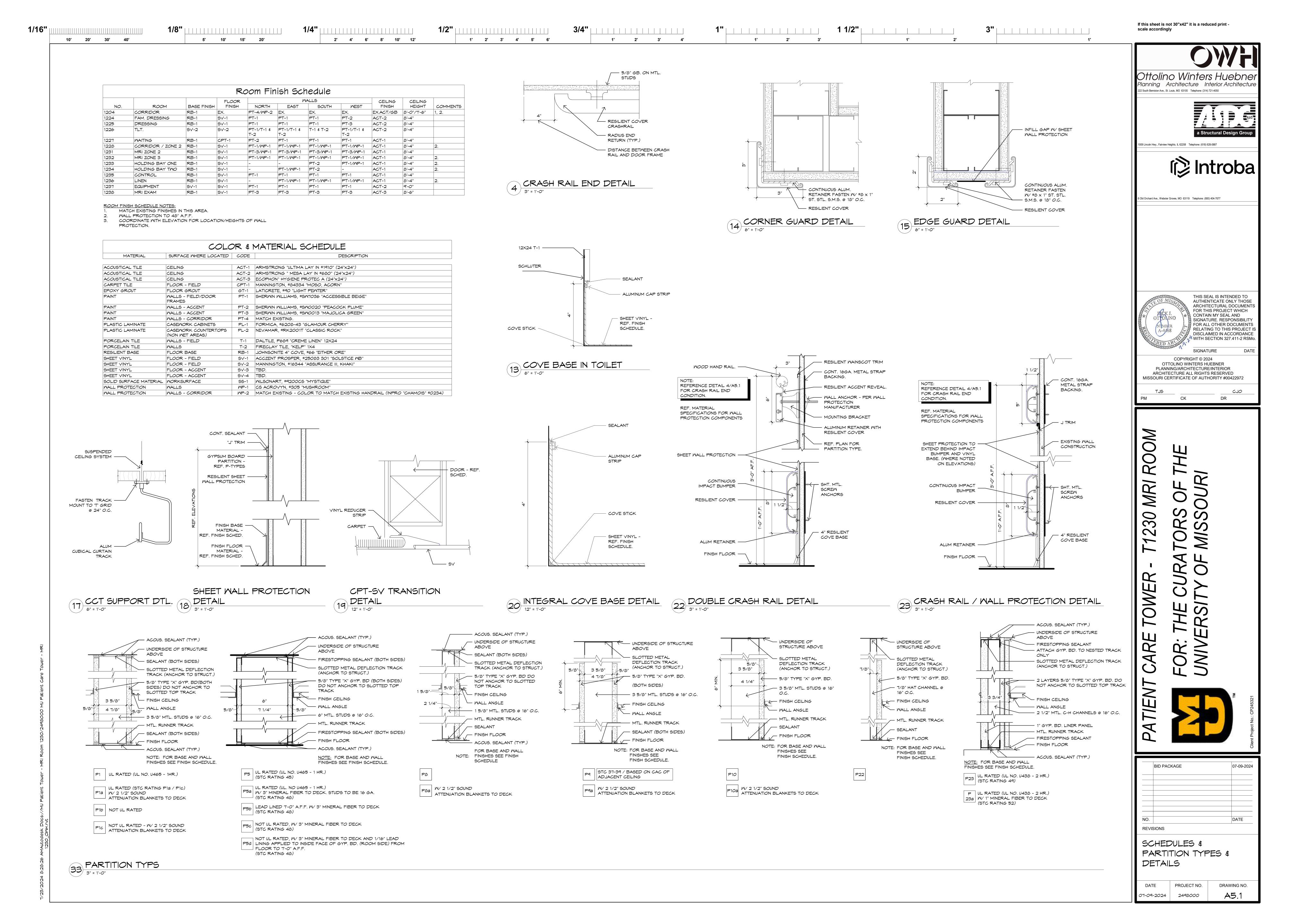
9.2 ALIGN NEW PARTITION WITH EXISTING.

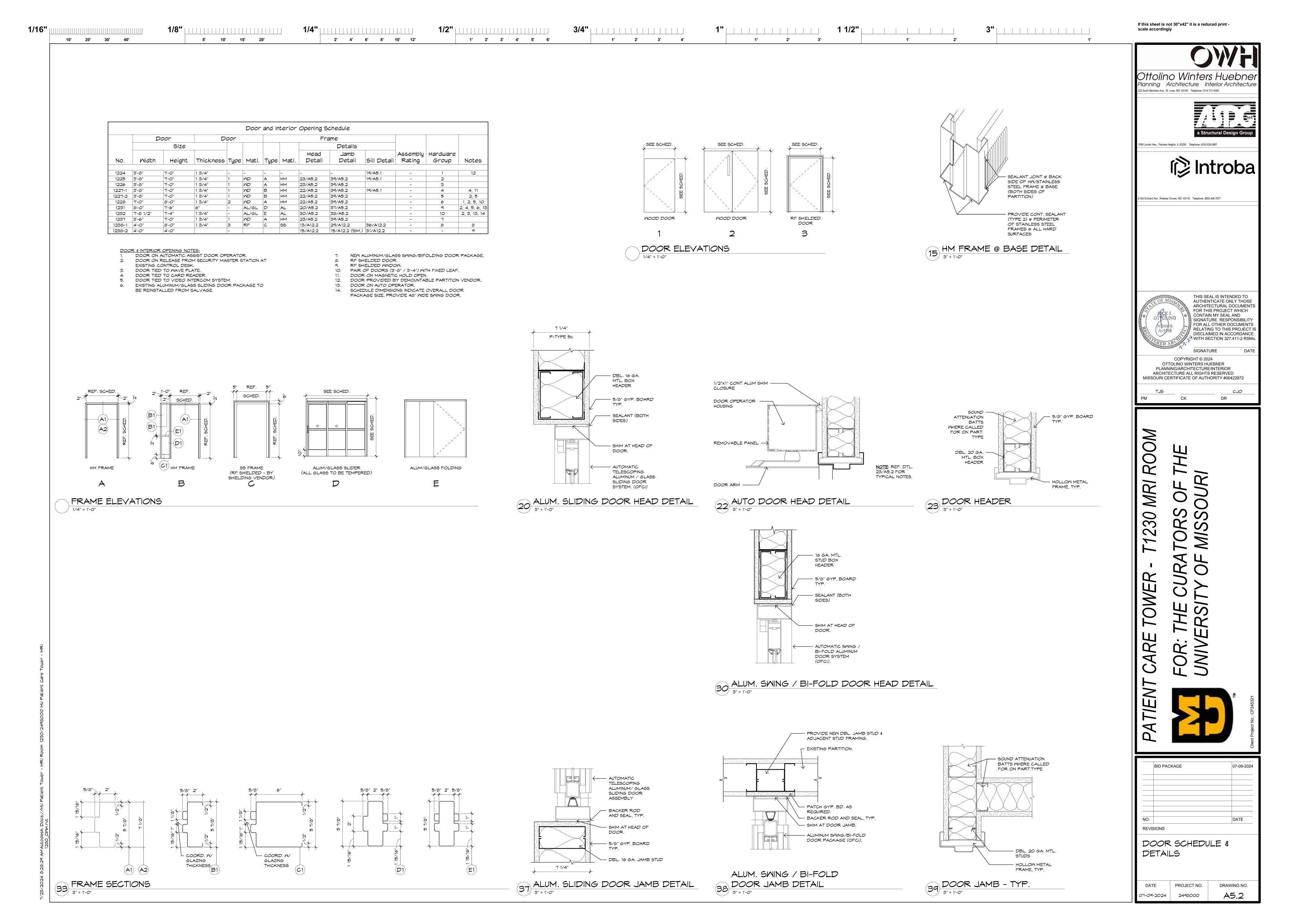
AUTOMATIC DOOR OPERATOR CONTROL PLATE.

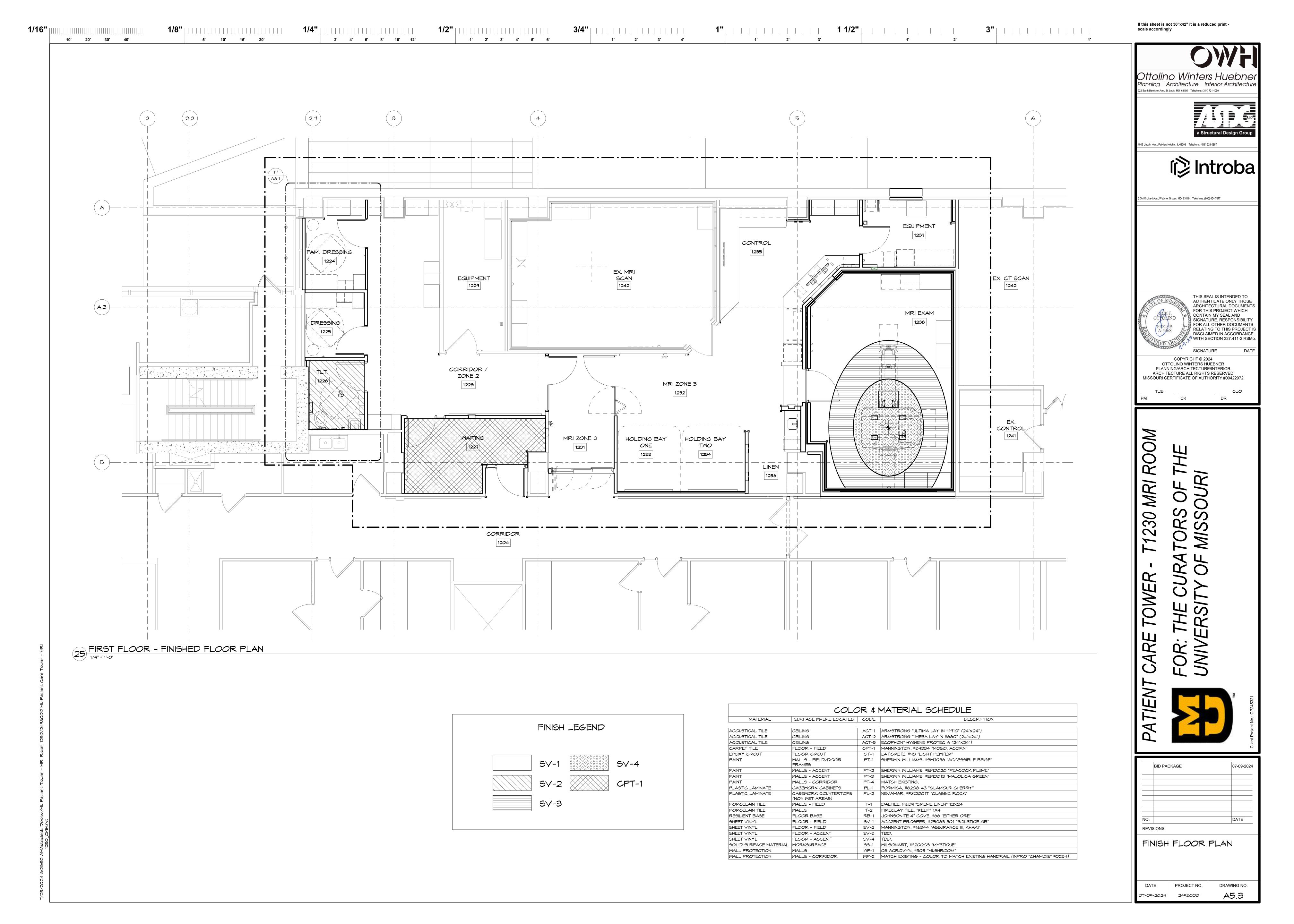
DEMOUNTABLE PARTITION SYSTEMS (OFCI). REF. DTL.

