

LOWRY HALL

RENOVATE FIRST FLOOR

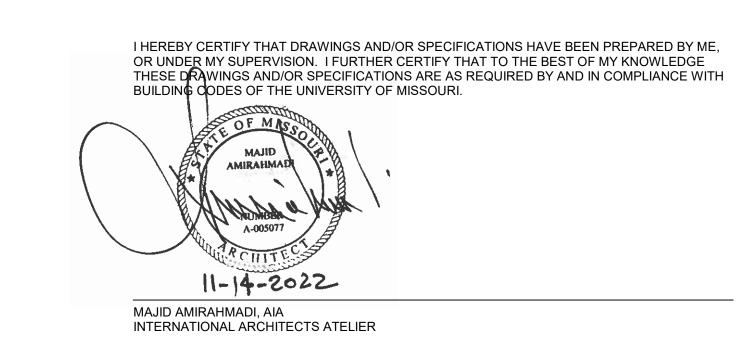
FOR THE CURATORS OF THE UNIVERSITY OF MISSOURI

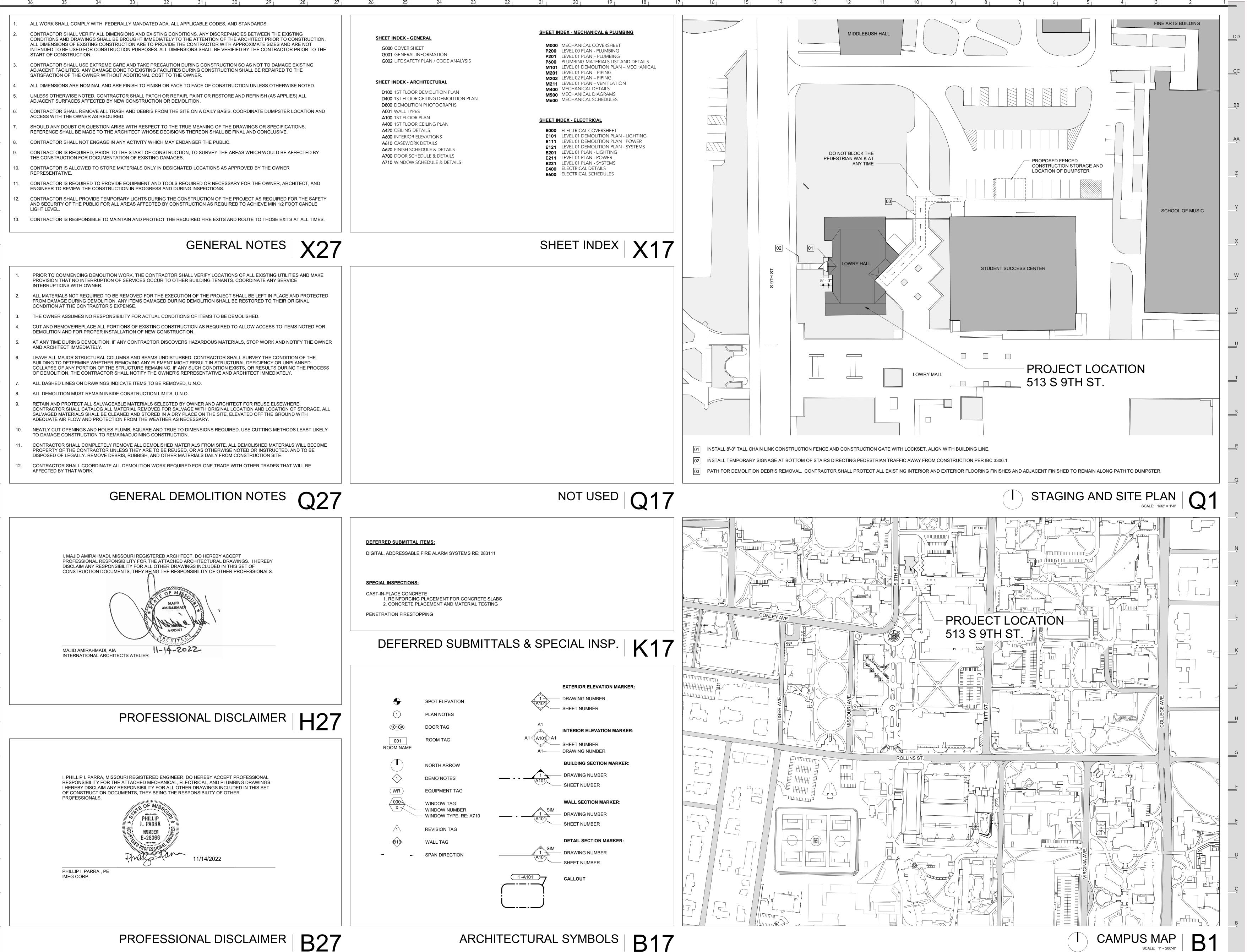
ISSUED FOR BID

11/14/2022

CP220811

INTERNATIONAL ARCHITECTS ATELIER





INTERNATIONA

912 BROADWAY BLVD, SUITE 300 | KANSAS CITY, MO 64105
P: 816 471 6522 | F: 816.471.3755 | W: I-A-A.COM

MISSOURI STATE CERTIFICATE OF AUTHORITY #000582

MEP CONSULTANT

IMEG

1600 BALTIMORE KANSAS CITY, MO 64108 PH: 816.842.837



FOR THE CURATORS OF THE UNIVERSITY OF MISSOURI

LOWRY HALL
RENOVATE FIRST
FLOOR

PROJECT NUMBER: CP220811

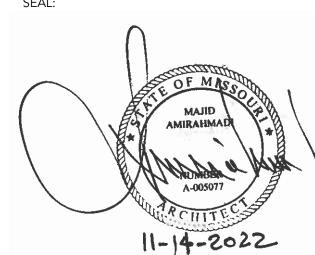
THE UNIVERSITY OF MISSOURI

ISSUED FOR BID

513 S 9th St (at Lowry Mall) Columbia, MO 65211 United States

DATE: PROJ. NO.:	11/14/2022 CP220811
DESIGNED BY:	IC, JL
DRAWN BY:	IC, JL
CHECKED BY:	JL, MA
APPROVED BY:	MA

SEAL:



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ISSUED FOR BID 11/14/2022

INFORMATION

GENERAL

G001



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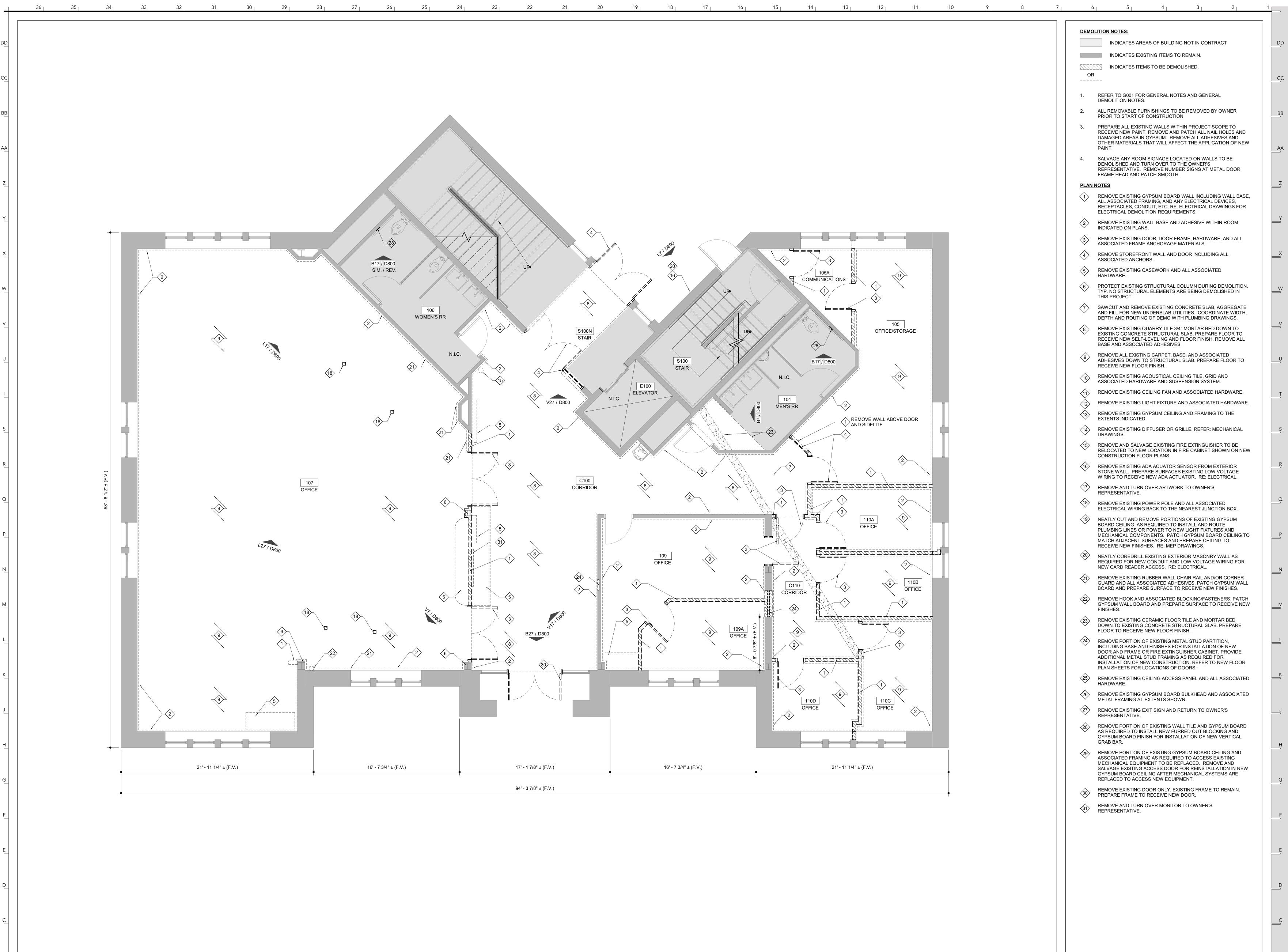


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LIFE SAFETY PLAN / CODE ANALYSIS

G002



DEMOLITION NOTES:

INDICATES AREAS OF BUILDING NOT IN CONTRACT

INDICATES EXISTING ITEMS TO REMAIN.

INDICATES ITEMS TO BE DEMOLISHED.

OR

REFER TO G001 FOR GENERAL NOTES AND GENERAL DEMOLITION NOTES.

- ALL REMOVABLE FURNISHINGS TO BE REMOVED BY OWNER PRIOR TO START OF CONSTRUCTION
- PREPARE ALL EXISTING WALLS WITHIN PROJECT SCOPE TO RECEIVE NEW PAINT. REMOVE AND PATCH ALL NAIL HOLES AND DAMAGED AREAS IN GYPSUM. REMOVE ALL ADHESIVES AND OTHER MATERIALS THAT WILL AFFECT THE APPLICATION OF NEW
- SALVAGE ANY ROOM SIGNAGE LOCATED ON WALLS TO BE DEMOLISHED AND TURN OVER TO THE OWNER'S REPRESENTATIVE. REMOVE NUMBER SIGNS AT METAL DOOR FRAME HEAD AND PATCH SMOOTH.

PLAN NOTES

- 1 REMOVE EXISTING GYPSUM BOARD WALL INCLUDING WALL BASE, ALL ASSOCIATED FRAMING, AND ANY ELECTRICAL DEVICES, RECEPTACLES, CONDUIT, ETC. RE: ELECTRICAL DRAWINGS FOR ELECTRICAL DEMOLITION REQUIREMENTS.
- REMOVE EXISTING WALL BASE AND ADHESIVE WITHIN ROOM INDICATED ON PLANS.
- REMOVE EXISTING DOOR, DOOR FRAME, HARDWARE, AND ALL ASSOCIATED FRAME ANCHORAGE MATERIALS.
- REMOVE STOREFRONT WALL AND DOOR INCLUDING ALL ASSOCIATED ANCHORS.
- 5 REMOVE EXISTING CASEWORK AND ALL ASSOCIATED HARDWARE.
- PROTECT EXISTING STRUCTURAL COLUMN DURING DEMOLITION. TYP. NO STRUCTURAL ELEMENTS ARE BEING DEMOLISHED IN THIS PROJECT.
- SAWCUT AND REMOVE EXISTING CONCRETE SLAB, AGGREGATE AND FILL FOR NEW UNDERSLAB UTILITIES. COORDINATE WIDTH, DEPTH AND ROUTING OF DEMO WITH PLUMBING DRAWINGS.
- REMOVE EXISTING QUARRY TILE 3/4" MORTAR BED DOWN TO EXISTING CONCRETE STRUCTURAL SLAB. PREPARE FLOOR TO RECEIVE NEW SELF-LEVELING AND FLOOR FINISH. REMOVE ALL BASE AND ASSOCIATED ADHESIVES.
- REMOVE ALL EXISTING CARPET, BASE, AND ASSOCIATED ADHESIVES DOWN TO STRUCTURAL SLAB. PREPARE FLOOR TO
- REMOVE EXISTING ACOUSTICAL CEILING TILE, GRID AND
- ASSOCIATED HARDWARE AND SUSPENSION SYSTEM. REMOVE EXISTING CEILING FAN AND ASSOCIATED HARDWARE.

RECEIVE NEW FLOOR FINISH.

- REMOVE EXISTING LIGHT FIXTURE AND ASSOCIATED HARDWARE.
- REMOVE EXISTING GYPSUM CEILING AND FRAMING TO THE EXTENTS INDICATED.
- REMOVE EXISTING DIFFUSER OR GRILLE. REFER: MECHANICAL
- (15) REMOVE AND SALVAGE EXISTING FIRE EXTINGUISHER TO BE
- RELOCATED TO NEW LOCATION IN FIRE CABINET SHOWN ON NEW CONSTRUCTION FLOOR PLANS. (16) REMOVE EXISTING ADA ACUATOR SENSOR FROM EXTERIOR

STONE WALL. PREPARE SURFACES EXISTING LOW VOLTAGE

WIRING TO RECEIVE NEW ADA ACTUATOR. RE: ELECTRICAL. REMOVE AND TURN OVER ARTWORK TO OWNER'S

REPRESENTATIVE.

- (18) REMOVE EXISTING POWER POLE AND ALL ASSOCIATED ELECTRICAL WIRING BACK TO THE NEAREST JUNCTION BOX.
- (19) NEATLY CUT AND REMOVE PORTIONS OF EXISTING GYPSUM BOARD CEILING AS REQUIRED TO INSTALL AND ROUTE PLUMBING LINES OR POWER TO NEW LIGHT FIXTURES AND MECHANICAL COMPONENTS. PATCH GYPSUM BOARD CEILING TO MATCH ADJACENT SURFACES AND PREPARE CEILING TO
- NEATLY COREDRILL EXISTING EXTERIOR MASONRY WALL AS REQUIRED FOR NEW CONDUIT AND LOW VOLTAGE WIRING FOR NEW CARD READER ACCESS. RE: ELECTRICAL.

RECEIVE NEW FINISHES. RE: MEP DRAWINGS.

- REMOVE EXISTING RUBBER WALL CHAIR RAIL AND/OR CORNER GUARD AND ALL ASSOCIATED ADHESIVES. PATCH GYPSUM WALL BOARD AND PREPARE SURFACE TO RECEIVE NEW FINISHES.
- REMOVE HOOK AND ASSOCIATED BLOCKING/FASTENERS. PATCH GYPSUM WALL BOARD AND PREPARE SURFACE TO RECEIVE NEW
- REMOVE EXISTING CERAMIC FLOOR TILE AND MORTAR BED DOWN TO EXISTING CONCRETE STRUCTURAL SLAB. PREPARE FLOOR TO RECEIVE NEW FLOOR FINISH.
- REMOVE PORTION OF EXISTING METAL STUD PARTITION, INCLUDING BASE AND FINISHES FOR INSTALLATION OF NEW DOOR AND FRAME OR FIRE EXTINGUISHER CABINET. PROVIDE ADDITIONAL METAL STUD FRAMING AS REQUIRED FOR INSTALLATION OF NEW CONSTRUCTION. REFER TO NEW FLOOR PLAN SHEETS FOR LOCATIONS OF DOORS.
- 25 REMOVE EXISTING CEILING ACCESS PANEL AND ALL ASSOCIATED HARDWARE.
- 26 REMOVE EXISTING GYPSUM BOARD BULKHEAD AND ASSOCIATED METAL FRAMING AT EXTENTS SHOWN.
- 27 REMOVE EXISTING EXIT SIGN AND RETURN TO OWNER'S REPRESENTATIVE.
- REMOVE PORTION OF EXISTING WALL TILE AND GYPSUM BOARD AS REQUIRED TO INSTALL NEW FURRED OUT BLOCKING AND GYPSUM BOARD FINISH FOR INSTALLATION OF NEW VERTICAL GRAB BAR.
- REMOVE PORTION OF EXISTING GYPSUM BOARD CEILING AND ASSOCIATED FRAMING AS REQUIRED TO ACCESS EXISTING MECHANICAL EQUIPMENT TO BE REPLACED. REMOVE AND SALVAGE EXISTING ACCESS DOOR FOR REINSTALLATION IN NEW GYPSUM BOARD CEILING AFTER MECHANICAL SYSTEMS ARE REPLACED TO ACCESS NEW EQUIPMENT.
- REMOVE EXISTING DOOR ONLY. EXISTING FRAME TO REMAIN. PREPARE FRAME TO RECEIVE NEW DOOR.
- REMOVE AND TURN REPRESENTATIVE. REMOVE AND TURN OVER MONITOR TO OWNER'S



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PROJECT NUMBER: CP220811

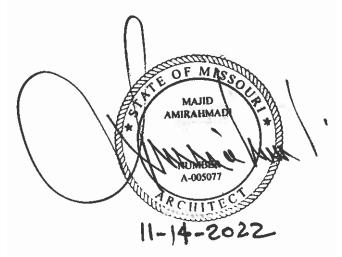
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DESIGNED BY:	CM, IC, JL
DRAWN BY:	CM, IC, JL
CHECKED BY:	JL, MA
A DDDOVED DV	N.4.0

APPROVED BY: SEAL:

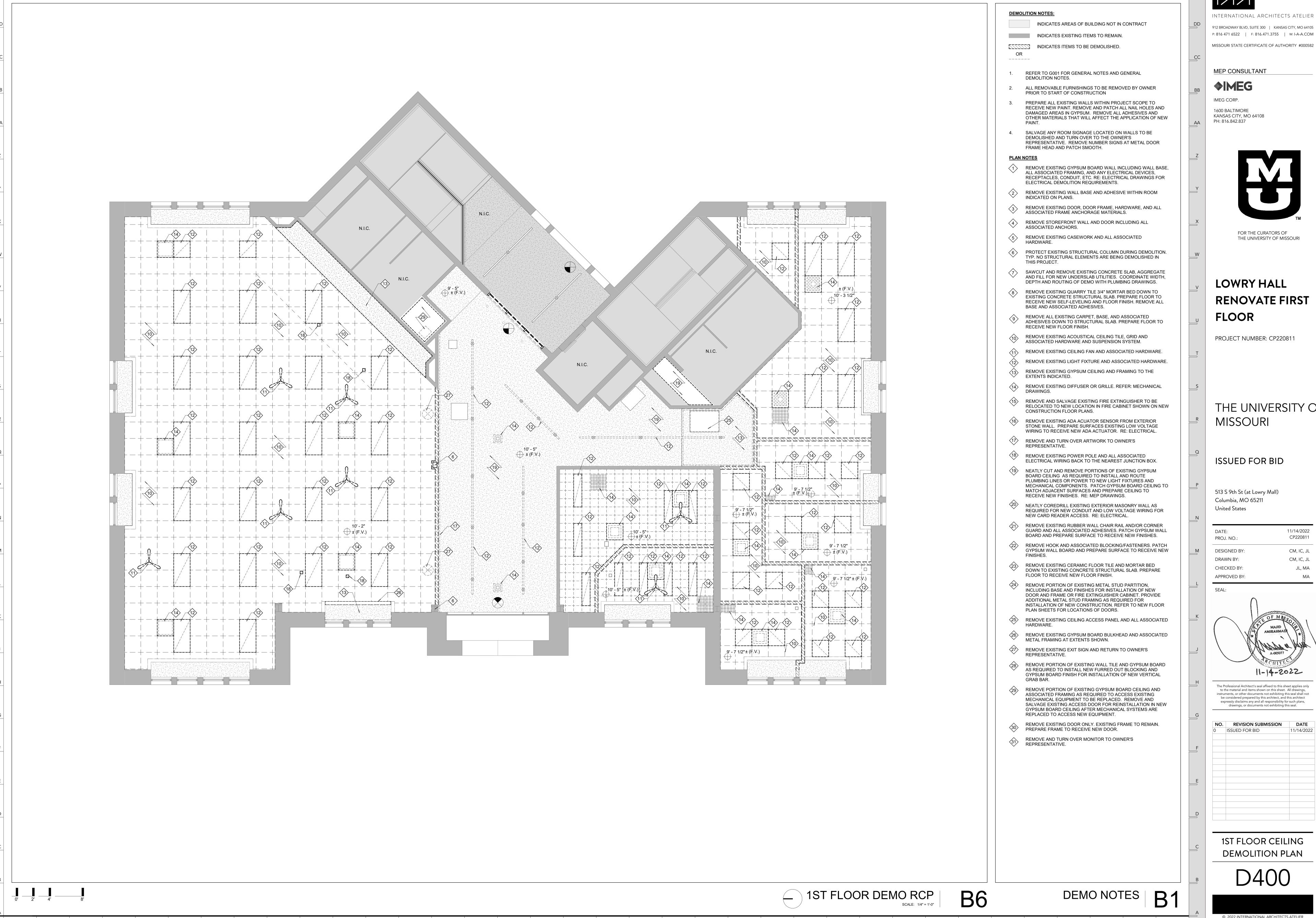


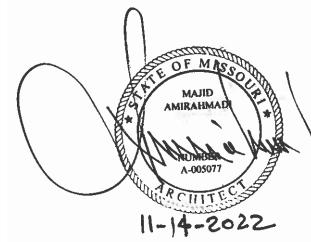
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1ST FLOOR **DEMOLITION PLAN**

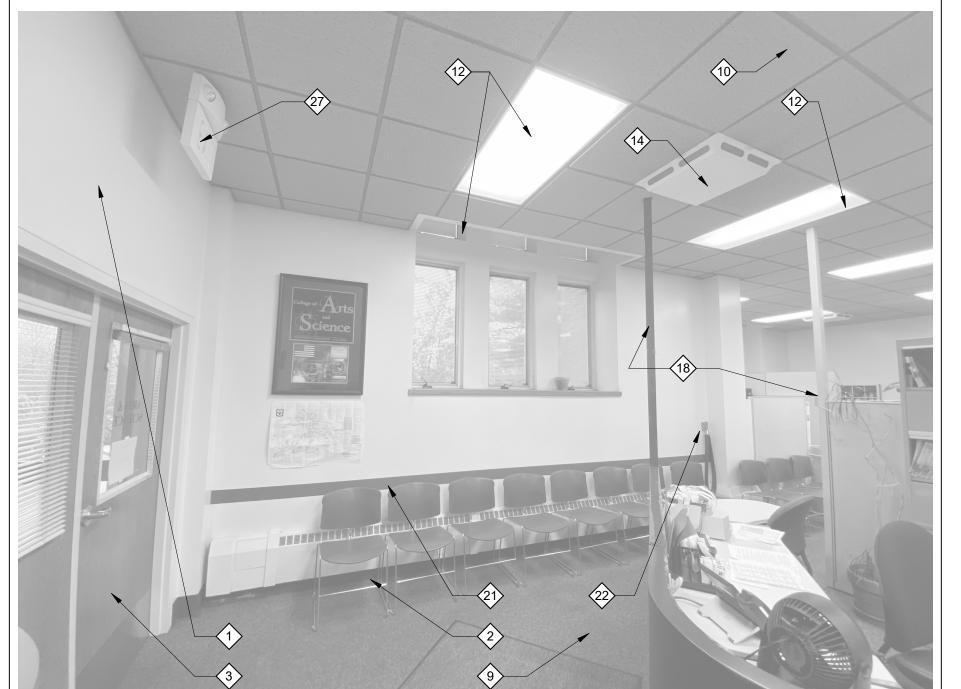
0' 2' 4'







FIRST FLOOR EASTERN VESTIBULE $\sqrt{27}$



FIRST FLOOR WAITING AREA

DEMOLITION NOTES:

INDICATES AREAS OF BUILDING NOT IN CONTRACT

INDICATES EXISTING ITEMS TO REMAIN.

PRIOR TO START OF CONSTRUCTION

FRAME HEAD AND PATCH SMOOTH.

INDICATED ON PLANS.

ASSOCIATED ANCHORS.

BASE AND ASSOCIATED ADHESIVES.

RECEIVE NEW FLOOR FINISH.

EXTENTS INDICATED.

REPRESENTATIVE.

HARDWARE.

ELECTRICAL DEMOLITION REQUIREMENTS.

ASSOCIATED FRAME ANCHORAGE MATERIALS.

DEMOLITION NOTES.

INDICATES ITEMS TO BE DEMOLISHED.

REFER TO G001 FOR GENERAL NOTES AND GENERAL

ALL REMOVABLE FURNISHINGS TO BE REMOVED BY OWNER

PREPARE ALL EXISTING WALLS WITHIN PROJECT SCOPE TO

SALVAGE ANY ROOM SIGNAGE LOCATED ON WALLS TO BE DEMOLISHED AND TURN OVER TO THE OWNER'S

RECEIVE NEW PAINT. REMOVE AND PATCH ALL NAIL HOLES AND

OTHER MATERIALS THAT WILL AFFECT THE APPLICATION OF NEW

DAMAGED AREAS IN GYPSUM. REMOVE ALL ADHESIVES AND

REPRESENTATIVE. REMOVE NUMBER SIGNS AT METAL DOOR

REMOVE EXISTING GYPSUM BOARD WALL INCLUDING WALL BASE, ALL ASSOCIATED FRAMING, AND ANY ELECTRICAL DEVICES, RECEPTACLES, CONDUIT, ETC. RE: ELECTRICAL DRAWINGS FOR

REMOVE EXISTING WALL BASE AND ADHESIVE WITHIN ROOM

REMOVE EXISTING DOOR, DOOR FRAME, HARDWARE, AND ALL

PROTECT EXISTING STRUCTURAL COLUMN DURING DEMOLITION. TYP. NO STRUCTURAL ELEMENTS ARE BEING DEMOLISHED IN

SAWCUT AND REMOVE EXISTING CONCRETE SLAB, AGGREGATE

AND FILL FOR NEW UNDERSLAB UTILITIES. COORDINATE WIDTH, DEPTH AND ROUTING OF DEMO WITH PLUMBING DRAWINGS.

REMOVE EXISTING QUARRY TILE 3/4" MORTAR BED DOWN TO EXISTING CONCRETE STRUCTURAL SLAB. PREPARE FLOOR TO RECEIVE NEW SELF-LEVELING AND FLOOR FINISH. REMOVE ALL

REMOVE ALL EXISTING CARPET, BASE, AND ASSOCIATED ADHESIVES DOWN TO STRUCTURAL SLAB. PREPARE FLOOR TO

REMOVE EXISTING ACOUSTICAL CEILING TILE, GRID AND ASSOCIATED HARDWARE AND SUSPENSION SYSTEM.

REMOVE EXISTING CEILING FAN AND ASSOCIATED HARDWARE.

REMOVE EXISTING GYPSUM CEILING AND FRAMING TO THE

REMOVE EXISTING DIFFUSER OR GRILLE. REFER: MECHANICAL

REMOVE AND SALVAGE EXISTING FIRE EXTINGUISHER TO BE

REMOVE EXISTING ADA ACUATOR SENSOR FROM EXTERIOR STONE WALL. PREPARE SURFACES EXISTING LOW VOLTAGE WIRING TO RECEIVE NEW ADA ACTUATOR. RE: ELECTRICAL.

REMOVE AND TURN OVER ARTWORK TO OWNER'S

REMOVE EXISTING POWER POLE AND ALL ASSOCIATED ELECTRICAL WIRING BACK TO THE NEAREST JUNCTION BOX.

(19) NEATLY CUT AND REMOVE PORTIONS OF EXISTING GYPSUM

RECEIVE NEW FINISHES. RE: MEP DRAWINGS.

NEW CARD READER ACCESS. RE: ELECTRICAL.

FLOOR TO RECEIVE NEW FLOOR FINISH.

PLAN SHEETS FOR LOCATIONS OF DOORS.

METAL FRAMING AT EXTENTS SHOWN.

REPLACED TO ACCESS NEW EQUIPMENT.

REMOVE AND TURN OVER MONITOR TO OWNER'S

27 REMOVE EXISTING EXIT SIGN AND RETURN TO OWNER'S

HARDWARE.

REMOVE AND TURN REPRESENTATIVE.

REPRESENTATIVE.

BOARD CEILING AS REQUIRED TO INSTALL AND ROUTE

MATCH ADJACENT SURFACES AND PREPARE CEILING TO

PLUMBING LINES OR POWER TO NEW LIGHT FIXTURES AND

NEATLY COREDRILL EXISTING EXTERIOR MASONRY WALL AS REQUIRED FOR NEW CONDUIT AND LOW VOLTAGE WIRING FOR

REMOVE EXISTING RUBBER WALL CHAIR RAIL AND/OR CORNER GUARD AND ALL ASSOCIATED ADHESIVES. PATCH GYPSUM WALL BOARD AND PREPARE SURFACE TO RECEIVE NEW FINISHES.

REMOVE HOOK AND ASSOCIATED BLOCKING/FASTENERS. PATCH GYPSUM WALL BOARD AND PREPARE SURFACE TO RECEIVE NEW

REMOVE EXISTING CERAMIC FLOOR TILE AND MORTAR BED DOWN TO EXISTING CONCRETE STRUCTURAL SLAB. PREPARE

INSTALLATION OF NEW CONSTRUCTION. REFER TO NEW FLOOR

REMOVE EXISTING CEILING ACCESS PANEL AND ALL ASSOCIATED

REMOVE PORTION OF EXISTING WALL TILE AND GYPSUM BOARD AS REQUIRED TO INSTALL NEW FURRED OUT BLOCKING AND GYPSUM BOARD FINISH FOR INSTALLATION OF NEW VERTICAL

REMOVE PORTION OF EXISTING GYPSUM BOARD CEILING AND

ASSOCIATED FRAMING AS REQUIRED TO ACCESS EXISTING

MECHANICAL EQUIPMENT TO BE REPLACED. REMOVE AND SALVAGE EXISTING ACCESS DOOR FOR REINSTALLATION IN NEW GYPSUM BOARD CEILING AFTER MECHANICAL SYSTEMS ARE

REMOVE EXISTING DOOR ONLY. EXISTING FRAME TO REMAIN. PREPARE FRAME TO RECEIVE NEW DOOR.

26 REMOVE EXISTING GYPSUM BOARD BULKHEAD AND ASSOCIATED

REMOVE PORTION OF EXISTING METAL STUD PARTITION, INCLUDING BASE AND FINISHES FOR INSTALLATION OF NEW DOOR AND FRAME OR FIRE EXTINGUISHER CABINET. PROVIDE ADDITIONAL METAL STUD FRAMING AS REQUIRED FOR

MECHANICAL COMPONENTS. PATCH GYPSUM BOARD CEILING TO

RELOCATED TO NEW LOCATION IN FIRE CABINET SHOWN ON NEW CONSTRUCTION FLOOR PLANS.

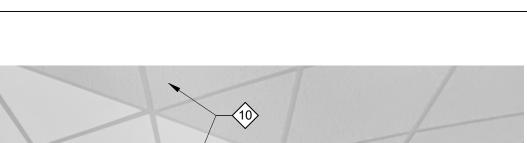
REMOVE EXISTING LIGHT FIXTURE AND ASSOCIATED HARDWARE.

REMOVE STOREFRONT WALL AND DOOR INCLUDING ALL

REMOVE EXISTING CASEWORK AND ALL ASSOCIATED









FIRST FLOOR OFFICE CUBICLES | L27

FIRST FLOOR OFFICE CUBICLE | 17

EXTERIOR ADA ACTUATOR AND CARD READER | 7



FIRST FLOOR MEN'S RESTROOM ENTRANCE

INTERNATIONAL ARCHITECTS ATELIER

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THE UNIVERSITY OF MISSOURI

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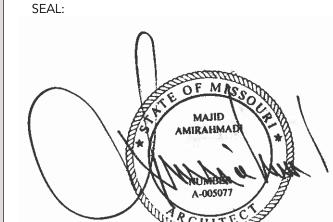
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THE UNIVERSITY OF MISSOURI

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	DATE: PROJ. NO.:	11/14/2022 CP22081
М	DESIGNED BY:	IC, JI
	DRAWN BY:	IC, JI
	CHECKED BY:	JL, MA
	APPROVED BY:	MA
1		



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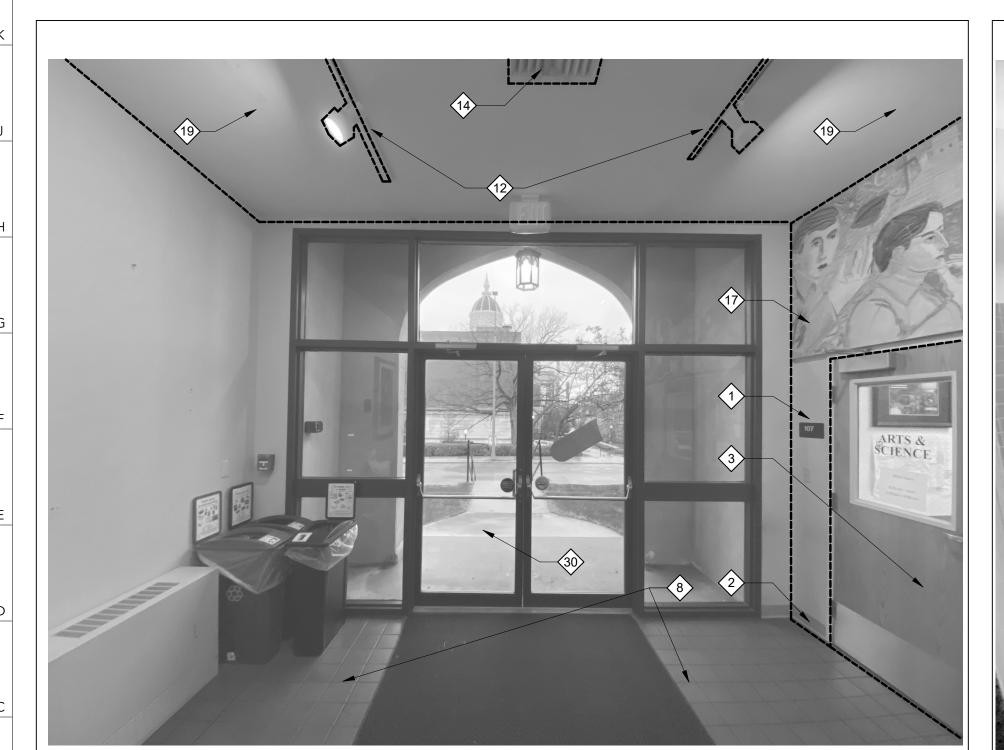
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11-14-2022

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DEMOLITION PHOTOGRAPHS

D800



FIRST FLOOR WEST ENTRANCE | B27

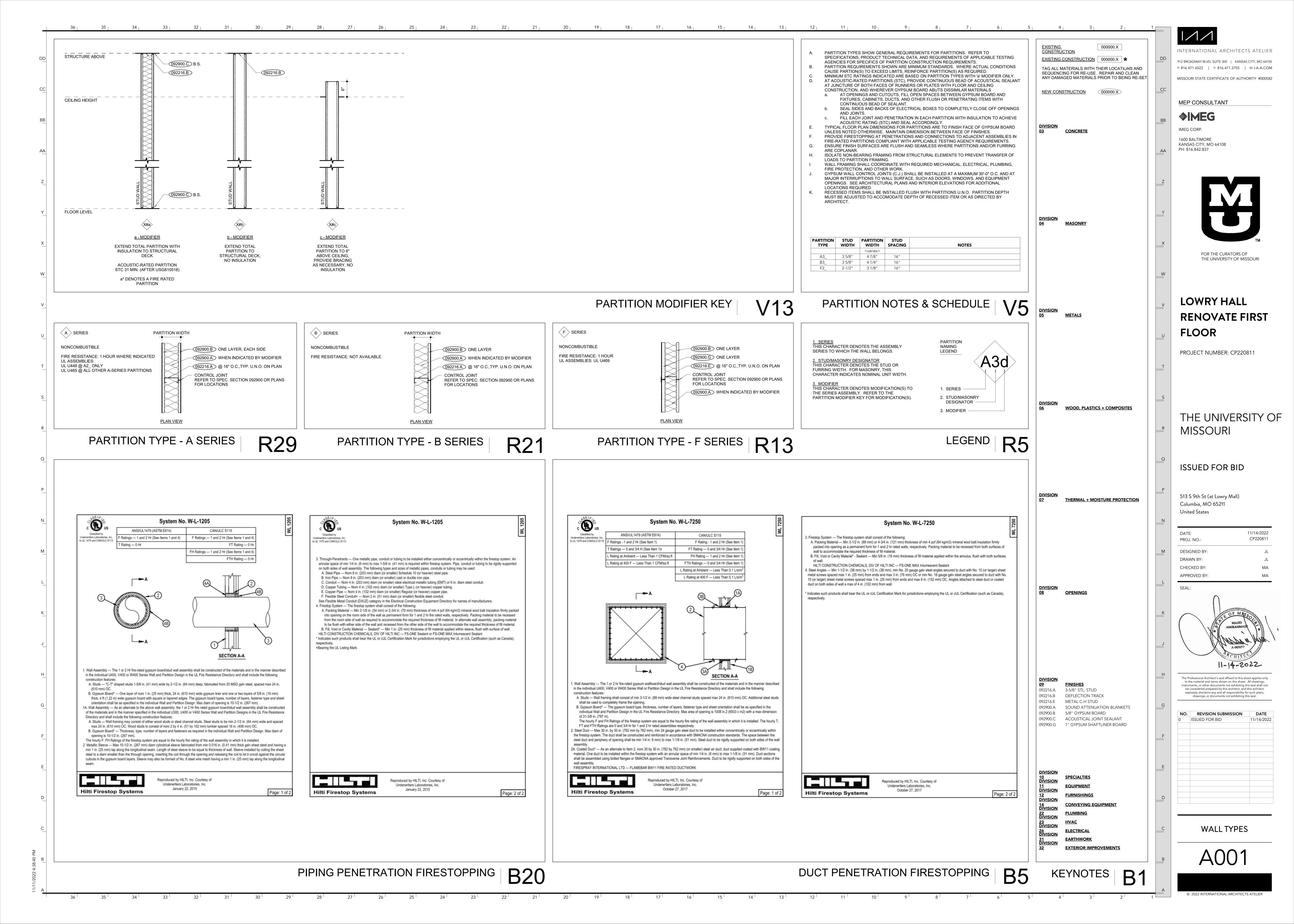
FIRST FLOOR MEN'S RESTROOM

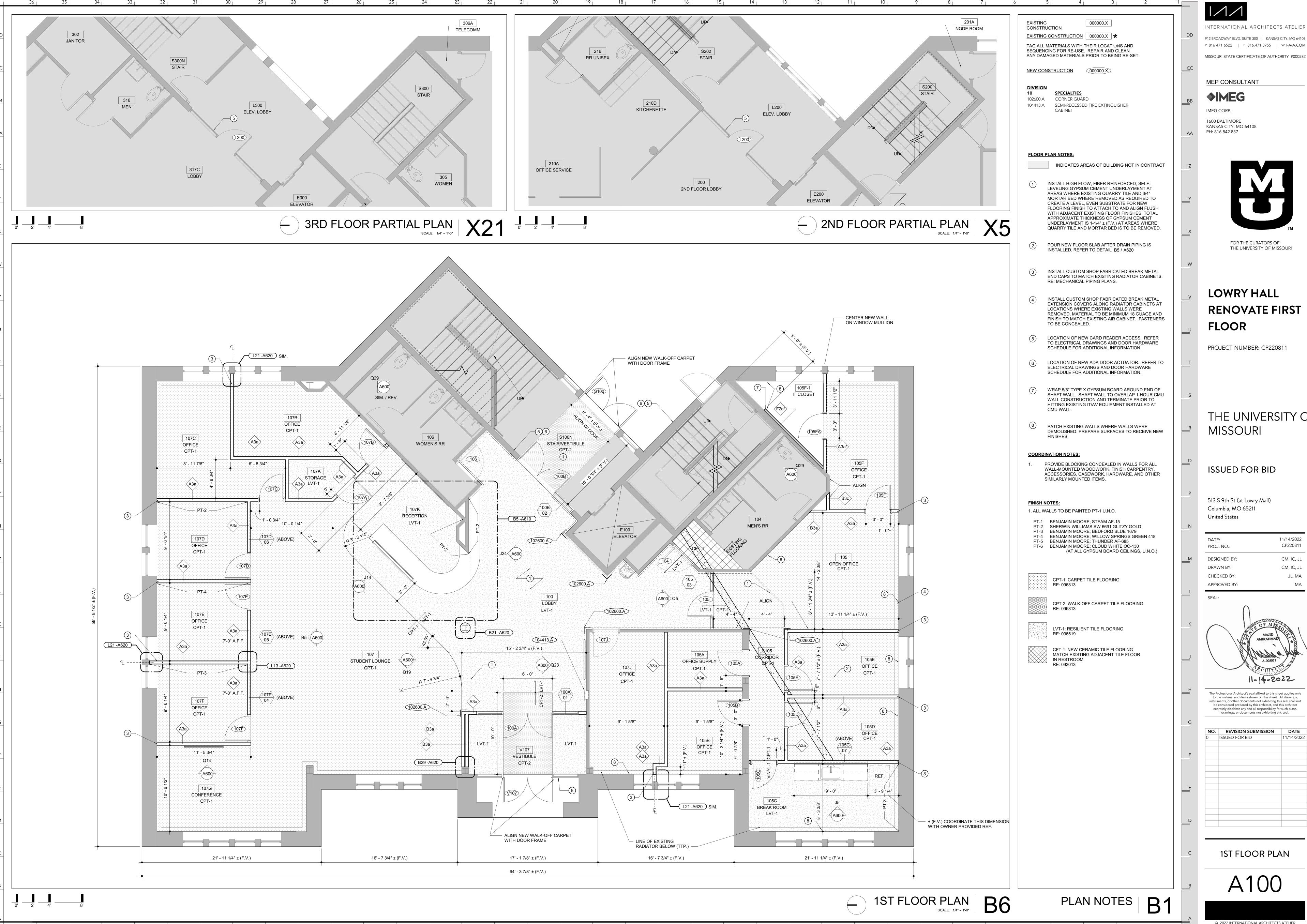
B17

DEMO NOTES

B1

B7





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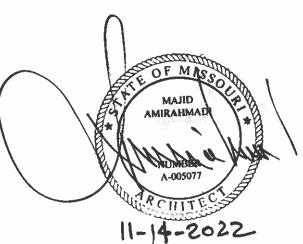
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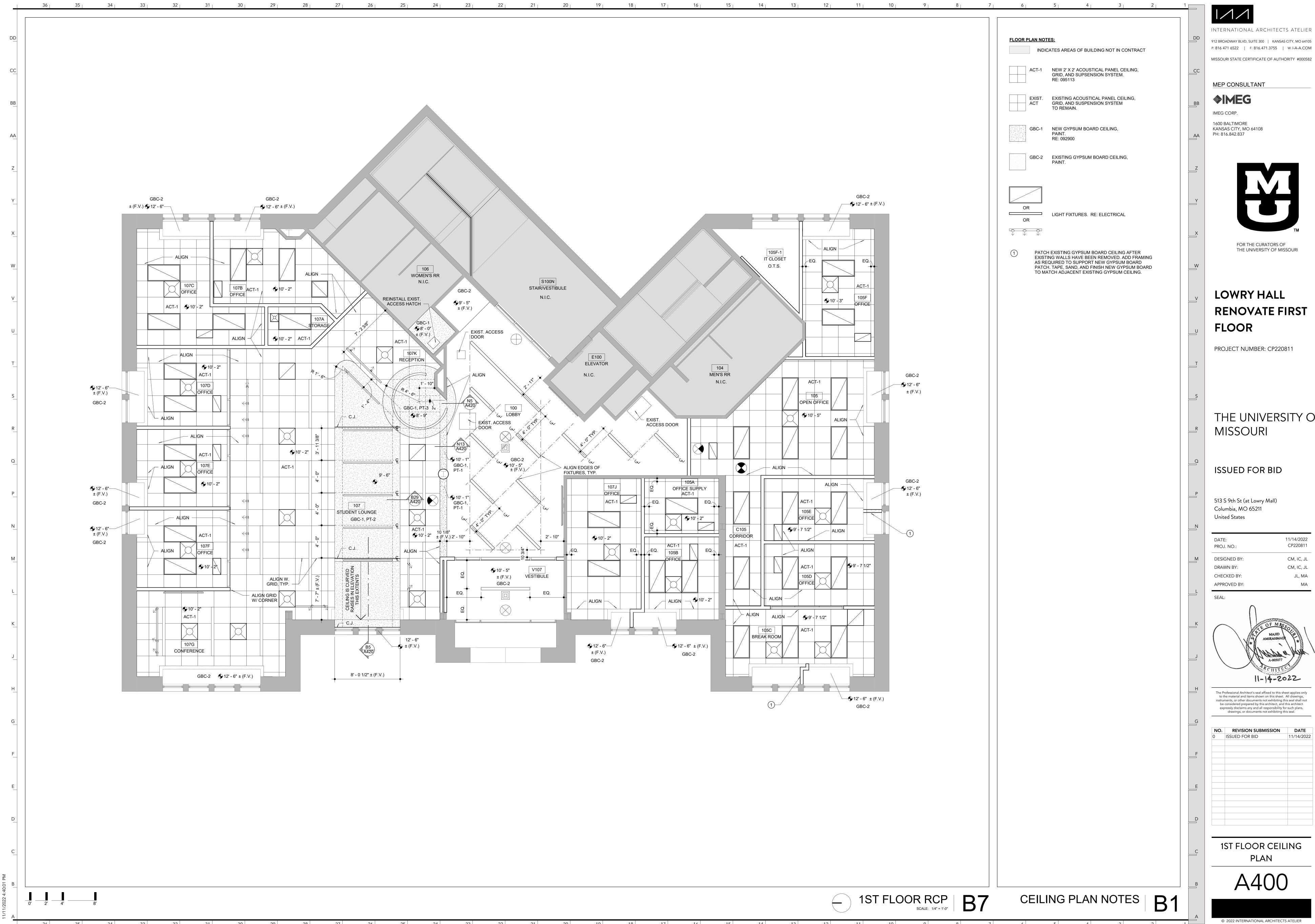
DATE: PROJ. NC).:	11/14/2022 CP220811
DESIGNE	D BY:	CM, IC, JL
DRAWN B	SY:	CM, IC, JL
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APPROVE	D BY:	MA

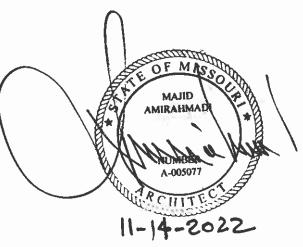


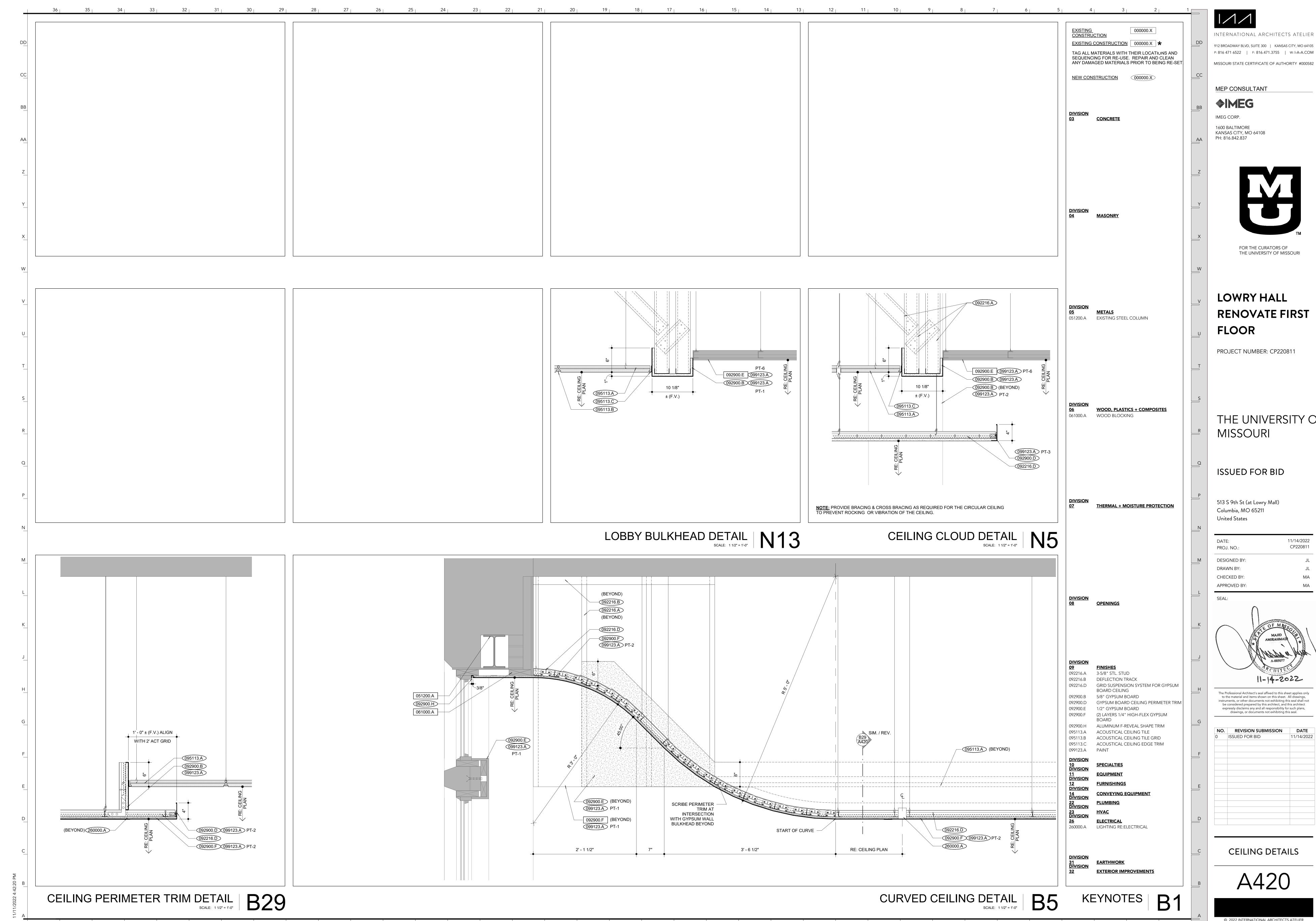
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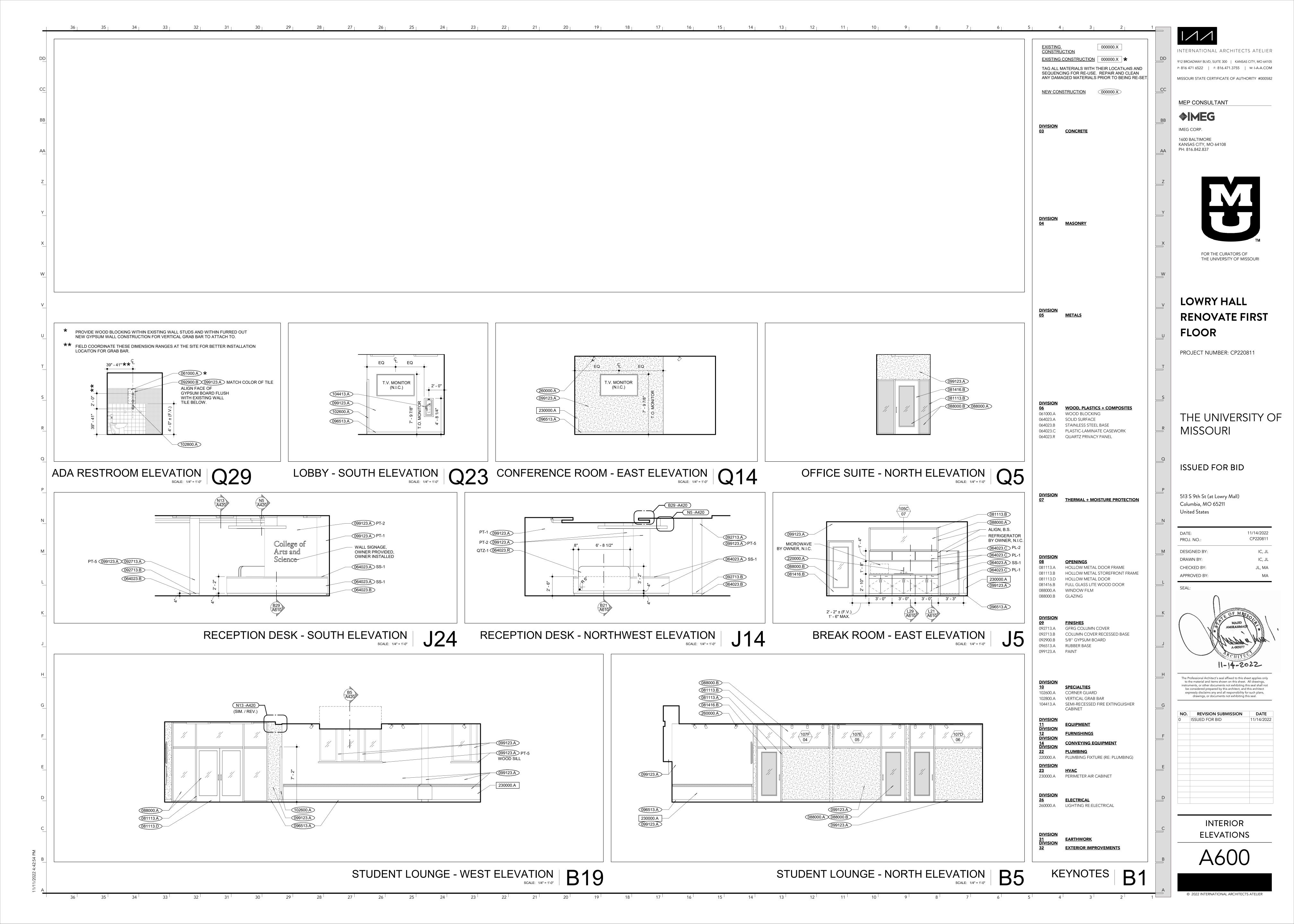
1ST FLOOR PLAN