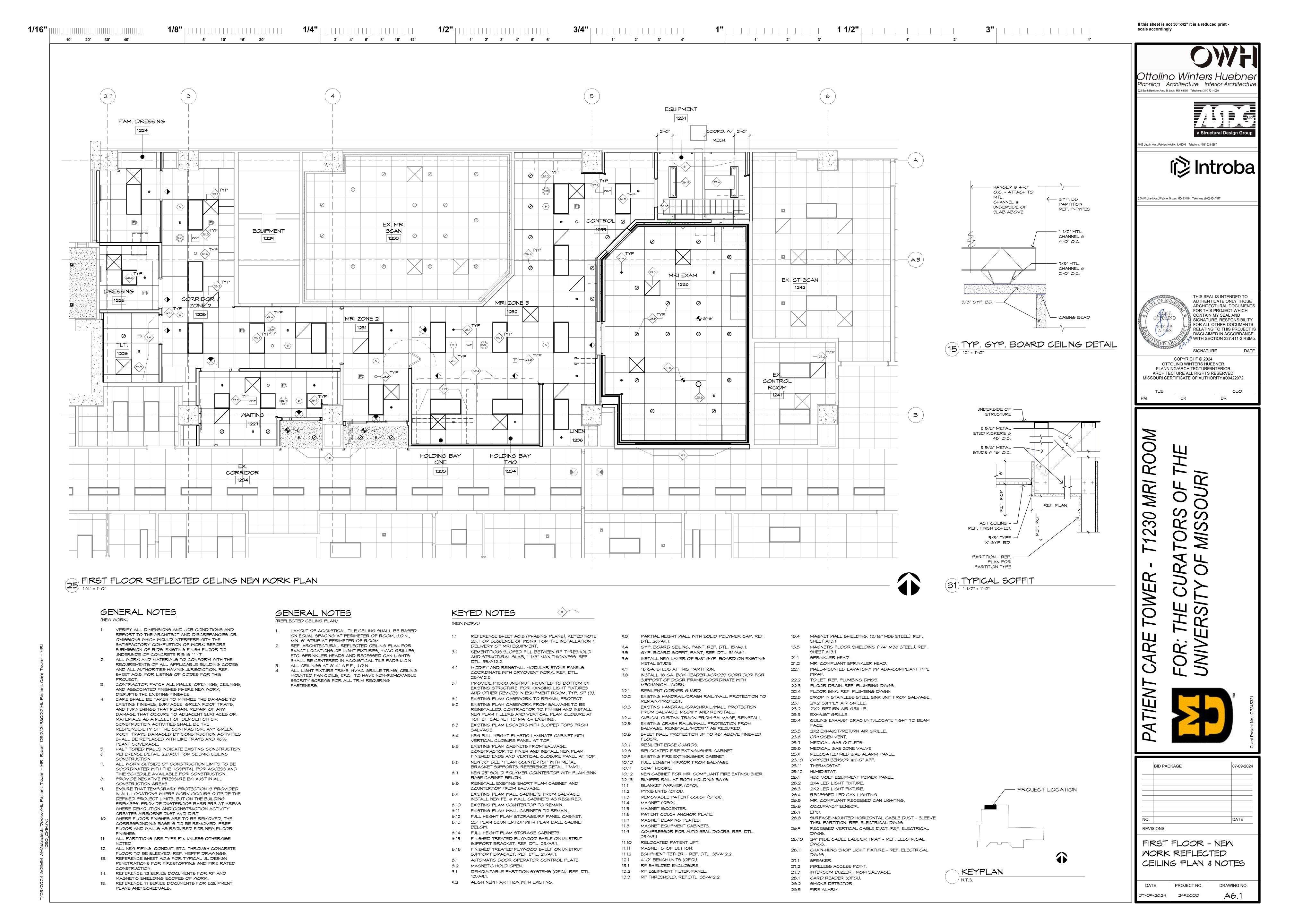


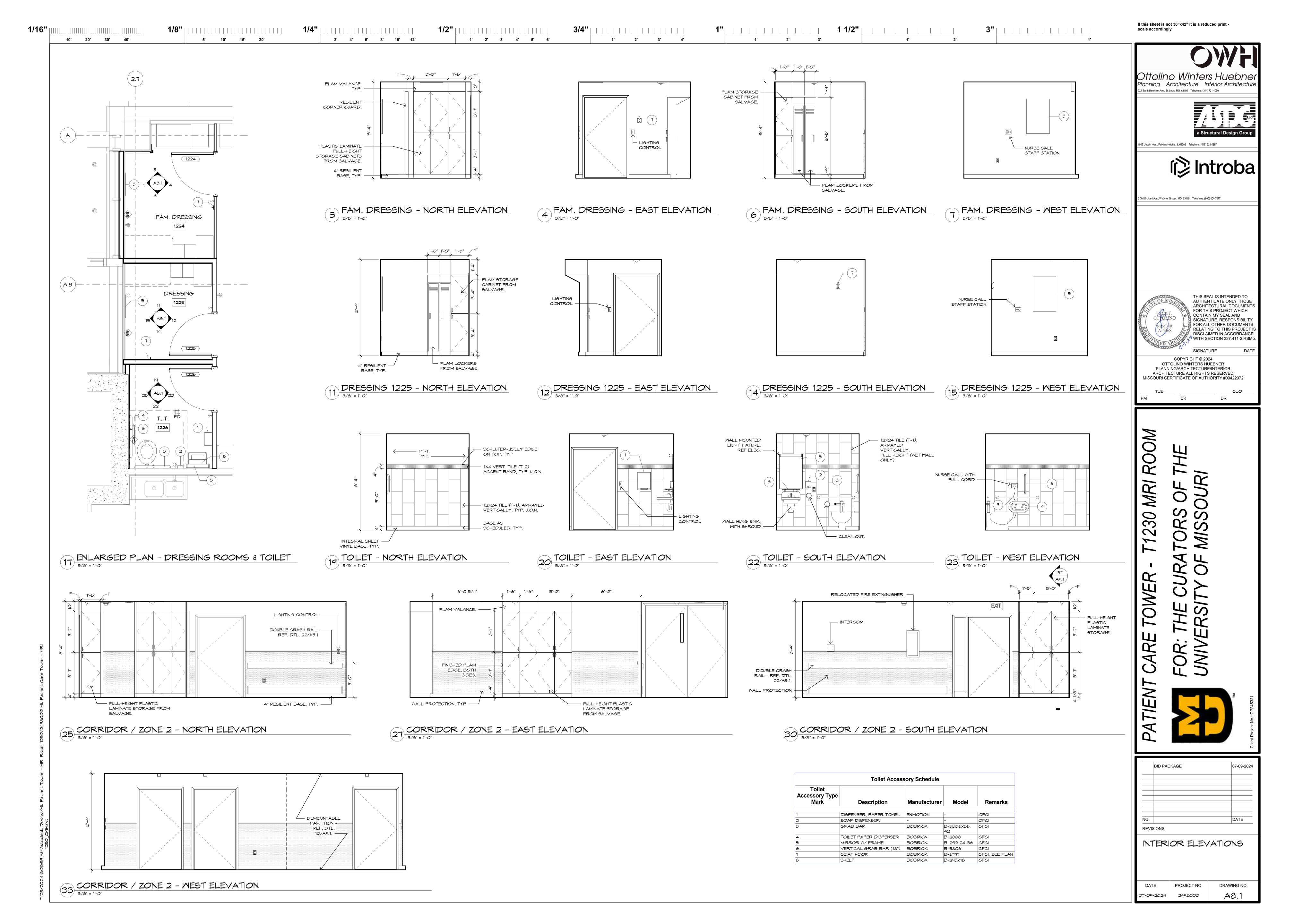


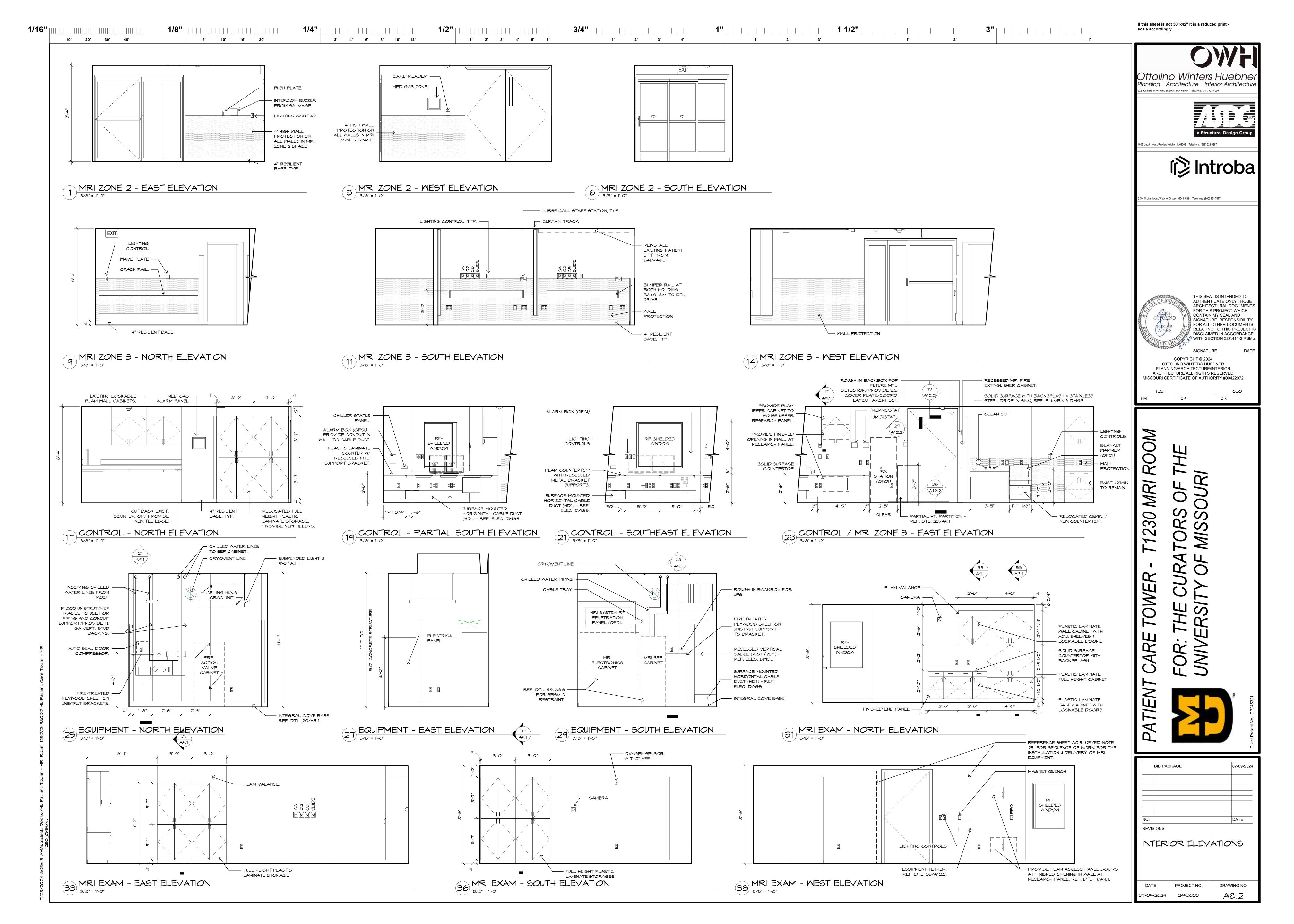


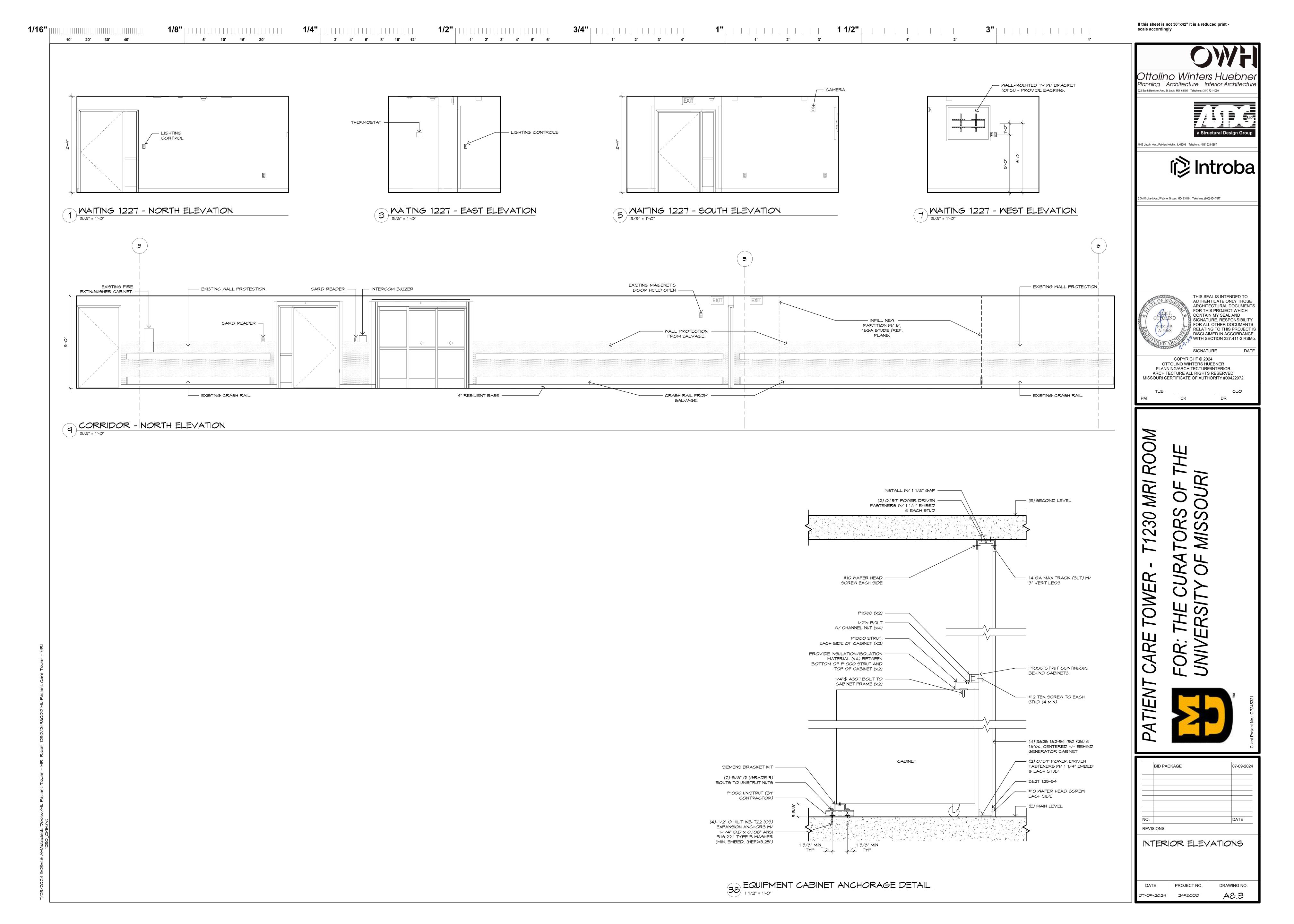


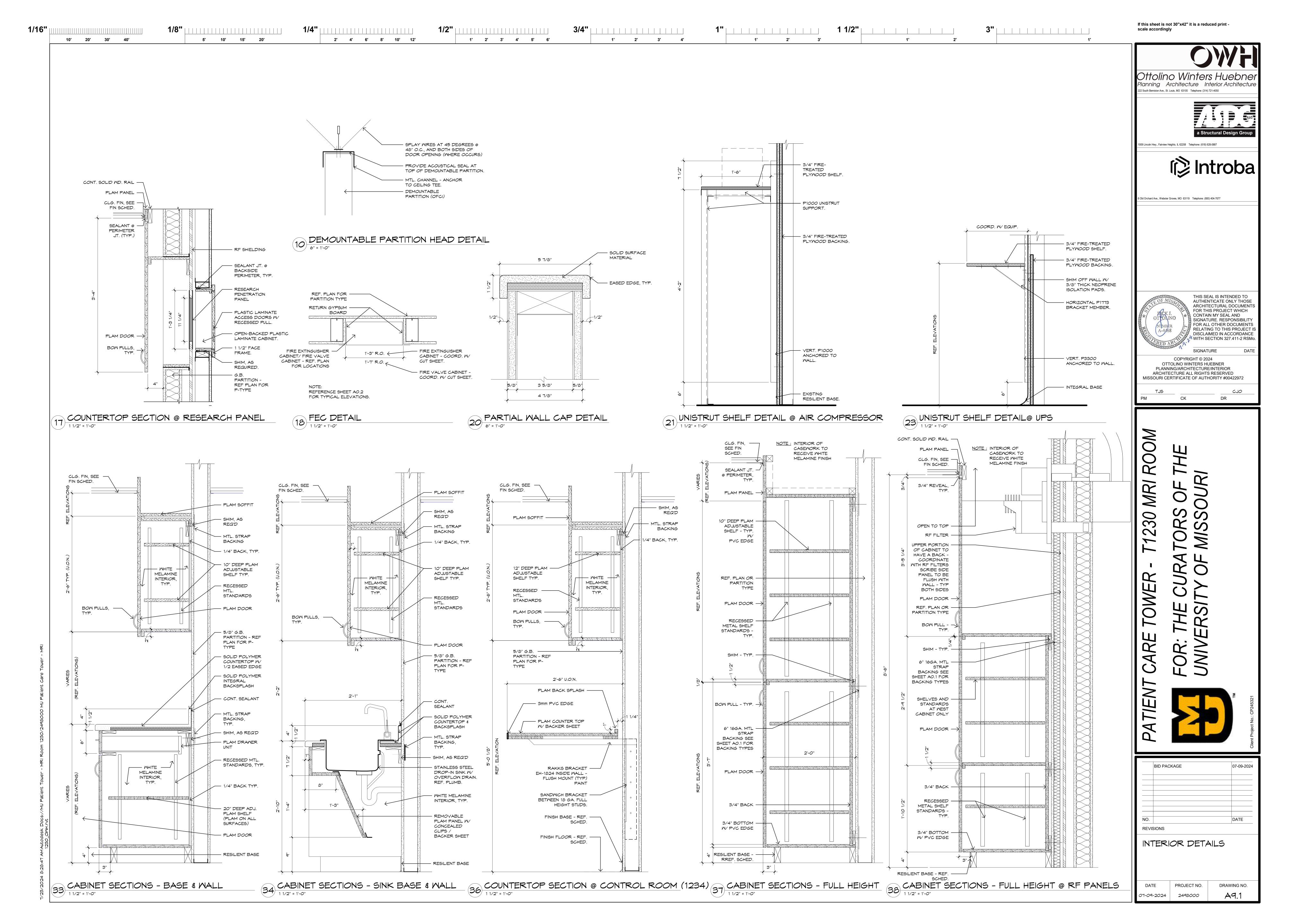


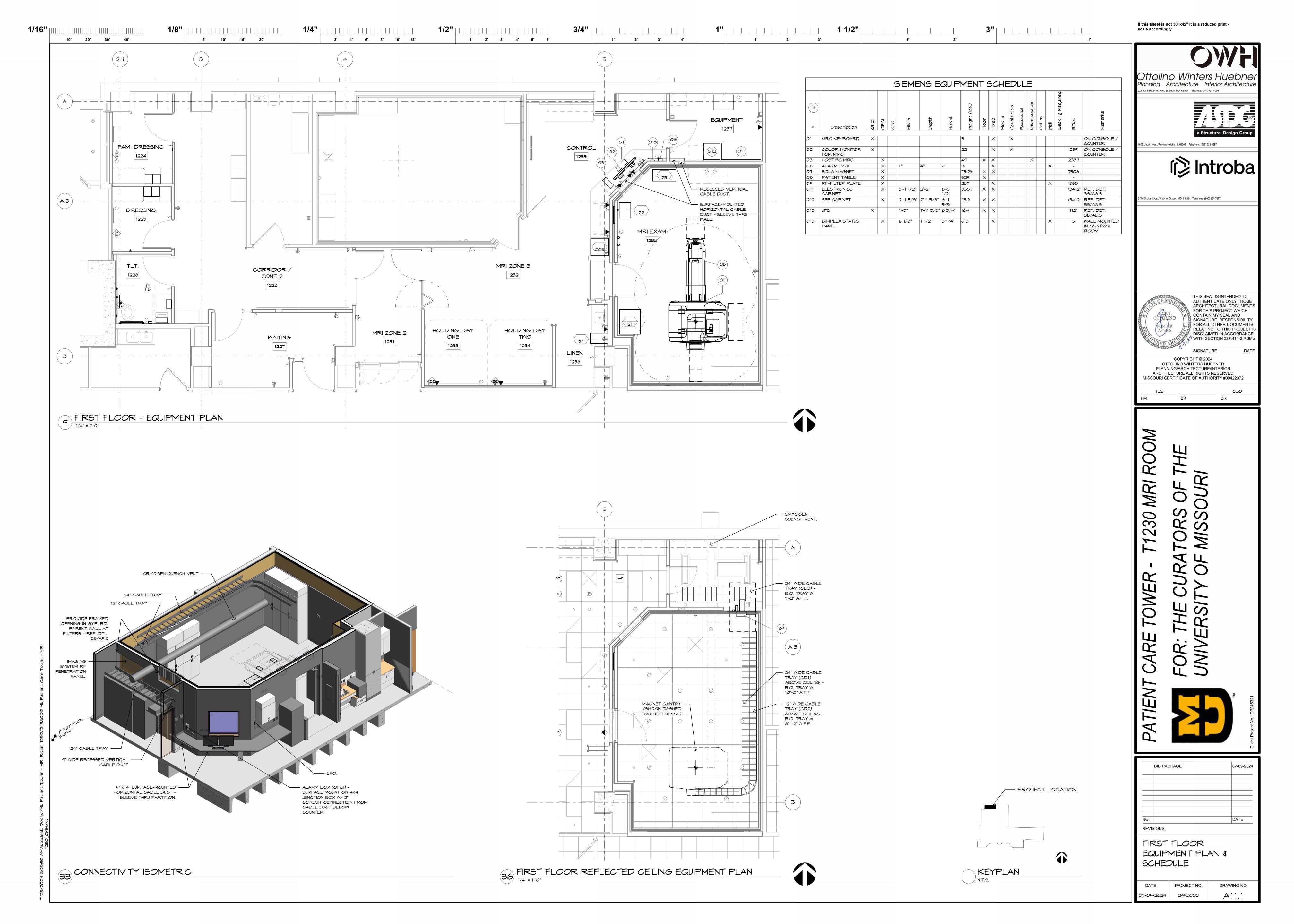


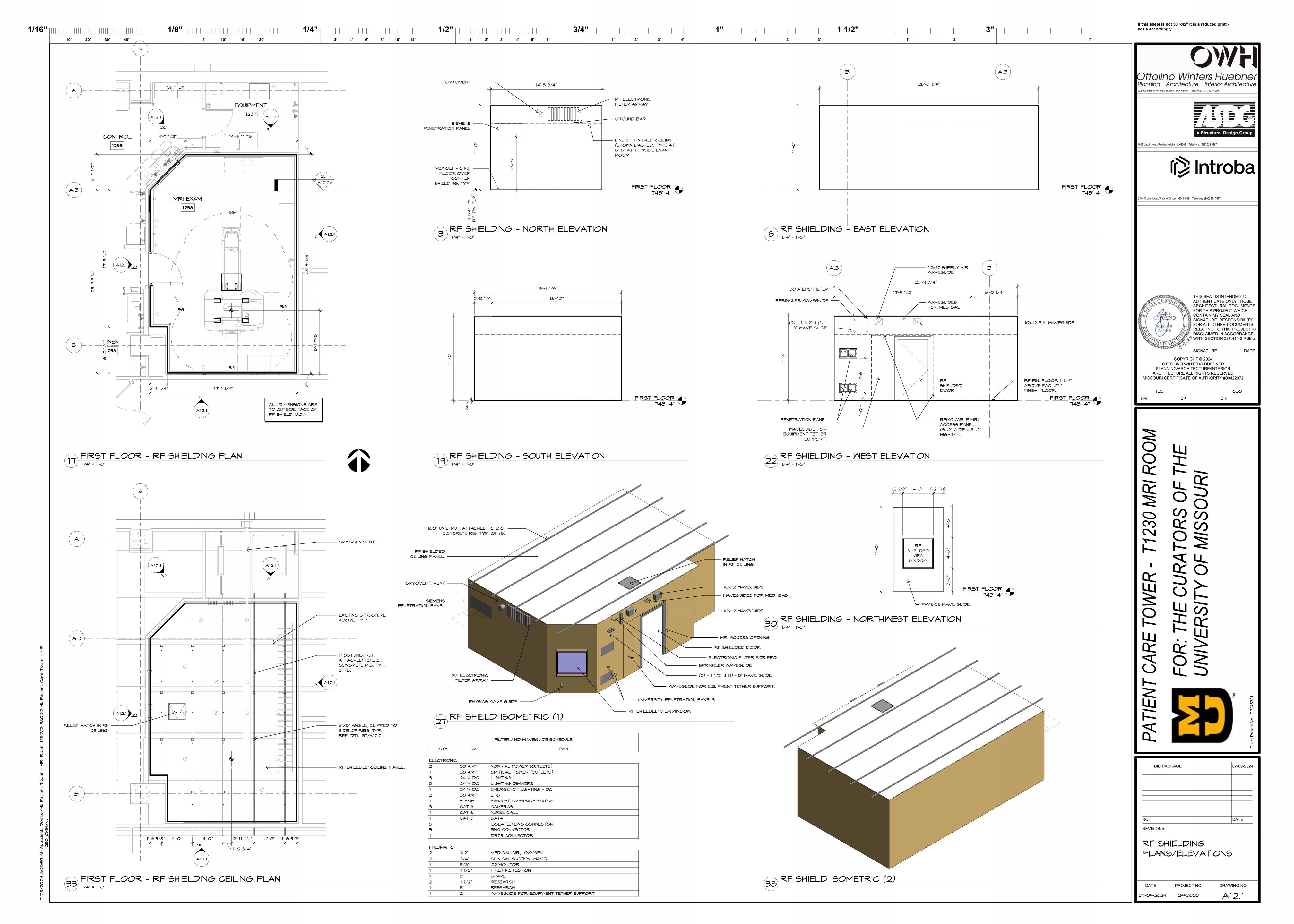


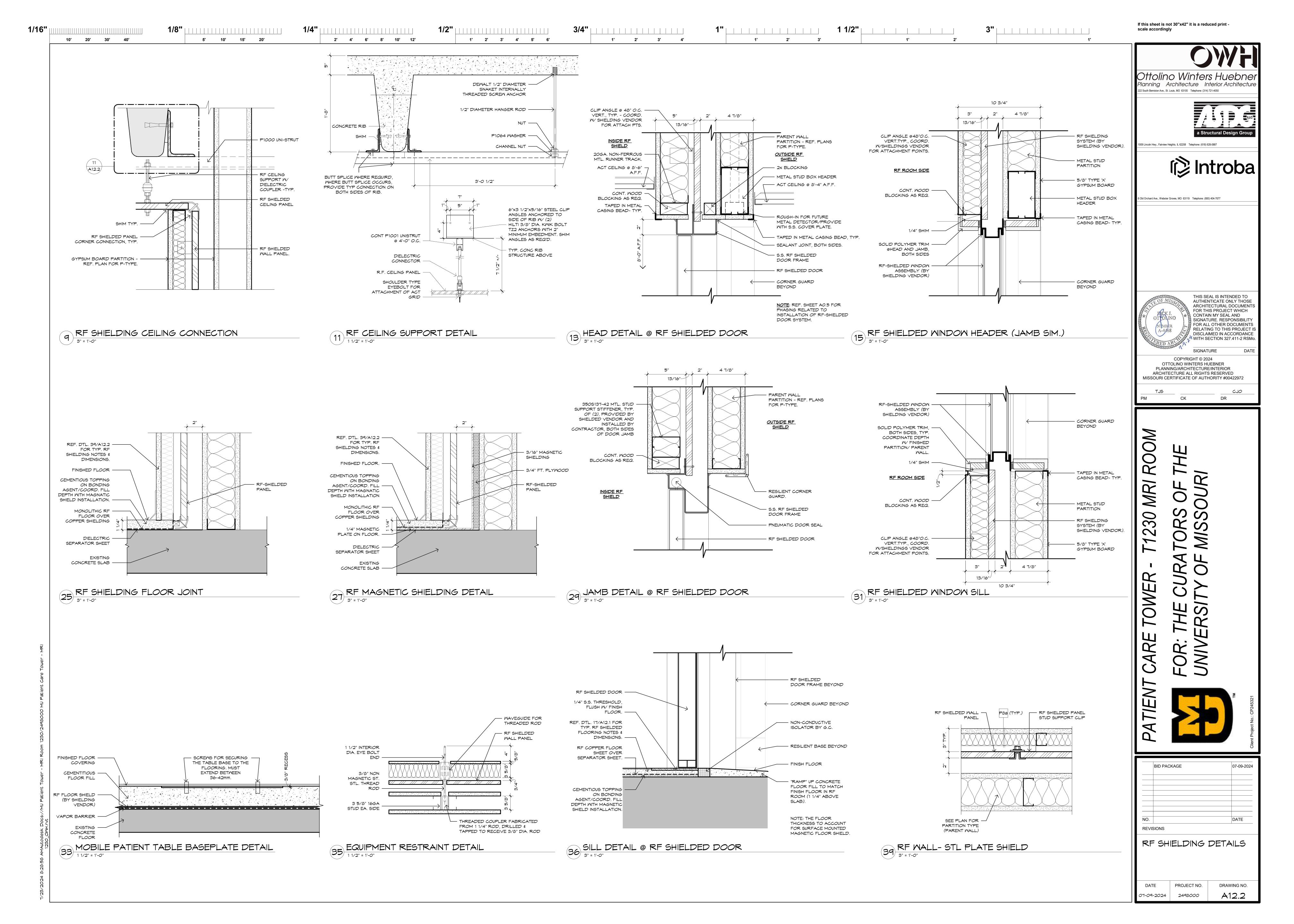


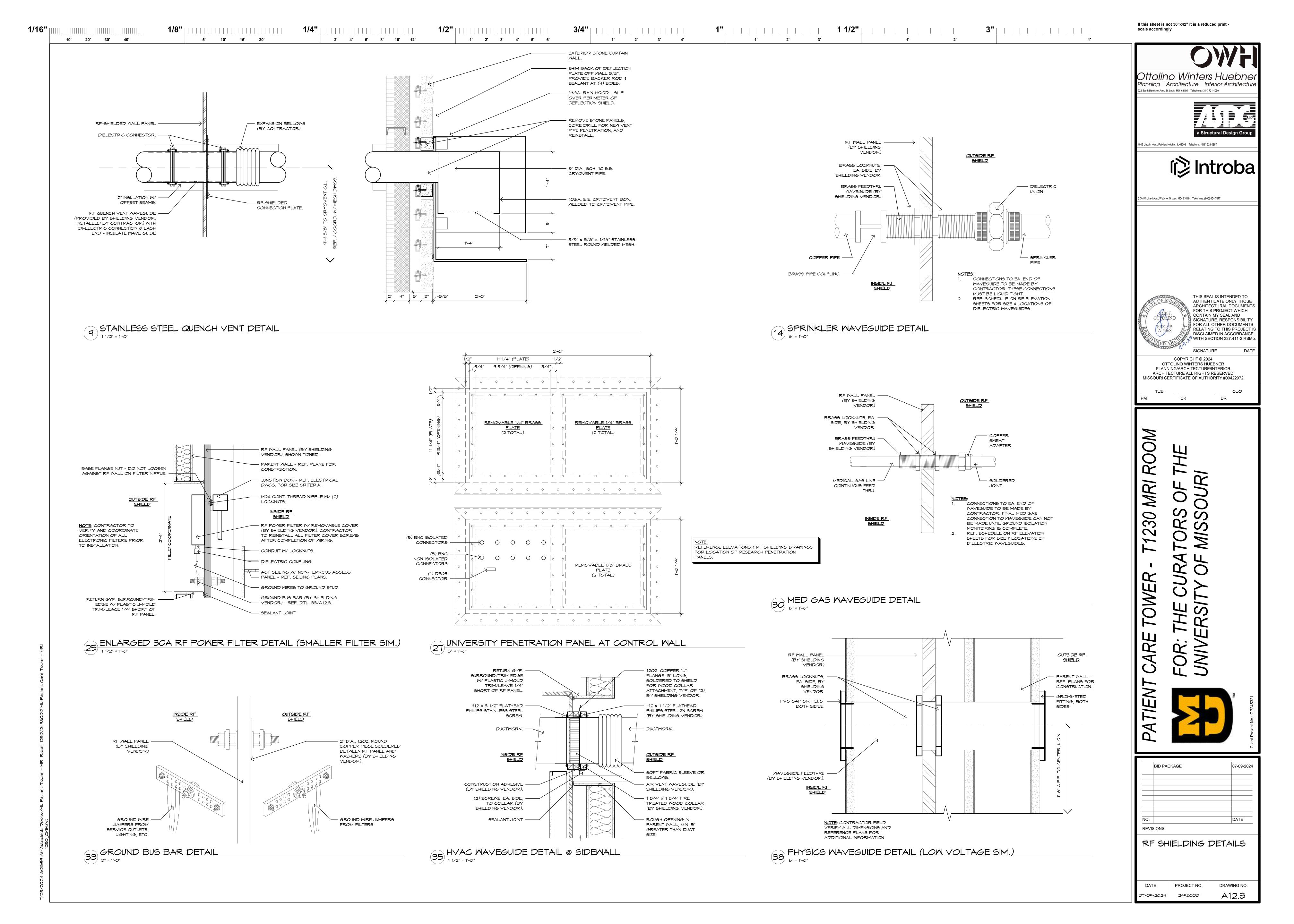


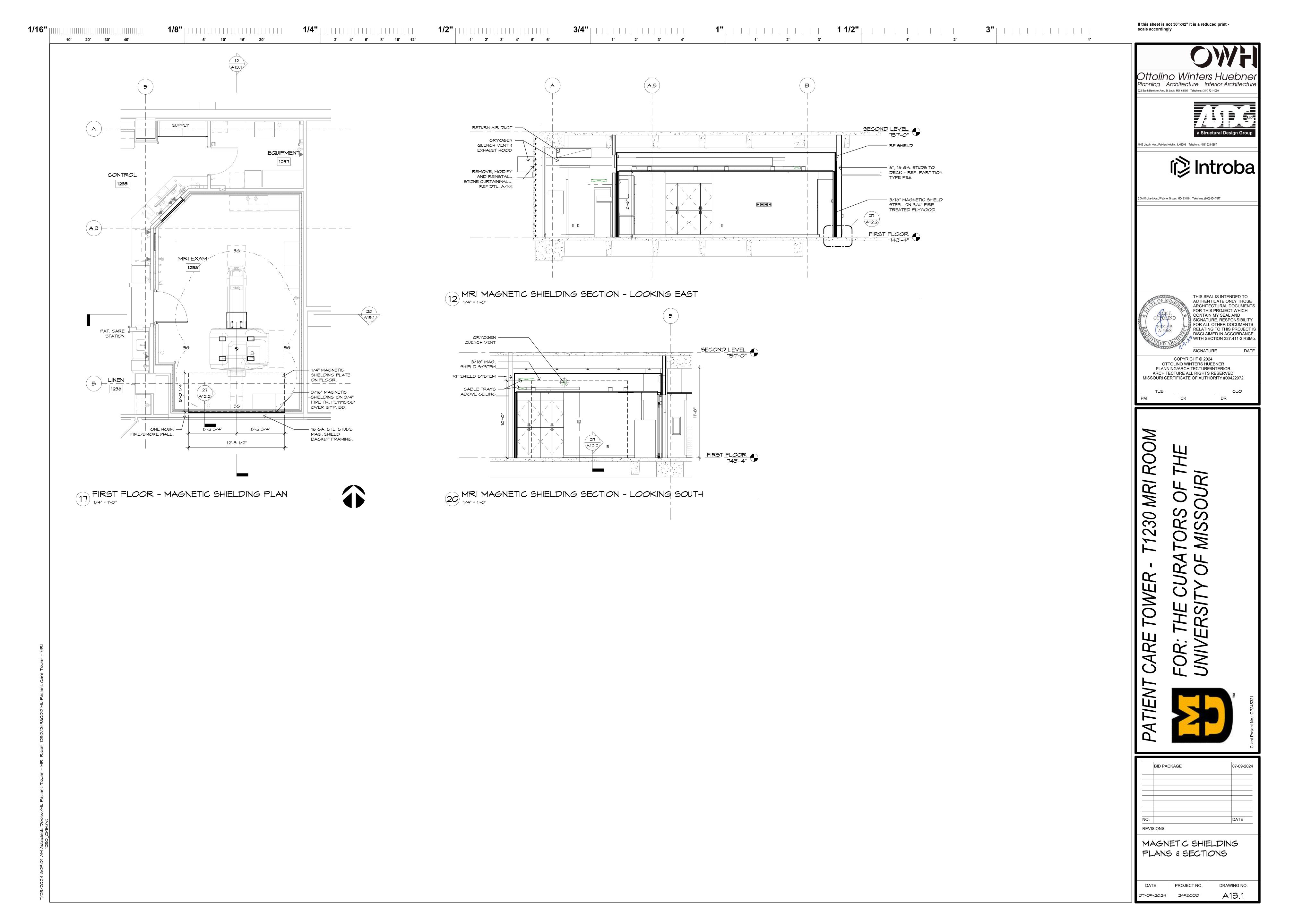


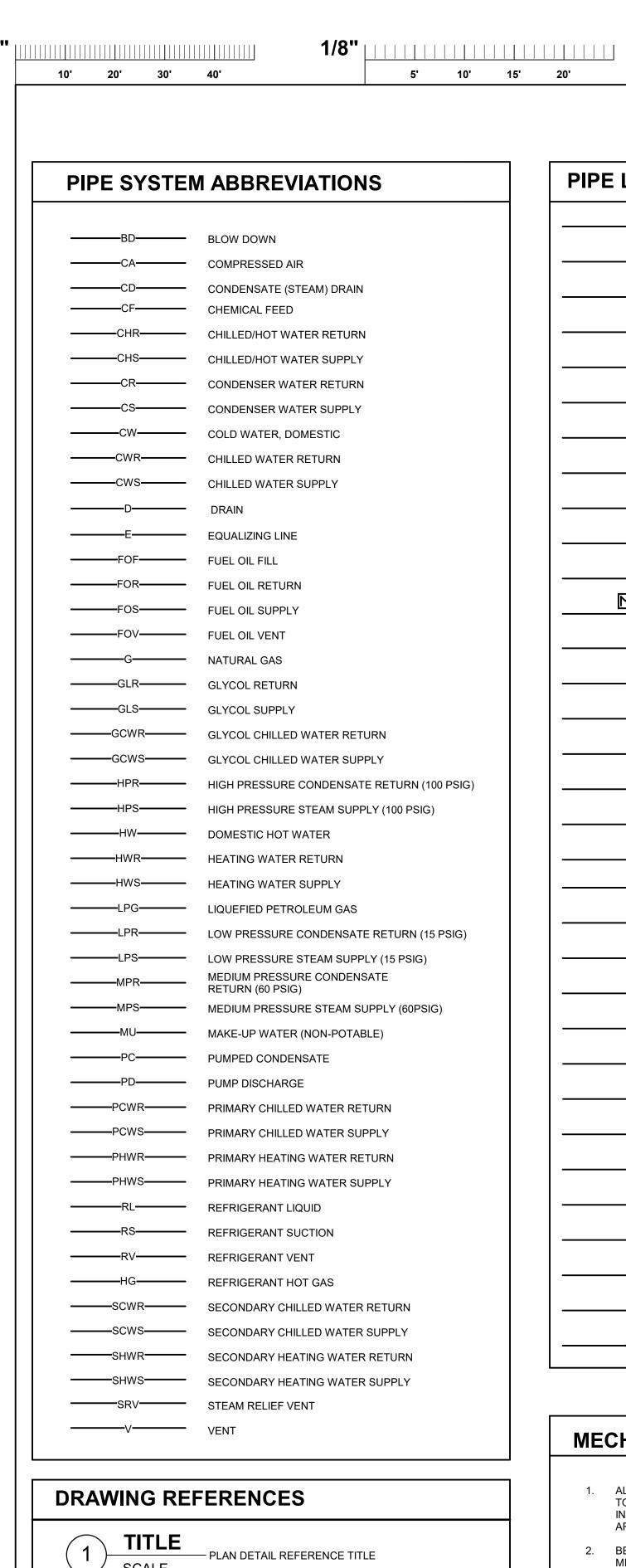


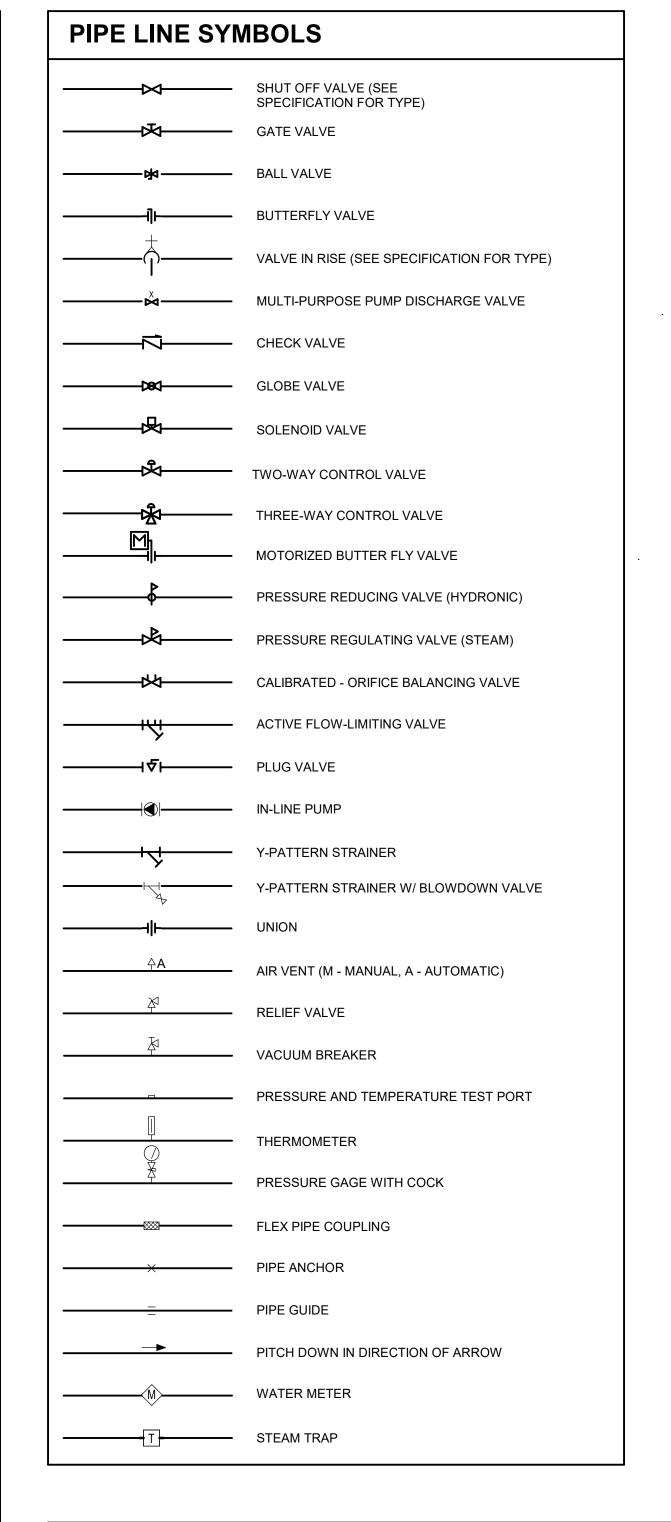




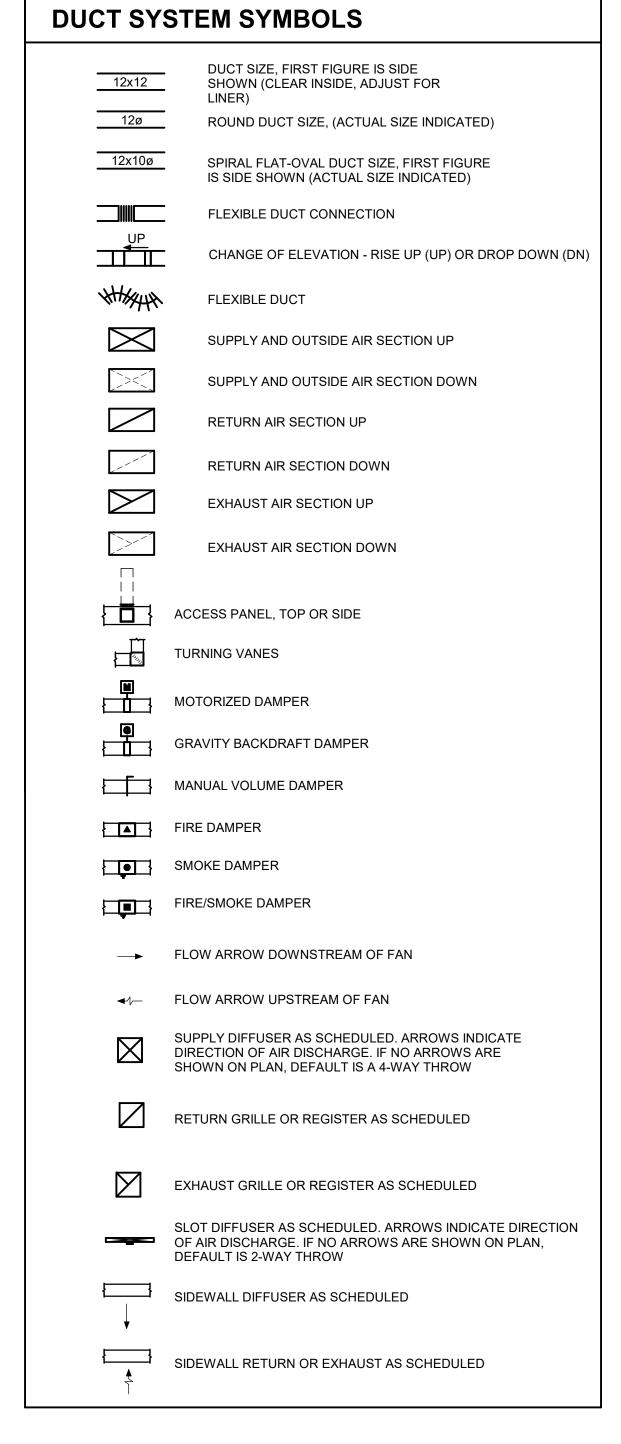








2' 4' 6' 8' 10' 12'



1' 2' 3' 4' 5' 6'

3/4"||||||||<u>|||||||</u>

1' 2' 3' 4'

EQUIPMENT DESIGNATION AIR CURTAIN AIR COOLED CONDENSER AIR CONDITIONING UNIT AIR CONTROL VALVE AIR FILTER AIR HANDLING UNIT AIR SEPARATOR AIR TERMINAL UNIT **BOILER** BLOWER COIL UNIT BASKET STRAINER BUFFER TANK CAV **CONSTANT AIR VOLUME** CHILLED BEAM COOLING COIL CHEMICAL FEED PUMP CHILLER **CONDENSER WATER PUMP** CRAC COMPUTER ROOM AIR CONDITIONING UNIT CRP CONDENSATE RETURN PUMP **CLEAN STEAM GENERATOR COOLING TOWER** CTF **COOLING TOWER FILTER** CONDENSING UNIT CABINET UNIT HEATER CONVECTOR CHILLED WATER PUMP DEAERATING FEEDWATER HEATER DHU DESICCANT DEHUMIDIFICATION UNIT **DUCT MOUNTED COIL EXHAUST AIR VALVE** EXHAUST FAN **EXPANSION JOINT ENERGY RECOVERY UNIT EXPANSION TANK EVAPORATIVE COOLER** FUME AIR VALVE FLUID COOLER FAN COIL UNIT FIRE DAMPER **FAN FILTER UNIT** COMBINATION FIRE/SMOKE DAMPER FLASH TANK FTR **FIN-TUBE RADIATION** FAN TERMINAL UNIT GAS FIRED FURNACE (*NEED APPROVAL) GLYCOL MAKEUP UNIT (*NEED APPROVAL) GLYCOL PUMP **GRAVITY VENTILATOR** HUMIDIFIER **HEATING COIL** HOOD EXHAUST VALVE HEAT PUMP UNIT **HEAT RECOVERY UNIT** HEATING WATER PUMP HEAT EXCHANGER LOUVER MAKE-UP AIR UNIT MOTORIZED DAMPER PACKAGED AIR CONDITIONING UNIT PCWP PRIMARY CHILLED WATER PUMP PIPE GUIDE PRIMARY HEATING WATER PUMP PHX PLATE HEAT EXCHANGER PRV PRESSURE REGULATING VALVE PTAC PACKAGED TERMINAL AIR CONDITIONER RETURN FAN TERMINAL REHEAT COIL **RADIANT PANEL** RTU **ROOFTOP UNIT** ROOF VENTILATOR (*NEED APPROVAL) SOUND ATTENUATOR SUPPLY AIR VALVE SCWP SECONDARY CHILLED WATER PUMP SMOKE DAMPER SUPPLY FAN SECONDARY HEATING WATER PUMP STEAM PRESSURE PUMP SPLIT SYSTEM CONDENSING UNIT (*NEED APPROVAL) SPLIT SYSTEM FAN/COIL UNIT (*NEED APPROVAL) SSFU STEAM TRAP TCP TEMPERATURE CONTROL PANEL UNIT HEATER VAV VARIABLE AIR VOLUME BOX VFD VARIABLE FREQUENCY DRIVE VIBRATION ISOLATION

VRF INDOOR UNIT

WATER COOLED CONDENSER

WATER SOURCE HEAT PUMP

VRF HEAT RECOVERY UNIT (*NEED APPROVAL)

INDIC

IPLV ISP

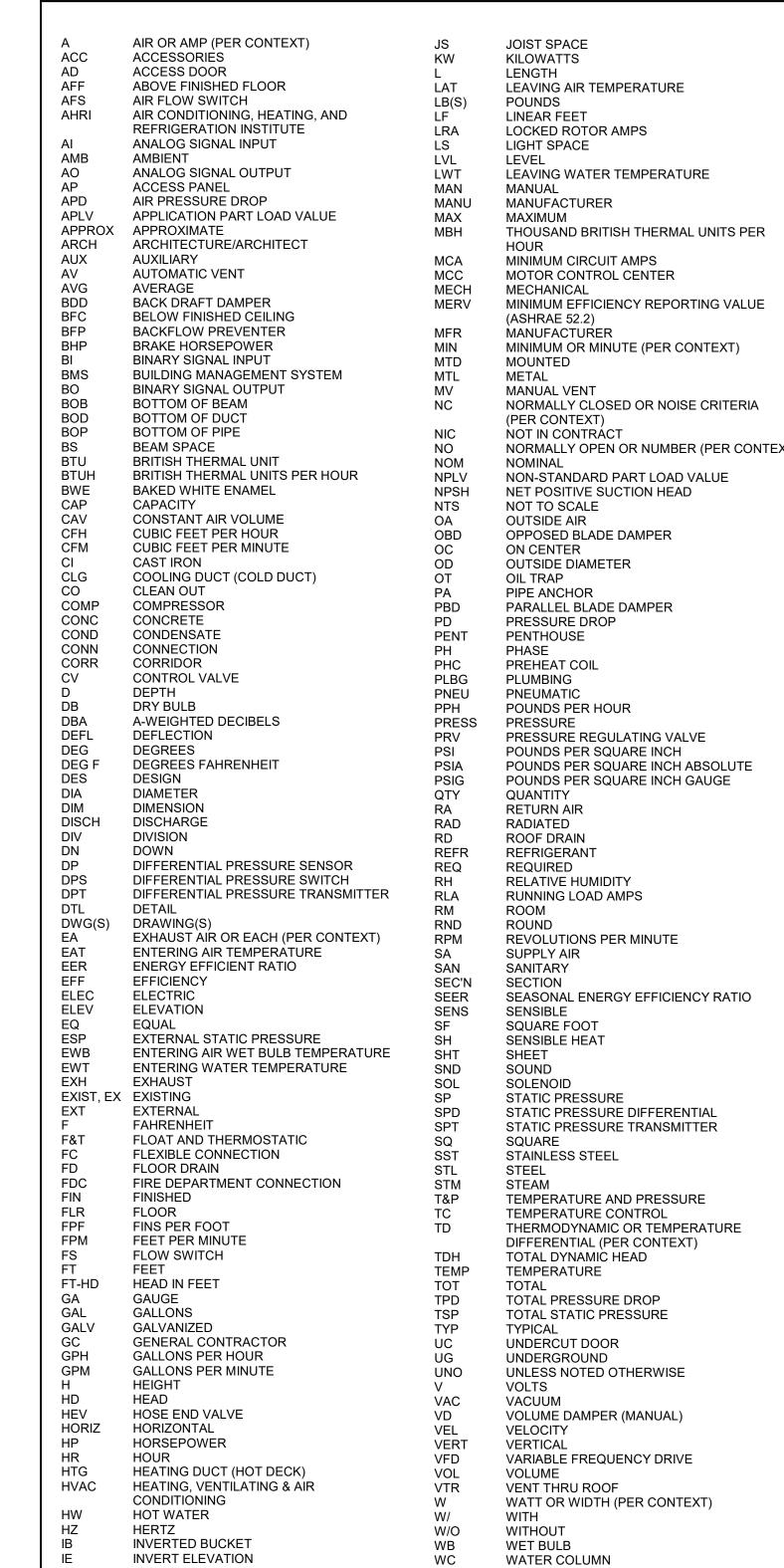
INDICATOR

INTEGRATED PART-LOAD VALUE

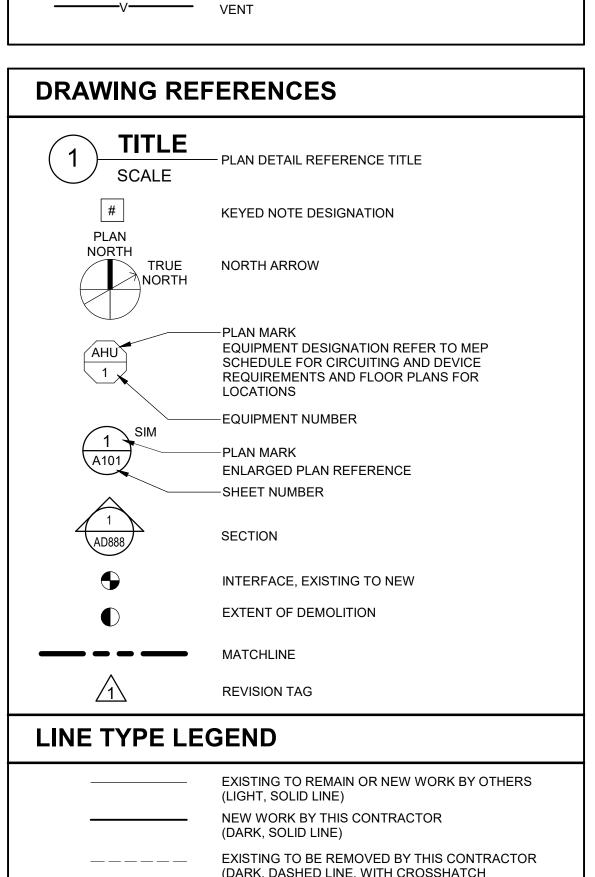
INTERNAL STATIC PRESSURE

1' 2'

MECH EQUIPMENT DESIGNATION



MECHANICAL ABBREVIATIONS



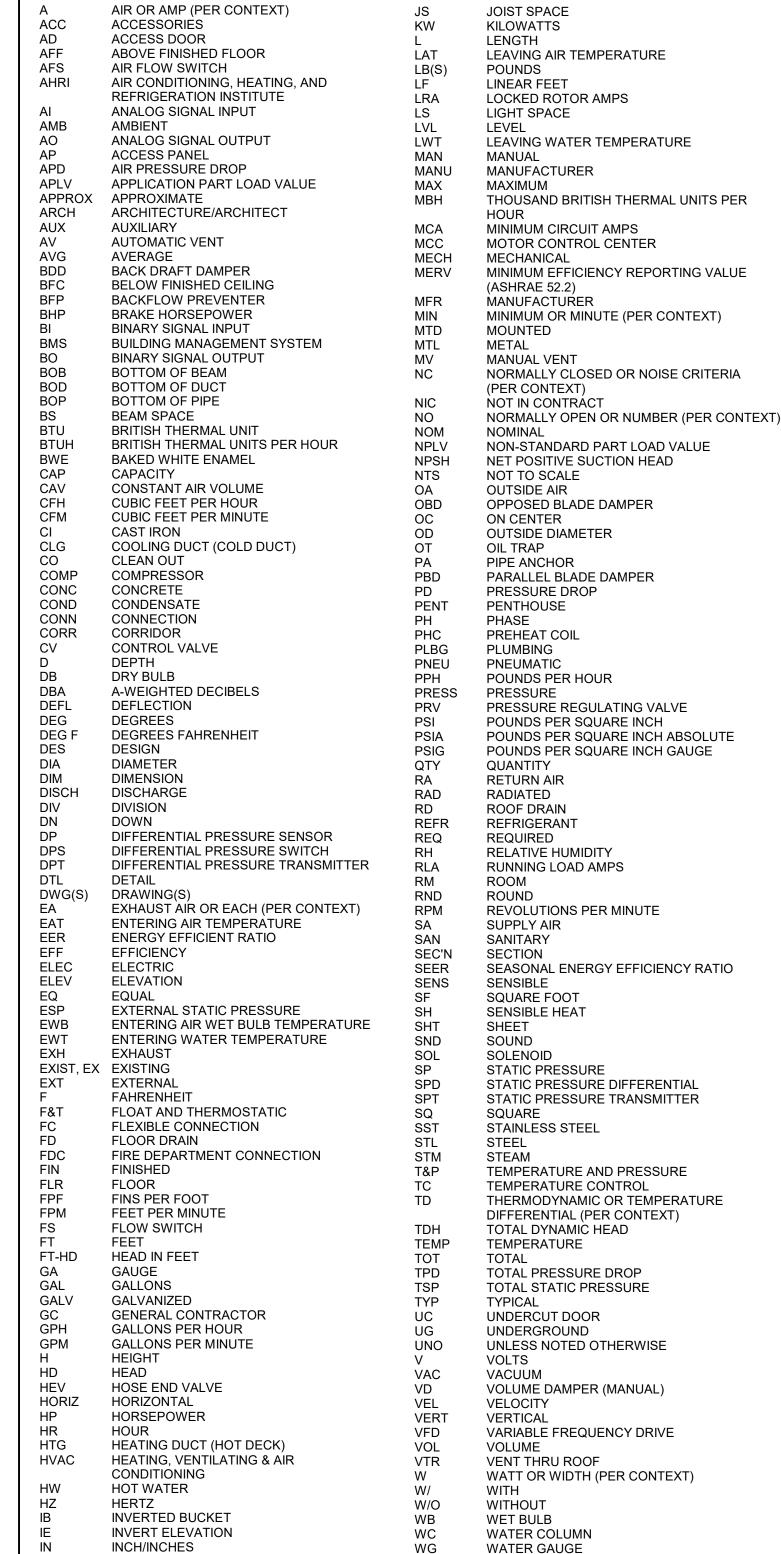


- ALL ELBOWS, FITTINGS, ETC., IN PIPING AND DUCTWORK REQUIRED O CLEAR ALL JOB OBSTRUCTIONS ARE NOT NECESSARILY INDICATED. ALL NECESSARY TRANSITIONS, FITTINGS AND OFFSETS ARE REQUIRED WHETHER SHOWN OR NOT.
- BECAUSE OF THE LIMITED SPACE AVAILABLE TO INSTALL ALL OF THE MECHANICAL WORK, COORDINATION BETWEEN THE VARIOUS TRADES IS OF THE UTMOST IMPORTANCE. SEE SPECIFICATION 230100 FOR REQUIRED COORDINATION DRAWINGS.
- THE CONTRACTOR SHALL COORDINATE STAGING AND SCHEDULING WITH THE OWNER'S REPRESENTATIVE. EXISTING CONDITIONS ARE BASED ON INFORMATION OBTAINED
- FROM PREVIOUS CONSTRUCTION DOCUMENTS AND INFORMAL FIELD OBSERVATION AND SHALL NOT BE CONSTITUTED AS "AS BUILT." THE CONTRACTOR SHALL FIELD-VERIFY EXISTING CONDITIONS BEFORE THE ONSET OF CONSTRUCTION.
- DEMOLISH ALL PIPING, DUCTWORK EQUIPMENT, ETC., SHOWN TO BE REMOVED, IN ITS ENTIRETY, INCLUDING ALL HANGERS AND SUPPORTS.
- WHERE CONTRACTOR IS REQUIRED TO CONCEAL NEW WORK, REMOVE OR MODIFY EXISTING CONSTRUCTION OR EQUIPMENT, OR ATTACH TO EXISTING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE EXISTING CONSTRUCTION AND MATERIALS TO MATCH CONDITIONS AT THE ONSET OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND REPLACE EXISTING CEILINGS AND WALLS REQUIRED FOR INSTALLATION OF MECHANICAL SYSTEMS.
- THE OWNER SHALL MAINTAIN ALL SALVAGE RIGHTS OF EQUIPMENT AND MATERIALS REMOVED. ALL EQUIPMENT AND MATERIALS NOT CLAIMED BY THE OWNER SHALL BE REMOVED FROM THE PREMISES BY THIS CONTRACTOR.
- CONTRACTOR SHALL PROVIDE SEISMIC BRACING AND MOUNTING OF EQUIPMENT AND MATERIALS IN COMPLIANCE WITH ALL LOCAL CODE SECTION SEISMIC PROTECTION.
- 9. ALL WORK SHALL BE INSTALLED PER THE REFERENCE DETAILS. REGARDLESS OF WHETHER OR NOT THE DETAILS ARE CALLED OUT PROVIDE VENTS AT ALL HYDRONIC PIPING HIGH POINTS. AND

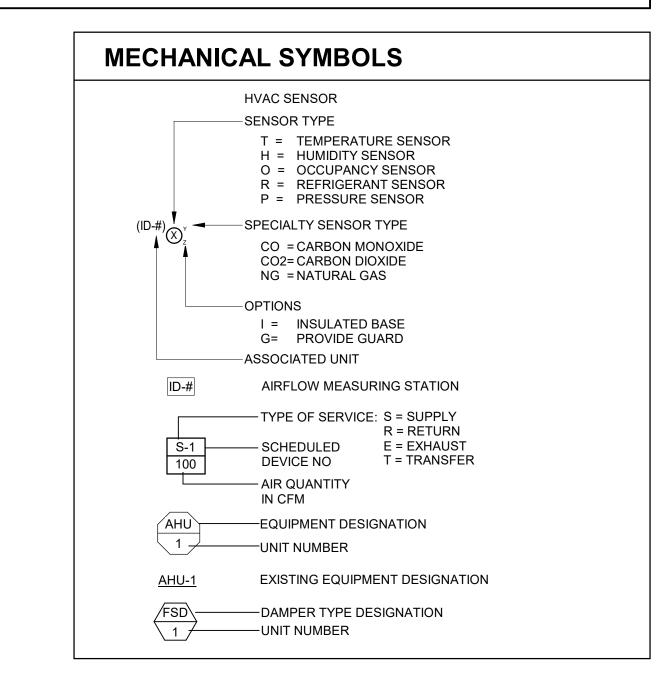
SHOWN OR NOT.