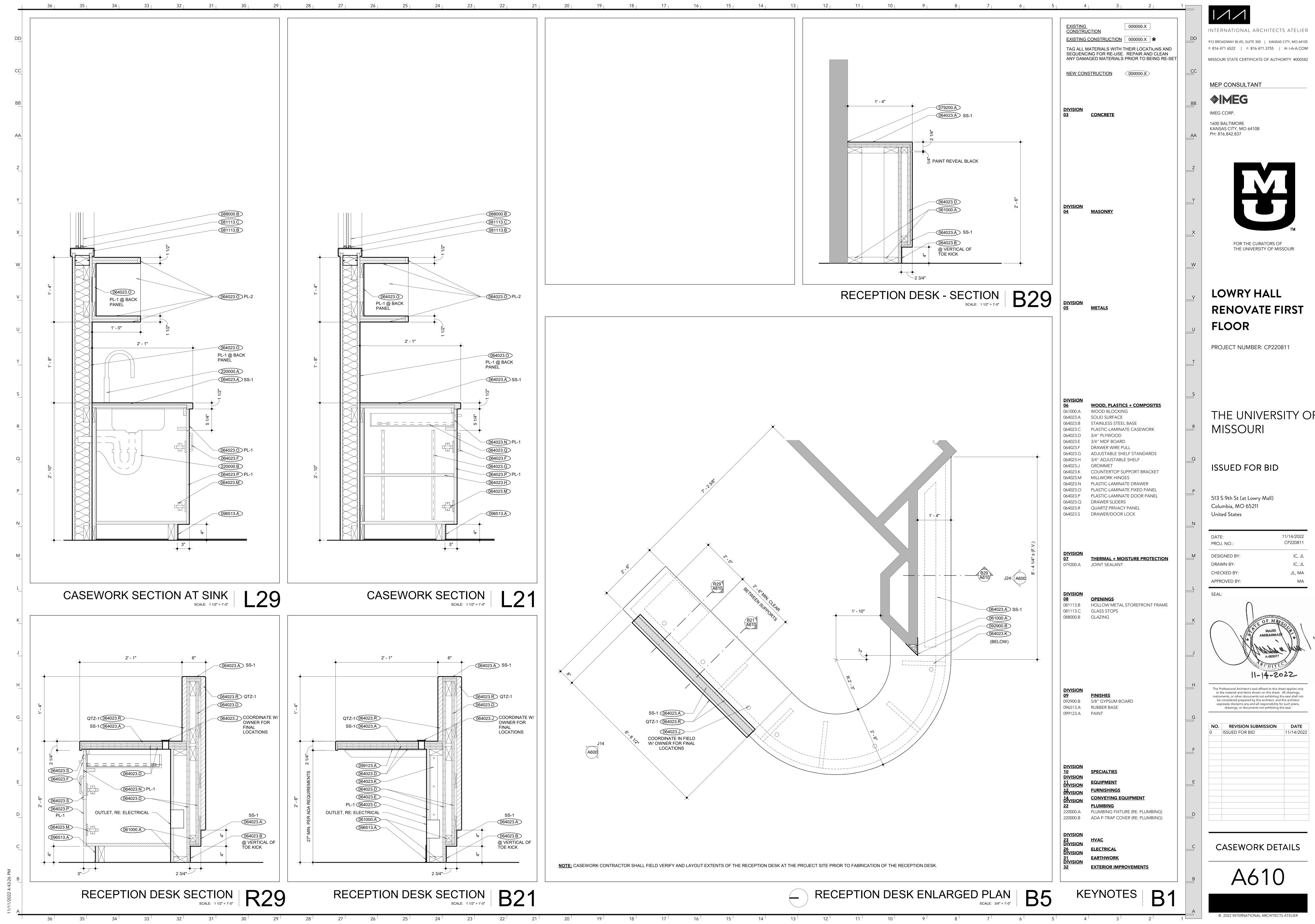


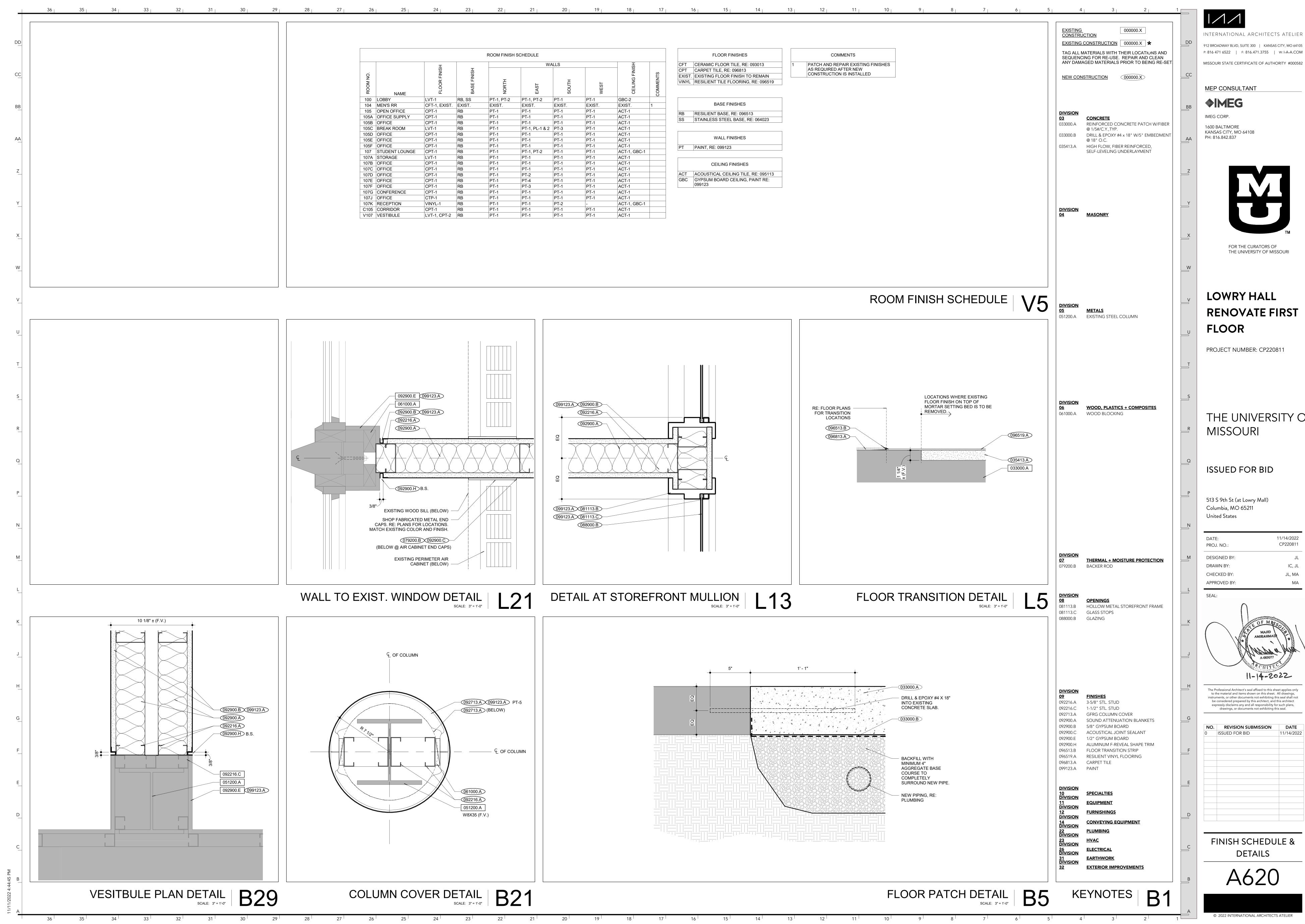




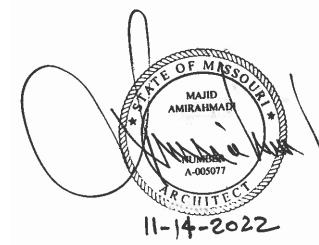




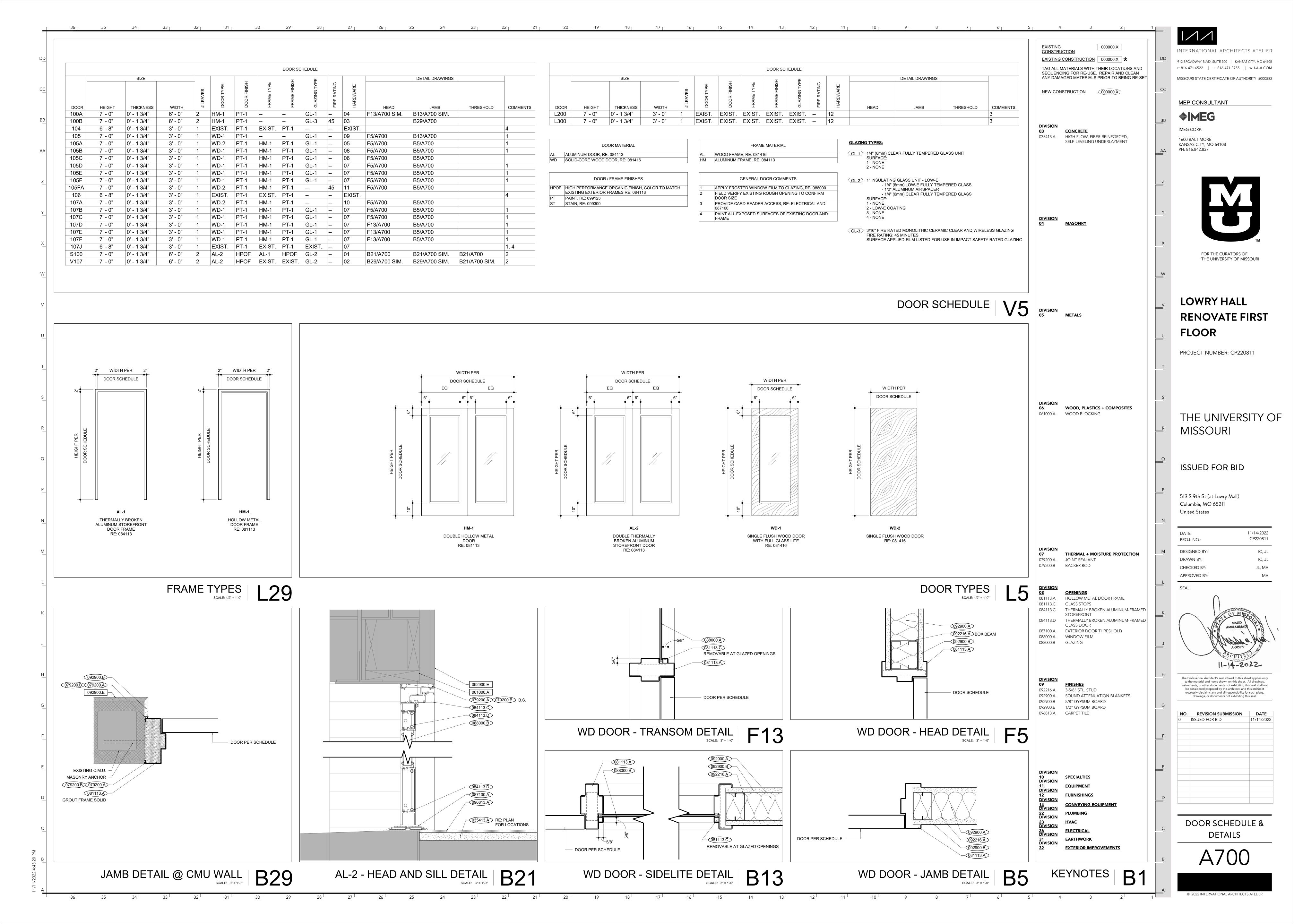


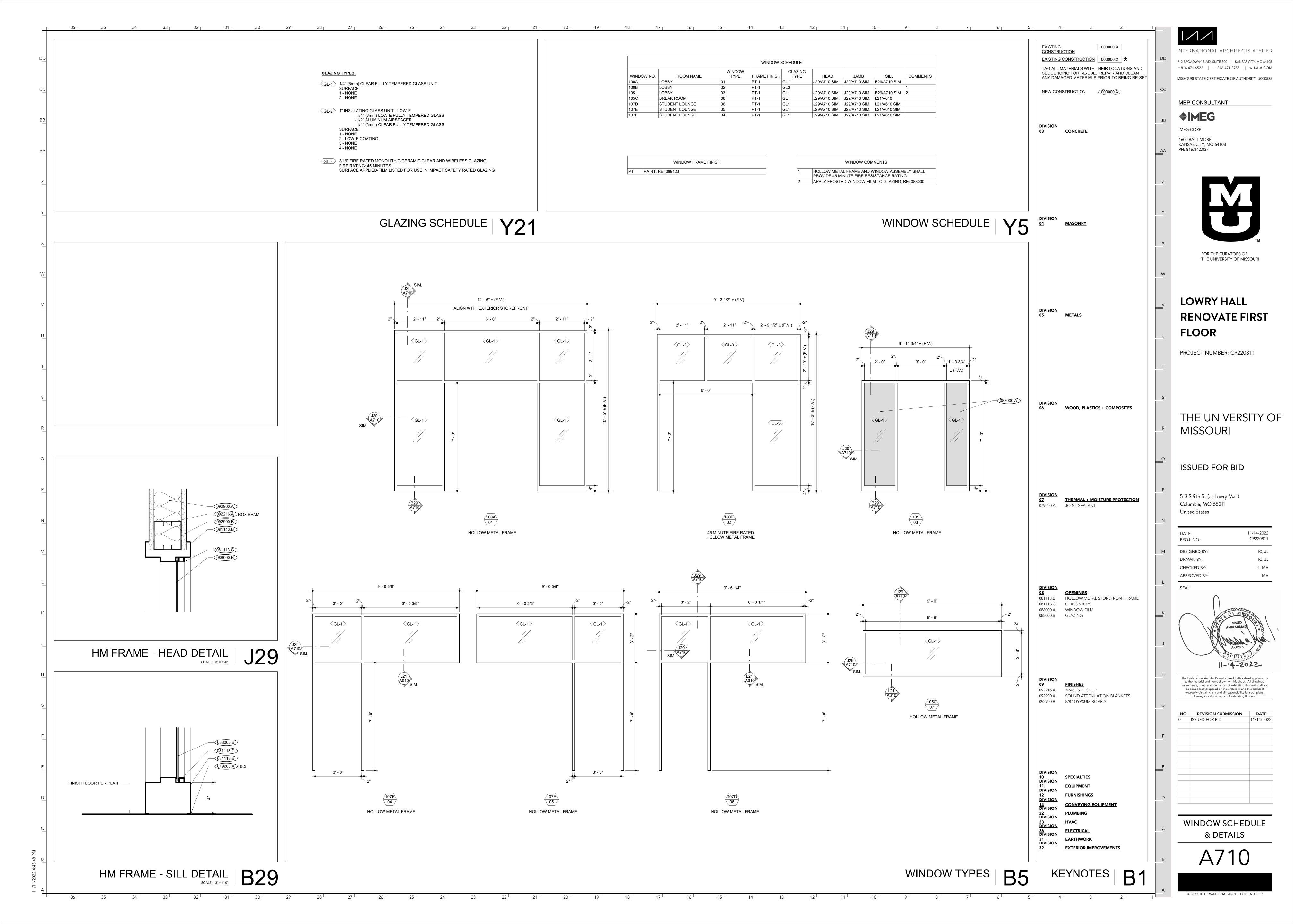


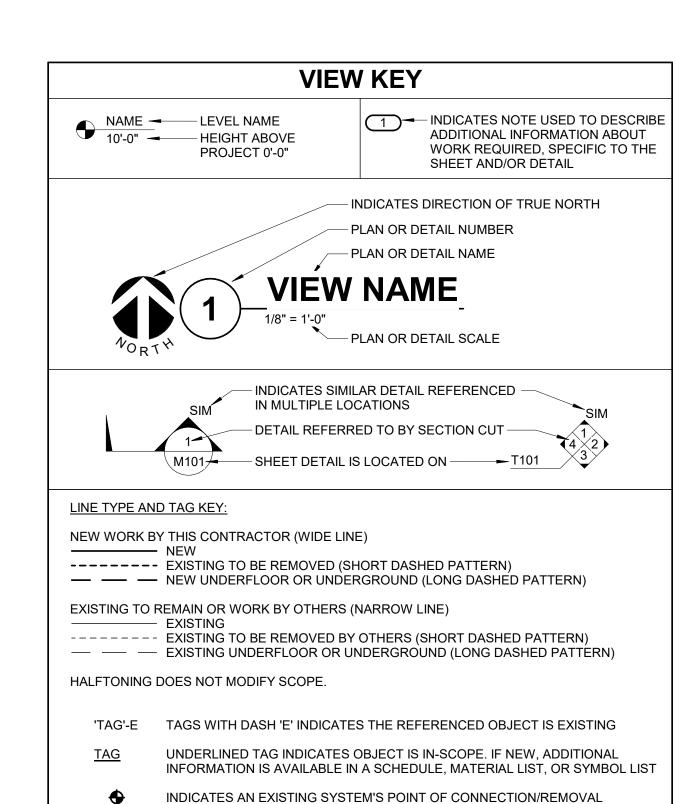
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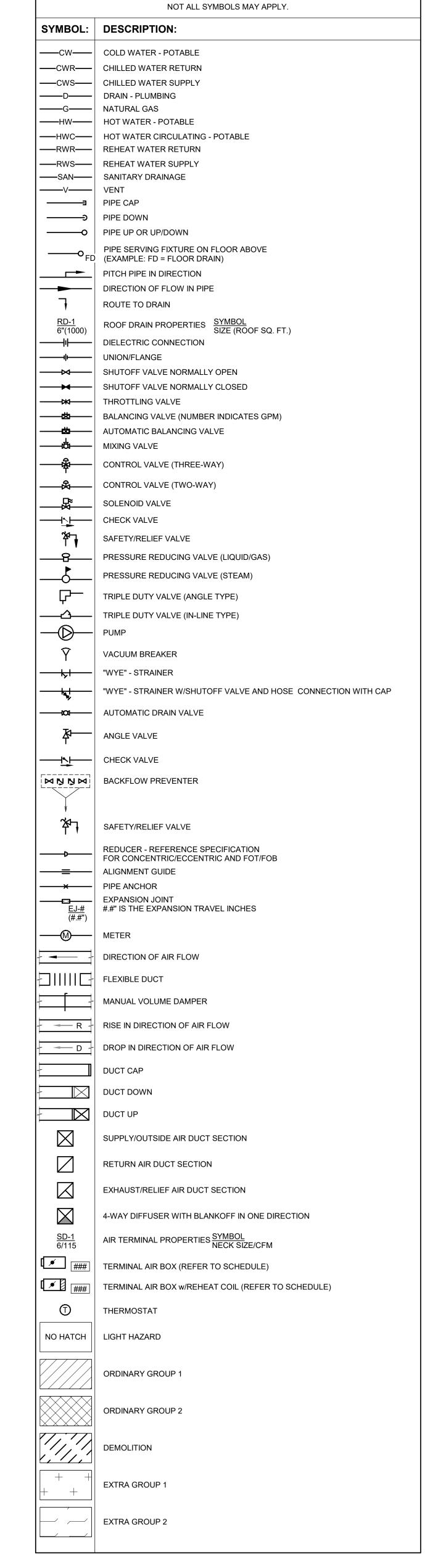


NO.	KENISION SUBINISSION	DATE
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MECHANICAL SYMBOL LIST

MECHANICAL ABBREVIATION KEY ABBR: **DESCRIPTION:** AD ACCESS DOOR AFF ABOVE FINISHED FLOOR BACKFLOW PREVENTER BATHTUB COMMON CB CATCH BASIN CONTROL/FIRE/SMOKE DAMPER CFSD CI CAST IRON CO **CLEANOUT** CS CLINICAL SINK DB DIALYSIS BOX DRINKING FOUNTAIN DUCTILE IRON DPG (0-2") DIFFERENTIAL PRESSURE GAUGE (RANGE) DPS DIFFERENTIAL PRESSURE SWITCH **EXISTING** EXHAUST/RELIEF AIR **ECFSD** EXISTING CONTROL FIRE SMOKE DAMPER **EMERGENCY EYEWASH** EFD EXISTING FIRE DAMPER EXISTING FIRE SMOKE DAMPER ELECTRICAL TO PNEUMATIC VALVE EMERGENCY SHOWER EXISTING SMOKE DAMPER ESD ESE **EMERGENCY SHOWER/EYEWASH** ELECTRIC WATER COOLER FCO FLOOR CLEANOUT FIRE DAMPER FM FLOW METER FOB FLAT ON BOTTOM FOT FLAT ON TOP FS FLOOR SINK FSD FIRE/SMOKE DAMPER GD GARBAGE DISPOSER GI **GREASE INTERCEPTOR** HB HOSE BIBB INVERT ELEVATION (FOR REFERENCE ONLY) I.E. LAV **LAVATORY** MIXED AIR MOP BASIN MH MANHOLE MIXING VALVE N.C. NORMALLY CLOSED NOT IN CONTRAC N.O. NORMALLY OPEN NEUTRALIZATION TANK OA OUTSIDE AIR OS OIL SEPARATOR PRESSURE SWITCH RETURN AIR RD **ROOF DRAIN** SUPPLY AIR SA SCCR SHORT CIRCUIT CURRENT RATING SD SMOKE DAMPER **SHOWER** SINK SS SERVICE SINK TAB TERMINAL AIR BOX TD TRANSFER DUCT TRAP PRIMER TYP TYPICAL UTILITY BOX UB UC-1 DOOR UNDERCUT BY OTHERS (1" TYPICAL) UON **UNLESS OTHERWISE NOTES** UR URINAL VTR VENT THROUGH ROOF WC WATER CLOSET WCO WALL CLEANOUT WASH FOUNTAIN WATER HEATER WH WMF WASHING MACHINE FIXTURE WM WATER METER WS WATER SOFTENER YCO YARD CLEANOUT

MECHANICAL GENERAL NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBING, MEDICAL GAS, VENTILATION, PIPING AND TEMPERATURE

- 1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT 2. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM
- ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES. 3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES
- OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS. 4. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER
- 5. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR
- EXPENSE TO OTHERS. 6. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF
- 7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING
- MOUNTED DEVICES, OTHER THAN SPRINKLERS. 8. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND 9. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE
- PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING. 10. SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER FOR OUTDOOR USE.
- 11. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS 6. VERIFY UNDERGROUND PIPE SIZES, INVERT ELEVATIONS, AND LOCATIONS PRIOR TO
- 12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED 2" MINIMUM ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE
- 13. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC.
- 14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES. 15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR
- STARTERS, SWITCHES, AND DISCONNECTS. 16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT. 17. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.

MECHANICAL RENOVATION NOTES:

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES. INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBING, MEDICAL GAS, VENTILATION, PIPING AND TEMPERATURE CONTROL.

- 1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND
- REPORT ANY CONFLICTS BEFORE PROCEEDING. 2. NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS
- BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 3. FIELD VERIFY THE AVAILABLE CLEARANCES FOR DUCTWORK AND PIPING BEFORE
- FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD
- 4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO BIDDING IF OTHER UTILITIES ARE
- REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO THEIR AREA OF WORK 5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS.
- CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING 6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF
- CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO
- 7. WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL
- SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK. 8. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT
- 9. OBTAIN PERMISSION FROM OWNER BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW
- SYSTEMS ARE INSTALLED. 10. MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR TIE IN AND SWITCHOVER. DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND
- CONNECTIONS. OBTAIN PERMISSION FROM OWNER BEFORE PARTIALLY OR COMPLETELY DRAINING SYSTEM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE. 11. DISCONNECT AND REMOVE MECHANICAL DEVICES AND EQUIPMENT SERVING EQUIPMENT THAT HAS BEEN REMOVED.

PLUMBING ROUGH-IN SCHEDULE

NOTES: (APPLIES TO ALL PLUMBING FIXTURES LISTED BELOW) I) SIZES SHOWN ARE MINIMUMS. LARGER SIZES SHOWN ON THE DRAWING SHALL DICTATE THE ROUGH-IN SIZE. 2) SANITARY RISERS UP IN WALL TO FIXTURES SHALL BE A MINUMUM OF 2". 3) DOMESTIC WATER BRANCH PIPING OUTSIDE OF THE WALL/CHASE SHALL BE A MINIMUM OF 3/4" LINI ESS NOTED OTHERWISE, ONLY THE FINAL RISE-DROP SHALL BE SMALLER, 4) FINAL SANITAR'

	SIZE SHALL MATCH P-TRAP SIZE (REFER TO MATERIAL LIST).					
TAG NAME	DESCRIPTION	COLD WATER	HOT WATER	SANITARY	VENT	
FD-1	FLOOR DRAIN			2"	1 1/2"	
SK-1	SINK (ACCESSIBLE)	1/2"	1/2"	1 1/2"	1 1/2"	

VENTILATION GENERAL NOTES:

1. UNLESS NOTED OTHERWISE, THE SIZE OF EACH BRANCH DUCT TO A TERMINAL AIR BOX (TAB) SHALL MATCH THE INLET SIZE UNLESS THE BRANCH IS GREATER THAN 6FEET IN LENGTH, IN WHICH CASE THE BRANCH DUCT SHALL BE SIZED AT A PRESSURE DROP OF 0.07"W.C. PER 100' OF DUCTWORK. 2. UNLESS NOTED OTHERWISE, THE SIZE OF EACH BRANCH DUCT TO AN AIR TERMINAL SHALL MATCH THE INLET SIZE. B. ALIGN TEMPERATURE SENSORS WITH LIGHT SWITCHES AND WHEN IN CLOSE PROXIMITY TO

5. EXISTING AIR INLET AND OUTLET CFM SHOWN ON DRAWINGS ARE FROM EXISTING DRAWINGS, AND ARE FOR REFERENCE ONLY. CONTRACTOR SHALL USE PRE-BALANCE VALUES, AND NOT EXISTING CFM SHOWN ON DRAWINGS. 6. CONTRACTOR MAY REUSE PORTIONS OF EXISTING DUCT PROVIDED SIZES AND PRESSURE CLASSES ARE CORRECT, DUCT IS THOROUGHLY CLEANED AND FREE OF DEFECTS, AND ALL TRANSVERSE JOINTS, LONGITUDINAL SEAMS, AND DUCT WALL PENETRATIONS ARE SEALED AS SPECIFIED FOR NEW DUCTWORK.

PIPING GENERAL NOTES:

1. THE SIZE OF BRANCH PIPING TO TERMINAL HEATING DEVICES AND COILS SHALL BE 3/4" UNLESS NOTED OTHERWISE. PIPE DRAIN LINES FROM EQUIPMENT TO NEAREST FLOOR DRAIN

PLUMBING GENERAL NOTES:

THE SYMBOLS AND THE MATERIAL LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY QUANTITIES AND FURNISH ALL MATERIALS REQUIRED FOR FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT. 2. CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE DESCRIPTION OF MATERIAL ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL TAKES PRECEDENCE OVER THE CATALOG NUMBER. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN.

- 3. CONTRACTOR SHALL VERIFY THAT FIXTURES SUPPLIED ARE APPROVED PER ALL APPLICABLE STATE, LOCAL AND GOVERNING AUTHORITIES. ALL FIXTURES SHALL CONFORM TO FEDERAL ACT S.3874
- . INVERT ELEVATIONS ARE FROM EXISTING DRAWINGS AND MAY NOT BE ACCURATE. VERIFY ALL ELEVATIONS BEFORE BEGINNING WORK.

DOMESTIC WATER PIPING SERVING EACH ROOM WITH FIXTURES. ANGLE STOPS SHALL NOT

BEGINNING ANY WORK. 7. REFER TO THE PLUMBING ROUGH-IN SCHEDULE FOR THE SIZES OF BRANCH PIPES TO PLUMBING FIXTURES.

8. FOR CLARITY, NOT ALL VALVES HAVE BEEN SHOWN. PROVIDE SHUTOFF VALVES IN

BE CONSIDERED SHUTOFF VALVES. EXISTING CONDITIONS ON DEMOLITION PLANS ARE PROVIDED TO INDICATE THE GENERAL SCOPE OF ITEMS TO BE REMOVED. 10. P.C. SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK

UNLESS NOTED OTHERWISE

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FOR THE CURATORS OF THE UNIVERSITY OF MISSOURI

LOWRY HALL RENOVATE FIRST **FLOOR**

PROJECT NUMBER: CP220811

THE UNIVERSITY OF **MISSOURI**

ISSUED FOR BID

513 S 9th St (at Lowry Mall) Columbia, MO 65211 United States

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CHECKED BY:	SGE
APPROVED BY:	SGE



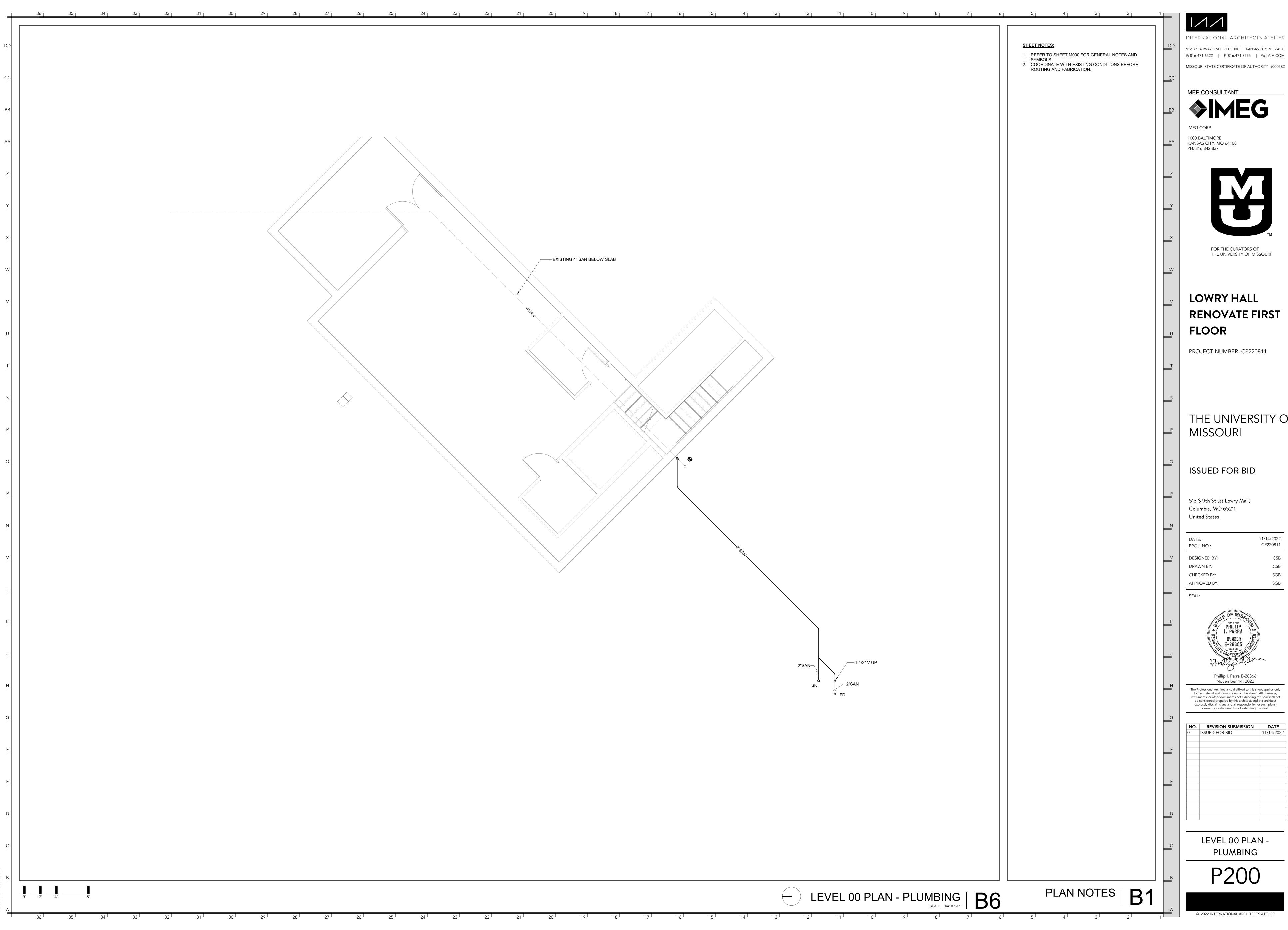
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MECHANICAL COVERSHEET



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FOR THE CURATORS OF

LOWRY HALL RENOVATE FIRST

PROJECT NUMBER: CP220811

THE UNIVERSITY OF

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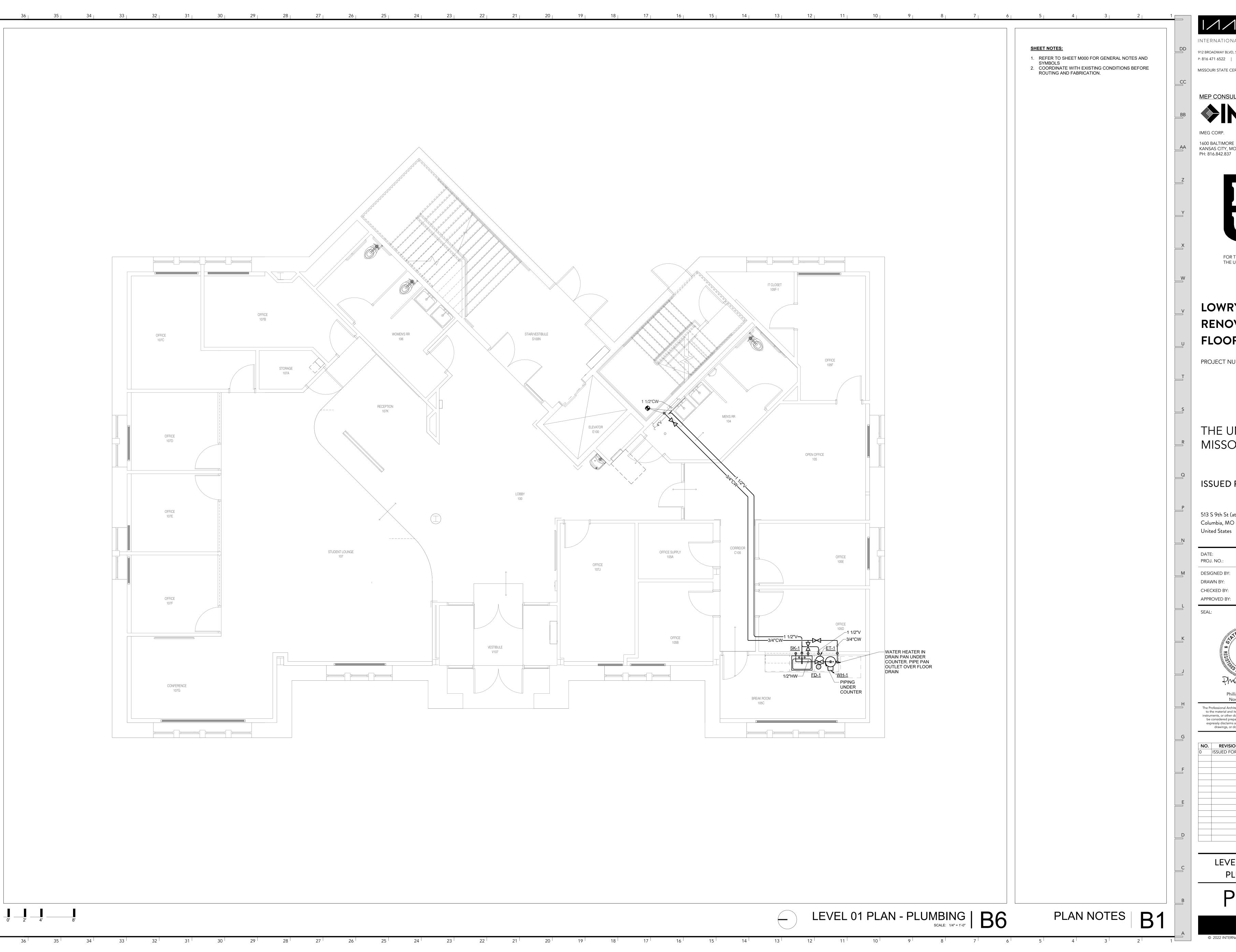
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LEVEL 00 PLAN -

P200



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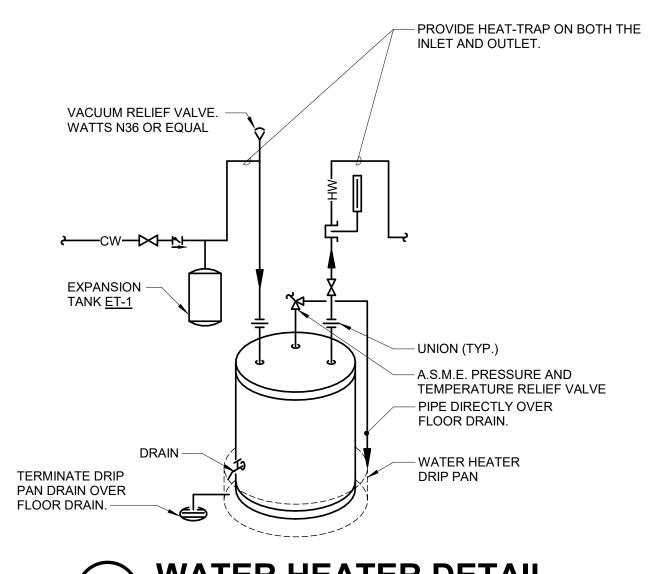
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LEVEL 01 PLAN -PLUMBING

P201

TAG NAME	DESCRIPTION	MANUFACTURER AND MODE
ET-1	EXPANSION TANK - WELDED STEEL CONSTRUCTION, ASME STAMPED, GUARANTEED AIRTIGHT AND LEAKPROOF, STAINLESS STEEL SYSTEM CONNECTION, HEAVY DUTY BUTYL DIAPHRAGM AND RIGID POLYPROPYLENE LINER MECHANICALLY BONDED TO TANK TO PROVIDE A 100% NON-CORROSIVE WATER RESERVOIR, DIAPHRAGM AND LINER SHALL BE APPROVED FOR USE IN POTABLE WATER SYSTEMS, ALL WETTED COMPONENTS OF FDA APPROVED MATERIALS. PROVIDE STANDARD SCHRADER AIR VALVE FOR FIELD CHARGING. TANK SHALL COMPLY WITH FEDERAL ACT S.3874.	EXPANSION TANK - AMTROL (THERM-X-TROL ST-5C), B&G (PTA), ELBI (DTS, DTL), TACO (PAX SERIES), WATTS (DETA) WESSELS (TTA)
	MINIMUM TANK VOLUME TO BE 2 GALLONS MINIMUM ACCEPTING VOLUME TO BE 0.9 GALLONS TANK SHALL HAVE A WORKING TEMPERATURE OF 200°F AND A WORKING PRESSURE OF 150 PSIG. FACTORY PRE-CHARGED FOR SHIPPING. FIELD	
FD-1	CHARGE TANK TO 55 PSIG. FLOOR DRAIN - CAST IRON BODY, NICKEL BRONZE ADJUSTABLE TOP, 8" ROUND,	
	2" BOTTOM OUTLET, FLASHING COLLAR, DEEP SEAL TRAP. TRAP SEAL - 2", PLASTIC HOUSING WITH FLEXIBLE DIAPHRAGM, SEALING GASKETS, RECLOSES AND SEALS WHEN DISCHARGE IS COMPLETED, ASSE 1072.	SMITH (2005), WADE (1100), JOSAM (30000), WATTS (FD-100), MIFAB (F1100), SUN (FD1000)
		TRAP SEAL - SURE SEAL (SS) PROVENT (TRAP GUARD), SMITH (QUAD CLOSE), LIQUIE BREAKER (GREEN DRAIN), MIFAB (MI-GARD)
SK-1	SINK - SELF-RIMMING SINGLE COMPARTMENT WITH FAUCET DECK, 18 GAUGE TYPE 304 STAINLESS STEEL, 19" (SIDE-TO-SIDE) x 18" (FRONT-TO-BACK) OVERALL SIZE, 16" x 11.5" x 5.5" DEEP BOWL, COMPLETELY UNDERCOATED, 3-1/2" DIAMETER DRAIN OUTLET LOCATION CENTERED IN BOWL, REMOVABLE TYPE 304 STAINLESS STEEL BASKET STRAINER WITH NEOPRENE STOPPER.	
	SINK TRIM - TWO HANDLE MIXING FAUCET, BRASS CONSTRUCTION, CHROME-PLATED FINISH, GOOSENECK SWING SPOUT, NOMINAL 8" REACH, AERATOR, 4" WRISTBLADE HANDLES AT 8" CENTERS, 1/4-TURN OPERATION CERAMIC DISC CARTRIDGE.	SPEAKMÁN (SC-3000 SÉRIES ZURN (Z831-XL) [INSULATION KIT - MCGUIRE
	MAXIMUM FLOW TO BE 2.2 GPM IN COMPLIANCE WITH ENERGY POLICY ACT OF 2005 AND ASME/ANSI STANDARD A112.18.1M. FAUCET SHALL COMPLY WITH FEDERAL ACT S.3874. PROVIDE RESTRICTIVE DEVICE AND ESCUTCHEON PLATE AS REQUIRED. PROVIDE WITH LEONARD 170A-LF MIXING VALVE.	(PROWRAP), JUST (J-ADA), PLUMBEREX (PRO-EXTREME TRUEBRO (LAV-GUARD2)]
	ACCESSORIES - 1-1/2" 17 GAUGE CHROME-PLATED BRASS TAILPIECE AND P-TRAP, QUARTER-TURN BALL VALVE TYPE 3/8" CHROME-PLATED BRASS ANGLE SUPPLIES WITH STOPS, CHROME-PLATED SOFT COPPER SUPPLY LINES.	
	INSULATION KIT - PRE-MANUFACTURED FOR P-TRAP, STOP VALVES AND SUPPLY LINES.	
WH-1	WATER HEATER - ELECTRIC, VERTICAL, METAL CABINET, BAKED ENAMEL FINISH, GLASS-LINED ASME STAMPED WELDED STEEL TANK, 150 PSI WORKING PRESSURE, FIBERGLASS OR FOAM INSULATION, BRASS WATER CONNECTIONS AND DRAIN VALVE, ASME APPROVED T&P RELIEF VALVE, MAGNESIUM ANODE ROD, INDIVIDUAL FLANGE-MOUNTED IMMERSION HEATING ELEMENTS SHEATHED WITH CORROSION-RESISTANT METAL ALLOY, EXTERNALLY ADJUSTABLE AUTOMATIC IMMERSION WATER THERMOSTAT, MANUAL RESET HIGH TEMPERATURE CUTOFF SWITCH, ENCLOSED CONTROLS, VENTILATED CONTROL CABINET, PILOT LIGHTS INDICATING MAIN POWER AND HEATING STEPS, CONTROL CIRCUIT TOGGLE SWITCH, SEQUENCING STEP CONTROLLER, CONTROL TRANSFORMER, POWER CIRCUIT FUSES, MAGNETIC CONTACTORS, CERAMIC TERMINAL BLOCK, FACTORY ASSEMBLED AND WIRED, 3-YEAR WARRANTY, UL LISTED, NEC COMPLIANT ELECTRICAL COMPONENTS, COMPLIANT TO NAECA, ASHRAE 90.1 AND ASHRAE 90A.	A.O. SMITH (DEL-6)
	6 GALLON CAPACITY, 1.5 KW ELEMENT, 6 GPH RECOVERY RATE AT 100°F TEMPERATURE RISE. HEATING ELEMENTS RATED FOR LESS THAN 75 WATTS PER SQUARE INCH.	
	ELECTRICAL REQUIREMENTS - 120V-1 PHASE HEATING CIRCUIT, 120V CONTROL CIRCUIT.	
	SET WATER TEMPERATURE AT 140°F.	



1 WATER HEATER DETAIL
NO SCALE

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FOR THE CURATORS OF THE UNIVERSITY OF MISSOURI

LOWRY HALL RENOVATE FIRST FLOOR

PROJECT NUMBER: CP220811

THE UNIVERSITY OF MISSOURI

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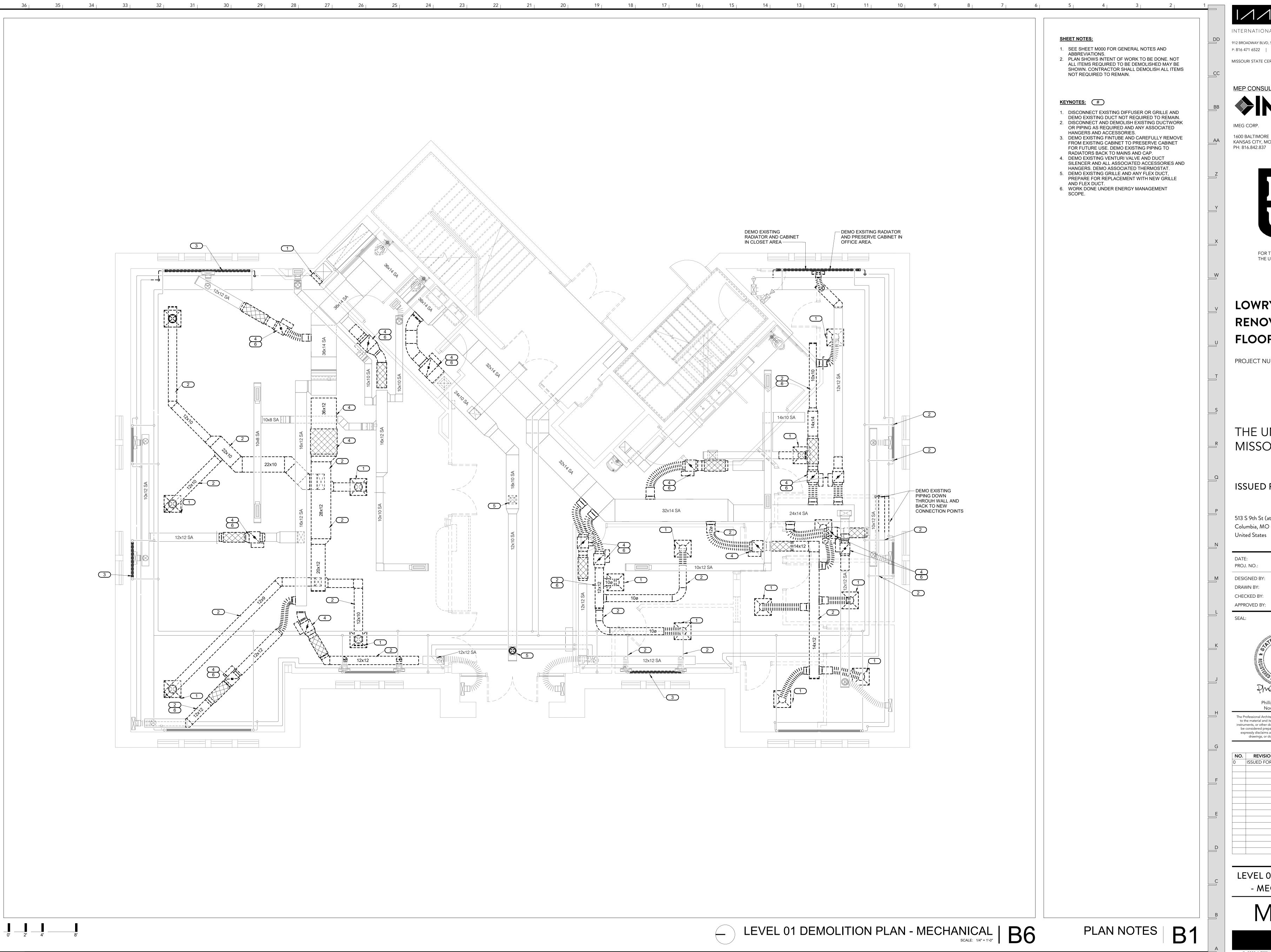
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PLUMBING SCHEDULES

P600



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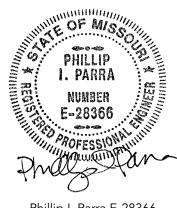
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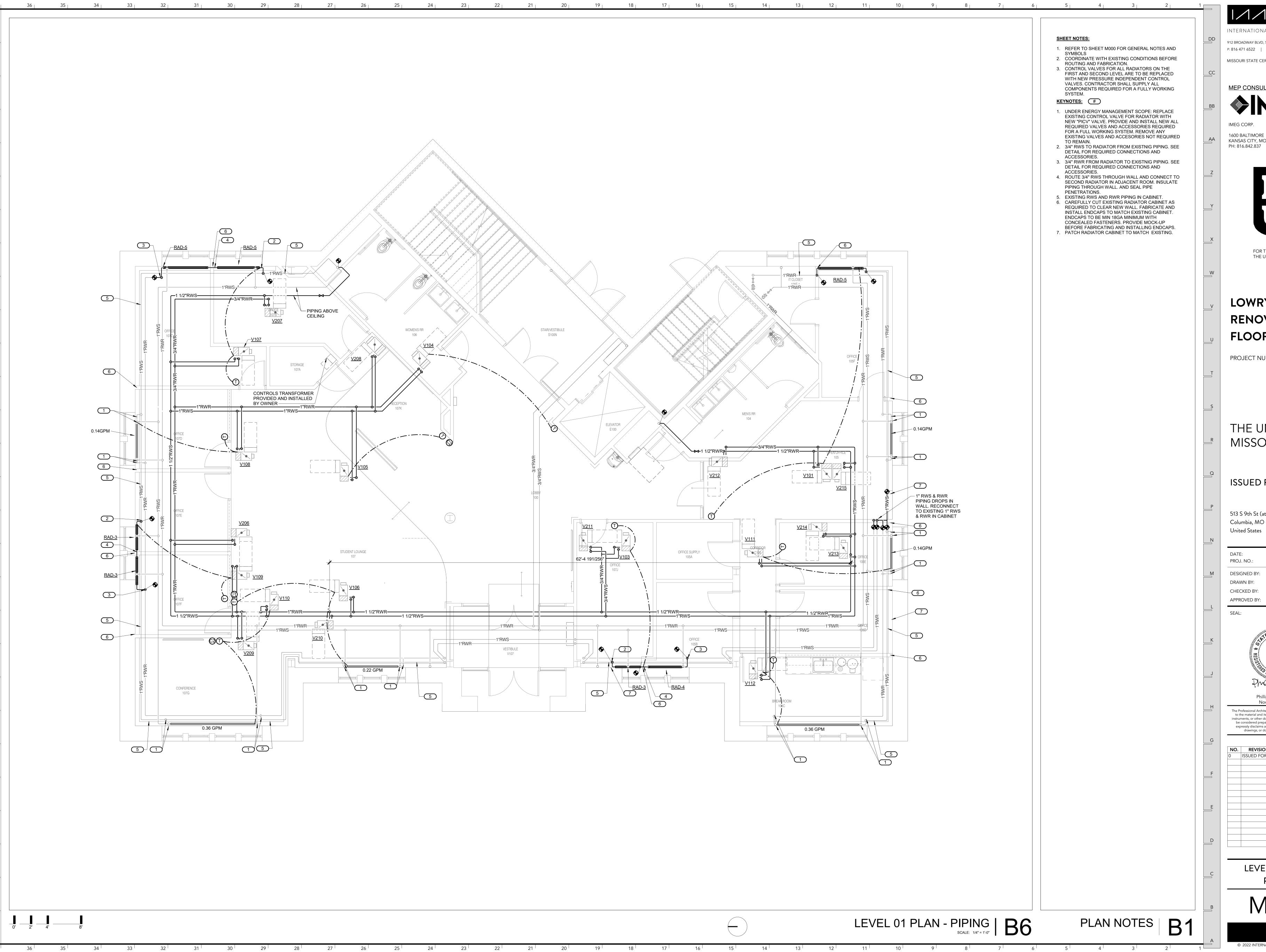


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LEVEL 01 DEMO PLAN - MECHANICAL



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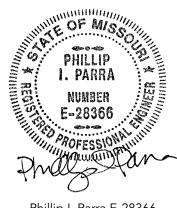
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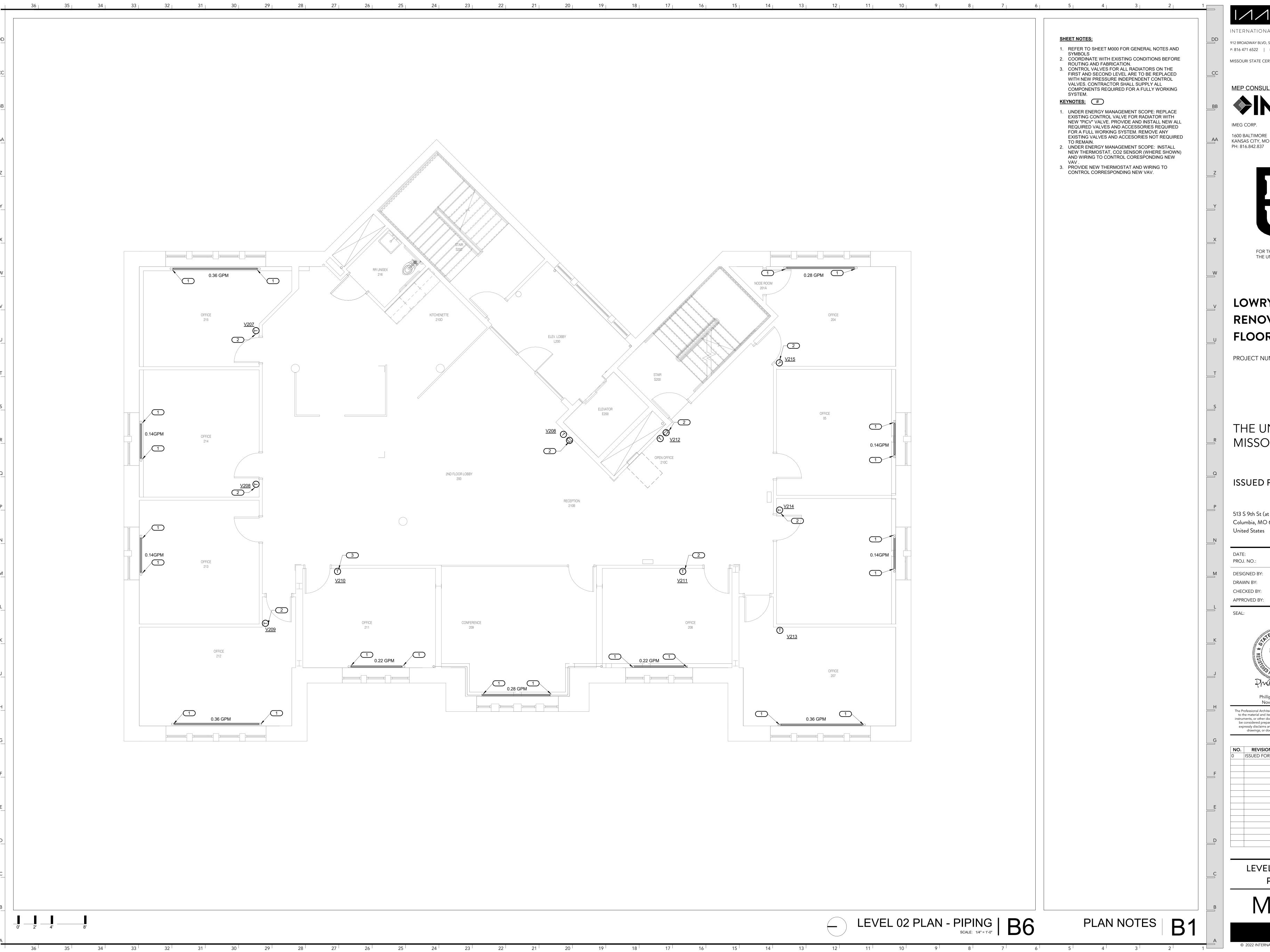


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LEVEL 01 PLAN -PIPING



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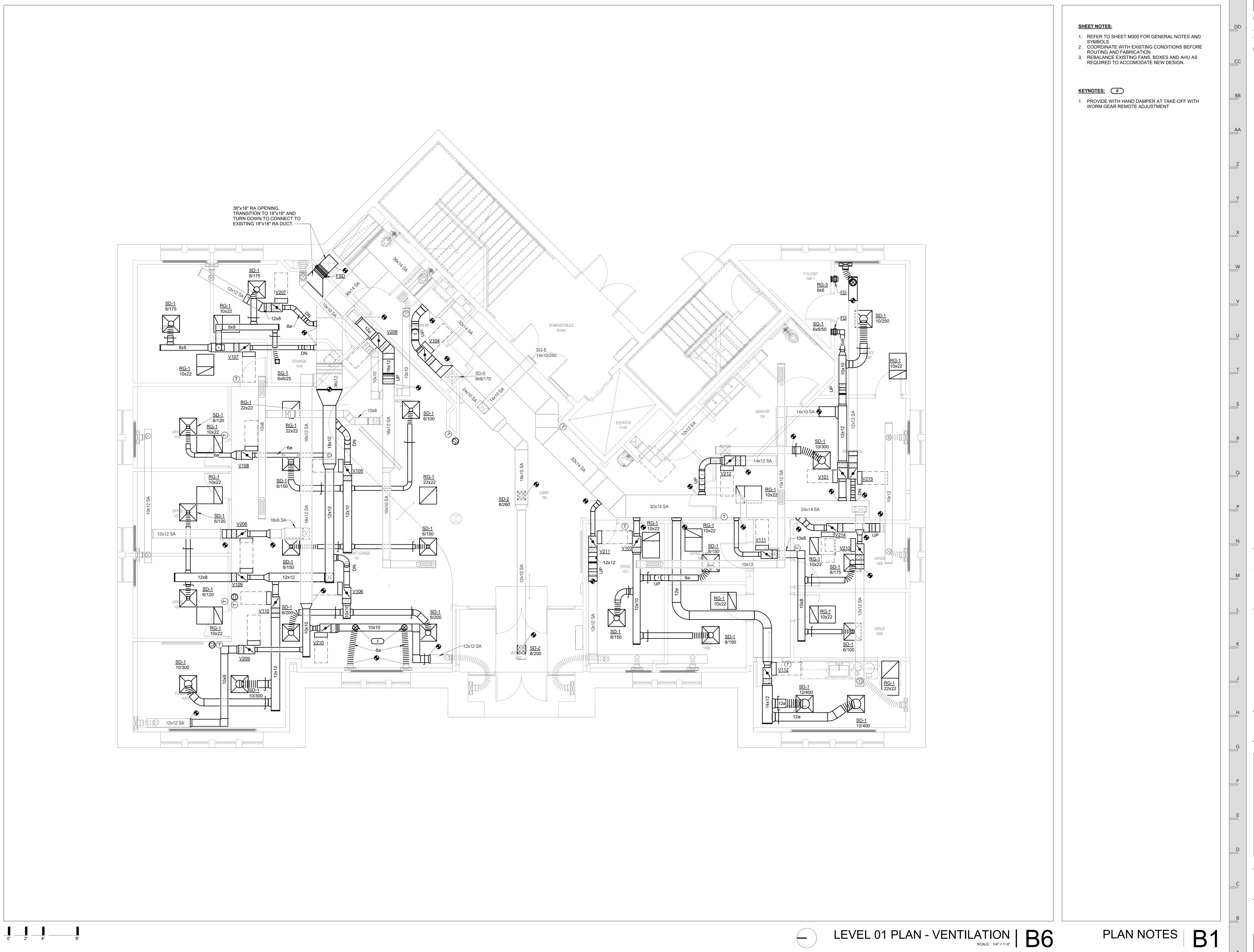


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LEVEL 02 PLAN -PIPING



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KANSAS CITY, MO 64108
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FOR THE CURATORS OF THE UNIVERSITY OF MISSOURI

LOWRY HALL RENOVATE FIRST FLOOR

PROJECT NUMBER: CP220811

THE UNIVERSITY OF MISSOURI

ISSUED FOR BID

513 S 9th St (at Lowry Mall) Columbia, MO 65211 United States

DATE: PROJ. NO.:	11/14/2022 CP220811
DESIGNED BY:	CSB
DRAWN BY:	CSB
CHECKED BY:	SGB
APPROVED BY:	SGB

SEAL:

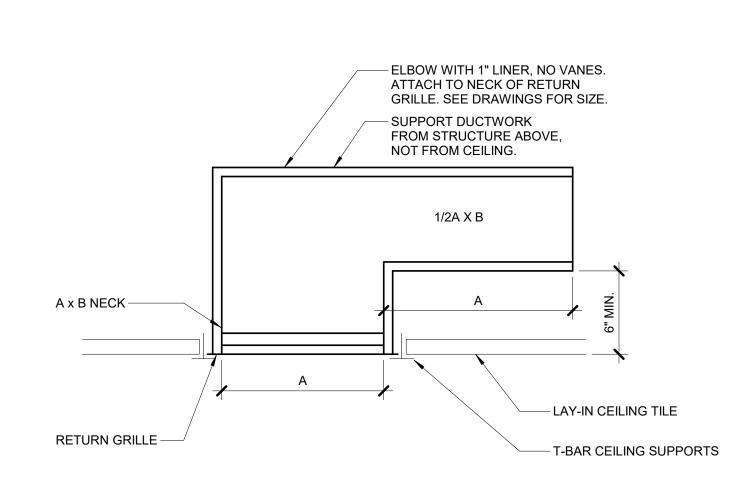


Phillip I. Parra E-28366 November 14, 2022

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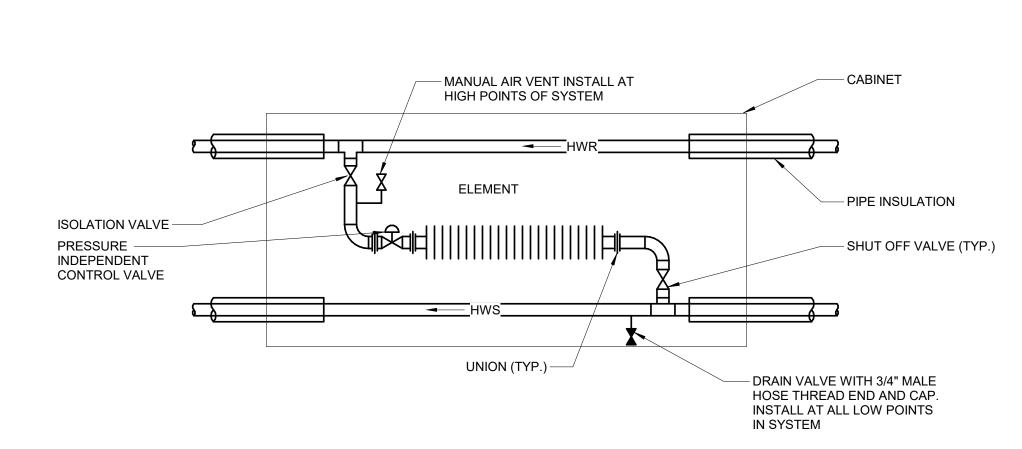
LEVEL 01 PLAN -VENTILATION



NOTES:

1. THIS DETAIL APPLIES TO WHERE RETURN BOOT IS SHOWN ON

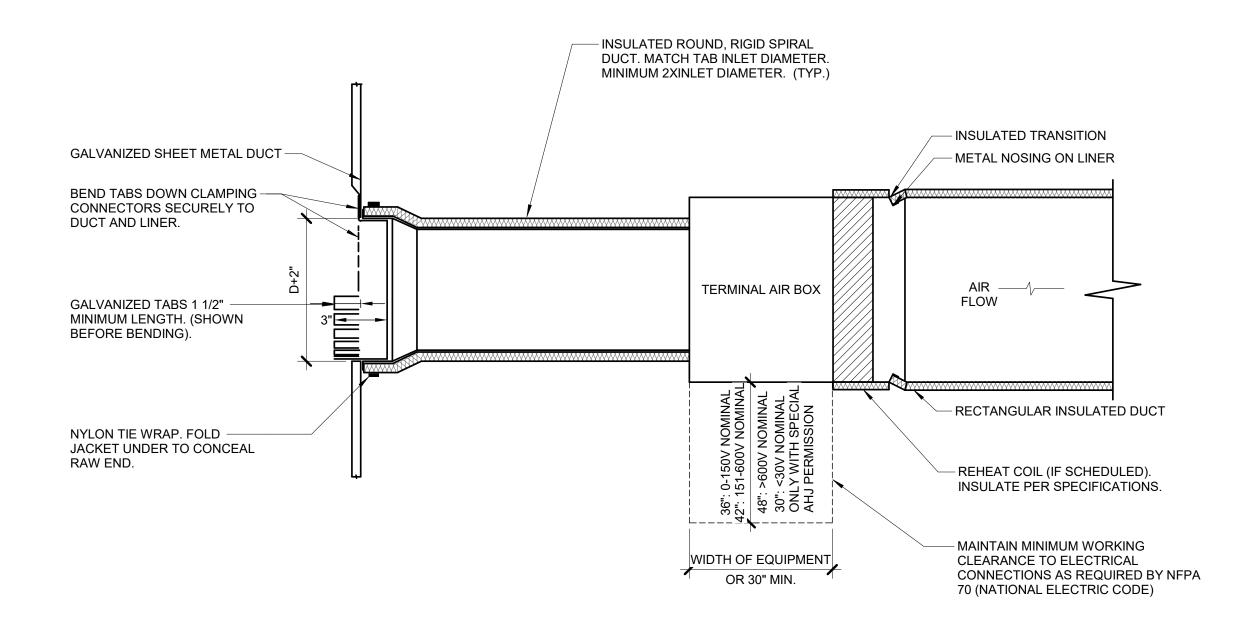
(1) CEILING RETURN GRILLE W/BOOT



RADIATION - IN CABINET PIPING DIAGRAM W/2-WAY VALVE

NOTES:

- PIPE INSULATION SHALL NOT BE RUN ABOVE OR BELOW FINNED ELEMENT.
- 2. RADIATION PIPING SHOWN WITH HWS & HWR IN CABINET. FOR RADIATORS ON THE SECOND FLOOR, PIPING IS FED FROM



NOTES:

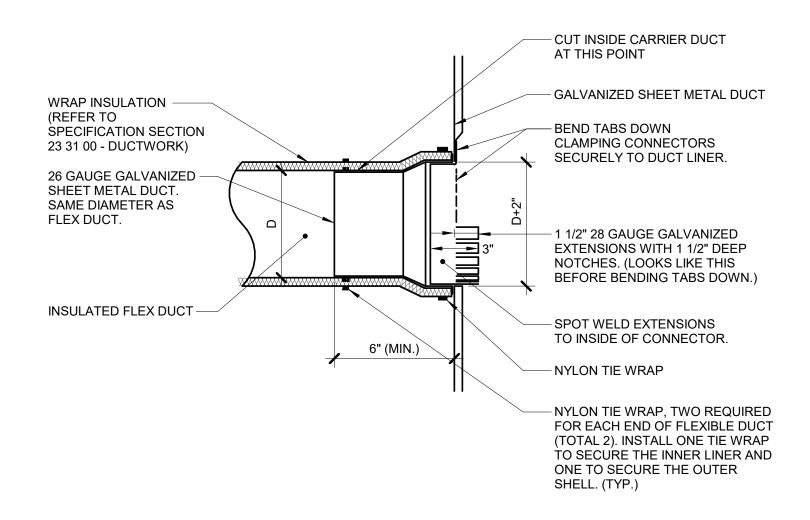
1. THIS DETAIL APPLIES ONLY TO TAPS OFF LINED DUCTS.