DRAINS AT ALL PIPING LOW POINTS, REGARDLESS OF WHETHER

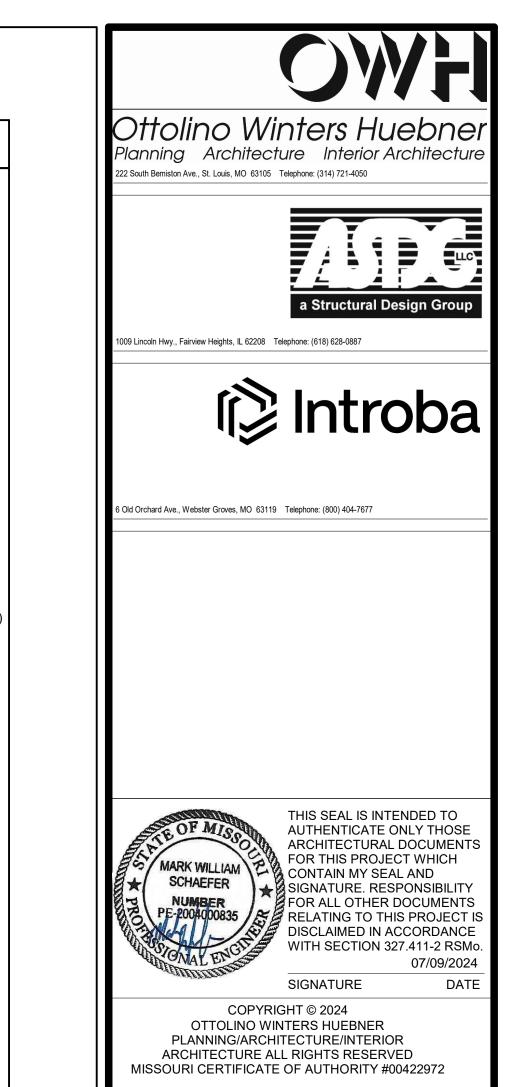
- DO NOT SCALE THE LOCATION OF HVAC CEILING ELEMENTS. SUCH AS AIR INLETS AND OUTLETS, FROM THE M-SERIES DRAWINGS. SEE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT HVAC CEILING ELEMENT LOCATIONS. REFLECTED CEILING PLANS GOVERN THE LOCATION OF DIFFUSERS, REGISTERS, AND GRILLES. M-SERIES DRAWINGS GOVERN TYPE, STYLE, AND SIZE OF DIFFUSERS,
- REGISTERS, AND GRILLES. ALL DUCTWORK SHALL COMPLY WITH "HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE," MOST RECENT VERSION OF SMACNA, EXCEPT WHERE MORE RESTRICTIVE REQUIREMENTS ARE SPECIFIED. ANY PLAN REFERENCES TO "SMACNA FIGURE ---" REFERS TO THIS STANDARD. SEE SPECIFICATIONS FOR SCHEDULE OF DUCT PRESSURE CLASS AND SEAL CLASS.
- IN GENERAL, THE FINAL FLEX DUCT RUNOUT TO EACH DIFFUSER, REGISTER, OR GRILLE IS NOT SIZED ON PLANS. FLEX DUCT RUNOUT SIZE SHALL MATCH AIR OUTLET NECK SIZE, UNO. FLEX DUCT TO BE MAXIMUM 5'-0" IN LENGTH.
- 14. IT IS THE INTENT OF THESE DRAWINGS THAT A MANUAL BALANCING DAMPER BE PROVIDED AT EVERY INDIVIDUAL DUCTED CONNECTION TO AN AIR DEVICE. UNLESS A BALANCING DAMPER IS SCHEDULED TO BE FURNISHED WITH AIR DEVICE. VAV BOXES WITH SINGLE DIFFUSERS ARE NOT REQUIRED TO HAVE A BALANCING DAMPER.
- ALL EXISTING TEMPERATURE CONTROLS THAT ARE BEING DEMOLISHED OR DISABLED AS WORK OF THIS CONTRACT SHALL BE COMPLETELY REMOVED FROM BUILDING.
- 16. THE CONTRACTOR SHALL CONNECT THE NEW HVAC SYSTEM TO THE OWNER'S EXISTING BUILDING CONTROL SYSTEM. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- THESE PLANS ARE DIAGRAMMATIC IN NATURE. THE CONTRACTOR SHALL BE PREPARED TO MAKE SOME ALTERATIONS TO THE EXACT LOCATION OF DUCTWORK, PIPING, AND EQUIPMENT FROM THE LOCATION INDICATED ON THESE DRAWINGS TO FIT ACTUAL JOB CONDITIONS.



3"| | | | | <u>| | | | | | | |</u>



WATER PRESSURE DIFFERENTIAL



CK

DR

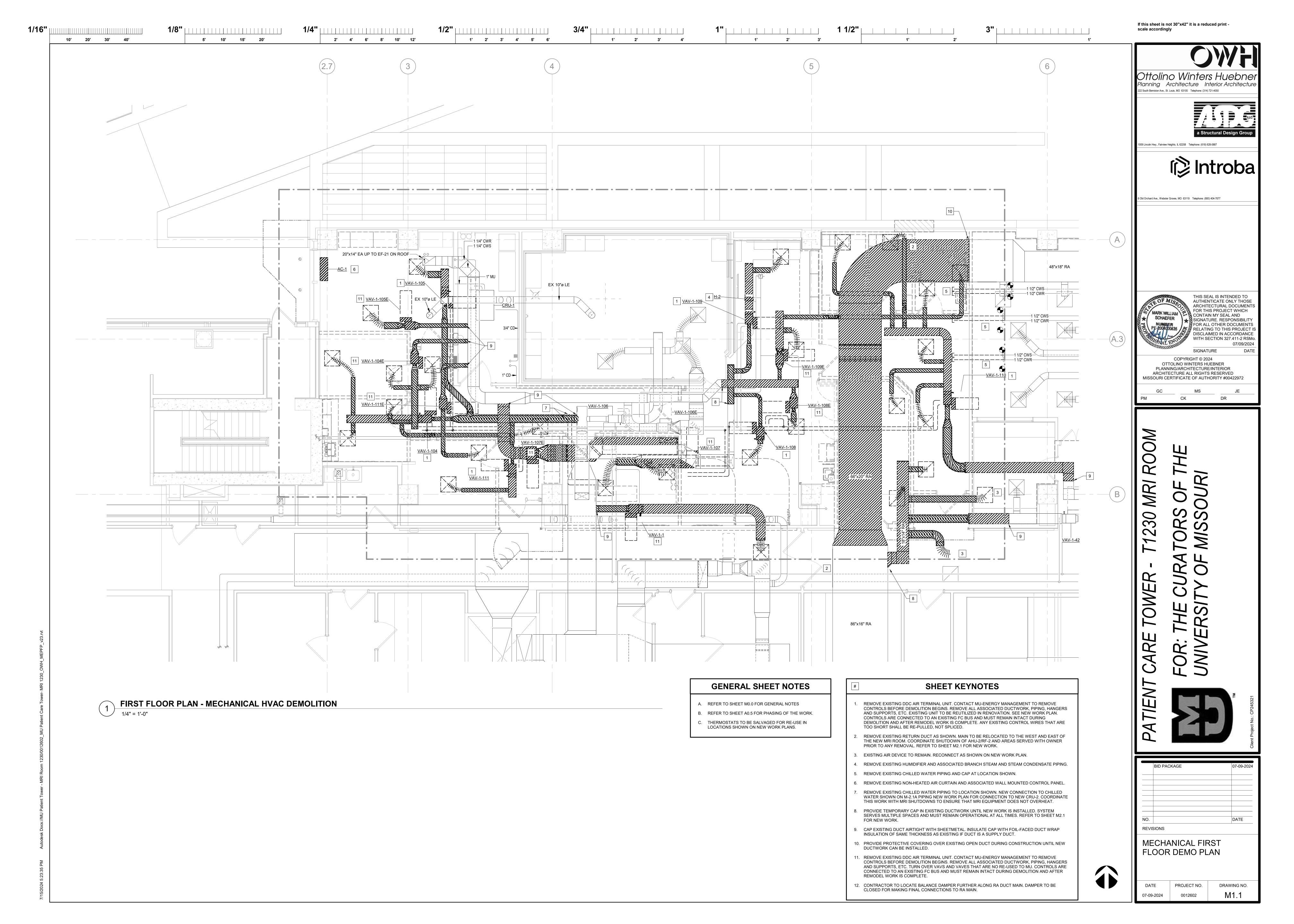
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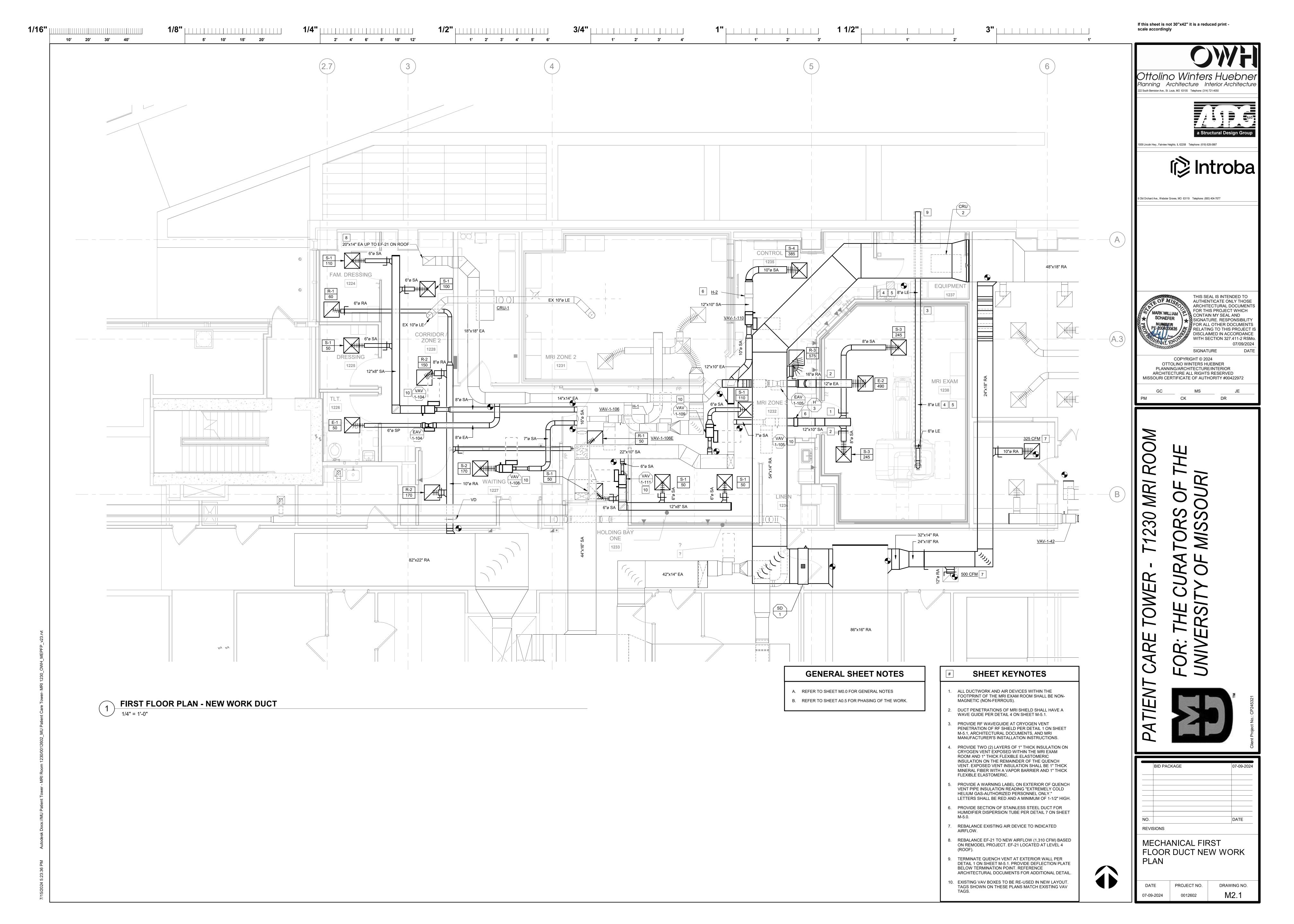
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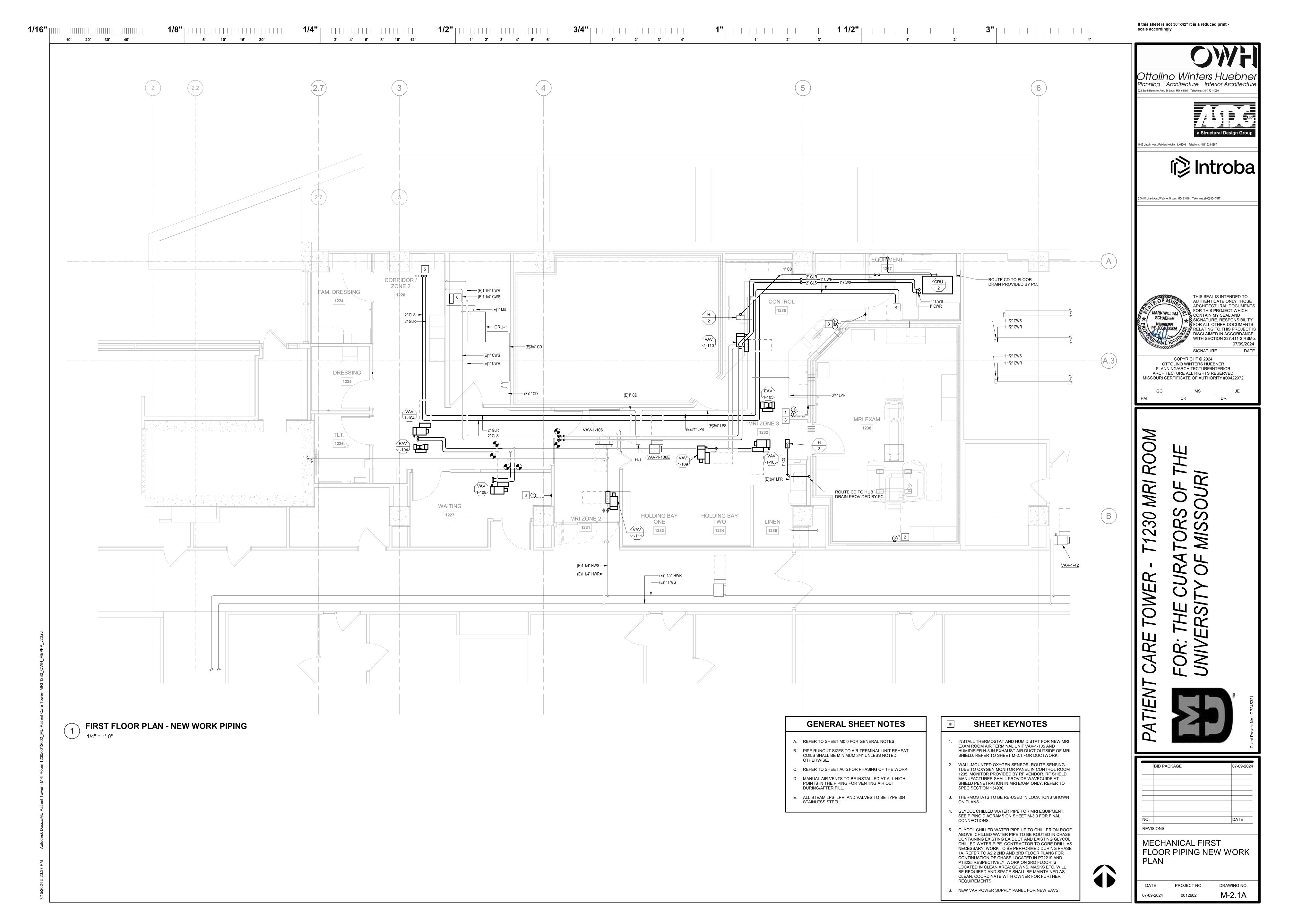
MR 30

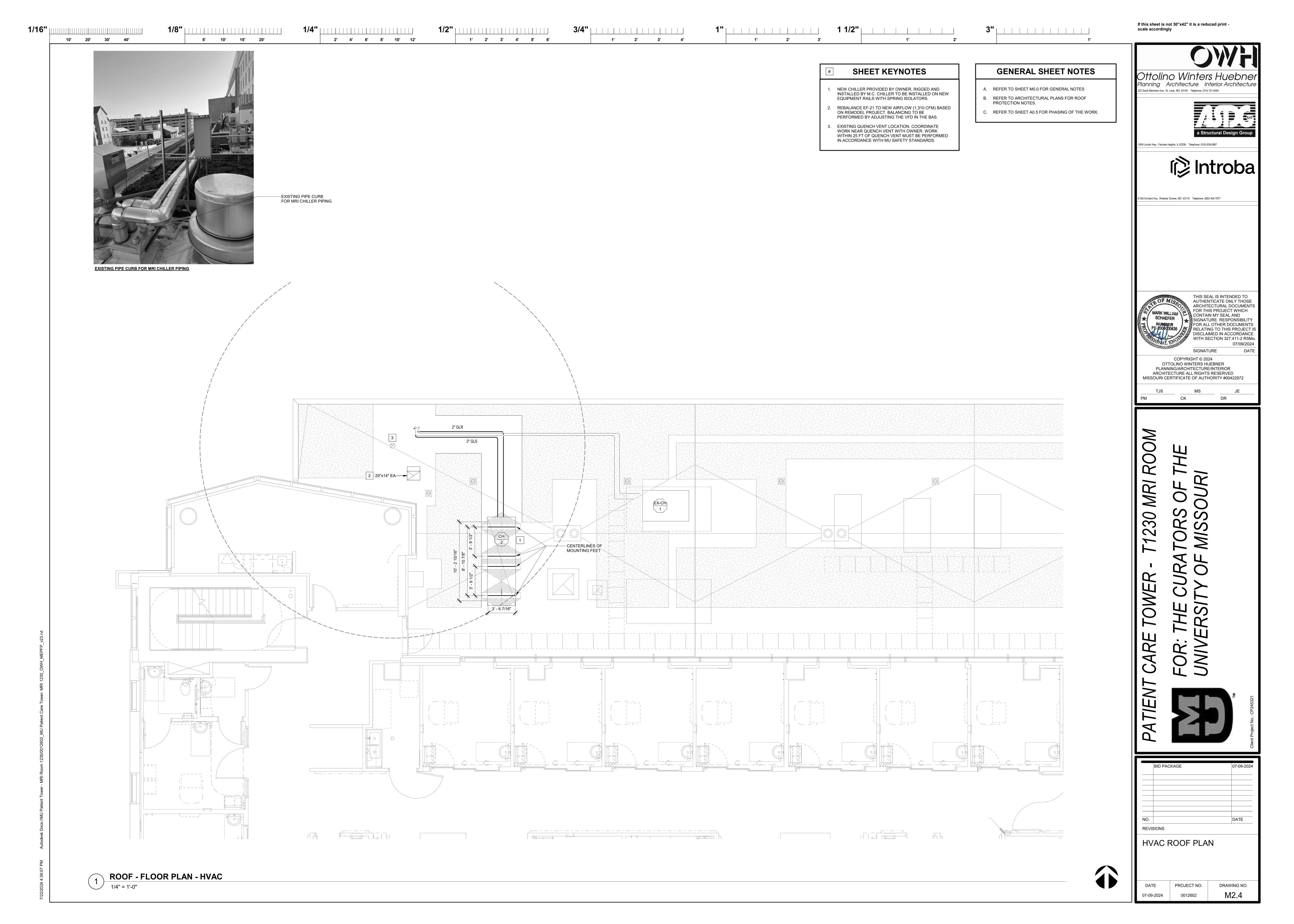
BID PACKAGE DATE REVISIONS MECHANICAL SYMBOLS & **ABBREVIATIONS**

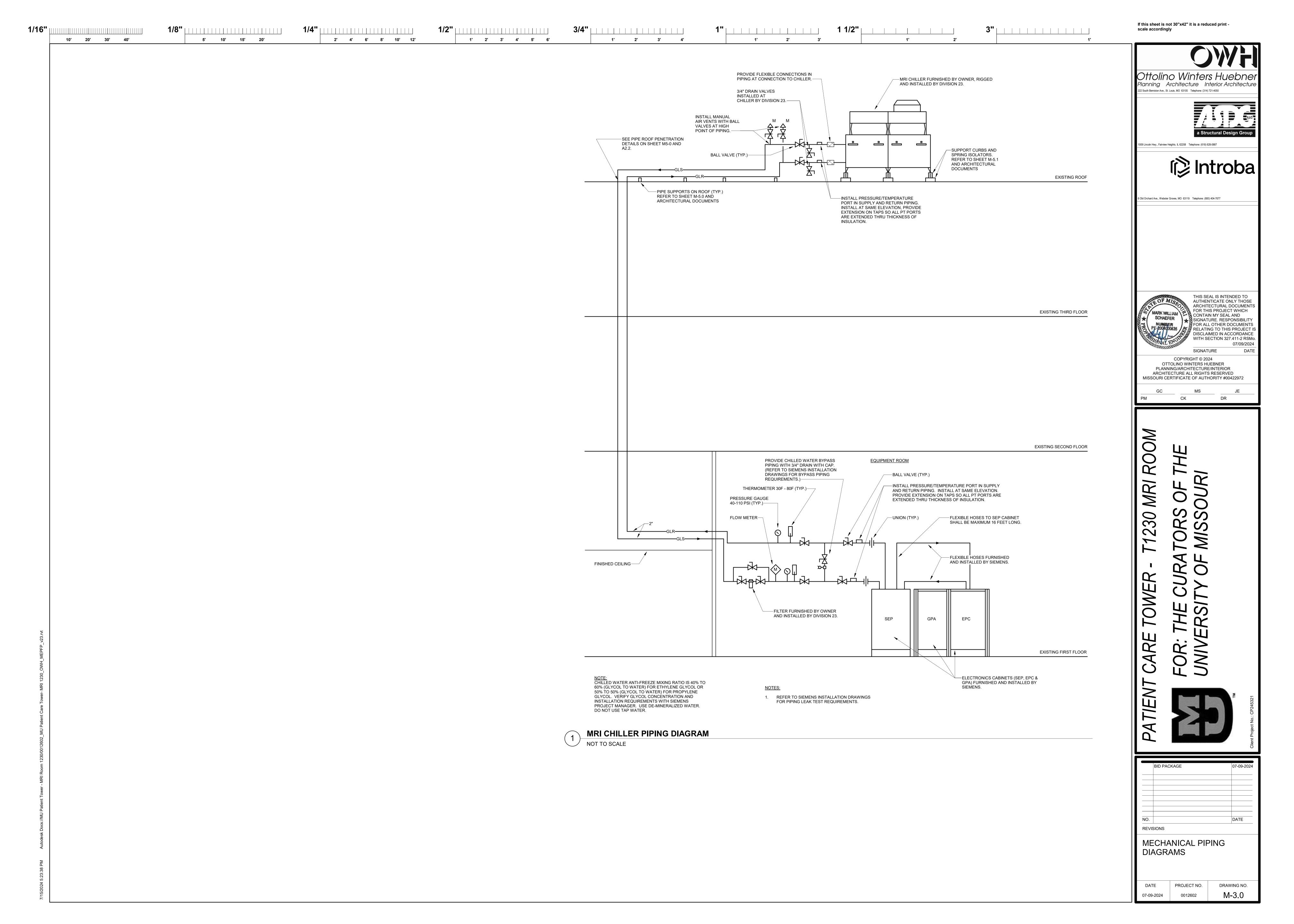
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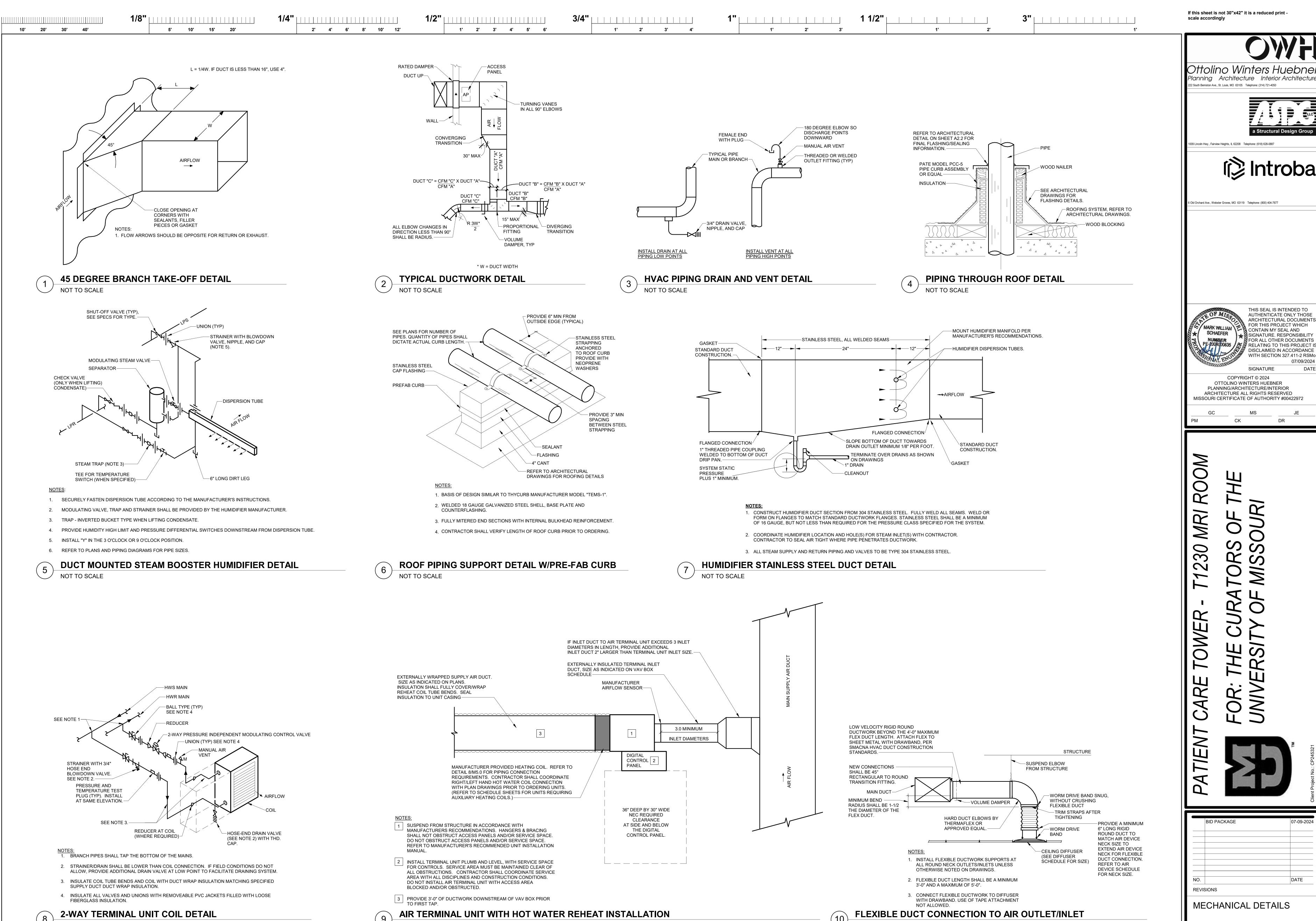












NOT TO SCALE

NOT TO SCALE / APPLIES TO VAV, ATU, FTU, UH, CUH, AND FCU COILS (UNO)

REVISIONS MECHANICAL DETAILS PROJECT NO. 07-09-2024 0012602

DATE

DRAWING NO.

M-5.0

BID PACKAGE

a Structural Design Gro

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FOR THIS PROJECT WHICH CONTAIN MY SEAL AND

FOR ALL OTHER DOCUMENTS

RELATING TO THIS PROJECT I

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WITH SECTION 327.411-2 RSM

DR

07/09/2024

DATE

SIGNATURE. RESPONSIBILITY

SIGNATURE

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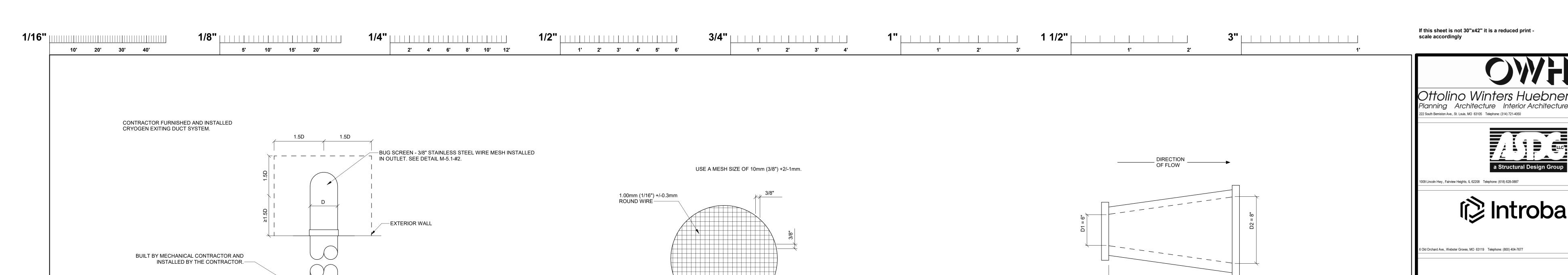
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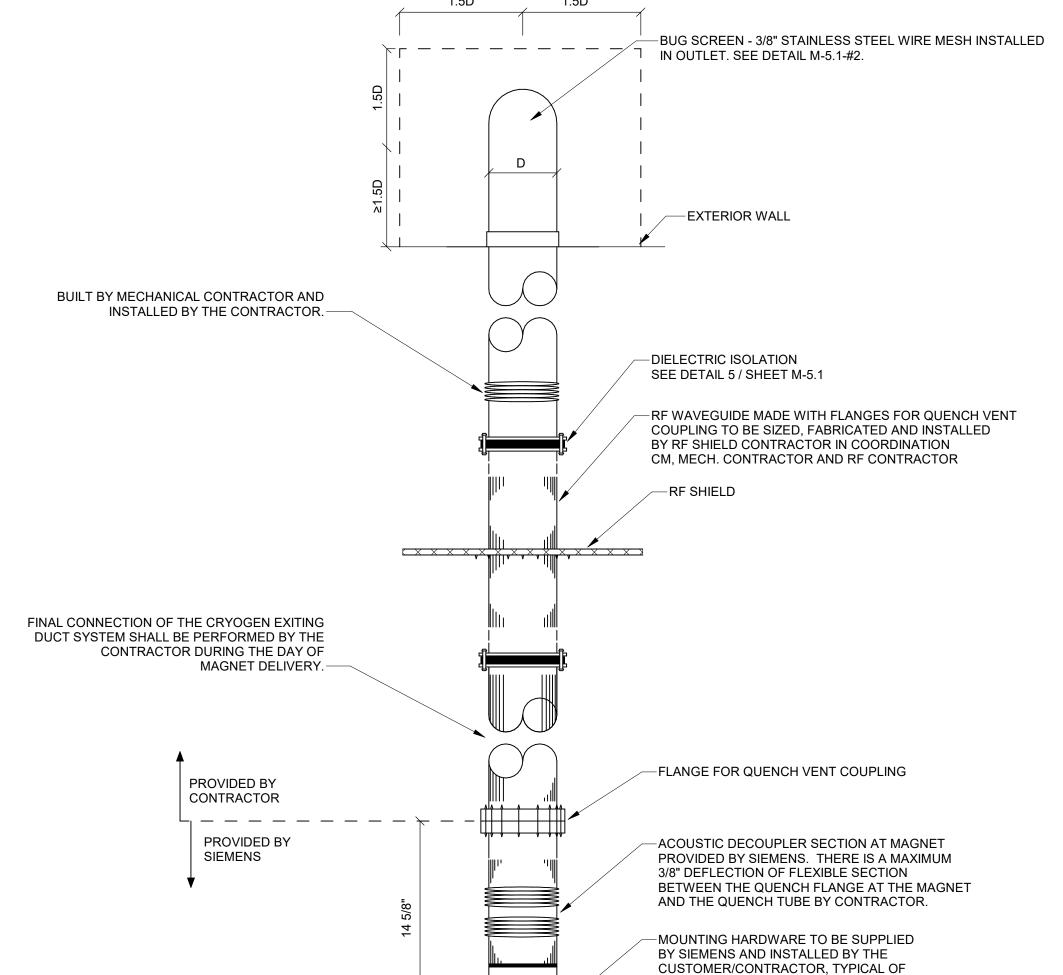
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SCHAEFER

ARCHITECTURAL DOCUMENTS



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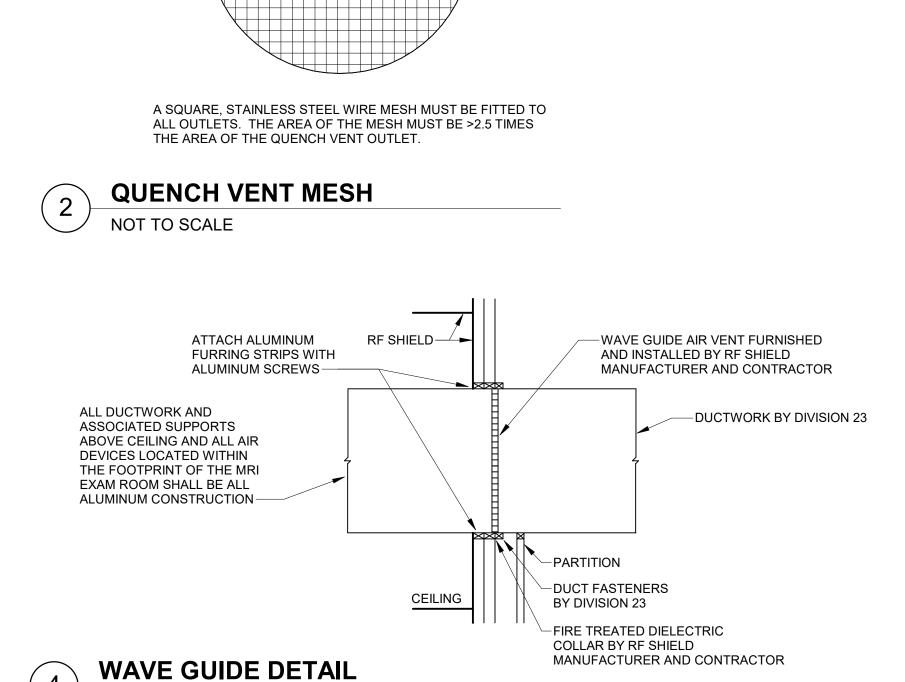
CRYOGEN EXITING DUCT SYSTEM NOTES:

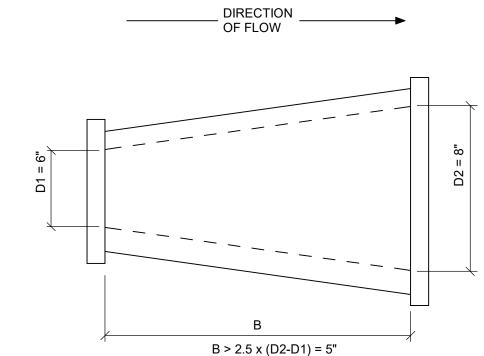
QUENCH VENT FLANGE AT MAGNET-

- 1. TAKE PROPER PRECAUTIONS WHEN FIELD WELDING IN THE VICINITY OF LIQUEFIED/FROZEN OXYGEN.
- 2. UNLESS SPECIFIED OTHERWISE, ALL MATERIAL AND WORK SHALL BE PERFORMED BY THE CUSTOMER/CONTRACTOR WITH FINAL CONNECTION OF THE CRYOGEN EXITING DUCT SYSTEM TO THE SIEMENS MAGNET TO BE PERFORMED BY THE CUSTOMER/CONTRACTOR UNDER SIEMENS' SUPERVISION.

12 PLACES. GALVANIC ISOLATION AT

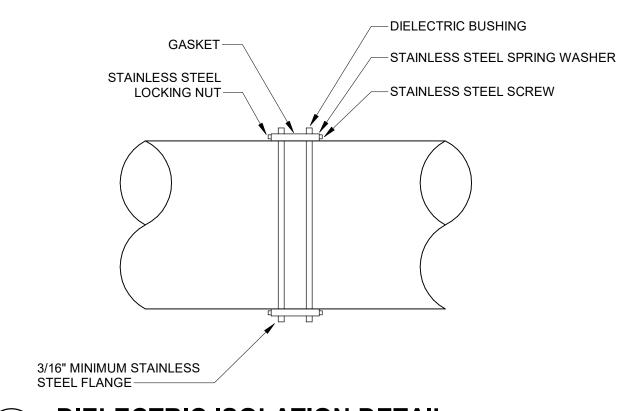
THIS LOCATION IS REQUIRED.





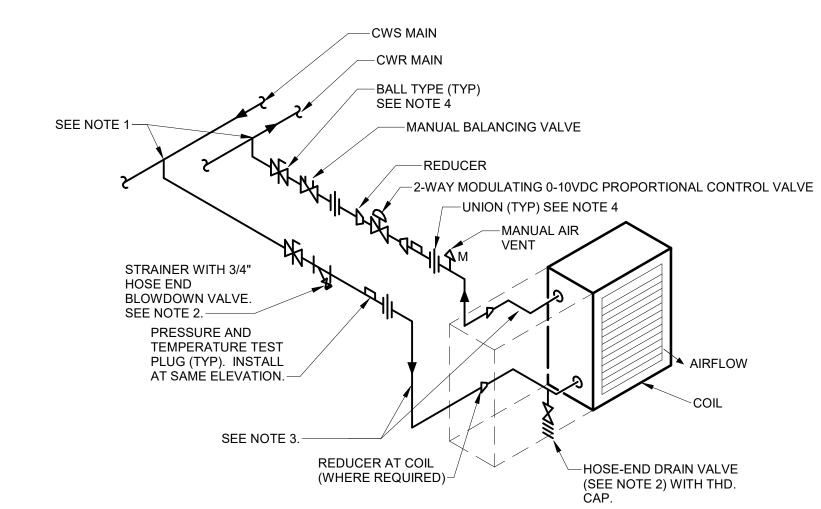
EXPANSION TO A GREATER DIAMETER TUBE CAN BE ACCOMPLISHED BY USE OF A DIFFUSER. THE DIFFUSER MUST MEET QUENCH VENT REQUIREMENTS AND THE GEOMETRIC PARAMETERS SHOWN HERE. THE DIAMETER OF THE PIPE SHOULD NEVER DECREASE IN THE DIRECTION OF FLOW.

QUENCH VENT DIFFUSER



DIELECTRIC ISOLATION DETAIL

NOT TO SCALE



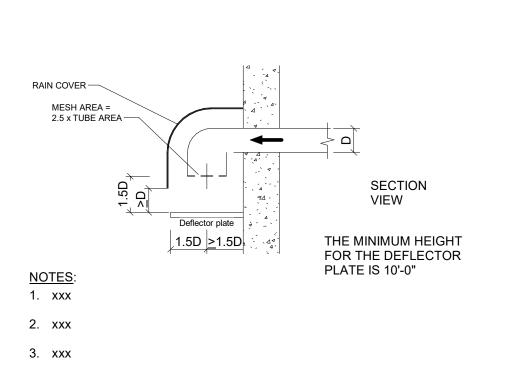
NOTES:

1. BRANCH PIPES SHALL TAP THE BOTTOM OF THE MAINS.

- 2. STRAINER/DRAIN SHALL BE LOWER THAN COIL CONNECTION. IF FIELD CONDITIONS DO NOT ALLOW, PROVIDE ADDITIONAL DRAIN VALVE AT LOW POINT TO FACILITATE DRAINING SYSTEM.
- 3. INSULATE COIL TUBE BENDS AND COIL WITH DUCT WRAP INSULATION MATCHING SPECIFIED SUPPLY DUCT DUCT WRAP INSULATION.
- 4. INSULATE ALL VALVES AND UNIONS WITH REMOVEABLE PVC JACKETS FILLED WITH LOOSE FIBERGLASS INSULATION.

2-WAY COMPUTER ROOM UNIT COIL





QUENCH VENT HORIZONTAL OUTLET SECTION



REVISIONS

07-09-2024

MECHANICAL DETAILS

PROJECT NO.

0012602

a Structural Design Gro

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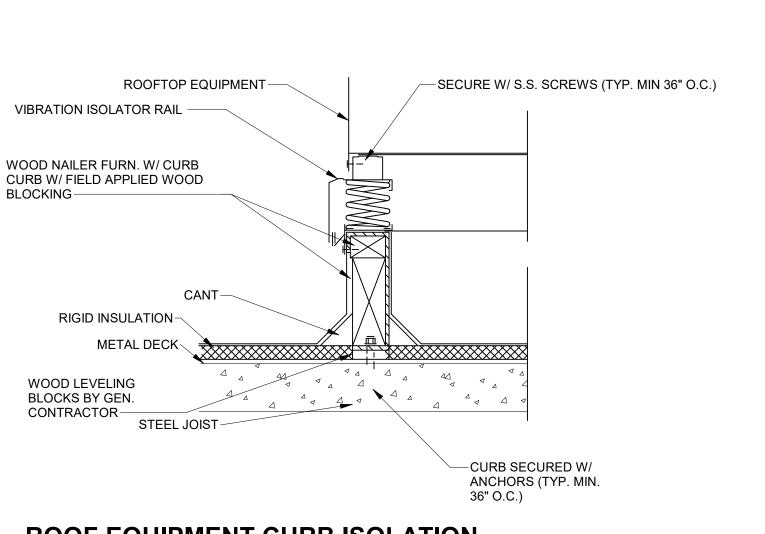
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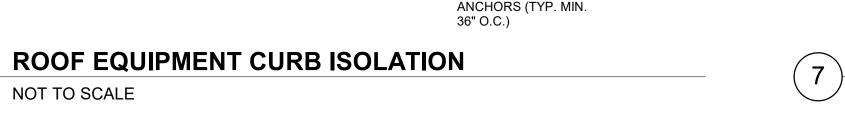
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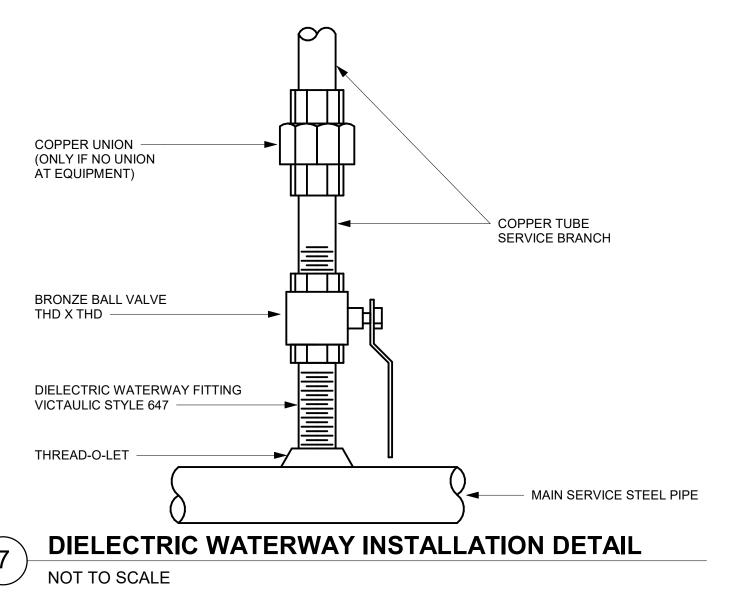
SIGNATURE. RESPONSIBILITY

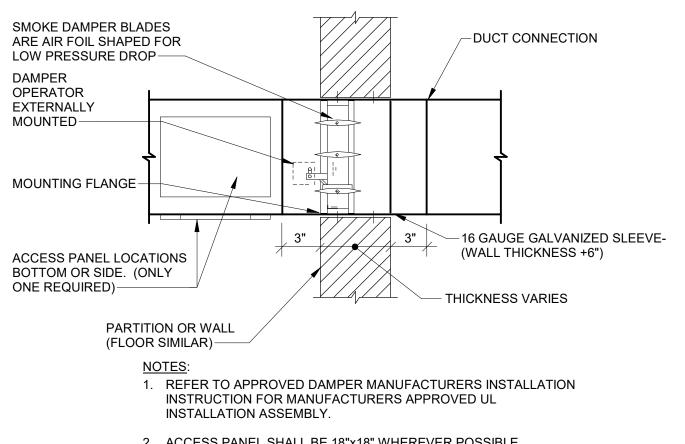
SCHAEFER











2. ACCESS PANEL SHALL BE 18"x18" WHEREVER POSSIBLE 3. IF 18"x18" ACCESS PANEL IS NOT POSSIBLE, PROVIDE 18" LONG FLANGED, REMOVABLE SEGMENT OF DUCT AT CONNECTION TO DAMPER WITH A 6"x6" ACCESS PANEL FOR VISUAL INSPECTION

SMOKE DAMPER INSTALLATION DETAIL NOT TO SCALE

AIR TERMINAL UNIT SCHEDULE SUPPLY AIR VAVS TO BE RE-USED. TAGS MATCH EXISTING TERMINAL UNIT DESIGNATIONS. PROVIDE THE NUMBER OF COIL ROWS AS REQUIRED TO MEET SCHEDULED PERFORMANCE AND STILL FALL WITHIN REHEAT COIL PRESSURE DROP LIMITATION. DESIGN SUPPLY AIR TEMPERATURE LIMITS THE TEMPERATURE TO 15 °F ABOVE THE SPACE SETPOINT OF 72 °F TO MAXIMIZE THE VENTILATION EFFECTIVENESS NOTED IN ASHRAE 62.1 - VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY. CONTRACTOR TO PROVIDE NEW VALVES AND SPECIALTIES AT HOT WATER REHEAT COILS FOR ANY VAV HOT WATER COIL THAT HAS TO BE RE-PIPED. DESIGN INLET STATIC OUTLET DUCT AIRFLOW AUXILIARY HOT WATER HEATING COIL MFR. MODEL TYPE LOCATION SERVICE FLOW ROWS (GPM) (2) INLET SIZE EAT (°F) | LAT (°F) (3) | | HEATING MAX | PRESSURE (IN WC) | SIZE WxD (IN) | (IN) (CFM) PRESSURE INDEPENDENT 1228 1224, 1225, 1226, 1228 TITUS DESV PRESSURE INDEPENDENT 12x10 12x8 11.9 85.2 PRESSURE INDEPENDENT TITUS DESV PRESSURE INDEPENDENT 1232 1232, 1236 12x8 86.5 1,2,3 385 5.1 180 1 2 1,2,3 VAV 1-110 TITUS DESV PRESSURE INDEPENDENT 94.3 1235 1235 120 120 12x10 120 55 VAV 1-111 TITUS DESV PRESSURE INDEPENDENT 1231 1231, 1233, 1234 12x8 50 1.7 55 86.5 180 1 2 1,2,3 4 65 50 50

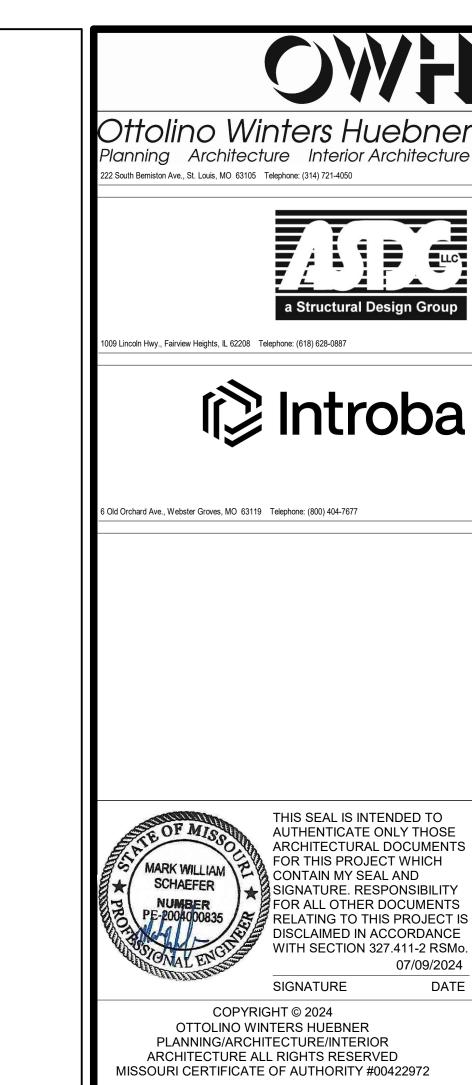
				\cap	MPLITE	ROOM	AIR COI	NDITION	FR S	CHE	DIIIE								
						V I VOOIVI	AITOOI	NDITION			DOLL								
1. 2. 3. 4. 5.	PROVIDE UNIT V PROVIDE LOW A PROVIDE MANU	/ITH HUMIDIFIER, MBIENT KIT FOR FACTURER'S FAC	1" FILTER, OVERFLOW OPERATION DOWN TO TORY-MOUNTED COND			,						ING SYSTEM.							
MARK ID 7	MFR.	MODEL	TYPE	LOCATION / SERVICE	COOLING TOTAL (MBH)	CAPACITY SENS (MBH)	CHILLED WATER FLOW (GPM)	EWT / LWT (°F)	SUPPLY QTY		ELECTRIC REHEAT (kW)	HUMIDIFIER (YES/NO)	EAT (DB/WB) (°F)	AMPS		RICAL I	DATA VOLTS	PHASE	NOTES
RU 2	2 STULZ	OHS-012-C	CEILING MOUNTED	EQUIPMENT ROOM 1237	13.8	11.7	2.3	46 / 58	1	500	-	YES	72 / 60	9.1	-	-	277	1	(1) (2) (3) (4)

									HUN	/IIDIF	TIER	SCHED	ULE								
NOTE 1. 2. 3.	MANI SING	LE MANIFOLD.		EQUIRED MANIFOLD LEN			OLDS TO MEET SO	CHEDULE	ED LOAD	AND MA	AXIMUM A	ABSORPTION [DISTANCE.								
ID	IARK #	MFR.	MODEL	TYPE	LOCATION	SERVICE	OUTPUT CAPACITY (LBS/HR)	DB (°F)		DB (°F)	RH	AIRFLOW (CFM)	DUCT SIZE (IN)	MANIFOLD LENGTH (IN)	# OF MANIFOLD	DISPERSION GRID	MAX ABSORPTION DISTANCE (IN)	CONTROL VALVE OPERATOR	SUP LOAD	PLY PRESS	NOTES
Н	3	ARMSTRONG	90	STEAM SEPARATOR	1232	1238	3.86	55	25%	55	60%	365	12x10	(NOTE 1)	(NOTE 1)	(NOTE 2)	12	ELECTRIC	4.27	15	1,2

NOT		AV TO TRACK AI	RFLOW SIGNA	L FROM ASSOCIATED VAV.								
MA	RK								AIRFLOW (CFM)		
ID	#	MFR.	MODEL	TYPE	LOCATION	SERVICE	SIZE	MAX	OCCUPIED MIN	UNOCCUPIED MIN	APD	NOTES
EAV	1-104	ACCUTROL	AVC4000	ELECTRONICALLY PRESSURE INDEPENDENT	1228	1226	PRESS	50	50	0	0.1"	1
EAV	1-105	ACCUTROL	AVC4000	ELECTRONICALLY PRESSURE INDEPENDENT	1232	1238	10"	490	365	365	0.25"	1

DISCIPLINE	SYSTEM	AREA(S) AFFECTED	SHUTDOWN LOCATION	DESCRIPTION	NORMAL HOURS / OFF-HOURS / WEEKENDS	MAXIMUM DURATION
MECHANICAL	HOT WATER	PCT 1ST FLOOR	EX. CORRIDOR - 1204	HOT WATER DISTRIBUTION TO VAV HOT WATER COILS WILL NEED TO BE SHUT DOWN FOR DISCONNECTING/RE-CONNECTING HOT WATER TO THE COILS. THIS WILL BE A COMBINATION OF SHUT-OFFS AT EACH INDIVIDUAL BOX TO RELOCATE VAV BOXES, AS WELL AS, A LARGER SHUTOFF WHEN RELOCATING THE VAV HW COIL VALVES. WILL NEED TO FIELD CONFIRM THE LOCATION OF THE LARGER SHUTOFF.	OFF-HOURS/WEEKENDS/M ULTIPLE SHUTDOWNS	PHASED
MECHANICAL	LOW PRESSURE STEAM	PCT 1ST FLOOR	MECHANICAL ROOM PT0017	LOW PRESSURE STREAM DISTRIBUTION WILL NEED TO BE SHUT DOWN FOR THE INSTALLATION OF NEW HUMIDIFIERS.	OFF-HOURS	8-HOURS
MECHANICAL	CHILLED WATER	MRI AREA	EQUIP. ROOM - 1229	THIS CHILLED WATER LINE WILL SERVE BOTH MRI EQUIPMENT ROOM COOLING UNITS. THE SHUT DOWN WILL HAVE TO BE DONE WHEN THE EXISTING MRI IS NOT IN USE.	OFF-HOURS	8-HOURS
MECHANICAL	AHU-2	PCT 1ST FLOOR	MECHANICAL ROOM PT0017	AHU WILL NEED TO BE SHUT DOWN FOR FINAL CONNECTIONS TO NEW DUCTWORK. THIS SHOULD BE DONE JUST BEFORE A WEEKEND TO MINIMIZE SHUTDOWN DURING BUSINESS HOURS. ALL DUCTWORK BETWEEN FINAL CONNECTIONS SHOULD BE COMPLETED PRIOR TO THIS SHUTDOWN.	OFF-HOURS/WEEKEND	1 WEEKENI
PLUMBING	DOMESTIC COLD WATER	PCT 1ST FLOOR	OFC-MGR PT1113	TEMPORARY SYSTEM SHUT DOWN WILL BE REQURIED FOR NEW CONNECTIONS CONSISTING OF TWO 1/2" COLD WATER LINES AND ONE 1 1/4" LINE. THESE CONNECTIONS WILL TAKE PLACE IN CORRIDOR PT31201.	OFF-HOURS	8-HOURS
PLUMBING	DOMESTIC HOT WATER	PCT 1ST FLOOR	OFC-MGR PT1113	TEMPORARY SYSTEM SHUT DOWN WILL BE REQURIED FOR NEW CONNECTIONS CONSISTING OF ONE 1/2" HOT WATER LINE. THIS CONNECTION WILL TAKE PLACE IN CORRIDOR PT31201.	OFF-HOURS	8-HOURS
PLUMBING	VENT	PCT GROUND FLOOR - PCT ROOF NEAR AND IN THE MRI AREA	SOILED HOLD PT1222 AND WAITING 1238	TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW CONNECTIONS CONSISTING OF AN OFFSET OF EXISTING 3" VENT LINE AND A NEW 2" VENT LINE.	OFF-HOURS	8-HOURS
PLUMBING	SANITARY	PCT GROUND FLOOR - PCT ROOF NEAR AND IN THE MRI AREA	CORRIDOR PTC1201 AND MECH-AHU EFCC PT0017	TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW CONNECTIONS CONSISTING OF A NEW 4" SANITARY LINE AND A NEW 3" SANITARY LINE.	OFF-HOURS	8-HOURS
PLUMBING	MEDICAL GAS	MRI AREA	CORRIDOR PTC1201	TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW MEDICAL GAS CONNECTIONS CONSISTING OF 3/4" WAGD, 1/2" NITROUS OXIDE, 1/2" OSYGEN, 3/4" MEDICAL VACUUM, AND 1/2" MEDICAL AIR.	OFF-HOURS / WEEKENDS	PHASED
FIRE PROTECTION	WET-SPRINKLER SYSTEM	FIRE PROTECTION ZONE 1-N	MRI AREA	TEMPORARY SYSTEM SHUT DOWN WITH TEMPORARY SPRINKLER PROTECTION WILL BE REQUIRED IN THIS SPACE. THE EXISITNG SPRINKLER BRANCH PIPING WILL BE RE-WORKED AND A NEW SPRINKLER MAIN TAP FOR THE NEW PRE-ACTION SYSTEM.		
ELECTRICAL	NDP-1	MRI AREA	BASEMENT ELEC. PT0040	SHUTDOWN REQUIRED FOR NEW MPB PANEL CONNECTION. WILL AFFECT ALL DOWNSTREAM DEVICES/EQUIPMENT. TEMPORARY POWER IS TO BE PROVIDED TO KEEP MRI PANEL AND OTHER NECESSARY EQUIPMENT RUNNING, VERIFY WITH OWNER IN FIELD.	OFF-HOURS. MULTIPLE SHUTDOWNS	PHASED
ELECTRICAL	RDP-1	ROOF	BASEMENT EMER PWR. PT0041	SHUTDOWN REQUIRED FOR NEW AHU-2 CONNECTION. WILL AFFECT ALL DOWNSTREAM DEVICES/EQUIPMENT. TEMPORARY POWER IS TO BE PROVIDED TO KEEP MRI PANEL AND OTHER NECESSARY EQUIPMENT RUNNING, VERIFY WITH OWNER IN FIELD.	OFF-HOURS.	8 HOURS

					SMC	OKE DAM	IPER SC	HEDULE					
<u>OTES</u> 1.		COMBINATION FIF	RE/SMOKE DAMI	PERS OR SMOK	Έ DΔMPERS SHA	ALL RE 115 VOL	T ACTUATOR PO	OWER AND CON	TROL TO THIS I	DAMDED SHALL BE THE	= WORK C	DIVISI	ON 26
			KE/OMORE D/ WI	LIKO OK OMOK		ALL BL 113 VOL	TACTUATOR, T	SWER, AND CON	TROE TO THIS E	DAME EN SHALL BE THE	_ WORK C	n Divion	OIN 20.
MA ID	ARK	MFR.	MODEL	TYPE	LOCATION	SERVICE	FRAME	ORIENTATION	DUCT SIZE WxH (IN)	2-POSITION ACTUATOR TYPE	ELECTI DA ⁻ VOLTS	RICAL TA	NOTES



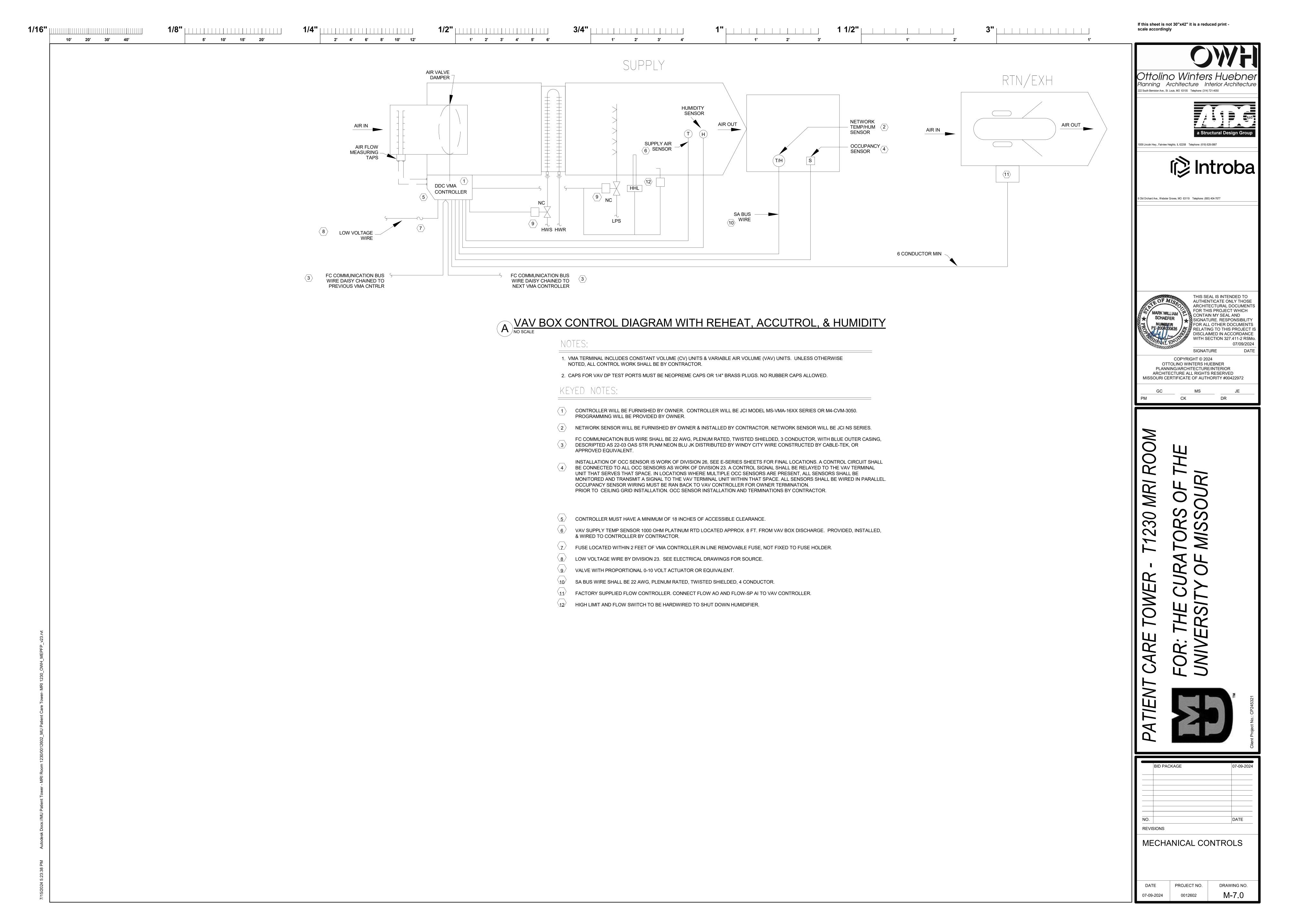
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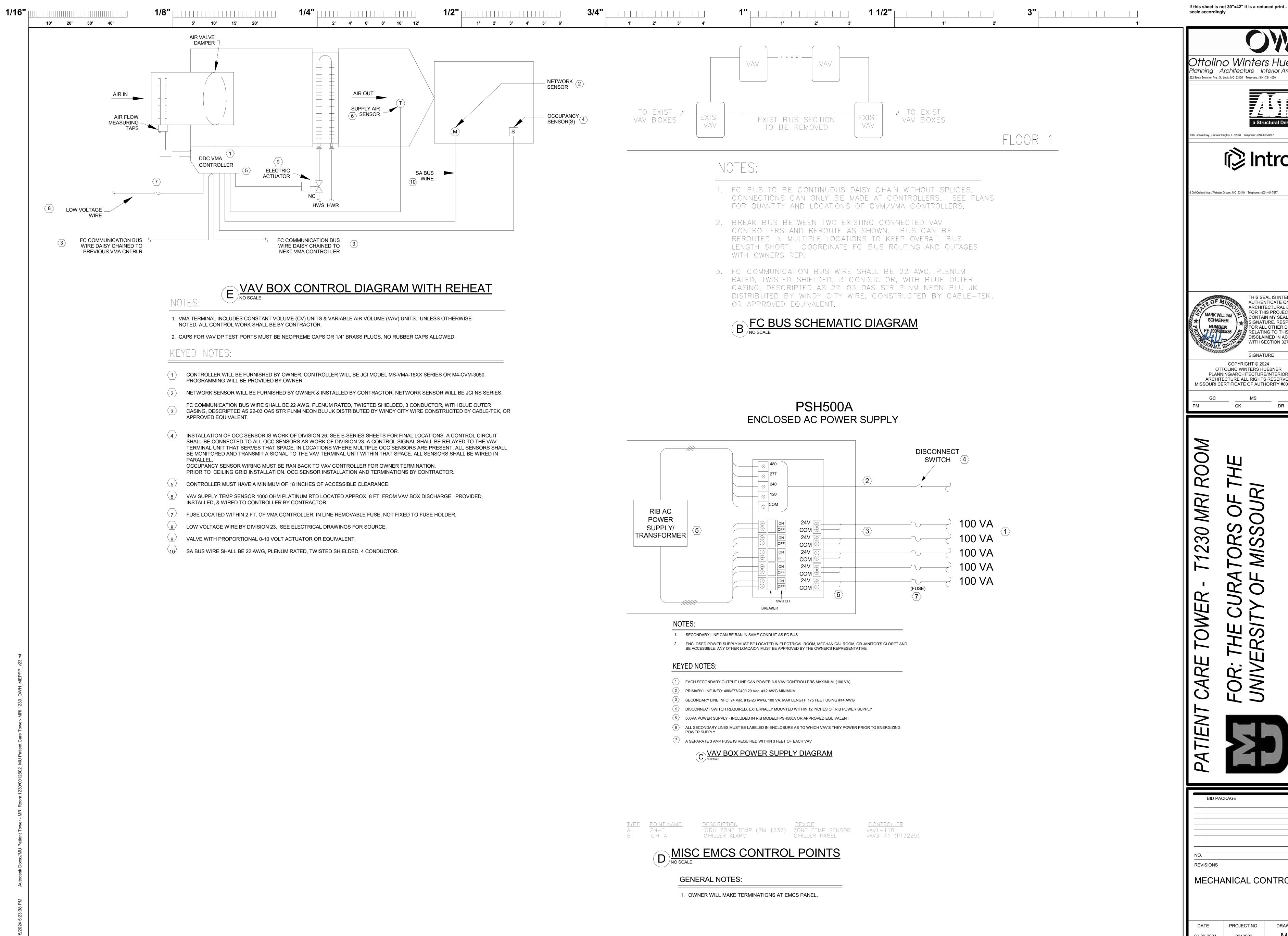
scale accordingly

REVISIONS MECHANICAL SCHEDULES

0012602

1. THIS MATRIX IS INTENDED TO CONVEY MAJOR SYSTEM SHUTDOWNS AFFECTING MULTIPLE AREAS OF THE CAMPUS. THIS MATRIX DOES NOT INDICATE ALL SHUTDOWNS OR PHASING REQUIRED AS PART OF PROJECT SCOPE 2. DUE TO PHASING OF PROJECT CONSTRUCTION, MULTIPLE SHUTDOWNS OF THE SAME SYSTEM MAY BE REQUIRED AT SEVERAL POINTS DURING CONSTRUCTION. 3. DURING BIDDING, CONTRACTOR SHALL REVIEW PROPOSED SHUTDOWN DURATIONS AND ALERT OWNER AND ARCHITECTENGINEER OF POTENTIAL CONCERNS.



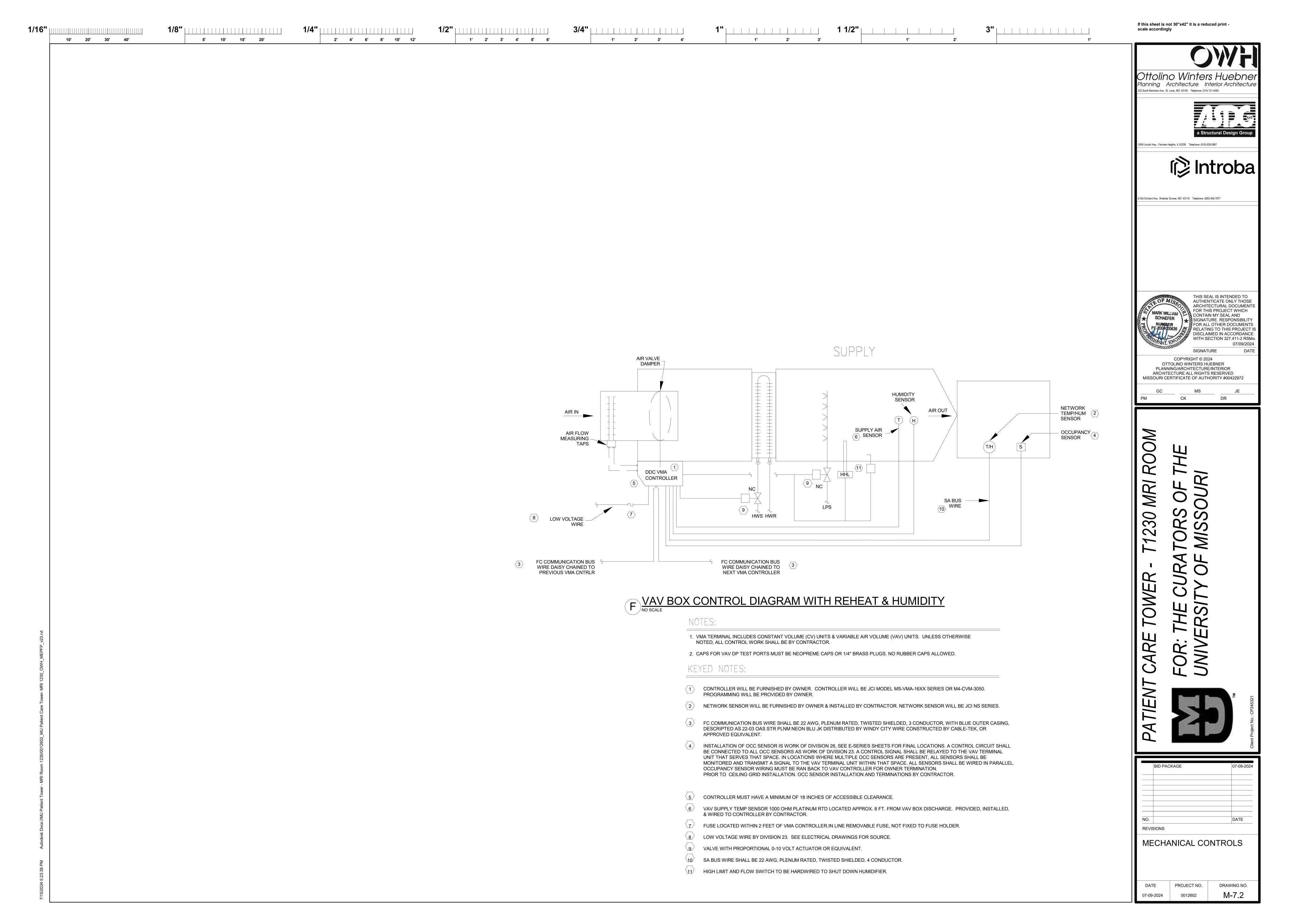


Planning Architecture Interior Architecture 222 South Bemiston Ave., St. Louis, MO 63105 Telephone: (314) 721-4050 a Structural Design Gro 09 Lincoln Hwy., Fairview Heights, IL 62208 Telephone: (618) 628-0887 Old Orchard Ave., Webster Groves, MO 63119 Telephone: (800) 404-7677 THIS SEAL IS INTENDED TO **AUTHENTICATE ONLY THOSE** ARCHITECTURAL DOCUMENTS FOR THIS PROJECT WHICH CONTAIN MY SEAL AND SCHAEFER SIGNATURE. RESPONSIBILIT FOR ALL OTHER DOCUMENTS RELATING TO THIS PROJECT I DISCLAIMED IN ACCORDANCE WITH SECTION 327.411-2 RSM 07/09/2024 SIGNATURE COPYRIGHT © 2024 OTTOLINO WINTERS HUEBNER PLANNING/ARCHITECTURE/INTERIOR ARCHITECTURE ALL RIGHTS RESERVED MISSOURI CERTIFICATE OF AUTHORITY #00422972 CK DR

BID PACKAGE REVISIONS

MECHANICAL CONTROLS

0012602



10' 20' 30' 40'

1' 2' 3' 4' 5' 6'

DRAWING REFERENCES

COMPRESSED AIR INTAKE PIPING (NON-MEDICAL) DENTAL AIR PIPING DENTAIL AIR INTAKE PIPING ———DAI——— DENTAL VACUUM PIPING DENTAL VACUUM EXHAUST PIPING _____DVE____ _____DSV_____ DENTAL SURGICAL VACUUM PIPING DENTAL SURGICAL VACUUM EXHAUST PIPING -----DSVE-----LAB COLD WATER _____LCW____

COMPRESSED AIR PIPING (NON-MEDICAL)

LAB HOT WATER ____LHW____ LAB GAS PIPING LAB VACUUM PIPING _____LV____ MEDICAL AIR PIPING MEDICAL AIR INTAKE PIPING

ESOV

MEDICAL VACUUM PIPING MEDICAL VACUUM EXHAUST PIPING NITROGEN PIPING _____N2____ NITROUS OXIDE PIPING _____N2O_____

____ox___ ------WAGD-------WASTE ANESTHETIC GAS DISPOSAL PIPING EXISTING GAS OUTLET **NEW GAS OUTLET** EXISTING ZONE VALVE DESIGNATION

> NEW ZONE VALVE DESIGNATION EXISTING AREA ALARM DESIGNATION NEW AREA ALARM DESIGNATION

EXISTING MEDICAL GAS MASTER ALARM DESIGNATION NEW MEDICAL GAS MASTER ALARM DESIGNATION AREA ALARM

EMERGENCY SHUT-OFF VALVE

ZONE VALVE

GENERAL NOTES

1. DUE TO THE LIMITED SPACE AVAILABLE FOR THE INSTALLATION OF ALL THE PLUMBING WORK, COORDINATION BETWEEN ALL OTHER TRADES IS OF UTMOST IMPORTANCE.