2. THIS DETAIL APPLIES TO TERMINAL AIR BOXES WITH ROUND INLETS AND RECTANGULAR OUTLETS.

3. DUCT LEADING TO TAB INLET MUST BE STRAIGHT FOR 1.5

DIAMETERS UPSTREAM.

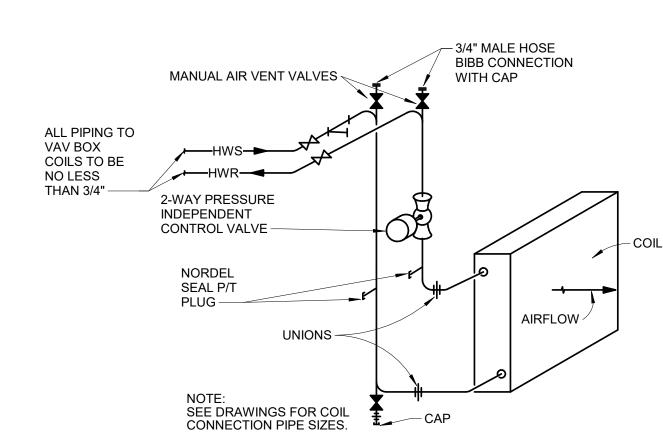
TERMINAL AIR BOX - SINGLE DUCT - LINED



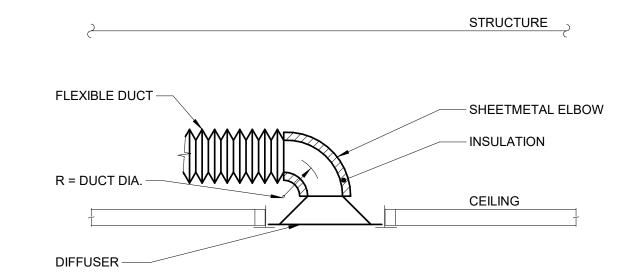
5 FLEX DUCT CONNECTION NO SCALE

NOTES:

 THIS DETAIL APPLIES ONLY TO TAPS OFF LINED DUCTS.
 TAP DOES NOT NEED TO BE CONICAL IF THE TAP IS NOT LOCATED BETWEEN FANS AND TERMINAL AIR BOXES, DUCT IS NOT OVER 2" PRESSURE CLASS, AND ROUND DUCT IS NOT OVER 12" DIAMETER.



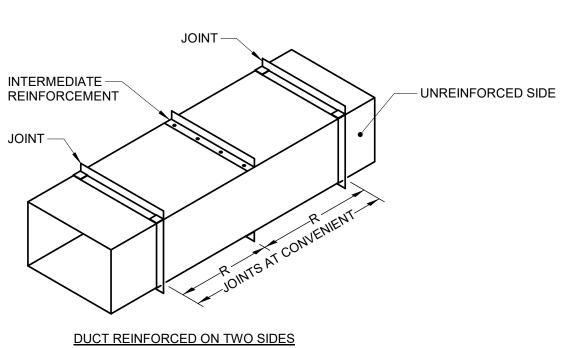
SKETCH OF CONN'S TO VAV BOX
HOT WATER COILS W/2 WAY VALVES
NO SCALE

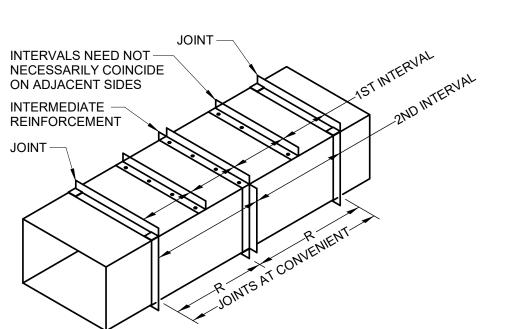


OIFFUSER CONNECTION DETAIL NO SCALE

NOTES:

 TO ATTACH FLEX DUCT TO THE HARD DUCT, TAPE THE INNER LINER TO THE HARD DUCT THEN ATTACH WITH TWO NYLON TIE WRAPS; ONE FOR THE INNER LINER AND ONE FOR THE OUTER SHELL. FOLD THE OUTER SHELL INSIDE ITSELF SO IT HAS NEAT EDGES PRIOR TO TIE WRAPPING.





NOTES

'R' IS AN ALLOWABLE REINFORCEMENT INTERVAL.
 TOP AND BOTTOM JOINTS MUST QUALIFY AS REINFORCEMENT

DUCT REINFORCED ON ALL SIDES

- DUCT SIZES THAT ARE 19 INCHES (483 mm) AND OVER ARE 20 GAGE (1.00 mm) OR LESS, WITH MORE THAN 10 SQUARE FEET (0.93 SQUARE METER) OF UNBRACED PANEL AREA, SHALL BE CROSSBROKEN OR BEADED UNLESS THEY ARE LINED OR EXTERNALLY INSULATED. DUCTS THAT ARE OF HEAVIER GAGE, SMALLER DIMENSIONS, AND SMALLER PANEL AREA AND THOSE THAT ARE LINED OR EXTERNALLY INSULATED ARE NOT REQUIRED TO HAVE CROSSBREAKING OR BEADING.
 SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- 6 DUCT REINFORCEMENT DETAIL
 NO SCALE



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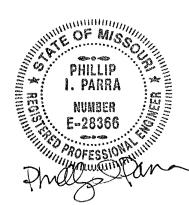
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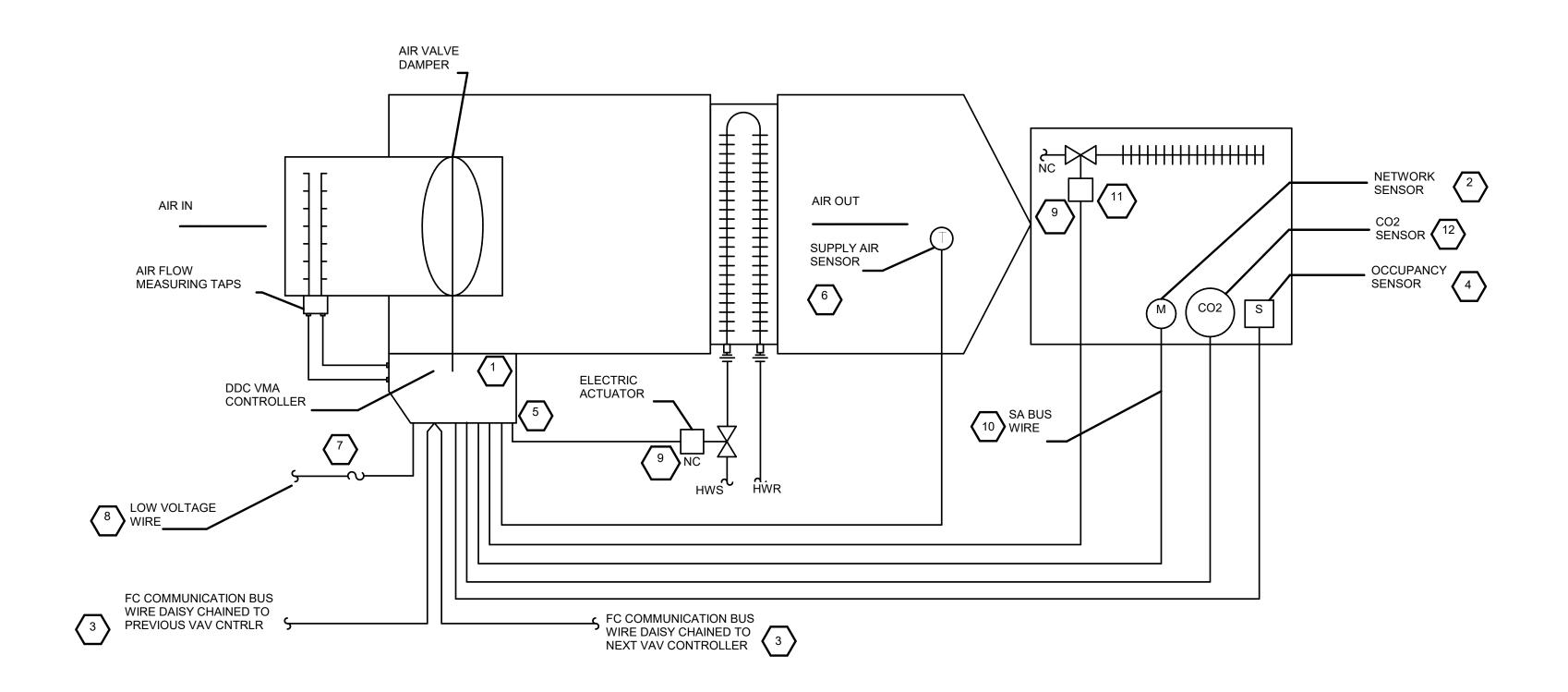


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MECHANICAL DETAILS



TAB-A - VAV BOX CONTROL DIAGRAM WITH REHEAT & PERIMETER HEAT

NOTES:

NO SCALE

1. VMA TERMINAL INCLUDES CONSTANT VOLUME (CV) UNITS & VARIABLE AIR VOLUME (VAV) UNITS. UNLESS OTHERWISE NOTED, ALL CONTROL WORK SHALL BE BY CONTRACTOR.

2. CAPS FOR VAV DP TEST PORTS MUST BE 1/4" BRASS PLUGS.

KEYED NOTES:

CONTROLLER WILL BE FURNISHED AND INSTALLED BY OWNER. CONTROLLER WILL BE JCI MODEL MS-VMA-16XX SERIES. PROGRAMMING AND COMMISSIONING WILL BE DONE BY OWNER.

NETWORK SENSOR WILL BE FURNISHED BY OWNER & INSTALLED BY CONTRACTOR. NETWORK SENSOR WILL BE JCI NC SERIES.

FC COMMUNICATION BUS WIRE SHALL BE 22 AWG, PLENUM RATED, TWISTED SHIELDED, 3 CONDUCTOR, WITH BLUE OUTER CASING, DESCRIPTED AS 22-03 OAS STR PLNM NEON BLU JK DISTRIBUTED BY WINDY CITY WIRE CONSTRUCTED BY CABLE-TEK, OR APPROVED EQUIVALENT.

INSTALLATION OF OCC SENSOR IS WORK OF DIVISION 26, SEE E-SERIES SHEETS FOR FINAL LOCATIONS. A CONTROL CIRCUIT SHALL BE CONNECTED TO ALL OCC SENSORS AS WORK OF

DIVISION 23. A CONTROL SIGNAL SHALL BE RELAYED TO THE VAV TERMINAL UNIT THAT SERVES THAT SPACE. IN LOCATIONS WHERE MULTIPLE OCC SENSORS ARE PRESENT, ALL SENSORS SHALL BE MONITORED AND TRANSMIT A SIGNAL TO THE VAV TERMINAL UNIT WITHIN THAT SPACE. ALL SENSORS SHALL BE WIRED IN PARALLEL

CONTROLLER MUST HAVE A MINIMUM OF 18 INCHES OF ACCESSIBLE CLEARANCE.

VAV SUPPLY TEMP SENSOR 1000 OHM PLATINUM RTD LOCATED APPROX. 8 FT. FROM VAV BOX DISCHARGE. PROVIDED, INSTALLED AND WIRED TO CONTROLLER BY CONTRACTOR

FUSE LOCATED WITHIN 2FT. OF VMA CONTROLLER.

LOW VOLTAGE WIRE BY DIVISION 23. SEE ELECTRICAL DRAWINGS FOR SOURCE.

VALVE WITH PROPORTIONAL 0-10 VOLT ACTUATOR OR EQUIVALENT

SA BUS WIRE SHALL BE 22 AWG, PLENUM RATED, TWISTED SHIELDED, 4 CONDUCTOR.

PERIMETER HEAT, CONNECT TO ALL VALVES IN AREA SERVED BY VAV BOX AND COORDINATE WITH OWNER PROVIDED SIGNAL AMPLIFIER AS REQUIRED.

CO2 SENSOR. SEE PLANS FOR LOCATIONS.

VAV BOX SEQUENCE OF OPERATION

OCCUPIED MODE

CONDITIONING CONTROL

VAV DAMPER SHALL MODULATE FROM ITS MINIMUM POSITION TOWARD ITS MAXIMUM POSITION TO MAINTAIN ITS COOLING SETPOINT OF 75°F (ADJ) VIA TRIM AND RESPOND PID LOOP. WHEN THE SPACE TEMP DROPS 2° (ADJ) BELOW THE COOLING SETPOINT THE DAMPER SHALL MODULATE TOWARD THE MIN. POSITION. UPON A FURTHER DROP IN ROOM TEMPERATURE THE ASSOCIATED FINNED TUBE RADIATION (WHERE APPLICABLE) CONTROL VALVE WILL MODULATE OPEN AND THE CONDITIONING AIR DAMPER SHALL OPEN TO IT'S SCHEDULED HEATING AIRFLOW SETPOINT AND THE HEATING COIL CONTROL VALVE SHALL OPEN TO MAINTAIN THE 73°F (ADJ) HEATING SETPOINT. WHEN SPACE TEMPERATURE IS 2° (ADJ) ABOVE THE HEATING SETPOINT THE HEATING VALVE(S) SHALL CLOSE AND THE VAV DAMPER SHALL MODULATE TOWARDS ITS MIN. POSITION. EMCS SHALL HAVE ABILITY TO LIMIT SETPOINT ADJUSTMENT.

VENTILATION MODE CONTROL

CO2 CONTROL (WHERE LOCAL CO2 SENSOR SHOWN)

VAV DAMPER SHALL MODULATE OPEN FROM ITS CONDITIONING CONTROL POSITION TO MAINTAIN 1000PPM MAX. (ADJ) CO2 LEVEL. IF DAMPER HAS BEEN 100% (ADJ.) OPEN FOR 10 MIN. (ADJ.) AND CO2 LEVEL IS STILL ABOVE SETPOINT THE SPACE CO2 SENSOR SHALL BE ABLE TO OVERRIDE ITS ASSOCIATED AHU MIN. OUTSIDE AIR DAMPER CONTROL. RE: AHU CONTROL. WHEN CO2 LEVEL FALLS BELOW 750PPM THE DAMPER SHALL MODULATE TOWARD ITS CONDITIONING CONTROL POSITION.

CONFERENCE/CLASSROOM "PERFORMANCE" MODE

ALL CONFERENCE ROOMS AND CLASSROOMS SHALL HAVE THE ABILITY TO INDEX ZONE TO "PERFORMANCE" MODE VIA A PUSHBUTTON ON THE ZONE SENSOR. WHEN THE BUTTON IS ACTIVATED THE COOLING SETPOINT SHALL BE LOWERED TO 73°F (ADJ) TO DECREASE RECOVERY TIME WHEN THE CLASSROOM OCCUPANCY INCREASES DRAMATICALLY. THIS FUNCTION SHALL TIME OUT IN 30 MINUTES (ADJ) AND CONTROL SHALL REVERT TO NORMAL OPERATION.

OCCUPANCY SENSOR CONTROL

ANY ZONE WITH A ROOM OR A SERIES OF ROOMS EQUIPPED WITH OCCUPANCY SENSORS (FURNISHED AND INSTALLED UNDER DIVISION 26) SHALL PROVIDE AN OUTPUT FROM EACH ASSOCIATED OCCUPANCY SENSOR TO THE VAV BOX CONTROLLERS TO INDEX THE BOX TO "UNOCCUPIED" MODE DURING TIME OF DAY (TOD) SCHEDULE "OCCUPIED" MODE. ALL OCCUPANCY SENSORS IN THE CONTROLLED ZONE SHALL BE IN "UNOCCUPIED" MODE TO INDEX THE BOX TO "UNOCCUPIED" MODE AFTER 5 MIN. (ADJ.) TIME DELAY. ONLY ONE (1) SENSOR IN THE ZONE MUST SENSE OCCUPANCY TO INDEX BOX BACK TO "OCCUPIED" MODE DURING TOD "OCCUPIED" MODE.

UNOCCUPIED MODE

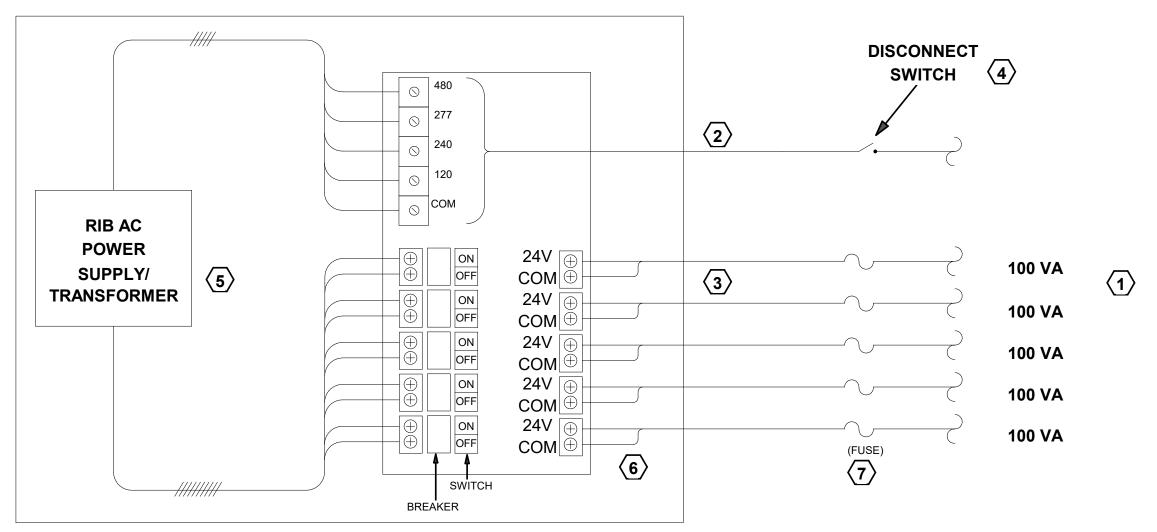
CONDITIONING CONTROL

ZONE TEMPERATURES SHALL BE MAINTAINED AT 55°F (ADJ). IF FINNED TUBE RADIATION IS AVAILABLE THE ASSOCIATED CONTROL VALVE SHALL BE MODULATED OPEN WHEN THE ZONE TEMPERATURE DROPS BELOW 55°F (ADJ) AND SHALL CLOSE WHEN SETPOINT IS REACHED. IF RADIATOR CONTROL VALVE IS 100% OPEN AND ZONE TEMPERATURE IS BELOW SETPOINT OR THERE IS NO FINNED TUBE THE VAV DAMPER SHALL OPEN TO ITS HEATING POSITION AND ALL OTHER ASSOCIATED AHU VAV BOX VAV DAMPERS SHALL OPEN 20% (ADJ), HEATING SYSTEM SHALL BE ACTIVATED IF NOT ALREADY RUNNING AND ASSOCIATED AHU STARTED IN NIGHT SETBACK MODE. WHEN THE SPACE TEMPERATURE IS 5°F (ADJ) ABOVE ITS UNOCCUPIED HEATING SETPOINT, THE AHU SHALL SHUT DOWN, ALL VAV DAMPERS SHALL CLOSE AND THE HEATING HOT WATER SYSTEM SHALL BE DEACTIVATED IF NOT REQUIRED TO RUN OTHERWISE.

COOLING

ZONE TEMPERATURES SHALL BE MAINTAINED AT 85°F (ADJ). IF AT LEAST 3 ZONES (ADJ) ARE ABOVE THE UNOCCUPIED COOLING SETPOINT THOSE 3 ZONES VAV DAMPERS SHALL FULLY OPEN AND ALL OTHER ASSOCIATED VAV BOX DAMPERS SHALL OPEN 20% AND THE ASSOCIATED AHU PUT INTO OPERATION WITH FREE COOLING VIA ECONOMIZER CYCLE. IF FREE COOLING IS NOT AVAILABLE, CHILLED WATER SYSTEM SHALL BE PUT INTO OPERATION. WHEN EACH AFFECTED ZONE IS 5°F BELOW UNOCCUPIED SETPOINT THE ASSOCIATED AHU SHALL SHUT DOWN, ALL CONDITIONING AIR DAMPERS SHALL CLOSE AND THE CHILLED WATER SYSTEM SHALL BE DEACTIVATED IF NOT REQUIRED TO RUN OTHERWISE.

PSH500A **ENCLOSED AC POWER SUPPLY**



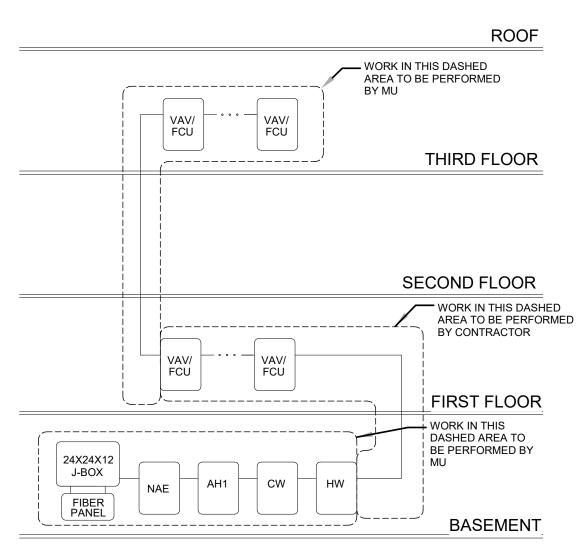
SECONDARY LINE CAN BE RAN IN SAME CONDUIT AS FC BUS

ENCLOSED POWER SUPPLY MUST BE LOCATED IN ELECTRICAL ROOM, MECHANICAL ROOM, OR JANITOR'S CLOSET AND BE ACCESSIBLE. ANY OTHER LOACAION MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE

KEYED NOTES:

- (1) EACH SECONDARY OUTPUT LINE CAN POWER 3-5 VAV CONTROLLERS MAXIMUM. (100 VA)
- (2) PRIMARY LINE INFO: 480/277/240/120 Vac, #12 AWG MINIMUM
- SECONDARY LINE INFO: 24 Vac, #12-26 AWG, 100 VA. MAX LENGTH 175 FEET USING #14 AWG DISCONNECT SWITCH REQUIRED, EXTERNALLY MOUNTED WITHIN 12 INCHES OF RIB POWER SUPPLY
- 500VA POWER SUPPLY INCLUDED IN RIB MODEL# PSH500A OR APPROVED EQUIVALENT
- 6 ALL SECONDARY LINES MUST BE LABELED IN ENCLOSURE AS TO WHICH VAV'S THEY POWER PRIOR TO ENERGIZING
- A SEPARATE 3 AMP FUSE IS REQUIRED WITHIN 3 FEET OF EACH VAV

VAV BOX POWER SUPPLY DIAGRAM NO SCALE



NOTES:

- . FC BUS TO BE CONTINUOUS DAISY CHAIN WITHOUT SPLICES. CONNECTIONS CAN ONLY BE MADE AT CONTROLLERS. SEE PLANS FOR QUANTITY AND LOCATIONS OF VAV/FCU CONTROLLERS. LOCATE PANELS IN SAME ROOM AS EQUIPMENT
- FC COMMUNICATION BUS WIRE SHALL BE 22 AWG. PLENUM RATED. TWISTED SHIELDED. 3 CONDUCTOR. WITH BLUE OUTER CASING. DESCRIPTED AS 22-03 OAS STR PLNM NEON BLU JK
- NAE'S CAN HAVE TWO TRUNKS EACH WITH 85 DEVICES.
 INSTALL A REPEATER AFTER 50 DEVICES. TRUNKS CAN NOT BE
 OVERLOADED. TO COORDINATE FINAL ROUTING WITH OWNERS
- ALL NON JCI BACNET DEVICES MUST BE SEPARATED ONTO THEIR OWN TRUNK(S) AS SHOWN. LIMIT BACNET TRUNKS TO
- 3.000
 THE DIAGRAM SHOWS PORTIONS OF THE WORK WHICH ARE TO BE PERFORMED BY "MU" AND BY "CONTRACTOR". THE CONTRACTOR SHALL BE RESPONSIBLE OF ROUTING THE FC BUS FROM THE BASEMENT CONTROLLER TO ALL THE VAV BOXES ON THE FIRST FLOOR. MU SHALL FURNISH AND INSTALL THE BUS IN THE OTHERAREAS. FC BUS SCHEMATIC DIAGRAM

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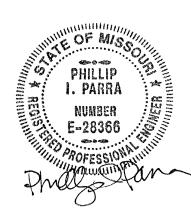
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MECHANICAL DIAGRAMS

AIR TERMINAL SCHEDULE

1.CONTRACTOR SHALL DETERMINE PROPER BORDER TYPE TO MATCH CEILING CONSTRUCTION.
2.REFER TO DRAWINGS FOR NECK SIZE. ALL BRANCH DUCTWORK TO AIR TERMINALS SHALL BE NECK SIZE UNLESS NOTED OTHERWISE.

TAG NAME	FACE SIZE (IN.) (NOTE 2)	TYPE	BORDER (NOTE 1)	MATERIAL	FINISH	VOLUME DAMPER REQUIRED	MANUFACTURER	MODEL	NOTES
SD-1	24x24	PANEL FACE	LAY-IN	STEEL	WHITE	NO	TITUS	OMNI	FLUSH FACE PANEL
SD-2	12x12	PANEL FACE	SURFACE MOUNT	STEEL	WHITE	NO	TITUS	OMNI	FLUSH FACE PANEL
SG-1	INLET +2	DOUBLE DEFLECTION	1 1/4"	STEEL	WHITE	NO	TITUS	300R	FRONT BLADES VERTICAL UNLESS NOTED OTHERWISE
RG-1	24x24	EGGCRATE GRILLE	LAY-IN	STEEL	WHITE	NO	TITUS	50F	
RG-1	24x12	EGGRATE GRILLE	LAY-IN	STEEL	WHITE	NO	TITUS	50F	
RG-3	INLET +2	35 DEGREE DEFLECTION	1 1/4"	STEEL	WHITE	NO	TITUS	350R	

TERMINAL AIR BOX SCHEDULE - SINGLE DUCT

1.NEITHER RADIATED NOR DISCHARGE SOUND LEVELS SHALL EXCEED NC 35 AT 1.5" INLET STATIC PRESSURE WHEN TESTED PER AHRI STANDARD 885-2008 USING 5/8" 20-LB DENSITY MINERAL FIBER CEILING TILE. 2.TOTAL AIR PRESSURE DROP OF TAB AND REHEAT COIL SHALL NOT EXCEED 0.50" WC. 3.REFER TO CONTROL DRAWINGS FOR DESCRIPTION OF CONTROL TYPE.

4.SENSOR TYPES: 1 - SENSOR ONLY, 2 - SENSOR WITH ADJUSTMENT, 3 - SENSOR WITH OVERRIDE, 4 - SENSOR WITH ADJUSTMENT AND OVERRIDE.
5.HEATING COIL IS BASED ON HEATING AIR FLOW. WATER PRESSURE DROP OF REHEAT COILS SHALL NOT EXCEED 5'. PROVIDE REHEAT COILS SEPARATE FROM BOXES IF REQUIRED TO MEET WATER PRESSURE DROP REQUIREMENTS. WHEN LAT °F, EWT °F, AND GPM VALUES ARE BLANK, HEATING COIL IS NOT REQUIRED FOR TAB.