1' 2' 3' 4'

THIS CONTRACTOR SHALL VISIT THE PROJECT SITE AND VERIFY LOCATIONS, ELEVATIONS AND SIZES OF ALL UTILITIES AT SITE PRIOR TO PROCEEDING WITH WORK, EXISTING SYSTEMS AND STRUCTURE SHALL BE INVESTIGATED FOR BEST POSSIBLE ROUTING OF COLD WATER. HOT WATER. SANITARY WASTE AND VENT, STORM AND MEDICAL LABORATORY GAS PIPING.

THESE PLANS ARE DIAGRAMMATIC IN NATURE SINCE THE ONLY AVAILABLE INFORMATION HAS BEEN OBTAINED FROM EXISTING PLANS, SPECIFICATIONS, AND FIELD SURVEYS. THE EXACT LOCATION OF PIPING. FIXTURES AND EQUIPMENT MAY DEVIATE FROM THE LOCATION INDICATED ON THESE DRAWINGS. EXTREME ACCURACY IS NOT GUARANTEED. THIS CONTRACTOR SHALL BE PREPARE TO MAKE ALTERATIONS TO NEW AND/OR EXISTING SERVICES TO FIT JOB CONDITIONS. THIS CONTRACTOR SHALL FURNISH A COMPLETE CODE COMPLYING SYSTEM. THIS CONTRACTOR SHALL REPORT. IN WRITING, ANY DISCREPANCIES WHICH PREVENT THE INSTALLATION OF WORK AS SHOWN.

IF THIS CONTRACTOR DOES NOT CLEARLY UNDERSTAND THESE PLANS OR IS NOT COMPLETELY SURE OF THEIR MEANING, THIS CONTRACTOR SHOULD OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND/OR INTERPRETATION PRIOR TO SUBMITTING BIDS, SINCE THIS CONTRACTOR WILL BE HELD RIGIDLY TO THE INTERPRETATION OF THE ENGINEER.

IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO REPAIR THE EXISTING SURFACES TO REMAIN WHERE THEIR WORK HAS BEEN COMPLETED. REPAIR SHALL INCLUDE, BUT NOT LIMITED TO, ANY EXISTING WALL, CEILING OR FLOOR THAT IS SCHEDULED TO REMAIN. REPAIR, PAINTING, AND PATCHING SHALL BE COMPLETED BY AN APPROPRIATE CONTRACTOR QUALIFIED FOR THIS TYPE OF WORK.

THE OWNER SHALL MAINTAIN ALL SALVAGE RIGHTS OF FIXTURES, EQUIPMENT AND MATERIALS REMOVED. HOWEVER, ALL FIXTURES. EQUIPMENT AND MATERIALS NOT CLAIMED BY THE OWNER SHALL BE REMOVED FROM THE PREMISES AND PROPERLY DISPOSED OF THE BY THE DEMOLITION CONTRACTOR.

CEILING REMOVAL, STORAGE AND REPLACEMENT FOR NEW PIPING INSTALLATION SHALL BE BY THE GENERAL CONTRACTOR.

IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS, THE CONTRACTOR WILL NOTIFY BUILDING OWNER OF THE HAZARDOUS MATERIAL.

TEMPORARY CONNECTION SHALL BE PROVIDED BY RESPECTIVE PLUMBING AND FIRE PROTECTION CONTRACTORS WHEN EXTENDED INTERRUPTIONS OF SERVICES AND UTILITIES SUCH AS WATER, WASTE AND FIRE PROTECTION WHICH SERVE OTHER AREAS ARE NECESSARY.

10. COORDINATE WITH MAINTENANCE PERSONNEL AS TO SOURCE OF UTILITIES AND TEMPORARILY DISCONNECT OR SHUT OFF SERVICES OR UTILITIES AT NEAREST MAIN, TEMPORARY AND ACCESSIBLE ISOLATION VALVES SHALL BE INSTALLED CLOSE TO THIS POINT OF

11. IT IS ESSENTIAL THAT BUILDING OPERATIONS CONTINUE WITH MINIMAL INTERRUPTIONS. IT IS NECESSARY THAT OPERATION OF EXISTING SYSTEMS BE INTERFACED WITH AS LITTLE DISRUPTION AS POSSIBLE EXCEPT IN AREAS VACATED FOR CONSTRUCTION WORK. WORK WHICH WILL INTERFERE WITH OPERATION OF EXISTING FIRE SUPPRESSION AND PLUMBING SYSTEMS OR WHICH REQUIRE DOWNTIME WILL BE SCHEDULED ONLY AFTER CONSULTATION WITH AND PERMISSION GIVEN BY THE OWNER. ALLOW 10 DAYS PRIOR TO ANTICIPATED INTERRUPTION OF SYSTEMS. WORK MAY BE REQUIRED TO BE PERFORMED OUTSIDE NORMAL WORKING HOURS.

ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH THESE DRAWINGS.

13. ALL PIPING HANGERS AND SUPPORTS SHALL BE REMOVED ALONG WITH PIPING BEING REMOVED.

14. THE CONTRACTOR SHALL COORDINATE DEMOLITION WORK WITH PROJECT'S PHASING SCHEDULE PRIOR TO COMMENCEMENT OF ANY

WHEN PLACING NEW PLUMBING FIXTURES, CONTRACTOR SHALL VERIFY LOCATIONS OF PLUMBING VENTS. OFFSET VENTS THAT TERMINATE WITHIN 25 FEET OF HVAC UNITS OUTDOOR AIR INTAKES. CONTRACTOR SHALL FIELD VERIFY PRIOR TO BID WHERE THE INTERFERENCE'S ARE PRICE ACCORDINGLY OR MAKE ALLOWANCES

16. USE CAUTION WHEN SAW-CUTTING THROUGH EXISTING CONCRETE FLOOR OR WALL CONSTRUCTION FOR THE INSTALLATION OF PLUMBING SYSTEMS TO AVOID CUTTING REBAR AT EDGE OF OPENING. LEAVE SUFFICIENT REBAR EXPOSED TO TIE NEW REINFORCING REPLACEMENT CONCRETE AND/OR OTHER

17. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REVISIONS, TRANSITIONS, OFFSETS, ETC., TO AVOID DUCTWORK, PIPING, EQUIPMENT OR STRUCTURE NEW OR EXISTING AND TO MAKE A COMPLETE AND FUNCTIONING SYSTEM.

STRUCTURAL ATTACHMENTS FOR NEW CONSTRUCTION.

PLAN DETAIL REFERENCE TITLE KEYED NOTE DESIGNATION PLAN NORTH TRUE NORTH ARROW NORTH EQUIPMENT DESIGNATION REFER TO MEP SCHEDULE FOR CIRCUITING AND DEVICE REQUIREMENTS AND FLOOR PLANS FOR LOCATIONS —EQUIPMENT NUMBER -PLAN MARK A101 ENLARGED PLAN REFERENCE -SHEET NUMBER 1 AD888 SECTION INTERFACE, EXISTING TO NEW EXTENT OF DEMOLITION MATCHLINE **REVISION TAG**

LINE TYPE LEGEND

EXISTING TO REMAIN OR NEW WORK BY OTHERS (LIGHT, SOLID LINE) NEW WORK BY THIS CONTRACTOR (DARK, SOLID LINE) EXISTING TO BE REMOVED BY THIS CONTRACTOR

(DARK, DASHED LINE, DEMOLITION PLANS)

PLUMBING SYMBOLS & ABBREVIATIONS NOT ALL SYMBOLS ARE USED FOR THIS PROJECT

TRAPPED CONNECTION STRAINER BALANCING VALVE CLEANOUT (CO) OS & Y GATE VALVE **TEMPERATURE GAUGE** THERMOSTATIC MIXING VALVE ____ REDUCED PRESSURE BACKFLOW PREVENTER HOSE BIBB/WALL HYDRANT ACID VENT PIPING ACID WASTE PIPING _____AW____ DOMESTIC COLD WATER PIPING (CW) DOMESTIC HOT WATER PIPING (HW) _____ DOMESTIC HOT WATER RETURN PIPING (HWR) _____ DRAIN PIPING DEIONIZED WATER PIPING GREASE VENT PIPING GREASE WASTE PIPING NATURAL GAS PIPING NON-POTABLE WATER PIPING

OVERFLOW STORM PIPING OIL WASTE PIPING _____OW____ PUMP DISCHARGE PIPING _____PD-____ REVERSE OSMOSIS PIPING (RO) _____RO____ SANITARY PIPING SOFTENED COLD WATER PIPING ----SCW----SOFTENED HOT WATER PIPING -----SHW-----SUBSOIL DRAINAGE PIPING STORM PIPING TEMPERED WATER PIPING VENT PIPING ______ WASTE PIPING FLEXIBLE CONNECTION

FLOOR DRAIN/FLOOR SINK (FD/FS)

CIRCULATION PUMP

PLUMBING ABBREVIATIONS NOT ALL SYMBOLS ARE USED FOR THIS PROJECT AMERICANS WITH DISABILITIES ACT A.F.F. ABOVE FINISH FLOOR ACCESS PANEL **BOOSTER PUMP** BATHTUB BTC BRANCH TO CONNECTION CALIBRATED BALANCING VALVE CAST IRON CLEANOUT CO CSS CLINICAL SERVICE SINK COLD WATER DCVA DOUBLE CHECK VALVE ASSEMBLY DRINKING FOUNTAIN **DEINOIZED WATER** DOWNSPOUT DW DISHWASHER DWH DOMESTIC WATER HEATER EEW EMERGENCY EYE WASH **ESEW EMERGENCY SHOWER & EYE WASH** ESH **EMERGENCY SHOWER** EXPANSION TANK ELECTRIC WATER COOLER **EWC** FCO FLOOR CLEANOUT FLOOR DRAIN F.F. FINISH FLOOR ELEVATION FS FLOOR SINK NATURAL GAS GCO GRADE CLEANOUT GARBAGE DISPOSAL HOSE BIBB **HOT WATER** HWR HOT WATER RETURN HWRP HOT WATER RETURN PUMP **HWST** HOT WATER STORAGE TANK INVERT ELEVATION ICE MAKER INDIRECT WASTE LAVATORY LA MB MOP BASIN NOT IN CONTRACT NON-POTABLE OUTLET BOX **OVERFLOW ROOF DRAIN** PRESSURE GAUGE PRV PRESURE REDUCING VALVE ROOF DRAIN **ROOF HYDRANT** RO REVERSE OSMOSIS REDUCED PRESSURE BACKFLOW PREVENTER SANITARY

SCW SOFTENED COLD WATER SHOWER SHW SOFTENED HOT WATER SK SOV SHUT OFF VALVE SUMP PUMP STAINLESS STEEL S/S SANITARY STACK SSD SUBSOIL DRAINAGE SSK SHOP SINK TRENCH DRAIN THERMOSTATIC MIXING VALVE TRAP PRIMER TREATED WATER **URINAL** VENT VALVE IN VERTICAL VACUUM BREAKER VENT STACK VTR VENT THRU ROOF WATER CLOSET WCO WALL CLEANOUT WASHER DRAIN WH WALL HYDRANT WHA WATER HAMMER ARRESTOR WM WATER METER WS WASTE STACK WSV WASTE STACK VENT YCO YARD CLEANOUT YARD HYDRANT



NOT ALL SYMBOLS ARE USED FOR THIS PROJECT

DIRECTION OF FLOW BRANCH CONNECTION, BOTTOM BRANCH CONNECTION, TOP ELBOW, TURNED DOWN ELBOW TURNED UP SHUTOFF VALVE CHECK VALVE PRESSURE REDUCING VALVE PRESSURE GAUGE PIPING CAP RISER DESIGNATION ABOVE FINISH FLOOR **AUTHORITIES HAVING JURISDICTION ACCESS PANEL** BOTTOM OF PIPE DIAMETER DOWN EX OR EXIST **EXISTING** FINISHED FLOOR ELEVATION GPH GALLONS PER HOUR GPM GALLONS PER MINUTE HORSEPOWER

INVERT ELEVATION

NORMALLY CLOSED

POUNDS PER SQUARE INCH

REVOLUTIONS PER MINUTE

NOT TO SCALE

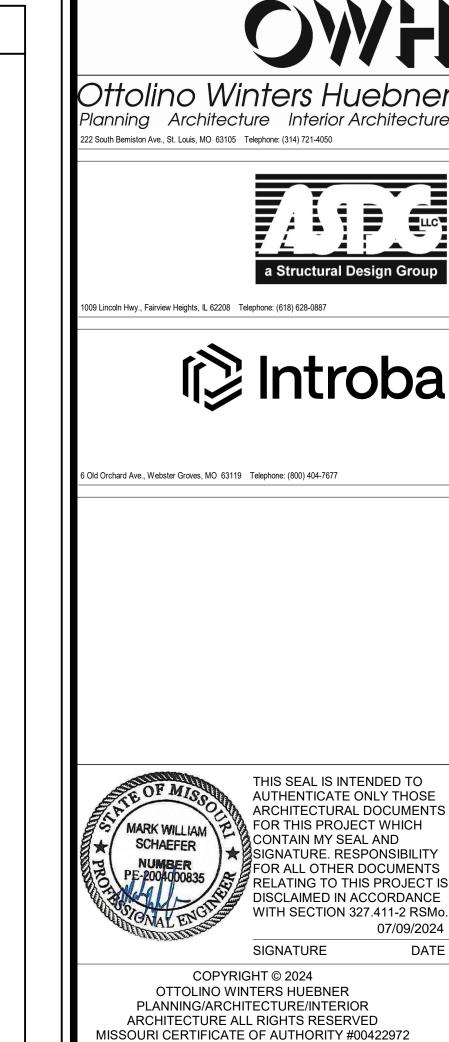
ROUGH-IN

SHUTOFF VALVE

VERIFY IN FIELD

TOTAL DYNAMIC HEAD

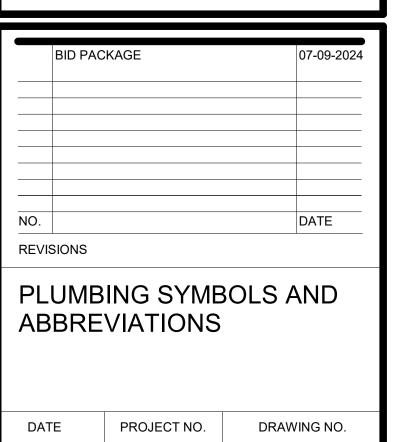
IE OR INV. ELEV



CK

DR

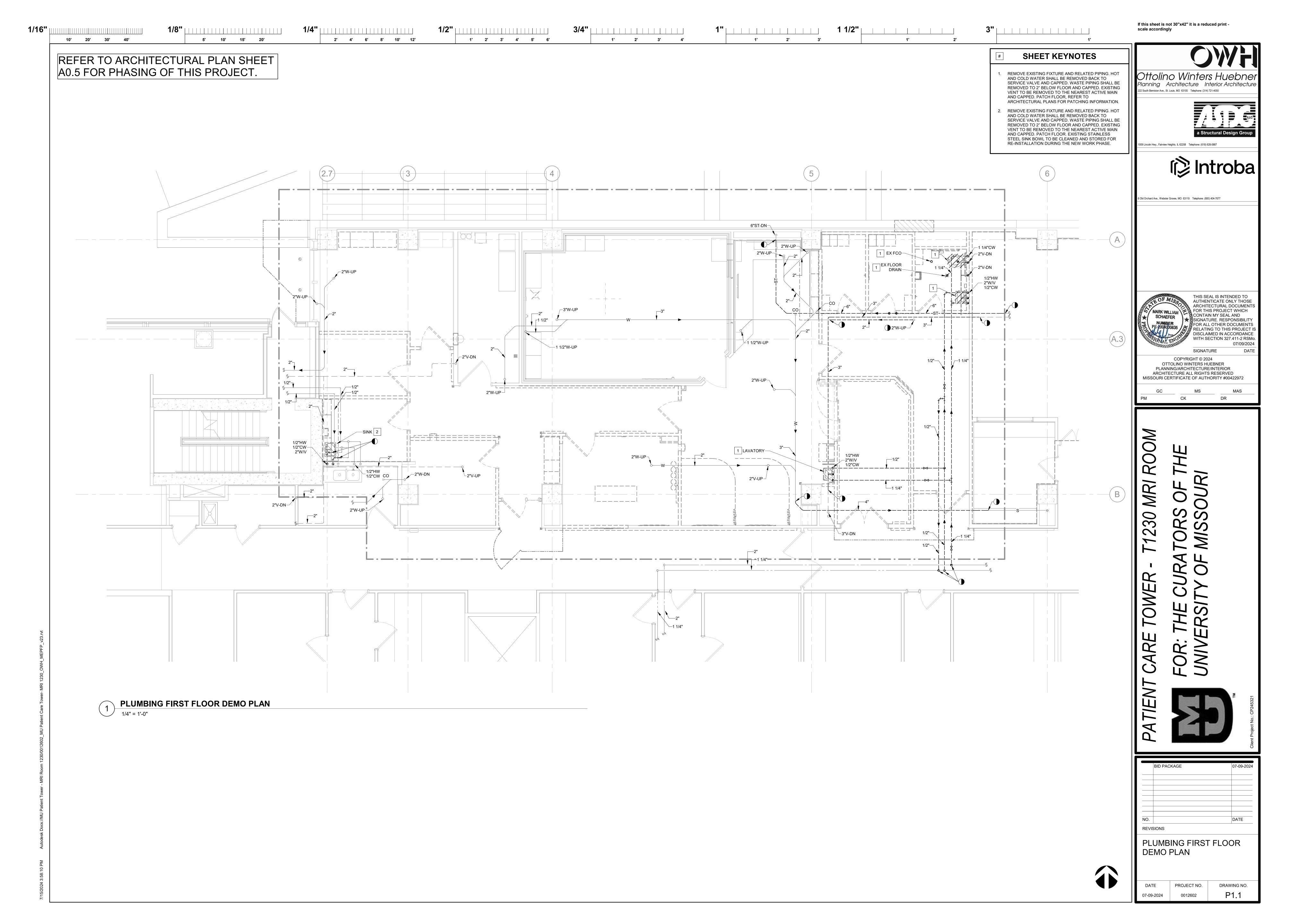
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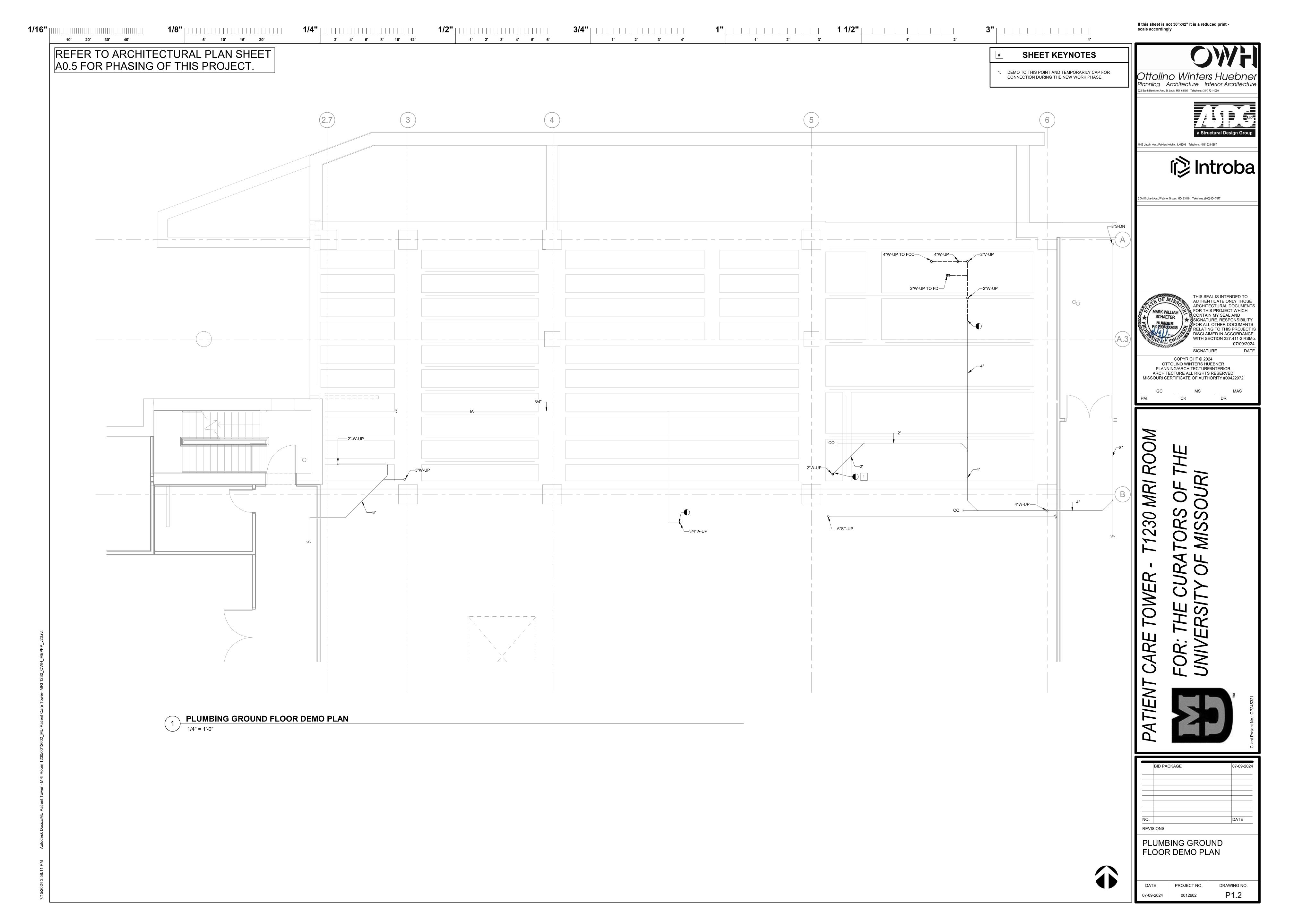


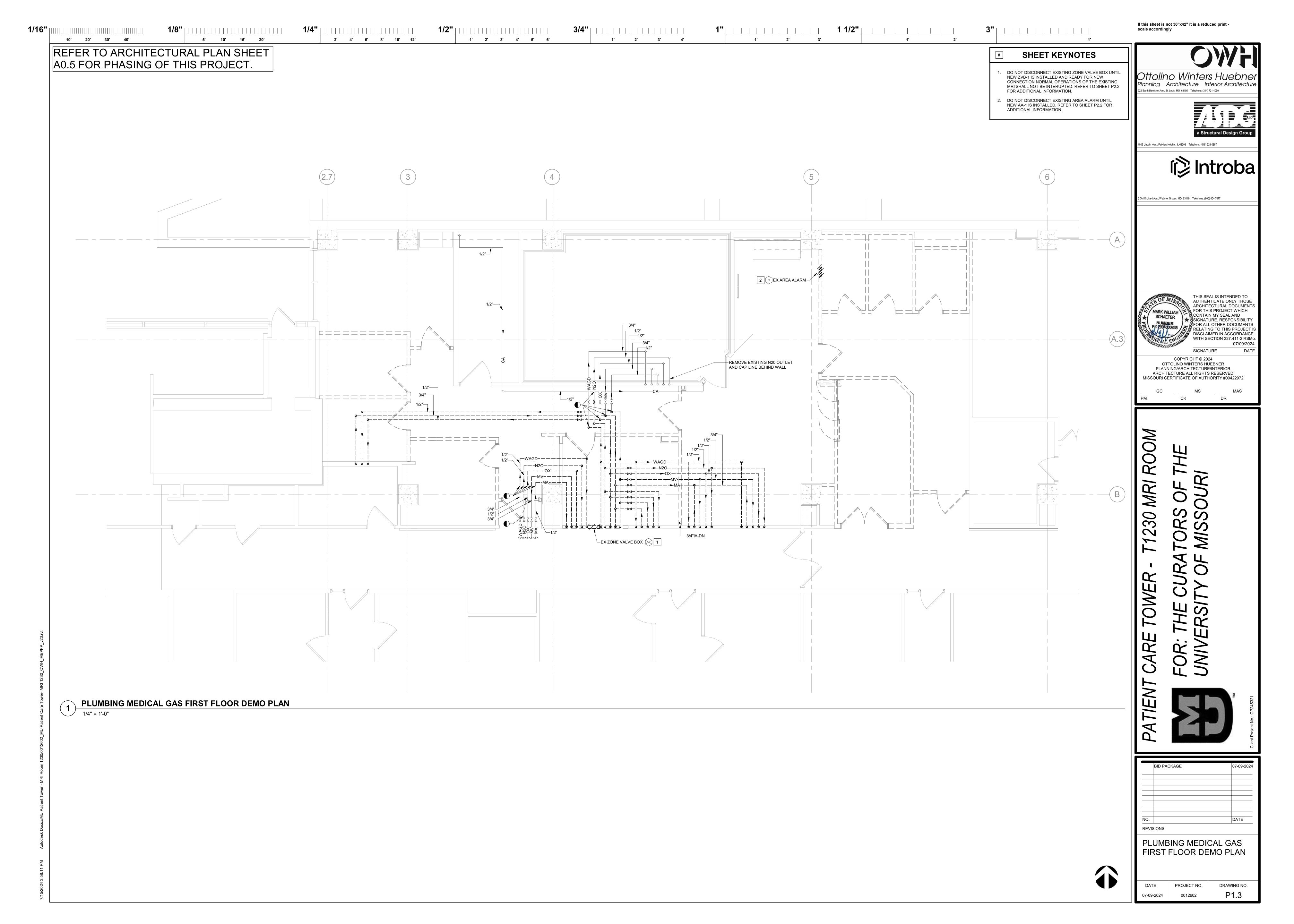
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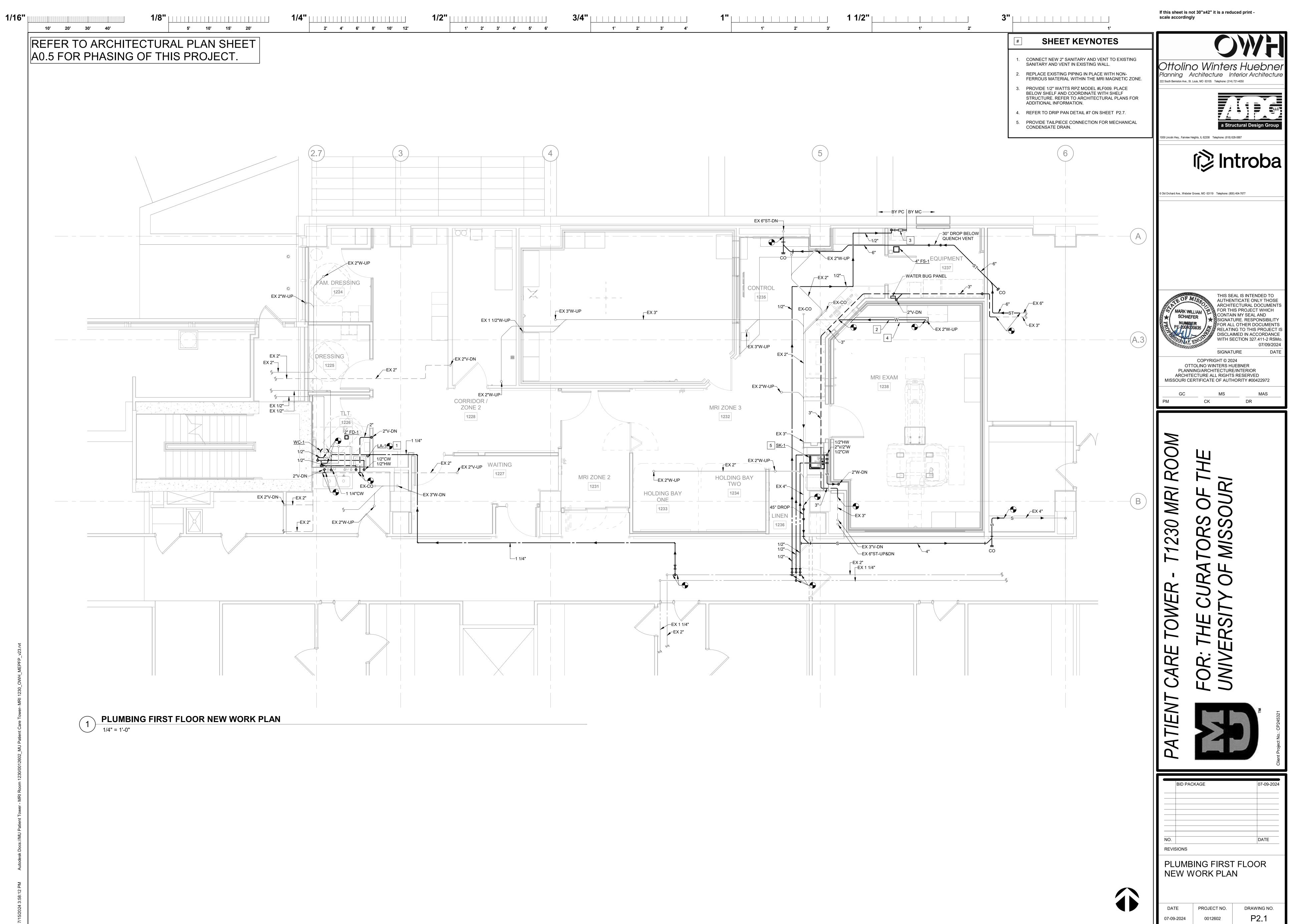
DISCIPLINE	SYSTEM	AREA(S) AFFECTED	SHUTDOWN LOCATION	DESCRIPTION	NORMAL HOURS / OFF-HOURS / WEEKENDS	MAXIMUM DURATION
MECHANICAL	HOT WATER	PCT 1ST FLOOR	EX. CORRIDOR - 1204	HOT WATER DISTRIBUTION TO VAV HOT WATER COILS WILL NEED TO BE SHUT DOWN FOR DISCONNECTING/RE-CONNECTING HOT WATER TO THE COILS. THIS WILL BE A COMBINATION OF SHUT-OFFS AT EACH INDIVIDUAL BOX TO RELOCATE VAV BOXES, AS WELL AS, A LARGER SHUTOFF WHEN RELOCATING THE VAV HW COIL VALVES. WILL NEED TO FIELD CONFIRM THE LOCATION OF THE LARGER SHUTOFF.	OFF-HOURS/WEEKENDS/M ULTIPLE SHUTDOWNS	PHASED
MECHANICAL	LOW PRESSURE STEAM	PCT 1ST FLOOR	MECHANICAL ROOM PT0017	LOW PRESSURE STREAM DISTRIBUTION WILL NEED TO BE SHUT DOWN FOR THE INSTALLATION OF NEW HUMIDIFIERS.	OFF-HOURS	8-HOURS
MECHANICAL	CHILLED WATER	MRI AREA	EQUIP. ROOM - 1229	THIS CHILLED WATER LINE WILL SERVE BOTH MRI EQUIPMENT ROOM COOLING UNITS. THE SHUT DOWN WILL HAVE TO BE DONE WHEN THE EXISTING MRI IS NOT IN USE.	OFF-HOURS	8-HOURS
MECHANICAL	AHU-2	PCT 1ST FLOOR	MECHANICAL ROOM PT0017	AHU WILL NEED TO BE SHUT DOWN FOR FINAL CONNECTIONS TO NEW DUCTWORK. THIS SHOULD BE DONE JUST BEFORE A WEEKEND TO MINIMIZE SHUTDOWN DURING BUSINESS HOURS. ALL DUCTWORK BETWEEN FINAL CONNECTIONS SHOULD BE COMPLETED PRIOR TO THIS SHUTDOWN.	OFF-HOURS/WEEKEND	1 WEEKEND
PLUMBING	DOMESTIC COLD WATER	PCT 1ST FLOOR	OFC-MGR PT1113	TEMPORARY SYSTEM SHUT DOWN WILL BE REQURIED FOR NEW CONNECTIONS CONSISTING OF TWO 1/2" COLD WATER LINES AND ONE 1 1/4" LINE. THESE CONNECTIONS WILL TAKE PLACE IN CORRIDOR PT31201.	OFF-HOURS	8-HOURS
PLUMBING	DOMESTIC HOT WATER	PCT 1ST FLOOR	OFC-MGR PT1113	TEMPORARY SYSTEM SHUT DOWN WILL BE REQURIED FOR NEW CONNECTIONS CONSISTING OF ONE 1/2" HOT WATER LINE. THIS CONNECTION WILL TAKE PLACE IN CORRIDOR PT31201.	OFF-HOURS	8-HOURS
PLUMBING	VENT	PCT GROUND FLOOR - PCT ROOF NEAR AND IN THE MRI AREA	SOILED HOLD PT1222 AND WAITING 1238	TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW CONNECTIONS CONSISTING OF AN OFFSET OF EXISTING 3" VENT LINE AND A NEW 2" VENT LINE.	OFF-HOURS	8-HOURS
PLUMBING	SANITARY	PCT GROUND FLOOR - PCT ROOF NEAR AND IN THE MRI AREA	CORRIDOR PTC1201 AND MECH-AHU EFCC PT0017	TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW CONNECTIONS CONSISTING OF A NEW 4" SANITARY LINE AND A NEW 3" SANITARY LINE.	OFF-HOURS	8-HOURS
PLUMBING	MEDICAL GAS	MRI AREA	CORRIDOR PTC1201	TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW MEDICAL GAS CONNECTIONS CONSISTING OF 3/4" WAGD, 1/2" NITROUS OXIDE, 1/2" OSYGEN, 3/4" MEDICAL VACUUM, AND 1/2" MEDICAL AIR.	OFF-HOURS / WEEKENDS	PHASED
FIRE PROTECTION	WET-SPRINKLER SYSTEM	FIRE PROTECTION ZONE 1-N	MRI AREA	TEMPORARY SYSTEM SHUT DOWN WITH TEMPORARY SPRINKLER PROTECTION WILL BE REQUIRED IN THIS SPACE. THE EXISITNG SPRINKLER BRANCH PIPING WILL BE RE-WORKED AND A NEW SPRINKLER MAIN TAP FOR THE NEW PRE-ACTION SYSTEM.		
ELECTRICAL	NDP-1	MRI AREA	BASEMENT ELEC. PT0040	SHUTDOWN REQUIRED FOR NEW MPB PANEL CONNECTION. WILL AFFECT ALL DOWNSTREAM DEVICES/EQUIPMENT. TEMPORARY POWER IS TO BE PROVIDED TO KEEP MRI PANEL AND OTHER NECESSARY EQUIPMENT RUNNING, VERIFY WITH OWNER IN FIELD.	OFF-HOURS. MULTIPLE SHUTDOWNS	PHASED
ELECTRICAL	RDP-1	ROOF	BASEMENT EMER PWR. PT0041	SHUTDOWN REQUIRED FOR NEW AHU-2 CONNECTION. WILL AFFECT ALL DOWNSTREAM DEVICES/EQUIPMENT. TEMPORARY POWER IS TO BE PROVIDED TO KEEP MRI PANEL AND OTHER NECESSARY EQUIPMENT RUNNING, VERIFY WITH OWNER IN FIELD.	OFF-HOURS.	8 HOURS

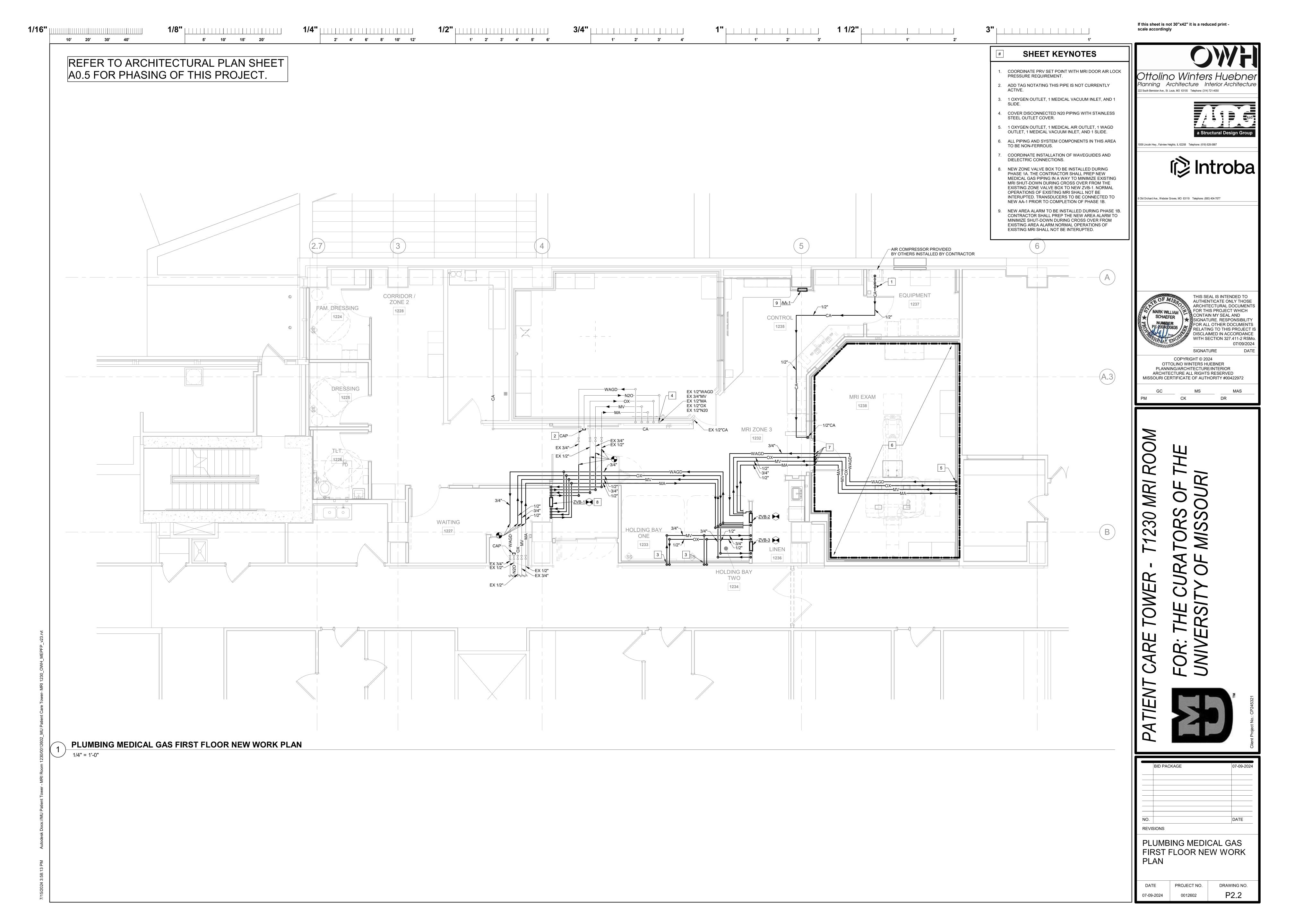
1. THIS MATRIX IS INTENDED TO CONVEY MAJOR SYSTEM SHUTDOWNS AFFECTING MULTIPLE AREAS OF THE CAMPUS. THIS MATRIX DOES NOT INDICATE ALL SHUTDOWNS OR PHASING REQUIRED AS PART OF PROJECT SCOPE 2. DUE TO PHASING OF PROJECT CONSTRUCTION, MULTIPLE SHUTDOWNS OF THE SAME SYSTEM MAY BE REQUIRED AT SEVERAL POINTS DURING CONSTRUCTION. 3. DURING BIDDING, CONTRACTOR SHALL REVIEW PROPOSED SHUTDOWN DURATIONS AND ALERT OWNER AND ARCHITECTENGINEER OF POTENTIAL CONCERNS.

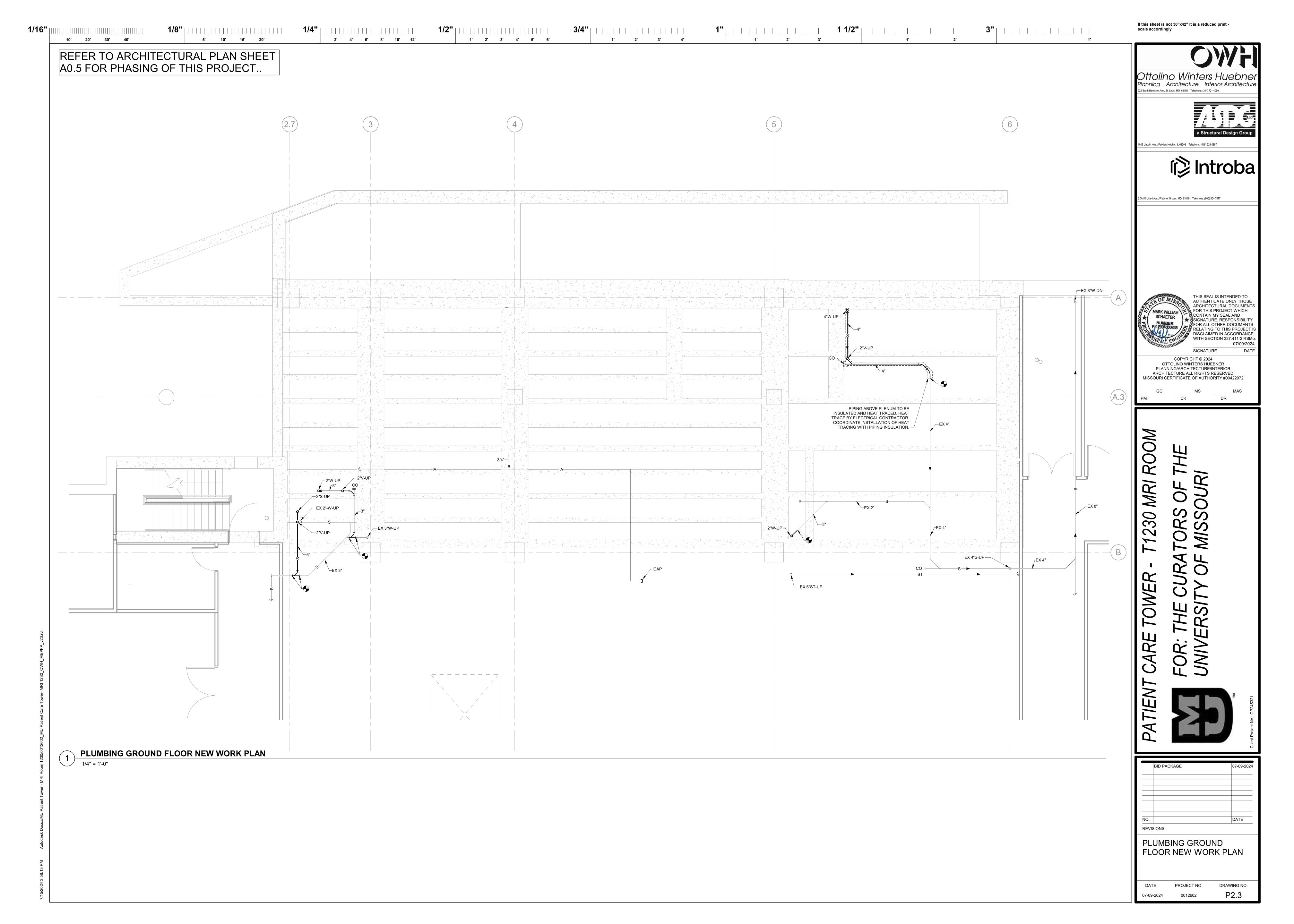


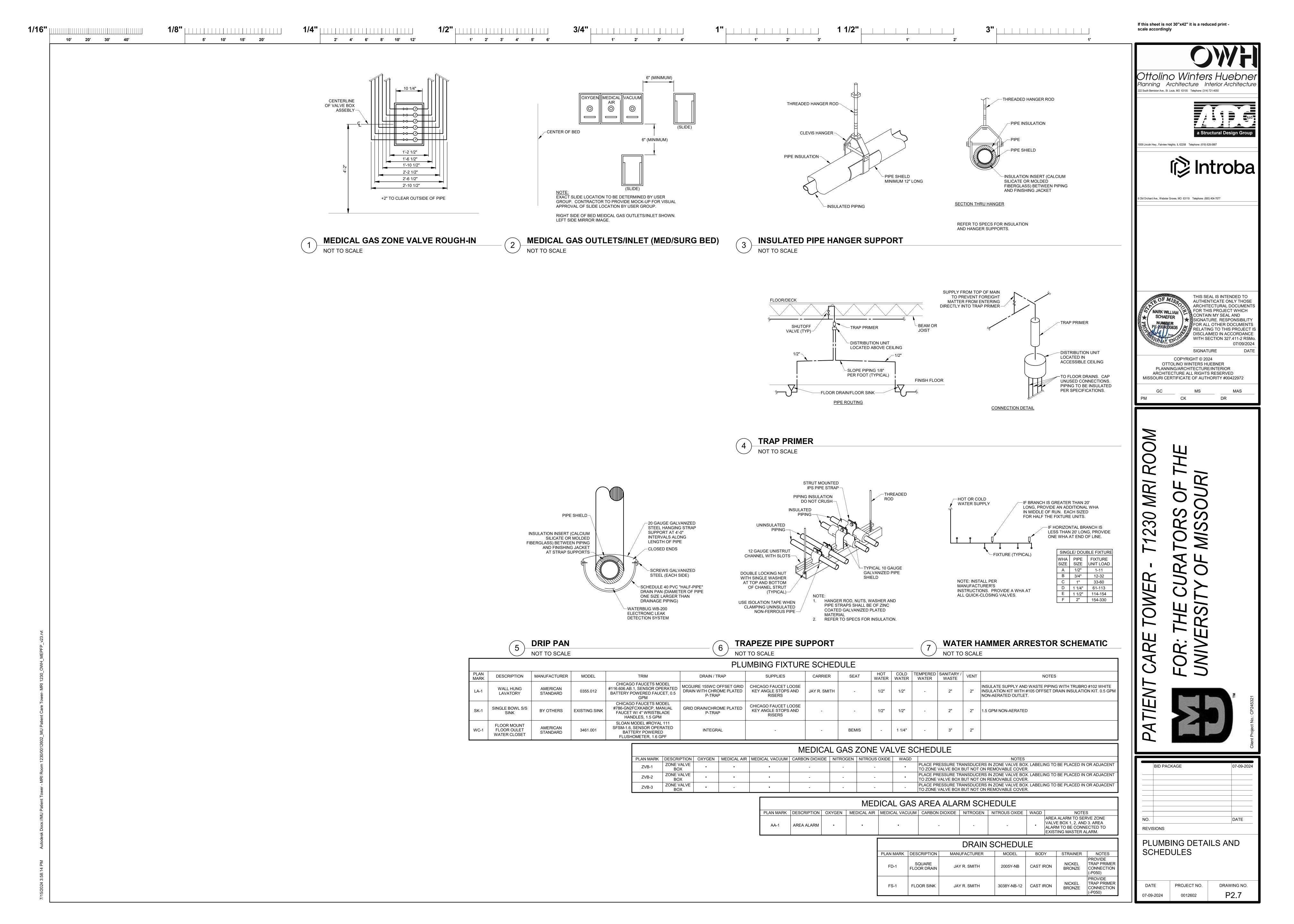












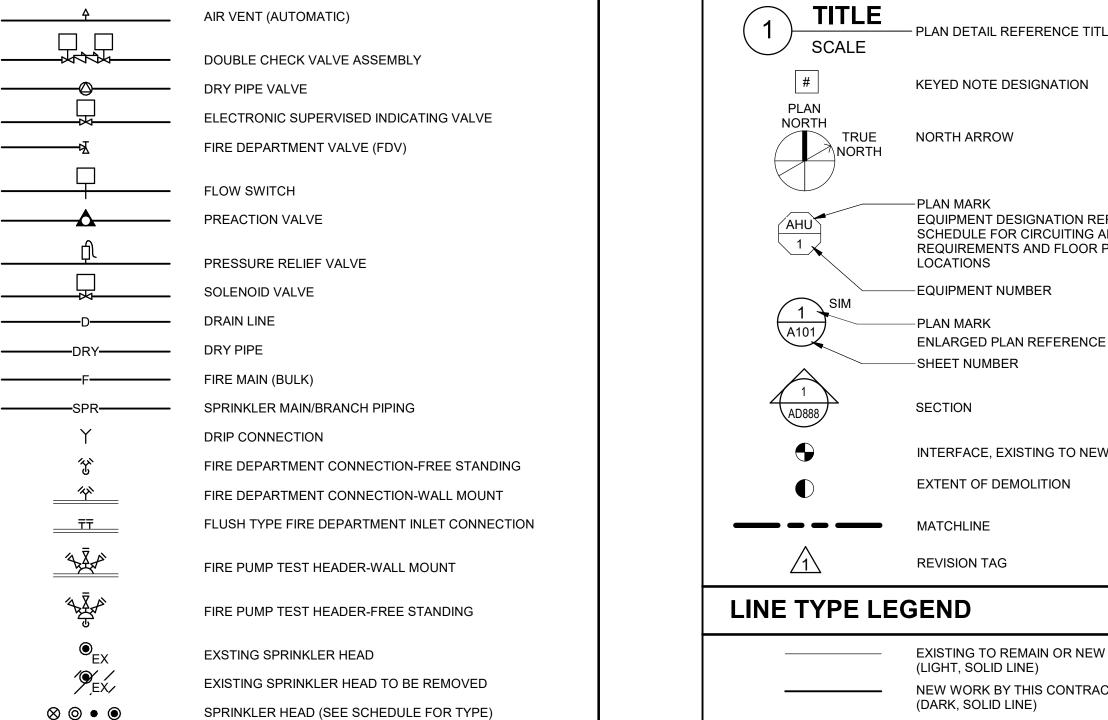
FIRE STOPPING NOTES

- MATERIALS: USE ONLY FIRE STOP PRODUCTS THAT HAVE BEEN UL 1479, ASTM E-814, OR UL 2079 TESTED FOR SPECIFIC FIRE RATE CONSTRUCTION CONDITIONS CONFORMING TO CONSTRUCTION ASSEMBLY TYPE, PENETRATING ITEM TYPE, ANNULAR SPACE REQUIREMENTS, AND FIRE RATING INVOLVED FOR EACH SEPARATE INSTANCE.
- FOR SINGLE PENETRATIONS: A READY-TO-USE LATEX BASED INTUMESCENT SEALANT IS REQUIRED TO MAINTAIN THE FIRE RATING OF THE ASSEMBLY PENETRATED. THE SEALANT MUST HAVE UL LISTING FOR BOTH SLEEVED AND NON-SLEEVED APPLICATIONS.
- FOR LARGE OPENINGS: CONTAINING MULTIPLE PENETRATIONS (2 OR MORE). A READY-TO-USE FOAM INTUMESCENT BLOCK MATERIAL MUST BE ABLE TO BE REMOVED AND REINSTALLED WITHOUT COMPROMISING FIRE PROTECTION INTEGRITY. COMPLY WITH MANUFACTURER'S RECOMMENDED PROCEDURES AND PRECAUTIONS. DO NOT USE DAMAGED OR EXPIRED
- MANUFACTURERS: JOHNS MANVILLE INTERNATIONAL, 3M BRAND, CSD SEALING SYSTEMS. HILTI. CIBA-GEIGY, HEAVY-DUTY/NEALSON. REFER TO DIVISION 7 FOR FURTHER REQUIREMENTS.

FIRE PROTECTION DEMOLITION NOTES

- PROTECT PIPING WHICH IS NOT TO BE REMOVED FROM DAMAGE, DIRT AND
- ALL FIRE EQUIPMENT AND MATERIALS NOT CLAIMED BY THE OWNER SHALL BE REMOVED FROM THE PREMISES AND PROPERLY DISPOSED OF BY THE DEMOLITION CONTRACTOR.
- THE CONTRACTOR SHALL PLUG OR CAP ALL PIPING OUTLETS NOT INTENDED
- CEILING REMOVAL, STORAGE, AND REPLACEMENT WILL BE MADE BY THE CONTRACTOR AND IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO REPAIR THE EXISTING SURFACES TO REMAIN WHERE THEIR WORK HAS BEEN COMPLETED. REPAIR INCLUDES BUT SHALL NOT BE LIMITED TO, ANY EXISTING WALL, CEILING, OR FLOOR THAT IS SCHEDULED TO REMAIN. REPAIR. PAINTING, AND PATCHING SHALL BE COMPLETED BY AN APPROPRIATE CONTRACTOR QUALIFIED FOR THIS TYPE OF WORK.
- IF HAZARDOUS MATERIALS ARE ENCOUNTERED DURING DEMOLITION OPERATIONS, THE CONTRACTOR WILL NOTIFY BUILDING OWNER OF THE HAZARDOUS MATERIAL.
- ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH THESE DRAWINGS.
- THE CONTRACTOR SHALL COORDINATE DEMOLITION WORK WITH PROJECT'S PHASING SCHEDULE PRIOR TO ANY WORK

FIRE PROTECTION SYMBOLS & ABBREVIATIONS NOT ALL SYMBOLS ARE USED FOR THIS PROJECT



SIDEWALL SPRINKLER HEAD (SEE SCHEDULE FOR TYPE)

ACCESS PANEL

CAST IRON

DRY PIPE VALVE

DRY STANDPIPE PIPING

DRY STANDPIPE VALVE

FIRE DEPARTMENT VALVE

FIRE PUMP CONTROLLER

FIRE PUMP TEST HEADER

JOCKEY PUMP CONTROLLER

NO AUTOMATIC SPRINKLERS

NORMAL HOURS /

OFF-HOURS / WEEKENDS

ULTIPLE SHUTDOWNS

OFF-HOURS

OFF-HOURS

OFF-HOURS/WEEKEND

OFF-HOURS

OFF-HOURS

OFF-HOURS

OFF-HOURS

OFF-HOURS.

MAXIMUM

DURATION

PHASED

8-HOURS

8-HOURS

1 WEEKEND

8-HOURS

8-HOURS

8-HOURS

8-HOURS

PHASED

PHASED

8 HOURS

FIRE HOSE CABINET

FIRE PUMP

JOCKEY PUMP

NOT IN CONTRACT

TAMPER SWITCH

POST INDICATOR VALVE

FIRE EXTINGUISHER CABINET

AIR COMPRESSOR

AUTOMATIC SPRINKLERS

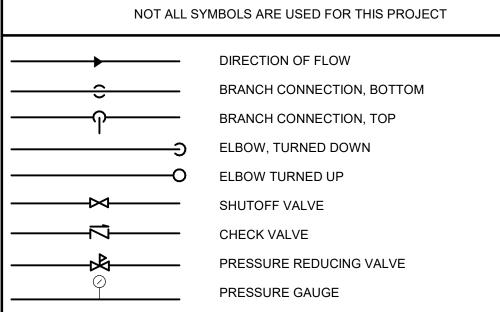
BACKFLOW PREVENTER

BRANCH TO CONNECTION

DOUBLE CHECK VALVE ASSEMBLY

FIRE DPARTMENT CONNECTION

ABBREVIATIONS



X #	-	
AFF		
AHJ		

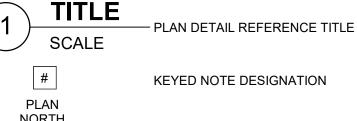
SOV

ACCESS PANEL **BOTTOM OF PIPE**

DIAMETER DN DOWN EX OR EXIST EXISTING FFE FINISHED FLOOR ELEVATION

GALLONS PER HOUR GPM **GALLONS PER MINUTE** HORSEPOWER IE OR INV. ELEV INVERT ELEVATION NORMALLY CLOSED NTS NOT TO SCALE RPMREVOLUTIONS PER MINUTE

DRAWING REFERENCES



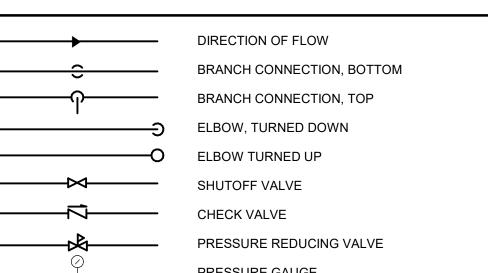
EQUIPMENT DESIGNATION REFER TO MEP SCHEDULE FOR CIRCUITING AND DEVICE REQUIREMENTS AND FLOOR PLANS FOR -EQUIPMENT NUMBER

INTERFACE, EXISTING TO NEW EXTENT OF DEMOLITION

REVISION TAG

EXISTING TO REMAIN OR NEW WORK BY OTHERS (LIGHT, SOLID LINE) NEW WORK BY THIS CONTRACTOR (DARK, SOLID LINE) EXISTING TO BE REMOVED BY THIS CONTRACTOR (DARK, DASHED LINE, DEMOLITION PLANS)

COMMON PIPING SYMBOLS &



RISER DESIGNATION ABOVE FINISH FLOOR AUTHORITIES HAVING JURISDICTION

POUNDS PER SQUARE INCH

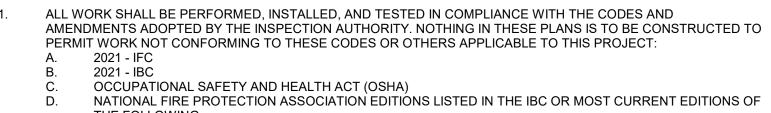
SHUTOFF VALVE

VERIFY IN FIELD

TOTAL DYNAMIC HEAD

- PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THIS PROJECT: 2021 - IBC OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA) NFPA 13
 - NFPA 14 NFPA 20 NFPA 24 NFPA 25
- THE CONTRACTOR SHALL INCLUDE IN THEIR BID, A FULLY CODE COMPLIANT AND COORDINATED SPRINKLER
- GLOBAL REQUIREMENTS. THESE DRAWINGS ARE ACCURATE TO THE BEST OF OUR KNOWLEDGE, HOWEVER, LOCATIONS, DEPTHS
- ALL SYSTEMS, EQUIPMENT, AND MATERIALS ARE TO BE INSTALLED IN A NEAT WORKMAN LIKE MANNER, WORK
- THE FIRE PROTECTION BID IS A DESIGN/BUILD CONTRACT. BEFORE SUBMITTING THE BID. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING CONDITIONS AND VERIFY LOCATIONS, ELEVATIONS, AND SIZES OF ALL UTILITIES AT SITE PRIOR TO PROCEEDING WITH WORK. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS, OR ERRORS MADE AS A RESULT OF THE FAILURE TO BECOME FULLY FAMILIAR WITH EXISTING CONDITIONS. EXISTING SYSTEMS AND
- WHEN PLACING NEW SPRINKLERS AND ROUTING NEW SPRINKLER PIPING, CONTRACTOR SHALL VERIFY LOCATIONS OF POTENTIAL OBSTRUCTIONS FROM MECHANICAL EQUIPMENT AND ARCHITECTURAL FEATURES PRIOR TO BID AND PRICE ACCORDINGLY TO MAKE ALLOWANCES IN BID.
- THE CONTRACTOR SHALL PERFORM A FLOW TEST PRIOR TO DESIGN AND SUBMITTAL OF THE HYDRAULICALLY CALCULATED SYSTEM. THE FLOW TEST SHALL NOT BE MORE THAN 6 12 MONTHS OLD FROM THE DATE OF
- AT LEAST ONE HYDRAULIC CALCULATION SHALL BE PROVIDED PER SPRINKLER ZONE BASED ON THE CURRENT FLOW TEST. THE CALCULATION WILL INCLUDE HOSE ALLOWANCES AT THE BASE OF THE RISER PER NFPA 13 REQUIREMENTS BASED ON THE IDENTIFIED HAZARD. THERE WILL BE A 10% SAFETY ALLOWANCE PROVIDED FOR THE SPRINKLER SYSTEM BASED ON THE AVAILABLE PRESSURE AT THE SOURCE AND SYSTEM DEMAND. (10% OF THE SUM OF THE SPRINKLER DEMAND PLUS THE SAFETY FACTOR).
- AGENCIES. AND INSURING AGENCY AND RECEIVE APPROVAL PRIOR TO SUBMITTING DESIGN SHOP DRAWINGS. SUBMIT ACCURATE AS-BUILT DRAWINGS TO THE ENGINEER AND OWNER.
- IF THIS CONTRACTOR DOES NOT CLEARLY UNDERSTAND THESE PLANS OR IS NOT COMPLETELY SURE OF THEIR MEANING, THIS CONTRACTOR SHOULD OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND/OR INTERPRETATION PRIOR TO SUBMITTING BIDS, SINCE THIS CONTRACTOR WILL BE HELD RIGIDLY TO THE INTERPRETATION OF THE ENGINEER.
- FROM EXISTING PLANS, SPECIFICATIONS, AND FILED SURVEYS. THE EXACT LOCATION OF PIPING AND EQUIPMENT MAY DEVIATE FROM THE LOCATION INDICATED BY THESE DRAWINGS. EXTREME ACCURACY IS NOT GUARANTEED. THIS CONTRACTOR SHALL BE PREPARED TO MAKE ALTERATIONS TO NEW AND/OR EXISTING SERVICES TO FIT JOB CONDITIONS. THIS CONTRACTOR SHALL REPORT, IN WRITING, ANY DISCREPANCIES WHICH PREVENT THE INSTALLATION OF WORK AS SHOWN.
- IT IS ASSUMED THAT AREAS OUTSIDE THE SCOPE OF WORK ARE TESTED, MAINTAINED, AND MEET THE CODE LIMITED BY THE BOUNDARY OF WORK.
- PIPING AND EQUIPMENT THAT IS EXISTING TO REMAIN WITHIN OR SERVING THE SCOPE OF WORK, IS IN GOOD WORKING CONDITION.
- REQUIREMENTS AND PER THE DESIGN DOCUMENTS BY THE CONTRACTOR.
- NFPA 13 REQUIREMENTS AND AT THE DISCRETION OF THE FIRE MARSHAL, ENGINEER OR GOVERNING AGENCY. ALL OPENINGS THROUGH FIRE RATED FLOORS, WALLS, OR PARTITIONS SHALL BE FIRE STOPPED WITH UL RATED
- COORDINATE WITH STRUCTURAL ENGINEER WHEN SAW-CUTTING THROUGH CONCRETE FLOOR OR WALL
- AND/OR OTHER STRUCTURAL ATTACHMENTS FOR NEW CONSTRUCTION.
- VALVES, TAMPER SWITCHES, OR ANY MECHANICAL/ELECTRICAL ITEM SHALL NOT BE LOCATED ABOVE A HARD CEILING, UNLESS PROVIDED WITH EQUIVALENTLY RATED ACCESS AND SIGNAGE MEETING NFPA 13
- ARCHITECT, AND OTHER DISCIPLINES.
- EXTENDED COVERAGE SPRINKLERS ARE ARE NOT PERMITTED. CONTRACTOR SHALL VERIFY ADDITIONAL PRESSURE REQUIREMENTS IF THIS TYPE IS SELECTED.
- PIPING SHALL BE INSTALLED AT LEAST 12" ABOVE FINISHED CEILING ELEVATION TO ALLOW FOR SUITABLE
- INSTALL NO PIPING IN A LOCATION OR MANNER WHICH WILL ALLOW FREEZING.
- COORDINATE PIPE ROUTING NEAR ELECTRICAL EQUIPMENT PER NFPA 70. PIPING IS NOT TO BE ROUTED ABOVE ELECTRICAL PANELS, TRANSFORMERS, COMPUTER RACKS ETC. FIELD VERIFY AND COORDINATE WITH ELECTRICAL CONTRACTOR ALL EXISTING AND NEW ELECTRICAL LOCATIONS PRIOR TO DESIGN OF THE FIRE
- ROUTING OF SPRINKLER MAINS, BRANCHLINES, AND HEADS SHALL BE THOROUGHLY COORDINATED WITH ALL OTHER DISCIPLINES AND BUILDING STRUCTURE PRIOR TO SUBMISSION OF COORDINATED SHOP DRAWINGS. THIS IS OF THE UTMOST IMPORTANCE ESPECIALLY WHERE SPACE IS LIMITED. FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR COORDINATING, PREPARING, AND SUBMITTING COORDINATION DRAWINGS FOR
- IF SEISMIC BRACING IS REQUIRED, FIRE PROTECTION CONTRACTOR SHALL FURNISH AND INSTALL ALL END OF
- SPRINKLER CONTRACTOR TO AVOID ROUTING PIPE THROUGH SHEAR WALLS. ANY SHEAR WALL PENETRATIONS SHALL BE COORDINATED WITH THE STRUCTURAL ENGINEER. REFER TO STRUCTURAL DRAWINGS FOR SHEAR
- WHEN WORK REQUIRES TEMPORARY INTERRUPTIONS OF FIRE PROTECTION SERVICES OR UTILITIES THE FOLLOWING ACTIONS WILL BE TAKEN:
- ENSURE BUILDING OPERATIONS CONTINUE WITH MINIMAL INTERRUPTIONS AND OPERATION OF EXISTING SYSTEMS BE INTERFACED WITH AS LITTLE DISRUPTION AS POSSIBLE EXCEPT IN VACATED AREAS. WORK INTERFERING WITH OPERATION OF DOWNTIME WILL BE SCHEDULED AFTER CONSULTATION WITH
- AND PERMISSION GIVEN BY OWNER 10 DAYS PRIOR TO ANTICIPATED INTERRUPTION OF SYSTEMS. SUCH WORK MAY BE REQUIRED TO BE PERFORMED OUTSIDE OF NORMAL WORKING HOURS. REFER TO FIRE WATCH NOTES FOR DISRUPTION OF FIRE SPRINKLER SYSTEMS IN OCCUPIED BUILDINGS WHEN DISRUPTION EXCEEDS 4 HOURS.
- CONTRACTOR TO PROVIDE TEMPORARY SPRINKLER PROTECTION DURING CONSTRUCTION PER NFPA 13 REQURIEMENTS.

FIRE PROTECTION GENERAL NOTES - EXISTING PROJECT



NATIONAL FIRE PROTECTION ASSOCIATION EDITIONS LISTED IN THE IBC OR MOST CURRENT EDITIONS OF

THE WORK CONSISTS OF FURNISHING ALL LABOR AND MATERIALS NECESSARY TO INSTALL, COMPLETE AND READY CONTINUOUS OPERATION, THE FIRE PROTECTION SYSTEMS, APPARATUS AND EQUIPMENT FOR THIS PROJECT, AS SHOWN ON THE DRAWINGS, PLUS AS REQUIRED BY NFPA 13 AND THE AUTHORITY HAVING JURISDICTION (AHJ).

SYSTEM. PROJECT SHALL BE DESIGNED, CONSTRUCTED, AND TESTED PER THE NFPA STANDARDS AND/OR FM

ELEVATIONS AND SIZES WERE TAKEN FROM DIFFERENT SOURCES AND ARE SUBJECT TO DEVIATION. THE CONTRACTOR SHALL ASSUME SOME DEVIATIONS AND INCLUDE OFFSETS, ADDITIONAL PIPING, ETC AT THE TIME

NOT DONE SO SHALL BE REMOVED AND REINSTALLED SATISFACTORILY.

STRUCTURE SHALL BE INVESTIGATED FOR BEST POSSIBLE ROUTING OF FIRE PROTECTION PIPING.

CONSTRUCTION.

THE CONTRACTOR SHALL SUBMIT ALL DRAWINGS AND CALCULATIONS TO THE FIRE DEPARTMENT, GOVERNING

THESE PLANS ARE DIAGRAMMATIC IN NATURE SINCE THE ONLY AVAILABLE INFORMATION HAS BEEN OBTAINED

REQUIREMENTS WHEN IT WAS INSTALLED, AND THE EXISTING SYSTEM IS ACCEPTED BY THE LOCAL AHJ. WORK PERFORMED WITHIN SCOPE OF WORK WILL PROVIDE A SYSTEM TO MEET THE REQUIREMENTS SET BY THE AHJ

THE SPRINKLER CONTRACTOR PRIOR TO TIME OF BID SHALL EVALUATE THE SITE AND VERIFY ALL SPRINKLER

FURNISH AND INSTALL TAMPER SWITCHES ON ALL INDICATING VALVES AND FLOW SWITCHES PER NFPA 13

THE CONTRACTOR SHALL FURNISH DRAIN VALVES AND INSPECTOR'S TEST CONNECTIONS AS REQUIRED BY

ASSEMBLIES OF EQUAL OR GREATER FIRE RATING. REFER TO FIRE STOPPING NOTES FOR ADDITIONAL

CONSTRUCTION. LEAVE SUFFICIENT REBAR EXPOSED TO TIE NEW REINFORCING REPLACEMENT CONCRETE

SPRINKLERS SHALL BE LOCATED IN THE CENTER OF CEILING TILES, COORDINATE FINAL LAYOUT WITH

THE SPRINKLER CONTRACTOR SHALL OBTAIN AND UTILIZE THE ARCHITECTURAL REFLECTED CEILING PLAN FOR THE LOCATING OF SPRINKLER HEADS. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR CEILING DEVICE LOCATIONS AND THE SPECIFICATIONS FOR COORDINATION DRAWING REQUIREMENTS.

ACCESS ABOVE CEILING.

PROTECTION PLANS.

ADVISE THE ENGINEERS OF ANY CONFLICTS, ERRORS, OMISSIONS, ETC. AT LEAST 10 DAYS PRIOR TO BID DATE, TO ALLOW CLARIFICATION BY WRITTEN ADDENDUM.

BRANCH LINE RESTRAINTS PER NFPA 13 PROVIDE SEISMIC BRACING DETAILS.

COORDINATION WITH MAINTENANCE PERSONNEL TO SHUT OF SERVICES AT NEAREST MAIN.

PROVIDE TEMPORARY AND ACCESSIBLE ISOLATION VALVES CLOSE TO THE POINT OF WORK.

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BID PACKAGE DATE REVISIONS FIRE PROTECTION

DRAWING NO.

SYMBOLS AND **ABBREVIATIONS**

PROJECT NO. 07-09-2024 0012602

1. THIS MATRIX IS INTENDED TO CONVEY MAJOR SYSTEM SHUTDOWNS AFFECTING MULTIPLE AREAS OF THE CAMPUS. THIS MATRIX DOES NOT INDICATE ALL SHUTDOWNS OR PHASING REQUIRED AS PART OF PROJECT SCOPE 2. DUE TO PHASING OF PROJECT CONSTRUCTION, MULTIPLE SHUTDOWNS OF THE SAME SYSTEM MAY BE REQUIRED AT SEVERAL POINTS DURING CONSTRUCTION.

MECHANICAL, ELECTRICAL, FIRE PROTECTION, PLUMBING SYSTEM SHUTDOWN MATRIX

INSTALLATION OF NEW HUMIDIFIERS.

IN CORRIDOR PT31201.

PRE-ACTION SYSTEM.

OWNER IN FIELD.

OWNER IN FIELD.

DESCRIPTION

EX. CORRIDOR - WILL BE A COMBINATION OF SHUT-OFFS AT EACH INDIVIDUAL BOX TO RELOCATE OFF-HOURS/WEEKENDS/M

HOT WATER DISTRIBUTION TO VAV HOT WATER COILS WILL NEED TO BE SHUT

DOWN FOR DISCONNECTING/RE-CONNECTING HOT WATER TO THE COILS. THIS

VAV BOXES, AS WELL AS, A LARGER SHUTOFF WHEN RELOCATING THE VAV HW

COIL VALVES. WILL NEED TO FIELD CONFIRM THE LOCATION OF THE LARGER

LOW PRESSURE STREAM DISTRIBUTION WILL NEED TO BE SHUT DOWN FOR THE

THIS CHILLED WATER LINE WILL SERVE BOTH MRI EQUIPMENT ROOM COOLING

TEMPORARY SYSTEM SHUT DOWN WILL BE REQURIED FOR NEW CONNECTIONS

TEMPORARY SYSTEM SHUT DOWN WILL BE REQURIED FOR NEW CONNECTIONS

CONSISTING OF AN OFFSET OF EXISTING 3" VENT LINE AND A NEW 2" VENT LINE.

TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW CONNECTIONS

TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW MEDICAL GAS

TEMPORARY SYSTEM SHUT DOWN WITH TEMPORARY SPRINKLER PROTECTION WILL BE REQUIRED IN THIS SPACE. THE EXISITNG SPRINKLER BRANCH PIPING

SHUTDOWN REQUIRED FOR NEW MPB PANEL CONNECTION. WILL AFFECT ALL

CONNECTIONS CONSISTING OF 3/4" WAGD, 1/2" NITROUS OXIDE, 1/2" OSYGEN, 3/4" OFF-HOURS / WEEKENDS

KEEP MRI PANEL AND OTHER NECESSARY EQUIPMENT RUNNING, VERIFY WITH MULTIPLE SHUTDOWNS

CONSISTING OF A NEW 4" SANITARY LINE AND A NEW 3" SANITARY LINE.

WILL BE RE-WORKED AND A NEW SPRINKLER MAIN TAP FOR THE NEW

SHUTDOWN REQUIRED FOR NEW AHU-2 CONNECTION. WILL AFFECT ALL

BASEMENT ELEC. DOWNSTREAM DEVICES/EQUIPMENT. TEMPORARY POWER IS TO BE PROVIDED TO

BASEMENT EMER DOWNSTREAM DEVICES/EQUIPMENT. TEMPORARY POWER IS TO BE PROVIDED TO

PWR. PT0041 KEEP MRI PANEL AND OTHER NECESSARY EQUIPMENT RUNNING, VERIFY WITH

AHU WILL NEED TO BE SHUT DOWN FOR FINAL CONNECTIONS TO NEW DUCTWORK. THIS SHOULD BE DONE JUST BEFORE A WEEKEND TO MINIMIZE

SHUTDOWN DURING BUSINESS HOURS. ALL DUCTWORK BETWEEN FINAL

CONNECTIONS SHOULD BE COMPLETED PRIOR TO THIS SHUTDOWN.