6.HEATING COIL SELECTION SHALL BE BASED ON A FIXED LEAVING AIR TEMPERATURE AND VARIABLE FLOW (GPM). PROVIDE FINAL MAXIMUM FLOW RATE (GPM) TO TEST & BALANCE TERMPERATURE CONTROLS

7.BOX SHALL HAVE CO2 SENSOR TO CONTROL VENTILATION RATE. CO2 SETPOINT SHALL BE 750PPM

		CFM				TING CO	OIL (NOTE	S 5, 6)						
TAG NAME	COOLING MAX.	HEATING MAX.	OCCUPIED MIN	MIN.	EAT °F	LAT °F	EWT °F	MAX. GPM	MIN. INLET SIZE (IN.) DIA.	CONTROL TYPE (NOTE 3)	SENSOR TYPE (NOTE 4)	MANUFACTURER	MODEL (NOTES 1, 2)	NOTES
V101	800	360	360	145	55.0	80.0	180	0.7	10"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V103	450	300	300	90	55.0	80.0	180	0.5	8"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V104	880	880	880	145	55.0	80.0	180	1.6	10"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V105	550	550	250	90	55.0	80.0	180	1.0	8"	TAB-A	2	TITUS	DESV	NOTES 1, 2, 7
V106	400	400	200	90	55.0	80.0	180	0.7	8"	TAB-A	2	TITUS	DESV	NOTES 1, 2, 7
V107	375	215	215	45	55.0	80.0	180	0.4	6"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V108	120	75	75	45	55.0	80.0	180	0.1	6"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V109	240	150	150	45	55.0	80.0	180	0.3	6"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V110	600	270	110	90	55.0	80.0	180	0.5	8"	TAB-A	2	TITUS	DESV	NOTES 1, 2, 7
V111	275	210	210	45	55.0	80.0	180	0.4	6"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V112	800	360	360	145	55.0	80.0	180	0.6	8"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V206	500	310	310	90	55.0	80.0	180	0.6	8"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V207	325	150	150	45	55.0	80.0	180	0.3	6"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V208	1400	515	515	190	55.0	80.0	180	0.9	12"	TAB-A	2	TITUS	DESV	NOTES 1, 2, 7
V209	250	100	100	45	55.0	80.0	180	0.2	6"	TAB-A	2	TITUS	DESV	NOTES 1, 2, 7
V210	350	175	175	90	55.0	80.0	180	0.3	8"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V211	350	175	175	90	55.0	80.0	180	0.3	6"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V212	750	375	375	145	55.0	80.0	180	0.7	10"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V213	250	125	125	45	55.0	80.0	180	0.2	6"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V214	500	310	310	90	55.0	80.0	180	0.6	8"	TAB-A	2	TITUS	DESV	NOTES 1, 2
V215	250	140	140	45	55.0	80.0	180	0.3	6"	TAB-A	2	TITUS	DESV	NOTES 1, 2

NOTES: 1.REFER TO	CONTRO	L DRAWII	HEDUL NGS FOR DES	SCRIPTION (-								
						ELEMENT				СО	CONTROL			
TAG NAME	МВН	GPM	MAT'L	LENGTH FT.	PIPE SIZE	FIN HEIGHT	FIN WIDTH	NUMBER OF ROWS	FINS PER FOOT	AVERAGE WATER TEMP °F	TYPE (NOTE 1)	MANUFACTURER	MODEL	NOTES
RAD-3	1620	0.11	ALUMINUM	3' - 0"	3/4"	2 1/4"	2 3/4"	1	60	165	TAB-A	<varies></varies>	<varies></varies>	NOTES 1, 2
RAD-4	2160	0.14	ALUMINUM	4' - 0"	3/4"	2 1/4"	2 3/4"	1	60	165	TAB-A	VULCAN	VR01	NOTES 1, 2
RAD-5	2700	0.18	ALUMINUM	5' - 0"	3/4"	2 1/4"	2 3/4"	1	60	165	TAB-A	<varies></varies>	<varies></varies>	NOTES 1, 2

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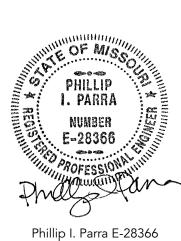
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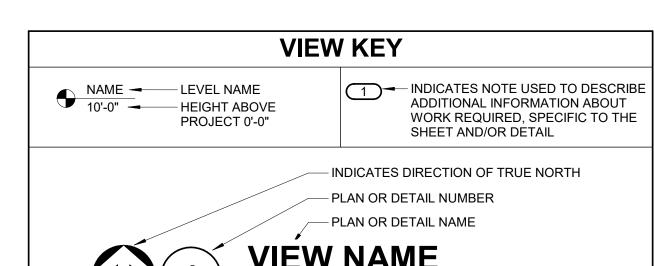


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MECHANICAL **SCHEDULES**



- INDICATES SIMILAR DETAIL REFERENCED — IN MULTIPLE LOCATIONS

LINE TYPE AND TAG KEY: NEW WORK BY THIS CONTRACTOR (WIDE LINE) ----- NEW

TYPICAL

V.C. VENTILATION CONTRACTOR

UNLESS OTHERWISE NOTED

---- EXISTING TO BE REMOVED (SHORT DASHED PATTERN) — — NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN) EXISTING TO REMAIN OR WORK BY OTHERS (NARROW LINE)

———— EXISTING ---- EXISTING TO BE REMOVED BY OTHERS (SHORT DASHED PATTERN) — — EXISTING UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN) HALFTONING DOES NOT MODIFY SCOPE.

'TAG'-E TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING UNDERLINED TAG INDICATES OBJECT IS IN-SCOPE. IF NEW, ADDITIONAL INFORMATION IS AVAILABLE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

ELECTRICAL ABBREVIATION KEY			
ABBR: DESCRIPTION:			
AFF	ABOVE FINISHED FLOOR		
С	CONDUIT		
GFI	GROUND FAULT INTERRUPTER		
N.C.	NORMALLY CLOSED		
NIC	NOT IN CONTRACT		
N.O.	NORMALLY OPEN		
SV	SOLENOID VALVE		

CONTRACTOR ABBREVIATION KEY		
ABBR:	DESCRIPTION:	
A.C.	ASBESTOS ABATEMENT CONTRACTOR	
A.V.C.	AUDIO/VISUAL CONTRACTOR	
C.C.	CIVIL CONTRACTOR	
C.M.	CONSTRUCTION MANAGER	
E.C.	ELECTRICAL CONTRACTOR	
F.P.C.	FIRE PROTECTION CONTRACTOR	
F.S.C.	FOOD SERVICE CONTRACTOR	
G.C.	GENERAL CONTRACTOR	
H.C.	HEATING CONTRACTOR	
M.C.	MECHANICAL CONTRACTOR	
N.C.C.	NURSE CALL CONTRACTOR	
P.C.	PLUMBING CONTRACTOR	
S.C.	SECURITY CONTRACTOR	
T.C.	TECHNOLOGY CONTRACTOR	
T.C.C.	TEMPERATURE CONTROLS CONTRACTOR	

	ELECTRICAL EQUIPMENT TAGS	
TAG:	DESCRIPTION:	RELATED SPECIFICATION
ATS-#	AUTOMATIC TRANSFER SWITCH, REFER TO TRANSFER SWITCH SCHEDULE	26 36 00
BAT-#	BATTERY RACK	26 32 13
<u>C-#</u>	GENERAL PURPOSE CONTACTOR	26 28 21
CR-#	CORD REEL	26 27 26
<u>CT-#</u>	CABLE TRAY	26 05 36
CUP-#	CUSTOM UTILITY PEDESTAL	26 27 16
DIM-#	DC DIMMING PANEL	26 09 33
<u>DP-#</u>	DISTRIBUTION PANEL	26 24 16
<u>DR-#</u>	DIMMING RACK	26 09 33
<u>DT-#</u>	GENERATOR DAY TANK	26 32 13
DTR-#	TRANSFORMER - DISTRIBUTION TYPE	26 12 19
	REFER TO TRANSFORMER SCHEDULE	26 12 13 26 12 16
		26 12 21
EVCS-#	ELECTRICAL VEHICLE CHARGING STATION	26 27 29
GCC-#	TEMP. GENERATOR/LOAD BANK CONNECTION CABINET	26 32 13
GCP-#	GENERATOR CONTROL PANEL	26 32 13
GEN-#	GENERATOR	26 32 13
GPS-#	GENERATOR PARALLELING AND DISTRIBUTION SWITCHBOARD	26 24 14 26 13 35
GANN-#	GENERATOR REMOTE RADIATOR	26 32 13
HH-#	HANDHOLE	26 05 33
HT-#	HEAT TAPE	26 05 17
<u>INV-#</u>	LIGHTING INVERTER	26 52 00
<u>M-#</u>	METER DISTRIBUTION CENTER	26 20 00
MC-#	EXTERIOR MOUNTED METERING CABINET	26 20 00
MCC-#	MOTOR CONTROL CENTER, REFER TO MOTOR CONTROL SCHEDULE	26 14 19
<u>MH-#</u>	MANHOLE	26 05 37
MPC-#	PACKAGED POWER CENTER	26 24 23
MTS-#	MANUAL TRANSFER SWITCH, REFER TO TRANSFER SWITCH SCHEDULE	26 36 00
MVSG-#	MEDIUM VOLTAGE SWITCHGEAR	26 13 13
		26 13 34
<u>MX-#</u>	MANUAL SWITCH, REFER TO DISCONNECT AND STARTER SCHEDULE	26 24 19
PDU-#	POWER DISTRIBUTION UNIT	26 26 00
<u>PS-#</u>	PAD-MOUNT MEDIUM VOLTAGE SWITCH RELAY	26 13 15
R-#	REMOTE ANNUNCIATOR FOR ATS	26 09 39 26 36 00
RFFS-#	REMOTE ANNONCIATOR FOR ATS	26 32 13
SB-#	SWITCHBOARD	26 24 13
SC-#	SECTIONALIZING CABINET	26 13 14
SG-#	SWITCHGEAR	26 23 00
<u>SMP-#</u>	SNOW MELT CONTROL PANEL	26 05 17
SMS-#	PAVEMENT MOUNTED DEICING CONTROLLER	26 05 17
SPD-#	SURGE PROTECTION DEVICE	26 43 00
UD-#	UNDERFLOOR DUCT - TRENCH DUCT - CELLULAR FLOOR DUCT	26 05 38
UPS-#	UNINTERRUPTIBLE POWER SUPPLY	26 33 53
<u>US-#</u>	UNIT SUBSTATION	26 11 00
VFD-#	VARIABLE FREQUENCY DRIVE - REFER TO VFD SCHEDULE	26 29 23
<u>WD-#</u>	WALL DUCT	26 05 38

ELECTRICAL SYMBOL LIST				
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:	
	FACP-#	28 31 00	FIRE ALARM CONTROL PANEL	
	<u>FAA-#</u>	28 31 00	FIRE ALARM ANNUNCIATOR	
(S)# (F)#	<u>FA-120</u>	28 31 00	FIRE ALARM SMOKE DETECTOR, CEILING OR WALL MOUNT	
Д			BLANK - PHOTOELECTRIC AT = ATTIC (LOCATED IN) BR = BEAM RECEIVER BT = BEAM TRANSMITTER CO = COMBINATION SMOKE / CARBON MONOXIDE COH = COMBINATION SMOKE / CARBON MONOXIDE / HEAT COS = COMBINATION SMOKE / CARBON MONOXIDE / STROBE H = COMBINATION SMOKE / HEAT DETECTOR ION = IONIZATION TYPE ID = IN DUCT DETECTOR SA = STAND ALONE WITH SOUNDER SB = SOUNDER BASE SV = STAND ALONE WITH SOUNDER AND 177 CANDELA STROBE	
<u>\$</u>	<u>FA-122</u>	28 31 00	FIRE ALARM DUCT SMOKE DETECTOR	
E	FA-130	28 31 00	FIRE ALARM MANUAL PULL STATION	
FT	<u>FA-131</u>	28 31 00	FIRE ALARM MANUAL PULL STATION W/ COVER	
рŞ	<u>FA-200</u>	28 31 00	FIRE ALARM VISUAL ALARM DEVICE, CEILING OR WALL MOUNT	
			# = CANDELA RATING. CD = CANDELA RATING SELECTED BY NICET DESIGNER	
	<u>FA-210</u>	28 31 00	AUDIO HORN/CHIME ALARM DEVICE, CEILING OR WALL MOUNTED	
	<u>FA-211</u>	28 31 00	COMBINATION AUDIO HORN/CHIME AND VISUAL ALARM DEVICE, CEILING OR WALL MOUNTED	
			# = CANDELA RATING CD = CANDELA RATING SELECTED BY NICET DESIGNER	
TS	<u>FA-261</u>	28 31 00	FIRE ALARM TAMPER SWITCH TO MONITOR SPRINKLER SYSTEM	
			BLANK = REFER TO PLANS PIV = POST INDICATOR VALVE	
ММ	<u>FA-160</u>	28 31 00	FIRE ALARM ADDRESSABLE MONITOR MODULE	
			BLANK = REFER TO PLANS KB = KNOX BOX MONITOR	
СМ	<u>FA-161</u>	28 31 00	FIRE ALARM ADDRESSABLE CONTROL MODULE	
			BLANK = REFER TO PLANS LC = LIGHTING CONTROL OVERRIDE DH = DOOR HOLD OPEN PD = HOLD OPEN OVERRIDE	
	<u>FA-271</u>	28 31 00	FIRE ALARM DOOR HOLD DEVICE (BY OTHERS, WIRED BY E.C.)	
			DH - ELECTROMAGNETIC DOOR HOLD DEVICE	

PD - HOLD OPEN OVERRIDE

CONNECTION 28 31 00 FIRE ALARM DOOR HOLD DEVICE

	ELECTRICAL SYMBOL LIST			
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:	
	<u>ECONN</u>	26 05 33	ELECTRICAL CONNECTION	
<u> </u>	<u>JB</u>	26 05 33	JUNCTION BOX	
	<u>FB-#</u> or <u>PT-#</u>	26 27 26	FLOOR BOX or POKE THROUGH	
RI ▼	<u>RI-TECH</u>	26 05 33	TECHNOLOGY OUTLET ROUGH-IN, OUTLET SHALL HAVE 2 DATA PORTS UNLESS NOTED OTHERWISE	
₽ RI	RI-TECH-C	26 05 33	TECHNOLOGY ROUGH-IN, CEILING	
W/RI	RI-TECH-W	26 05 33	TECHNOLOGY ROUGH-IN, WALL PHONE	
WAP	RI-TECH-WAP	26 05 33	WIRELESS ACCESS POINT, CEILING	
R1	RI-TECH-C	26 05 33	CARD ACCESS READER (WALL), ROUGH-IN	
РВ	<u>PB</u>	26 09 16	AUTOMATIC DOOR PUSHBUTTON OPERATOR	
HD	<u>HD</u>	ARCH	HAND DRYER	
	PANEL '###'	26 24 16	PANELBOARD - RECESS MOUNT	
	PANEL '###'	26 24 16	PANELBOARD - SURFACE MOUNT	

ELECTRICAL SYMBOL LIST				
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:	
=	REC-DUP	26 27 26	DUPLEX RECEPTACLE, 125V	
₩	REC-DUP-GFI	26 27 26	DUPLEX GFI RECEPTACLE, 125V	
Θ	REC-SIM-520R	26 27 26	SIMPLEX RECEPTACLE, 125V	
-	REC-SIM-530R	26 27 26	RECEPTACLE, 125V	
-	REC-SIM-620R	26 27 26	RECEPTACLE, 6-20R, 250V	
	REC-SIM-630R	26 27 26	RECEPTACLE, 6-30R, 250V	
€>	REC-TAMP	26 27 26	DUPLEX RECEPTACLE, TAMPER RESISTANT, 12	
=⊕ >	REC-TAMP-QUAD	26 27 26	QUAD RECEPTACLE, TAMPER RESISTANT, 125\	
=	REC-QUAD	26 27 26	QUAD RECEPTACLE, 125V	
≠	REC-QUAD-GFI	26 27 26	QUAD GFI RECEPTACLE, 125V	

ELECTRICAL SYMBOL LIST

SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:
S	<u>SW-1P</u>	26 09 33	SWITCH - SINGLE POLE
S_3	<u>SW-3W</u>	26 09 33	SWITCH - THREE WAY
S ₄	SW-4W	26 09 33	SWITCH - FOUR WAY
D_L	SW-D-LVM	26 09 33	DIMMER - LOW VOLTAGE, 0-10V
D _D	SW-D-LED	26 09 33	DIMMER - LED
D _O	SW-OD	26 09 33	DIMMER - WALL DIMMER OCCUPANCY SENSOR
R	<u>SW-LS-R</u>	26 09 33	WATTSTOPPER DIGITAL LIGHTING MANAGEMENT ROOM CONTROLLER. # - REFERS TO NUMBER OF RELAYS D - REFERS TO 0-10V DIMMING CONTROLLER
PC	SW-LS-PC	26 09 33	PHOTOCELL
⊚ _D	SW-OC-D	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY
⊚ _{P2}	SW-OC-P2	26 09 33	OCCUPANCY SENSOR - PASSIVE INFRARED 100 DEGREE COVERAGE
OC D	SW-OC-D-W	26 09 33	OCCUPANCY SENSOR - DUAL TECHNOLOGY - WALL MOUNTED
\$ _O	SW-OC-P-O	26 09 33	SWITCH - OCCUPANCY SENSOR WALL SWITCH
SW	<u>SW</u>	26 09 33	WALL CONTROL STATION
TC	<u>TC-#</u>	26 09 33	TIME SWITCH
#B	SW-DCS	26 09 33	DIMMER CONTROL STATION # - INDICATES NUMBER OF ZONES CONTROLLED
S _{LV}	SW-LV	26 09 33	CENTRAL CONTROL - STATION
	LCS-#	26 09 33	LIGHTING CONTROL STATION
ALCR	ALCR20	26 09 33	AUTOMATIC LOAD CONTROL RELAY

	ELECTRICAL SYMBOL LIST				
SYMBOL:	TAG:	SPEC SECTION:	DESCRIPTION:		
			LINEAR LUMINAIRES		
			TROFFER		
			WALL SCONCE LUMINAIRE		
	REFER TO LU SCHED		DOWNLIGHT LUMINAIRE		
			SINGLE FACE EXIT SIGN		
			DOUBLE FACE EXIT SIGN		
4			EMERGENCY UNIT		

	LUMINAIRE SYMBOL KEY				
SYMBOL:	DESCRIPTION:				
	NORMAL BRANCH LUMINAIRE				
D	EMERGENCY LUMINAIRE UNSWITCHED FOR NIGHT LIGHT, UNLESS NOTED 'SE'				

ELECTRICAL LIGHTING DEMOLITION NOTES:

- 1. THE ELECTRICAL LIGHTING DRAWINGS INDICATE EXISTING ELECTRICAL ITEMS TO BE REMOVED. THE DRAWINGS ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED AND DO NOT INDICATE EVERY BOX, CONDUIT, OR WIRE THAT MUST BE REMOVED. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING
- CONDITIONS. 2. EQUIPMENT REMOVAL IN CERTAIN LOCATIONS MAY REQUIRE THE INSTALLATION OF A JUNCTION BOX TO RECONNECT CIRCUITS THAT REMAIN IN OPERATION. EXTEND CONDUIT AND WIRING AS REQUIRED TO MAINTAIN POWER TO REMAINING EQUIPMENT.
- 3. BALLASTS MANUFACTURED PRIOR TO 1980 CONTAIN PCBs AND SHALL BE DISPOSED OF BY A FEDERAL OR STATE E.P.A. APPROVED METHOD AND IN ACCORDANCE WITH
- 4. HID AND FLUORESCENT LAMPS CONTAIN MERCURY AND SHALL BE DISPOSED OF BY A
- FEDERAL OR STATE E.P.A. APPROVED METHOD AND IN ACCORDANCE WITH SPECIFICATIONS.
- 5. REUSE EXISTING CONDUIT, CIRCUITS AND LIGHTING CONTROL WHERE POSSIBLE. PROVIDE NEW CONDUIT AND WIRE WHERE SHOWN, MISSING OR REQUIRED TO INSTALL THE NEW
- 6. WHERE REMOVED EXTERIOR LIGHT FIXTURE IS NOT BEING REPLACED. PROVIDE WATERPROOF GROMMETS, SEALS OR PLUGS TO COVER EXISTING HOLES IN POLES. 7. VERIFY MANUFACTURERS INSTALLATION GUIDELINES WITH EXISTING FIELD CONDITIONS PRIOR TO BIDDING AND ORDERING NEW LIGHT FIXTURES AND INSTALLATION MATERIAL.
- 8. MATCH EXISTING PAINTED SURFACES. WHERE REPLACED LUMINAIRE DOES NOT FULLY COVER EXISTING JUNCTION BOX OR PAINTED SURFACE. PROVIDE CUSTOM BACK PLATE WHERE NECESSARY TO COVER ANY FIELD CONDITIONS THAT WOULD ALLOW INTRUSION OF WATER AND CAULK WHERE NECESSARY.
- NECESSARY TO MEET EXISTING CONTROL SEQUENCES. VERIFY WITH OWNER ANY 10. VERIFY WITH EXISTING CONDITIONS PRIOR TO REMOVING ALL FIXTURES WITH A QUARTZ

9. COORDINATE EXISTING LIGHTING CONTROL AND REPROGRAM PHOTOCELLS AS

RESTRIKE. IF THE QUARTZ RESTRIKE IS A SEPARATE CIRCUIT, NOTIFY THE ENGINEERING IMMEDIATELY.

- **ELECTRICAL RENOVATION NOTES:** THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, AND SYSTEMS. 1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD
- SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING. 2. NOT ALL EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. VERIFY EXISTING
- CONDITIONS AND REPORT ANY CONFLICTS WITH NEW WORK BEFORE STARTING WORK. 3. FIELD VERIFY THE AVAILABLE CLEARANCES FOR CABLE TRAY, BUSWAY AND CONDUITS BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS.
- 4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF THEIR WORK AND SHALL NOTIFY THE GENERAL CONTRACTOR AND ARCHITECT/ENGINEER PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO THEIR AREA OF WORK
- 5. EACH CONTRACTOR SHALL CUT AND PATCH ROOFS, WALLS, AND FLOORS ASSOCIATED WITH THEIR WORK. 6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL

CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO

Y. WHERE EXISTING ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.

ELECTRICAL GENERAL NOTES:

- 1. "NL" INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT. 2. "SE" INDICATES LUMINAIRE IS SWITCHED/CONTROLLED DURING NORMAL OPERATION AND OPERATES FROM EMERGENCY BATTERY (EXTEND UNSWITCHED CIRCUIT LEG TO BATTERY) UPON LOSS OF POWER.
- EMERGENCY CIRCUIT
- 5. { Z###} INDICATES THE LIGHTING ZONES FOR THE SPACE. PROVIDE SEPARATE CONTROL OF TOGETHER WITHIN THE SAME PROGRAMMED SCENE. REFER TO SHEET E600. { B#} PUSH BUTTON REFERS TO SCENE QUANTITY. CONTROL STATION SHALL BE CAPABLE OF [RAISE/LOWER AND] SWITCHING ON/OFF FOR MULTIPLE SCENES AS INDICATED ON SHEETS AND THE LIGHTING SEQUENCE OF OPERATIONS (L##). COORDINATE QUANTITIES OF
- SHEET E600.

<u>F1</u> = FIXTURE TAG 1 = CIRCUIT NUMBER

NL = SUBSCRIPT (IF APPLICABLE) Z = ZONE DESIGNATION

*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS

DEVICE A = MOUNTING (IF APPLICABLE)
1 = CIRCUIT NUMBER

*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: A / 1

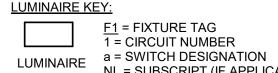
ELECTRICAL MOUNTING SUBSCRIPT KEY:

- MOUNT AT CEILING
- MOUNT IN CASEWORK MOUNT IN MODULAR FURNITURE
- EWC ELECTRIC WATER COOLER
- 3. EMERGENCY BRANCH WIRING FOR FEEDERS AND BRANCH CIRCUITS SHALL BE ROUTED IN SEPARATE RACEWAY, JUNCTION BOXES, PULL BOXES, AND CABINETS. WIRING FOR EACH BRANCH SHALL BE INDEPENDENT FROM OTHER BRANCHES, INCLUDING THE NORMAL
- 4. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE
- 5. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED. MOUNT EXTERIOR LOCATED RECEPTACLES WITH WHILE-IN-USE COVERS AT +20" FROM FINISHED
- GRADE (CENTER DIMENSIONS) TO MAINTAIN INSTALLATION ADA COMPLIANCE. 6. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF
- 8. MOUNT ALL FIRE ALARM PULL STATIONS AT +42" FROM FLOOR (CENTERLINE DIMENSION) EXCEPT WHERE OTHERWISE NOTED. 9. INSTALL ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES AT 90" ABOVE FINISHED FLOOR OR 6" BELOW THE CEILING, WHICHEVER IS LOWER, EXCEPT WHERE OTHERWISE
- BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE. 11. CONTRACTOR SHALL VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT
- PRIOR TO MAKING THE ACTUAL ELECTRICAL INSTALLATION, THIS CONTRACTOR SHALL ADJUST RECEPTACLES, OUTLETS, OR CONNECTION LOCATIONS TO ACCOMMODATE
- OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT
- 13. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
- ANY WELDERS ASSIGNED TO THE JOB. 15. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO THE WALLS, FLOORS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS
- 16. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING
- MOUNTED DEVICES, OTHER THAN SPRINKLERS. 17. ELECTRICAL IDENTIFICATION. REFER TO SPECIFICATION SECTION 26 05 53 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.

- 3. SHADED LUMINAIRE OR DEVICE INDICATES LUMINAIRE OR DEVICE IS CONNECTED TO AN
- 4. REFER TO SHEET E600 FOR LUMINAIRE SCHEDULE. EACH CONTROLLED ZONE. LUMINAIRES ASSOCIATED WITH THE SAME ZONE SHALL OPERATE

BUTTONS FOR CONTROL STATIONS WITH LIGHTING CONTROL MANUFACTURER. REFER TO

- 7. { L##} DENOTES THE LIGHTING SEQUENCE OF OPERATIONS FOR THIS SPACE. REFER TO SHEET E600.
- 8. VACANCY/OCCUPANCY SENSOR LAYOUT: SENSORS ARE SHOWN ON THE PLANS FOR DESIGN INTENT AND MAY NOT REPRESENT EVERY DEVICE. PROVIDE MANUFACTURER SPECIFIC FLOOR PLAN LAYOUTS SHOWING LOCATION, ORIENTATION, AND COVERAGE AREA OF EACH CONTROL DEVICE, SENSOR, AND CONTROLLER/INTERFACE, AREAS REQUIRING MULTIPLE SENSOR DEVICES FOR APPROPRIATE COVERAGE, SUBMIT SPECIFIC MANUFACTURER-APPROVED SENSOR LAYOUT AS AN OVERLAY DIRECTLY ON THE PROJECT DRAWINGS, EITHER IN PRINT OR APPROVED ELECTRONIC FORM.



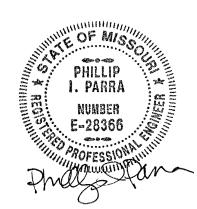
INFORMATION. EX: F1 / 1 / a / NL

DEVICE KEY:

- MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH
- MOUNT ORIENTED HORIZONTALLY
- MOUNT IN SURFACE RACEWAY

ELECTRICAL INSTALLATION NOTES:

- 1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION. 2. CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH
- DIMENSION), EXCEPT WHERE OTHERWISE NOTED. DEVICES MAY BE SURFACE MOUNTED
- WHEN CONDUIT IS SPECIFIED EXPOSED.
- THROUGH-PENETRATION FIRESTOPS.
- 7. CONNECTION FOR ELECTRIC WATER COOLERS (EWC) SHALL BE A JUNCTION BOX CONCEALED BEHIND WATER COOLER ACCESS PLATE OR BE A GFI RECEPTACLE LOCATED DIRECTLY BELOW AND CENTERED ON EWC. CONTRACTOR SHALL VERIFY TYPE OF EWC TO
- NOTED. HEIGHT SHALL BE MEASURED TO THE TOP OF THE DEVICE. 10. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES, SPRINKLER, AND CEILING DIFFUSERS. CENTER ALL DEVICES IN CEILING TILE PATTERN. SMOKE DETECTORS AND OCCUPANCY/VACANCY SENSORS SHALL
- LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS.
- FURNITURE AND/OR EQUIPMENT. 12. ELECTRICAL AND TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF,
- SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER
- 14. ALL WELDING SHALL BE ACCORDING TO AMERICAN WELDING SOCIETY STANDARDS. CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER CERTIFICATES QUALIFYING EACH WELDER, PRIOR TO START OF WORK. THE ARCHITECT/ENGINEER RESERVES THE RIGHT TO REQUIRE QUALIFYING DEMONSTRATION, AT THE CONTRACTOR'S EXPENSE, OF
- RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND



INTERNATIONAL ARCHITECTS ATELIER

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MISSOURI STATE CERTIFICATE OF AUTHORITY #000582

FOR THE CURATORS OF

LOWRY HALL

FLOOR

RENOVATE FIRST

PROJECT NUMBER: CP220811

MISSOURI

ISSUED FOR BID

513 S 9th St (at Lowry Mall)

Columbia, MO 65211

United States

DATE:

SEAL:

PROJ. NO.:

DESIGNED BY:

DRAWN BY:

CHECKED BY:

APPROVED BY:

THE UNIVERSITY OF

11/14/2022

CP220811

THE UNIVERSITY OF MISSOURI

MEP CONSULTANT

1600 BALTIMORE

PH: 816.842.837

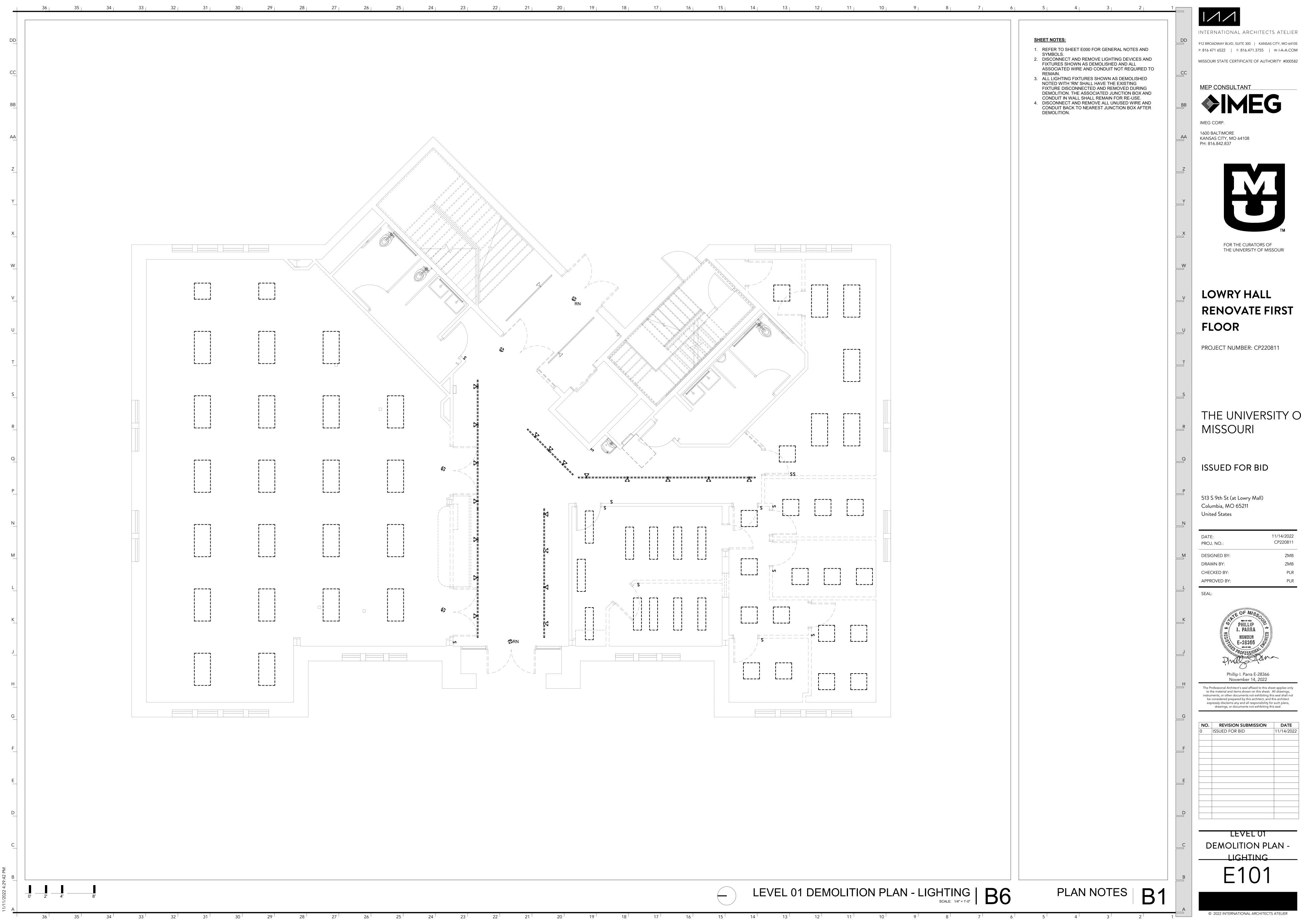
KANSAS CITY, MO 64108

Phillip I. Parra E-28366 November 14, 2022

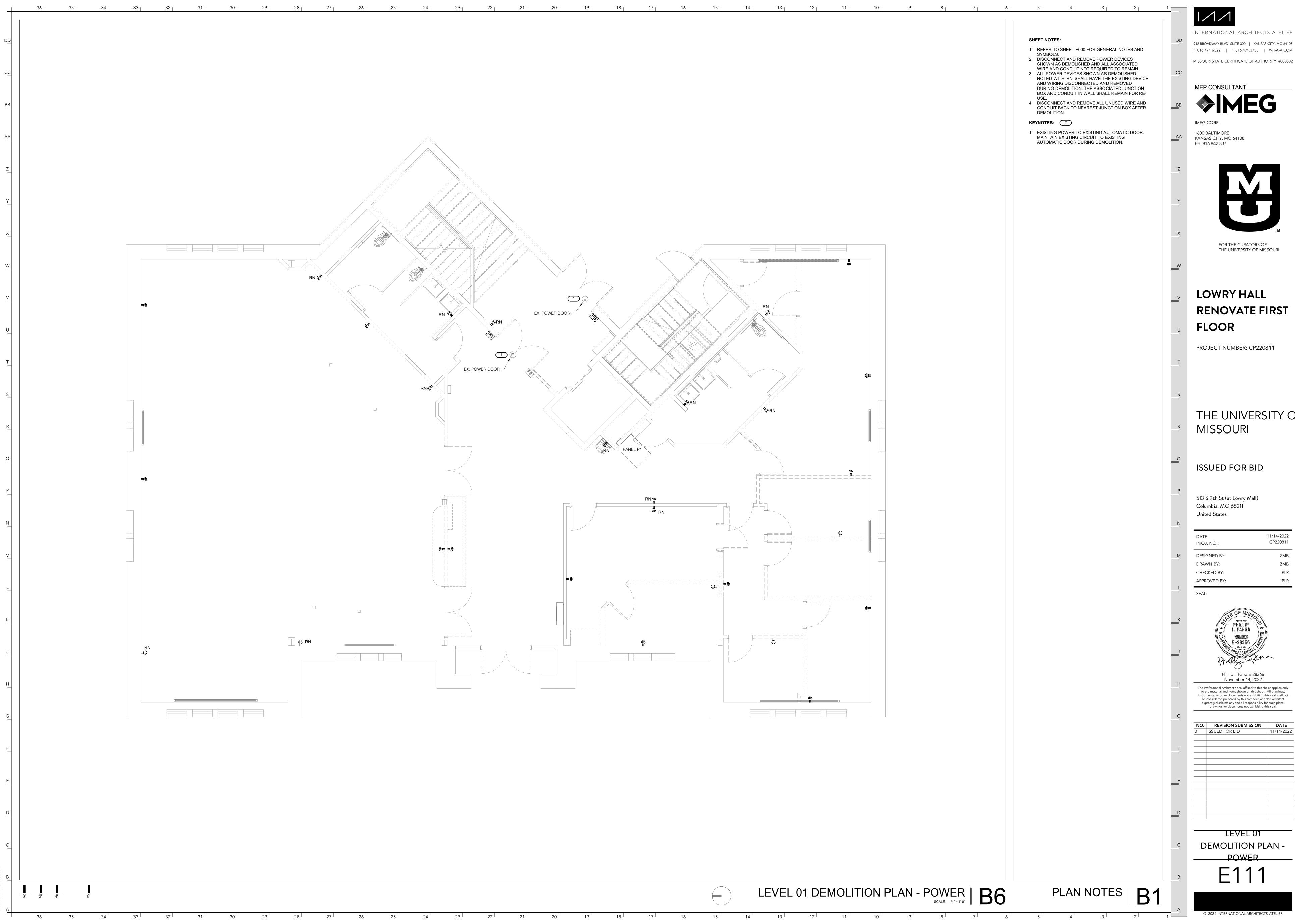
The Professional Architect's seal affixed to this sheet applies only to the material and items shown on this sheet. All drawings, be considered prepared by this architect, and this architect expressly disclaims any and all responsibility for such plans, drawings, or documents not exhibiting this seal.

NO. REVISION SUBMISSION ISSUED FOR BID

> **ELECTRICAL** COVERSHEET



DATE: PROJ. NO.:	11/14/2022 CP220811
DESIGNED BY:	ZMB
DRAWN BY:	ZMB
CHECKED BY:	PLR
APPROVED BY:	PLR



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FOR THE CURATORS OF

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THE UNIVERSITY OF

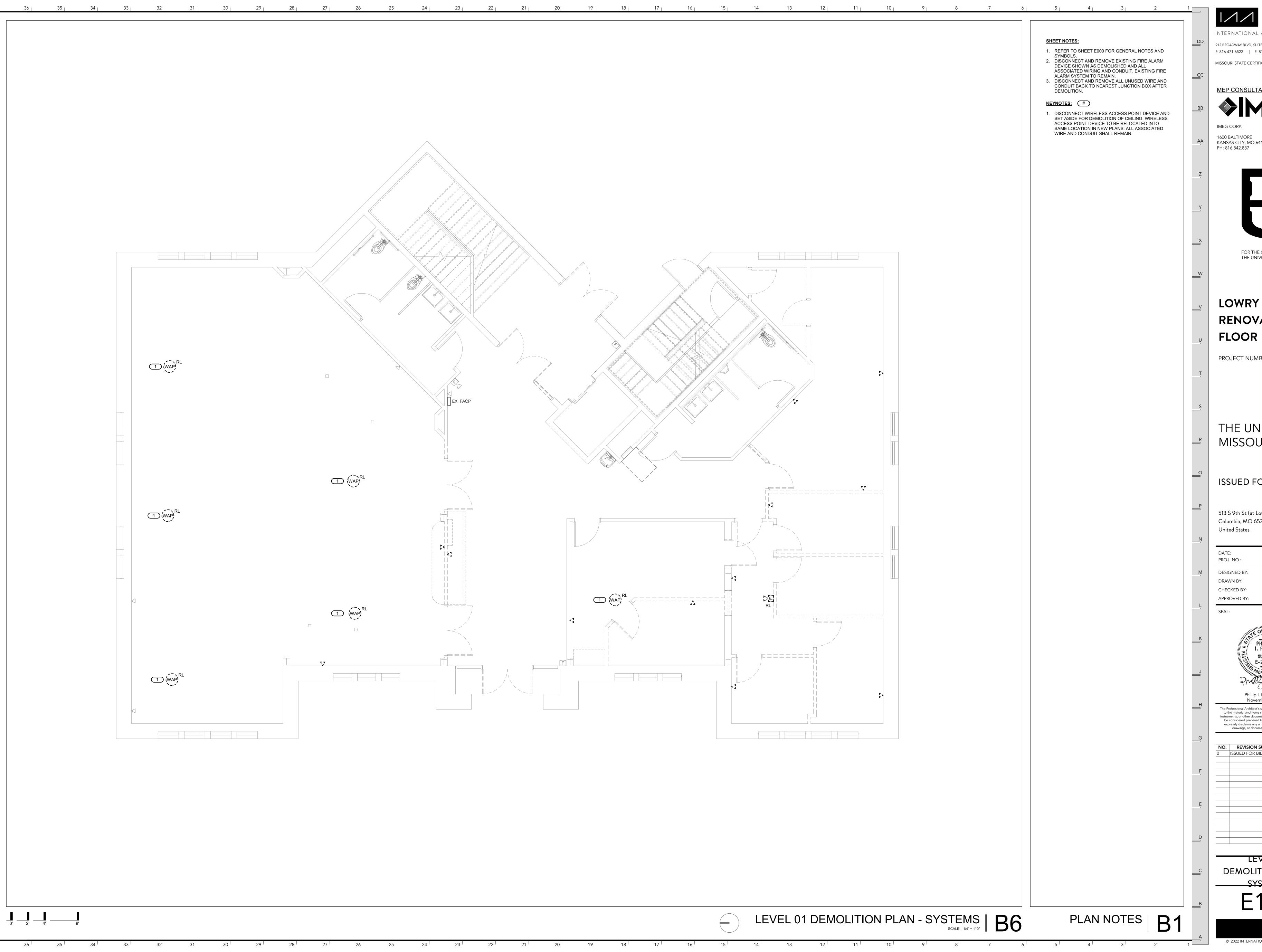
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DEMOLITION PLAN -



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MEP CONSULTANT

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FOR THE CURATORS OF THE UNIVERSITY OF MISSOURI

LOWRY HALL RENOVATE FIRST

PROJECT NUMBER: CP220811

THE UNIVERSITY OF MISSOURI

ISSUED FOR BID

513 S 9th St (at Lowry Mall) Columbia, MO 65211

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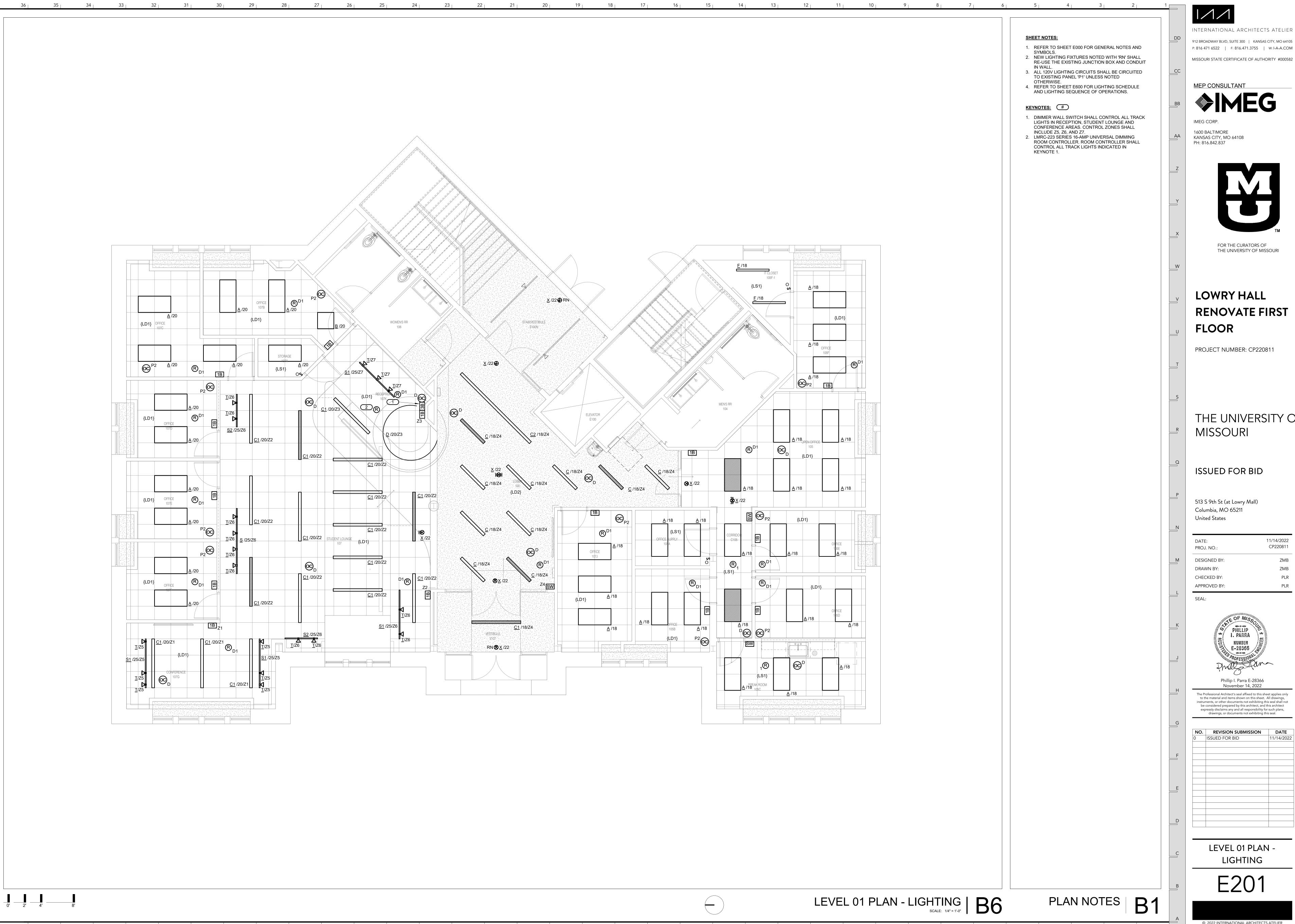
Phillip I. Parra E-28366 November 14, 2022

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LEVEL 01 **DEMOLITION PLAN -**

SYSTEMS



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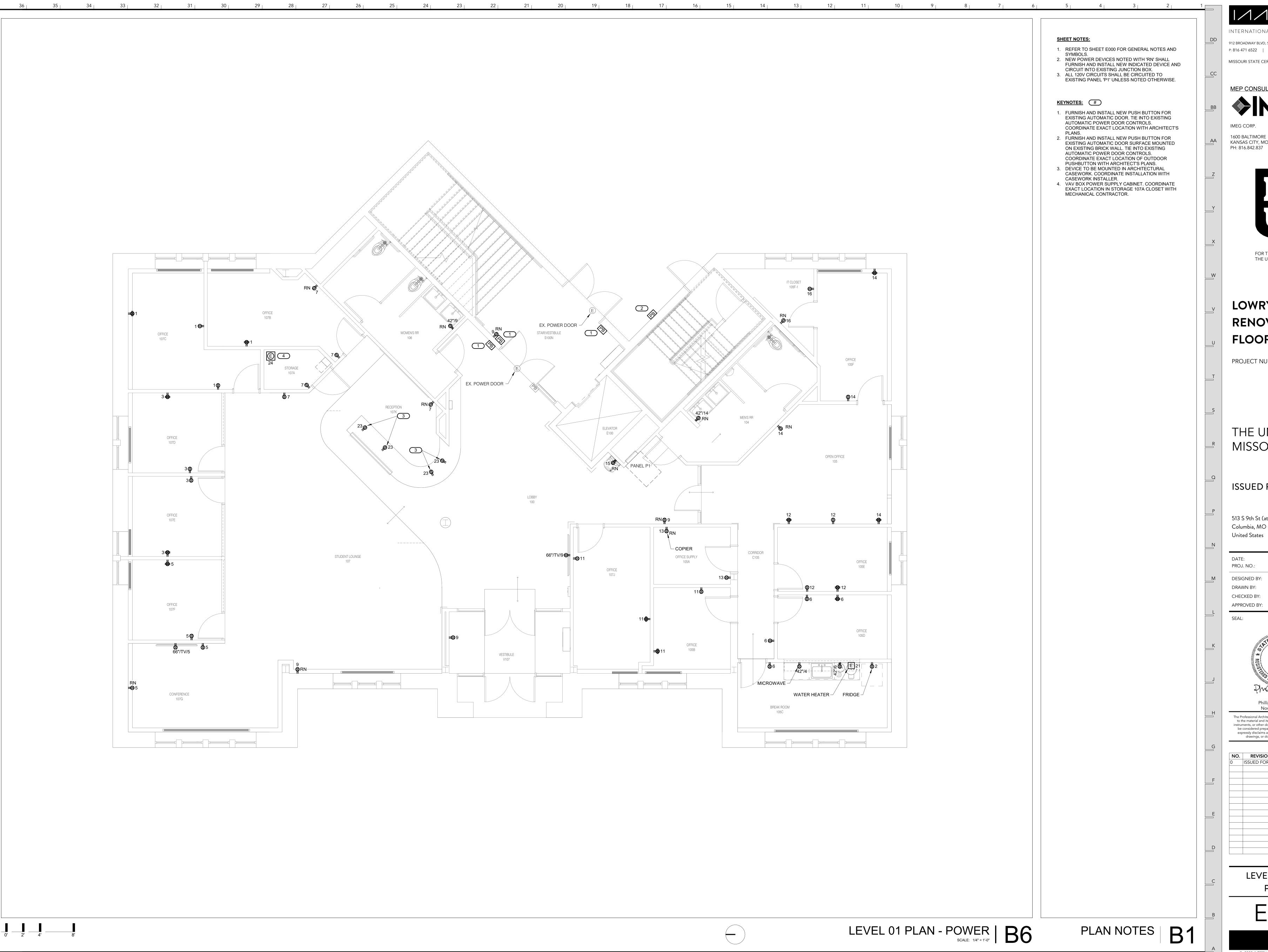


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LEVEL 01 PLAN -LIGHTING



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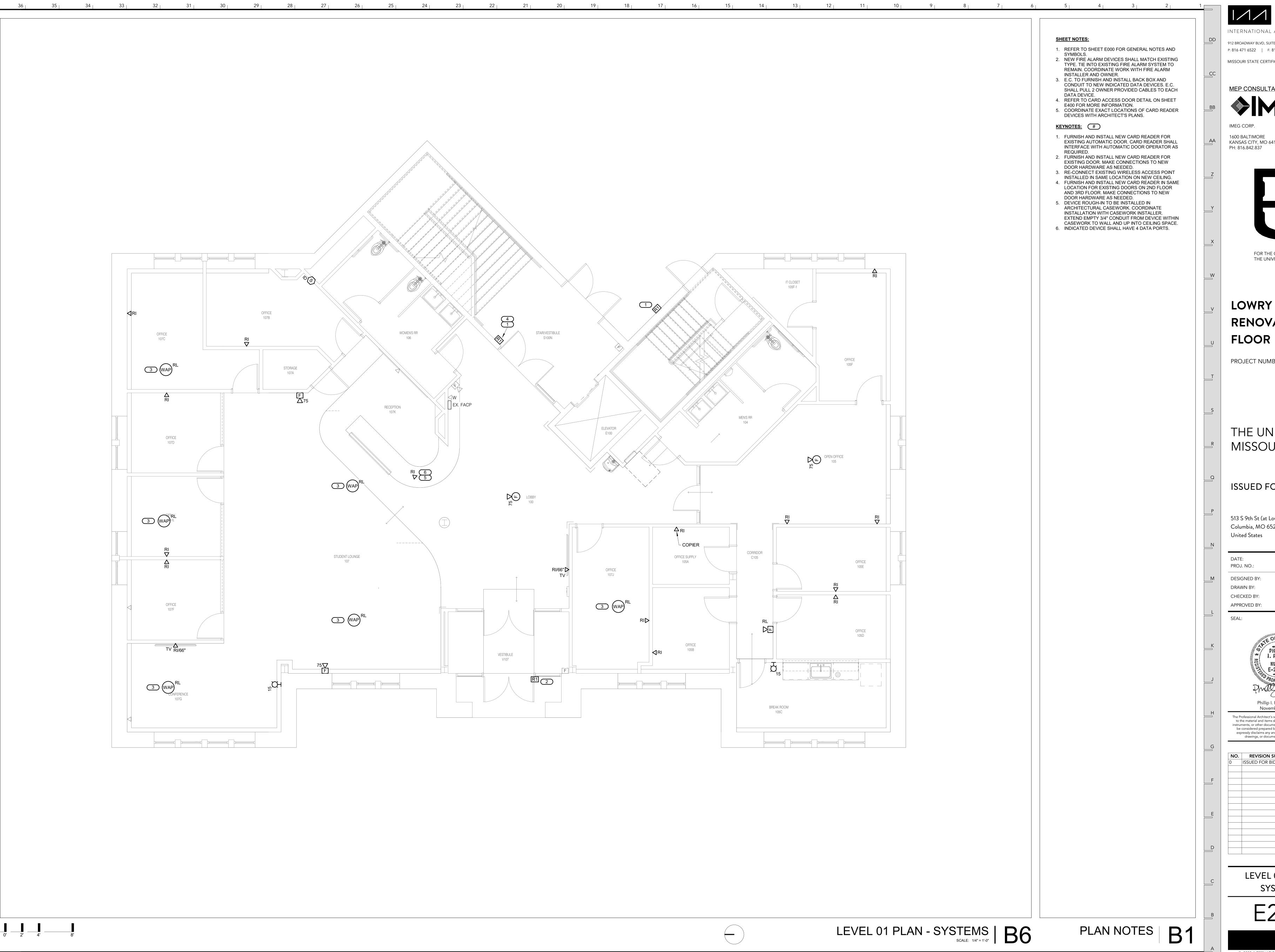


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LEVEL 01 PLAN -POWER



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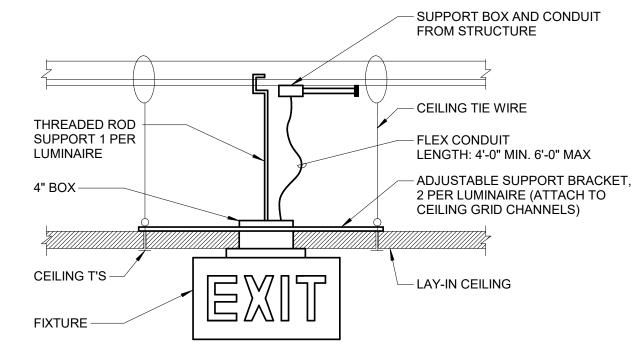


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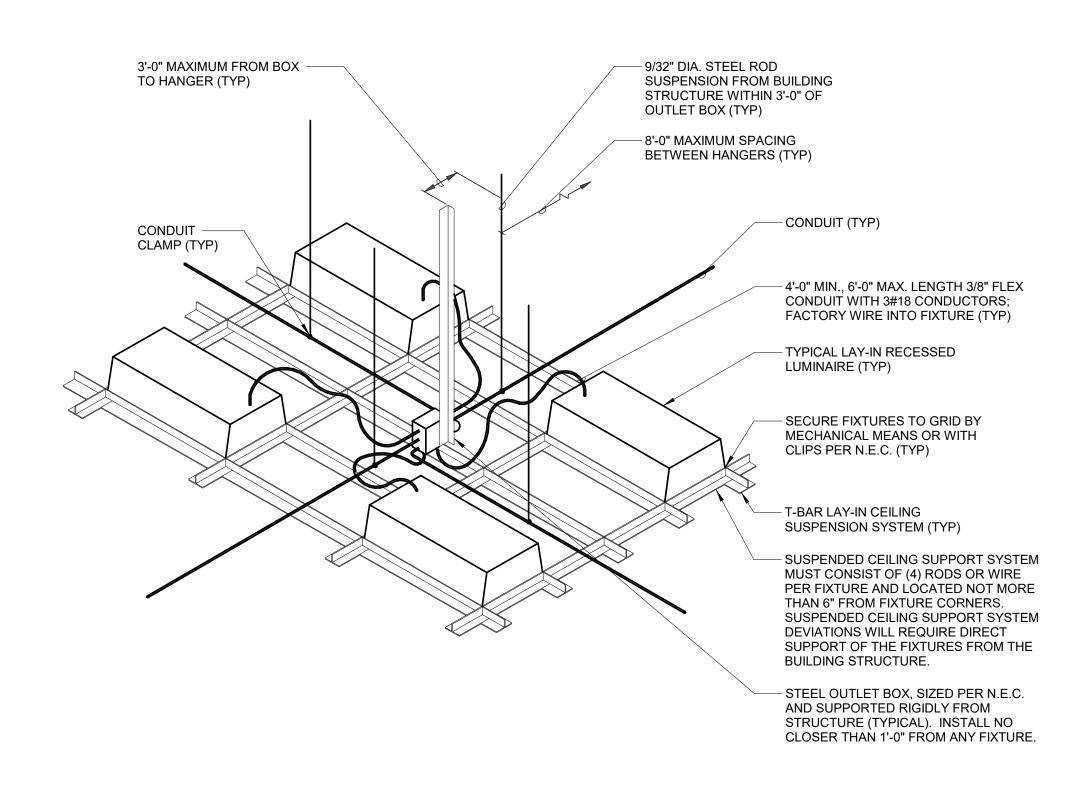
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LEVEL 01 PLAN -SYSTEMS



6 EXIT SIGN MOUNTING DETAIL NO SCALE

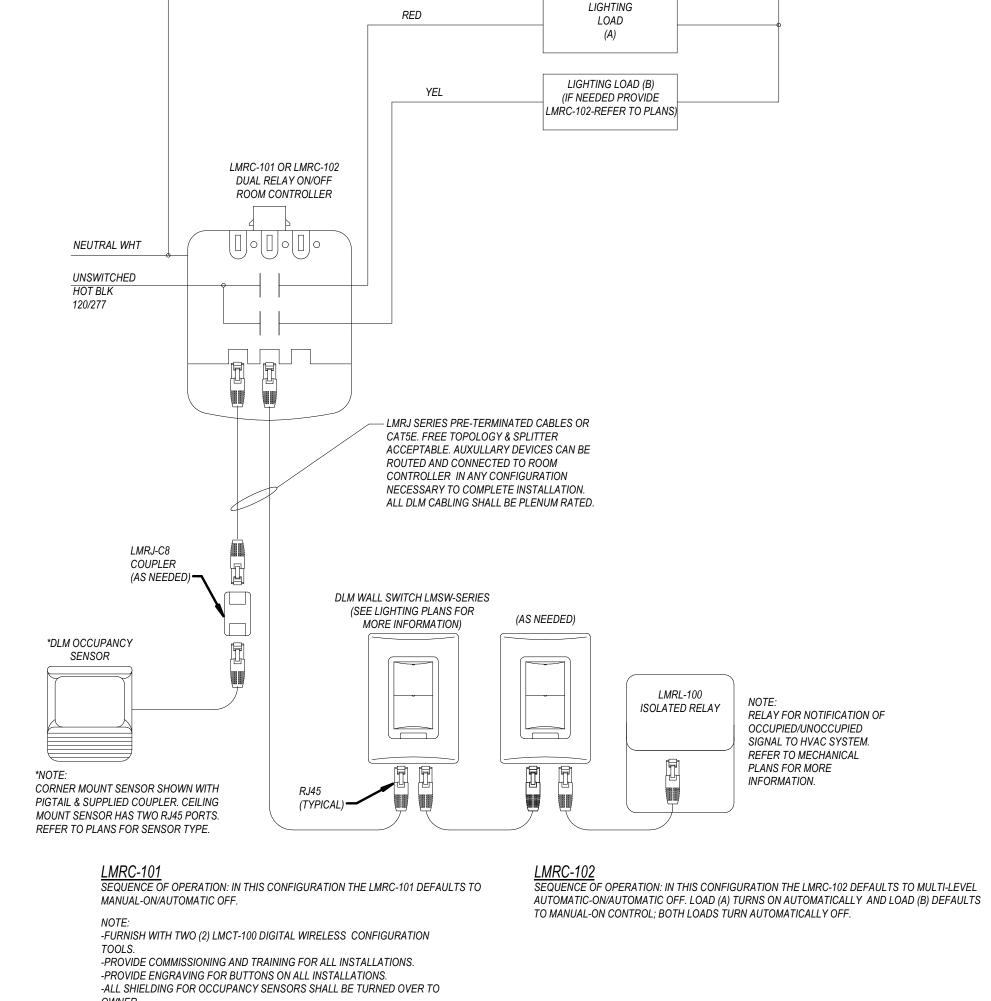


NOTES:

1. DO NOT SUPPORT CONDUIT OR BOXES FROM CEILING GRID HANGERS.

5 RECESSED LUMINAIRE DETAIL (GRID CLIPS) NO SCALE

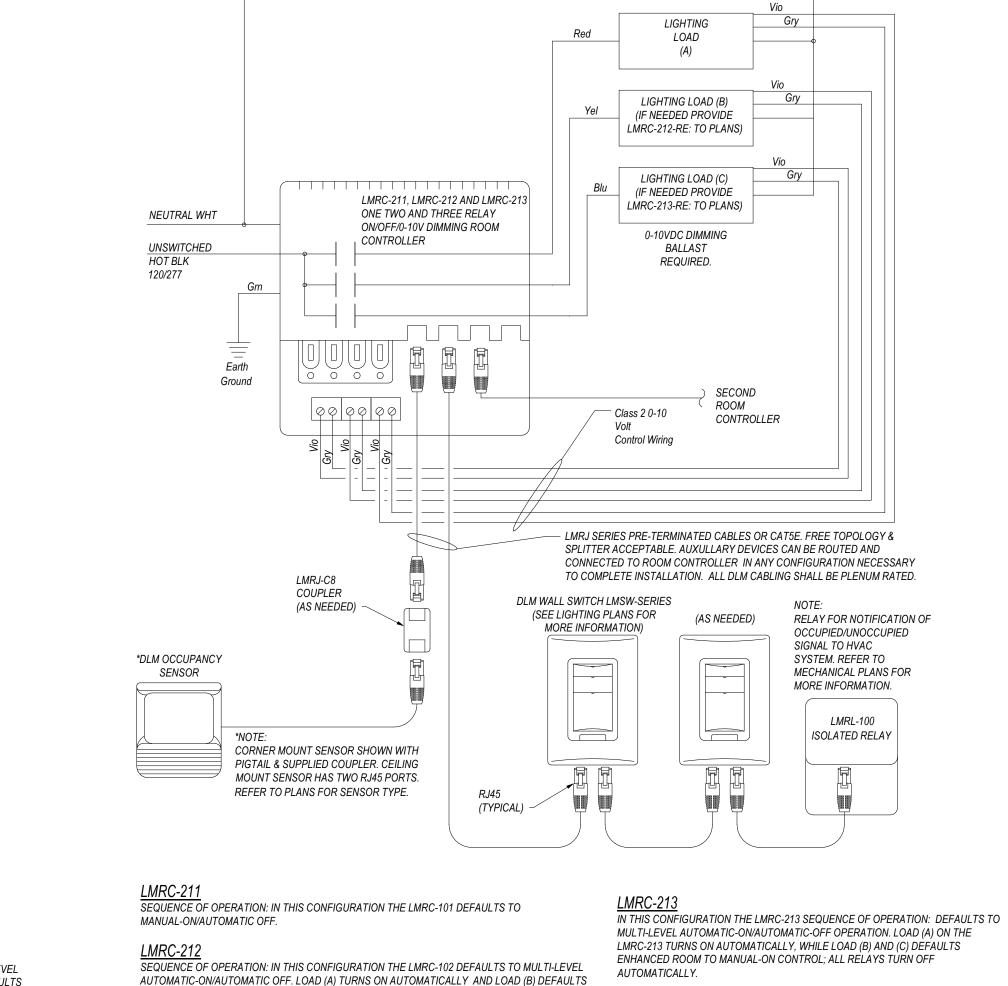
TECHNOLOGY ROUGH-IN TO J-HOOK DETAIL



 30_1 29_1 28_1 27_1 26_1 25_1 24_1 23_1 22_1 21_1 20_1 19_1 18_1 17_1 16_1 15_1 14_1 13_1 12_1 11_1 10_1 9_1 8_1 7_1 6_1 5_1 4_1 3_1 2_1

DETAIL OF LMRC-100 SERIES ROOM CONTROLLER CABLING

NO SCALE



DETAIL OF LMRC-211, LMRC-212

AND LMRC-213 ROOM CONTROLLER CABLING

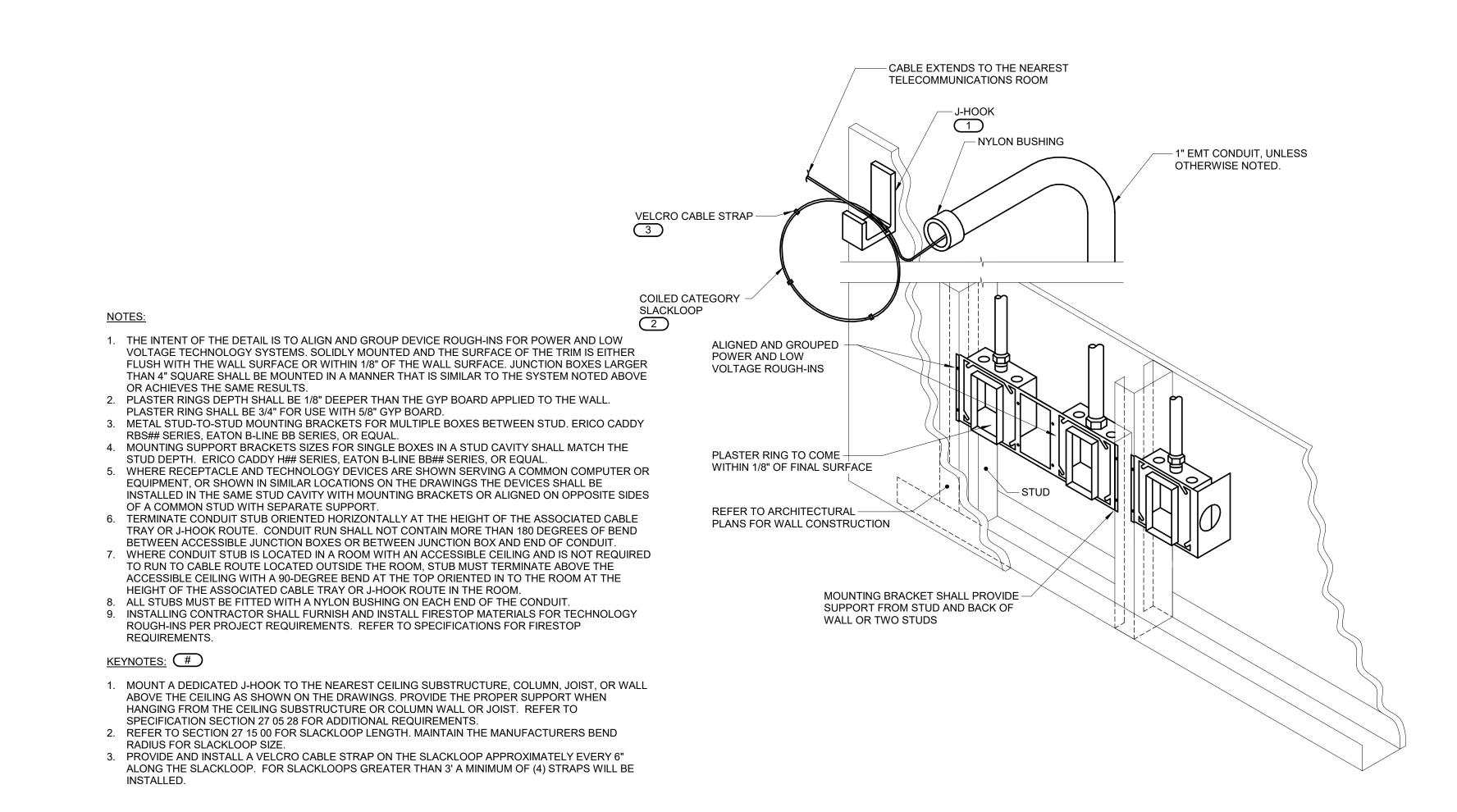
NO SCALE

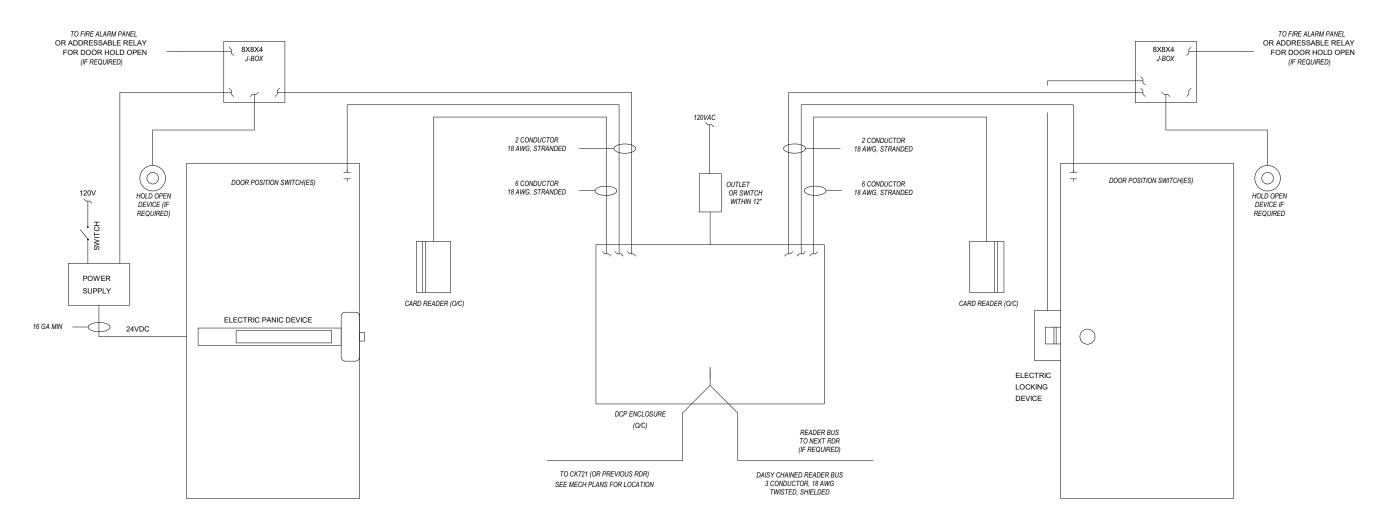
-FURNISH WITH TWO (2) LMCT-100 DIGITAL WIRELESS CONFIGURATION

-ALL SHIELDING FOR OCCUPANCY SENSORS SHALL BE TURNED OVER TO

-PROVIDE COMMISSIONING AND TRAINING FOR ALL INSTALLATIONS.

-PROVIDE ENGRAVING FOR BUTTONS ON ALL INSTALLATIONS.





TO MANUAL-ON CONTROL; BOTH LOADS TURN AUTOMATICALLY OFF.

NOTES:

- ALL WIRING MUST BE IN MINIMUM 3/4" CONDUIT.
- 2. ALL LOW VOLTGE WIRING (<25 V) TO BE MINIMUM 18 AWG STRANDED, TWISTED SHIELDED PAIR UNLESS SPECIFIED OTHERWISE OR REQUIRED BY THE DEVICE.
- 3. O/C = OWNER PROVIDED, CONTRACTOR INSTALLED. ALL OTHER COMPONENTS ARE CONTRACTOR PROVIDED AND CONTRACTORINSTALLED.
- 4. ALL TERMINATION CONNECTIONS IN THE 8X8 J-BOX AND DCP ENCLOSURE ARE DONE BY THE OWNER.
- WIRING FROM DOOR CONTROLLER EQUIPMENT MUST BE CLEARLY IDENTIFIED.
 ALL ELECTRONIC LOCKING DEVICES MUST HAVE 24VDC COILS. DEVICES REQUIRING MORE THAN 400MA MUST HAVE
- ITS OWN POWER
 SUPPLY.
 7. ELECTRICAL OUTLET OR SWITCH TO BE MOUNTED ABOVE OWNER PROVIDED DCP ENCLOSURE LOCATED IN ELECT OR
- MECH ROOM OR AS LOCATED ON PLANS. USE OUTLET FOR SMALL DCP. USE SWITCH FOR LARGEDCP.

 8. ANY DOOR FRAME WIRE PENETRATIONS MUST BE INSTALLED WITH A GROMET.
- PROVIDE ADDITIONAL ELECTRONIC LOCKING DEVICES CONNECTED TO DOOR CONTROLLER SIGNAL AS REQUIRED
- FOR EACH DOOR LOCATION.

 10. 8X8X4 J-BOX ONLY REQUIRED IF DOOR HOLD OPENS ARE REQUIRED.
- 11. DOOR POSITION SWITCH PREFERRED TO BE INTEGRAL LATCH MONITOR. IF NOT FEASIBLE USE CONCEALED MAGNETIC SWITCH. INSTALL ONE DPS FOR EACH LEAF AND WIRE IN SERIES.

SEQUENCE OF OPERATION:

2. LOCKED HOURS WILL BE DETERMINED BY THE P2000 SYSTEM.

SENSORS ARE ACTIVATED.

DOOR OPERATOR SEQUENCER SHALL ENERGIZE THE LOCKING DEVICE AND THE

DURING UNLOCKED HOURS. THE RDR WILL ENERGIZE THE LOCKING DEVICE AN

4. DURING LOCKED HOURS, THE RDR WILL DE-ENERGIZE THE LOCKING DEVICE AND

SENSOR UNLESS A VALID ID CARD IS READ BY THE CARD READER.

5. INTERIOR DOOR OPERATOR SENSOR SHALL REMAIN OPERABLE AT ALL TIMES.

DOOR HOLD OPEN (IF REQUIRED) AND DISABLE THE EXTERIOR DOOR OPERATOR

DOOR HOLD OPEN (IF REQUIRED) AND ENABLE THE EXTERIOR DOOR OPERATOR

DOOR OPERATOR MOTOR (AFTER A ONE SECOND DELAY) IF EITHER OF THE DOOR

1 CARD READER DETAIL NO SCALE



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FOR THE CURATORS OF THE UNIVERSITY OF MISSOURI

LOWRY HALL RENOVATE FIRST FLOOR

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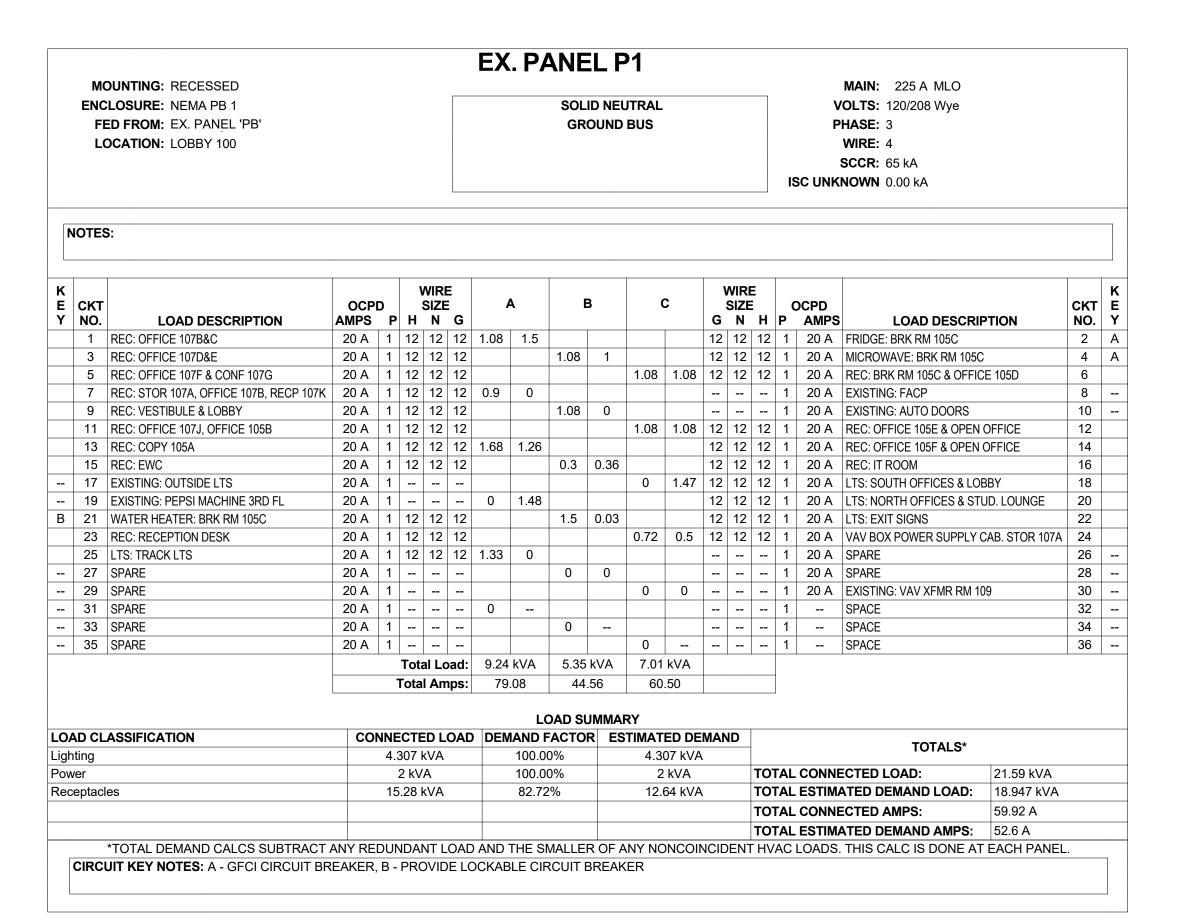


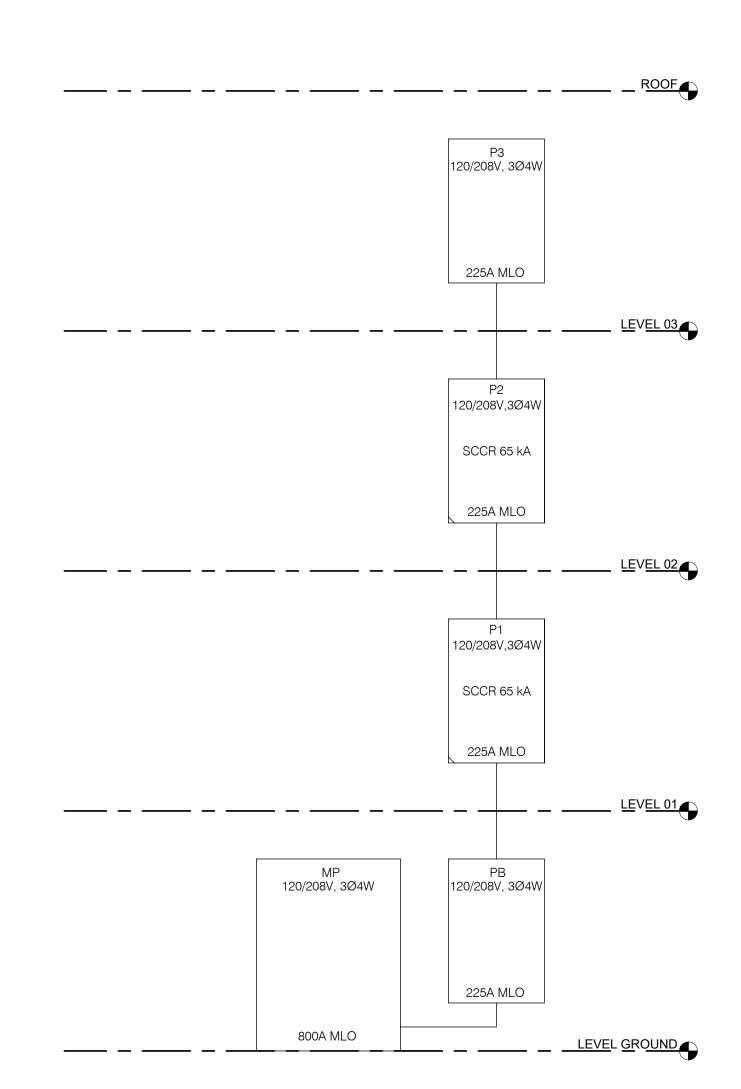
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ELECTRICAL DETAILS





1 ELECTRICAL RISER DIAGRAM
NO SCALE

(DESC) DOOR:	DISTRIBUTION:	BEAMWIDTH:	(L/L) LENS/LOUVER:	K19 - KSH19 .156" ACRYLIC	
FA - FLAT ALUMINUM	II - ANSI/IES TYPE 2 DISTRIBUTION	NSP - VERY NARROW SPOT	A125" ACRYLIC	M - MATTE DIFFUSE CLEAR	
FS - FLAT STEEL	III - ANSI/IES TYPE 3 DISTRIBUTION	SP - SPOT	B - BAFFLE/LOUVER	N - NONE	
RA - REGRESSED ALUMINUM	IV - ANSI/IES TYPE 4 DISTRIBUTION	MD - MEDIUM	C - CLEAR ALZAK	P - POLYCARBONATE	
RS - REGRESSED STEEL	REGRESSED STEEL V - ANSI/IES TYPE 5 DISTRIBUTION WD - WIDE F - FROSTED ACRYLIC		R - HIGH IMPACT DR ACRYLIC		
FINISH:		VWD - VERY WIDE	G - TEMPERED GLASS	SS - SEMI-SPECULAR CLEAR	
PAF - PAINT AFTER FABRICATION	I	WW - WALL WASH	K - KSH12 .125" ACRYLIC	O - OTHER (SEE DESCRIPTION)	
CFSA - COLOR-FINISH SELECTIO	N BY ARCHITECT			[DESIGN SPECIFIC BLANKS]	
MTG) MOUNTING:	RE - RECESSED		(WATT) PER: FIX - FIXTURE,	FT - FOOT, LAMP	
CL - CEILING SURFACE	SP - SUSPENDED		(TYPE) LED	RGB - COLOR CHANGING LED	
CV - COVE	SU - SURFACE		LED - LIGHT EMITTING DIODE	RGBW - COLOR CHANGING + WHITE	
FR - FLANGED RECESSED	UC - UNDER CABINET		TLED - TUBULAR LED LAMP	RGBA - COLOR CHANGING + AMBER	
P - PERIMETER	WL - WALL		OLED - ORGANIC LED	RLED - RETROFIT LED	
PL - POLE	O - OTHER (SEE DESCRIPTION)		DLED - DYNAMIC TUNABLE LED	WLED - WARM DIM LED	
TYPE) DRIVER:					
0-10V - 0-10V DIMMING	EB - ELECTRONIC	HL - HIGH/LOW (100%/50%) STEP DIN	Л	MV - MULTI-VOLTAGE ELECTRONIC	
DALI - DIGITAL ADDRESSABLE ELV - ELECTRONIC LOW VOLTAGE		LINE - LINE VOLTAGE DIMMING		REM - REMOTE	
DMX - DIGITAL MULTIPLEX	EM - EMERGENCY BATTERY	ML - MULTI-LEVEL SWITCHING		O - OTHER (SEE DESCRIPTION)	

VERIFY AND COORDINATE ALL CEILING TYPES WITH LUMINAIRE MOUNTING AND TRIM REQUIREMENTS PRIOR TO THE RELEASE OF THE LUMINAIRE ORDER.

CONFIRM ALL COLORS AND FINISHES OF ALL LUMINAIRE COMPONENTS WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO THE RELEASE OF THE LUMINAIRE ORDER.

UNLESS INDICATED ON LIGHTING PLANS OR BELOW, REFER TO ARCHITECTURAL AND INTERIOR DESIGN ELEVATIONS, SECTIONS AND DETAILS FOR ALL SUSPENDED AND WALL MOUNTED LUMINAIRE MOUNTING HEIGHTS.

SHALL BE COORDINATED WITH THE CATALOG NUMBER TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN.

REFER TO SPECIFICATION SECTIONS LED LIGHTING 26 51 19 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
INTERIOR CORRELATED COLOR TEMPERATURE 3500K, COLOR RENDERING INDEX (CRI) AT OR ABOVE 80, UNLESS NOTED OTHERWISE.

				DIMENSIONS			WATT		LED			DRIVER			
ITEM	DESCRIPTION	L/L	MTG	L	w	н	DIA.	ANSI WATTS	PER	TYPE	QTY	DELIVERED LUMENS (MIN)	VOLTS	TYPE	MANUFACTURER AND MODEL
А	2'x4' RECESSED PRISMATIC TROFFER FOR LED SOURCE125 FROSTED ACRYLIC LENS. FIXTURE STEEL POST PAINTED BAKED WHITE ENAMEL.	A	RE	4'-0"	2'-0"	4 1/2"		30 W	FIX	LED	1	3800 LUMENS	120 V	0-10V	WILLIAMS 50 SERIES
В	SAME AS TYPE 'A' EXCEPT 2'x2' FIXTURE.	Α	RE	2'-0"	2'-0"	4 1/2"		25 W	FIX	LED	1	3300 LUMENS	120 V	0-10V	WILLIAMS 50 SERIES
С	4' LONG x 4" WIDE SURFACE LINEAR FIXTURE WITH A BATWING DISTRIBUTION. FIXTURE WITH WHITE FINISH.	0	SU	4'-0"	4"	5"		9 W	FT	LED	1	1000 LUMENS PER FOOT	120 V	0-10V	FOCAL POINT SEEM 4
C1	6' LONG x 4" WIDE RECESSED LINEAR FIXTURE WITH A BATWING DISTRIBUTION. FIXTURE WITH A WHITE FINISH.	0	RE	6'-0"	4"	5"		9 W	FT	LED	1	1000 LUMENS PER FOOT	120 V	0-10V	FOCAL POINT SEEM 4
C2	SAME AS TYPE 'C' EXCEPT 12' LONG FIXTURE.	0	SU	12'-0"	4"	5"		9 W	FT	LED	1	1000 LUMENS PER FOOT	120 V	0-10V	FOCAL POINT SEEM 4
D	0.75" WIDE CURVE RECESSED LED LIGHT FIXTURE CONSISTING OF A PORTION OF A CIRCLE WITH A RADIUS OF ABOUT 3'-6". REFER TO ARCHITECTURAL RCP FOR EXACT DIMENSION LAYOUTS.	0	RE			9 1/2"	6'-10"	5 W	FT	LED	1	339 LUMENS PER FOOT	120 V	0-10V	PURE EDGE TRU CURVE SERIES
F	4' LONG SUSPENDED STRIP LED FIXTURE125" FROST ACRYLIC SHIELDING. FIXTURE STEEL POST PAINTED BAKED WHITE ENAMEL.	F	SP	4'-0"	2 3/4"	3 1/4"		31 W	FIX	LED	1	3800 LUMEN	120 V	0-10V	WILLIAMS 39 SERIES
S	8 FT HALO SINGLE CIRCUIT POWER TRAC. PROVIDE NECESSARY MOUNTING HARDWARE AND LOCK ADAPTERS. FURNISH WITH 2 AMP CURRENT LIMITER.							240 W	FIX				120 V		HALO SINGLE CIRCUIT POWER TRAC SERIES
S1	SAME AS TYPE 'S' EXCEPT 6 FT TRAC. FURNISH WITH 1.5 AMP CURRENT LIMITER.							180 W	FIX				120 V		HALO SINGLE CIRCUIT POWER TRAC SERIES
S2	SAME AS TYPE 'S' EXCEPT 4 FT TRAC. FURNISH WITH 1 AMP CURRENT LIMITER.							120 W	FIX				120 V		HALO SINGLE CIRCUIT POWER TRAC SERIES
Т	3" ROUND LED TRACK HEAD WITH FLAT BACK CYLINDER. 3" NARROW REFLECTOR WITH AN OVERALL SPREAD LENS FOR EVEN DISTRIBUTION. COORDINATE FIXTURE FINISH WITH ARCHITECT.	0	0	6"	0"		3"	21 W	FIX	LED	1	1500 LUMENS, 90 CRI	120 V	0-10V	HALO 808 SERIES
Х	SINGLE-FACE OR DOUBLE-FACE EDGE LIT LED EXIT SIGN. RED LETTERING. FURNISH WITH NECESSARY MOUNTING HARDWARE FOR CEILING AND CONFIGURE FACES AND ARROWS AS SHOWN ON PLANS. FURNISH WITH SELF BATTERY BACKUP WITH SELF-DIAGNOSTICS.	0	CL	1'-1"	2"	9"		3 W	FIX	LED	1	ЕМ	120 V	EM	LITHONIA EDG

NOTES:

1. LIGHT FIXTURES ON PLANS SHOWN AS SHADED SHALL HAVE AN INTEGRAL EMERGENCY BATTERY PACK. PROVIDE A BATTERY INVERTER AS NEEDED.

LIGHTING SEQUENCE OF OPERATION

NOTES:

1. {L##} DENOTES THE LIGHTING SEQUENCE OF OPERATIONS FOR THIS SPACE.

2. [#B] PUSH BUTTON REFERS TO SCENE QUANTITY. CONTROL STATION SHALL BE CAPABLE OF [RAISE/LOWER AND]
SWITCHING ON/OFF FOR MULTIPLE SCENES AS INDICATED ON SHEETS AND THE LIGHTING SEQUENCE OF OPERATIONS {L##}.
COORDINATE QUANTITIES OF BUTTONS FOR CONTROL STATIONS WITH LIGHTING CONTROL MANUFACTURER.
3. [Z#] DENOTES LIGHTING CONTROL ZONE. PROVIDE SEPARATE CONTROL OF EACH CONTROLLED ZONE. LUMINAIRES
ASSOCIATED WITH THE SAME ZONE SHALL OPERATE TOGETHER WITHIN THE SAME PROGRAMMED SCENE.

4. a = SWITCH DESIGNATION FOR LIGHTING CONTROL

5. VERIFY AND COORDINATE ALL TIME CLOCK SETTINGS WITH OWNER PRIOR TO FINAL PROGRAMMING.

6. VERIFY AND COORDINATE ALL PUSH BUTTON WALL DEVICES AND QUANTITIES OF INDIVIDUAL BUTTONS WITH SCENES AND ZONES PER LOCATION.
7. VERIFY AND COORDINATE ALL PUSH BUTTON QUANTITIES AND SCENE NAMES WITH OWNER PRIOR TO SUBMITTING ENGRAVING TEMPLATE TO MANUFACTURER.

PLAN ID	LIGHTING SWITCHED							
{LD1}	Sequence: Dimmed lights are controlled in this space. ON: The lights turn on manually via lighting control station. ADJUST: The dimming luminaires are raised/lowered using a push button wall controller(s). OFF: The lights turn off manually via lighting control station, or automatically shut off, via occupancy sensor, once the space has been unoccupied for 20 minutes.							
{LD2}	Sequence: Dimmed lights are controlled in this space. ON: The lights shall turn on automatically no greater than 50% illumination or manually to 100% via lighting control station. ADJUST: The dimming luminaires are raised/lowered using a push button wall controller(s). OFF: The lights shall reduce output to 50% when unoccupied for 20 minutes and they shall turn off completely, via occupan sensor, once the space has been unoccupied for 30 minutes or turn off manually via lighting control station.							
{LS1}	Sequence: Switched lights are controlled in this space. ON: The lights turn on manually via lighting control station. OFF: After the space has been vacant for 20 minutes, the lights will automatically turn off.							

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ELECTRICAL SCHEDULES

=600