OFC-MGR PT1113 CONSISTING OF TWO 1/2" COLD WATER LINES AND ONE 1 1/4" LINE. THESE

CONNECTIONS WILL TAKE PLACE IN CORRIDOR PT31201.

MEDICAL VACUUM, AND 1/2" MEDICAL AIR.

OFC-MGR PT1113 | CONSISTING OF ONE 1/2" HOT WATER LINE. THIS CONNECTION WILL TAKE PLACE

SOILED HOLD TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW CONNECTIONS

UNITS. THE SHUT DOWN WILL HAVE TO BE DONE WHEN THE EXISTING MRI IS NOT

SHUTDOWN

LOCATION

EQUIP. ROOM -

1229

MECHANICAL

ROOM PT0017

PT1222 AND

WAITING 1238

CORRIDOR

PTC1201 AND

MECH-AHU EFCC PT0017

PTC1201

MRI AREA

AREA(S) AFFECTED

PCT 1ST FLOOR

PCT 1ST FLOOR

MRI AREA

PCT 1ST FLOOR

PCT 1ST FLOOR

PCT 1ST FLOOR

PCT GROUND FLOOR - PCT ROOF NEAR AND IN THE

MRI AREA

PCT GROUND FLOOR - PCT ROOF NEAR AND IN THE

MRI AREA

MRI AREA

FIRE PROTECTION ZONE 1-N

MRI AREA

ROOF

PROTECTION ELECTRICAL ELECTRICAL

NOTES:

SYSTEM

HOT WATER

CHILLED WATER

AHU-2

DOMESTIC COLD WATER

DOMESTIC HOT WATER

VENT

SANITARY

MEDICAL GAS

WET-SPRINKLER SYSTEM

NDP-1

RDP-1

MECHANICAL LOW PRESSURE STEAM

DISCIPLINE

MECHANICAL

MECHANICAL

MECHANICAL

PLUMBING

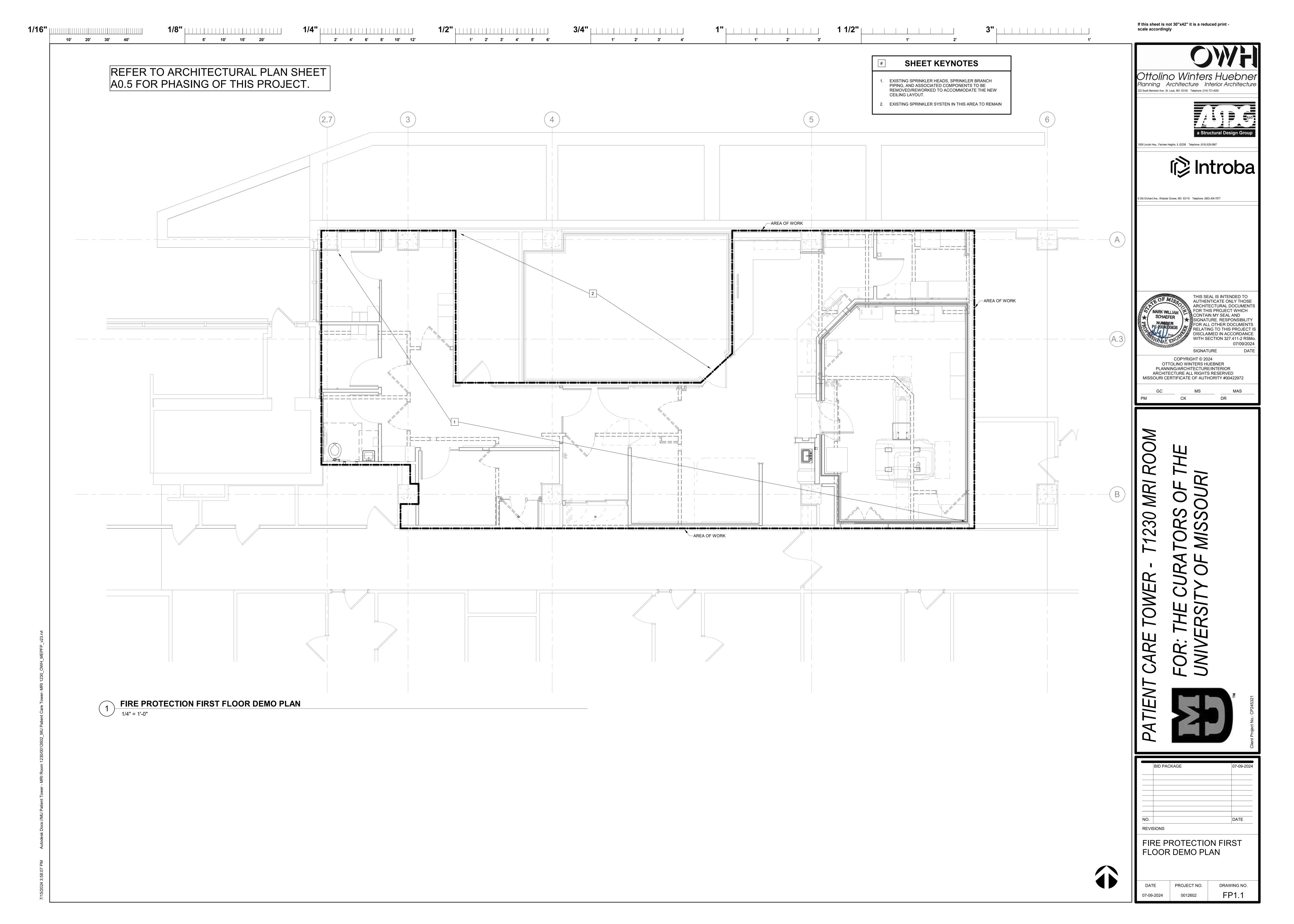
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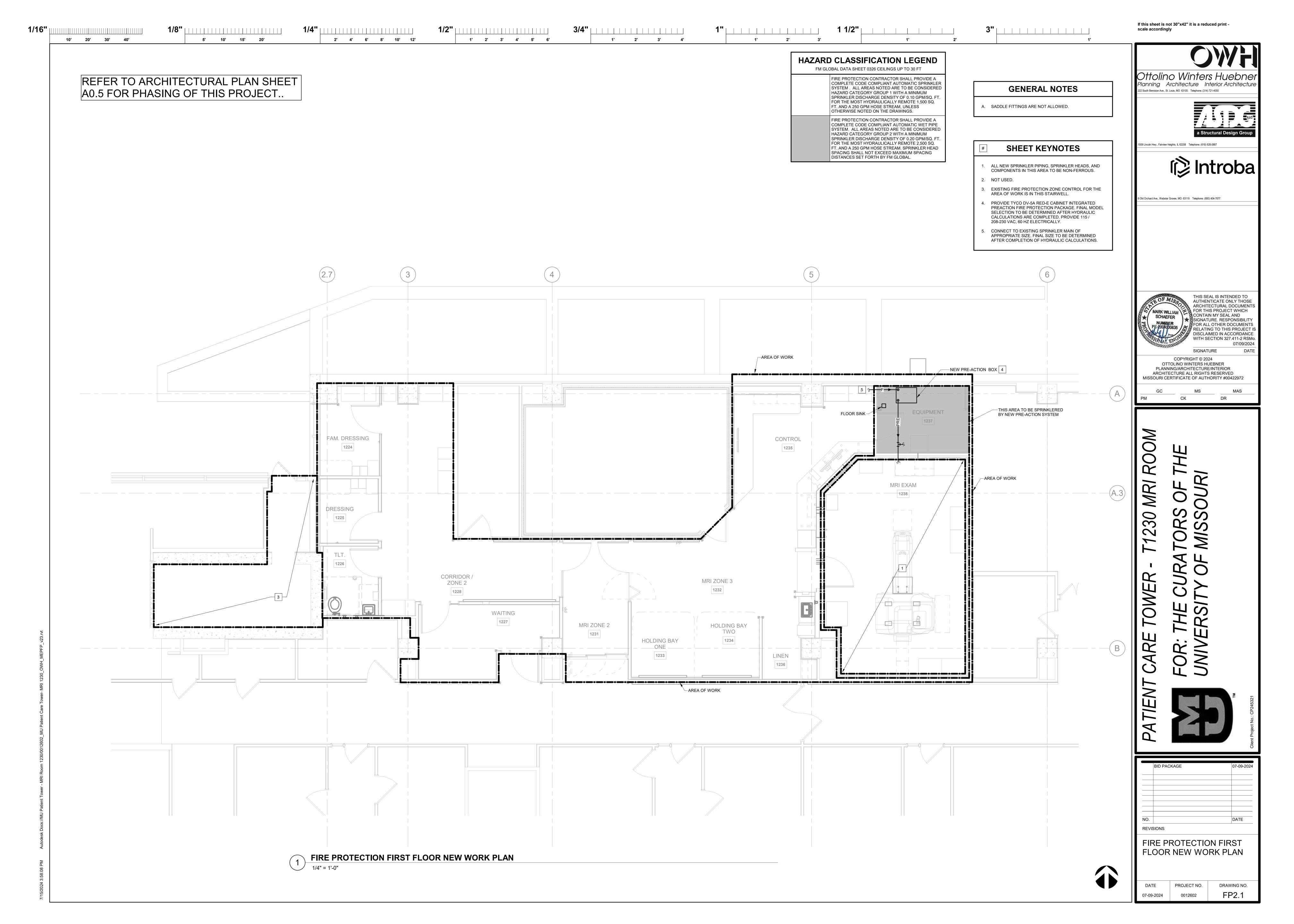
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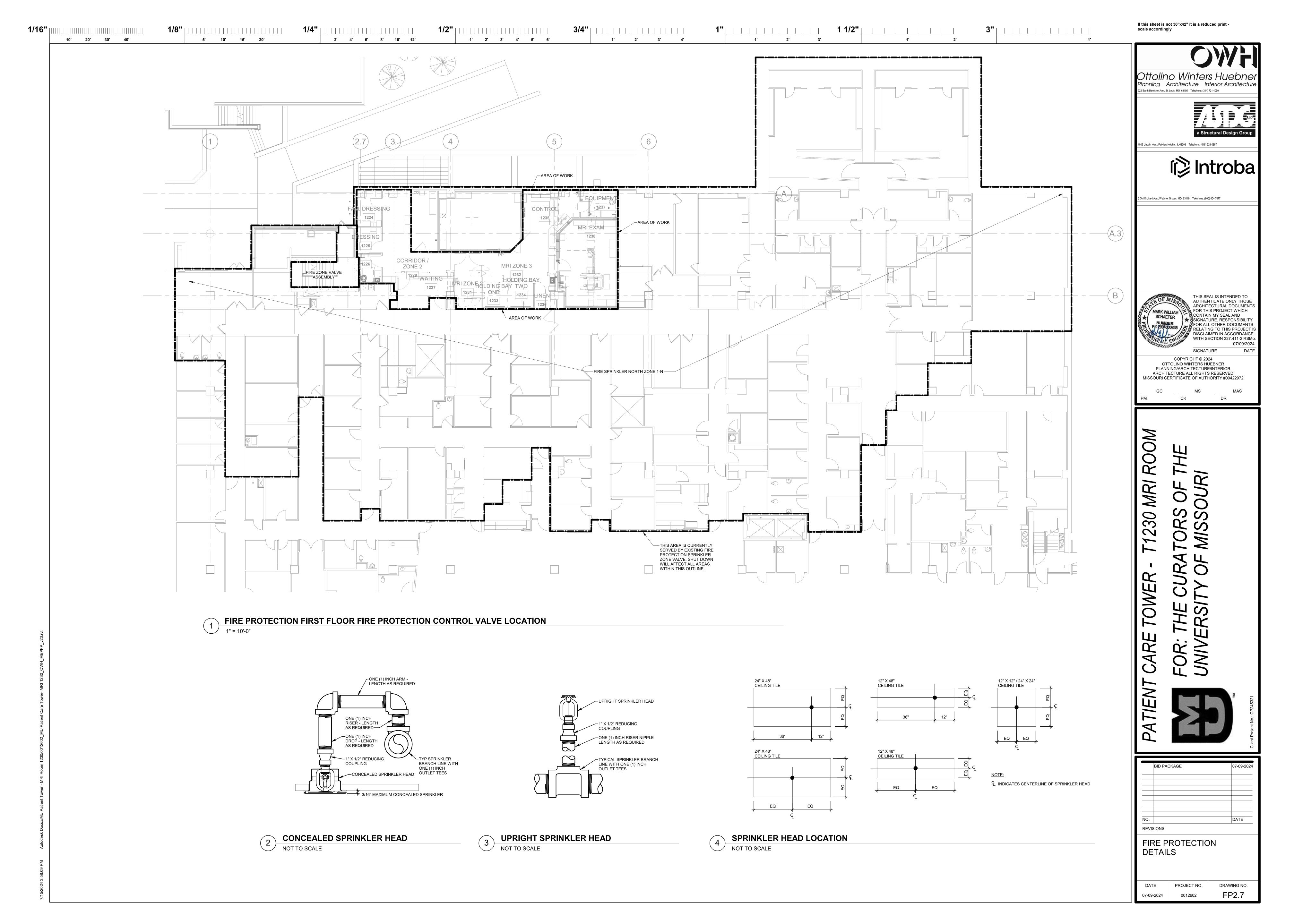
PLUMBING

PLUMBING

3. DURING BIDDING, CONTRACTOR SHALL REVIEW PROPOSED SHUTDOWN DURATIONS AND ALERT OWNER AND ARCHITECTENGINEER OF POTENTIAL CONCERNS.







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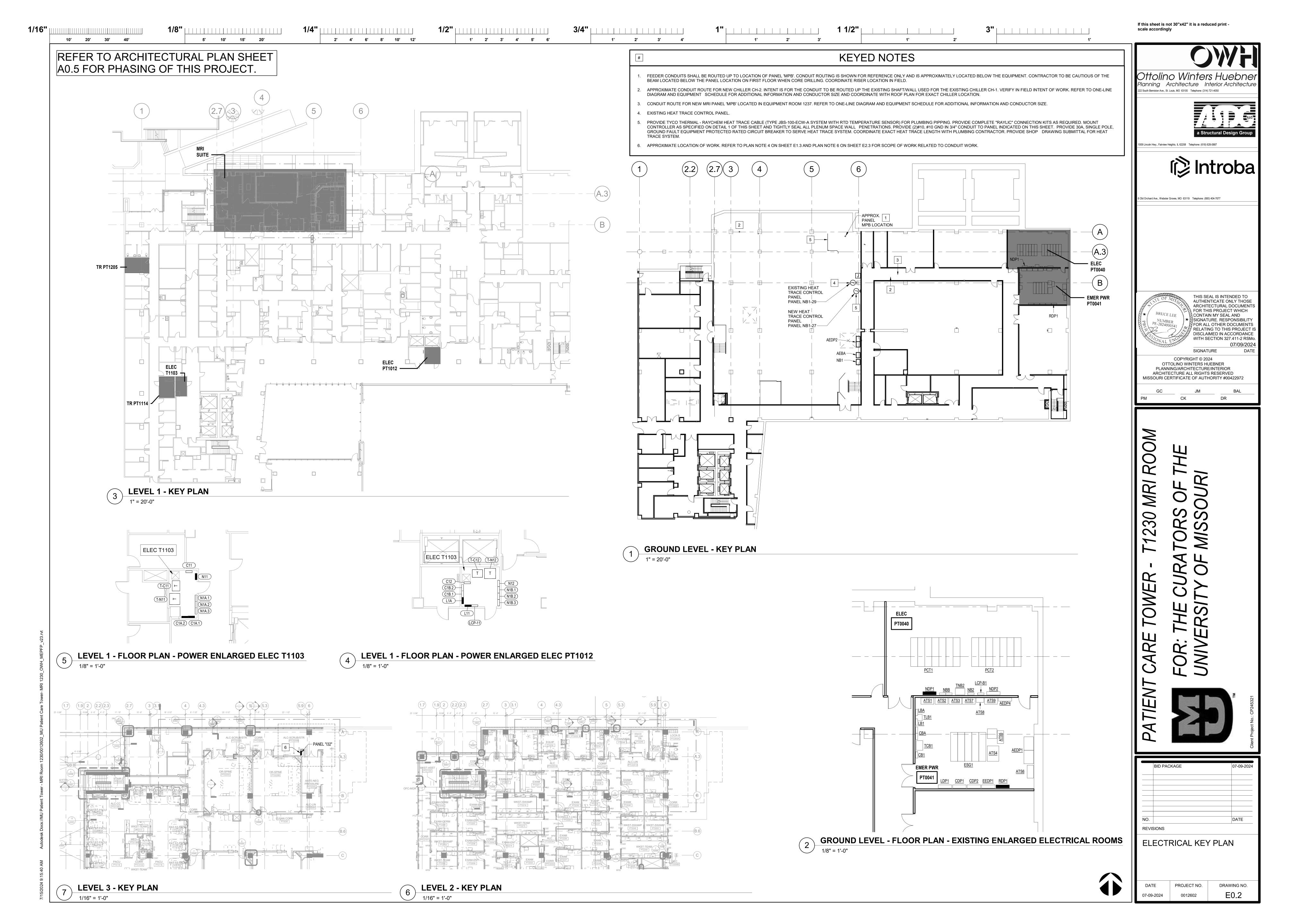
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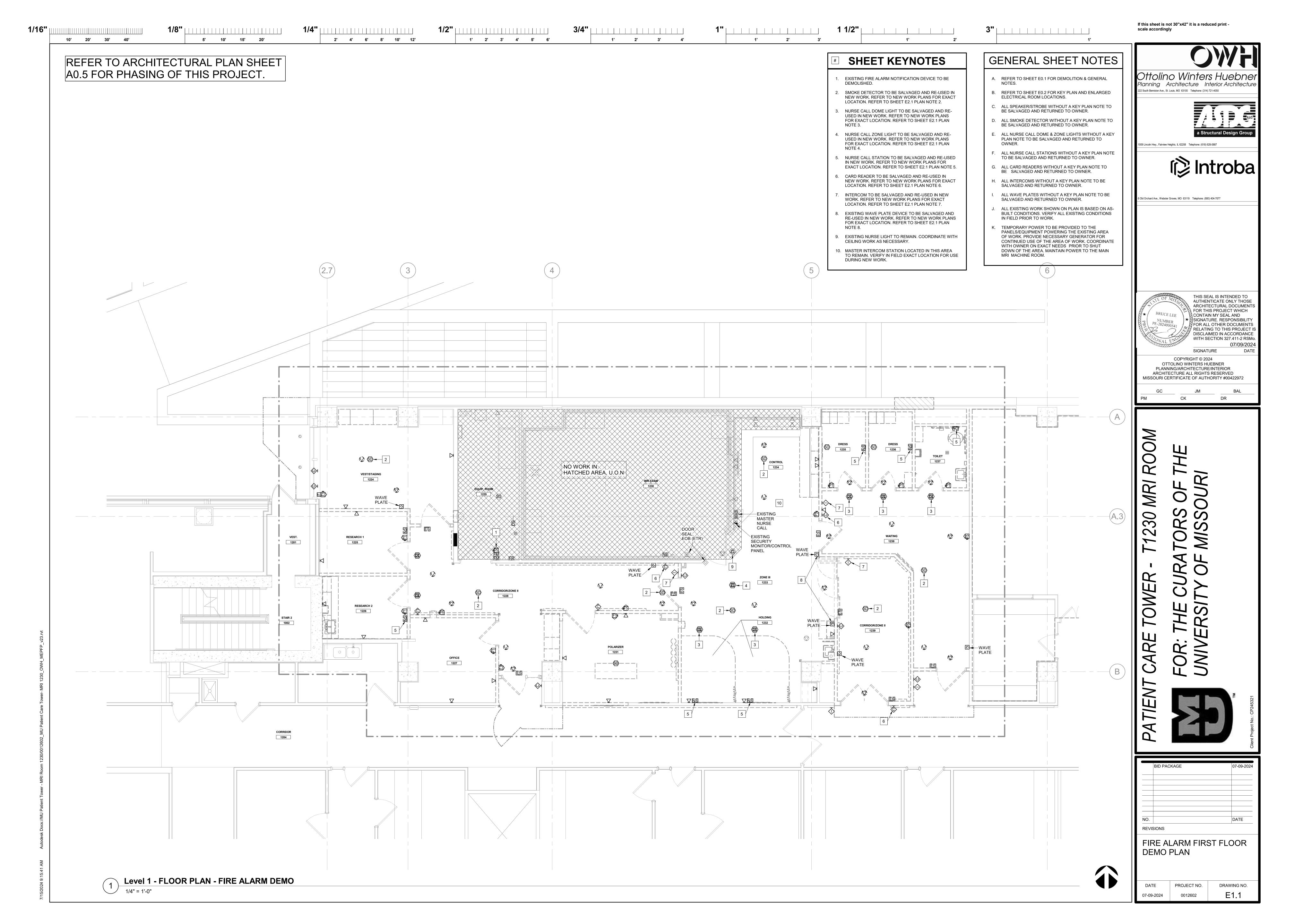
ACCESSIBLE CEILING SPACE UNLESS NOTED OTHERWISE. ONE-LINE DIAGRAM CONDUIT TO CLOSEST TERMINAL POINT WITHOUT INTERMEDIATE BOXES DETAILS AND SCHEDULES DETAILS AND SCHEDULES WALL MOUNTED DATA DEVICES AT +48", UON DETAILS AND SCHEDULES DETAILS AND SCHEDULES DETAILS AND SCHEDULES Grand total: 16 NOTE: NOT ALL SYMBOLS, NOTES OR ABBREVIATIONS SHOWN HERE

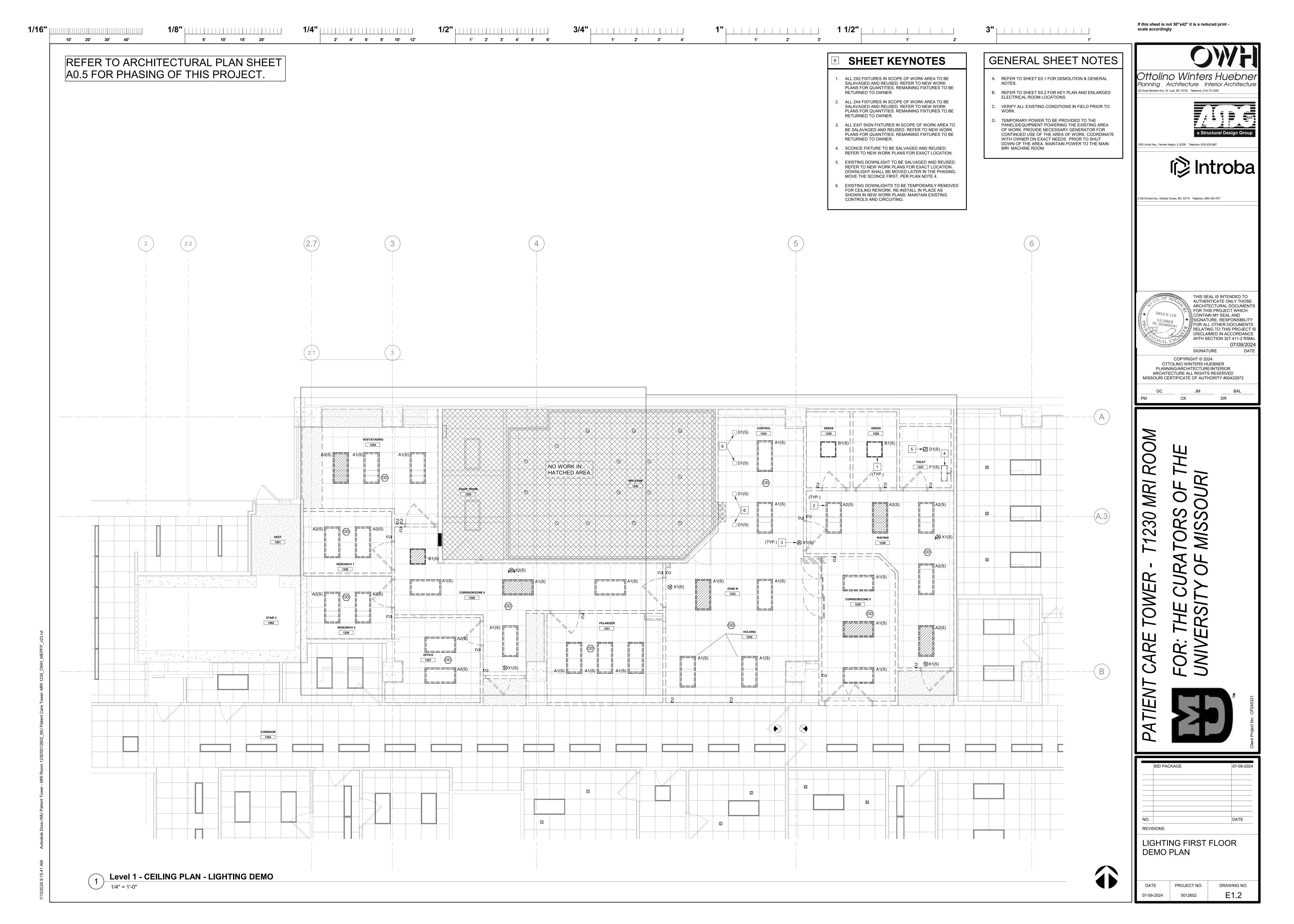
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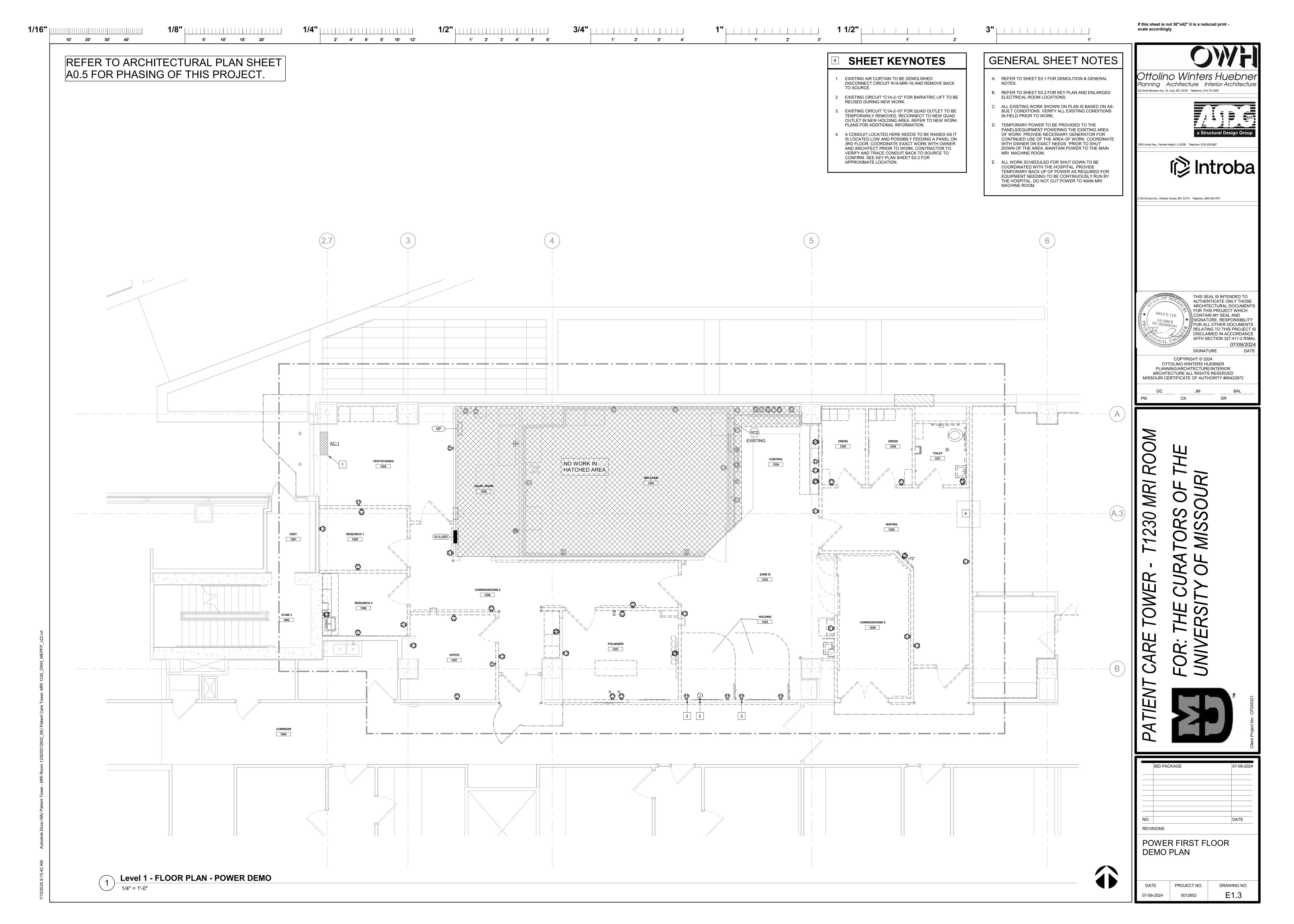
CORRIDOR PTC1201 TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW CONNECTIONS CONSISTING PCT GROUND FLOOR - PCT ROOF NEAR AND IN THE MRI AND MECH-AHU EFCC OF A NEW 4" SANITARY LINE AND A NEW 3" SANITARY LINE. **PLUMBING** SANITARY **OFF-HOURS** 8-HOURS TEMPORARY SYSTEM SHUT DOWN WILL BE REQUIRED FOR NEW MEDICAL GAS CORRIDOR PTC1201 | CONNECTIONS CONSISTING OF 3/4" WAGD, 1/2" NITROUS OXIDE, 1/2" OSYGEN. 3/4" MEDICAL OFF-HOURS / WEEKENDS **PLUMBING** MRI AREA PHASED MEDICAL GAS VACUUM, AND 1/2" MEDICAL AIR. TEMPORARY SYSTEM SHUT DOWN WITH TEMPORARY SPRINKLER PROTECTION WILL BE REQUIRED IN THIS SPACE. THE EXISITING SPRINKLER BRANCH PIPING WILL BE RE-WORKED FIRE PROTECTION WET-SPRINKLER SYSTEM FIRE PROTECTION ZONE 1-N AND A NEW SPRINKLER MAIN TAP FOR THE NEW PRE-ACTION SYSTEM SHUTDOWN REQUIRED FOR NEW MPB PANEL CONNECTION. WILL AFFECT ALL DOWNSTREAM BASEMENT ELEC. OFF-HOURS. DEVICES/EQUIPMENT. TEMPORARY POWER IS TO BE PROVIDED TO KEEP MRI PANEL AND ELECTRICAL NDP-1 MRI AREA **PHASED** MULTIPLE SHUTDOWNS OTHER NECESSARY EQUIPMENT RUNNING, VERIFY WITH OWNER IN FIELD. SHUTDOWN REQUIRED FOR NEW AHU-2 CONNECTION. WILL AFFECT ALL DOWNSTREAM **BASEMENT EMER** DEVICES/EQUIPMENT. TEMPORARY POWER IS TO BE PROVIDED TO KEEP MRI PANEL AND ELECTRICAL RDP-1 ROOF OFF-HOURS. 8 HOURS PWR. PT0041 OTHER NECESSARY EQUIPMENT RUNNING, VERIFY WITH OWNER IN FIELD.

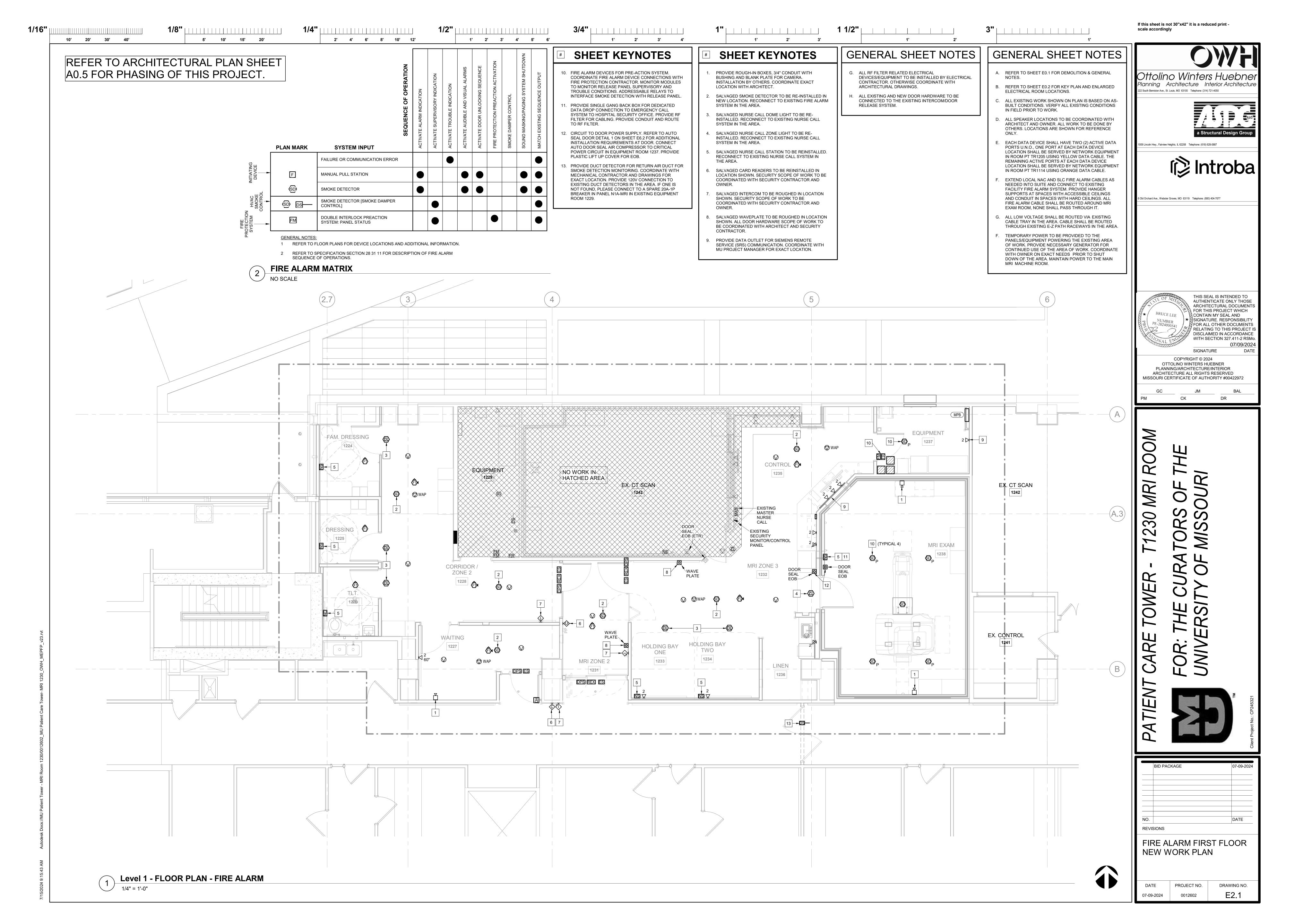
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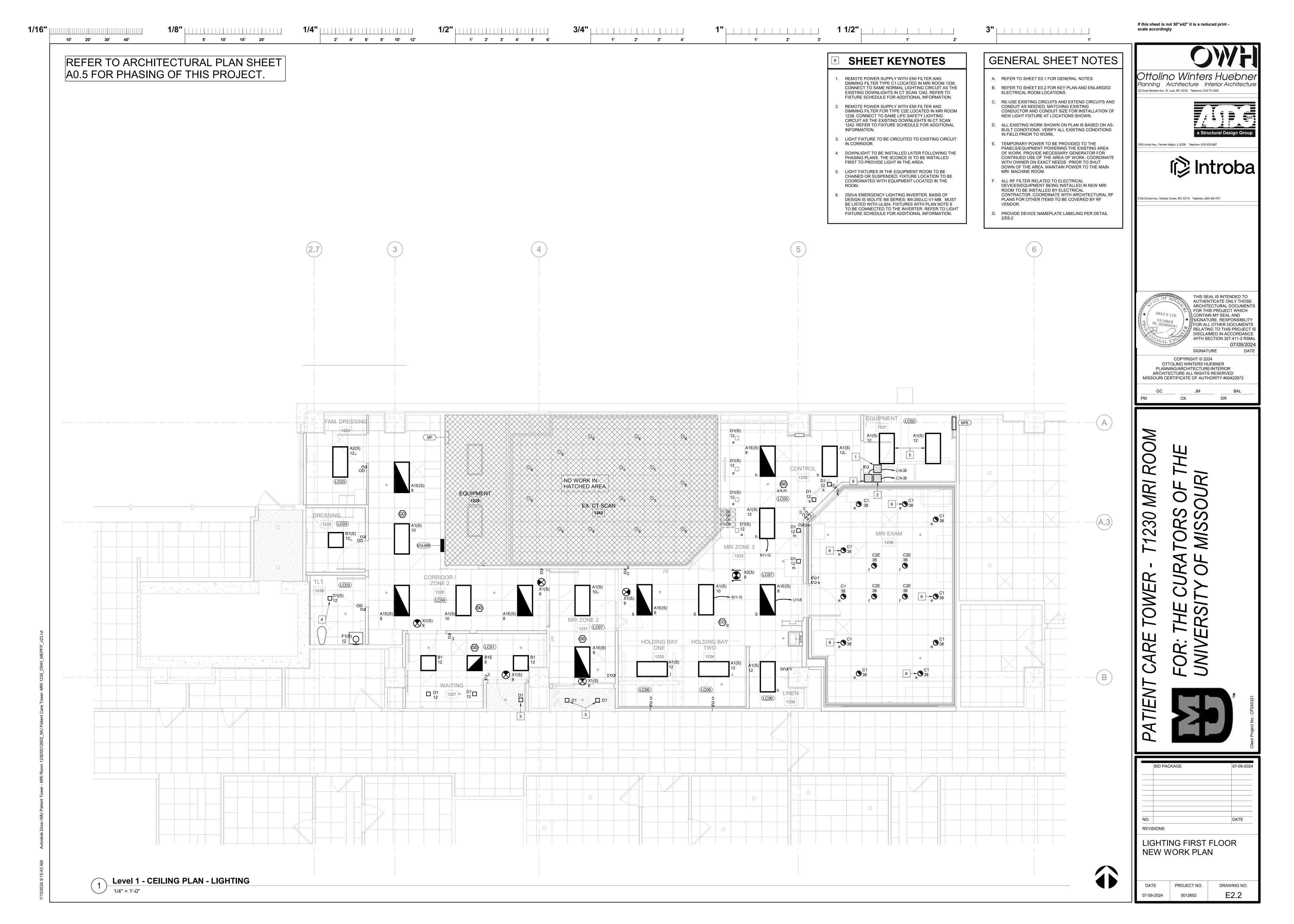


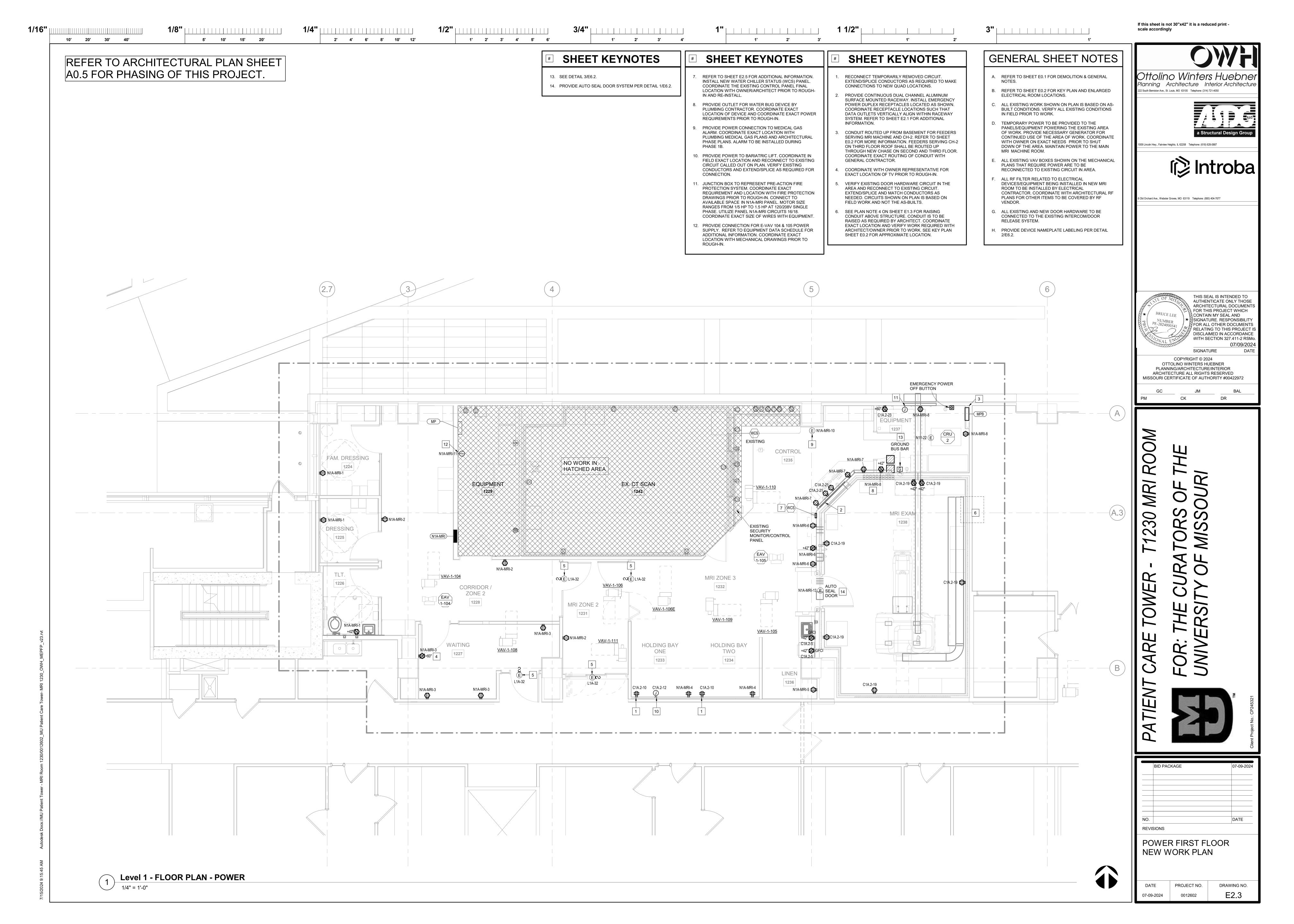


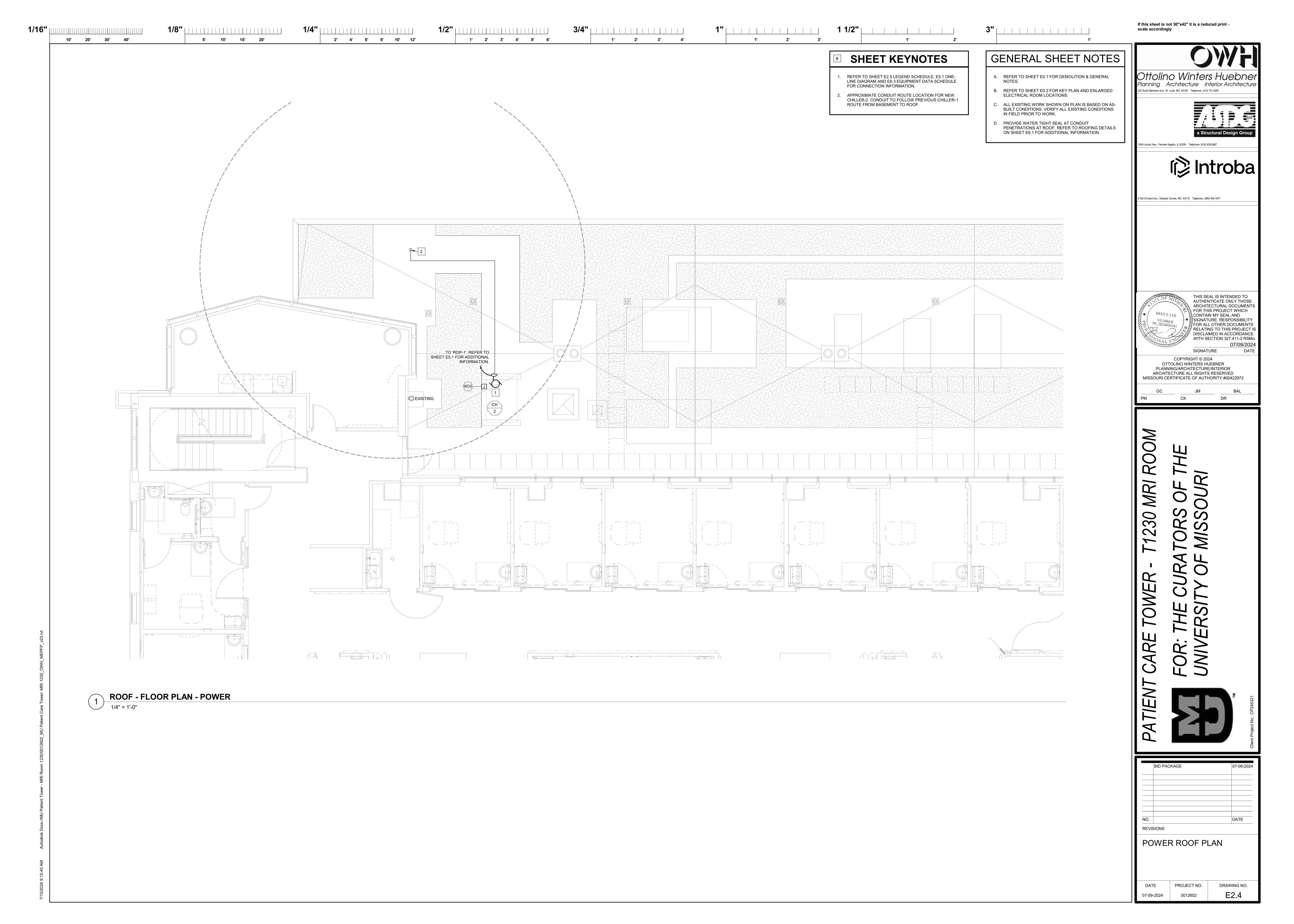












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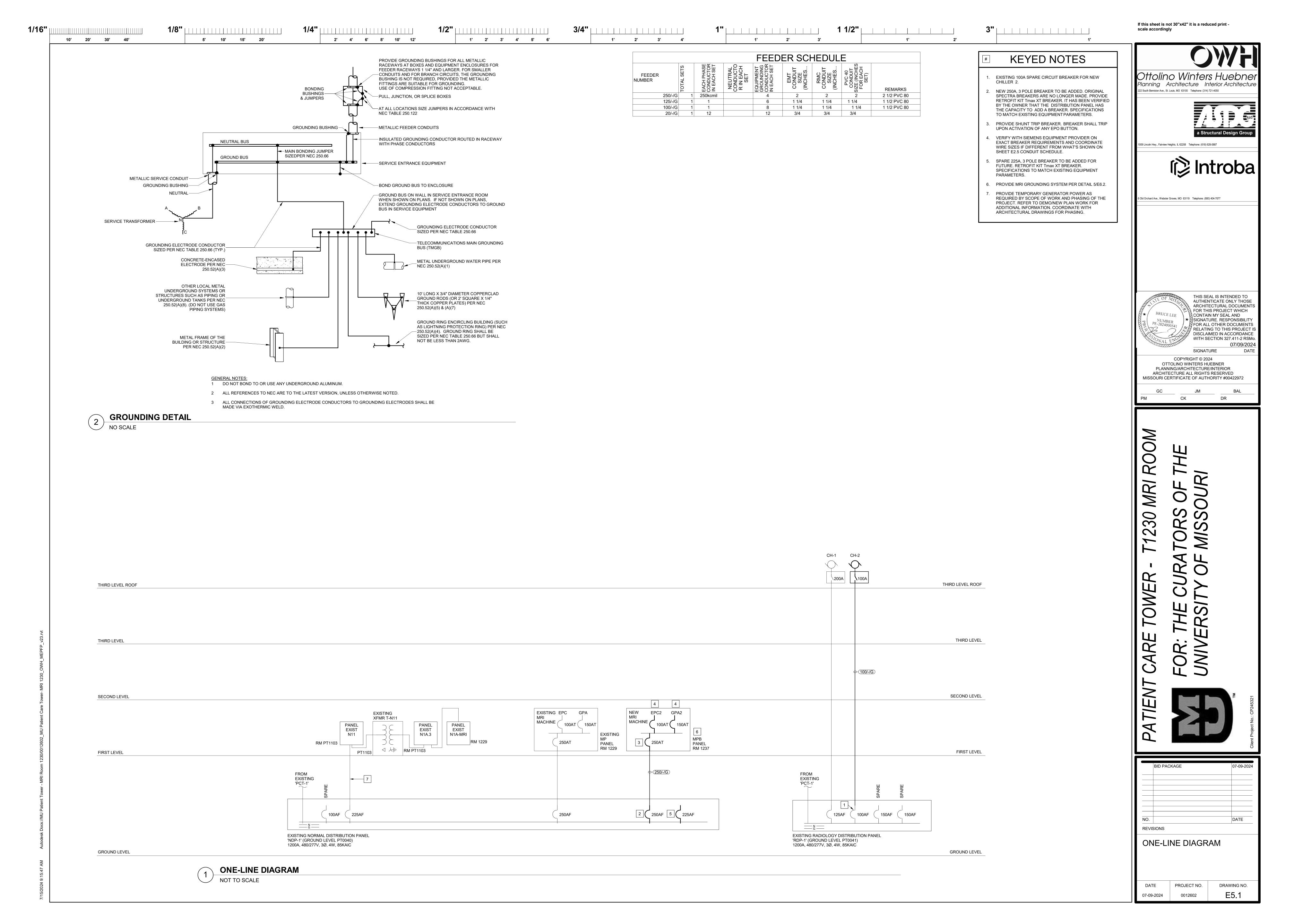
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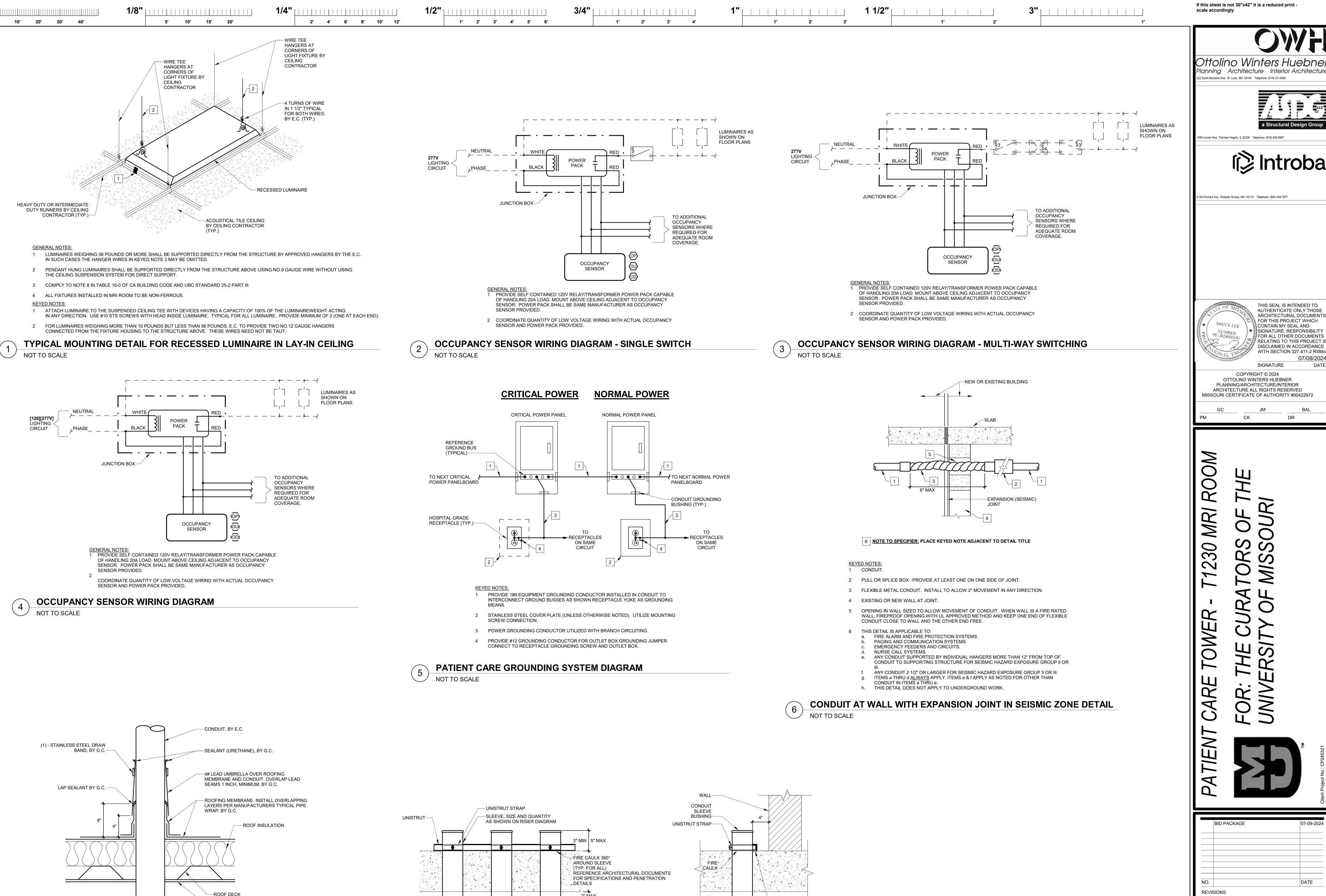
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REVISIONS

SIEMENS EQUIPMENT PLAN NEW WORK





—1 5/8" GALVANIZED

SIDE SECTION

CONDUIT SLEEVE

FRONT SECTION

CONDUIT SLEEVE THROUGH FLOOR

NOT TO SCALE

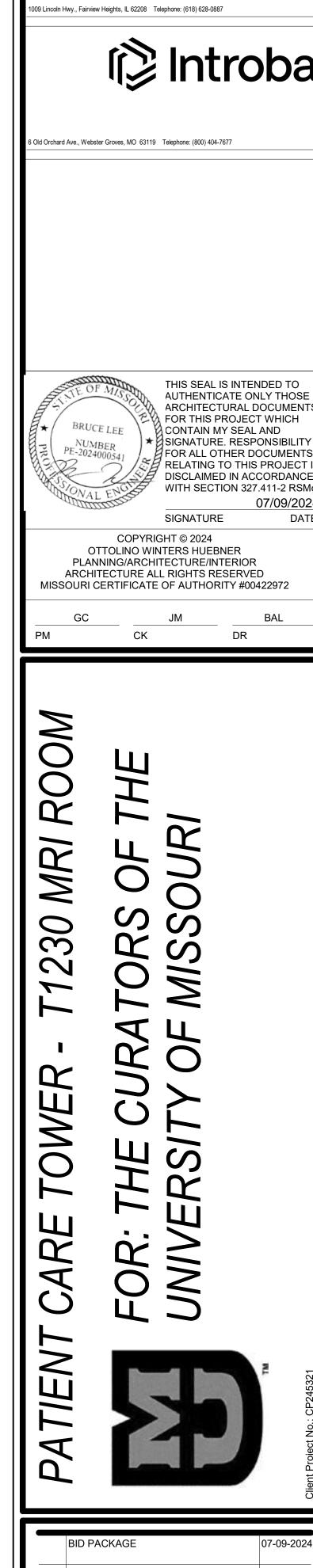
TOP OF STEEL JOIST

1 CONDUIT SHALL BE SUPPORTED WITHIN 24 INCHES ABOVE AND BELOW ROOF.

CONDUIT ROOF PENETRATION DETAIL

NOT TO SCALE

2 VERIFY FINAL REQUIREMENTS WITH GENERAL CONTRACTOR (G.C.) PRIOR TO INSTALLATION.



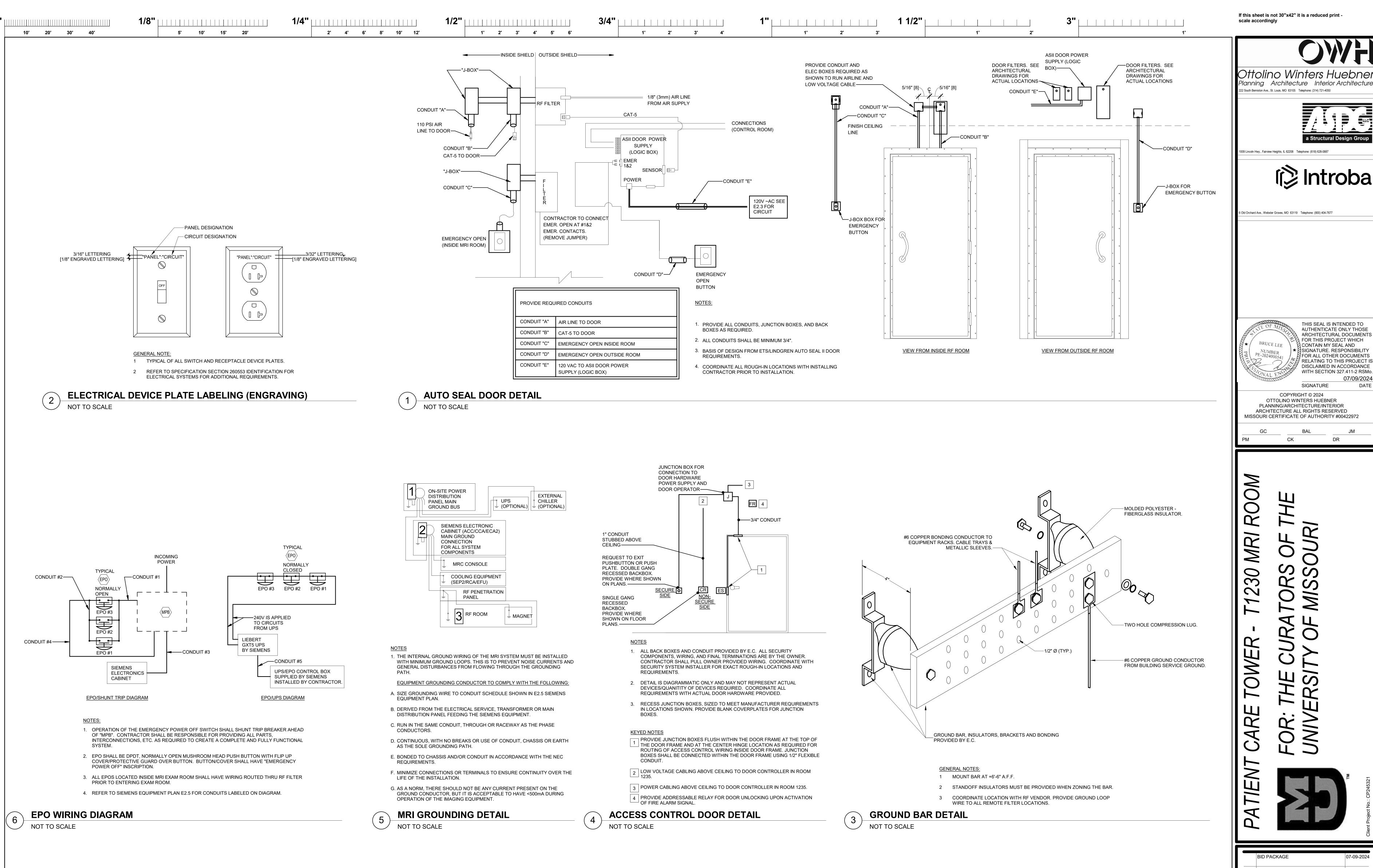
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LUMINAIRE SCHEDULE GENERAL NOTES:

1/16" ||||||||||||

- 1. UNLESS OTHERWISE STATED IN REMARKS. ALL FIXTURES ARE LED.
- 2. LIGHT FIXTURE SHOP DRAWING AND LIGHTING CONTROL SHOP DRAWING SUBMITTAL SHALL BE SUBMITTED AT THE SAME TIME. APPROVAL WILL NOT BE GRANTED UNTIL BOTH ARE REVIEWED.
- 3. REFER TO ARCHITECTURAL DOCUMENTS FOR EXACT MOUNTING LOCATIONS OF LUMINAIRES AND CEILING TYPES.
- 4. ALL RECESSED DOWNLIGHTS SHALL HAVE SELF-FLANGED REFLECTORS U.O.N. AND SHALL BE INSTALLED SO THAT THE BOTTOM OF THE THROAT IS EVEN WITH THE FINISHED CEILING PLANE. THE OVERLAPPING FLANGE MUST THEN FIT FLUSH TO THE CEILING PLANE/THROAT. NO LIGHT LEAK MUST BE VISIBLE. ALL MISCELLANEOUS HARDWARE ABOVE THE CEILING PLANE TO ACCOMPLISH THE ABOVE SHALL BE INCLUDED IN THE BASE BID.
- 5. ALL LUMINAIRES SHALL HAVE A U.L. LABEL.
- 6. IN ALL MECHANICAL ELECTRICAL EQUIPMENT AREAS, CONTRACTOR TO COORDINATE LUMINAIRE LOCATIONS SUCH THAT LIGHT LUMINAIRES RUN PARALLEL TO THE FACE OF THE EQUIPMENT AND OVER AISLES BETWEEN EQUIPMENT. INSTALL AT EXACT LOCATIONS AND AT EXACT HEIGHT TO ILLUMINATE ALL GAGES, PANELS, CONTROLS, VALVES, ETC. CHAIN HANGING, STEM HANGING, UNISTRUT HANGING, ETC. ARE ACCEPTABLE METHODS.
- 7. WHEN LUMINAIRES ARE INSTALLED IN CONTINUOUS ROWS OF TWO (2) OR MORE, LUMINAIRES SHALL BE APPROVED FOR USE AS WIREWAY.

1/8"||||||||||||<u>|||||||||||</u>

- COMPLETE CATALOG NUMBER IN THIS LIGHT FIXTURE SCHEDULE ARE NOT BE LISTED. ORDER LUMINAIRE BASED ON DESCRIPTION, PARTIAL CATALOG NUMBER AND SPECIFICATIONS. THE MANUFACTURER LISTED IS THE
- 9. VERIFY COMPATIBILITY OF ALL DIMMING DRIVERS WITH SPECIFIED DIMMING CONTROLS PRIOR TO ORDERING AND PROVIDE APPROPRIATE COMPONENTS TO CREATE A COMPLETE AND FULLY FUNCTIONAL INSTALLATION.
- 10. CONTRACTOR IS RESPONSIBLE FOR ALL MISCELLANEOUS HARDWARE, CLIPS, ANGLES, FRAMES, ETC. AS REQUIRED TO MOUNT THE LUMINAIRES IN OR ON THE SURFACES THEY ARE TO BE INSTALLED.
- 11. WHEN VARYING FROM BASIS-OF-DESIGN LUMINAIRE, PROVIDE A LUMINAIRE UTILIZING ±10% OF THE LED LUMENS INDICATED IN LUMINAIRE SCHEDULE.
- 12. REFER TO SPECIFICATION SECTION 265100 LIGHTING FOR ADDITIONAL INFORMATION CONCERNING LUMINAIRES, FINISHES, DRIVERS, ETC.
- 13. ALL LUMINAIRES SHALL OPERATE AT 120 OR 277 VOLTS OR OTHER VOLTAGE AS REQUIRED BY THE CIRCUITS AND/OR PANELS TO WHICH THEY ARE CONNECTED. 14. WHEN INSTALLING LUMINAIRES, THE CONTRACTOR SHALL USE THE LUMINAIRE MANUFACTURER'S MOUNTING HARDWARE AND FOLLOW ALL MANUFACTURER'S INSTALLATION DIRECTIONS.

					I	IGHTIN	IG CONT	TROL SEQ	UENCE			
S - "INDIVIDUAL	ZONE WALL CONTROLLER". REFER TO FLOOR PLAN FOR QUANTITY	OF ZONES	SHOV	VN IN TH	IE AREA	EACH	ZONE S	SHALL HAV	VE A ITS	S OWN I	NDEPEN	NDENT CONTROLLER WITHIN THE WALL CONTROLLER.
D - "INDIVIDUAL	DIMMING ZONE WALL CONTROLLER". EACH ZONE SHALL ITS OWN IN	NDEPENDE	ENT CC	NTROL	ER CAP	ABLE C	F ON, O	OFF AND D	IMMINO	WITIN	THE WA	LL CONTROLLER. REFER TO FLOOR PLAN FOR QUANTITY OF ZONES SHOWN IN THE AREA.
P -"PRESET SC	ENE CONTROLLER". NUMBER INDICATES QUATITY OF PRESET SCENE	CONTRO	LS. EA	CH PRE	SET SCE	NE SH	ALL EAC	CH BE CAF	PABLE (OF TURN	NING SC	ENE ON, OFF AND DIM.
MAN - MANUAL	CONTROL. OCC - OCCUPANCY ON AND / OR VACANCY OFF.	TC - TIME	CLOC	K.	ETD - EN	1ERGEN	NCY TRA	ANSFER D	EVICE.			
			WALL			AU٦	TOMATIO	OMATIC CONTROLS				
		CONTROLLER			10	I (X=100	0%)	OFF (X=0%)				
SEQUENCE ID	AREA DESCRIPTION	S	D	Р	MAN	OCC	TC	MAN	OCC	TC	ETD	REMARKS
LC01	WAITING 1227	X				Х			Χ		X	
LC02	EQUIPMENT 1237	X			X			X				
LC03	RESTROOMS/DRESSING RM	X				Х			Х			
LC04	CORRIDORS	X				Х		Х	50%		X	
LC05	TWO ZONES - CONTROL 1235		Χ		Х				Χ		Х	

LC07 MRI ZONES LIGHTING CONTROL NOTES:

LC06

1. LIGHT FIXTURE SHOP DRAWING AND LIGHTING CONTROL SHOP DRAWING SUBMITTAL SHALL BE SUBMITTED AT THE SAME TIME. APPROVAL WILL NOT BE

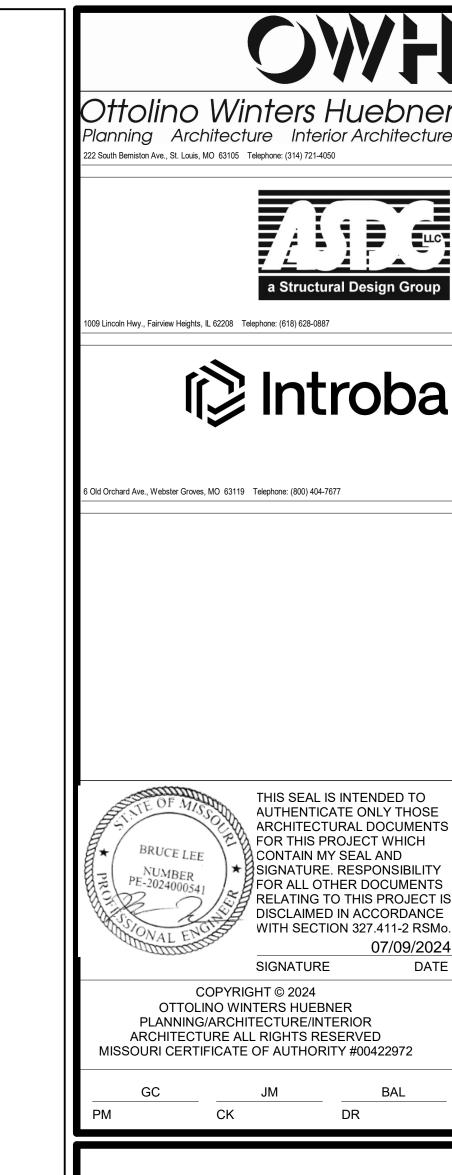
- GRANTED UNTIL BOTH ARE REVIEWED. THE LIGHTING CONTROL SYSTEM SCHEDULE SHALL BE CONSIDERED A PERFORMANCE CRITERIA. PROVIDE ALL CONTROL DEVICES, WIRING, RACEWAY,
- PROVIDE CONTROL DRAWINGS, SEQUENCE DESCRIPTIONS, PUSHBUTTON CONFIGURATIONS (WITH LIGHITNG LOADS IDENTIFIED) AND WIRING DIAGRAMS INDICATING THE PROPOSED LIGHTING CONTROLS WITHIN THE SHOP DRAWING SUBMITTAL FOR APPROVAL.
- 4. COORDINATE ALL BUTTON ENGRAVING WITH OWNER PRIOR TO ORDERING.

PROGRAMMING, AND LABOR AS REQUIRED TO OBTAIN THE SEQUENCES IDENTIFIED FOR EACH SPACE.

HOLDING BAY1233 & 1234/LINEN 1236

- 5. MOUNT AREA CONTROLLERS AND POWER PACKS ABOVE CEILING, NEAR WALL CONTROLLERS IN THE INTERIOR SIDE OF THE SPACE SERVED. ROOM CONTROLLERS SERVING CORRIDORS MAY BE LOCATED IN ELECTRICAL ROOMS.
- 6. PRIOR TO CONSTRUCTION CLOSEOUT, DEMONSTRATE LIGHTING CONTROLS TO OWNER FOR FINAL APPROVAL. MODIFY PROGRAMMING AND ILLUMINATION AS REQUIRED TO MEET OWNERS FINAL REQUIREMENTS.
- 7. EACH SWITCH LEG SHOWN ON LIGHTING DRAWINGS IS A ZONE, PROVIDE A TOGGLE/DIMMER SWITCH FOR EACH SWITCH LEG/ZONE SHOWN ON LIGHTING

										Е	QUIPME	NT DATA SCH	IEDULE	- ELECT	RICAL											
NOTES: 1. 2. 3. 4. 5.	ALL MAGNETIC AND SOLID AUXILIARY CONTACTS, PIL TRANSFORMERS. SEE SPIE FIRE ALARM INTERLOCK. INTEGRAL DISCONNECT SWIPROVIDE 120V TO VAV POWITHIN 12" FROM PANEL EWITHIN POWER SUPPLY	LOT LIGHTS AND FUS ECIFICATIONS FOR A SWITCH. ITCH ON EQUIPMENT WER SUPPLY. IF PO BREAKER, MOUNT A	SED CONTRO ADDITIONAL I T HOUSING. DWER SUPPLY DISCONNEC	OL POWER NFORMATION. (1S NOT T SWITCH 12"	BRANCH CIRC REFER TO F SCHEDULE W COLUMN CON DESIGNATION CONDUCTOR	FEEDER VHEN THIS NTAINS A FEED N INSTEAD OF	F - FUS	N FUSED		<u>E:</u>	COMB2 - CC COMB3 - CC COMB4 - CC	PE: OMBINATION FULL VOLTAGE OMBINATION FULL VOLTAGE OMBINATION FULL VOLTAGE OMBINATION FULL VOLTAGE REWIRED CONTROL PANEL	GE NON-REVER GE NON-REVER GE NON-REVER	RSING MAGNETI RSING MAGNETI	C STARTER WITH C STARTER WITH	I UNFUSI I THERM	ED DISC AL MAG	CONNECTOR NETTERNATION	T SWITCH MOLDED CASE CIRCU				HOAP - H PB - STAF (MON SPECIFICA DIVISION DIVISION DIVISION DIVISION	ART/STOP F MENTARY ATION DIVIS N 14 - CON	PILOT LIGHT PUSH BUTTON CONTACT) SION NUMBER: VEYING EQUIPM PROTECTION MBING HANICAL	1ENT
MARK					MOT	MOTOR OR EQUIPMENT DATA						DISCONNECT SWITCH AT EQUIPMENT STARTER														
ID	# EQUIPMENT	LOCATION	FURN. BY	AMPS	KW	HP	VOLTS PHAS	E MIN SCCR	INST. BY	CONN. BY	FED FROM	BRANCH CIRCUIT	TYPE	NEMA ENCLOS. TYPE	SWITCH/ FUSE SIZE	FURN. BY	INST. BY	CONN. BY	NEMA SIZE E	NEMA NCLOS. TYI TYPE	BREAKER/ TRIP	ACCES.	FURN. BY	CONN. BY	CONTROL WIRING	NOTES
СН	2 WATER CHILLER	ROOF	OWNER	70	-		480 3		23	26	SEE ONE-LINE	SEE ONE-LINE	NF	3R	100A/-	26	26	26	-	3R PW	P -	-	OWNER	₹ 26	26	3
CRU	2 COMPUTER ROOM UNIT	EQUIPMENT ROOF 1237	M 23	9.1	-	_	277 1	-	23	26	SEE PLAN	(2)#12,#12G.,3/4"C.	TOG	1	30A/-	23	23	26	-	1 PW	P -	-	23	26	23	4
EAV 1-	104 AIR CONTROL VALVE	1228	23	.15	-	-	24 1	-	23	23	SEE PLAN	(2)#12,#12G.,3/4"C.	TOG	1	30A/-	23	23	26	-	1 -	-	-	-	1 -		5
EAV 1-	105 AIR CONTROL VALVE	1232	23	.15	_	-	24 1	_	23	23	SEE PLAN	(2)#12,#12G.,3/4"C.	TOG	1	30A/-	23	23	26	_	1 -	-	-	-	-	, - 1	5



If this sheet is not 30"x42" it is a reduced print -

scale accordingly

3" | | | | | | | | | | | | | | | | | |

BID PACKAGE **DETAILS AND SCHEDULES**

